

KLA TENCOR CORP
Form 424B3
June 07, 2018
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As filed pursuant to Rule 424(b)(3)
Registration No. 333-224982

June 7, 2018

MERGER PROPOSED YOUR VOTE IS VERY IMPORTANT

Dear Orbotech Ltd. shareholder:

You are cordially invited to attend the extraordinary general meeting of shareholders of Orbotech Ltd. (Orbotech or we) to be held at 10:00 a.m., Israel time, on Thursday, July 12, 2018, at Orbotech s offices at 7 Sanhedrin Boulevard, North Industrial Zone, Yavne, Israel.

As previously announced, on March 18, 2018, Orbotech entered into an agreement and plan of merger, as amended (the Merger Agreement), with KLA-Tencor Corporation (KLA-Tencor) and Tiburon Merger Sub Technologies Ltd. (Merger Sub) under which Orbotech would be acquired by KLA-Tencor (the Merger). Pursuant to the terms of the Merger Agreement, each ordinary share of Orbotech that is issued and outstanding (other than certain Excluded Shares) will be canceled and converted into the right to receive \$38.86 in cash and 0.25 of a share of KLA-Tencor common stock. You will be asked at the meeting to consider and vote on the approval and adoption of the Merger Agreement, the Merger and the other transactions contemplated by the Merger Agreement (the Merger Proposal). We encourage you to read the Merger Agreement, a copy of which is attached to this proxy statement/prospectus as Annex A, in its entirety.

The Orbotech Board of Directors has (i) determined that the Merger Agreement and the transactions contemplated by the Merger Agreement, including the Merger, are advisable, fair to and in the best interests of Orbotech and its shareholders and that, considering the financial position of the merging companies, and assuming, among other things, the accuracy of the representations and warranties of the other parties in the Merger Agreement, no reasonable concern exists that the surviving company, as a result of the Merger, will be unable to fulfill the obligations of Orbotech to its creditors; (ii) approved the Merger Agreement and the transactions contemplated by the Merger Agreement, including the Merger; and (iii) resolved to direct that the Merger Agreement and the transactions contemplated by the Merger Agreement be submitted to the shareholders of Orbotech for approval and adoption and recommended that the shareholders of Orbotech vote in favor of the approval and adoption of the Merger Agreement, the Merger and the other transactions contemplated by the Merger Agreement, all upon the terms and subject to the conditions set forth in the Merger Agreement. **Accordingly, the Orbotech Board of Directors unanimously recommends that you vote FOR the Merger Proposal.**

We urge you to read the accompanying proxy statement/prospectus, including the Annexes and the documents incorporated by reference, carefully and in its entirety. In particular, we urge you to read carefully the section entitled Risk Factors .

We look forward to greeting personally those Orbotech shareholders who are able to be present at the meeting. If you do plan to attend, to gain access to the meeting we ask that you bring with you some form of personal identification and verification of your status as a shareholder as of the close of trading on June 6, 2018, the record date for the meeting. However, whether or not you will be with us at the meeting, it is important that your shares be represented. Accordingly, you are requested to complete, date, sign and mail the enclosed proxy in the envelope provided at your earliest convenience and in any event so as to be received in a timely manner as discussed in the enclosed proxy statement/prospectus. Your shares can be voted at the meeting only if you are present or represented by a valid proxy.

Thank you for your cooperation.

Very truly yours,

ASHER LEVY

Chief Executive Officer, Orbotech Ltd.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the securities to be issued under this proxy statement/prospectus or determined if this proxy statement/prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

This proxy statement/prospectus is dated June 7, 2018 and is first being made available to Orbotech shareholders on or about June 7, 2018.

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ORBOTECH LTD.

7 Sanhedrin Boulevard

North Industrial Zone

P.O. Box 215

Yavne 8110101, Israel

PROXY STATEMENT

EXTRAORDINARY GENERAL MEETING OF SHAREHOLDERS

This proxy statement/prospectus is being furnished to the holders of ordinary shares, New Israeli Shekels (NIS) 0.14 nominal (par) value per share (Orbotech shares), of Orbotech Ltd. (Orbotech) in connection with the solicitation by the Board of Directors of Orbotech (the Orbotech Board) of proxies for use at Orbotech 's extraordinary general meeting of shareholders (the meeting) or at any adjournment thereof.

The meeting will be held on Thursday, July 12, 2018 at 10:00 a.m., Israel time, at Orbotech 's principal executive offices at 7 Sanhedrin Boulevard, North Industrial Zone, Yavne, Israel, to consider and vote on the following matter in connection with the acquisition of Orbotech by KLA-Tencor Corporation, a Delaware corporation (KLA-Tencor):

To approve and adopt (i) the agreement and plan of merger dated March 18, 2018, as amended (the Merger Agreement), among KLA-Tencor, Tiburon Merger Sub Technologies Ltd., a company organized under the laws of the State of Israel and a wholly owned subsidiary of KLA-Tencor (Merger Sub) and Orbotech; (ii) the merger of Merger Sub with and into Orbotech (the Merger) on the terms and subject to the conditions set forth in the Merger Agreement and in accordance with the provisions of Sections 314-327 of the Companies Law 1999 of the State of Israel (together with the rules and regulations promulgated thereunder, the ICL), following which Merger Sub will cease to exist, and Orbotech will become a wholly owned subsidiary of KLA-Tencor; and (iii) all other transactions contemplated by the Merger Agreement, all upon the terms and subject to the conditions set forth in the Merger Agreement (the Merger Proposal).

Voting procedures. A form of proxy for use at the meeting and a return envelope for the proxy are enclosed. No postage is required if mailed in the United States. Shareholders may revoke the authority granted by their execution of a proxy at any time before the effective exercise thereof by filing with Orbotech a written notice of revocation or a duly executed proxy bearing a later date, or by voting in person at the meeting. *In order for a proxy to be counted, it must be duly executed and received prior to the meeting. This will be deemed to have occurred only if such proxy is received either by Orbotech at its principal executive offices at 7 Sanhedrin Boulevard, North Industrial Zone, Yavne, Israel, at any time prior to the commencement of the meeting, or by American Stock Transfer & Trust Company, LLC, Orbotech 's transfer agent, in New York City, New York, by no later than 11:59 p.m., New York City time, on July 11, 2018, the last business day immediately preceding the date of the meeting (and, in each case, not revoked prior to such time). Orbotech shares represented by any proxy received after the time specified above will not be counted as present at the meeting and will not be voted.*

If a shareholder properly executes and returns the form of proxy to Orbotech prior to the meeting (as specified above) without indicating how the shareholder intends to vote with respect to the Merger Proposal, the Orbotech shares

represented by the proxy will be counted as being present for quorum purposes, but will not be treated as having been voted in respect of the Merger Proposal and will have no effect on the voting with respect to the Merger Proposal.

Joint holders of Orbotech shares should take note that, pursuant to Article 62 of the Articles of Association of Orbotech, the vote of the senior holder of joint holders of any Orbotech share who tenders a vote, whether in person or by proxy, will be accepted to the exclusion of the vote(s) of the other joint holder(s) of such Orbotech

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share, and for this purpose seniority will be determined by the order in which the names stand in Orbotech's share register.

Record date. Proxies for use at the meeting are being solicited by the Orbotech Board. Only shareholders with Orbotech shares registered in his, her, its or their name or names, at the close of trading on June 6, 2018, the record date (Orbotech shareholders of record), will be entitled to vote at the meeting or at any adjournment thereof. Proxies are expected to be mailed to Orbotech shareholders of record on or about June 15, 2018, and their return will be solicited chiefly by mail; however, certain officers, directors, employees and agents of Orbotech, none of whom will receive additional compensation therefor, as well as Okapi Partners LLC, the proxy solicitor for Orbotech, may solicit proxies by telephone, facsimile transmission, electronic mail or other personal contact. Orbotech will bear the costs of the solicitation of proxies, including postage, printing and handling, and will reimburse the reasonable expenses of brokerage firms and others for forwarding material to beneficial owners of Orbotech shares.

Quorum. At the close of trading on June 6, 2018, the record date, 48,569,735 Orbotech shares were outstanding¹, each of which is entitled to one vote upon each of the matters to be presented at the meeting. No less than two Orbotech shareholders of record present in person or by proxy, and holding or representing between them Orbotech shares conferring in the aggregate more than 50% of the voting rights of Orbotech, shall constitute a quorum at the meeting. If within one-half hour from the time appointed for the holding of the meeting a quorum is not present, the meeting shall be adjourned to July 23, 2018, at the same time and place. At any such adjourned meeting, if a quorum is not present within one-half hour from the specified time, any shareholders present in person or by proxy shall constitute a quorum even if they hold or represent Orbotech shares conferring 50% or less of the voting rights of Orbotech.

In determining whether there is a quorum for the meeting and whether the required number of votes for the Merger Proposal has been cast, Orbotech shares subject to abstentions or to broker non-votes are counted for purposes of determining whether there is a quorum for the meeting but, with regard to the Merger Proposal, are not counted as having been voted in respect thereof. Broker non-votes are votes that brokers holding Orbotech shares of record for their clients are, pursuant to applicable stock exchange or other rules, precluded from casting in respect of certain non-routine proposals because such brokers have not received specific instructions from their clients as to the manner in which such Orbotech shares should be voted on those proposals and as to which the brokers have advised Orbotech that, accordingly, they lack voting authority.

Required vote. The affirmative vote of a simple majority of the voting rights of Orbotech shares represented and voting thereon at the meeting is necessary for the approval of the Merger Proposal, provided that such majority includes at least a majority of the votes cast by Orbotech shareholders that are not KLA-Tencor, Merger Sub or a KLA Related Person (as defined below), who are present and voting (abstentions are disregarded) (the Merger Majority).

Pursuant to the ICL, each Orbotech shareholder voting on the Merger Proposal is required to inform Orbotech as detailed below prior to voting at the meeting if the shareholder is any of KLA-Tencor, Merger Sub, or a KLA Related Person and to indicate such matter in the appropriate place in the enclosed proxy, as further detailed below. A KLA Related Person is (a) a person holding, directly or indirectly, either (i) 25% or more of the voting rights of KLA-Tencor or Merger Sub, or (ii) the right to appoint 25% or more of the directors of KLA-Tencor or Merger Sub, or (b) one of such person's spouse, siblings, parents, grandparents, descendants, spouse's descendants, siblings or parents or the spouse of any such person, or a corporation controlled by any one or more of such persons or by KLA-Tencor or Merger Sub.

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Does not include, as at that date: (i) a total of 4,401,303 Orbotech shares that were either subject to outstanding equity awards granted pursuant to equity remuneration plans of Orbotech or were available for grant pursuant to such plans and (ii) a total of 5,410,773 Orbotech shares held as treasury shares, including (A) 37,022 Orbotech shares held on behalf of Orbotech by the Section 102 Trustee and (B) 3,416,855 Orbotech shares held by direct or indirect wholly owned subsidiaries of Orbotech, all as described in further detail under the section entitled Security Ownership of Certain Beneficial Owners and Management of Orbotech .

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Special voting instructions under the ICL. In order to provide for proper counting of your shareholder vote, in the enclosed proxy you are required to indicate whether or not you are KLA-Tencor, Merger Sub, or a KLA Related Person with respect to the Merger Proposal. If you have not marked **NO** on the proxy (or in your electronic submission), thereby confirming that you are not any of KLA-Tencor, Merger Sub, or a KLA Related Person with respect to the Merger Proposal, your vote will not be counted for purposes of the Merger Majority with respect to the Merger Proposal, and your signature on the enclosed proxy (or the submission of an electronic vote) will constitute a certification that you are either KLA-Tencor, Merger Sub or a KLA Related Person.

Based on information provided by KLA-Tencor and Merger Sub to Orbotech, as of the date of this proxy statement/prospectus, Orbotech is not aware of any holdings of Orbotech shares by KLA-Tencor, Merger Sub or any KLA Related Persons, and therefore believes that all of its shareholders should mark **NO** in the appropriate place on the enclosed proxy (or in their electronic submission).

Abstentions and broker non-votes will be counted for purposes of determining whether there is a quorum for the meeting but will not be treated as having been voted in respect of the Merger Proposal. Consequently, assuming a quorum is present at the meeting, broker non-votes and abstentions will have no effect on the voting with respect to the Merger Proposal.

Orbotech is unaware at this time of any other matters that will come before the meeting. If any other matters properly come before the meeting, it is the intention of the persons designated as proxies to vote in accordance with their judgment on such matters. Orbotech shares represented by executed and unrevoked proxies will be voted in accordance with such judgment.

ADDITIONAL INFORMATION

This proxy statement/prospectus incorporates important business and financial information about KLA-Tencor and Orbotech from other documents that are not included in or delivered with this proxy statement/prospectus. This information is available to you without charge upon your request. You can obtain the documents incorporated by reference into the proxy statement/prospectus free of charge by requesting them in writing or by telephone from the appropriate company at the following addresses and telephone numbers:

KLA-Tencor Corporation

One Technology Drive

Milpitas, CA 95035

(408) 875-3000

Attention: Investor Relations

Orbotech Ltd.

P. O. Box 215

Yavne 8110101, Israel

972-8-9423622

Attention: Michael Havin, Corporate Secretary

Investors may also consult KLA-Tencor's or Orbotech's website for more information concerning the Merger described in this proxy statement/prospectus. KLA-Tencor's website is www.kla-tencor.com. Orbotech's website is www.orbotech.com. Information included on these websites is not incorporated by reference into this proxy statement/prospectus.

In addition, if you have questions about the Merger, the merger consideration or related matters or this proxy statement/prospectus, would like additional copies of this proxy statement/prospectus or need to obtain proxy cards or other information related to the proxy solicitation, please contact Okapi Partners LLC, the proxy solicitor for Orbotech, toll-free at +1 (855) 305-0857 or collect at +1 (212) 297-0720. You will not be charged for any of these documents that you request. If you have any questions about the merger consideration or related matters, you may also contact D.F. King & Co., Inc., the information agent for the Merger, by phone at +1 (800) 628-8538 (toll-free for stockholders) or +1 (212) 269-5550 (banks and brokers) or by email at orbotech@dfking.com.

If you would like to request any documents, please do so by July 5, 2018 in order to receive them before the extraordinary general meeting of Orbotech shareholders.

For a more detailed description of the information incorporated by reference into this proxy statement/prospectus and how you may obtain it, see the section entitled Where You Can Find More Information .

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ABOUT THIS PROXY STATEMENT/PROSPECTUS

This proxy statement/prospectus, which forms part of a registration statement on Form S-4 filed with the U.S. Securities and Exchange Commission (the "SEC") by KLA-Tencor, constitutes a prospectus of KLA-Tencor under Section 5 of the Securities Act of 1933, as amended (the "Securities Act") with respect to the shares of KLA-Tencor common stock to be issued to Orbotech shareholders pursuant to the Merger Agreement. This proxy statement/prospectus also constitutes a notification with respect to the extraordinary general meeting of Orbotech shareholders.

You should rely only on the information contained in or incorporated by reference into this proxy statement/prospectus. No one has been authorized to provide you with information that is different from that contained in, or incorporated by reference into, this proxy statement/prospectus. This proxy statement/prospectus is dated June 7, 2018. You should not assume that the information contained in this proxy statement/prospectus is accurate as of any other date. You should not assume that the information incorporated by reference into this proxy statement/prospectus is accurate as of any date other than the date of the incorporated document. Neither our making available this proxy statement/prospectus to Orbotech shareholders nor the issuance by KLA-Tencor of shares of common stock pursuant to the Merger Agreement will create any implication to the contrary.

This proxy statement/prospectus does not constitute an offer to sell, or a solicitation of an offer to buy, any securities, or the solicitation of a proxy, in any jurisdiction to or from any person to whom it is unlawful to make any such offer or solicitation. Information contained in this proxy statement/prospectus regarding KLA-Tencor has been provided by KLA-Tencor and information contained in this proxy statement/prospectus regarding Orbotech has been provided by Orbotech.

All references in this proxy statement/prospectus to "KLA-Tencor" refer to KLA-Tencor Corporation, a Delaware corporation; all references in this proxy statement/prospectus to "Orbotech" refer to Orbotech Ltd., a company organized under the laws of the State of Israel; all references to "Merger Sub" refer to Tiburon Merger Sub Technologies Ltd., a company organized under the laws of the State of Israel and a wholly owned subsidiary of KLA-Tencor formed for the sole purpose of effecting the Merger, or its permitted assignees; unless otherwise indicated or as the context requires, all references in this proxy statement/prospectus to "we," "our" and "us" refer to KLA-Tencor and Orbotech collectively; unless otherwise indicated or as the context requires, all references to the "combined company" refer to KLA-Tencor, Orbotech and their subsidiaries, collectively, following the consummation of the Merger; unless otherwise indicated or as the context requires, all references to the "Merger Agreement" refer to the agreement and plan of merger, dated as of March 18, 2018, as amended, among KLA-Tencor, Merger Sub and Orbotech, a copy of which is attached to this proxy statement/prospectus as Annex A; all references to the "Merger" refer to the merger of Merger Sub with and into Orbotech, with Orbotech as the surviving company.

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Annex B Opinion of Barclays Capital Inc.

Annex C Proxy Card

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QUESTIONS AND ANSWERS

The following are some questions that you, as a shareholder of Orbotech, may have regarding the Merger Proposal being considered at the extraordinary general meeting of Orbotech shareholders (the meeting) and the answers to those questions. KLA-Tencor and Orbotech urge you to carefully read the remainder of this proxy statement/prospectus because the information in this section does not provide all the information that might be important to you with respect to the Merger Proposal being considered at the meeting. Additional important information is also contained in the Annexes to, and the documents incorporated by reference into, this proxy statement/prospectus. For more information, see the section entitled Where You Can Find More Information .

Q: Why am I receiving this proxy statement/prospectus?

A: KLA-Tencor and Orbotech have agreed to an acquisition of Orbotech by KLA-Tencor under the terms of the Merger Agreement that is described in this proxy statement/prospectus. A copy of the Merger Agreement is attached to this proxy statement/prospectus as Annex A. The Merger Agreement is the legal document governing the Merger.

In order to consummate the Merger, Orbotech shareholders must vote to approve and adopt the Merger Proposal described in this proxy statement/prospectus, and all other conditions to the Merger must be satisfied or waived.

Orbotech will hold the meeting to obtain this approval for the Merger Proposal. This proxy statement/prospectus contains important information about the Merger, the Merger Proposal and the meeting, and you should read it carefully. The enclosed proxy materials allow you to vote your shares without attending the meeting.

Your vote is important. We encourage you to vote as soon as possible. For more information on how to vote your shares, see the section entitled The Orbotech Extraordinary General Meeting Voting Procedures .

This proxy statement/prospectus is for the extraordinary general meeting of the shareholders of Orbotech to consider the Merger Proposal and does not relate to the 2018 annual general meeting of Orbotech shareholders (the 2018 Orbotech Annual Meeting) scheduled to be held on June 21, 2018 . **To vote on the Merger Proposal, you must follow the procedures in this proxy statement/prospectus. Completing the proxy for or voting at the 2018 Orbotech Annual Meeting is not a vote on the Merger Proposal.** This proxy statement/prospectus is not soliciting votes for the 2018 Orbotech Annual Meeting and a separate proxy statement relating to the 2018 Orbotech Annual Meeting was made available to Orbotech shareholders on or about May 17, 2018. See the section entitled Where You Can Find More Information .

Q: What is a proxy?

A: A proxy is another person you authorize to vote on your behalf. Orbotech is asking its shareholders to vote, or to instruct their proxy how to vote, their Orbotech ordinary shares (the Orbotech shares) so that all Orbotech shares may be voted at the meeting even if the holders do not attend the meeting.

Q: When were the enclosed solicitation materials first made available to shareholders?

A: The enclosed solicitation materials were first made available to Orbotech shareholders on or about June 7, 2018 and are expected to be mailed to Orbotech shareholders on or about June 15, 2018.

Q: What do I need to do now?

A: After you have carefully read and considered the information contained in or incorporated by reference into this proxy statement/prospectus, please either join us at the meeting to vote in person or vote by submitting

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your proxy card by following the instructions set forth below in the sections entitled The Orbotech Extraordinary General Meeting Vote Required at the Meeting, and The Orbotech Extraordinary General Meeting Voting Procedures .

Questions and Answers about the Merger Proposal and Extraordinary General Meeting

Q: When and where is the meeting?

A: The meeting will be held on Thursday, July 12, 2018 at 10:00 a.m., Israel time, at Orbotech's principal executive offices at 7 Sanhedrin Boulevard, North Industrial Zone, Yavne, Israel.

Q: Who is entitled to vote at the meeting?

A: Only Orbotech shareholders with Orbotech shares registered in his, her, its or their name or names as of the close of trading on June 6, 2018, the record date (Orbotech shareholders of record), will be entitled to vote at the meeting or at any adjournment thereof. As of the close of trading on June 6, 2018, the record date, 48,569,735 Orbotech shares were outstanding², each of which is entitled to one vote upon the matter presented at the meeting.

Q: What proposal will be considered at the meeting?

A: At the meeting, you will be asked to consider and vote on the following item:

To approve and adopt (i) the Merger Agreement; (ii) the Merger on the terms and subject to the conditions set forth in the Merger Agreement and in accordance with the provisions of Sections 314-327 of the ICL, following which Merger Sub will cease to exist, and Orbotech will become a wholly owned subsidiary of KLA-Tencor; and (iii) all other transactions contemplated by the Merger Agreement, all upon the terms and subject to the conditions set forth in the Merger Agreement (the Merger Proposal).

Q: What constitutes a quorum?

A: No less than two Orbotech shareholders of record present in person or by proxy, and holding or representing between them Orbotech shares conferring in the aggregate more than 50% of the voting rights of Orbotech, shall constitute a quorum at the meeting. If within one-half hour from the time appointed for the holding of the meeting a quorum is not present, the meeting shall be adjourned to July 23, 2018, at the same time and place. At any such adjourned meeting, if a quorum is not present within one-half hour from the specified time, any shareholders present in person or by proxy shall constitute a quorum even if they hold or represent Orbotech shares conferring 50% or less of the voting rights of Orbotech.

In determining whether there is a quorum for the meeting and whether the required number of votes for the Merger Proposal has been cast, Orbotech shares subject to abstentions or to broker non-votes are counted for purposes of determining whether there is a quorum for the meeting but, with regard to the Merger Proposal, are not counted as having been voted in respect thereof. Broker non-votes are votes that brokers holding Orbotech shares of record for their clients are, pursuant to applicable stock exchange or other rules, precluded from casting in respect of certain non-routine proposals because such brokers have not received specific instructions from their clients as to the manner in which such Orbotech shares should be voted on

² Does not include, as at that date: (i) a total of 4,401,303 Orbotech shares that were either subject to outstanding equity awards granted pursuant to equity remuneration plans of Orbotech or were available for grant pursuant to such plans and (ii) a total of 5,410,773 Orbotech shares held as treasury shares, including (A) 37,022 Orbotech shares held on behalf of Orbotech by the Section 102 Trustee and (B) 3,416,855 Orbotech shares held by direct or indirect wholly owned subsidiaries of Orbotech, all as described in further detail in the section entitled Security Ownership of Certain Beneficial Owners and Management of Orbotech .

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those proposals and as to which the brokers have advised Orbotech that, accordingly, they lack voting authority.

Q: What vote of Orbotech shareholders is required to approve the Merger Proposal?

A: The affirmative vote of a simple majority of the voting rights of Orbotech represented and voting thereon at the meeting is necessary for the approval of the Merger Proposal, provided that such majority includes at least a majority of the votes cast by Orbotech shareholders that are not KLA-Tencor, Merger Sub or a KLA Related Person, who are present and voting (abstentions are disregarded) (the Merger Majority).

Q: How does the Orbotech Board recommend that I vote?

A: The Board of Directors of Orbotech (the Orbotech Board) unanimously recommends a vote FOR the Merger Proposal.

For a discussion of the factors that the Orbotech Board considered in determining to recommend the approval and adoption of the Merger Agreement, the Merger and all other transactions contemplated by thereby, see the section entitled The Merger Orbotech s Reasons for the Merger; Recommendation of the Orbotech Board .

Q: Do any of Orbotech s directors or executive officers have any interests in the Merger that may be different from, or in addition to, my interests as an Orbotech shareholder?

A: In considering the proposal to be voted on at the meeting, you should be aware that Orbotech s directors and executive officers have interests that may be different from, or in addition to, the interests of the Orbotech shareholders generally. For more information, see the section entitled The Merger Interests of Orbotech Directors and Executive Officers in the Merger .

Q: What do I need to do now?

A: After carefully reading and considering the information contained in this proxy statement/prospectus, including the Annexes and the other documents incorporated by reference in this proxy statement/prospectus, please ensure your Orbotech shares are voted at the meeting by completing, dating, signing and mailing the enclosed proxy in the envelope provided at your earliest convenience and in any event so as to be received in a timely manner as discussed in this proxy statement/prospectus.

Your shares can be voted at the meeting only if you are present or represented by a valid proxy. In order to provide for proper counting of your shareholder vote, in the enclosed proxy you are required to indicate whether or not you are KLA-Tencor, Merger Sub, or a KLA Related Person with respect to the Merger Proposal. If you have not marked NO on the proxy (or in your electronic submission), thereby confirming that you are not any of KLA-Tencor, Merger Sub, or a KLA Related Person with respect to the Merger Proposal, your vote will not be counted for purposes of the Merger Majority with respect to the Merger Proposal, and your signature on the enclosed proxy (or the submission of

an electronic vote) will constitute a certification that you are either KLA-Tencor, Merger Sub or a KLA Related Person.

Q: What happens if I sell my Orbotech shares before the meeting?

A: The record date for the meeting is earlier than the date of the meeting. If you own Orbotech shares on the record date and transfer your Orbotech shares after the record date but before the time of the meeting, you will retain your right to vote such Orbotech shares at the meeting, but the right to receive the Merger Consideration will pass to the person to whom you transferred your Orbotech shares. In order to receive the Merger Consideration, you must hold your Orbotech shares through the completion of the Merger.

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Q: How do I cast my vote if I am an Orbotech shareholder of record?

A: If you are an Orbotech shareholder of record, you may vote in person at the meeting or by submitting a proxy for the meeting. In order for a proxy to be counted, it must be a duly executed proxy and received prior to the meeting. This will be deemed to have occurred only if such proxy is received either by Orbotech at its principal executive offices at 7 Sanhedrin Boulevard, North Industrial Zone, Yavne, Israel, at any time prior to the commencement of the meeting, or by American Stock Transfer & Trust Company, LLC, Orbotech's transfer agent, in New York, New York, by no later than 11:59 p.m., New York City time, on July 11, 2018, the last business day immediately preceding the date of the meeting (and, in each case, not revoked prior to such time). Orbotech shares represented by any proxy received after the time specified above will not be counted as present at the meeting and will not be voted. For more detailed instructions on how to vote, see the sections entitled "The Orbotech Extraordinary General Meeting Vote Required at the Meeting" and "The Orbotech Extraordinary General Meeting Voting Procedures".

Joint holders of Orbotech shares should take note that, pursuant to Article 62 of the Articles of Association of Orbotech, the vote of the senior holder of joint holders of any Orbotech share who tenders a vote, whether in person or by proxy, will be accepted to the exclusion of the vote(s) of the other joint holder(s) of the Orbotech share, and for this purpose seniority will be determined by the order in which the names stand in Orbotech's share register.

If you are an Orbotech shareholder of record who properly executes and returns the form of proxy to Orbotech prior to the meeting (as specified above) without indicating how you intend to vote with respect to the Merger Proposal, the Orbotech shares represented by the proxy will be counted as being present for quorum purposes, but will not be treated as having been voted in respect of the Merger Proposal and will have no effect on the voting with respect to the Merger Proposal.

Q: How do I cast my vote if my Orbotech shares are held in street name by my broker?

A: If you are an Orbotech shareholder with Orbotech shares held in street name, which means your Orbotech shares are held in an account at a broker, bank or other nominee, you must follow the instructions from your broker, bank or other nominee in order to vote. Without following those instructions, your Orbotech shares will not be voted.

Q: What will happen if I abstain from voting on the Merger Proposal?

A: Abstentions and broker non-votes will be counted for purposes of determining whether there is a quorum for the meeting but will not be treated as having been voted in respect of the Merger Proposal. Consequently, assuming a quorum is present at the meeting, broker non-votes and abstentions will have no effect on the voting with respect to the Merger Proposal.

Q: Can I change my vote after I have delivered my proxy?

A: Yes. If you are an Orbotech shareholder of record, once you have given your proxy votes for the matters before our Orbotech shareholders as described in this proxy statement/prospectus, you may revoke such vote at any time prior to the time it is voted, (1) by filing with Orbotech an instrument revoking such proxy, (2) by completing, signing, dating and returning a new proxy bearing a later date by mail to Orbotech or (3) by attending the meeting and voting in person.

Merely attending the meeting will not, by itself, revoke a proxy. Please note that if you want to revoke your proxy by sending a new proxy or an instrument revoking such proxy to Orbotech, you should ensure that you send your new proxy or instrument revoking such proxy in sufficient time for it to be received by Orbotech prior to the meeting. Only your last-dated proxy will count. If you are an Orbotech shareholder of record, you may obtain a new legal proxy by contacting Okapi Partners LLC, Orbotech's proxy solicitor, at 1212 Avenue of the Americas, 24th Floor, New York, NY 10036 or by telephone at +1 (212) 297-0720.

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If you are an Orbotech shareholder with Orbotech shares held in street name, you should follow the instructions of your broker regarding the revocation of proxies. If your broker allows you to submit a proxy via the internet or by telephone, you may be able to change your vote by submitting a new proxy via the internet or by telephone or by mail. Please note that if your Orbotech shares are held in the name of a broker, you must obtain and bring to the meeting a proxy issued in your name from the broker to be able to vote at the meeting.

Q: If I hold my Orbotech shares in certificated form, should I send in my share certificates now?

A: No. You should not send in your share certificate(s) with your proxy. A letter of transmittal with instructions for the surrender of your certificates representing any Orbotech shares will be mailed to Orbotech shareholders if the Merger is completed.

Promptly after the Effective Time (as defined below in the answer to the question *When do you expect the Merger to be completed?*), each holder of record of a certificate representing any Orbotech share (each a *certificate*) or uncertificated Orbotech shares, in each case that have been converted into the right to receive the Merger Consideration (as defined in the section entitled *The Merger Effects of the Merger*), will be sent a letter of transmittal describing the procedure for surrendering such certificate or acknowledging the conversion of such uncertificated shares into the right to receive the Merger Consideration. Upon delivery to the exchange agent of the letter of transmittal and a declaration for tax withholding purposes or a valid tax certificate and, if applicable, surrender of the certificates for cancellation to the exchange agent, the holders of such certificates or uncertificated shares, as applicable, will be entitled to receive in exchange therefor the Merger Consideration. Payments and deliveries will be made to such addresses or bank accounts as set forth in the letter of transmittal. For more information, see the sections entitled *The Merger Procedures for Surrendering Orbotech Shares in the Merger* and *The Merger Agreement Exchange Agent; Letter of Transmittal* .

Q: Am I entitled to exercise dissenters' rights or appraisal rights instead of receiving the Merger Consideration for my Orbotech shares?

A: No. Under Israeli law, holders of Orbotech shares are not entitled to statutory appraisal rights in connection with the Merger.

Questions and Answers about the Merger

Q: What will happen in the Merger?

A: Under the terms of the Merger Agreement, Merger Sub will merge with and into Orbotech, with Orbotech continuing as the surviving company and as a wholly owned subsidiary of KLA-Tencor. After the Merger, Orbotech will no longer be a publicly held corporation.

Q: What is required to complete the Merger?

A: Each of KLA-Tencor's and Orbotech's obligation to consummate the Merger is subject, as relevant, to a number of conditions specified in the Merger Agreement, including the following:

approval of the Merger Agreement, the Merger and the other transactions contemplated thereby by Orbotech shareholders as described in this proxy statement/prospectus;

the termination or expiration of any applicable waiting period, or the exemption or approval of applicable government entities, under certain antitrust laws;

the absence of (i) any law, order, judgment, injunction or other ruling instituted by a governmental entity with competent jurisdiction, that is in effect and has the effect of making the Merger illegal or of prohibiting or otherwise preventing the consummation of the Merger in any jurisdiction or (ii) any

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legal proceeding seeking to enjoin, restrain or prohibit the Merger pursuant to any applicable antitrust laws or seeking to impose certain burdensome conditions on the consummation of the Merger;

approval for listing on the NASDAQ Global Select Market (NASDAQ) of the shares of KLA-Tencor common stock to be issued in the Merger, subject to official notice of issuance;

that this registration statement on Form S-4 has been declared by the SEC to be effective under the Securities Act and is not the subject of any stop order or proceedings seeking a stop order;

certain customary Israeli conditions relating to the compliance of KLA-Tencor and Orbotech with applicable Israeli laws;

subject to certain materiality standards contained in the Merger Agreement, the accuracy of representations and warranties of Orbotech and KLA-Tencor, respectively, and material performance by Orbotech and KLA-Tencor of their respective covenants contained in the Merger Agreement; and

the absence of a material adverse effect with respect to the other party.

The consummation of the Merger is not subject to a financing condition. For more information, see the section entitled "The Merger Agreement Conditions to Completion of the Merger" as well as the copy of the Merger Agreement attached to this proxy statement/prospectus as Annex A and incorporated herein by reference.

Q: Is the consummation of the Merger conditioned on the approval of the Merger Agreement by KLA-Tencor's stockholders?

A: No. The consummation of the Merger is not conditioned on the approval of the Merger Agreement by KLA-Tencor's stockholders.

Q: When do you expect the Merger to be completed?

A: KLA-Tencor and Orbotech expect the closing of the Merger (the Closing) to occur in the fourth quarter of calendar year 2018 (such date that the Closing occurs, the Closing Date). However, the Merger is subject to various regulatory approvals and the satisfaction or waiver of other conditions, and it is possible that factors outside the control of KLA-Tencor and Orbotech could result in the Merger being completed at an earlier time, a later time or not at all. There may be a substantial amount of time between the date on which the meeting is held and the date of the completion of the Merger. The Merger will become effective following the satisfaction or waiver of the conditions to Closing upon the issuance by the Companies Registrar of the State of Israel (the Registrar) of a certificate of merger (the Effective Time).

Q: In the Merger, what will Orbotech shareholders receive for their shares?

A: If the Merger is consummated, each Orbotech share that is issued and outstanding immediately prior to the Closing, other than certain Excluded Shares (as defined in the section entitled "The Merger Agreement - Merger Consideration") will be converted into the right to receive (1) cash, without interest, in an amount equal to \$38.86 (the "Cash Consideration"), and (2) 0.25 of a share of KLA-Tencor common stock (the "Stock Consideration" and, together with the Cash Consideration, the "Merger Consideration"), in each case subject to the terms and conditions set forth in the Merger Agreement. Orbotech shareholders will not receive any fractional shares of KLA-Tencor common stock and will instead receive cash in lieu of any such fractional shares of KLA-Tencor common stock. For more information, see the section entitled "The Merger Agreement - Merger Consideration".

Q: What is the value of the Merger Consideration per share?

A: The exact value of the Merger Consideration will depend on the price per share at which KLA-Tencor common stock trades at the Effective Time. Such price will not be known at the time of the meeting and may be less than the current price of the KLA-Tencor common stock or its price at the time of the meeting. Based on the closing stock price of KLA-Tencor common stock on March 16, 2018, the last trading day

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before public announcement of the Merger, of \$120.62, and assuming that the price of KLA-Tencor common stock at the Effective Time of the Merger is the same as it was on March 16, 2018, the value of the Merger Consideration per share would be \$69.02 for each Orbotech share. The market prices of shares of KLA-Tencor common stock and Orbotech shares are subject to fluctuation, and the price of KLA-Tencor's common stock at the Effective Time may be higher or lower than it was on March 16, 2018, on the date of this proxy statement/prospectus or on the date of the meeting. We urge you to obtain current market quotations of KLA-Tencor common stock and Orbotech shares. For more information, see the sections entitled "Where You Can Find More Information" and "Summary Unaudited Comparative Per Share Market Value and Dividend Information".

Q: After the Merger, how much of KLA-Tencor will Orbotech shareholders own?

A: Based on the number of Orbotech shares issued and outstanding as of June 4, 2018, the number of shares of KLA-Tencor common stock issued and outstanding as of June 4, 2018, the number of vested Orbotech Equity Awards outstanding as of June 4, 2018, and assuming a KLA-Tencor Average Closing Price (as defined in the section entitled "The Merger Agreement Merger Consideration") of \$113.77 (calculated based on the ten trading days ended June 4, 2018, the most recent practicable range of trading days prior to the date of this proxy statement/prospectus), it is expected that, immediately after completion of the Merger, former Orbotech shareholders will receive shares of KLA-Tencor common stock in the Merger representing approximately 7.3% of the outstanding shares of KLA-Tencor common stock immediately following the Effective Time, assuming the Effective Time is on June 5, 2018.

Q: Will Orbotech shareholders be able to trade the shares of KLA-Tencor common stock that they receive in the transaction?

A: Yes. Shares of KLA-Tencor common stock are listed on NASDAQ under the symbol KLAC. Shares of KLA-Tencor common stock received in exchange for Orbotech shares in the Merger will be freely transferable under U.S. federal securities laws.

Q: What will happen to my outstanding Orbotech equity compensation awards in the Merger?

A: For information regarding the treatment of Orbotech's Equity Awards, see the section entitled "The Merger Agreement Treatment of Orbotech Equity Awards".

Q: How will I receive the Merger Consideration to which I am entitled?

A: After receiving the proper documentation from holders of Orbotech shares, subject to the terms and conditions set forth in the Merger Agreement, the exchange agent in the transaction will transfer to such holders the cash and the shares of KLA-Tencor common stock to which such holders are entitled. Orbotech shareholders will not receive any fractional shares of KLA-Tencor common stock and will instead receive cash in lieu of any such fractional shares.

Holders of Orbotech Equity Awards granted under Section 102 of the Israeli Income Tax Ordinance [New Version], 1961 (the ITO and, such Orbotech Equity Awards, the 102 Compensatory Awards), that are not being assumed by KLA-Tencor will receive the Merger Consideration to which such holders are entitled through the 102 Trustee (as described in the section entitled The Merger Agreement Merger Consideration), in accordance with the terms and conditions of Section 102 of the ITO and the Tax Rulings (as defined below in the answer to the question What are the Israeli tax consequences of the exchange of Orbotech shares for the Merger Consideration?).

Holders of Orbotech Equity Awards (other than 102 Compensatory Awards) that are not being assumed by KLA-Tencor will receive the Merger Consideration to which such holders are entitled from Orbotech or, if applicable, a relevant engaging subsidiary, through its payroll system, subject to applicable withholdings.

More information on the documentation required to be delivered to the exchange agent may be found under the section entitled Material Israeli Tax Consequences .

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Q: Do I need to do anything with my certificates representing Orbotech shares now?

A: No. After the Merger is consummated, if you held certificates representing Orbotech shares prior to the Merger, the exchange agent will send you instructions for exchanging your Orbotech shares for the Merger Consideration.

Q: What happens if the Merger is not completed?

A: If the Merger Proposal is not approved by Orbotech shareholders or if the Merger is not completed for any other reason, Orbotech shareholders will not receive the Merger Consideration in exchange for their Orbotech shares. Instead, Orbotech will remain a stand-alone public company and Orbotech shares will continue to be listed and traded. Under specified circumstances, Orbotech may be required to pay KLA-Tencor a termination fee, as described in the section entitled [The Merger Agreement Termination Fees](#) . See also the section entitled [Where You Can Find More Information](#) .

Q: Are Orbotech shareholders entitled to appraisal or dissenters' rights?

A: No. Under Israeli law, Orbotech shareholders are not entitled to statutory appraisal or dissenters' rights in connection with the Merger.

Q: What are the U.S. federal income tax consequences of the exchange of Orbotech shares for the Merger Consideration?

A: If you are a U.S. Holder (as defined in the section entitled [Material U.S. Federal Income Tax Consequences of the Merger](#)), the exchange of your Orbotech shares for cash and shares of KLA-Tencor common stock in the Merger will be a taxable transaction for U.S. federal income tax purposes, which generally will require you to recognize gain or loss for U.S. federal income tax purposes in an amount equal to the difference, if any, between the sum of the amount of cash and the fair market value of the shares of KLA-Tencor common stock you receive in the Merger and your tax basis in the Orbotech shares exchanged in the Merger.

Because particular circumstances may differ, we recommend that you consult your own tax advisor to determine the U.S. federal income tax consequences to you relating to the Merger in light of your own particular circumstances and the consequences to you arising under U.S. federal non-income tax laws or the laws of any state, local or non-U.S. taxing jurisdiction. A more complete description of material U.S. federal income tax consequences of the Merger is provided in the section entitled [Material U.S. Federal Income Tax Consequences of the Merger](#) .

Q: What are the Israeli tax consequences of the exchange of Orbotech shares for the Merger Consideration?

A: The following statements are only a summary of certain material Israeli tax consequences of the Merger.

As a consequence of the Merger, holders of Orbotech shares will be treated as having sold their Orbotech shares in the Merger. When an Israeli company is sold, regardless of whether the consideration in the sale is cash or stock, its shareholders are generally subject to Israeli taxation.

The ITO distinguishes between Real Capital Gain and Inflationary Surplus. The Inflationary Surplus is the portion of the total capital gain which is equivalent to the increase of the relevant asset's purchase price which is attributable to the increase in the Israeli CPI or, in certain circumstances, a foreign currency exchange rate, between the date of purchase and the date of sale. The Real Capital Gain is the excess of the total capital gain over the Inflationary Surplus.

The capital gains tax rate applicable to the Real Capital Gain is 25% for individuals (and if such individual is holding or is entitled to purchase, directly or indirectly, alone or together with such person's relative or

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another person who collaborates with such person on a permanent basis, one of the following: (i) at least 10% of the issued and outstanding Orbotech shares, (ii) at least 10% of the voting rights of Orbotech, (iii) the right to receive at least 10% of Orbotech's profits or its assets upon liquidation, (iv) the right to appoint a manager/director, or (v) the right to instruct any other person to do any of the foregoing (a Major Stockholder) on the date of sale or on any date falling within the 12-month period preceding that date of sale, such Major Stockholder would be subject to Israeli taxation at the rate of 30% and 23% for corporations. An additional tax at a rate of three percent on the Real Capital Gain may be imposed upon individual shareholders whose annual income from all sources that is taxable in Israel exceeds a certain amount. The Inflationary Surplus is generally exempt from tax, provided that the shares being sold were acquired after December 31, 1993.

Shareholders of a company, such as Orbotech, whose shares are traded on an authorized stock exchange outside Israel, or on a regulated market outside of Israel, who are non-Israeli residents, would generally be exempt from Israeli capital gains tax, provided that certain conditions are met (e.g., including that the capital gain is not made through a permanent establishment that the non-Israeli resident shareholder maintains in Israel). In addition, such sale may be exempt from Israeli capital gain tax (or be subject to a reduced tax rate) under the provisions of an applicable tax treaty between Israel and the seller's country of residence (subject to the receipt of a valid certificate from the Israel Tax Authority allowing for an exemption or a reduced tax rate).

Orbotech has filed requests for tax rulings from the Israel Tax Authority with respect to (i) exemption from withholding of Israeli tax on payments of Merger Consideration paid to Orbotech shareholders who are non-Israeli residents and meet certain conditions, (ii) deferral of the obligation of Israeli tax resident holders of Orbotech shares, to pay Israeli tax on the exchange of the Orbotech shares for KLA-Tencor common stock in accordance with the provisions of Section 104H of the ITO and (iii) the application of Israeli tax withholding and other Israeli tax treatment applicable to holders of Orbotech options, RSUs and shares issued to certain directors and employees under Section 102 of the ITO and to certain directors and others under Section 3(i) of the ITO (collectively, the Tax Rulings). If and when the tax rulings are finalized, Orbotech will issue a press release and furnish a Form 6-K or other document with the SEC describing the scope of the exemptions provided by the rulings. There can be no assurance that such rulings will be granted before the Closing or at all or that, if obtained, such rulings will be granted under the conditions requested by Orbotech.

Whether or not a particular Orbotech shareholder is actually subject to Israeli capital gains tax in connection with the Merger, absent receipt by Orbotech of a tax ruling from the Israel Tax Authority prior to Closing, all Orbotech shareholders will be subject to Israeli tax withholding at the rate of 25% (for individuals) and 23% (for corporations) on the gross Merger Consideration (unless the shareholder requests and obtains an individual certificate of exemption or a reduced tax rate from the Israel Tax Authority, as described below), and KLA-Tencor or the exchange agent will withhold and deduct from the Cash Consideration an amount equal to 25%, 23% or such other reduced tax rate as stipulated in the certificate obtained, as applicable, of the gross Merger Consideration received by such shareholder and, if the Cash Consideration is lower than the required amount to be withheld, no KLA-Tencor common stock will be issued to such shareholder of Orbotech, until such shareholder remits sufficient cash to cover the required amount to be withheld.

Regardless of whether Orbotech obtains the requested tax rulings from the Israel Tax Authority, any holder of Orbotech shares who believes that it is entitled to such an exemption (or reduced tax rate) may separately apply to the Israel Tax Authority to obtain a certificate of exemption from withholding or an individual tax ruling providing for no withholding or withholding at a reduced rate, and submit such certificate of exemption or ruling to the exchange agent at least five business days prior to the date that is 180 days following the Closing Date. If KLA-Tencor or the exchange agent receive a valid exemption certificate or tax ruling (as determined in KLA-Tencor's or the exchange agent's discretion) at least five business days prior to the date that is 180 days following the Closing Date, then the

withholding (if any) of any amounts under the ITO, from the Merger Consideration payable shall be made only in accordance with the provisions of such Israeli tax certificate or tax ruling.

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You are urged to consult with your own tax advisor for a full understanding of the tax consequences of the Merger to you, including the consequences under any applicable, state, local, foreign or other tax laws.

For a more detailed description of the material Israeli tax consequences of the Merger, see the section entitled **Material Israeli Tax Consequences** .

Q: Who can help answer my questions?

A: If you have questions about the Merger or the other matters to be voted on at the meeting or desire additional copies of this proxy statement/prospectus or additional proxy cards, you should contact Okapi Partners LLC, the proxy solicitor for Orbotech, toll free at +1 (855) 305-0857 or collect at +1 (212) 297-0720. You will not be charged for any of those documents that you request.

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SUMMARY

*This summary highlights selected information contained elsewhere in this proxy statement/prospectus and may not contain all the information that is important to you with respect to the Merger Proposal to be considered at the meeting. KLA-Tencor and Orbotech urge you to read the remainder of this proxy statement/prospectus carefully, including the attached Annexes, and the other documents to which we have referred you. See also the section entitled *Where You Can Find More Information*. We have included references in this summary to direct you to more complete descriptions of the topics presented below.*

The Companies

KLA-Tencor Corporation

KLA-Tencor is a leading supplier of process control and yield management solutions for the semiconductor and related nanoelectronics industries. KLA-Tencor's broad portfolio of defect inspection and metrology products, and related service, software and other offerings primarily supports integrated circuit, which is referred to as an IC or chip, manufacturers throughout the entire semiconductor fabrication process, from research and development to final volume production. KLA-Tencor provides leading-edge equipment, software and support that enable IC manufacturers to identify, resolve and manage significant advanced technology manufacturing process challenges and obtain higher finished product yields at lower overall cost. In addition to serving the semiconductor industry, KLA-Tencor also provides a range of technology solutions to a number of other high technology industries, including the LED and data storage industries, as well as general materials research.

KLA-Tencor's common stock is traded on NASDAQ under the symbol KLAC.

The principal executive offices of KLA-Tencor are located at One Technology Drive, Milpitas, California, 95035, and its telephone number is (408) 875-3000.

Orbotech Ltd.

Orbotech is a global innovator and supplier of enabling solutions used to manufacture the world's most sophisticated consumer and industrial electronic products and is part of a select group of companies whose technology is literally driving the future of electronics. Orbotech's core business lies in enabling electronic device manufacturers to inspect, test and measure printed circuit boards (PCBs) and flat panel displays (FPDs) to verify their quality (reading); pattern the desired electronic circuitry on the relevant substrate and perform three-dimensional shaping of metalized circuits on multiple surfaces (writing); and utilize advanced vacuum deposition and etching processes in semiconductor device (SD) and semiconductor manufacturing and to perform laser drilling of electronic substrates (connecting). Orbotech refers to this reading, writing and connecting as enabling the Language of Electronics.

Orbotech ordinary shares, New Israeli Shekels (NIS) 0.14 nominal (par) value per share (the Orbotech shares), are traded on NASDAQ under the symbol ORBK.

The principal executive offices of Orbotech are located at 7 Sanhedrin Boulevard, North Industrial Zone, Yavne 8110101 Israel, and its telephone number is +972-8-9423533.

Tiburón Merger Sub Technologies Ltd.

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Merger Sub, a wholly-owned subsidiary of KLA-Tencor, is a company organized under the laws of the State of Israel that was formed on March 15, 2018 for the sole purpose of effecting the Merger. In the Merger, Merger

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Sub will be merged with and into Orbotech, with Orbotech surviving as a wholly owned subsidiary of KLA-Tencor.

The Merger

A copy of the Merger Agreement is attached as Annex A to this proxy statement/prospectus and is incorporated by reference herein. KLA-Tencor and Orbotech encourage you to read the entire Merger Agreement carefully, because it is the principal document governing the Merger. For more information on the Merger Agreement, see the section entitled "The Merger Agreement".

Structure of the Merger

The Merger Agreement provides for the Merger, in which Merger Sub will be merged with and into Orbotech, with Orbotech surviving the Merger as a wholly owned subsidiary of KLA-Tencor.

After the completion of the Merger, Orbotech's memorandum of association ("Orbotech's Memorandum") and Orbotech's articles of association ("Orbotech's Articles") and, together with Orbotech's Memorandum, "Orbotech's Charter Documents") in effect immediately prior to completion of the Merger will be the memorandum of association and articles of association, respectively, of Orbotech as the surviving company of the Merger, the directors of Merger Sub immediately prior to the completion of the Merger will be the directors of Orbotech as the surviving company of the Merger and the officers of Orbotech immediately prior to the completion of the Merger will be the officers of Orbotech as the surviving company of the Merger.

Merger Consideration

Each of the KLA-Tencor Board and the Orbotech Board has approved the Merger Agreement, which provides for the merger of Merger Sub with and into Orbotech. Upon the closing of the Merger (the "Closing"), Orbotech will be the surviving company and will become a wholly owned subsidiary of KLA-Tencor. Each Orbotech share that is issued and outstanding immediately prior to the Closing, other than any Excluded Shares (as defined in the section entitled "The Merger Agreement - Merger Consideration"), will be converted into the right to receive (1) cash, without interest, in an amount equal to \$38.86, and (2) 0.25 of a share of KLA-Tencor common stock, in each case subject to the terms and conditions set forth in the Merger Agreement.

In lieu of any fractional share of KLA-Tencor common stock that otherwise would be issuable pursuant to the Merger, each holder of Orbotech shares who otherwise would be entitled to receive a fraction of a share of KLA-Tencor common stock pursuant to the Merger will be paid an amount in cash (without interest) equal to (i) the fraction of a share of KLA-Tencor common stock to which such holder would otherwise be entitled multiplied by (ii) the KLA-Tencor Average Closing Price (as defined in the section entitled "The Merger Agreement - Merger Consideration").

Material U.S. Federal Income Tax Consequences of the Merger

For U.S. federal income tax purposes, the receipt of cash and KLA-Tencor common stock by a U.S. Holder (as defined under the section entitled "Material U.S. Federal Income Tax Consequences of the Merger") in exchange for such U.S. Holder's Orbotech shares in the Merger generally will result in the recognition of gain or loss in an amount equal to the difference, if any, between (1) the amount of cash and the fair market value, at the time of the Merger, of the KLA-Tencor common stock received in the Merger and (2) the U.S. Holder's adjusted tax basis in the Orbotech shares surrendered pursuant to the Merger.

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For more information, see the section entitled **Material U.S. Federal Income Tax Consequences of the Merger**. **Orbotech shareholders should consult their own tax advisors concerning the U.S. federal income tax consequences relating to the Merger in light of their particular circumstances and any consequences arising under the laws of any state, local or non-U.S. taxing jurisdiction.**

Material Israeli Tax Consequences of the Merger

The following statements are only a summary of certain material Israeli tax consequences of the Merger.

As a consequence of the Merger, holders of Orbotech shares will be treated as having sold their Orbotech shares in the Merger. When an Israeli company is sold, regardless of whether the consideration in the sale is cash or stock, its shareholders are generally subject to Israeli taxation.

The Israeli Income Tax Ordinance [New Version], 1961 (the **ITO**) distinguishes between **Real Capital Gain** and **Inflationary Surplus**. The **Inflationary Surplus** is the portion of the total capital gain which is equivalent to the increase of the relevant asset's purchase price which is attributable to the increase in the Israeli CPI or, in certain circumstances, a foreign currency exchange rate, between the date of purchase and the date of sale. The **Real Capital Gain** is the excess of the total capital gain over the **Inflationary Surplus**.

The capital gains tax rate applicable to the **Real Capital Gain** is 25% for individuals (and if such individual is a Major Stockholder on the date of sale or on any date falling within the 12-month period preceding that date of sale, such Major Stockholder would be subject to Israeli taxation at the rate of 30%) and 23% for corporations. An additional tax at a rate of three percent on the **Real Capital Gain** may be imposed upon individual shareholders whose annual income from all sources that is taxable in Israel exceeds a certain amount. The **Inflationary Surplus** is generally exempt from tax, provided that the shares being sold were acquired after December 31, 1993.

Shareholders of a company, such as Orbotech, whose shares are traded on an authorized stock exchange outside Israel, or on a regulated market outside of Israel, who are non-Israeli residents, would generally be exempt from Israeli capital gains tax, provided that certain conditions are met (e.g., including that the capital gain is not made through a permanent establishment that the non-Israeli resident shareholder maintains in Israel). In addition, such sale may be exempt from Israeli capital gain tax (or be subject to a reduced tax rate) under the provisions of an applicable tax treaty between Israel and the seller's country of residence (subject to the receipt of a valid certificate from the Israel Tax Authority allowing for an exemption or a reduced tax rate).

Orbotech has filed requests for tax rulings from the Israel Tax Authority with respect to (i) exemption from withholding of Israeli tax on payments of Merger Consideration paid to Orbotech shareholders who are non-Israeli residents and meet certain conditions, (ii) deferral of the obligation of Israeli tax resident holders of Orbotech shares, to pay Israeli tax on the exchange of the Orbotech shares for KLA-Tencor common stock in accordance with the provisions of Section 104H of the ITO and (iii) the application of Israeli tax withholding and other Israeli tax treatment applicable to holders of Orbotech Options, RSUs and shares issued to certain directors and employees under Section 102 of the ITO and to certain directors and others under Section 3(i) of the ITO. If and when the tax rulings are finalized, Orbotech will issue a press release and furnish a Form 6-K or other document with the SEC describing the scope of the exemptions provided by the rulings. There can be no assurance that such rulings will be granted before the Closing or at all or that, if obtained, such rulings will be granted under the conditions requested by Orbotech.

Whether or not a particular shareholder is actually subject to Israeli capital gains tax in connection with the Merger, absent receipt by Orbotech of a tax ruling from the Israel Tax Authority prior to Closing, all Orbotech shareholders

will be subject to Israeli tax withholding at the rate of 25% (for individuals) and 23% (for corporations) on the gross Merger Consideration (unless the shareholder requests and obtains an individual

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certificate of exemption or a reduced tax rate from the Israel Tax Authority, as described below), and KLA-Tencor or the exchange agent will withhold and deduct from the Cash Consideration an amount equal to 25%, 23% or such other reduced tax rate as stipulated in the certificate obtained, as applicable, of the gross Merger Consideration received by such shareholder and, if the Cash Consideration is lower than the required amount to be withheld, no KLA-Tencor common stock will be issued to such shareholder of Orbotech, until such shareholder remits sufficient cash to cover the required amount to be withheld.

Regardless of whether Orbotech obtains the requested tax rulings from the Israel Tax Authority, any holder of Orbotech shares who believes that it is entitled to such an exemption (or reduced tax rate) may separately apply to the Israel Tax Authority to obtain a certificate of exemption from withholding or an individual tax ruling providing for no withholding or withholding at a reduced rate, and submit such certificate of exemption or ruling to the exchange agent at least five business days prior to the date that is 180 days following the Closing Date. If KLA-Tencor or the exchange agent receive a valid exemption certificate or tax ruling (as determined in KLA-Tencor's or the exchange agent's discretion) at least five business days prior to the date that is 180 days following the Closing Date, then the withholding (if any) of any amounts under the ITO, from the Merger Consideration payable shall be made only in accordance with the provisions of such Israeli tax certificate or tax ruling.

You are urged to consult with your own tax advisor for a full understanding of the tax consequences of the Merger to you, including the consequences under any applicable, state, local, foreign or other tax laws.

For a more detailed description of the material Israeli tax consequences of the Merger, see the section entitled Material Israeli Tax Consequences .

Recommendation of the Orbotech Board

The Board of Directors of Orbotech (the Orbotech Board) unanimously recommends a vote FOR the Merger Proposal. For a discussion of the factors that the Orbotech Board considered in determining to recommend the approval and adoption of the Merger Agreement, the Merger and all other transactions contemplated by the Merger Agreement, see the section entitled The Merger Orbotech's Reasons for the Merger; Recommendation of the Orbotech Board . In addition, in considering the recommendation of the Board with respect to the Merger Agreement, the Merger, and the other transactions contemplated by the Merger Agreement, you should be aware that Orbotech's directors and executive officers have interests that may be different from, or in addition to, the interests of the Orbotech shareholders generally. For more information, see the section entitled The Merger Interests of Orbotech Directors and Executive Officers in the Merger .

Opinion of Orbotech's Financial Advisor

Orbotech engaged Barclays Capital Inc., which we refer to as Barclays , to act as its financial advisor in connection with the Merger and the other transactions contemplated by the Merger Agreement (the proposed transaction). On March 18, 2018, Barclays rendered its oral opinion (which was subsequently confirmed in writing) to the Orbotech Board that, as of such date and based upon and subject to the qualifications, limitations and assumptions stated in its opinion, the consideration to be offered to the holders of Orbotech shares, other than the holders of any Excluded Shares, in the proposed transaction was fair, from a financial point of view, to such holders.

The full text of Barclays' written opinion, dated as of March 18, 2018, is attached as Annex B to this proxy statement/prospectus. Barclays' written opinion sets forth, among other things, the assumptions made, procedures followed, factors considered and limitations upon the review undertaken by Barclays in

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rendering its opinion. You are encouraged to read the opinion carefully in its entirety. This summary is qualified in its entirety by reference to the full text of the opinion. Barclays' opinion is addressed to the Orbotech Board and addresses only the fairness, from a financial point of view, of the consideration to be offered to the holders of Orbotech shares (other than the holders of the Excluded Shares) in the proposed transaction and does not constitute a recommendation to any holder of Orbotech shares as to how such holder should vote with respect to the proposed transaction or any other matter. For a description of the opinion that Orbotech received from Barclays, see the section entitled "The Merger Opinion of Orbotech's Financial Advisor."

Interests of Orbotech Directors and Executive Officers in the Merger

The directors and executive officers of Orbotech have interests in the Merger that may be different from, or in addition to, those of the Orbotech shareholders generally. The Orbotech Board was aware of and considered these anticipated interests, among other things, in evaluating the Merger Agreement, the Merger and the other transactions contemplated by the Merger Agreement, and in recommending that Orbotech shareholders approve the Merger Proposal. These interests include the treatment of equity awards granted under Orbotech's equity-based incentive plans (which we refer to as "Orbotech Equity Awards") in connection with the Merger (including potential accelerated vesting and payout or settlement of Orbotech Equity Awards held by directors and executive officers in connection with the Closing of the Merger or upon certain qualifying terminations of employment, as applicable), potential cash severance payments and other benefits payable to certain executive officers and the Active Chairman of the Orbotech Board pursuant to their employment agreements and as otherwise agreed by KLA-Tencor in the event of a resignation or termination of employment following the approval of the Merger by Orbotech's shareholders, extension of eligibility of executive officers to continue to receive severance benefits triggered by the approval of the Merger by Orbotech's shareholders so long as such executive officer is employed by Orbotech, cash-based and equity-based retention awards that may be granted to the employees and executive officers of Orbotech in connection with the Merger, proposed new post-Closing compensation arrangements for the Active Chairman of the Orbotech Board, the Chief Executive Officer of Orbotech and the President and Chief Operating Officer of Orbotech, certain other retention arrangements for the Chief Executive Officer of Orbotech and the President and Chief Operating Officer of Orbotech, KLA-Tencor's undertakings with respect to continuing director and officer indemnity arrangements and the purchase of a seven year tail policy on directors' and officers' insurance.

In general, references in this proxy statement/prospectus to executive officers refers to "Office Holders" as defined under applicable Israeli law, other than directors.

Treatment of Orbotech Equity Awards

In accordance with the terms of the Merger Agreement, Orbotech Equity Awards will be treated in the following manner upon the completion of the Merger.

Orbotech Restricted Share Units. Outstanding and unvested Orbotech restricted share units will be assumed by KLA-Tencor and subject to substantially the same terms and conditions as were applicable to such restricted share units at the Effective Time (as defined below in the section entitled "Expected Timing of the Merger") (except for any performance-based vesting conditions). We refer to such assumed restricted share units as "Assumed Orbotech RSUs." The number of shares of KLA-Tencor common stock that will be subject to each Assumed Orbotech RSU will be determined by multiplying the number of Orbotech shares subject to such Assumed Orbotech RSU as of immediately prior to the Effective Time (assuming, in the case of an Assumed Orbotech RSU that is subject to performance-based vesting conditions, that any applicable

performance goals have been attained at maximum levels) by the Exchange Ratio (as defined in the section entitled "The Merger Agreement - Treatment of Orbotech Equity Awards"), rounded to the nearest whole number of shares. At the

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Effective Time, outstanding Orbotech restricted share units that are not Assumed Orbotech RSUs, will be cancelled and converted into the right to receive the Merger Consideration for each Orbotech share subject to such award, plus any accrued but unpaid dividends in respect of such award. We refer to such cancelled Orbotech restricted share unit awards as *Cancelled Orbotech RSUs* .

Orbotech Restricted Share Awards. Outstanding and unvested awards of Orbotech restricted shares will be assumed by KLA-Tencor and subject to substantially the same terms and conditions as were applicable to such awards at the Effective Time. We refer to such assumed restricted share awards as *Assumed Orbotech RSAs* . The number of shares of KLA-Tencor common stock that are subject to each Assumed Orbotech RSA will be determined by multiplying the number of Orbotech shares subject to such Assumed Orbotech RSA as of immediately prior to the Effective Time by the Exchange Ratio, rounded to the nearest whole number of shares. Outstanding Orbotech restricted share awards that are not Assumed Orbotech RSAs will be cancelled and converted into the right to receive the Merger Consideration for each Orbotech share subject to such award, plus any accrued but unpaid dividends in respect of such award. We refer to such cancelled Orbotech restricted share awards as *Cancelled Orbotech RSAs* .

Orbotech Options. Outstanding and unvested options to purchase Orbotech shares will be assumed by KLA-Tencor and subject to substantially the same terms and conditions as were applicable to such options immediately prior to the Effective Time (except for any performance-based vesting conditions). We refer to such assumed option awards as *Assumed Orbotech Options* . The number of shares of KLA-Tencor common stock that are subject to each Assumed Orbotech Option will be determined by multiplying the number of Orbotech shares subject to such Assumed Orbotech Option as of immediately prior to the Effective Time (assuming, in the case of an Assumed Orbotech Option that is subject to performance-based vesting conditions, that any applicable performance goals have been attained at maximum levels) by the Exchange Ratio, rounded down to the nearest whole number of shares. The per share exercise price of each Assumed Orbotech Option will be determined by dividing the applicable exercise price of such Assumed Orbotech Option by the Exchange Ratio, rounded up to the nearest whole cent. Outstanding vested options to purchase Orbotech shares, including any options that vest as a result of the consummation of the Merger, will be cancelled and converted into the right to receive the Merger Consideration for each net share (as defined in the section entitled *The Merger Agreement Treatment of Orbotech Equity Awards*) subject to such award. We refer to such cancelled Orbotech options as *Cancelled Orbotech Options* .

In addition, certain Assumed Orbotech Options, Assumed Orbotech RSUs and Assumed Orbotech RSAs may be subject to potential accelerated vesting and payout or settlement upon certain terminations of employment following the Merger. For more information, see the section entitled *The Merger Interests of Orbotech Directors and Executive Officers in the Merger Treatment of Orbotech Equity Awards Potential Accelerated Vesting and/or Payout of Assumed Orbotech Equity Awards Upon Certain Terminations of Employment* .

For a more detailed description of the treatment of Orbotech Equity Awards, see the section entitled *The Merger Agreement Treatment of Orbotech Equity Awards* .

Competition Clearances Required for the Merger

KLA-Tencor and Orbotech are required to submit notifications to various competition authorities prior to completing the Merger. With respect to the United States, the 30-day waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended (the *HSR Act*), related to the Merger has expired. In addition, the Israel Antitrust Authority has granted KLA-Tencor's request for an exemption from any premerger notification requirement

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in Israel related to the Merger and the German Federal Cartel Office, the Austrian Federal Competition Authority and the Taiwanese Fair Trade Commission have respectively cleared or waived

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jurisdiction over the Merger. The Closing remains subject to the exemption or approval of applicable government entities under the antitrust laws of China, Korea and Japan.

Although KLA-Tencor and Orbotech expect to obtain all required regulatory clearances, KLA-Tencor and Orbotech cannot assure you that the antitrust regulators or other government agencies, including state attorneys general or private parties, will not initiate actions to challenge the Merger before or after it is completed. Any such challenge to the Merger could result in an administrative or court order enjoining the Merger or in restrictions or conditions that would have a material adverse effect on the combined company if the Merger is completed. Such restrictions and conditions could include requiring the divestiture or spin-off of assets or businesses, the required licensing of intellectual property rights, or limitations on the ability of the combined company to operate its business as it sees fit. Neither KLA-Tencor nor Orbotech can provide assurance that any such conditions, terms, obligations or restrictions will not result in the delay or abandonment of the Merger.

Expected Timing of the Merger

KLA-Tencor and Orbotech expect the Closing to occur in the fourth quarter of calendar year 2018 (such date that the Closing occurs, the Closing Date). However, the Merger is subject to various regulatory approvals and the satisfaction or waiver of other conditions, and it is possible that factors outside the control of KLA-Tencor and Orbotech could result in the Merger being completed at an earlier time, a later time or not at all. There may be a substantial amount of time between the date on which the meeting is held and the date of the completion of the Merger. The Merger will become effective following the satisfaction or waiver of the conditions to Closing upon the issuance by the Companies Registrar of the State of Israel (the Registrar) of a certificate of merger (the Effective Time).

Conditions to Completion of the Merger

Under the Merger Agreement, each party's obligation to effect the Merger is subject to satisfaction or, to the extent permitted where permissible under applicable law, mutual waiver at the Effective Time of each of the following conditions:

The approval of Orbotech's shareholders shall have been obtained.

All (i) applicable waiting periods (and extensions thereof) applicable to the transactions contemplated by the Merger Agreement (including the Merger) under the HSR Act shall have expired or been terminated and (ii) any affirmative exemption or approval of a governmental entity required under any antitrust law set forth on the Orbotech disclosure letter provided to KLA-Tencor on March 18, 2018 in connection with and pursuant to the Merger Agreement (the Orbotech Disclosure Letter) shall have been obtained and any mandatory waiting periods related thereto (including any extension thereof) shall have expired (collectively, the Regulatory Approvals).

No governmental entity of competent jurisdiction shall have (i) enacted, issued, promulgated, entered, enforced or deemed applicable to the Merger any applicable law that is in effect and has the effect of making the Merger illegal in any jurisdiction or which has the effect of prohibiting or otherwise preventing the consummation of the Merger in any jurisdiction; or (ii) issued or granted any order (whether temporary, preliminary or permanent) that has the effect of making the Merger illegal in any jurisdiction or which has

the effect of prohibiting or otherwise preventing the consummation of the Merger in any jurisdiction.

The shares of KLA-Tencor common stock issuable as Stock Consideration pursuant to the Merger Agreement shall have been approved for listing on NASDAQ, subject to official notice of issuance.

50 days shall have elapsed after the filing of the Merger Proposal with the Registrar and 30 days shall have elapsed after the approval of the Merger by Orbotech shareholders and the sole shareholder of Merger Sub.

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This Form S-4 shall have become effective under the Securities Act and shall not be the subject of any stop order or proceedings seeking a stop order.

KLA-Tencor shall have obtained the ISA Offering No-Action (as defined in the Merger Agreement) or shall have published the Israeli Prospectus (as defined in the Merger Agreement), as applicable, in accordance with the Israeli Securities Law, 1968.

Orbotech shall have submitted the written notice to the Israeli National Authority for Technological Innovation (the OCS) regarding the change in ownership of Orbotech effected as a result of the Merger and KLA-Tencor shall have submitted its written undertaking to be bound by and to comply with the provisions of the Israeli Encouragement of Research, Development and Technological Innovation in the Industry Law 1984 (the Innovation Law) that KLA-Tencor is required to execute and deliver to the OCS in connection with the Merger (collectively, the OCS Notices).

Orbotech shall have obtained approval from the Israeli Investment Center of the Israeli Ministry of Economy (the Investment Center) of the change in ownership of Orbotech to be effected by the Merger (the Investment Center Condition).

As of the date of this proxy statement/prospectus, (1) the 30-day waiting period under the HSR Act related to the Merger has expired; (2) the Israel Antitrust Authority has granted KLA-Tencor's request for an exemption from any premerger notification requirement in Israel related to the Merger and the German Federal Cartel Office, the Austrian Federal Competition Authority and the Taiwanese Fair Trade Commission have respectively cleared or waived jurisdiction over the Merger; (3) KLA-Tencor has obtained the ISA Offering No-Action; (4) the OCS has confirmed that Orbotech and KLA-Tencor have respectively submitted the required OCS Notices; and (5) the Investment Center has confirmed that its approval is not required with respect to the change in ownership of Orbotech to be effected by the Merger, and KLA-Tencor and Orbotech have acknowledged that this confirmation satisfies the Investment Center Condition, unless such confirmation is revoked, withdrawn or amended by the Investment Center prior to Closing.

KLA-Tencor's and Merger Sub's obligation to effect the Merger is further subject to the satisfaction by Orbotech or waiver by KLA-Tencor and Merger Sub of the following conditions:

Accuracy of representations and warranties of Orbotech:

Each of the representations and warranties of Orbotech set forth in the Merger Agreement (other than certain provisions of the representations and warranties of Orbotech related to capitalization and the representations set forth in the immediately following bullet point) shall have been true and correct in all respects as of the date of the Merger Agreement and shall be true and correct in all respects on and as of the Closing Date with the same force and effect as if made on and as of such date, except for any failure to be so true and correct that has not had and would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect (as defined in the section entitled Merger Agreement Material Adverse Effect) on Orbotech.

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Each of the representations and warranties of Orbotech set forth in the Merger Agreement relating to Organization and Standing, Subsidiaries, Authorization, Capitalization (only in subsection (c) thereof), Brokers; Fees and Expenses, Opinion of Financial Advisor and Takeover Statutes; No Rights Plan shall have been true and correct in all material respects as of the date of the Merger Agreement and shall be true and correct in all material respects on and as of the Closing Date with the same force and effect as if made on and as of such date;

Each of the representations and warranties of Orbotech set forth in the Merger Agreement relating to Capitalization (other than subsections (b) and (c) thereof) shall have been true and correct in all respects as of the date of the merger Agreement and shall be true and correct in all respects as of the Closing Date with the same force and effect as if made on and as of such date, except for any failure to be so true and correct in any immaterial amount or as a result of any action following the

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date hereof and not prohibited, permitted or otherwise consented to by KLA-Tencor pursuant to the Merger Agreement;

In the case of each of the foregoing bullets, (1) except for those representations and warranties which address matters only as of a particular date (the accuracy of which shall be determined as of such particular date) and (2) without giving effect to any Material Adverse Effect or similar materiality qualifications in the relevant representations and warranties.

Orbotech shall have complied with or performed in all material respects each of its covenants or obligations under the Merger Agreement required to be complied with or performed at or prior to the Closing Date.

No Material Adverse Effect on Orbotech shall have occurred following the execution and delivery of the Merger Agreement.

KLA-Tencor shall have received a certificate signed on behalf of Orbotech by its chief executive officer and its chief financial officer to the effect that the conditions related to Orbotech's representations, warranties and covenants described above have been satisfied.

There shall not be pending any Legal Proceeding by a Governmental Entity (i) seeking to enjoin, restrain or prohibit the consummation of the Merger pursuant to any applicable Antitrust Laws (as defined in the Merger Agreement), or (ii) seeking to impose any Antitrust Restraint (as defined in the section entitled "The Merger Agreement Reasonable Best Efforts").

Orbotech's obligation to effect the Merger is further subject to the satisfaction by KLA-Tencor and Merger Sub or waiver by Orbotech of the following conditions:

Accuracy of representations and warranties of KLA-Tencor and Merger Sub:

Each of the representations and warranties of KLA-Tencor and Merger Sub set forth in the Merger Agreement (other than the representations in the bullet point immediately following and certain provisions of the representations and warranties of KLA-Tencor related to capitalization) shall have been true and correct in all respects as of the date of the Merger Agreement and shall be true and correct in all respects on and as of the Closing Date with the same force and effect as if made on and as of such date, except for any failure to be so true and correct that has not had and would not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect on KLA-Tencor.

Each of the representations and warranties of KLA-Tencor and Merger Sub set forth in the Merger Agreement relating to Organization, Authorization, Capitalization (only in subsection (c) thereof) and Brokers; Fees and Expenses shall have been true and correct in all material respects as of the date of the Merger Agreement and shall be true and correct in all material respects on and as of the Closing Date with the same force and effect as if made on and as of such date.

Each of the representations and warranties of KLA-Tencor and Merger Sub set forth in Merger Agreement relating to Capitalization (other than subsections (b) and (c) thereof) shall have been true and correct in all respects as of the date of the Merger Agreement and shall be true and correct in all respects as of the Closing Date with the same force and effect as if made on and as of such date, except for any failure to be so true and correct in any immaterial amount or as a result of any action following the date of the Merger Agreement and not prohibited, permitted or otherwise consented to by Orbotech pursuant to the Merger Agreement;

In the case of each of the foregoing bullets, (1) except for those representations and warranties which address matters only as of a particular date (the accuracy of which shall be determined as of such

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particular date) and (2) without giving effect to any Material Adverse Effect or similar materiality qualifications in the relevant representations and warranties.

Each of KLA-Tencor and Merger Sub shall have performed in all material respects each of their respective obligations under the Merger Agreement required to be performed at or prior to the Closing Date and complied in all material respects with each covenant or other agreement of KLA-Tencor and Merger Sub required to be performed or complied with by it under the Agreement.

Orbotech shall have received a certificate signed on behalf of KLA-Tencor and Merger Sub by a duly authorized officer of each of KLA-Tencor and Merger Sub to the effect that the conditions related to KLA-Tencor's representations, warranties and covenants described above have been satisfied.

No Material Adverse Effect on KLA-Tencor shall have occurred following the execution and delivery of the Merger Agreement.

For additional information, see the section entitled The Merger Agreement Conditions to Completion of the Merger .

No Solicitation of Alternative Proposals

Orbotech has agreed that it will not, directly or indirectly:

solicit, initiate, knowingly encourage, facilitate or induce the making, submission or announcement of an acquisition proposal or the making of any inquiry, offer or proposal that constitutes or would reasonably be expected to lead to any Acquisition Proposal (as defined below);

in connection with or in response to any Acquisition Proposal or any inquiry, offer or proposal that would reasonably be expected to lead to an Acquisition Proposal, furnish to any third party any non-public information relating to Orbotech or any of its subsidiaries, or afford access to the business, properties, assets, books or records of Orbotech or any of its subsidiaries to any third party, or take any other action intended to assist or facilitate the making of any Acquisition Proposal or any inquiry, offer or proposal that would reasonably be expected to lead to an Acquisition Proposal;

participate or engage in negotiations regarding an Acquisition Proposal or knowingly engage in discussions with any third party that is seeking to make or has made an Acquisition Proposal;

approve, endorse or recommend an Acquisition Proposal;

execute or enter into any letter of intent, memorandum of understanding or contract contemplating or otherwise relating to an Acquisition Transaction (as defined below); or

except to the extent that Orbotech Board determines that the failure to do so would be reasonably likely to be inconsistent with its fiduciary duties under applicable law, terminate, amend, modify, waive or fail to enforce any rights under any standstill or other similar agreement between Orbotech or any of its subsidiaries and any third party.

Orbotech also agreed to immediately cease and cause to be terminated any and all activities, discussions or negotiations with any third party concerning any Acquisition Proposal existing as of the date of the Merger Agreement.

However, until Orbotech shareholders approve the Merger, if Orbotech receives a bona fide written Acquisition Proposal from any person that did not result from a material breach of its non-solicitation obligations that the Orbotech Board concludes in good faith is or is reasonably likely to lead to a Superior Proposal (as defined below), Orbotech may, directly or indirectly:

engage or participate in discussions or negotiations with such third party; or

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furnish to such third party any non-public information relating to Orbotech or any of its subsidiaries pursuant to a confidentiality agreement no less favorable to Orbotech (other than with respect to any standstill or similar terms) than that between Orbotech and KLA-Tencor.

Any action taken pursuant to the foregoing paragraph may be taken only if (1) at least 24 hours prior to engaging or participating in any such discussions or negotiations with, or furnishing any non-public information to, such third party, Orbotech gives KLA-Tencor written notice of the identity of such third party and all of the terms and conditions of such Acquisition Proposal (and if such Acquisition Proposal is in written form, Orbotech gives KLA-Tencor a copy thereof) and of Orbotech's intention to engage or participate in discussions or negotiations with, or furnish non-public information to, such third party; and (2) contemporaneously with furnishing any non-public information to such third party, Orbotech furnishes such non-public information to KLA-Tencor (to the extent that such information has not been previously furnished by Orbotech to KLA-Tencor).

Orbotech must promptly, and in all cases within 36 hours of its receipt, advise KLA-Tencor orally and in writing of any (i) Acquisition Proposal; (ii) request for information that would reasonably be expected to lead to an Acquisition Proposal; or (iii) inquiry with respect to, or that would reasonably be expected to lead to, any Acquisition Proposal, the terms and conditions of such Acquisition Proposal, request or inquiry, and the identity of the Person or group making any such Acquisition Proposal, request or inquiry.

Orbotech must keep KLA-Tencor reasonably informed of the status of discussions relating to, and material terms and conditions (including all amendments or proposed amendments to such material terms and conditions) of, any Acquisition Proposal and must promptly (and in no event later than 36 hours thereafter) upon receipt or delivery of any of the following provide KLA-Tencor with copies of all documents and written (including electronic) communications relating to any Acquisition Proposal (including the financing thereof), request or inquiry exchanged between Orbotech, its subsidiaries or any of their respective representatives, on the one hand, and the third party making such Acquisition Proposal, request or inquiry (or such third party's affiliates or representatives), on the other hand. In addition to the foregoing, Orbotech must provide KLA-Tencor with at least 72 hours (or such shorter period of notice as is given to each of the members of the Orbotech Board or the relevant committee thereof, as applicable) prior written notice of a meeting of Orbotech Board (or any committee thereof) at which the Orbotech Board (or any committee thereof) is reasonably expected to consider an Acquisition Proposal, an inquiry relating to a potential Acquisition Proposal, or a request to provide non-public information to any Person.

The Merger Agreement provides that the term "Acquisition Proposal" means offer, proposal, inquiry or indication of interest from any third party relating to any Acquisition Transaction.

The Merger Agreement provides that the term "Acquisition Transaction" means any transaction or series of related transactions (other than the transactions contemplated by the Merger Agreement) involving: (i) any acquisition by any third party, directly or indirectly, of 15% or more of the outstanding Orbotech shares, or any tender offer (including a self-tender) or exchange offer that, if consummated, would result in any third party beneficially owning (as defined under Section 13(d) of the Exchange Act) 15% or more of the Orbotech shares; or (ii) any acquisition by any third party, directly or indirectly, of 15% or more of the assets (including equity securities of Orbotech's subsidiaries) of Orbotech (on a consolidated basis with its subsidiaries), measured at the fair market value thereof as of the last day of Orbotech's last fiscal year, in the case of each of clause (i) and (ii), whether pursuant to a merger, consolidation or other business combination, sale of shares of capital stock, sale of assets, tender offer or exchange offer or otherwise, including any single or multi-step transaction or series of related transactions.

The Merger Agreement provides that the term "Superior Proposal" means any bona fide, written Acquisition Proposal (with references to 15% in the definition thereof being deemed to be replaced with references to 50%),

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with respect to which the Orbotech Board shall have determined in good faith (after consultation with its financial advisor and its outside legal counsel, and after taking into account the financial, legal, regulatory and other aspects of such Acquisition Proposal and all of the terms and conditions of such Acquisition Proposal (including any termination or break-up fees, expense reimbursement provisions and any conditions, potential time delays or other risks to consummation), as well as any counter-offer or proposal made by KLA-Tencor pursuant the Merger Agreement) that the proposed Acquisition Transaction is (a) more favorable to Orbotech and Orbotech's shareholders, from a financial point of view, than the transactions contemplated by the Merger Agreement, including the Merger (or any counter-offer or proposal made by KLA-Tencor or any of its affiliates pursuant to the Merger Agreement), and (b) reasonably capable of being completed, in the case of each of clause (a) and (b), taking into account all financial, legal, regulatory and other aspects of such Acquisition Proposal and the identity and financial capability of the third party making such Acquisition Proposal.

Termination of the Merger Agreement

The Merger Agreement may be terminated at any time prior to the Effective Time by mutual written agreement of KLA-Tencor and Orbotech. In addition, either party may terminate the Merger Agreement in the following circumstances:

If the meeting shall have been held and the approval of the Orbotech shareholders for the Merger Proposal shall not have been obtained thereat or at any adjournment or postponement thereof, in each case at which a vote on such approval was taken; provided, however, that this right to terminate shall not be available to any party whose action or failure to fulfill any obligation under the Merger Agreement has been the principal cause of or resulted in the failure of the Orbotech shareholder approval to be obtained.

If any governmental entity of competent jurisdiction shall have (i) enacted, issued, promulgated, entered or enforced a final and nonappealable law which has the effect of prohibiting, making illegal or otherwise preventing the consummation of the Merger; or (ii) issued or granted any final and nonappealable order that has the effect of prohibiting, making illegal or otherwise preventing the consummation of the Merger; provided, however, that this right to terminate shall not be available to any party whose action or failure to fulfill any obligation under the Merger Agreement has been the principal cause of or resulted in the enactment, issuance, promulgation or entry of such final and nonappealable law or order.

If the Effective Time shall not have occurred on or prior to March 18, 2019 (as it may be extended pursuant to the Merger Agreement, the Termination Date), provided, however, that if, as of March 18, 2019, any of the Regulatory Approvals shall not have been obtained but all other conditions to Closing set forth in the Merger Agreement shall have been satisfied or waived or by their terms cannot be satisfied until immediately prior to the Closing (but which conditions would be satisfied if the Closing Date were March 18, 2019), the Termination Date shall be extended to June 18, 2019; provided, further, that this right to terminate the Merger Agreement shall not be available to any Party whose action or failure to fulfill any obligation under the Merger Agreement has been the principal cause of or resulted in the failure of the Effective Time to have occurred on or prior to the Termination Date.

Orbotech may also terminate the Merger Agreement at any time prior to the Effective Time as follows:

In the event of a breach of any representation, warranty, covenant or agreement on the part of KLA-Tencor or Merger Sub set forth in the Merger Agreement such that the conditions to Orbotech's obligations to close the Merger based on the accuracy of the representation and warranties of KLA-Tencor and Merger Sub or their material performance of covenants would not be satisfied as of the Closing Date as a result of such breach, subject to customary cure periods (if curable).

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Prior to the receipt of the approval of the Merger by Orbotech's shareholders in order to accept a Superior Proposal in accordance with the Merger Agreement; provided that Orbotech pays KLA-Tencor, or causes KLA-Tencor to be paid, \$125.0 million substantially concurrently with the termination.

KLA-Tencor may also terminate the Merger Agreement at any time prior to the Effective Time as follows:

In the event of a breach of any representation, warranty, covenant or agreement on the part of Orbotech set forth in the Merger Agreement such that the conditions to KLA-Tencor's obligations to close the Merger based on the accuracy of Orbotech's representations and warranties or its material performance of covenants would not be satisfied as of the Closing Date as a result of such breach, subject to customary cure periods (if curable).

Prior to the receipt of the approval of the Merger by Orbotech's shareholders in the event that a Triggering Event (as defined in The Merger Agreement Termination of the Merger Agreement) shall have occurred.

Expenses and Termination Fees

Orbotech will be required to pay to KLA-Tencor a termination fee of \$125.0 million by wire transfer of immediately available funds to an account or accounts designated in writing by KLA-Tencor if the Merger Agreement is terminated as follows:

by Orbotech in order to accept a Superior Proposal pursuant to the Merger Agreement;

by KLA-Tencor as a result of a Triggering Event; or

by (1) either party for a failure to obtain Orbotech shareholder approval or (2) KLA-Tencor for a breach of Orbotech's representations and warranties or covenants, but only if:

following the execution and delivery of the Merger Agreement and (x) prior to the date of the meeting, or (y) prior to the breach or inaccuracy that forms the basis for the termination of the Merger Agreement, an Acquisition Proposal shall have been publicly announced or shall have become publicly known, or shall have been communicated or otherwise made known to Orbotech; and

within 12 months following the termination of the Merger Agreement, either (x) an Acquisition Transaction is consummated or (y) Orbotech enters into a contract providing for an Acquisition Transaction and such Acquisition Transaction is consummated (whether or not within the 12-month period), however, for purposes of this provision, all references to 15% in the definition of Acquisition Transaction shall be deemed to be references to 50% .

Accounting Treatment

KLA-Tencor prepares its financial statements under existing U.S. generally accepted accounting principles, which are referred to as GAAP standards, which are subject to change and interpretation. The Merger will be accounted for using the acquisition method of accounting with KLA-Tencor being considered the acquiror of Orbotech for accounting purposes.

Appraisal Rights

Under Israeli law, holders of Orbotech shares are not entitled to statutory appraisal rights in connection with the Merger.

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Comparison of Rights of Orbotech Shareholders and KLA-Tencor Stockholders

Orbotech shareholders receiving KLA-Tencor common stock as part of their Merger Consideration will have different rights once they become stockholders of KLA-Tencor due to differences between the governing laws and corporate documents of Orbotech and the governing laws and corporate documents of KLA-Tencor. Certain principal differences are described under the section entitled **Comparison of Rights of Orbotech Shareholders and KLA-Tencor Stockholders**.

Listing of Additional Shares of KLA-Tencor Common Stock

KLA-Tencor will use its reasonable best efforts to cause the shares of KLA-Tencor common stock to be issued in the Merger to be approved for listing on NASDAQ, subject to official notice of issuance, prior to the Effective Time.

De-Listing and Deregistration of Orbotech Shares

If the Merger is completed, the Orbotech shares will be delisted from NASDAQ and deregistered under the Exchange Act, and Orbotech shares will no longer be publicly traded.

The Orbotech Extraordinary General Meeting

The meeting will be held on Thursday, July 12, 2018, at 10:00 a.m., Israel time, at Orbotech's principal executive offices at 7 Sanhedrin Boulevard, North Industrial Zone, Yavne, Israel.

The meeting is being held to consider and vote the following item:

To approve and adopt (i) the Merger Agreement; (ii) the Merger on the terms and subject to the conditions set forth in the Merger Agreement and in accordance with the provisions of Sections 314-327 of the ICL, following which Merger Sub will cease to exist, and Orbotech will become a wholly owned subsidiary of KLA-Tencor; and (iii) all other transactions contemplated by the Merger Agreement, all upon the terms and subject to the conditions set forth in the Merger Agreement (the **Merger Proposal**).

Required Vote

The affirmative vote of a simple majority of the voting rights of Orbotech shares represented and voting thereon at the meeting is necessary for the approval of the Merger Proposal, provided that such majority includes at least a majority of the votes cast by Orbotech shareholders that are not KLA-Tencor, Merger Sub or a KLA Related Person (as defined below), who are present and voting (abstentions are disregarded) (the **Merger Majority**).

Pursuant to the ICL, each Orbotech shareholder voting on the Merger Proposal is required to inform Orbotech prior to voting at the meeting if the shareholder is any of KLA-Tencor, Merger Sub, or a KLA Related Person and to indicate such matter in the appropriate place in the enclosed proxy. A **KLA Related Person** is (a) a person holding, directly or indirectly, either (i) 25% or more of the voting rights of KLA-Tencor or Merger Sub, or (ii) the right to appoint 25% or more of the directors of KLA-Tencor or Merger Sub, or (b) one of such person's spouse, siblings, parents, grandparents, descendants, spouse's descendants, siblings or parents or the spouse of any such person, or a corporation controlled by any one or more of such persons or by KLA-Tencor or Merger Sub. For more information, see the section entitled **The Orbotech Extraordinary General Meeting Vote Required at the Meeting**.

Table of Contents**How Proxies are Counted; Abstentions and Broker Non-Votes**

If you properly execute and return the form of proxy to Orbotech prior to the meeting, each person named as proxy will follow your instructions. If you properly execute and return the form of proxy to Orbotech prior to the meeting without indicating how you intend to vote with respect to the Merger Proposal, the Orbotech shares represented by the proxy will be counted as being present for quorum purposes, but not be treated as having been voted in respect of the Merger Proposal and will have no effect on the voting with respect to the Merger Proposal.

In determining whether there is a quorum for the meeting and whether the required number of votes for the approval of the Merger Proposal has been cast, Orbotech shares subject to abstentions or to broker non-votes are counted for purposes of determining whether there is a quorum for the meeting but, with regard to the Merger Proposal, are not counted as having been voted in respect thereof. Broker non-votes are votes that brokers holding Orbotech shares of record for their clients are, pursuant to applicable stock exchange or other rules, precluded from casting in respect of certain non-routine proposals because such brokers have not received specific instructions from their clients as to the manner in which such Orbotech shares should be voted on those proposals and as to which the brokers have advised Orbotech that, accordingly, they lack voting authority.

Summary Consolidated Historical Financial Data**Summary Consolidated Historical Financial Data of KLA-Tencor**

The following tables present selected consolidated summary financial data for KLA-Tencor, as of and for each of the fiscal years of KLA-Tencor ended June 30, 2017, 2016, 2015, 2014 and 2013 and as of and for the nine months ended March 31, 2018 and 2017. The historical consolidated statement of operations data set forth with respect to the fiscal years ended June 30, 2017, 2016 and 2015, and the consolidated balance sheet data as of June 30, 2017 and 2016, have been derived from the audited consolidated financial statements included in KLA-Tencor's Annual Report on Form 10-K for the year ended June 30, 2017, which is incorporated by reference into this proxy statement/prospectus, and have been prepared in accordance with generally accepted accounting principles (as applied in the United States, GAAP). The consolidated statement of operations data set forth in this section with respect to the fiscal years ended June 30, 2014 and 2013, and the consolidated balance sheet data as of June 30, 2015, 2014 and 2013, have been derived from consolidated financial statements for such years, which are not incorporated by reference into this proxy statement/prospectus, and have also been prepared in accordance with GAAP. The consolidated statements of operations data for the nine months ended March 31, 2018 and 2017 and the consolidated balance sheet data as of March 31, 2018 have been derived from KLA-Tencor's unaudited consolidated financial statements included in its Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2018, which is incorporated by reference into this proxy statement/prospectus. The consolidated balance sheet data as of March 31, 2017 have been derived from KLA-Tencor's unaudited consolidated financial statements included in its Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2017, which is not incorporated by reference into this proxy statement/prospectus. The unaudited interim financial statements have been prepared on a basis consistent with KLA-Tencor's audited financial statements and, in the opinion of KLA-Tencor's management, include all adjustments that KLA-Tencor's management considers necessary for the fair statement of the information for the unaudited periods.

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The information set forth below is not necessarily indicative of future results and should be read together with the other information contained in Item 8, Financial Statements and Supplementary Data, and Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations in KLA-Tencor's Annual Report on Form 10-K for the fiscal year ended June 30, 2017 and quarterly report on Form 10-Q for the nine months ended March 31, 2018, together with the other information contained therein. See the section entitled "Where You Can Find More Information" in this proxy statement/prospectus.

(In thousands, except per share amounts)	Nine Months Ended March 31,		Year Ended June 30,				
	2018	2017	2017	2016	2015	2014	2013
Consolidated Statements of Operations:							
Total revenues	\$ 2,966,697	\$ 2,541,367	\$ 3,480,014	\$ 2,984,493	\$ 2,814,049	\$ 2,929,408	\$ 2,842,781
Net income ⁽¹⁾	\$ 453,498	\$ 669,914	\$ 926,076	\$ 704,422	\$ 366,518	\$ 582,755	\$ 543,149
Cash dividends declared per share (including a special cash dividend of \$16.50 per share declared during the three months ended December 31, 2014)	\$ 1.77	\$ 1.60	\$ 2.14	\$ 2.08	\$ 18.50	\$ 1.80	\$ 1.60
Net income per share:							
Basic	\$ 2.90	\$ 4.28	\$ 5.92	\$ 4.52	\$ 2.26	\$ 3.51	\$ 3.27
Diluted	\$ 2.88	\$ 4.26	\$ 5.88	\$ 4.49	\$ 2.24	\$ 3.47	\$ 3.21

(In thousands)	As of March 31,		As of June 30,				
	2018	2017	2017	2016	2015	2014	2013
Consolidated Balance Sheets:							
Cash, cash equivalents and marketable securities	\$ 2,889,982	\$ 2,703,514	\$ 3,016,740	\$ 2,491,294	\$ 2,387,111	\$ 3,152,637	\$ 2,918,881
Working capital ⁽²⁾	\$ 3,340,079	\$ 3,004,144	\$ 3,098,904	\$ 2,865,609	\$ 2,902,813	\$ 3,690,484	\$ 3,489,236
Total assets	\$ 5,598,184	\$ 5,324,445	\$ 5,532,173	\$ 4,962,432	\$ 4,826,012	\$ 5,535,846	\$ 5,283,804
Long-term debt ⁽³⁾	\$ 2,461,914	\$ 2,704,856	\$ 2,680,474	\$ 3,057,936	\$ 3,173,435	\$ 745,101	\$ 743,823
Total stockholders equity ⁽³⁾	\$ 1,370,143	\$ 1,147,312	\$ 1,326,417	\$ 689,114	\$ 421,439	\$ 3,669,346	\$ 3,482,152

(1) KLA-Tencor's net income decreased to \$366.5 million in the fiscal year ended June 30, 2015, primarily as a result of the impact of the pre-tax net loss of \$131.7 million for the loss on extinguishment of debt and certain one-time expenses of \$2.5 million associated with the leveraged recapitalization that was completed during the three months ended December 31, 2014.

(2) KLA-Tencor adopted the accounting standards update regarding classification of deferred taxes on a prospective basis at the beginning of the fourth quarter of fiscal year ended June 30, 2016. Upon adoption, approximately \$218.0 million in net current deferred tax assets were reclassified to noncurrent. No prior periods were

retrospectively adjusted. Working capital is defined as current assets less current liabilities.

- (3) KLA-Tencor's long-term debt increased to \$3.17 billion at the end of fiscal year ended June 30, 2015, because, as part of the leveraged recapitalization plan, KLA-Tencor issued \$2.50 billion aggregate principal amount of senior, unsecured long-term notes (collectively referred to as Senior Notes), entered into \$750.0 million of five-year senior unsecured prepayable term loans and a \$500.0 million unfunded revolving credit facility and redeemed its \$750.0 million aggregate principal amount of 6.900% Senior Notes due in 2018 (the 2018 Notes). KLA-Tencor's total stockholders' equity decreased to \$421.4 million at the end of fiscal year ended June 30, 2015, because, as part of its leveraged recapitalization plan, it declared a special cash dividend of approximately \$2.76 billion.

Summary Consolidated Historical Financial Data of Orbotech

The following tables present selected consolidated summary financial data for Orbotech, as of and for each of the fiscal years of Orbotech ended December 31, 2017, 2016, 2015, 2014, and 2013 and as of and for the three months ended March 31, 2018 and 2017. The selected historical consolidated statement of operations data set forth with respect to the fiscal years ended December 31, 2017, 2016 and 2015, and the consolidated balance sheet data as

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of December 31, 2017 and 2016, have been derived from the audited financial statements included in Orbotech's Annual Report on Form 20-F for the year ended December 31, 2017, which is incorporated by reference into this proxy statement/prospectus, and have been prepared in accordance with GAAP. The consolidated statement of operations data set forth in this section with respect to the fiscal years ended December 31, 2014 and 2013, and the consolidated balance sheet data as of December 31, 2015, 2014 and 2013, have been derived from audited consolidated financial statements for such years, which are not incorporated by reference into this proxy statement/prospectus, and have also been prepared in accordance with GAAP. The financial data for the three months ended March 31, 2018 and 2017 and as of March 31, 2018 have been derived from Orbotech's unaudited condensed consolidated financial information consisting of a balance sheet, statement of operations, and statement of cash flows included as Exhibit 99.2 to its Report on Form 6-K furnished with the SEC on May 9, 2018, which financial information is incorporated by reference into this proxy statement/prospectus. The unaudited balance sheet data as of March 31, 2017 have been derived from unaudited financial information that is not incorporated into this proxy statement/prospectus. The unaudited interim financial information have been prepared on a basis consistent with Orbotech's audited financial statements and, in the opinion of Orbotech's management, include all adjustments that Orbotech's management considers necessary for the fair statement of the information for the unaudited periods.

The information set forth below is not necessarily indicative of future results and should be read together with the other information contained in Orbotech's Annual Report on Form 20-F for the year ended December 31, 2017 filed with the SEC. See the section entitled "Where You Can Find More Information" in this proxy statement/prospectus.

(In thousands, except per share amounts)	Three Months Ended March 31,		Year Ended December 31,				
	2018	2017	2017	2016	2015	2014 ⁽¹⁾	2013
Statement of Operations Data:							
Revenues	\$ 250,551	\$ 187,649	\$ 900,856	\$ 806,402	\$ 752,517	\$ 582,746	\$ 439,995
Net income	29,899	14,780	130,887	78,995	56,716	35,264	39,161
Loss attributable to non-controlling interests	(368)	(140)	(1,498)	(443)	(55)	(116)	(840)
Net income attributable to Orbotech Ltd.	\$ 30,267	\$ 14,920	\$ 132,385	\$ 79,438	\$ 56,771	\$ 35,380	\$ 40,001
Earnings per share:							
basic	\$ 0.62	\$ 0.31	\$ 2.76	\$ 1.74	\$ 1.34	\$ 0.85	\$ 0.94
diluted	\$ 0.61	\$ 0.31	\$ 2.71	\$ 1.71	\$ 1.31	\$ 0.83	\$ 0.92
Weighted average number of shares used in computation of earnings per share:							
basic ⁽²⁾	48,437	47,839	47,989	45,534	42,412	41,703	42,571
diluted	49,331	48,768	48,850	46,461	43,322	42,757	43,253

(In thousands) Balance Sheet Data:	At March 31,		At December 31,				
	2018	2017	2017	2016	2015	2014	2013
Cash and cash equivalents	\$ 290,056	\$ 201,378	\$ 315,803	\$ 216,292	\$ 162,102	\$ 136,367	\$ 161,155
Working capital ⁽³⁾	\$ 685,716	\$ 530,790	\$ 647,872	\$ 503,887	\$ 455,840	\$ 421,683	\$ 412,852
Long-term loans, net ⁽⁴⁾	\$ 56,232	\$ 72,134	\$ 56,117	\$ 72,002	\$ 218,372	\$ 286,381	
Total assets	\$ 1,326,967	\$ 1,116,561	\$ 1,303,904	\$ 1,102,903	\$ 1,041,878	\$ 1,026,502	\$ 636,582
Capital stock	\$ 440,041	\$ 425,451	\$ 436,326	\$ 422,566	\$ 308,821	\$ 295,219	\$ 283,283
Equity ⁽⁵⁾	\$ 945,296	\$ 778,360	\$ 911,868	\$ 752,781	\$ 567,756	\$ 496,881	\$ 467,154

(1) In respect of the year ended December 31, 2014, includes the financial information of SPTS Technologies Group Limited and its consolidated subsidiaries (SPTS) from the closing date of the SPTS Acquisition (as defined below) SPTS Closing Date (August 7, 2014) (the SPTS Closing Date).

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- (2) The actual number of Orbotech shares outstanding at December 31, 2016 was 47,808,453.
 - (3) Under the applicable accounting standard, as implemented by Orbotech, all deferred tax assets and liabilities have been classified as non-current on the balance sheet as of and from December 31, 2015, without retrospective adjustment for dates prior to December 31, 2015.
 - (4) Net of current maturities and deferred financing costs.
 - (5) Comprising Orbotech equity and non-controlling interests.
- Orbotech has not paid any cash dividends in the last five years.

Table of Contents**Summary Unaudited Pro Forma Condensed Combined Financial Information**

The following tables set forth selected unaudited pro forma condensed combined financial information giving effect to the planned Merger of KLA-Tencor and Orbotech. The unaudited pro forma condensed combined statements of operations for the nine months ended March 31, 2018, and the fiscal year ended June 30, 2017, give effect to the Merger as if it had been consummated on July 1, 2016, the beginning of KLA-Tencor's most recently completed fiscal year. The unaudited pro forma condensed combined balance sheet as of March 31, 2018 gives effect to the Merger as if it had been consummated on March 31, 2018.

The summary unaudited pro forma condensed combined financial information is provided for illustrative purposes only and does not purport to represent what the actual consolidated results of operations or consolidated financial condition of the combined company would have been had the Merger actually occurred on the dates indicated, nor do they purport to project the future consolidated results of operations or consolidated financial condition of the combined company for any future period or as of any future date.

The summary unaudited pro forma condensed combined financial data as of and for the nine months ended March 31, 2018 and for the year ended June 30, 2017 are derived from the unaudited pro forma condensed combined financial information included under the section entitled "Unaudited Pro Forma Condensed Consolidated Financial Statements" and should be read in conjunction with that information. The unaudited pro forma adjustments are based upon available information and certain assumptions that KLA-Tencor believes are reasonable under the circumstances. The unaudited pro forma condensed combined financial information also gives effect to the assumptions and adjustments described in the accompanying notes to the unaudited pro forma condensed combined financial statements included in this proxy statement/prospectus. For more information, please see the section titled "Unaudited Pro Forma Condensed Combined Financial Statements" in this proxy statement/prospectus.

(In millions, except for per share data)	Nine Months Ended March 31, 2018	Year Ended June 30, 2017
Condensed Combined Statements of Operations Data:		
Revenues	\$ 3,680	\$ 4,298
Net income	483	840
Net income per share from continuing operations:		
Basic	\$ 2.86	\$ 5.01
Diluted	\$ 2.83	\$ 4.95

(In millions)	As of March 31, 2018
Condensed Combined Balance Sheet Data:	
Cash, cash equivalents, and marketable securities	\$ 1,165
Total assets	7,426
Long term debt	2,462
Total stockholders' equity	2,611

Table of Contents**Unaudited Comparative Per Share Data**

Presented below are KLA-Tencor's historical per share data for the nine months ended March 31, 2018 and the fiscal year ended June 30, 2017, Orbotech's historical per share data for the nine months ended December 31, 2017 and the twelve months ended June 30, 2017, unaudited pro forma combined per share data for the nine months ended March 31, 2018 and the fiscal year ended June 30, 2017, and unaudited pro forma equivalent data for the nine months ended March 31, 2018 and the year ended June 30, 2017. This information should be read together with the consolidated financial statements and related notes of KLA-Tencor and Orbotech that are incorporated by reference into this proxy statement/prospectus and with the unaudited pro forma condensed combined financial data included under the section entitled "Unaudited Pro Forma Condensed Combined Financial Information." The pro forma information is presented for illustrative purposes only and is not necessarily indicative of the operating results or financial position that would have occurred if the Merger had been completed as of the beginning of the periods presented or on the dates presented, nor is it necessarily indicative of the future operating results or financial position of the combined company. The historical book value per share is computed by dividing total stockholders' equity by the number of shares outstanding at the end of the relevant period. The pro forma net income per share of the combined company is computed by dividing the pro forma net income by the pro forma weighted average number of diluted shares outstanding. The pro forma book value per share of the combined company is computed by dividing total pro forma stockholders' equity by the pro forma number of shares outstanding at the end of the period.

	Nine Months Ended March 31, 2018	Year Ended June 30, 2017
KLA-TENCOR HISTORICAL DATA		
Historical per share of common stock		
Basic net income per share	\$ 2.90	\$ 5.92
Diluted net income per share	\$ 2.88	\$ 5.88
Book value per share (at period end)	\$ 8.79	\$ 8.46
	Nine Months Ended December 31, 2017	Twelve Months Ended June 30, 2017
ORBOTECH HISTORICAL DATA		
Historical per ordinary share		
Basic net income per share	\$ 2.45	\$ 1.88
Diluted net income per share	\$ 2.40	\$ 1.86
Book value per share (at period end)	\$ 18.63	\$ 16.64
	Nine Months Ended March 31, 2018	Year Ended June 30, 2017
KLA-TENCOR PRO FORMA COMBINED DATA		
Unaudited pro forma per share of common stock		
Basic net income per share	\$ 2.86	\$ 5.01
Diluted net income per share	\$ 2.83	\$ 4.95
Book value per share (at period end)	\$ 15.54	\$ 15.63
ORBOTECH PRO FORMA EQUIVALENT DATA⁽¹⁾		
Unaudited pro forma per ordinary share		

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Basic net income per share	\$	0.72	\$	1.25
Diluted net income per share	\$	0.71	\$	1.24
Book value per share (at period end)	\$	3.88	\$	3.91

- (1) The pro forma equivalent Orbotech share amounts were calculated by multiplying the pro forma combined amounts by the Exchange Ratio of 0.25. The Exchange Ratio does not include the \$38.86 per share that is the Cash Consideration portion of the Merger Consideration.

Table of Contents**Unaudited Comparative Market Value and Dividend Information**

The following table presents trading information for Orbotech shares and KLA-Tencor common stock on NASDAQ on March 16, 2018, the last trading day before announcement of the Merger, and June 4, 2018, the most recent practicable trading day before the date of this proxy statement/prospectus. For illustrative purposes, the following table also provides the equivalent per share value of the Merger Consideration, which is equal to (1) 0.25 of a share of KLA-Tencor common stock plus (2) \$38.86 in cash for each Orbotech share outstanding as of such dates.

Date	Orbotech Shares			KLA-Tencor Common Stock			Equivalent Per-Share Value		
	High	Low	Close	High	Low	Close	High	Low	Close
March 16, 2018	\$ 60.01	\$ 59.03	\$ 59.90	\$ 121.62	\$ 120.15	\$ 120.62	\$ 69.27	\$ 68.90	\$ 69.02
June 4, 2018	\$ 64.79	\$ 64.11	\$ 64.76	\$ 117.12	\$ 115.17	\$ 116.24	\$ 68.14	\$ 67.65	\$ 67.92

The market prices of Orbotech shares and shares of KLA-Tencor common stock fluctuate, and the value of the Merger Consideration will fluctuate with the market price of the Orbotech shares. As a result, we urge you to obtain current market quotations of the Orbotech shares and the KLA-Tencor common stock.

Orbotech does not currently pay dividends on its shares. Under the terms of the Merger Agreement, during the period before the Effective Time, Orbotech is not permitted to declare, authorize, set aside or pay any dividend or other distribution without the prior consent of KLA-Tencor. On May 3, 2018, KLA-Tencor announced that its board of directors declared a dividend of \$0.75 per share of the KLA-Tencor common stock payable on June 1, 2018 to stockholders of record on May 15, 2018. This dividend was paid on June 1, 2018.

The table below sets forth in comparative columnar form, the cash dividends declared for the most recent fiscal year and interim period for KLA-Tencor on a historical and pro forma per share basis and for Orbotech on a historical and equivalent pro forma per share basis.

	Nine Months Ended March 31, 2018	Twelve Months Ended June 30, 2017
Cash dividends per share		
KLA-Tencor Historical	\$ 1.77	\$ 2.14
Orbotech Historical		
KLA-Tencor Pro Forma Combined	\$ 1.77	\$ 2.14
Orbotech Pro Forma Equivalent	\$ 0.44	\$ 0.54

Table of Contents**SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS**

This proxy statement/prospectus and the documents incorporated by reference into this proxy statement/prospectus contain forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 that are not limited to historical facts, but reflect KLA-Tencor's and Orbotech's current beliefs, expectations or intentions regarding future events. Words such as may, will, could, should, expect, plan, project, intend, anticipate, believe, estimate, predict, potential, pursue, target, continue, and similar are intended to identify such forward-looking statements. These forward-looking statements include, without limitation, the manner in which the parties plan to effect the proposed Merger, including the share repurchase program; the ability to raise additional capital necessary to complete the repurchase program within the time frame expected; the expected benefits, synergies and costs of the proposed Merger; management plans relating to the proposed Merger; the expected timing of the completion of the proposed Merger; the parties' ability to complete the proposed Merger considering the various closing conditions, including conditions related to regulatory and Orbotech shareholder approvals; the plans, strategies and objectives of management for future operations; product development, product extensions, product integration, complementary product offerings and growth opportunities in certain business areas; the potential future financial impact of the proposed Merger; and any assumptions underlying any of the foregoing. Without limiting the generality of the preceding sentence, certain statements contained in the sections entitled "The Merger Background of the Merger," "The Merger Orbotech's Reasons for the Merger; Recommendation of the Orbotech Board," "The Merger Certain Projections of Orbotech" contain forward-looking statements.

All forward-looking statements involve significant risks and uncertainties that could cause actual results to differ materially from those in the forward-looking statements, many of which are generally outside the control of KLA-Tencor and Orbotech and are difficult to predict. In addition to the risks and uncertainties described in the section entitled "Risk Factors" and those described in any documents that are incorporated by reference into this proxy statement/prospectus, such risks and uncertainties include, among others: (1) the risk that the conditions to the Closing are not satisfied, including the risk that required approvals for the Merger from governmental authorities or the shareholders of Orbotech are not obtained; (2) the risk that the value of the Stock Consideration will fluctuate over time; (3) litigation relating to the Merger, if any; (4) uncertainties as to the timing of the consummation of the Merger and the ability of each party to consummate the Merger; (5) risks that the proposed Merger disrupts the current plans and operations of Orbotech or KLA-Tencor; (6) the ability of Orbotech and KLA-Tencor to retain and hire key personnel; (7) competitive responses to the proposed Merger and the impact of competitive products; (8) unexpected costs, charges or expenses resulting from the Merger; (9) potential adverse reactions or changes to business relationships resulting from the announcement or completion of the Merger, including related to Frontline (as defined below); (10) the combined company's ability to achieve the financial and operating results, growth prospects and synergies expected from the Merger, as well as delays, challenges and expenses associated with integrating the existing businesses of KLA-Tencor and Orbotech; (11) the combined company's ability to maintain and improve relationships with customers, suppliers and other third parties following the Merger; (12) the terms and availability of the indebtedness that may be incurred in connection with the Merger; and (13) legislative, regulatory and economic developments, including changing business conditions in the industries in which KLA-Tencor and Orbotech operate, including the semiconductor industry, and overall economy as well as the financial performance and expectations of KLA-Tencor's and Orbotech's existing and prospective customers.

KLA-Tencor and Orbotech caution that the foregoing list of factors is not exclusive and that you should not place undue reliance on any forward-looking statement. All subsequent written and oral forward-looking statements concerning KLA-Tencor, Orbotech, the proposed Merger or other matters and attributable to KLA-Tencor or Orbotech or any person acting on their behalf are expressly qualified in their entirety by the cautionary statements above. All forward-looking statements contained in this proxy statement/prospectus and the documents incorporated by reference herein are made only as of the date of the document in which they are contained and, except as required

by law, neither KLA-Tencor nor Orbotech undertakes any obligation to update publicly any of these forward-looking statements to reflect events or circumstances that may arise after the date hereof.

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*In addition to the other information included and incorporated by reference into this proxy statement/prospectus, including the matters addressed in the section entitled **Special Note Regarding Forward-Looking Statements**, you should carefully consider the following risks before deciding whether to vote for the Merger Proposal. In addition, you should read and consider the risks associated with each of the businesses of KLA-Tencor and Orbotech because these risks will also affect the combined company. The risks associated with KLA-Tencor's business can be found in KLA-Tencor's Annual Report on Form 10-K for the fiscal year ended June 30, 2017, and any amendments thereto, as such risks may be updated or supplemented in KLA-Tencor's subsequently filed Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q or Current Reports on Form 8-K. The risks associated with Orbotech's business can be found in Orbotech's Annual Report on Form 20-F for the fiscal year ended December 31, 2017 and any amendments thereto, as such risks may be updated or supplemented in Orbotech's Annual Reports on Form 20-F or subsequently filed or furnished Reports on Form 6-K. Such filings by KLA-Tencor and Orbotech will be incorporated by reference into this proxy statement/prospectus to the extent described in the section entitled **Where You Can Find More Information**. You should also read and consider the other information in this proxy statement/prospectus and the other documents incorporated by reference into this proxy statement/prospectus. For more information, see the section entitled **Where You Can Find More Information**.*

Risk Factors Relating to the Merger

The value of the stock portion of the Merger Consideration that Orbotech shareholders will receive in the Merger will fluctuate over time.

At the time that the Merger is consummated, each issued and outstanding ordinary share of Orbotech (except for Excluded Shares) will be converted into the right to receive, without interest and less any applicable withholding taxes, (a) \$38.86 in cash and (b) 0.25 of a share of KLA-Tencor common stock, in each case, subject to the terms and conditions set forth in the Merger Agreement. Orbotech shareholders will not receive any fractional shares of KLA-Tencor common stock and will instead receive cash in lieu of any such fractional shares.

Time will elapse between each of the date of this proxy statement/prospectus, the date on which Orbotech shareholders vote to approve and adopt the Merger Proposal at the meeting and the date on which Orbotech shareholders are entitled to receive the Stock Consideration in the form of KLA-Tencor common stock and the Cash Consideration in the form of cash from KLA-Tencor. The respective market value of KLA-Tencor's common stock and Orbotech's ordinary shares may fluctuate during any or all of these periods as a result of a variety of factors, including general market and economic conditions, changes in KLA-Tencor's or Orbotech's businesses, operations and prospects, catastrophic events, both natural and man-made, and regulatory considerations. Many of these factors are outside the control of Orbotech and KLA-Tencor. There will be no adjustment to the exchange ratio of the Stock Consideration (except for adjustments to reflect the effect of any stock dividend, subdivision, reclassification, recapitalization, split, combination or exchange of shares or other like changes with respect to the KLA-Tencor common stock) and the parties do not have a right to terminate the Merger Agreement based upon changes in the market price of the KLA-Tencor common stock. Consequently, at the time that Orbotech shareholders must decide whether to approve and adopt the Merger Proposal, they will not know the market price of the KLA-Tencor common stock they will receive and the market price of the Orbotech shares that they will surrender when the Merger is actually consummated. The value of the KLA-Tencor common stock received by Orbotech shareholders upon consummation of the Merger will depend on the market price of the KLA-Tencor common stock at that time, and the value of the Orbotech shares surrendered by Orbotech shareholders will depend on the market price of the Orbotech shares at that time.

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The Merger is subject to a number of conditions, some of which are outside of the parties' control, and, if these conditions are not satisfied, the Merger Agreement may be terminated and the Merger may not be completed.

The Merger Agreement contains a number of conditions that must be fulfilled to complete the Merger. These conditions include:

approval of the Merger Agreement and the transactions contemplated thereby by Orbotech shareholders as described in this proxy statement/prospectus;

the termination or expiration of any applicable waiting period, or the exemption or approval of applicable government entities, under certain other antitrust laws;

absence of (i) any law, order, judgment or injunction or other ruling, instituted by a governmental entity of competent jurisdiction, that is in effect and has the effect of making the Merger illegal or of prohibiting or otherwise preventing the consummation of the Merger in any jurisdiction or (ii) any legal proceeding seeking to enjoin, restrain or prohibit the Merger pursuant to any applicable antitrust laws or seeking to impose certain burdensome conditions on the consummation of the Merger;

approval for listing of the shares of KLA-Tencor common stock to be issued in the Merger on NASDAQ, subject to official notice of issuance;

that this registration statement on Form S-4 has been declared by the SEC to be effective under the Securities Act and is not the subject of any stop order or proceedings seeking a stop order;

certain customary Israeli conditions relating to the compliance of KLA-Tencor and Orbotech with applicable Israeli laws;

subject to certain materiality standards contained in the Merger Agreement, the accuracy of representations and warranties of Orbotech and KLA-Tencor, respectively, and material performance by Orbotech and KLA-Tencor of their respective covenants contained in the Merger Agreement; and

the absence of a material adverse effect with respect to the other party.

The required satisfaction of the foregoing conditions could delay the completion of the Merger for a significant period of time or prevent it from occurring. Any delay in completing the Merger could cause KLA-Tencor not to realize some or all of the benefits that the parties expect KLA-Tencor to achieve following the Merger. Further, there can be no assurance that the conditions to the Closing will be satisfied or waived or that the Merger will be completed.

In addition, if the Merger is not completed by March 18, 2019 (subject to a potential extension to June 18, 2019), either KLA-Tencor or Orbotech may choose to terminate the Merger Agreement. KLA-Tencor or Orbotech may also

elect to terminate the Merger Agreement in certain other circumstances, and the parties may mutually decide to terminate the Merger Agreement at any time prior to the Closing Date, before or after Orbotech shareholder approval is received, as applicable. For more information, see the section entitled "The Merger Agreement - Termination of the Merger Agreement".

Failure to complete the Merger could negatively affect the share prices and the future business and financial results of either or both of KLA-Tencor and Orbotech.

If the Merger is not completed, the ongoing businesses of either or both of KLA-Tencor and Orbotech may be adversely affected. Additionally, if the Merger is not completed and the Merger Agreement is terminated, in certain circumstances Orbotech may be required to pay KLA-Tencor a termination fee of \$125.0 million. For more information, see the sections entitled "The Merger Agreement - Termination of the Merger Agreement" and "The Merger Agreement - Termination Fees". In addition, KLA-Tencor and Orbotech have incurred and will continue to incur significant transaction expenses in connection with the Merger regardless of whether the

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Merger is completed. Furthermore, either or both of KLA-Tencor or Orbotech may experience negative reactions from the financial markets, including negative impacts on their stock prices, or negative reactions from their customers, suppliers or other business partners, should the Merger not be completed.

The foregoing risks, or other risks arising in connection with the failure to consummate the Merger, including the diversion of management attention from conducting the businesses of the respective companies and pursuing other opportunities during the pendency of the Merger, may have a material adverse effect on the businesses, operations, financial results and stock prices of either or both of KLA-Tencor and Orbotech. Either or both of KLA-Tencor or Orbotech could also be subject to litigation related to any failure to consummate the Merger or any related action that could be brought to enforce a party's obligations under the Merger Agreement.

Litigation against KLA-Tencor and Orbotech, or the members of the Orbotech Board, could prevent or delay the completion of the Merger or result in the payment of damages following completion of the Merger.

Claims may be asserted by purported shareholder plaintiffs related to the Merger. The results of any such potential legal proceedings are difficult to predict and could delay or prevent the Merger from becoming effective in a timely manner. The existence of litigation related to the Merger could affect the likelihood of obtaining the required approval from Orbotech shareholders. Moreover, any litigation could be time consuming and expensive, could divert KLA-Tencor's and Orbotech's management's attention away from their respective regular businesses and, if any lawsuit is adversely resolved against any of KLA-Tencor, Orbotech or the members of the Orbotech Board, could have a material adverse effect on KLA-Tencor's or Orbotech's financial condition. For more information, see the section entitled "The Merger - Litigation Related to the Merger".

One of the conditions to the Closing is the absence of any law, order, judgment, injunction or other ruling, instituted by a governmental entity with competent jurisdiction, that is in effect and has the effect of making the Merger illegal, or prohibiting or otherwise preventing the consummation of the Merger in any jurisdiction. Consequently, if a settlement or other resolution is not reached in any lawsuit that is filed and a claimant secures injunctive or other relief prohibiting, delaying or otherwise adversely affecting KLA-Tencor's and/or Orbotech's ability to complete the Merger on the terms contemplated by the Merger Agreement, then such injunctive or other relief may prevent the Merger from becoming effective in a timely manner or at all.

The Merger Agreement contains provisions that limit Orbotech's ability to pursue alternatives to the Merger, could discourage a potential competing acquiror of Orbotech from making an alternative transaction proposal and, in specified circumstances, could require Orbotech to pay a termination fee to KLA-Tencor.

The Merger Agreement prohibits Orbotech and its representatives from soliciting, participating in negotiations with respect to or approving or recommending any third-party proposal for an alternative transaction, subject to exceptions set forth in the Merger Agreement relating to the receipt of certain unsolicited offers. If the Merger Agreement is terminated by either party after the Orbotech Board has changed its recommendation regarding the Merger or due to Orbotech's material breach of its non-solicitation obligations, then Orbotech may be required to pay a termination fee of \$125.0 million to KLA-Tencor. For more information, see the sections entitled "The Merger Agreement - Termination of the Merger Agreement" and "The Merger Agreement - Termination Fees".

These provisions could discourage a potential third-party acquiror or merger partner that might have an interest in acquiring all or a significant portion of Orbotech or pursuing an alternative transaction from considering or proposing such a transaction, even if it were prepared to pay consideration with a higher per share cash or market value than the consideration to be paid in the Merger, or might result in a potential third-party acquiror or merger partner proposing to pay a lower price to Orbotech shareholders than it might otherwise have proposed to pay because of the added

expense of the termination fee that may become payable in certain circumstances.

If the Merger Agreement is terminated and Orbotech determines to seek another business combination, Orbotech may not be able to negotiate a transaction with another party on terms comparable to, or better than, the terms of the Merger.

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The Merger is subject to the expiration of applicable waiting periods under and the receipt of approvals, consents or clearances from foreign antitrust regulatory authorities that may impose conditions that could have an adverse effect on KLA-Tencor or Orbotech or, if not obtained, could prevent completion of the Merger.

The Closing remains subject to the exemption or approval of applicable government entities under the antitrust laws of China, Korea and Japan. In deciding whether to grant the required regulatory approvals, consents or clearances, the relevant governmental entities will consider the effect of the Merger on competition within their relevant jurisdiction. The terms and conditions of the approvals, consents and clearances that are granted may impose requirements, limitations or costs or place restrictions on the conduct of KLA-Tencor's business and which may adversely affect the financial position and prospects of KLA-Tencor and its ability to achieve the cost savings and other synergies projected to result from the Merger.

Under the Merger Agreement, KLA-Tencor and Orbotech have agreed to use their reasonable best efforts to obtain any consents, clearances or approvals (provided that such actions do not reduce the reasonably anticipated benefits to KLA-Tencor of the Merger in an amount that is financially material relative to the value of Orbotech and its subsidiaries, as a whole) and therefore may be required to comply with conditions or limitations imposed by governmental antitrust authorities. However, there can be no assurance that antitrust regulators will not impose unanticipated conditions, terms, obligations or restrictions and that such conditions, terms, obligations or restrictions will not have the effect of delaying completion of the Merger or imposing additional costs on or limiting the revenues of KLA-Tencor following the completion of the Merger and which may adversely affect the financial position and prospects of KLA-Tencor and its ability to achieve the cost savings and other synergies projected to result from the Merger. In addition, one of the conditions to the obligation of KLA-Tencor to close the Merger consists of the absence of any legal proceeding seeking to enjoin, restrain or prohibit the Merger pursuant to any applicable antitrust laws or seeking to impose certain burdensome conditions on the Merger. As a result, neither KLA-Tencor nor Orbotech can provide assurance that any such conditions, terms, obligations or restrictions will not result in the delay or abandonment of the Merger. For a more detailed description of the regulatory review process, see the section entitled "The Merger – Competition Clearances Required for the Merger" .

Until the completion of the Merger or the termination of the Merger Agreement in accordance with its terms, in consideration of the agreements made by the parties in the Merger Agreement, Orbotech is prohibited from entering into certain transactions and taking certain actions that might otherwise be beneficial to Orbotech and its shareholders.

Until the Merger is completed, the Merger Agreement restricts Orbotech from taking specified actions without the consent of KLA-Tencor, and requires Orbotech to operate in the ordinary course of business consistent with past practices. These restrictions may prevent Orbotech from making appropriate changes to its businesses, retaining its workforce, paying dividends or pursuing attractive business opportunities that may arise prior to the completion of the Merger. For more information, see the section entitled "The Merger Agreement – Restrictions on Orbotech's Business Pending the Closing" .

The opinion of Orbotech's financial advisor does not reflect changes in circumstances that may occur between the original signing of the Merger Agreement and the completion of the Merger.

Consistent with market practices, the Orbotech Board has not obtained an updated opinion from its financial advisor as of the date of this proxy statement/prospectus and does not expect to receive an updated, revised or reaffirmed opinion prior to the completion of the Merger. Changes in the operations and prospects of Orbotech, general market and economic conditions and other factors that may be beyond the control of Orbotech, and on which Orbotech's financial advisor's opinion was based, may significantly alter the value of Orbotech or the price of Orbotech shares by

the time the Merger is completed. The opinion does not speak as of the time the Merger will be completed or as of any date other than the date of such opinion. Because Orbotech's financial

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advisor will not be updating its opinion, the opinion will not address the fairness of the Merger Consideration from a financial point of view at the time the Merger is completed. For a description of the opinion that the Orbotech Board received from its financial advisor, see the section entitled "The Merger – Opinion of Orbotech's Financial Advisor."

After the Merger, Orbotech shareholders will have a significantly lower ownership and voting interest in KLA-Tencor than they currently have in Orbotech, and will exercise less influence over management.

Based on the number of Orbotech shares issued and outstanding as of June 4, 2018, the number of shares of KLA-Tencor common stock issued and outstanding as of June 4, 2018, the number of vested Orbotech Equity Awards outstanding as of June 4, 2018, and assuming a KLA-Tencor Average Closing Price (as defined in the section entitled "The Merger Agreement – Merger Consideration") of \$113.77 (calculated based on the ten trading days ended June 4, 2018, the most recent practicable range of trading days prior to the date of this proxy statement/prospectus), it is expected that, immediately after completion of the Merger, former Orbotech shareholders will receive shares of KLA-Tencor common stock in the Merger representing approximately 7.3% of the outstanding shares of KLA-Tencor common stock, immediately following the Effective Time, assuming the Effective Time is on June 5, 2018. Consequently, Orbotech shareholders will have substantially less influence over the management and policies of KLA-Tencor than they currently have over Orbotech.

The executive officers and directors of Orbotech have interests in the Merger that are different from, or in addition to, those of the other Orbotech shareholders. Therefore, the executive officers and directors of Orbotech may have a conflict of interest in recommending the Merger Proposal being voted on at the meeting.

The directors and executive officers of Orbotech have interests in the Merger that may be different from, or in addition to, those of the Orbotech shareholders generally. These interests include the treatment of Orbotech Equity Awards in connection with the Merger (including potential accelerated vesting and payout or settlement of Orbotech Equity Awards held by directors and executive officers in connection with the Closing of the Merger or upon certain qualifying terminations of employment, as applicable), potential cash severance payments and other benefits payable to certain executive officers and the Active Chairman of the Orbotech Board pursuant to their employment agreements and as otherwise agreed by KLA-Tencor in the event of a resignation or termination of employment following the approval of the Merger by Orbotech's shareholders, extension of eligibility of executive officers to continue to receive severance benefits triggered by the approval of the Merger by Orbotech's shareholders for so long as such executive officer is employed by Orbotech, cash-based and equity-based retention awards that may be granted in some instances to employees and executive officers of Orbotech in connection with the Merger, proposed new post-Closing compensation arrangements for the Active Chairman of the Orbotech Board, the Chief Executive Officer of Orbotech and the President and Chief Operating Officer of Orbotech, certain other retention arrangements for the Chief Executive Officer of Orbotech and the President and Chief Operating Officer of Orbotech, KLA-Tencor's undertakings with respect to continuing director and officer indemnity arrangements and the purchase of a seven year "tail" policy on directors' and officers' insurance. These interests may influence the directors and executive officers of Orbotech to support or approve the Merger Proposal to be presented at the meeting.

For more information, see the section entitled "The Merger – Interests of Orbotech's Directors and Executive Officers in the Merger."

The shares of KLA-Tencor common stock to be received by Orbotech shareholders as a result of the Merger will have different rights from the Orbotech shares.

Upon completion of the Merger, Orbotech shareholders will become stockholders of KLA-Tencor and their rights as stockholders will be governed by the KLA-Tencor Charter and the KLA-Tencor amended and restated bylaws. The

rights associated with Orbotech shares are different from the rights associated with shares of KLA-Tencor common stock. For more information, see the section entitled Comparison of Rights of Orbotech Shareholders and KLA-Tencor Stockholders .

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Orbotech shareholders may be subject to Israeli capital gains tax in connection with the Merger and absent receipt of a ruling or exemption, will generally be subject to Israeli tax withholding on the gross Merger Consideration.

As a consequence of the Merger, holders of Orbotech shares will be treated as having sold their Orbotech shares in the Merger.

When an Israeli company is sold, regardless of whether the consideration in the sale is cash or stock, its shareholders are generally subject to Israeli taxation. The Israeli Income Tax Ordinance [New Version], 1961 (the ITO) distinguishes between Real Capital Gain and Inflationary Surplus . The Inflationary Surplus is the portion of the total capital gain which is equivalent to the increase of the relevant asset s purchase price which is attributable to the increase in the Israeli CPI or, in certain circumstances, a foreign currency exchange rate, between the date of purchase and the date of sale. The Real Capital Gain is the excess of the total capital gain over the Inflationary Surplus.

The capital gains tax rate applicable to the Real Capital Gain is 25% for individuals, 30% for individuals who are Major Stockholders on the date of sale or on any date falling within the 12-month period preceding that date of sale and 23% for corporations. An additional tax at a rate of three percent on the Real Capital Gain may be imposed upon individual shareholders whose annual income from all sources that is taxable in Israel exceeds a certain amount. The Inflationary Surplus is generally exempt from tax, provided that the shares being sold were acquired after December 31, 1993.

Shareholders of a company, such as Orbotech, whose shares are traded on an authorized stock exchange outside Israel, or on a regulated market outside of Israel, who are non-Israeli residents, would generally be exempt from Israeli capital gains tax, provided that certain conditions are met (e.g., including that the capital gain is not made through a permanent establishment that the non-Israeli resident shareholder maintains in Israel). In addition, such sale may be exempt from Israeli capital gain tax (or be subject to a reduced tax rate) under the provisions of an applicable tax treaty between Israel and the seller s country of residence (subject to the receipt of a valid certificate from the Israel Tax Authority allowing for an exemption or a reduced tax rate).

Orbotech has filed requests for tax rulings from the Israel Tax Authority with respect to (i) exemption from withholding of Israeli tax on payments of Merger Consideration paid to Orbotech shareholders who are non-Israeli residents and meet certain conditions, (ii) deferral of the obligation of Israeli tax resident holders of Orbotech shares to pay Israeli tax on the exchange of the Orbotech shares for KLA-Tencor common stock in accordance with the provisions of Section 104H of the ITO and (iii) the application of Israeli tax withholding and other Israeli tax treatment applicable to holders of Orbotech options, RSUs and shares issued to certain directors and employees under Section 102 of the ITO and to certain directors and others under Section 3(i) of the ITO. If and when the tax rulings are finalized, Orbotech will issue a press release and furnish a Form 6-K or other document with the SEC describing the scope of the exemptions provided by the rulings. There can be no assurance that such rulings will be granted before the Closing or at all or that, if obtained, such rulings will be granted under the conditions requested by Orbotech.

Whether or not a particular shareholder is actually subject to Israeli capital gains tax in connection with the Merger, absent receipt by Orbotech of a tax ruling from the Israel Tax Authority prior to Closing, all Orbotech shareholders will be subject to Israeli tax withholding at the rate of 25% (for individuals) and 23% (for corporations) on the gross Merger Consideration (unless the shareholder requests and obtains an individual certificate of exemption or a reduced tax rate from the Israel Tax Authority, as described below), and KLA-Tencor or the exchange agent will withhold and deduct from the Cash Consideration an amount equal to 25%, 23% or such other reduced tax rate as stipulated in the certificate obtained, as applicable, of the gross Merger Consideration received by such shareholder and, if the Cash Consideration is lower than the required amount to be withheld, no KLA-Tencor common stock will be issued to such

shareholder of Orbotech, until such recipient remits sufficient cash to cover the required amount to be withheld.

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The Israeli tax withholding consequences of the Merger to Orbotech shareholders and holders of certain Orbotech Options, RSUs and shares issued subject to Section 102 of the ITO may vary depending upon the particular circumstances of each shareholder or holder of Orbotech options, RSUs or ordinary shares issued subject to Section 102 of the ITO, as applicable, and the final tax rulings issued by the Israel Tax Authority. To the extent that tax is withheld on payments to U.S. taxpayers, it is possible that such withheld taxes may not be able to be credited against such taxpayers' U.S. income tax liability.

You are urged to consult with your own tax advisor for a full understanding of the tax consequences of the Merger to you, including the consequences under any applicable, state, local, foreign or other tax laws or tax treaties.

For a more detailed description of the material Israeli tax consequences of the Merger, see the section entitled "Material Israeli Tax Consequences".

Orbotech may be required to perform certain obligations with respect to Orbotech's ownership interest in Frontline even if the Merger does not close.

In 1998, Orbotech entered into an agreement (the "JV Agreement") with Mentor Graphics Development Services (Israel) Ltd. (the "JV Partner") (then called Valor Computerized Systems Ltd.), an Israeli corporation, for the formation of Frontline P.C.B. Solutions Limited Partnership ("Frontline"), a joint venture with respect to computer-aided manufacturing ("CAM") software for printed circuit board fabrication applications owned equally by Orbotech and the JV Partner and which combines their respective former CAM operations. Under the JV Agreement, the approval of the Merger by the Orbotech shareholders constitutes a change in control of Orbotech, which gives the JV Partner, based on procedures set forth in the JV Agreement, the right to exercise certain sell-buy rights that may require Orbotech to either purchase all outstanding shares in Frontline held by the JV Partner or to sell to the JV Partner all of its interest in Frontline, as the case may be, based on procedures set forth in the JV Agreement. Failure to consummate the Merger after receiving shareholder approval will not negate Orbotech's obligations to perform its commitments under the JV Agreement. Accordingly, Orbotech may not continue to own any of its interest in, or may be required to acquire all of the JV Partner's interest in, Frontline. For the year ended December 31, 2017, equity in earnings of Frontline were \$4.5 million. Orbotech cannot presently predict the effects, if any, in the event Orbotech is obligated to consummate the sell-buy process with the JV Partner notwithstanding the failure of the Merger to close, but expects any effects would be material.

For more information about Frontline's contribution to Orbotech's financial results, see Note 2 of Orbotech's audited financial statements for the year ended December 31, 2017 in its Annual Report on Form 20-F, incorporated by reference herein.

Risk Factors Relating to the Combined Company Following the Merger

There is the possibility that KLA-Tencor, following the Merger, may be unable to successfully integrate the business of Orbotech to realize the anticipated benefits of the Merger or to do so within the intended timeframe. KLA-Tencor may overestimate the synergies that will result from the Merger or underestimate the cost of implementing such synergies.

KLA-Tencor will be required to devote significant management attention and resources to integrating the businesses and operations of Orbotech with KLA-Tencor. Due to legal restrictions, KLA-Tencor and Orbotech have only been able to conduct limited planning regarding the integration of Orbotech into KLA-Tencor after completion of the Merger and KLA-Tencor has not yet determined the exact nature of how the businesses and operations of Orbotech will be run following the Merger. Potential difficulties KLA-Tencor may encounter as part of the integration process

include the following:

the costs of integration and compliance and the possibility that the full benefits anticipated to result from the Merger will not be realized;

difficulties in achieving anticipated cost savings, synergies, business opportunities and growth prospects from combining the two businesses;

any delay in the integration of management teams, strategies, operations, products and services;

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diversion of the attention of each company's management as a result of the Merger;

differences in business backgrounds, corporate cultures and management philosophies that may delay successful integration;

the ability to create and enforce uniform standards, controls, procedures, policies and information systems;

the challenge of integrating complex systems, technology, networks and other assets of Orbotech into those of KLA-Tencor in a manner that minimizes any adverse impact on customers, suppliers, employees and other constituencies;

potential unknown liabilities and unforeseen increased expenses or delays associated with the Merger, including costs to integrate Orbotech; and

the disruption of, or the loss of momentum in, each company's ongoing businesses.

Any of these factors could adversely affect the ability of KLA-Tencor following the Merger to maintain relationships with customers, suppliers, employees and other constituencies or its ability to achieve the anticipated benefits of the Merger or could reduce the earnings or otherwise adversely affect the business and financial results of KLA-Tencor after the Merger. In addition, many of these factors will be outside of KLA-Tencor's control and any one of them could result in increased costs, decreases in the amount of expected revenues and diversion of management's time and energy, which could materially impact the business, financial condition and results of operations of the combined company. As such, KLA-Tencor may not realize the full benefits of the Merger (within the anticipated timeframe, or at all), including the expected combined annual cost run rate synergies of approximately \$50 million within 24 months following the Closing. Even if the operations of KLA-Tencor's and Orbotech's businesses are integrated successfully, KLA-Tencor may not realize some or all of the anticipated benefits of the Merger.

The Merger may not be accretive and may cause dilution to KLA-Tencor's earnings per share, which may harm the market price of KLA-Tencor common stock following the Merger.

There can be no assurance with respect to the timing and scope of the accretive effect of the Merger on KLA-Tencor's future earnings per share or whether it will be accretive at all. KLA-Tencor following the Merger could encounter additional transaction and integration-related costs or other factors such as the failure to realize all of the benefits anticipated in the Merger or a downturn in its business. All of these factors could cause dilution to KLA-Tencor's earnings per share following the Merger or decrease the expected accretive effect of the Merger and cause a decrease in the price of shares of KLA-Tencor common stock following the Merger.

After paying the Cash Consideration to the former Orbotech shareholders upon the Closing, KLA-Tencor will have a substantially lower balance of cash, cash equivalents and short-term investments and may have increased borrowings under its credit agreement.

At March 31, 2018, KLA-Tencor's balance of cash, cash equivalents and marketable securities was \$2.89 billion. KLA-Tencor currently expects to finance the cash portion of the purchase price of the Merger using its cash, cash equivalents, and short-term investments. However, if it deems it prudent at the time of the Closing, KLA-Tencor may

finance a portion of the cash purchase price with proceeds available to it under its revolving line of credit.

KLA-Tencor following the Merger will incur significant transaction and integration related costs in connection with the Merger.

KLA-Tencor expects to incur costs associated with integrating the operations of Orbotech following the Closing. The amount of these costs could be material to the financial position and results of operations of KLA-Tencor following the Merger. A substantial amount of such expenses will be comprised of transaction costs related to the Merger, facilities and systems consolidation costs, and employee-related costs. KLA-Tencor will also incur fees and costs related to formulating integration plans and performing integration activities. Additional unanticipated costs may be incurred in the integration of the two companies' businesses. The elimination of duplicative costs, as well as the realization of other efficiencies related to the integration of the businesses, may not offset incremental transaction and other integration related costs in the near term.

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Orbotech's counterparties may acquire certain rights upon the Merger, which could negatively affect KLA-Tencor following the Merger.

Orbotech is party to numerous contracts, agreements, licenses, permits, authorizations and other arrangements that contain provisions giving counterparties certain rights (including, in some cases, termination rights) in the event of an assignment of the agreement or a change in control of Orbotech or its subsidiaries. The definitions of assignment and change in control vary from contract to contract and, in some cases, the assignment or change in control provisions may be implicated by the Merger. If an assignment or change in control occurs, a counterparty may be permitted to terminate its contract with Orbotech.

Whether a counterparty would have cancellation rights in connection with the Merger depends upon the language and governing law of its agreement with Orbotech. Whether a counterparty exercises any cancellation rights it has would depend on, among other factors, such counterparty's views with respect to the financial strength and business reputation of KLA-Tencor following the Merger and prevailing market conditions. Orbotech cannot presently predict the effects, if any, if the Merger is deemed to constitute a change in control under certain of its contracts and other arrangements, including the extent to which cancellation rights would be exercised, if at all, or the effect on KLA-Tencor's financial condition, results of operations or cash flows following the Merger, but such effect could be material.

Uncertainties associated with the Merger may cause a loss of employees, including senior management and key employees and may otherwise materially adversely affect the future business and operations of KLA-Tencor following the Merger.

KLA-Tencor's success following the Merger will depend upon the ability of KLA-Tencor to retain senior management and key employees of KLA-Tencor and Orbotech following the Merger. In some of the fields in which KLA-Tencor and Orbotech operate, there are only a limited number of people in the job market who possess the requisite skills, and it may be difficult for KLA-Tencor following the Merger to hire qualified personnel over time. KLA-Tencor following the Merger will operate in many geographic locations, where the labor markets, especially for engineers, are particularly competitive. Furthermore, certain unvested stock awards and benefits held by Orbotech employees may vest in connection with the Merger, and KLA-Tencor following the Merger may need to offer new awards and benefits to increase retention.

Current and prospective employees of KLA-Tencor and Orbotech may experience uncertainty about their roles with KLA-Tencor following the Merger. In addition, key employees may depart because of issues relating to the uncertainty and difficulty of integration or a desire not to remain with KLA-Tencor following the Merger. The loss of services of certain senior management or key employees of Orbotech or the inability to hire new personnel with the requisite skills could restrict the ability of KLA-Tencor following the Merger to develop new products or enhance existing products in a timely manner, to sell products to customers or to manage the business of KLA-Tencor effectively. Also, the business, financial condition and results of operations of KLA-Tencor following the Merger could be materially adversely affected by the loss of any of its key employees, by the failure of any key employee to perform in his or her current position, or by KLA-Tencor's inability to attract and retain skilled employees, particularly engineers.

KLA-Tencor following the Merger will have a more complex organizational structure, which could result in unfavorable tax or other consequences and could have an adverse effect on its net income and financial condition.

KLA-Tencor following the Merger will operate legal entities in many countries around the world where it will conduct manufacturing, design and sales operations. In some countries, it will maintain multiple entities for tax or

other purposes. Changes in tax laws, regulations, and related interpretations in the countries in which it operates may adversely affect its results of operations. KLA-Tencor following the Merger will have many entities globally and may have unsettled intercompany balances between some of these entities that could result, if changes in law, regulations or related interpretations occur, in adverse tax or other consequences affecting its capital structure, intercompany interest rates and legal structure.

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Future results of KLA-Tencor following the Merger may differ materially from the unaudited pro forma financial information and from the Orbotech Management Projections included in this proxy statement/prospectus.

The future results of KLA-Tencor following the Merger may be materially different from those shown in the unaudited pro forma financial information presented in this proxy statement/prospectus that shows only a combination of KLA-Tencor's and Orbotech's historical results. Furthermore, no assurances can be made regarding future events or that the assumptions made in preparing the Orbotech Management Projections (as defined in the section entitled "The Merger - Certain Projections of Orbotech") will accurately reflect future conditions or that the projected results set forth in the Orbotech Management Projections will be realized, and actual results will likely differ, and may differ materially, from such projections, which could result in a material adverse effect on the business, financial condition, results of operations and prospects of KLA-Tencor following the Merger. In addition, KLA-Tencor expects to incur significant costs associated with completing the Merger and integrating the operations of Orbotech, and the exact magnitude of these costs is not yet known. Furthermore, these costs may decrease the amount of capital that could be used by KLA-Tencor for other purposes.

The business and operating results of KLA-Tencor following the Merger could be harmed by the highly cyclical nature of the semiconductor industry.

Orbotech and KLA-Tencor operate in the semiconductor industry. Historically, the semiconductor industry has been highly cyclical with recurring periods of diminished product demand. Significant downturns in the semiconductor industry are often experienced in connection with, or in anticipation of, excess manufacturing capacity worldwide, maturing product cycles and declines in general economic conditions. Even if demand for the products and solutions of KLA-Tencor following the Merger remains constant after the completion of the Merger, a slowdown in the semiconductor industry may create competitive pressures that can degrade pricing levels and reduce revenues of KLA-Tencor following the Merger. Any failure to expand in cycle upturns to meet customer demand and delivery requirements or contract in cycle downturns at a pace consistent with cycles in the industry could have an adverse effect on the business of KLA-Tencor following the Merger.

Other Risk Factors of KLA-Tencor and Orbotech

KLA-Tencor's and Orbotech's businesses are, and will continue to be, subject to the risks described above. In addition, KLA-Tencor is, and will continue to be, subject to the risks described in KLA-Tencor's Annual Report on Form 10-K for the fiscal year ended June 30, 2017, as may be amended and updated by subsequent Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, all of which are filed or furnished with the SEC and incorporated by reference into this proxy statement/prospectus to the extent described in the section entitled "Where You Can Find More Information". Orbotech is, and will continue to be, subject to the risks described in Orbotech's Annual Report on Form 20-F for the fiscal year ended December 31, 2017, as may be amended and updated by subsequent Reports on Form 6-K, all of which are filed or furnished with the SEC and incorporated by reference into this proxy statement/prospectus to the extent described in the section entitled "Where You Can Find More Information". For more information, see the section entitled "Where You Can Find More Information".

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THE COMPANIES

KLA-Tencor Corporation

KLA-Tencor is a leading supplier of process control and yield management solutions for the semiconductor and related nanoelectronics industries. KLA-Tencor's broad portfolio of defect inspection and metrology products, and related service, software and other offerings primarily supports chip manufacturers throughout the entire semiconductor fabrication process, from research and development to final volume production. KLA-Tencor provides leading-edge equipment, software and support that enable IC manufacturers to identify, resolve and manage significant advanced technology manufacturing process challenges and obtain higher finished product yields at lower overall cost. In addition to serving the semiconductor industry, KLA-Tencor also provides a range of technology solutions to a number of other high technology industries, including the LED and data storage industries, as well as general materials research.

KLA-Tencor's common stock is traded on NASDAQ under the symbol **KLAC**.

The principal executive offices of KLA-Tencor are located at One Technology Drive, Milpitas, California, 95035, and its telephone number is (408) 875-3000.

Orbotech Ltd.

Orbotech is a global innovator and supplier of enabling solutions used to manufacture the world's most sophisticated consumer and industrial electronic products and is part of a select group of companies whose technology is literally driving the future of electronics. Orbotech's core business lies in enabling electronic device manufacturers to inspect, test and measure printed circuit boards (PCBs) and flat panel displays (FPDs) to verify their quality (reading); pattern the desired electronic circuitry on the relevant substrate and perform three-dimensional shaping of metalized circuits on multiple surfaces (writing); and utilize advanced vacuum deposition and etching processes in semiconductor devices (SD) and semiconductor manufacturing and to perform laser drilling of electronic substrates (connecting). Orbotech refers to this reading, writing and connecting as enabling the Language of Electronics.

Orbotech shares are traded on NASDAQ under the symbol **ORBK**.

The principal executive offices of Orbotech are located at 7 Sanhedrin Boulevard, North Industrial Zone, Yavne 8110101 Israel, and its telephone number is +972-8-9423533.

Tiburon Merger Sub Technologies Ltd.

Merger Sub, a wholly-owned subsidiary of KLA-Tencor, is a company organized under the laws of the State of Israel that was formed on March 15, 2018 for the sole purpose of effecting the Merger. In the Merger, Merger Sub will be merged with and into Orbotech, with Orbotech surviving as a wholly owned subsidiary of KLA-Tencor.

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THE ORBOTECH EXTRAORDINARY GENERAL MEETING

This proxy statement/prospectus is being made available to the Orbotech shareholders as part of a solicitation of proxies by the Orbotech Board for use at the meeting to be held at the time and place specified below, and at any properly convened meeting following any adjournment or postponement thereof. This proxy statement/prospectus provides Orbotech shareholders with the information they need to know to be able to vote or instruct their vote to be cast at the meeting.

Date, Time and Place

The meeting will be held on Thursday, July 12, 2018 at 10:00 a.m., Israel time, at Orbotech's principal executive offices at 7 Sanhedrin Boulevard, North Industrial Zone, Yavne, Israel.

Attendance at the meeting is limited to holders of record of Orbotech shares and holders of valid proxies. If you plan to attend the meeting, to gain access to the meeting we ask that you bring with you some form of personal identification and verification of your status as a shareholder as of the close of trading on June 6, 2018, the record date for the meeting. If you are a representative of an institutional investor, please bring evidence demonstrating your representative capacity for such entity to be verified against our list of shareholders as of the close of trading on the record date for the meeting. In addition, if your Orbotech shares are held in the name of a broker, bank or other nominee, you will need a valid legal proxy from such entity evidencing your authority to vote Orbotech shares that the institution or other nominee held for your account as of the close of trading on the record date for the meeting. You must contact your broker, bank or other nominee directly in advance of the meeting to obtain a legal proxy.

Purpose of the Meeting

The meeting is being held to consider and vote the following item:

To approve and adopt (i) the agreement and plan of merger dated March 18, 2018, as amended (the Merger Agreement), among KLA-Tencor, Merger Sub and Orbotech; (ii) the Merger on the terms and subject to the conditions set forth in the Merger Agreement and in accordance with the provisions of Sections 314-327 of the Companies Law 1999 of the State of Israel (together with the rules and regulations promulgated thereunder, the ICL), following which Merger Sub will cease to exist, and Orbotech will become a wholly owned subsidiary of KLA-Tencor; and (iii) all other transactions contemplated by the Merger Agreement, all upon the terms and subject to the conditions set forth in the Merger Agreement (the Merger Proposal).

A copy of the Merger Agreement is attached as Annex A to this proxy statement/prospectus and incorporated herein by reference. The text of the proposed resolution to approve the Merger Proposal is set out below (see the section entitled The Orbotech Proposal Approval and Adoption of the Merger Proposal).

Recommendation of the Orbotech Board

After careful consideration, the Orbotech Board has (i) determined that the Merger Agreement and the transactions contemplated by the Merger Agreement, including the Merger, are advisable, fair to and in the best interests of Orbotech and its shareholders and that, considering the financial position of the merging companies, and assuming, among other things, the accuracy of the representations and warranties of KLA-Tencor and Merger Sub in the Merger Agreement, no reasonable concern exists that the surviving company, as a result of the Merger, will be unable to fulfill the obligations of Orbotech to its creditors; (ii) approved the Merger Agreement and the transactions

contemplated by the Merger Agreement, including the Merger; and (iii) resolved to direct that the Merger Agreement be submitted to the shareholders of Orbotech for approval and adoption and recommend that the shareholders of Orbotech vote in favor of the approval and adoption of the Merger Agreement, the Merger and the other transactions contemplated by the Merger Agreement, all upon the terms and

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subject to the conditions set forth in the Merger Agreement. Accordingly, the Orbotech Board unanimously recommends that Orbotech shareholders vote FOR the Merger Proposal. For a discussion of the factors that the Orbotech Board considered in determining to recommend the approval and adoption of the Merger Proposal, see the section entitled The Merger Orbotech s Reasons for the Merger; Recommendation of the Orbotech Board .

Record Date and Orbotech Shareholders Entitled to Vote

Only Orbotech shareholders with Orbotech shares registered in his, her, its or their name or names as of the close of trading on June 6, 2018, the record date for the meeting (Orbotech shareholders of record), are entitled to vote the Orbotech shares they held on the record date at the meeting. As of the close of trading on the record date, 48,569,735 Orbotech shares were outstanding, each of which is entitled to one vote upon each of the matters presented at the meeting.

Quorum

No less than two Orbotech shareholders of record present in person or by proxy, and holding or representing between them Orbotech shares conferring in the aggregate more than 50% of the voting rights of Orbotech, shall constitute a quorum at the meeting. If within one-half hour from the time appointed for the holding of the meeting a quorum is not present, the meeting shall be adjourned to July 23, 2018 at the same time and place. At any such adjourned meeting, if a quorum is not present within one-half hour from the specified time, any Orbotech shareholders of record present in person or by proxy shall constitute a quorum even if they hold or represent Orbotech shares conferring 50% or less of the voting rights of Orbotech.

In determining whether there is a quorum for the meeting and whether the required number of votes for the approval of the Merger Proposal has been cast, Orbotech shares subject to broker non-votes and abstentions are counted for purposes of determining whether there is a quorum for the meeting but, with regard to the Merger Proposal, are not counted as having been voted in respect thereof. Broker non-votes are votes that brokers holding Orbotech shares of record for their clients are, pursuant to applicable stock exchange or other rules, precluded from casting in respect of certain non-routine proposals because such brokers have not received specific instructions from their clients as to the manner in which such Orbotech shares should be voted on those proposals and as to which the brokers have advised Orbotech that, accordingly, they lack voting authority.

Vote Required at the Meeting

The affirmative vote of a simple majority of the voting rights of Orbotech represented and voting thereon at the meeting is necessary for the approval of the Merger Proposal, provided that such majority includes at least a majority of the votes cast by Orbotech shareholders that are not KLA-Tencor, Merger Sub or a KLA Related Person (as defined below), who are present and voting (abstentions are disregarded) (the Merger Majority).

Pursuant to the ICL, each Orbotech shareholder voting on the Merger Proposal is required to inform Orbotech as detailed below prior to voting at the meeting if the shareholder is any of KLA-Tencor, Merger Sub, or a KLA Related Person and to indicate such matter in the appropriate place in the enclosed proxy, as further detailed below. A KLA Related Person is (a) a person holding, directly or indirectly, either (i) 25% or more of the voting rights of KLA-Tencor or Merger Sub, or (ii) the right to appoint 25% or more of the directors of KLA-Tencor or Merger Sub, or (b) one of such person s spouse, siblings, parents, grandparents, descendants, spouse s descendants, siblings or parents or the spouse of any such person, or a corporation controlled by any one or more of such persons or by KLA-Tencor or Merger Sub.

Special voting instructions under the ICL. In order to provide for proper counting of your shareholder vote, in the enclosed proxy you are required to indicate whether or not you are:

KLA-Tencor, Merger Sub, or a KLA Related Person with respect to the Merger Proposal. If you have not marked **NO** on the proxy (or in your electronic submission), thereby confirming that you are not

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any of KLA-Tencor, Merger Sub, or a KLA Related Person with respect to the Merger Proposal, your vote will not be counted for purposes of the Merger Majority with respect to the Merger Proposal, and your signature on the enclosed proxy (or the submission of an electronic vote) will constitute a certification that you are either KLA-Tencor, Merger Sub or a KLA Related Person.

Based on information provided by KLA-Tencor and Merger Sub to Orbotech, as of the date of this proxy statement/prospectus, Orbotech is not aware of any holdings of Orbotech shares by KLA-Tencor, Merger Sub or any KLA Related Persons, and therefore believes that all of its shareholders should mark **NO** in the appropriate place on the enclosed proxy (or in their electronic submission).

Abstentions and broker non-votes will not be treated as having been voted in respect of the Merger Proposal. Consequently, assuming a quorum is present at the meeting, broker non-votes and abstentions will have no effect on the voting with respect to the Merger Proposal.

Orbotech is unaware at this time of any other matters that will come before the meeting. If any other matters properly come before the meeting, it is the intention of the persons designated as proxies to vote in accordance with their judgment on such matters. Orbotech shares represented by executed and unrevoked proxies will be voted in accordance with such judgment.

Voting Procedures

Whether or not you plan to attend the meeting and regardless of the number of Orbotech shares you own, your careful consideration of, and vote on, the Merger Proposal is important and we encourage you to vote promptly.

To ensure that your Orbotech shares are voted at the meeting, we recommend that you provide voting instructions promptly by proxy, even if you plan to attend the meeting in person, by marking, dating and signing the proxy and returning it by mail in the enclosed postage-paid envelope. If you are mailing your proxy to an address outside your country of residence, you should add any necessary postage to the enclosed envelope to ensure delivery. In order to ensure that your vote is received on or prior to the date of the meeting, we recommend that your proxy be returned to us by overnight mail.

If you are an Orbotech shareholder with Orbotech shares held in street name, which means your Orbotech shares are held in an account at a broker, bank or other nominee, you must follow the instructions from your broker, bank or other nominee in order to vote. Without following those instructions, your Orbotech shares will not be voted.

YOU SHOULD NOT SEND IN YOUR SHARE CERTIFICATE(S) WITH YOUR PROXY. A letter of transmittal with instructions for the surrender of your certificates representing any Orbotech shares will be mailed to Orbotech shareholders if the Merger is completed.

For additional questions about the Merger, assistance in submitting proxies or voting Orbotech shares, or to request additional copies of this proxy statement/prospectus or the enclosed proxy, please contact Okapi Partners LLC, which is acting as Orbotech's proxy solicitor in connection with the Merger, toll free at +1 (855) 305-0857. Brokers, banks and other nominees may call collect at +1 (212) 297-0720.

How Proxies Are Voted

If you properly execute, date and return the form of proxy to Orbotech prior to the meeting, each person named as proxy will follow your instructions. If you properly execute and return the form of proxy to Orbotech prior to the

meeting without indicating how you intend to vote with respect to the Merger Proposal, the Orbotech shares represented by the proxy will be counted as being present for quorum purposes, but not be treated as having been voted in respect of the Merger Proposal and will have no effect on the voting with respect to the Merger Proposal.

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Revocation of Proxies

If you are an Orbotech shareholder of record, once you have given your proxy votes for the matters before our Orbotech shareholders as described in this proxy statement/prospectus, you may revoke such vote with respect to the meeting at any time prior to the time it is voted, (1) by filing with Orbotech an instrument revoking such proxy; (2) by completing, signing, dating and returning a new proxy bearing a later date by mail to Orbotech; or (3) by attending the meeting and voting in person.

Merely attending the meeting will not, by itself, revoke a proxy. Please note that if you want to revoke your proxies by sending a new proxy or an instrument revoking such proxy to Orbotech, you should ensure that you send your new proxy or instrument revoking such proxy in sufficient time for it to be received by Orbotech prior to the meeting. Please note, however, that only your last-dated proxy will count. If you are an Orbotech shareholder of record, you may obtain a new proxy by contacting Okapi Partners LLC at 1212 Avenue of the Americas, 24th Floor, New York, NY, 10036, or by telephone at +1 (212) 297-0720.

If you are an Orbotech shareholder with Orbotech shares held in street name, you should follow the instructions of your broker regarding the revocation of proxies. If your broker allows you to submit a proxy via the internet or by telephone, you may be able to change your vote by submitting a new proxy via the internet or by telephone or by mail. Please note that if your Orbotech shares are held in the name of a broker, you must obtain and bring to the meeting a proxy issued in your name from the broker to be able to vote at the meeting.

Voting in Person

Attendance at the meeting is limited to Orbotech shareholders of record and holders of valid proxies. If you plan to attend the meeting, to gain access to the meeting we ask that you bring with you some form of personal identification and verification of your status as a shareholder as of the close of trading on June 6, 2018, the record date for the meeting. If you are a representative of an institutional investor, please bring evidence demonstrating your representative capacity for such entity to be verified against our list of shareholders as of the close of trading on the record date for the meeting. In addition, if your Orbotech shares are held in the name of a broker, bank or other nominee, you will need a valid legal proxy from such entity evidencing your authority to vote Orbotech shares that the institution or other nominee held for your account as of the close of trading on the record date for the meeting. You must contact your broker, bank or other nominee directly in advance of the meeting to obtain a valid legal proxy.

Even if you plan to attend the meeting in person, we encourage you to vote your Orbotech shares by proxy so that your vote will be counted if you later decide not to attend the meeting.

Appraisal Rights

Under Israeli law, holders of Orbotech shares are not entitled to statutory appraisal rights in connection with the Merger.

Solicitation of Proxies

Proxies for use at the meeting are being solicited by the Orbotech Board. Only Orbotech shareholders of record at the close of trading on June 6, 2018, the record date, will be entitled to vote at the meeting or at any adjournment thereof. Proxies are expected to be mailed to shareholders on or about June 15, 2018, and their return will be solicited chiefly by mail; however, certain officers, directors, employees and agents of Orbotech, none of whom will receive additional compensation therefor, may solicit proxies by telephone, facsimile transmission, electronic mail or other personal

contact. In addition, Orbotech has retained Okapi Partners LLC to solicit Orbotech shareholder proxies at a total cost to Orbotech of approximately \$25,000, plus reimbursement of reasonable out-of-pocket expenses and indemnification of losses in certain circumstances.

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Adjournments and Postponements

If within one-half hour from the time appointed for the holding of the meeting a quorum is not present, the meeting shall be adjourned to July 23, 2018, at the same time and place. At any such adjourned meeting, if a quorum is not present within one-half hour from the specified time, any shareholders present in person or by proxy shall constitute a quorum even if they hold or represent Orbotech shares conferring 50% or less of the voting rights of Orbotech.

Orbotech Shares Held by Orbotech Directors and Executive Officers

As of the close of business on June 6, 2018, the record date for the meeting, Orbotech's directors and executive officers beneficially owned, in the aggregate, 4,252,546 Orbotech shares, or collectively approximately 8.74% of the outstanding Orbotech shares. For more information, see the section entitled "Security Ownership of Certain Beneficial Owners and Management of Orbotech". Orbotech's directors and executive officers have interests in the Merger that may be different from, or in addition to, the interests of the Orbotech shareholders generally. For more information, please see the section entitled "The Merger - Interests of the Orbotech Directors and Executive Officers in the Merger".

Assistance

If you need assistance in completing your proxy or have questions regarding the meeting, please contact Okapi Partners LLC, which is acting as Orbotech's proxy solicitor in connection with the Merger, toll free at +1 (855) 305-0857 or via email at info@okapipartners.com. Brokers, banks and other nominees may call collect at +1 (212) 297-0720.

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THE ORBOTECH PROPOSAL

APPROVAL AND ADOPTION OF THE MERGER PROPOSAL

As discussed elsewhere in this proxy statement/prospectus, Orbotech shareholders will consider and vote on the Merger Proposal, which consists of a proposal for Orbotech shareholders to approve and adopt (i) the Merger Agreement; (ii) the Merger on the terms and subject to the conditions set forth in the Merger Agreement and in accordance with the provisions of Sections 314-327 of the ICL, following which Merger Sub will cease to exist, and Orbotech will become a wholly owned subsidiary of KLA-Tencor; and (iii) all other transactions contemplated by the Merger Agreement, all upon the terms and subject to the conditions set forth in the Merger Agreement.

You are urged to carefully read this proxy statement/prospectus in its entirety for more detailed information concerning the Merger and the Merger Agreement, including the information set forth under the sections entitled **The Merger** and **The Merger Agreement**. A copy of the Merger Agreement is attached as Annex A to this proxy statement/prospectus and incorporated by reference herein. You are urged to read the Merger Agreement carefully and in its entirety.

It is proposed that at the meeting the following resolution is adopted to approve the Merger Proposal:

RESOLVED, that (i) the agreement and plan of merger dated March 18, 2018, as amended, among KLA-Tencor, Merger Sub and Orbotech; (ii) the merger of Merger Sub with and into Orbotech on the terms and subject to the conditions set forth in the Merger Agreement and in accordance with the provisions of Sections 314-327 of the ICL, following which Merger Sub will cease to exist, and Orbotech will become a wholly owned subsidiary of KLA-Tencor; and (iii) all other transactions contemplated by the Merger Agreement, all upon the terms and subject to the conditions set forth in the Merger Agreement be, and each hereby is, approved and adopted in all respects.

The Orbotech Board unanimously recommends a vote FOR the Merger Proposal and the above resolution by the Orbotech shareholders.

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THE MERGER

The following is a discussion of the Merger and the material terms of the Merger Agreement between KLA-Tencor and Orbotech. You are urged to read the Merger Agreement carefully and in its entirety, a copy of which is attached as Annex A to this proxy statement/prospectus and incorporated by reference herein.

Effects of the Merger

Subject to the terms and conditions of the Merger Agreement and the applicable provisions of Sections 314-327 of the ICL, at the Effective Time (as defined in the section entitled "The Merger Agreement Closing and Effective Time"), Merger Sub will be merged with and into Orbotech, with (a) Orbotech surviving the Merger as a wholly owned subsidiary of KLA-Tencor; (b) all the properties, rights, privileges, powers and franchises of Orbotech and Merger Sub shall vest in Orbotech (as the surviving company); (c) all debts, liabilities and duties of Orbotech and Merger Sub shall become the debts, liabilities and duties of the Orbotech (as the surviving company); and (d) all the rights, privileges, immunities, powers and franchises of Orbotech (as the surviving company) shall continue unaffected by the Merger in accordance with the ICL.

At the Effective Time, by virtue of the Merger, each Orbotech share issued and outstanding immediately prior to the Effective Time, other than the Excluded Shares, will be cancelled and converted into the right to receive (1) cash, without interest, in an amount equal to \$38.86, and (2) 0.25 of a share of KLA-Tencor common stock, subject to the conditions and restrictions set forth in the Merger Agreement.

Background of the Merger

Orbotech's management and the Orbotech Board have consistently reviewed growth options available to Orbotech and challenges related thereto, including organic growth of Orbotech's core businesses through product and customer initiatives, and growth through acquisitions and joint ventures in particular geographies. In addition, from time to time, Orbotech has received oral indications of interest from third parties that never progressed past an initial discussion. One of those parties was KLA-Tencor. In the Spring of 2017, KLA-Tencor approached Orbotech about a potential acquisition, but Orbotech's management believed that it was premature to engage in any such discussions in view of Orbotech's share price, which Orbotech's Active Chairman and senior management believed undervalued Orbotech in light of the positive business outlook at that time. A potential purchase price was not discussed at that time. In August of 2017, Orbotech and KLA-Tencor agreed to discuss some matters related to their respective customer service businesses and entered into a mutual non-disclosure agreement on September 11, 2017 to cover such discussions, which then occurred later in the same month. An acquisition transaction was not discussed during these conversations.

On November 6, 2017, Amichai Steimberg, the President and Chief Operating Officer of Orbotech, was approached by Bren Higgins, the Chief Financial Officer of KLA-Tencor, regarding KLA-Tencor's potential interest in pursuing a strategic transaction. In the absence of a formal proposal from KLA-Tencor, Orbotech's management sought to better assess the legitimacy of KLA-Tencor's interest before informing the Board of such inquiry. In November and early December of 2017, representatives of Orbotech and KLA-Tencor negotiated a new mutual confidentiality agreement in order to facilitate the exchange of certain non-public and confidential information between the parties and, on December 14, 2017, Orbotech and KLA-Tencor executed a new mutual confidentiality agreement.

On December 14, 2017, at a previously scheduled meeting of the audit committee of the Orbotech Board, the committee discussed the exchange of non-public information with KLA-Tencor for purposes of evaluating a potential strategic transaction and the process by which Orbotech would continue discussions with KLA-Tencor. Orbotech's

management stated that a proposed purchase price had not been discussed and that KLA-Tencor had requested an initial in-person due diligence meeting to cover fundamental business topics to determine whether there was a mutual basis to continue discussions, including on terms such as price, structure and timing.

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The initial in-person due diligence session was held on January 17 and 18, 2018 in New York City. Mr. Steimberg, Alon Rozner, Chief Financial Officer of Orbotech, and Lior Maayan, Corporate Vice President, Business Development and Chief Marketing Officer of Orbotech, attended from Orbotech. Mr. Higgins, David Fisher, Senior Vice President of Corporate Business Development, and Michael Kirk, Executive Vice President, attended from KLA-Tencor. These representatives presented reciprocal information regarding their respective businesses for preliminary due diligence purposes and discussed certain high level terms of a potential merger other than price.

On February 8, 2018, KLA-Tencor delivered a letter to Orbotech containing a non-binding proposal for a transaction in which each Orbotech share would be exchanged for \$36.00 in cash and 0.244 shares of KLA-Tencor common stock, representing, based on market closing prices as of February 8, 2018, a nominal purchase price of approximately \$60 per Orbotech share, a 1-day implied premium of 29% and an implied premium of 15% to the 30-day average closing price. The proposal also indicated that, in connection with the announcement of any transaction, KLA-Tencor would announce \$50 million of run-rate synergies, as well as a \$2 billion buyback of KLA-Tencor common stock following the closing of the transaction. The proposal was subject to the completion of confirmatory due diligence and negotiation of definitive agreements. In addition, considering the significant resources KLA-Tencor was prepared to invest in expediently conducting due diligence, KLA-Tencor requested that Orbotech sign an exclusivity agreement as a condition to proceeding with discussions. The proposal was scheduled to expire at 5 p.m., Pacific time, on Friday, February 16, 2018.

On February 14, 2018, at a regularly scheduled meeting, the Orbotech Board considered the legal and financial aspects of KLA-Tencor's proposal and evaluated proposed responses. At this meeting, Cravath, Swaine & Moore LLP (Cravath), Orbotech's U.S. legal advisors, and Tulchinsky, Stern, Marciano, Cohen, Levitski & Co. (Tulchinsky), Orbotech's Israeli legal advisors, advised the members of the Orbotech Board as to their legal duties in connection with KLA-Tencor's proposal. Representatives of Barclays Capital Inc. (Barclays) then reviewed its preliminary financial analysis of KLA-Tencor's proposal and discussed certain considerations relating to potential responses. Orbotech and its advisors also discussed the possible benefits and strategic fit of a combination with KLA-Tencor, as well as KLA-Tencor's stated intention to maintain Orbotech's operations in the State of Israel and KLA-Tencor's own long-standing presence and infrastructure in Israel. At the meeting, Orbotech's senior management, including Yochai Richter, Active Chairman of the Orbotech Board, presented certain long-term risks to Orbotech, particularly with regard to China, and discussed the importance of scale to compete effectively.

With the assistance of representatives of Barclays and input from management on overlap and strategic fit, the Orbotech Board also discussed a list of other potential strategic partners for Orbotech. Based on a variety of factors, including size, potential strategic fit and capacity to complete a transaction, the Orbotech Board identified three primary companies other than KLA-Tencor, as well as several additional entities based in China, that it believed would potentially have some interest in a strategic transaction with Orbotech. However, due to a number of factors, including strategic fit and regulatory uncertainty with respect to such parties' ability to consummate a potential transaction, the Orbotech Board determined that those companies were either unlikely to have any serious interest in an acquisition of Orbotech at that time or otherwise would pose a greater risk of completion than a potential transaction with KLA-Tencor. Following this discussion, the Orbotech Board determined that it would be willing to proceed with exclusive negotiations with KLA-Tencor if KLA-Tencor were to first agree to an increased purchase price per share, either based on an all cash or a mixed cash and stock offer. At the meeting, the Orbotech Board also authorized management to negotiate and enter into an engagement letter with Barclays, and Orbotech and Barclays subsequently executed such engagement letter on February 22, 2018.

Also at the February 14, 2018 meeting, in view of the Orbotech Board's desire to announce the transaction by the end of March, the Orbotech Board formed a transaction committee consisting of Mr. Richter, Michael Anghel, Dan Falk, Joseph Tenne and Arie Weisberg to provide real-time guidance to management in negotiating the proposed

transaction. On February 15, 2018, the transaction committee met to review Orbotech's response to KLA-Tencor.

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On February 16, 2018, based on the authorization of the Orbotech Board, Mr. Richter and Mr. Steimberg called Rick Wallace, Chief Executive Officer of KLA-Tencor, and Mr. Higgins to indicate that, while Orbotech would be prepared to proceed with negotiation of a strategic transaction, it would only be prepared to do so at a price of \$68.75 per Orbotech share, which could be delivered as either an all cash or a mixed cash and stock offer, at KLA-Tencor's discretion. Messrs. Richter and Steimberg indicated that Orbotech would be able to move quickly to announce the transaction prior to the Passover holiday, which began on March 30, 2018, if the parties could reach an agreed price.

On February 18, 2018, KLA-Tencor delivered an updated offer letter containing a revised non-binding proposal to acquire Orbotech for an implied purchase price of \$63.50 per Orbotech share, with \$38.10 (60% of the proposed consideration) in cash and the remainder in shares of KLA-Tencor common stock, representing, based on market closing prices as of February 18, 2018, a 1-day implied premium of 19% and an implied premium of 23% to the 30-day average closing price. At the time, KLA-Tencor indicated that this was their best offer and that, if it was not acceptable, the parties could cease their discussions until a later date.

On February 20, 2018, Orbotech's transaction committee convened to discuss the revised offer from KLA-Tencor and possible responses. Representatives of Barclays reviewed its preliminary financial analysis of KLA-Tencor's revised proposal and discussed certain considerations relating to potential responses. Following discussion, the transaction committee instructed management to continue negotiations with KLA-Tencor to determine whether additional value for Orbotech's shareholders was available from KLA-Tencor.

Later on February 20, 2018, Mr. Steimberg called Mr. Higgins to discuss KLA-Tencor's latest proposal. In the course of that discussion, Messrs. Steimberg and Higgins reached a preliminary, non-binding understanding that, subject to confirmatory due diligence, each of them would be willing to recommend to their respective senior management and board that the parties move forward in negotiating a transaction in which each Orbotech share would be exchanged for \$38.86 in cash and 0.25 of a share of KLA-Tencor common stock, which at the time, based on market closing prices as of February 20, 2018, provided an implied value of approximately \$66.50 per Orbotech share and represented a 1-day implied premium of 23% and an implied premium of 29% to the 30-day average closing price. Later on February 20, 2018, KLA-Tencor reaffirmed this understanding in an updated non-binding proposal letter delivered to the Orbotech Board reflecting this consideration and indicating that KLA-Tencor would be prepared to move forward quickly to announce a transaction by March 26, 2018, subject to prompt agreement on terms of an exclusivity agreement with Orbotech.

On February 21, 2018, the Orbotech Board met to consider KLA-Tencor's latest proposal with the assistance of Barclays, Cravath and Tulchinsky. At this meeting, representatives of Barclays reviewed its preliminary financial analysis of KLA-Tencor's latest revised proposal and each of Cravath and Tulchinsky reminded the Orbotech Board of their legal duties in evaluating the proposed transaction with KLA-Tencor. Following this discussion, the Orbotech Board authorized management to proceed with due diligence and to enter into exclusive negotiations with KLA-Tencor until March 26, 2018, on the basis of the consideration proposed in KLA-Tencor's February 20, 2018 offer.

On February 22, 2018, Messrs. Levy, Steimberg, Rozner and Maayan from Orbotech's management team and Messrs. Higgins and Fisher and Ms. Teri Little, Chief Legal Officer of KLA-Tencor, from KLA-Tencor's management team met via video conference to discuss the timeline for a potential transaction and process to announcing a deal, which included promptly commencing in-person due diligence, together with concurrent meetings between the legal advisors to discuss draft definitive transaction agreements.

On February 24, 2018, Orbotech and KLA-Tencor signed an exclusivity agreement effective until March 26, 2018.

Shortly thereafter, Orbotech and KLA-Tencor exchanged initial due diligence request lists for various information and documents with respect to each party, and the parties opened their respective due diligence data

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rooms on February 26, 2018 and March 1, 2018, respectively. From such time until the execution of the Merger Agreement, Orbotech, KLA-Tencor and certain of their respective advisors and other representatives conducted due diligence with respect to each other.

On March 2, 2018, KLA-Tencor's legal advisors delivered an initial draft of the Merger Agreement to Orbotech and its legal advisors. Beginning on March 4, 2018 and continuing through March 7, 2018, representatives of each of Orbotech's senior management and certain of its advisors commenced reciprocal in-person due diligence meetings with representatives of each of KLA-Tencor's senior management and certain of its advisors, including Wilson Sonsini Goodrich & Rosati, Professional Corporation (WSGR), its legal advisor, in Palo Alto, California. The due diligence meetings with respect to Orbotech focused on Orbotech's operating plans and strategy, product development efforts, employee compensation and benefits, financial position and liabilities and certain legal diligence matters. The due diligence meetings with respect to KLA-Tencor focused on KLA-Tencor's operating plans and strategy, technology, financial recordkeeping and accounting practices and certain legal diligence matters.

On March 6, 2018, Mr. Richter met Mr. Wallace separately in Palo Alto, California to further discuss the transaction. Also on March 6, 2018, Orbotech's management team met with Orbotech's transaction committee via telephone conference to discuss the current status of negotiations and due diligence.

On March 7, 2018, representatives from Orbotech, KLA-Tencor, Cravath and WSGR met to discuss Orbotech's initial feedback in its mark-up of the draft of the Merger Agreement provided to KLA-Tencor and WSGR on March 6, 2018. In these discussions, representatives of each of Orbotech and KLA-Tencor indicated certain key issues for each party. For Orbotech, these related to KLA-Tencor's commitment to maintain Orbotech's operations in the State of Israel and to the exclusion of certain publicly disclosed matters from consideration of a material adverse effect. For KLA-Tencor, these related to the treatment of outstanding Orbotech equity awards and certain retention, interim period and post-closing employee compensation and benefits matters and to the obligations that may be imposed on KLA-Tencor to seek and obtain regulatory approval for the transaction. Representatives of each party's management then left and the parties' legal advisors and members of KLA-Tencor's internal legal team continued to discuss various additional issues on the draft Merger Agreement, including certain deal protection provisions, issues related to closing conditions and termination rights and the general scope of the Merger Agreement's representations and covenants.

From March 7 to 9, 2018, the parties met to discuss the various open issues in the draft of the Merger Agreement.

On March 7 and 8, 2018, representatives of Orbotech and KLA-Tencor also discussed a substantially inaccurate speculative news article that was published in Israel on March 8, 2018 relating to a potential change of control of Orbotech. Following such article, on March 8, 2018, Orbotech shares closed at a price of \$58.83 per share, which represented a five percent increase from the prior's day close of \$56.25 per share. Although Orbotech did not comment on the article, the parties agreed to proceed expediently to finalizing their negotiations if the remaining open issues could be addressed. Considering the limited amount of remaining open issues, representatives of Orbotech and KLA-Tencor also agreed to target March 18, 2018 for the execution of the Merger Agreement with the goal of announcing the transaction before market open in New York on March 19, 2018. In addition, representatives of Orbotech agreed to expediently prepare Orbotech's confidential disclosure letter with respect to the Merger Agreement.

On March 9, 2018, representatives of Cravath held a conference call with representatives of WSGR to discuss various open issues related to the Merger Agreement based on a revised mark-up of the Merger Agreement delivered by WSGR on March 8, 2018. Also on March 9, 2018, Mr. Steimberg and representatives of Cravath met with Mr. Higgins, Ms. Little, Mr. Fisher, Jeffrey Cannon, Associate General Counsel, and representatives of WSGR to address the remaining open issues. The parties also reiterated a mutual desire to announce the transaction on

March 19, 2018. On March 11, 2018, Cravath delivered a revised mark-up of the Merger Agreement to KLA-Tencor and WSGR.

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On March 13, 2018, Orbotech's transaction committee met and reviewed the status of the negotiations with KLA-Tencor with representatives of each of Orbotech's management, Cravath, Tulchinsky and Barclays. Representatives of each of Cravath and Tulchinsky reviewed the principal terms of and open issues in the draft Merger Agreement, with a particular focus on KLA-Tencor's proposals for its efforts obligations and closing conditions relating to antitrust approval, the proposed approach on the definition of "material adverse effect" and related closing conditions and certain deal protection matters, as well as the then-current proposals relating to employee retention and interim period equity awards and compensation. Following such discussion, the transaction committee authorized management to proceed with its final proposals to KLA-Tencor on the key remaining open issues. At such time, the transaction committee also authorized the engagement of Goldman Sachs Israel LLC ("Goldman Sachs") to provide its views to the transaction committee with respect to the proposed transaction.

Following such transaction committee meeting, on March 14, 2018, representatives of WSGR delivered a revised draft of the Merger Agreement to the legal representatives of Orbotech, reflecting KLA-Tencor's final proposals on certain outstanding open issues, including a further limitation to the exclusion of certain publicly disclosed matters from the "material adverse effect" definition under discussion between the parties. From March 14 to 18, 2018, representatives of each of the parties' legal and financial advisors extensively discussed this proposed limitation, together with other open issues on the draft Merger Agreement, with revised drafts of the Merger Agreement exchanged on March 16 and 18, 2018.

On March 17, 2018, representatives of Goldman Sachs delivered to Orbotech's transaction committee, at an in-person meeting in Tel Aviv also attended by representatives of Cravath and Tulchinsky, its assessment of the proposed transaction, including a further assessment of other potential strategic partners. Following such discussion, the transaction committee again concluded that the proposed transaction with KLA-Tencor represented the best strategic option for Orbotech and directed Orbotech's management to proceed with a meeting of the full Orbotech Board scheduled for March 18, 2018.

On March 18, 2018, the Orbotech Board met to review the potential transaction, which, based on market closing prices as of March 16, 2018, provided an implied value of approximately \$69.02 per Orbotech share and represented a 1-day implied premium of 15% and an implied premium of 23% to the 30-day average closing price. At such meeting, the Orbotech Board reviewed the potential personal interests of Orbotech's directors and executive officers in the Merger and the transactions contemplated thereby and representatives of Cravath and Tulchinsky reviewed the terms of the Merger Agreement and updated the Orbotech Board regarding the changes from the terms discussed at the prior meetings of the Orbotech Board and the transaction committee. Further, the representatives of each of Cravath and Tulchinsky reviewed the Orbotech Board's legal duties in evaluating the proposed transaction with the Orbotech Board, including with respect to potential personal interests of directors and executive officers in the Merger and the transactions contemplated thereby as a result of proposed retention arrangements and other post-closing compensation and benefits matters. In particular, the Orbotech Board considered that there were no retention arrangements then in place for Orbotech's senior management and in light of, among other things, the severance and additional benefits that would become available to such officers pursuant to their existing arrangements following a successful shareholder meeting to approve the Merger, considered that retention arrangements for such individuals would need to be determined by KLA-Tencor and Orbotech and entered into in advance of such shareholder meeting. At the request of the Orbotech Board, representatives of Barclays then reviewed its financial analyses of the proposed transaction. Following such review, representatives of Barclays delivered its oral opinion (which was subsequently confirmed in writing as of March 18, 2018) that, as of such date and based upon and subject to the qualifications, limitations and assumptions stated in its opinion, the consideration to be offered to the holders of Orbotech shares (other than holders of the Excluded Shares (as defined in "The Merger" Merger Consideration)) in the proposed transaction was fair, from a financial point of view, to such holders. The full text of Barclay's written opinion dated March 18, 2018, which sets forth, among other things, the assumptions made, procedures followed, factors considered and the limitations on the

review undertaken by Barclays in rendering its opinion, is attached to this proxy statement/prospectus as Annex B. Representatives of Orbotech's management then discussed the due

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diligence conducted with respect to KLA-Tencor. Finally, representatives of Kesselman & Kesselman, Certified Public Accountants (Israel), an independent registered public accounting firm and a member firm of PricewaterhouseCoopers International Limited (Kesselman), Orbotech's auditor, presented certain accounting analyses related to the transaction.

Following the presentations by Cravath, Tulchinsky, Barclays, Orbotech's management and Kesselman, the Orbotech Board discussed the proposed transaction in more detail. In considering the Merger Agreement and the advisability of the Merger and the other transactions, the Orbotech Board considered a number of factors as described under "The Merger" Orbotech's Reasons for the Merger.

Taking into account these considerations, including the advice received from its management and financial and legal advisors and after further concerted deliberation, the Orbotech Board unanimously (1) determined that the Merger Agreement and the proposed transactions, including the Merger, are advisable, that the Merger Agreement and the proposed transactions, including the Merger, are fair to and in the best interests of Orbotech and its shareholders and that, considering the financial position of the merging companies, no reasonable concern exists that the merged company will be unable to fulfill the obligations of Orbotech to its creditors, (2) approved the Merger Agreement and the proposed transactions, including the Merger, and (3) resolved to recommend that Orbotech's shareholders approve the Merger Agreement, the Merger and the other proposed transactions, all upon the terms and subject to the conditions set forth in the Merger Agreement. At sessions immediately preceding the final deliberations of the Orbotech Board, the audit committee and remuneration committee of the Orbotech Board each similarly reviewed all relevant information about the proposed transactions, including the anticipated personal interests of Orbotech's directors and executive officers therein, and each unanimously approved the Merger Agreement and the proposed transactions, including the Merger, on the terms described above and recommended to the Orbotech Board to do the same.

On March 18, 2018, following receipt of the approval of the Orbotech Board, representatives of KLA-Tencor and Orbotech and their respective legal advisors finalized the Merger Agreement and related confidential disclosure letters. Orbotech and KLA-Tencor thereafter executed the Merger Agreement and, prior to market open on the morning of March 19, 2018, KLA-Tencor and Orbotech issued a joint press release announcing the transaction and the execution of the Merger Agreement.

Orbotech's Reasons for the Merger; Recommendation of the Orbotech Board

At its meeting on March 18, 2018, the Orbotech Board (i) determined that the Merger Agreement and the transactions contemplated by the Merger Agreement, including the Merger, are advisable, fair to and in the best interests of Orbotech and its shareholders and that, considering the financial position of the merging companies, and assuming, among other things, the accuracy of the representations and warranties of KLA-Tencor and Merger Sub in the Merger Agreement, no reasonable concern exists that the surviving company, as a result of the Merger, will be unable to fulfill the obligations of Orbotech to its creditors; (ii) approved the Merger Agreement and transactions contemplated by the Merger Agreement, including the Merger; and (iii) resolved to direct that the Merger Agreement be submitted to the shareholders of Orbotech for approval and adoption and recommend that the shareholders of Orbotech vote in favor of the approval and adoption of the Merger Agreement, the Merger and the other transactions contemplated by the Merger Agreement, all upon the terms and subject to the conditions set forth in the Merger Agreement. **The Orbotech Board unanimously recommends that you vote FOR the Merger Proposal.**

The Orbotech Board considered many factors in making its determination that the Merger Agreement, the Merger and the other transactions contemplated by the Merger Agreement are advisable, fair to and in the best interests of Orbotech and its shareholders and that, considering the financial position of the merging companies, and assuming,

among other things, the accuracy of the representations and warranties of KLA-Tencor and Merger Sub in the Merger Agreement, no reasonable concern exists that the surviving company, as a result of the Merger, will be unable to fulfill the obligations of Orbotech to its creditors. In arriving at its determination, the

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Orbotech Board consulted with and received the advice of its outside financial and legal advisors, discussed certain issues with Orbotech's management and considered a variety of factors weighing positively in favor of the Merger, including the following:

Prospects of Orbotech.

The Orbotech Board considered that the proposed transaction will allow Orbotech to fully embrace the megatrend opportunities associated with China's Made in China 2025 strategic plan while mitigating the risks of cyclicity.

The Orbotech Board considered that combining with KLA-Tencor will enable Orbotech to better take advantage of increased available opportunities in the competitive marketplace.

The Orbotech Board considered that the Merger with KLA-Tencor offers a unique opportunity to accelerate Orbotech's growth, as KLA-Tencor has a complementary business with no competitive overlap and significant resources and is very highly regarded in the industry by both Orbotech's and KLA-Tencor's customers.

The Orbotech Board considered that significant elements of Orbotech's business and operating strategy will benefit from partnership with KLA-Tencor.

The Orbotech Board considered that Orbotech's strategic objectives, which include expanding its customer base, expanding and enhancing its product offerings, expanding its global distribution and support capabilities and extending its technological leadership, would be furthered by the Merger and, as a result, Orbotech would be better positioned to reach these objectives than it would as a stand-alone company.

Merger Consideration.

The Orbotech Board considered that the consideration per Orbotech share of (i) cash, without interest, in an amount equal to \$38.86; and (ii) 0.25 of a share of the common stock of KLA-Tencor represents an attractive valuation for Orbotech.

The Orbotech Board considered that the implied price per share represents a premium of approximately 30.7% over the volume-weighted average share price of Orbotech's shares during the three-month period prior to the date of the Merger Agreement and is higher than the price at which Orbotech shares have traded since the beginning of calendar year 2001.

The Orbotech Board considered that a portion of the consideration to be paid in the transaction is cash, which provides certainty of value and immediate liquidity to Orbotech's shareholders, especially when viewed against the risks and uncertainties inherent in Orbotech's business.

The Orbotech Board considered that a portion of the consideration to be paid in the transaction is shares of KLA-Tencor common stock, which provides Orbotech's shareholders with the opportunity to participate in any increase in value of KLA-Tencor or of the combined company, whether during the pre-Closing period or following the Closing.

Opinion of Barclays. The Orbotech Board considered the financial analyses reviewed and discussed with the Orbotech Board by representatives of Barclays, Orbotech's financial advisor, as well as the oral opinion of Barclays (which was subsequently confirmed in writing as of March 18, 2018) that, as of such date and based upon and subject to the qualifications, limitations and assumptions stated in its opinion, the Merger Consideration to be offered to the holders of Orbotech shares (other than holders of the Excluded Shares) in the proposed transaction was fair, from a financial point of view, to such holders, as more fully described in the section entitled "Opinion of Orbotech's Financial Advisor".

Likelihood of Consummation.

The Orbotech Board considered the nature of the closing conditions included in the Merger Agreement, including the absence of any financing conditions or related contingencies with

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respect to the Merger Consideration, as well as the need to receive specified regulatory approvals, including with respect to China.

The Orbotech Board considered the identity of KLA-Tencor, which is a reputable company with a strong business model.

Terms of the Merger Agreement.

The Orbotech Board considered the terms of the Merger Agreement, including the parties' respective representations, warranties and covenants, the conditions to their respective obligations to complete the Merger and the ability of the respective parties to terminate the Merger Agreement. The Orbotech Board noted that the termination or breakup fee provisions of the Merger Agreement could have the effect of discouraging competing proposals for a business combination between Orbotech and a third party, but that such provisions are customary for transactions of this size and type. The Orbotech Board considered that the amount of the termination fee, which amount is equal to \$125.0 million, or approximately 3.6% of the transaction value, was within a reasonable range.

The Orbotech Board considered that the Merger Agreement permits Orbotech and the Orbotech Board to respond to a competing proposal that the Orbotech Board determines is a superior proposal, subject to certain restrictions imposed by the Merger Agreement and the requirement that Orbotech pay the termination fee in the event that Orbotech terminates the Merger Agreement to accept a superior proposal, and also permits the Orbotech Board to change its recommendation in favor of the Merger in response to certain unforeseen or unforeseeable intervening events.

Participation in Future Growth. The Orbotech Board considered the fact that, because Orbotech's shareholders will be receiving shares of KLA-Tencor's common stock for their shares, they will participate in any increase in value of KLA-Tencor or the combined company, whether during the limited pre-Closing period or following the Closing.

No Financing Condition; Ability to Finance. The Orbotech Board considered that the Merger is not subject to a financing condition and, in particular, that KLA-Tencor represented that, at the Effective Time, it will have the funds necessary to pay the Cash Consideration and the other cash payments contemplated by the Merger Agreement.

Structure; Orbotech Shareholder Approval.

The Orbotech Board considered that the transaction will result in detailed public disclosure and a substantial period of time prior to the convening of the shareholder meeting to consider the approval and adoption of the Merger Proposal during which a competing proposal could be brought forth.

The Orbotech Board also considered that the affirmative vote of a simple majority of the voting rights of Orbotech represented and voting thereon at the meeting, including the Merger Majority, is necessary for the approval of the Merger.

Potentially Interested Parties.

The Orbotech Board considered that Orbotech had not received any written proposals from any other potentially interested parties as of the date of the Merger Agreement.

The Orbotech Board considered the identification by Barclays of only three primary other potential strategic parties, as well as several additional entities based in China, based on a variety of factors, including size, potential strategic fit and capacity to complete a transaction, that, due to a number of factors, including strategic fit and regulatory uncertainty with respect to such parties' ability to consummate a potential transaction, were either unlikely to have any serious interest in an acquisition of Orbotech at that time or otherwise would pose a greater risk of completion than a potential transaction with KLA-Tencor, as well as the Orbotech Board's conclusion that those

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companies were either unlikely to have any serious interest in an acquisition of Orbotech at that time or otherwise would pose a greater risk of completion than a potential transaction with KLA-Tencor. The Orbotech Board also identified and considered a number of other matters, some of which are countervailing factors and risks to Orbotech and its shareholders, relating to the Merger and the Merger Agreement, including the following:

the possibility that the Merger may not be completed and the potential adverse consequences to Orbotech if the Merger is not completed, including the potential (i) loss of customers, suppliers and employees; (ii) reduction in the perceived value of Orbotech; and (iii) erosion of customer and employee confidence in Orbotech;

the limitations imposed in the Merger Agreement on the conduct of Orbotech's business during the pre-Closing period, its ability to solicit and respond to competing proposals and the ability of the Orbotech Board to change or withdraw its recommendation of the Merger;

the possibilities that certain provisions of the Merger Agreement, including the non-solicitation and other protective provisions such as the \$125.0 million termination fee payable if the Merger Agreement is terminated under certain circumstances, might have the effect of deterring other potential acquirors from making competing proposals that could be more advantageous to Orbotech's shareholders;

the potential conflicts of interest of Orbotech's directors and executive officers, including with respect to the treatment (including acceleration) of equity awards, enhanced severance benefits, transaction and retention bonuses and indemnification, exculpation and insurance provisions, as well as with respect to potential retention arrangements and post-Closing benefits for Orbotech's senior management that were anticipated to be determined by KLA-Tencor and Orbotech following the execution of the Merger Agreement and prior to the Orbotech shareholder meeting to consider the approval of the Merger, in each case, as described more fully in the section entitled "Interests of Orbotech Directors and Executive Officers in the Merger";

the risk that the parties may incur significant costs and delays related to the Merger, including resulting from seeking governmental consents and regulatory approvals necessary for completion of the Merger; and

the risks of the type and nature described under "Risk Factors" and the matters described under "Special Note Regarding Forward-Looking Statements."

The foregoing discussion of the factors considered by the Orbotech Board is not intended to be exhaustive, but rather includes the material factors considered by the Orbotech Board. The Orbotech Board collectively (i) determined that the Merger Agreement and the transactions contemplated by the Merger Agreement, including the Merger, are advisable, fair to and in the best interests of Orbotech and its shareholders and that, considering the financial position of the merging companies, and assuming, among other things, the accuracy of the representations and warranties of KLA-Tencor and Merger Sub in the Merger Agreement, no reasonable concern exists that the surviving company, as a result of the Merger, will be unable to fulfill the obligations of Orbotech to its creditors; (ii) approved the Merger Agreement and the transactions contemplated by the Merger Agreement, including the Merger; and (iii) resolved to

direct that the Merger Agreement be submitted to the shareholders of Orbotech for approval and adoption and recommend that the shareholders of Orbotech vote in favor of the approval and adoption of the Merger Agreement, the Merger and the other transactions contemplated by the Merger Agreement, all upon the terms and subject to the conditions set forth in the Merger Agreement. In view of the wide variety of factors considered by the Orbotech Board in connection with its evaluation of the Merger and the complexity of these matters, the Orbotech Board did not consider it practical, and did not attempt, to quantify, rank or otherwise assign relative or specific weights or values to any of the factors it considered in reaching its decision and did not undertake to make any specific determination as to whether any particular factor, or any aspect of any particular factor, was favorable or unfavorable to the ultimate

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determination of the Orbotech Board. Rather, the Orbotech Board considered all of these factors as a whole and made its recommendation based on the totality of the information available to the Orbotech Board, including discussions with, and questioning of, Orbotech's management and its legal and financial advisors. In considering the factors discussed above, individual members of the Orbotech Board may have given different weights to different factors and the factors are not presented in any order of priority.

This explanation of the Orbotech Board's reasons to recommend that Orbotech's shareholders vote in favor of the Merger Proposal presented in this section is forward-looking in nature and, therefore, should be read in light of the factors described in the section entitled "Special Note Regarding Forward-Looking Statements".

Opinion of Orbotech's Financial Advisor

Orbotech engaged Barclays to act as its financial advisor in connection with a possible sale of Orbotech. On March 18, 2018, Barclays rendered its oral opinion (which was subsequently confirmed in writing) to the Orbotech Board that, as of such date and based upon and subject to the qualifications, limitations and assumptions stated in its opinion, the consideration to be offered to the holders of Orbotech shares (other than the holders of the Excluded Shares) in the proposed transaction was fair, from a financial point of view, to such holders.

The full text of Barclays' written opinion, dated as of March 18, 2018, is attached as Annex B to this proxy statement/prospectus. Barclays' written opinion sets forth, among other things, the assumptions made, procedures followed, factors considered and limitations upon the review undertaken by Barclays in rendering its opinion. You are encouraged to read the opinion carefully in its entirety. The following is a summary of Barclays' opinion and the methodology that Barclays used to render its opinion. This summary is qualified in its entirety by reference to the full text of the opinion.

Barclays' opinion, the issuance of which was approved by Barclays' Fairness Opinion Committee, is addressed to the Orbotech Board, addresses only the fairness, from a financial point of view, of the consideration to be offered to the holders of Orbotech shares (other than the holders of the Excluded Shares) in the proposed transaction and does not constitute a recommendation to any holder of Orbotech shares as to how such holder should vote with respect to the proposed transaction or any other matter. The terms of the proposed transaction were determined through arm's-length negotiations between Orbotech and KLA-Tencor and were unanimously approved by the Orbotech Board. Barclays did not recommend any specific form of consideration to Orbotech or that any specific form of consideration constituted the only appropriate consideration for the proposed transaction. Barclays was not requested to address, and its opinion does not in any manner address, Orbotech's underlying business decision to proceed with or effect the proposed transaction, the likelihood of the consummation of the proposed transaction, or the relative merits of the proposed transaction as compared to any other transaction or business strategy in which Orbotech may engage. In addition, Barclays expressed no opinion on, and its opinion does not in any manner address, the fairness of the amount or the nature of any compensation to any officers, directors or employees of any parties to the proposed transaction, or any class of such persons, relative to the consideration to be offered to the holders of Orbotech shares in the proposed transaction. No limitations were imposed by the Orbotech Board upon Barclays with respect to the investigations made or procedures followed by it in rendering its opinion.

In arriving at its opinion, Barclays, among other things:

reviewed and analyzed the Merger Agreement and the specific terms of the proposed transaction;

reviewed and analyzed publicly available information concerning Orbotech that Barclays believed to be relevant to its analysis, including Orbotech's Annual Report on Form 20-F for the fiscal years ended December 31, 2016 and December 31, 2017 filed with the SEC and Current Reports on Form 6-K furnished with the SEC on January 17, 2018 and February 14, 2018;

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reviewed and analyzed publicly available information concerning KLA-Tencor that Barclays believed to be relevant to its analysis, including KLA-Tencor's Annual Report on Form 10-K for the fiscal year ended June 30, 2017 and Quarterly Reports on Form 10-Q for the fiscal quarters ended September 30, 2017 and December 31, 2017;

reviewed and analyzed financial and operating information with respect to the business, operations and prospects of Orbotech furnished to Barclays by Orbotech, including the Orbotech Management Projections (as defined below);

reviewed and analyzed the pro forma impact of the proposed transaction on the future financial performance of the combined company, including cost synergies and other strategic benefits expected by management of KLA-Tencor;

reviewed and analyzed a trading history of the Orbotech shares from March 16, 2013 until March 16, 2018 and a trading history of KLA-Tencor common stock from March 16, 2013 until March 16, 2018;

reviewed and analyzed a comparison of trading price as a multiple of certain financial metrics for calendar years 2018 and 2019 of Orbotech and KLA-Tencor and certain other companies that Barclays deemed relevant;

reviewed and analyzed a comparison of the financial terms of the proposed transaction with the financial terms of certain other transactions that Barclays deemed relevant;

reviewed and analyzed published estimates of independent research analysts with respect to the future financial performance and price targets of Orbotech (the Orbotech Published Estimates);

reviewed and analyzed published estimates of independent research analysts with respect to the future financial performance and price targets of KLA-Tencor, including published estimates of publicly available Wall Street research brokers for KLA-Tencor's fiscal years ending on June 30, 2018, June 30, 2019 and June 30, 2020 (the KLA-Tencor Published Estimates);

had discussions with the management of Orbotech concerning its business, operations, assets, liabilities, financial condition and prospects;

had discussions with the management of Orbotech and KLA-Tencor concerning KLA-Tencor's business, operations, assets, liabilities, financial condition and prospects; and

undertook such other studies, analyses and investigations as Barclays deemed appropriate.

In arriving at its opinion, Barclays assumed and relied upon the accuracy and completeness of the financial and other information used by Barclays without any independent verification of such information (and did not assume responsibility or liability for any independent verification of such information). Barclays also relied upon the assurances of management of Orbotech that they were not aware of any facts or circumstances that would make such information inaccurate or misleading. With respect to the Orbotech Management Projections, upon the advice of Orbotech, Barclays assumed that the Orbotech Management Projections were reasonably prepared on a basis reflecting the best currently available estimates and judgments of the management of Orbotech as to Orbotech's future financial performance. Furthermore, upon the advice of Orbotech, Barclays assumed that the amounts and timing of the expected synergies were reasonable and that the expected synergies would be realized in accordance with such estimates. Barclays was not provided with, and did not have any access to, financial projections of KLA-Tencor prepared by management of Orbotech or management of KLA-Tencor. Accordingly, upon the advice of Orbotech, Barclays assumed that the KLA-Tencor Published Estimates were a reasonable basis upon which to evaluate the future financial performance of KLA-Tencor and that KLA-Tencor would perform substantially in accordance with such KLA-Tencor Published Estimates. In arriving at its opinion, Barclays assumed no responsibility for and expressed no view as to any such projections or estimates or the assumptions on which they were based. In arriving at its opinion, Barclays did not conduct a physical inspection of the properties and facilities of Orbotech or KLA-Tencor and did not make or obtain any evaluations or

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appraisals of the assets or liabilities of Orbotech or KLA-Tencor. In addition, Barclays was not authorized by Orbotech to solicit, and did not solicit, any indications of interest from any third party with respect to the purchase of all or a part of Orbotech's business. Barclays' opinion was necessarily based upon market, economic and other conditions as they existed on, and could be evaluated as of, March 18, 2018. Barclays assumed no responsibility for updating or revising its opinion based on events or circumstances that may have occurred after March 18, 2018.

Barclays assumed the accuracy of the representations and warranties contained in the Merger Agreement and all the agreements related thereto. Barclays also assumed, upon the advice of Orbotech, that all material governmental, regulatory and third party approvals, consents and releases for the proposed transaction would be obtained within the constraints contemplated by the Merger Agreement and that the proposed transaction will be consummated in accordance with the terms of the Merger Agreement, without waiver, modification or amendment of any material term, condition or agreement thereof. Barclays did not express any opinion as to any tax or other consequences that might result from the proposed transaction, nor did Barclays' opinion address any legal, tax, regulatory or accounting matters, as to which Barclays understood Orbotech had obtained such advice as it deemed necessary from qualified professionals.

In connection with rendering its opinion, Barclays performed certain financial, comparative and other analyses as summarized below. In arriving at its opinion, Barclays did not ascribe a specific range of values to the Orbotech shares but rather made its determination as to fairness, from a financial point of view, to holders of Orbotech shares of the consideration to be offered to such holders in the proposed transaction on the basis of various financial and comparative analyses. The preparation of a fairness opinion is a complex process and involves various determinations as to the most appropriate and relevant methods of financial and comparative analyses and the application of those methods to the particular circumstances. Therefore, a fairness opinion is not readily susceptible to summary description.

In arriving at its opinion, Barclays did not attribute any particular weight to any single analysis or factor considered by it but rather made qualitative judgments as to the significance and relevance of each analysis and factor relative to all other analyses and factors performed and considered by it and in the context of the circumstances of the proposed transaction. Accordingly, Barclays believes that its analyses must be considered as a whole, as considering any portion of such analyses and factors, without considering all analyses and factors as a whole, could create a misleading or incomplete view of the process underlying its opinion.

Summary of Material Financial Analyses

The following is a summary of the material financial analyses used by Barclays in preparing its opinion to the Orbotech Board. The summary of Barclays' analyses and reviews provided below is not a complete description of the analyses and reviews underlying Barclays' opinion. The preparation of a fairness opinion is a complex process involving various determinations as to the most appropriate and relevant methods of analysis and review and the application of those methods to particular circumstances, and, therefore, is not readily susceptible to summary description.

For the purposes of its analyses and reviews, Barclays made numerous assumptions with respect to industry performance, general business, economic, market and financial conditions and other matters, many of which are beyond the control of Orbotech or any other parties to the proposed transaction. No company, business or transaction considered in Barclays' analyses and reviews is identical to Orbotech, KLA-Tencor, Merger Sub or the proposed transaction, and an evaluation of the results of those analyses and reviews is not entirely mathematical. Rather, the analyses and reviews involve complex considerations and judgments concerning financial and operating characteristics and other factors that could affect the acquisition, public trading or other values of the companies,

businesses or transactions considered in Barclays' analyses and reviews. None of Orbotech, KLA-Tencor, Merger Sub, Barclays or any other person assumes responsibility if future results are materially different from those discussed. Any estimates contained in these analyses and reviews and the ranges

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of valuations resulting from any particular analysis or review are not necessarily indicative of actual values or predictive of future results or values, which may be significantly more or less favorable than as set forth below. In addition, analyses relating to the value of companies, businesses or securities do not purport to be appraisals or reflect the prices at which the companies, businesses or securities may actually be sold. Accordingly, the estimates used in, and the results derived from, Barclays' analyses and reviews are inherently subject to substantial uncertainty.

The summaries of the financial analyses and reviews identified below include information presented in tabular format. In order to fully understand the financial analyses and reviews used by Barclays, the tables must be read together with the text of each summary, as the tables alone do not constitute a complete description of the financial analyses and reviews. Considering the data in the tables below without considering the full description of the analyses and reviews, including the methodologies and assumptions underlying the analyses and reviews, could create a misleading or incomplete view of Barclays' analyses and reviews.

Selected Comparable Company Analysis for Orbotech

In order to assess how the public market values shares of publicly traded companies similar to Orbotech and to provide a range of relative implied equity values per Orbotech share by reference to those companies, Barclays reviewed and compared specific financial and operating data relating to Orbotech with that of selected companies that Barclays deemed comparable to Orbotech.

The selected comparable companies were:

Applied Materials, Inc.

ASM International N.V. ADR

BE Semiconductor Industries N.V. ADR

Camtek Ltd.

KLA-Tencor Corporation

Lam Research Corporation

Nanometrics Incorporated

Rudolph Technologies, Inc.

Tokyo Electron Ltd.

Veeco Instruments Inc.

Barclays calculated and compared various financial multiples and ratios of Orbotech and the selected comparable companies. As part of its selected comparable company analysis, Barclays calculated and analyzed each company's enterprise value, or EV, as a multiple of (i) its calendar year 2018 and 2019 estimated revenue and (ii) its calendar year 2018 and 2019 estimated earnings before interest, taxes, depreciation, amortization and stock-based compensation, or adjusted EBITDA. Barclays also calculated and analyzed each company's ratio of its current stock price to its projected non-GAAP earnings per share, or EPS, as adjusted for non-recurring items, amortization of

intangibles and stock-based compensation, or non-GAAP EPS, for each company's calendar year 2018 and 2019. The EV of each company was obtained by adding its short and long-term debt to the sum of the market value of its fully diluted equity value, using the treasury stock method, based on closing stock prices on March 16, 2018, the value of any preferred stock (at liquidation value), the value of any pension liabilities and the book value of any minority interest, and subtracting its cash equivalents and short and long-term liquid investments. All of these calculations for the comparable companies were performed, and based, on generally available financial data and closing prices, as of March 16, 2018, the last trading date prior to the delivery of Barclays' opinion. All of these calculations for KLA-Tencor were performed, and based, on the KLA-Tencor Published Estimates. All of these calculations for Orbotech were performed, and based, on the Orbotech Management Projections and the Orbotech Published Estimates.

Barclays selected the comparable companies listed above because of similarities in one or more business or operating characteristics with Orbotech. However, because no selected comparable company is exactly the same

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as Orbotech, Barclays believed that it was inappropriate to, and therefore did not, rely solely on the quantitative results of the selected comparable company analysis. Accordingly, Barclays also made qualitative judgments concerning differences between the business, financial and operating characteristics and prospects of Orbotech and the selected comparable companies that could affect the public trading values of each in order to provide a context in which to consider the results of the quantitative analysis. These qualitative judgments related primarily to the differing sizes, growth prospects, profitability levels and degree of operational risk between Orbotech and the companies included in the selected company analysis. Based upon these judgments, Barclays selected a range of multiples for Orbotech and applied such range to the Orbotech Management Projections to calculate a range of implied values per Orbotech share. The following summarizes the result of these calculations:

	Selected Multiple Range		Implied Value per Orbotech Share	
EV/CY 2018E Revenue	2.35x	3.15x	\$ 54.88	\$71.79
EV/CY 2019E Revenue	2.05x	2.85x	\$ 52.06	\$70.34
EV/CY 2018E ADJUSTED EBITDA	9.5x	11.5x	\$ 52.12	\$62.00
EV/CY 2019E ADJUSTED EBITDA	9.0x	11.0x	\$ 57.94	\$69.66
P/CY 2018E non-GAAP EPS	13.5x	17.5x	\$ 50.04	\$64.87
P/CY 2019E non-GAAP EPS	12.5x	15.5x	\$ 56.24	\$69.74

For purposes of its opinion, Barclays calculated the implied value, as of March 16, 2018, of the Merger Consideration per Orbotech share to be \$69.02, which was determined by adding the cash portion of the Merger Consideration of \$38.86 per Orbotech share to \$30.16, the implied value of the stock portion of the Merger Consideration per Orbotech share that was derived by multiplying the closing price of \$120.62 per share of KLA-Tencor common stock on March 16, 2018, the last trading day prior to the announcement of the proposed transaction, by the exchange ratio of 0.25 of a share of KLA-Tencor common stock per Orbotech share.

Barclays noted that on the basis of the selected comparable company analysis with respect to Orbotech, the implied value of the Merger Consideration of \$69.02 per share was (i) above the range of implied values per Orbotech share calculated using estimated calendar year 2018 adjusted EBITDA and estimated calendar year 2018 non-GAAP EPS, and (ii) within the range of implied values per Orbotech share calculated using estimated calendar year 2018 and 2019 revenue, estimated calendar year 2019 adjusted EBITDA and estimated calendar year 2019 non-GAAP EPS.

Selected Comparable Company Analysis for KLA-Tencor

In order to assess how the public market values shares of similar publicly traded companies and to provide a range of relative implied equity values per share of KLA-Tencor by reference to those companies, Barclays reviewed and compared specific financial and operating data relating to KLA-Tencor with selected companies that Barclays deemed comparable to KLA-Tencor.

The selected comparable companies were:

Applied Materials, Inc.

ASM International N.V. ADR

ASML Holding NV

Lam Research Corporation

Orbotech Ltd.

Tokyo Electron Ltd.

Barclays calculated and compared various financial multiples and ratios of KLA-Tencor and the selected comparable companies. As part of its selected comparable company analysis, Barclays calculated and analyzed

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each company's EV (calculated as described above), as a multiple of (i) its calendar year 2018 and 2019 estimated revenue and (ii) its calendar year 2018 and 2019 estimated adjusted EBITDA. Barclays also calculated and analyzed each company's ratio of its current stock price to its projected non-GAAP EPS. All of these calculations for the comparable companies were performed, and based, on generally available financial data and closing prices, as of March 16, 2018. All of these calculations for Orbotech were performed, and based, on the Orbotech Management Projections. All of these calculations for KLA-Tencor were performed, and based, on the KLA-Tencor Published Estimates.

Barclays selected the comparable companies listed above because of similarities in one or more business or operating characteristics with KLA-Tencor. However, because no selected comparable company is exactly the same as KLA-Tencor, Barclays believed that it was inappropriate to, and therefore did not, rely solely on the quantitative results of the selected comparable company analysis. Accordingly, Barclays also made qualitative judgments concerning differences between the business, financial and operating characteristics and prospects of KLA-Tencor and the selected comparable companies that could affect the public trading values of each in order to provide a context in which to consider the results of the quantitative analysis. These qualitative judgments related primarily to the differing sizes, growth prospects, profitability levels and degree of operational risk between KLA-Tencor and the companies included in the selected company analysis. Based upon these judgments, Barclays selected a range of multiples for KLA-Tencor and applied such range to the KLA-Tencor Published Estimates to calculate a range of implied values per share of KLA-Tencor common stock. The following summarizes the result of these calculations:

	Selected Multiple Range		Implied Value per Share of KLA-Tencor common stock	
EV/CY 2018E Revenue	3.35x	4.35x	\$	89.25 \$115.41
EV/CY 2019E Revenue	2.85x	3.85x	\$	80.32 \$107.92
EV/CY 2018E ADJUSTED EBITDA	9.5x	11.5x	\$	104.85 \$126.57
EV/CY 2019E ADJUSTED EBITDA	8.5x	10.5x	\$	100.27 \$123.48
P/CY 2018E non-GAAP EPS	12.5x	15.5x	\$	105.89 \$131.30
P/CY 2019E non-GAAP EPS	11.5x	14.5x	\$	104.28 \$131.48

Barclays noted that on the basis of the selected comparable company analysis with respect to KLA-Tencor, the closing price of \$120.62 per share of KLA-Tencor common stock on March 16, 2018, the last trading day prior to the announcement of the proposed transaction, was (i) above the range of implied values per share of KLA-Tencor common stock calculated using estimated calendar year 2018 and 2019 revenue and (ii) within the range of implied values per share of KLA-Tencor common stock calculated using estimated calendar year 2018 and 2019 adjusted EBITDA and estimated calendar year 2018 and 2019 non-GAAP EPS.

Selected Precedent Transaction Analysis

Barclays reviewed and compared the purchase prices and financial multiples paid in selected other transactions that Barclays, based on its experience with merger and acquisition transactions, deemed relevant. Barclays chose such transactions based on, among other things, the similarity of the applicable target companies in the transactions to Orbotech with respect to the size, mix, margins and other characteristics of their businesses.

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As part of its precedent transactions analysis, for each of the selected transactions, based on information Barclays obtained from publicly available information, Barclays analyzed the EV to last-12-months , or LTM, and forward-12-months , or FTM, revenue and to LTM and FTM adjusted EBITDA. The results of this precedent transaction analysis are summarized below:

Date Announced	Acquiror	Target	EV/Revenue		EV/ADJ. EBITDA	
			LTM	FTM	LTM	FTM
4/26/2017	Kohlberg Kravis Roberts & Co. LP	Hitachi Kokusai Electric, Inc. ⁽¹⁾	1.62x	1.42x	15.2x	10.3x
2/2/2017	Veeco Instruments, Inc.	Ultratech, Inc.	2.79x	2.53x	18.6x	16.5x
6/15/2016	ASML Holding NV	Hermes Microvision, Inc.	NM ⁽²⁾	9.33x	NM ⁽²⁾	22.2x
3/16/2016	Coherent, Inc.	Rofin-Sinar Technologies, Inc.	1.57x	1.56x	10.3x	10.4x
2/23/2016	MKS Instruments, Inc.	Newport Corp.	1.65x	1.59x	10.4x	9.0x
2/4/2016	FormFactor, Inc.	Cascade Microtech, Inc.	2.24x	2.17x	12.2x	11.5x
12/1/2015	Beijing E-town	Mattson Technology, Inc.	1.34x	1.96x	12.2x	NM ⁽²⁾
10/21/2015	Lam Research Corp. ⁽³⁾	KLA-Tencor Corp.	4.08x	3.91x	13.0x	11.6x
12/4/2014	Veeco Instruments, Inc.	Solid State Equipment LLC	NA ⁽⁴⁾	2.31x	NA ⁽⁴⁾	10.3x
7/7/2014	Orbotech Ltd.	SPTS Technologies Ltd.	2.37x	1.91x	10.3x	7.6x
4/11/2014	AMETEK, Inc.	Zygo Corp.	1.80x	NA	12.3x	NA
2/4/2014	Entegris, Inc.	ATMI, Inc.	2.83x	2.67x	13.4x	11.4x
9/24/2013	Applied Materials, Inc. ⁽³⁾	Tokyo Electron Ltd.	1.71x	1.23x	NM ⁽²⁾	11.1x
10/17/2012	ASML Holding NV	Cymer, Inc.	4.24x	3.37x	22.4x	17.6x
8/13/2012	Tokyo Electron Ltd.	FSI International, Inc.	1.51x	1.26x	13.0x	7.5x
3/16/2012	Tokyo Electron Ltd.	NEXX Systems, Inc.	2.69x	2.42x	21.2x	15.4x
12/14/2011	Lam Research Corp.	Novellus Systems, Inc.	2.26x	2.67x	8.5x	12.6x
5/4/2011	Applied Materials, Inc.	Varian Semiconductor Equipment Assoc.	3.92x	3.27x	13.8x	11.5x
12/6/2010	Advantest Corp.	Verigy Ltd.	1.11x	0.98x	9.8x	9.8x
		1st Quartile	1.62x	1.57x	10.4x	10.3x
		Median	2.24x	2.24x	12.6x	11.4x
		Mean	2.34x	2.59x	13.5x	12.1x
		3rd Quartile	2.79x	2.67x	14.1x	12.6x

(1) Equity value is based on the revised offer price on November 24, 2017 converted at the applicable spot exchange rate.

(2) Multiples are considered non-meaningful (NM) where EV / Revenue is above 10.0x or EV / adj. EBITDA is above 30.0x.

(3) Transactions were abandoned prior to consummation.

(4) NA stands for not available.

The reasons for and the circumstances surrounding each of the selected precedent transactions analyzed were diverse and there are inherent differences in the business, operations, financial conditions and prospects of each of Orbotech and KLA-Tencor and the companies included in the selected precedent transaction analysis. Accordingly, Barclays believed that a purely quantitative selected precedent transaction analysis would not be particularly meaningful in the context of considering the proposed transaction. Barclays therefore made qualitative judgments concerning differences between the characteristics of the selected precedent transactions and the proposed transaction that would affect the acquisition values of the selected target companies and Orbotech. Based upon these judgments, Barclays selected ranges of multiples for Orbotech and applied such

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ranges to the Orbotech Management Projections to calculate ranges of implied value per Orbotech share. The following table sets forth the results of such analysis:

	Selected		Implied Value	
	Multiple Range		per	
			Orbotech	
			Share	
EV/LTM Revenue	2.50x	3.25x	\$ 50.36	\$63.91
EV/FTM Revenue	2.40x	3.10x	\$ 55.93	\$70.73
EV/LTM ADJUSTED EBITDA	12.5x	15.0x	\$ 52.94	\$62.48
EV/FTM ADJUSTED EBITDA	11.0x	13.0x	\$ 59.53	\$69.41

Barclays noted that on the basis of the selected precedent transaction analysis, the implied value of the Merger Consideration of \$69.02 per Orbotech share was (i) above the range of implied values per Orbotech share calculated using LTM revenue and LTM adjusted EBITDA, and (ii) within the range of implied values per Orbotech share calculated using FTM revenue and FTM adjusted EBITDA.

Discounted Cash Flow Analysis

In order to estimate the present value of Orbotech shares, Barclays performed a discounted cash flow analysis of Orbotech. A discounted cash flow analysis is a traditional valuation methodology used to derive a valuation of an asset by calculating the present value of estimated future cash flows of the asset. Present value refers to the current value of future cash flows or amounts and is obtained by discounting those future cash flows or amounts by a discount rate that takes into account macroeconomic assumptions and estimates of risk, the opportunity cost of capital, expected returns and other appropriate factors.

To calculate the estimated EV of Orbotech using the discounted cash flow method, Barclays added (i) Orbotech's projected after-tax unlevered free cash flows (calculated as described below) for calendar years 2018 through 2021 based on the Orbotech Management Projections to (ii) the terminal value of Orbotech as of the end of calendar year 2021 and discounted such amount to its present value (as of March 16, 2018) using a range of selected discount rates. Barclays used the mid-year convention in its discounted cash flow analysis to more accurately reflect the present value of future cash flows because cash flows are actually earned throughout the year rather than at the end of the year. The after-tax unlevered free cash flows were calculated by taking the after tax non-GAAP operating income of Orbotech, adding depreciation and amortization, subtracting capital expenditures and adjusting for changes in net working capital. The residual value of Orbotech at the end of calendar year 2021, or terminal value, was estimated by selecting a range of estimated FTM adjusted EBITDA exit multiples. Barclays assumed a range of FTM adjusted EBITDA exit multiples of 8.0x to 10.0x, which was derived by Barclays utilizing its professional judgment and experience, taking into account the financial forecasts and market expectations and applying such ranges to the Orbotech Management Projections. The range of after-tax discount rates of 10% to 12% was selected based on an analysis of the weighted average cost of capital of Orbotech and the selected comparable companies used in the Selected Comparable Company Analysis for Orbotech described above. Barclays then calculated a range of implied values per Orbotech share by subtracting net debt as of December 31, 2017 from the estimated EV using the discounted cash flow method and dividing such amount by the fully diluted number of Orbotech shares, calculated using the treasury stock method, and using the number of Orbotech shares, options to purchase Orbotech shares and Orbotech restricted share units outstanding as of March 5, 2018. This analysis implied a range of values per Orbotech share of \$61.81 to \$77.37 based on the range of FTM adjusted EBITDA exit multiples.

Barclays also performed a similar analysis using the same methodology described above, other than that the terminal value was estimated by selecting a range of perpetuity growth rates. Barclays assumed a range of perpetuity growth rates of 3.0% to 4.5%, which was derived by Barclays utilizing its professional judgment and experience, taking into account the financial forecasts and market expectations and applying such ranges to the Orbotech Management Projections. This analysis implied a range of values per Orbotech share of \$52.82 to \$81.04 based on the range of perpetuity growth rates.

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Barclays noted that on the basis of the discounted cash flow analyses performed, the implied value of the Merger Consideration of \$69.02 per Orbotech share was within the range of implied values per Orbotech share calculated using the Orbotech Management Projections, FTM adjusted EBITDA exit multiples and perpetuity growth rates.

Other Factors

Barclays also noted the following additional factors that were not considered part of its financial analyses with respect to its fairness determination, but were referenced for informational purposes:

Research Analysts Price Targets Analysis for Orbotech and KLA-Tencor

Barclays reviewed publicly available research on per share price targets for Orbotech shares and the KLA-Tencor common stock obtained from brokers. The equity research analysts' per share price targets ranged from \$58.00 to \$65.00 for Orbotech and ranged from \$110.00 to \$153.00 for KLA-Tencor. The publicly available per share price targets published by equity research firms do not necessarily reflect the current market trading price of the Orbotech shares or the KLA-Tencor common stock, respectively, and these estimates are subject to uncertainties, including the future financial performance of Orbotech and KLA-Tencor as well as future market conditions.

Historical Share Price Analysis of Orbotech and KLA-Tencor

To illustrate the trend in the historical trading prices of the Orbotech shares, Barclays considered historical data with regard to the trading prices of the Orbotech shares over the 52-week period prior to the announcement of the proposed transaction. During such period, the closing price of Orbotech shares ranged from \$30.59 to \$59.90 per share.

To illustrate the trend in the historical trading prices of the KLA-Tencor common stock, Barclays considered historical data with regard to the trading prices of the KLA-Tencor common stock over the 52-week period prior to the announcement of the proposed transaction. During such period, the closing price of KLA-Tencor common stock ranged from \$88.14 to \$122.39 per share.

Premiums Paid Analysis

In order to assess the premium offered to the holders of Orbotech shares in the proposed transaction relative to the premiums offered to stockholders in other transactions, Barclays reviewed the premiums paid in all electronics mergers and acquisitions transactions valued between \$1.0 billion and \$5.0 billion from January 1, 2010 to March 16, 2018, of which there were 42. For each transaction, Barclays calculated the implied value per share paid by the acquiror by comparing the announced transaction value per share to the target company's: (i) closing price on the last trading day prior to announcement of the transaction or first reference in the public news media about the transaction, and (ii) average closing price for the 30 calendar days prior to announcement of the transaction or first reference in the public news media about the transaction.

The reasons for and the circumstances surrounding each of the transactions analyzed in the transaction premium analysis were diverse and there are inherent differences in the business, operations, financial conditions and prospects of Orbotech, KLA-Tencor and the companies included in the transaction premium analysis. Accordingly, Barclays believed that a purely quantitative transaction premium analysis would not be particularly meaningful in the context of considering the proposed transaction. Barclays therefore made qualitative judgments concerning the differences between the characteristics of the selected transactions and the proposed transaction that would affect the acquisition values of the target companies and Orbotech. Based upon these judgments, Barclays selected a range of premiums to (i) the closing price of the Orbotech shares on March 7, 2018 (the last unaffected trading day prior to the first

reference to a potential sale of Orbotech in the public news media) and

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(ii) the 30-day average of the closing prices of the Orbotech shares ended on March 7, 2018, to calculate a range of implied values per Orbotech share. The following summarizes the result of these calculations:

	Selected Premium Range		Implied Value per Orbotech Share	
1-Day Unaffected Price	16%	45%	\$65.25	\$81.56
30-Day Average Unaffected Price	20%	47%	\$63.14	\$77.35

Barclays noted that on the basis of the transaction premium analysis, the implied Merger Consideration of \$69.02 per Orbotech share was within the range of implied values per Orbotech share calculated using (i) the closing price of the Orbotech shares on March 7, 2018 and (ii) the 30-day average of the closing price of the Orbotech shares ending on March 7, 2018.

General

Barclays is an internationally recognized investment banking firm and, as part of its investment banking activities, is regularly engaged in the valuation of businesses and their securities in connection with mergers and acquisitions, investments for passive and control purposes, negotiated underwritings, competitive bids, secondary distributions of listed and unlisted securities, private placements and valuations for estate, corporate and other purposes. The Orbotech Board selected Barclays because of its familiarity with Orbotech and its qualifications, reputation and experience in the valuation of businesses and securities in connection with mergers and acquisitions generally, as well as substantial experience in transactions comparable to the proposed transaction.

Barclays is acting as financial advisor to Orbotech in connection with the proposed transaction. As compensation for its services in connection with the proposed transaction, Orbotech will pay Barclays a fee for its services, \$1.0 million of which was paid upon the delivery of Barclays' opinion. The remaining amount of the fee due to Barclays, which remaining amount is currently estimated at approximately \$24.5 million, will be payable by Orbotech on completion of the proposed transaction. In addition, Orbotech has agreed to reimburse Barclays for up to a specified amount of its reasonable expenses incurred in connection with the proposed transaction and to indemnify Barclays for certain liabilities that may arise out of its engagement by Orbotech and the rendering of Barclays' opinion. Barclays has performed various investment banking and financial services for Orbotech and KLA-Tencor in the past, and expects to perform such services in the future, and has received, and expects to receive, customary investment banking fees for such services. Specifically, in the past two years, Barclays has performed the following investment banking services: (i) acted as sole bookrunner on Orbotech's \$102 million registered equity block trade offering in June 2016 and (ii) acted as a lender under an existing credit facility for, and provided corporate banking services to, one of Orbotech's subsidiaries.

Barclays, its subsidiaries and its affiliates engage in a wide range of businesses from investment and commercial banking, lending, asset management and other financial and non-financial services. In the ordinary course of its business, Barclays and its affiliates may actively trade and effect transactions in the equity, debt and/or other securities (and any derivatives thereof) and financial instruments (including loans and other obligations) of Orbotech and KLA-Tencor for its own account and for the accounts of its customers and, accordingly, may at any time hold long or short positions and investments in such securities and financial instruments.

Certain Projections of Orbotech

Orbotech historically has publicly made available a multiyear plan. In addition to the multiyear plan, Orbotech has typically provided public guidance for one to two future fiscal quarters, but has been wary of making forecasts or projections for longer periods due to the unpredictability of the underlying assumptions and estimates and lack of long-term visibility. For example, Orbotech provided guidance for revenue growth in 2018 in November of 2017, and revised it substantially in January of 2018. The financial information concerning Orbotech's forecast set forth below is included in this proxy statement/prospectus only because it was made available by Orbotech's management to the Orbotech Board, to Barclays in connection with rendering its fairness

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opinion and related financial analysis to the Orbotech Board, and to KLA-Tencor and its advisors in connection with their due diligence review of Orbotech. Orbotech's management prepared and delivered to Barclays and KLA-Tencor the following projections regarding Orbotech's future operations for the calendar years 2018 through 2021 (the "Orbotech Management Projections"). Orbotech has included below a summary of these forecasts for the purpose of providing shareholders and investors access to certain non-public information that was furnished to third parties and such information may not be appropriate for other purposes. These forecasts were also considered by the Orbotech Board for the purpose of evaluating the Merger.

At the time of preparation, the Orbotech Management Projections were preliminary estimates and did not reflect any of Orbotech's normal quarterly or annual review procedures. In addition, the Orbotech Management Projections were based on Orbotech's then-current multiyear plan and did not take into account fluctuations in Orbotech's product mix or the cyclical nature of the industries in which Orbotech operates. This meant that there was not any assurance (and there remains no assurance) that the final results of the relevant periods would not differ from the estimates of the Orbotech Management Projections, and any such differences could be material. While presented with numeric specificity, the Orbotech Management Projections reflect numerous judgments, estimates and assumptions with respect to industry performance, general business, economic, regulatory, market and financial conditions and other future events, as well as matters specific to Orbotech's business, all of which are inherently subjective, uncertain and difficult to predict and many of which are beyond Orbotech's control. The Orbotech Management Projections are susceptible to multiple interpretations and periodic reevaluations based on actual experience and business developments. As such, the Orbotech Management Projections constitute forward-looking information and are subject to risks and uncertainties that could cause actual results to differ materially from the results forecasted, including risks and uncertainties relating to Orbotech's business (including its ability to achieve strategic goals, objectives and targets over applicable periods), industry performance (including the cyclical nature of the industries in which Orbotech operates), general business and economic conditions and other factors described in this proxy statement/prospectus and in Orbotech's periodic reports incorporated by reference to this proxy statement/prospectus. Please see the sections entitled "Special Note Regarding Forward-Looking Statements" and "Where You Can Find More Information". The Orbotech Management Projections also reflect numerous variables, expectations and assumptions available at the time that they were prepared as to certain business decisions that are subject to change. As a result, actual results may differ materially from those contained in the Orbotech Management Projections.

There can be no assurance that the projected results will be realized or that actual results will not be significantly different than projected. Orbotech's ability to accurately forecast its results has been limited and historically Orbotech has had to revise its public guidance from time to time. Accordingly, the inclusion of a summary of the Orbotech Management Projections in this proxy statement/prospectus should not be regarded as an indication that any of Orbotech, KLA-Tencor or their respective affiliates, advisors or representatives considered the Orbotech Management Projections to be achievable or predictive of any future events, and the Orbotech Management Projections should not be relied upon as such nor should the information contained in the Orbotech Management Projections be considered appropriate for other purposes. None of Orbotech, KLA-Tencor or their respective affiliates, advisors or representatives can give you any assurance that actual results will not differ materially from the Orbotech Management Projections, and none of them undertakes any obligation to update or otherwise revise or reconcile the Orbotech Management Projections to reflect circumstances existing after the date the Orbotech Management Projections were generated or to reflect the occurrence of future events, even in the event that any or all of the assumptions underlying these forecasts are shown to be in error. Since the forecasts cover multiple years, such information by its nature becomes less meaningful and predictive with each successive year. None of Orbotech or its affiliates, advisors, officers, directors or representatives has made or makes any representation to any shareholder or other person regarding Orbotech's ultimate performance compared to the information contained in the Orbotech Management Projections or that the forecasted results will be achieved. Orbotech has made no representation to KLA-Tencor, in the Merger Agreement or otherwise, concerning the Orbotech Management Projections.

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The Orbotech Management Projections do not take into account any circumstances or events occurring after the date they were prepared, including the announcement of the Merger. The Orbotech Management Projections do not take into account the effect of any failure to occur of the Merger and should not be viewed as accurate or continuing in that context.

The Orbotech Management Projections were not prepared with a view toward public disclosure or toward complying with generally accepted accounting principles, the published guidelines of the SEC regarding forecasts or the guidelines established by the American Institute of Certified Public Accountants for preparation and presentation of prospective financial information but, in the view of Orbotech's management, were prepared on a reasonable basis. The Orbotech Management Projections were prepared by, and are the responsibility of, Orbotech's management. Neither Orbotech's independent registered public accounting firm, nor any other independent accountants, have audited, reviewed, examined, compiled or applied agreed upon procedures with respect to the following Orbotech Management Projections, nor have they expressed any opinion or any other form of assurance on such information or its achievability, and they assume no responsibility for, and disclaim any association with, the Orbotech Management Projections. This information is not fact and should not be relied upon as being necessarily indicative of future results, and readers of this document are urged not to place undue reliance on the prospective financial information set forth below. The report of Kesselman incorporated by reference in this proxy statement/prospectus relates to Orbotech's previously issued financial statements. It does not extend to the Orbotech Management Projections and should not be read to do so. Orbotech urges all shareholders to review Orbotech's most recent filings with the SEC for a description of Orbotech's reported financial results. Please see the section entitled [Where You Can Find Additional Information](#).

The inclusion of the Orbotech Management Projections is not deemed an admission or representation by Orbotech that the Orbotech Management Projections are viewed by Orbotech as material information of Orbotech or the surviving company. The Orbotech Management Projections are not included in this proxy statement/prospectus in order to induce any holder of Orbotech shares to approve the Merger Proposal. **ORBOTECH DOES NOT INTEND TO UPDATE OR OTHERWISE REVISE THE ORBOTECH MANAGEMENT PROJECTIONS TO REFLECT CIRCUMSTANCES EXISTING SINCE THEIR PREPARATION OR TO REFLECT THE OCCURRENCE OF UNANTICIPATED EVENTS, EVEN IN THE EVENT THAT ANY OR ALL OF THE UNDERLYING ASSUMPTIONS ARE SHOWN TO BE IN ERROR, OR TO REFLECT CHANGES IN GENERAL ECONOMIC OR INDUSTRY CONDITIONS.**

Subject to the foregoing qualifications, the following is a summary of the Orbotech Management Projections:

ORBOTECH MANAGEMENT PROJECTIONS				
<i>In millions, except per share</i>	2018E	2019E	2020E	2021E
Revenues	\$ 1,054	\$ 1,140	\$ 1,250	\$ 1,394
Non-GAAP Operating Income ⁽¹⁾	\$ 226	\$ 271	\$ 331	\$ 369
Adjusted EBITDA ⁽¹⁾	\$ 246	\$ 292	\$ 353	\$ 392
Non-GAAP Net Income ⁽¹⁾	\$ 185	\$ 225	\$ 276	\$ 310
Non-GAAP EPS ⁽¹⁾	\$ 3.71	\$ 4.50	\$ 5.51	\$ 6.19
Unlevered Free Cash Flow ⁽²⁾	\$ 124	\$ 166	\$ 213	\$ 239

- (1) Non-GAAP Operating Income, Adjusted EBITDA, Non-GAAP Net Income and Non-GAAP EPS are each defined in Orbotech's filings with the SEC. Please see the items incorporated by reference to this proxy statement/prospectus referred to in the section entitled [Where You Can Find More Information](#).

- (2) Unlevered Free Cash Flow is defined as Orbotech's after tax Non-GAAP Operating Income, adding depreciation and amortization, subtracting capital expenditures and adjusting for changes in net working capital.

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Interests of Orbotech Directors and Executive Officers in the Merger

The directors and executive officers of Orbotech may have interests in the transactions contemplated by the Merger Agreement that may be different from, or in addition to, those of the Orbotech shareholders generally. The Orbotech Board was aware of and considered these anticipated interests, among other things, in evaluating the Merger Agreement, the Merger and the other transactions contemplated by the Merger Agreement, and in recommending that Orbotech shareholders approve the Merger Proposal. These interests include:

treatment of Orbotech Equity Awards held by Orbotech directors and executive officers in connection with the Merger, including potential accelerated vesting and payout or settlement of Orbotech Equity Awards in connection with the Closing of the Merger or upon certain qualifying terminations of employment, as applicable (as described below under Treatment of Orbotech Equity Awards in the Merger);

potential cash severance payments and other benefits payable to executive officers and the Active Chairman of the Orbotech Board pursuant to their employment agreements and as otherwise agreed by KLA-Tencor in the event of a resignation or termination of employment following the approval of the Merger by Orbotech s shareholders (as described below under Potential Severance Payments);

extension of eligibility of executive officers to continue to receive severance benefits triggered by the approval of the Merger by Orbotech s shareholders for so long as such executive officer is employed by Orbotech (as described below under Potential Severance Payments);

eligibility of certain executive officers, other than the Chief Executive Officer of Orbotech and the President and Chief Operating Officer of Orbotech, to receive equity-based retention awards, vesting over the two-year period following the Closing, or cash-based retention awards, payable upon the Closing, in each case, subject to the executive officer s continued employment through the applicable payment or vesting date (as described below under Cash-Based and Equity-Based Retention Awards);

post-Closing employment and compensation arrangements for the Active Chairman of the Orbotech Board, the Chief Executive Officer of Orbotech and the President and Chief Operating Officer of Orbotech in connection with the Merger, and certain other retention arrangements for the Chief Executive Officer of Orbotech and the President and Chief Operating Officer of Orbotech (as described below under New Chairman, CEO and COO Employment Compensation Arrangements); and

KLA-Tencor s undertakings with respect to continuing director and officer indemnity arrangements and the purchase of a seven year tail policy on directors and officers insurance (as described below under Indemnification).

Orbotech Shareholdings

As of the close of business on June 6, 2018, the record date for the meeting, directors and officers of Orbotech beneficially owned approximately 8.74% of the issued and outstanding Orbotech shares. For more information, see

the section entitled Security Ownership of Certain Beneficial Owners and Management of Orbotech . Based on a per share value of \$63.69, which equals the average closing price of an Orbotech share over the first five business days immediately following the announcement of the Merger, the aggregate value of such shares held by directors and executive officers of Orbotech (other than Orbotech Equity Awards, described below) is approximately \$266,127,900.

Table of Contents**Treatment of Orbotech Equity Awards**

Each director and executive officer of Orbotech holds outstanding Orbotech Equity Awards that will, in accordance with the Merger Agreement, be treated in the manner described below. For further information with respect to the treatment of Orbotech Equity Awards, see the section entitled "The Merger Agreement Treatment of Orbotech Equity Awards".

Orbotech Restricted Share Unit Awards. Assumed Orbotech RSUs will be assumed by KLA-Tencor and subject to substantially the same terms and conditions as were applicable to such Assumed Orbotech RSUs at the Effective Time (except for any performance-based vesting conditions). The number of shares of KLA-Tencor common stock that are subject to each Assumed Orbotech RSU will be determined by multiplying the number of Orbotech shares subject to such Assumed Orbotech RSU as of immediately prior to the Effective Time (assuming, in the case of an Assumed Orbotech RSU that is subject to performance-based vesting conditions, that any applicable performance goals have been attained at maximum levels) by the Exchange Ratio (as defined in "The Merger Agreement Treatment of the Orbotech Equity Awards"), rounded to the nearest whole number of shares. At the Effective Time, Cancelled Orbotech RSUs will be cancelled and converted into the right to receive the Merger Consideration for each Orbotech share subject to such Cancelled Orbotech RSUs, plus any accrued but unpaid dividends in respect of such Cancelled Orbotech RSUs.

Orbotech Restricted Share Awards. Assumed Orbotech RSAs will be assumed by KLA-Tencor and subject to substantially the same terms and conditions as were applicable to such awards at the Effective Time. The number of shares of KLA-Tencor common stock that are subject to each Assumed Orbotech RSA shall be determined by multiplying the number of Orbotech shares subject to such Assumed Orbotech RSA as of immediately prior to the Effective Time by the Exchange Ratio, rounded to the nearest whole number of shares. Cancelled Orbotech RSAs will be cancelled and converted into the right to receive the Merger Consideration for each Orbotech share subject to such Cancelled Orbotech RSAs, plus any accrued but unpaid dividends in respect of such Cancelled Orbotech RSAs.

Orbotech Options. Assumed Orbotech Options will be assumed by KLA-Tencor and subject to substantially the same terms and conditions as were applicable to such Assumed Orbotech Options immediately prior to the Effective Time (except for any performance-based vesting conditions). The number of shares of KLA-Tencor common stock that are subject to each Assumed Orbotech Option will be determined by multiplying the number of Orbotech shares subject to such Assumed Orbotech Option as of immediately prior to the Effective Time (assuming, in the case of an Assumed Orbotech Option that is subject to performance-based vesting conditions, that any applicable performance goals have been attained at maximum levels) by the Exchange Ratio, rounded down to the nearest whole share. The per share exercise price of each Assumed Orbotech Option will be determined by dividing the applicable exercise price of such Assumed Orbotech Option by the Exchange Ratio, rounded up to the nearest whole cent. Cancelled Orbotech Options will be cancelled and converted into the right to receive the Merger Consideration for each net share (as defined in "The Merger Agreement Treatment of Orbotech Equity Awards") subject to such Cancelled Orbotech Options determined using the KLA-Tencor Average Closing Price (as defined below).

Potential Accelerated Vesting and/or Payout of Assumed Orbotech Equity Awards Upon Certain Terminations of Employment

In the event of a termination of employment without Cause or for Good Reason (each, as defined below) of certain Orbotech employees (including certain of Orbotech's executive officers) during the six months following the Closing, subject to a customary release of claims becoming effective, any then-unvested portion of such employee's Assumed Orbotech RSUs, Assumed Orbotech RSAs and Assumed Orbotech Options, other than any equity-based retention awards, will immediately vest and be exchanged for the right to receive an amount in cash equal to the unvested value of such awards as of the date of such employee's termination. Cause generally means (i) the individual's conviction of, or plea of *nolo contendere* to, a felony; (ii) the

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individual's gross misconduct; (iii) any material act of personal dishonesty taken by the individual in connection with his or her responsibilities as an employee or service provider of the Orbotech or its subsidiaries; or (iv) the individual's willful and continued failure to perform the duties and responsibilities of his or her position after there has been delivered to the individual a written demand for performance from Orbotech or the applicable subsidiary which describes the basis for the belief that the individual has not substantially performed his or her duties and provides the individual with 30 days to take corrective action.

Good Reason generally means, subject to customary notice and cure provisions, a requirement, without the individual's consent, that the individual move his or her primary place of employment or service to a location that is more than 50 kilometers from the location of his or her primary place of employment or service.

In addition, certain executive officers of Orbotech, including the Chief Executive Officer of Orbotech and the President and Chief Operating Officer of Orbotech, are party to equity acceleration agreements or employment agreements that provide for the accelerated vesting of all outstanding Orbotech Equity Awards held by such executive officer in connection with (i) a termination of employment by Orbotech (or any successor company) or by any subsidiary or related company, (ii) a resignation due to an adverse change in the executive officer's position or in circumstances that would result in such resignation being a deemed termination by Orbotech (or any successor company) or any subsidiary or related company pursuant to Section 11(a) of the Israeli Severance Pay Law, 1963), in each case, within 12 months following the approval of the Merger by Orbotech's shareholders or (iii) continued employment as of the 24-month anniversary of the approval of the Merger by Orbotech's shareholders. After the Merger Agreement was signed, in order to achieve its retention objectives, KLA-Tencor has agreed that the Chief Executive Officer of Orbotech and the President and Chief Operating Officer of Orbotech and, with respect to equity awards granted prior to the date hereof, the other such executive officers will be entitled to the benefits described in clause (i) and (ii) upon a termination of employment or resignation for any reason or at any time following the Closing.

Based on the value of an Orbotech share of \$63.69, which equals the average closing price of an Orbotech share over the first five business days immediately following the announcement of the Merger, and assuming that each of the executive officers experienced a qualifying termination of employment (as described above) as of the Effective Time, which, for purposes of this disclosure is assumed to be December 31, 2018, the estimated aggregate value of unvested equity awards held by the executive officers that will vest in connection with a qualifying termination of employment, assuming that no additional Orbotech Equity Awards will be granted between the date of this proxy statement/prospectus and such date, is \$7,900,000.

Director Equity Awards

Under the terms of the Merger Agreement, immediately prior to the Effective Time, Orbotech may accelerate the vesting of any Orbotech Equity Awards granted to Orbotech's directors in accordance with the Directors Annual Equity Award Plan in connection with the annual general meeting of shareholders that precedes the Closing. The Orbotech Board has approved and is seeking Orbotech shareholder approval for such accelerated vesting at Orbotech's 2018 annual general meeting of shareholders (the 2018 Orbotech Annual Meeting), which is scheduled to be held on June 21, 2018. Subject to such shareholder approval and assuming that (i) the annual equity awards granted to each of the Orbotech directors in connection with the 2018 Orbotech Annual Meeting in accordance with Orbotech's Directors Annual Equity Award Plan remain outstanding as of the Effective Time and (ii) the value of an Orbotech share on the date such awards are granted is the same as the value of an Orbotech share as of immediately prior to the Effective Time, the estimated aggregate value of unvested Orbotech Equity Awards held by the Orbotech directors that may accelerate vesting as of immediately prior to the Effective Time is \$675,000.

Potential Severance Payments

Certain of Orbotech's executive officers, including the Chief Executive Officer of Orbotech and the President and Chief Operating Officer of Orbotech, have entered into employment agreements with Orbotech that provide for cash severance payments and benefits in connection with a resignation or termination of employment without cause (as defined in the applicable employment agreement) during the 12-month period following

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shareholder approval of certain change in control transactions (including approval of the Merger by Orbotech's shareholders). Such payments may include an advance notice payment in lieu of notice of up to six months of salary and certain benefits, an adaptation payment of up to six months of base salary and a severance payment equal to an amount ranging between 100% and 200% (based on length of service with Orbotech) of such executive officer's monthly salary and certain benefits multiplied by the number of years such executive officer had been employed by Orbotech prior to such termination. After the Merger Agreement was signed, in order to achieve its retention objectives, KLA-Tencor has agreed that each executive officer will be entitled to an adaptation payment equal to six months of base salary and a severance payment equal to the product of 200% of such executive officer's monthly salary and certain benefits multiplied by the number of years such executive officer had been employed by Orbotech prior to such termination. Such benefits will be payable to each executive officer with respect to the period prior to the Closing upon a termination of employment with Orbotech for any reason (including a resignation by such executive officer), and with respect to the period following the Closing, upon a termination of employment by Orbotech without Cause (as defined in Potential Accelerated Vesting and/or Payout of Assumed Orbotech Equity Awards Upon Certain Terminations of Employment) or a resignation by such executive officer. KLA-Tencor has also agreed that each executive officer will be entitled to the benefits described in this paragraph without giving effect to the 12-month limitation and such benefits will be available as long as the executive officer remains employed by Orbotech.

In addition, the Active Chairman of the Orbotech Board is party to an employment agreement with Orbotech, which provides that upon a termination of employment at any time, Mr. Richter is entitled to receive a lump sum payment equal to 12 months of salary plus certain benefits in effect at the time of termination, as well as a severance payment equal to (i) in the event of his resignation from employment, 150% of his monthly salary and certain benefits multiplied by the number of years he was employed by Orbotech (commencing with his employment by Orbot Systems Ltd. in 1982) or (ii) in the event of a termination of his employment agreement by Orbotech (other than for cause), as defined in his employment agreement), 200% of his monthly salary and certain benefits multiplied by the number of years he was employed by Orbotech (commencing with his employment by Orbot Systems Ltd. in 1982).

Assuming that each of the executive officers, including the Chief Executive Officer of Orbotech and the President and Chief Operating Officer of Orbotech, and the Active Chairman of the Orbotech Board experienced a qualifying termination of employment (as described above) as of the Effective Time, which, for purposes of this disclosure is assumed to be December 31, 2018, the estimated aggregate potential cash severance payments that such executive officers and the Active Chairman of the Orbotech Board may be entitled to receive is approximately \$17,600,000.

Cash-Based and Equity-Based Retention Awards

KLA-Tencor has agreed that certain retention awards may be granted in connection with the Closing of the Merger and that, with respect to the equity portion of such awards, KLA-Tencor will be responsible for granting such awards after the Closing. The cash-based and equity-based retention awards to be granted to employees, other than senior management, have a value of \$24,000,000 in the aggregate, and the cash-based and equity-based retention awards to be granted to certain senior management employees, including Orbotech's executive officers (other than the Active Chairman of the Orbotech Board, the Chief Executive Officer of Orbotech and the President and Chief Operating Officer of Orbotech), have an aggregate value of \$6,000,000. For information about the cash-based and equity-based retention awards to the Active Chairman of the Orbotech Board, the Chief Executive Officer of Orbotech and the President and Chief Operating Officer of Orbotech, see the section entitled New CEO, President and COO and Active Chairman Employment Agreements.

Equity-based retention awards that will be granted to senior management will fully vest on or before the second anniversary of the grant date, subject to the executive officer's continued employment through the applicable vesting date, and will not be subject to accelerated vesting as discussed above in Treatment of Orbotech Equity Awards

Potential Accelerated Vesting and/or Payout of Assumed Orbotech Equity Awards

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Upon Certain Terminations of Employment . Cash-based retention awards will be paid upon the Closing, subject to the executive officer's continued employment through such date.

Any such retention awards will be granted by Orbotech in its sole discretion. As of the date hereof, none of the Orbotech executive officers have been granted any such cash-based or equity-based retention award.

New CEO, President and COO and Active Chairman Employment and Compensation Arrangements***New Levy Employment Agreement***

In order to ensure the continued retention of Asher Levy, the Chief Executive Officer of Orbotech, and in view of the importance of Mr. Levy's role at Orbotech and to the broader business of KLA-Tencor following the Closing, KLA-Tencor and Orbotech have agreed that, immediately following the Closing, KLA-Tencor will cause Orbotech to, and Orbotech will, enter into a new employment agreement with Mr. Levy (the *New Levy Employment Agreement*). Pursuant to the *New Levy Employment Agreement*, following the Closing, Mr. Levy will continue to be employed on a full-time basis as the Chief Executive Officer of Orbotech. On the earlier of six months following the Closing Date and July 1, 2019 (such date, the *Levy Transition Date*), Mr. Levy's employment will transition to part-time status as a Senior Advisor of Orbotech. On and following the *Levy Transition Date*, Mr. Levy will be permitted to engage in full-time employment with another person, firm or company, provided it is not a *Competitor* (as such term is defined in the *New Levy Employment Agreement*). Mr. Levy's employment with Orbotech will terminate on December 31, 2019, unless Mr. Levy and Orbotech agree otherwise in writing.

Prior to the *Levy Transition Date*, Orbotech will continue to pay Mr. Levy a monthly base salary that is the same as Mr. Levy's monthly base salary immediately prior to the Closing Date. Following the *Levy Transition Date*, Orbotech will pay Mr. Levy a monthly base salary of \$15,000, payable in New Israeli Shekels, with the applicable exchange rate determined as provided in the *New Levy Employment Agreement*. In calendar year 2019, Mr. Levy's bonus opportunity will be equal to 100% of his annual base salary as in effect prior to the *Levy Transition Date*. In the event Closing has not occurred as of December 31, 2018, Mr. Levy will be entitled to a bonus payment in accordance with the terms of his current employment arrangement with Orbotech for the period beginning on January 1, 2019 and ending on the Closing Date (payable following preparation of unaudited financial statements with respect to the applicable financial quarters). Such bonus payment will reduce the amount of any additional bonus payment Mr. Levy may become entitled to with respect to calendar year 2019 under the *New Levy Employment Agreement* for the period following the Closing Date. Additionally, not later than 10 business days following the Closing Date, Orbotech will pay Mr. Levy a cash bonus in the amount of \$2,000,000, which will be increased if the Closing Date does not occur by December 31, 2018 (with a corresponding decrease in the value of the *Levy Performance-Based RSUs* and the *Levy Time-Based RSUs* (in each case, as defined below)). Mr. Levy will also be permitted to participate in the employee benefit arrangements that Orbotech makes available to its senior executives and receive certain other benefits consistent with Mr. Levy's current employment agreement with Orbotech. On the Closing Date, Mr. Levy will be granted (i) an award of performance-based restricted stock units settled in shares of KLA-Tencor common stock with a target value of \$3,000,000 on the date of grant (the *Levy Performance-Based RSUs*), and (ii) an award of time-based restricted stock units settled in shares of KLA-Tencor common stock with a value of \$2,000,000 on the date of grant (the *Levy Time-Based RSUs*). The *Levy Performance-Based RSUs* will vest at up to a maximum amount of 200% of target on the earlier of (1) 12 months following the Closing Date, or (2) December 31, 2019, subject to Mr. Levy's continuing employment or service (including as a Senior Advisor) through such date based on the level of Orbotech's achievement of certain performance objectives as specified in the *New Levy Employment Agreement*. 50% of the *Levy Time-Based RSUs* will vest on the *Levy Transition Date*, and the remaining 50% of the *Levy Time-Based RSUs* will vest on the earlier of (X) 12 months following the Closing Date, or (Y) December 31, 2019, in each instance subject to Mr. Levy's continuing employment or service (including as a Senior Advisor) through such date

(except as otherwise provided in the New Levy Employment Agreement). If Mr. Levy is terminated by the Company without Cause (as defined in Potential Accelerated Vesting and/or Payout of Assumed Orbotech Equity Awards Upon Certain Terminations of Employment), and

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Mr. Levy executes and delivers a release agreement, any outstanding Levy Performance-Based RSUs and Levy Time-Based RSUs will be cancelled and Orbotech will pay Mr. Levy an amount in cash equal to the target value of any unvested Levy Performance-Based RSUs and Levy Time-Based RSUs, payable in New Israeli Shekels with the applicable exchange rate determined as provided in the New Levy Employment Agreement.

The term of Mr. Levy's employment will begin on the Closing Date and will continue until December 31, 2019 unless either Mr. Levy or Orbotech provides the other party with six months' prior written notice. Orbotech may also terminate Mr. Levy's employment prior to the end of such notice period by providing an advance notice payment, in lieu of notice, of six months of base salary and benefits (the Levy Advanced Notice Payment). Orbotech may terminate Mr. Levy's employment at any time without having to provide the Levy Advanced Notice Payment if Mr. Levy is terminated for Cause.

In the event of a termination of employment with Orbotech for any reason (including a resignation by Mr. Levy), Mr. Levy will be entitled to (i) a lump sum payment equal to the product of 200% of his monthly salary in effect prior to the Levy Transition Date multiplied by the number of years of Mr. Levy's service with Orbotech until the Closing Date and (ii) an adaptation payment equal to six months of base salary in effect prior to the Levy Transition Date. In addition, in the event of a termination of employment by Orbotech without Cause (as defined in the New Levy Employment Agreement) or a resignation by Mr. Levy for any reason, Mr. Levy will additionally be entitled to the product of 200% of his monthly salary in effect prior to the Levy Transition Date multiplied by the number of years following the Closing Date until the date of such termination. Mr. Levy will additionally be entitled to the equity acceleration termination benefits with respect to his outstanding equity-based awards, other than the Levy Performance-Based RSUs and the Levy Time-Based RSUs, as described in the section entitled Potential Accelerated Vesting and/or Payout of Assumed Orbotech Equity Awards Upon Certain Terminations of Employment, upon (i) a termination of employment by Orbotech or a resignation at any time prior to the expiration of the term of Mr. Levy's employment or (ii) Mr. Levy's continued employment with Orbotech (including as Senior Advisor) as of the 24-month anniversary of the approval of the Merger by Orbotech's shareholders. Further, if Mr. Levy remains in continuous employment with Orbotech through December 31, 2019, Mr. Levy will be eligible to receive the separation benefits described in this paragraph, as well as the Levy Advanced Notice Payment on any subsequent termination of employment. The severance payments and benefits described in this paragraph will additionally be paid on any termination of employment as a result of death or disability.

New Steimberg Employment Agreement

In order to ensure the continued retention of Amichai Steimberg, the President and Chief Operating Officer of Orbotech, and in view of the importance of Mr. Steimberg's role at Orbotech and to the broader business of KLA-Tencor following the Closing, KLA-Tencor and Orbotech have agreed that, immediately following the Closing, KLA-Tencor will cause Orbotech to, and Orbotech will, enter into a new employment agreement with Mr. Steimberg (the New Steimberg Employment Agreement). Pursuant to the New Steimberg Employment Agreement, following the Closing, Mr. Steimberg will continue to be employed on a full-time basis as the President and Chief Operating Officer of Orbotech, except that, as of the Levy Transition Date, Mr. Steimberg's title will change to Chief Executive Officer of Orbotech. On the earlier of 18 months following the Closing Date and July 1, 2020 (the Steimberg Transition Date), Mr. Steimberg's employment will transition to part-time status as a Senior Advisor of Orbotech. Mr. Steimberg's employment with Orbotech will terminate on December 31, 2020, unless Mr. Steimberg and Orbotech agree otherwise in writing.

Prior to the Steimberg Transition Date, Orbotech will continue to pay Mr. Steimberg a monthly base salary that is the same as Mr. Steimberg's monthly base salary immediately prior to the Closing Date. Following the Steimberg Transition Date, Orbotech will pay Mr. Steimberg a monthly base salary of \$15,000, payable in New Israeli Shekels,

with the applicable exchange rate determined as provided in the New Steimberg Employment Agreement. In calendar years 2019 and 2020, Mr. Steimberg's bonus opportunity will be equal to 100% of his annual base salary as in effect prior to the Steimberg Transition Date. With respect to calendar year 2019, in the

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event Closing has not occurred as of December 31, 2018, Mr. Steimberg will be entitled to a bonus payment in accordance with the terms of his current employment arrangement with Orbotech for the period beginning on January 1, 2019 and ending on the Closing Date (payable following preparation of unaudited financial statements with respect to the applicable financial quarters). Such bonus payment will reduce the amount of any additional bonus payment Mr. Steimberg may become entitled to with respect to calendar year 2019 under the New Steimberg Employment Agreement for the period following the Closing Date. Additionally, no later than ten business days following the Closing Date, Orbotech will pay Mr. Steimberg a cash bonus in the amount of \$1,500,000, which will be increased if the Closing Date does not occur by December 31, 2018 (with a corresponding decrease in the value of the Steimberg Performance-Based RSUs and the Steimberg Time-Based RSUs (in each case, as defined below)). Mr. Steimberg will also be permitted to participate in the employee benefit arrangements that Orbotech makes available to its senior executives and receive certain other benefits consistent with Mr. Steimberg's current employment agreement with Orbotech.

On the Closing Date Mr. Steimberg will be granted (i) an award of performance-based restricted stock units settled in shares of KLA-Tencor common stock with a target value of \$3,600,000 on the date of grant (the Steimberg Performance-Based RSUs), and (ii) an award of time-based restricted stock units settled in shares of KLA-Tencor common stock with a value of \$2,400,000 on the date of grant (the Steimberg Time-Based RSUs). One half of the Steimberg Performance-Based RSUs will vest at up to a maximum amount of 200% of target on the earlier of (1) 12 months following the Closing Date, or (2) December 31, 2019, and one half of the Steimberg Performance-Based RSUs will vest at up to a maximum amount of 200% of target on the earlier of (a) 24 months following the Closing Date, or (b) December 31, 2020, in each case, based on the level of Orbotech's achievement of certain performance objectives as specified in the New Steimberg Employment Agreement and subject in each instance to Mr. Steimberg's continuing employment or service (including as a Senior Advisor) through such date. 50% of the Steimberg Time-Based RSUs will vest on the earlier of (I) 12 months following the Closing Date, or (II) December 31, 2019, and the remaining 50% of the Steimberg Time-Based RSUs will vest on the earlier of (X) 24 months following the Closing Date or (Y) December 31, 2020, in each instance subject to Mr. Steimberg's continuing employment or service (including as a Senior Advisor) through such date (except as otherwise provided in the New Steimberg Employment Agreement). If Mr. Steimberg is terminated by the Company without Cause (as defined in Potential Accelerated Vesting and/or Payout of Assumed Orbotech Equity Awards Upon Certain Terminations of Employment), and Mr. Steimberg executes and delivers a release agreement, any outstanding Steimberg Performance-Based RSUs and Steimberg Time-Based RSUs will be cancelled and Orbotech will pay Mr. Steimberg an amount in cash equal to the target value of any unvested Steimberg Performance-Based RSUs and Steimberg Time-Based RSUs, payable in New Israeli Shekels with the applicable exchange rate determined as provided in the New Steimberg Employment Agreement.

The term of Mr. Steimberg's employment will begin on the Closing Date and will continue until December 31, 2020 unless either Mr. Steimberg or Orbotech provides the other party with six months' prior written notice. Orbotech may also terminate Mr. Steimberg's employment prior to the end of such notice period by providing an advance notice payment, in lieu of notice, of six months of base salary and benefits (the Steimberg Advanced Notice Payment). In addition, Orbotech may terminate Mr. Steimberg's employment at any time without having to provide the Steimberg Advanced Notice Payment if Mr. Steimberg is terminated for Cause.

In the event of a termination of employment with Orbotech for any reason (including a resignation by Mr. Steimberg), Mr. Steimberg will be entitled to (i) a lump sum payment equal to the product of 200% of his monthly salary in effect prior to the Steimberg Transition Date multiplied by the number of years of Mr. Steimberg's service with Orbotech until the Closing Date and (ii) an adaptation payment equal to six months of base salary in effect prior to the Steimberg Transition Date. In addition, in the event of a termination of employment by Orbotech without Cause (as defined in the New Steimberg Employment Agreement) or a resignation by Mr. Steimberg for any reason,

Mr. Steimberg will additionally be entitled to the product of 200% of his monthly salary in effect prior to the Steimberg Transition Date multiplied by the number of years following the Closing Date until the date of such termination. Mr. Steimberg will additionally be entitled to the

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equity acceleration termination benefits with respect to his outstanding equity-based awards, other than the Steimberg Performance-Based RSUs and the Steimberg Time-Based RSUs, as described in the section entitled Potential Accelerated Vesting and/or Payout of Assumed Orbotech Equity Awards Upon Certain Terminations of Employment, upon (i) a termination of employment by Orbotech or a resignation at any time prior to the expiration of the term of Mr. Steimberg's employment, or (ii) Mr. Steimberg's continued employment with Orbotech (including as Senior Advisor) as of the 24-month anniversary of the approval of the Merger by Orbotech's shareholders. Further, if Mr. Steimberg remains in continuous employment with Orbotech through December 31, 2020, Mr. Steimberg will be eligible to receive the separation benefits described in this paragraph, as well as the Steimberg Advanced Notice Payment, on any subsequent termination of employment. The severance payments and benefits described in this paragraph will additionally be paid on any termination of employment as a result of death or disability.

New Richter Employment Agreement

In order to ensure the continued retention of Yochai Richter, the Active Chairman of the Orbotech Board of Directors, KLA-Tencor and Orbotech have agreed that, immediately following the Closing, KLA-Tencor will cause Orbotech to, and Orbotech will, enter into a new employment agreement with Mr. Richter (the New Richter Employment Agreement). Pursuant to the New Richter Employment Agreement, following the Closing, Mr. Richter will continue to be employed on a part-time basis by Orbotech in the position of Senior Advisor. Mr. Richter's employment with Orbotech will terminate on December 31, 2020, unless Mr. Richter and Orbotech agree otherwise in writing.

During the term of the New Richter Employment Agreement, Orbotech will pay Mr. Richter a monthly base salary of \$33,000, payable in New Israeli Shekels, with the applicable exchange rate determined as provided in the New Richter Employment Agreement. In addition, in the event Closing has not occurred as of December 31, 2018, Mr. Richter will be entitled to a bonus payment in accordance the terms of his current employment arrangement with Orbotech for the period beginning on January 1, 2019 and ending on the Closing Date (payable following preparation of unaudited financial statements with respect to the applicable financial quarters). Mr. Richter will also be permitted to participate in the employee benefit arrangements that Orbotech makes available to its senior executives and receive certain other benefits consistent with Mr. Richter's current employment agreement with Orbotech.

The term of Mr. Richter's employment will begin on the Closing Date and will continue until December 31, 2020, unless either Mr. Richter or Orbotech provides the other party with 60 days' prior written notice. Orbotech may also terminate Mr. Richter's employment prior to the end of such notice period by providing an advance notice payment, in lieu of notice, of 60 days of base salary and benefits (the Richter Advanced Notice Payment). In addition, Orbotech may terminate Mr. Richter's employment at any time without having to provide the Richter Advanced Notice Payment if Mr. Richter is terminated for Cause (as defined in Potential Accelerated Vesting and/or Payout of Assumed Orbotech Equity Awards Upon Certain Terminations of Employment).

In the event of a termination of employment by Orbotech, or Mr. Richter's resignation, in each case, for any reason, Mr. Richter will be entitled to (i) a lump sum payment equal to the product of 200% of his monthly salary in effect prior to the Closing Date multiplied by the number of years of Mr. Richter's service with Orbotech until the Closing Date and (ii) an adaptation payment equal to 12 months base salary and certain benefits. In addition, in the event of (1) a termination of employment by Orbotech without Cause (as defined in the New Richter Employment Agreement), Mr. Richter will additionally be entitled to a lump sum payment equal to the product of 200% of his monthly salary in effect prior to the Closing Date multiplied by the number of years following the Closing Date until the date of such termination or (2) in the event of a resignation by Mr. Richter, Mr. Richter will additionally be entitled to a lump sum payment equal to the product of 150% of his monthly salary in effect prior to the Closing Date multiplied by the number of years following the Closing Date until the date of such termination. Further, if Mr. Richter remains in continuous employment with Orbotech through December 31, 2020, Mr. Richter will be eligible to receive the

separation benefits described in this paragraph, as well as the

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Richter Advanced Notice Payment, on any subsequent termination of employment. The severance payments and benefits described in this paragraph will additionally be paid on any termination of employment as a result of death or disability.

The descriptions of the New Levy Employment Agreement, the New Steimberg Employment Agreement and the New Richter Employment Agreement above are summaries of the principal economic terms of such agreements and are not intended to be a complete description of the agreements.

In addition, pursuant to the approval of the Orbotech Board, at the 2018 Orbotech Annual Meeting scheduled to be held on June 21, 2018, Orbotech is seeking shareholder approval of certain retention arrangements for each of the Chief Executive Officer of Orbotech and the President and Chief Operating Officer of Orbotech to be granted in the event the Merger Agreement terminates prior to the Closing. This proxy statement/prospectus is not soliciting votes for the 2018 Orbotech Annual Meeting and a separate proxy statement relating to the 2018 Orbotech Annual Meeting was made available to Orbotech shareholders on or about May 17, 2018. See the section entitled [Where You Can Find More Information](#) .

Indemnification

Directors and executive officers of Orbotech also have rights to indemnification and directors and officers liability insurance that will survive completion of the Merger. See the section entitled [The Merger Agreement Directors and Officers Indemnification and Insurance](#) .

KLA-Tencor Board of Directors Following the Merger

There will be no change to the KLA-Tencor board of directors following the Merger.

Competition Clearances Required for the Merger

KLA-Tencor and Orbotech are required to submit notifications to various competition authorities prior to completing the Merger. With respect to the United States, the 30-day waiting period under the HSR Act, related to the Merger has expired. In addition, the Israel Antitrust Authority has granted KLA-Tencor's request for an exemption from any premerger notification requirement in Israel related to the Merger and the German Federal Cartel Office, the Austrian Federal Competition Authority and the Taiwanese Fair Trade Commission have respectively cleared or waived jurisdiction over the Merger. The Closing remains subject to the exemption or approval of applicable government entities under the antitrust laws of China, Korea and Japan.

While KLA-Tencor and Orbotech expect to obtain all required regulatory clearances, KLA-Tencor and Orbotech cannot assure you that the antitrust regulators or other government agencies, including state attorneys general or private parties, will not initiate actions to challenge the Merger before or after it is completed. Any such challenge to the Merger could result in an administrative or court order enjoining the Merger or in restrictions or conditions that would have a material adverse effect on the combined company if the Merger is completed. Such restrictions and conditions could include requiring the divestiture or spin-off of assets or businesses, the required licensing of intellectual property rights, or limitations on the ability of the combined company to operate its business as it sees fit. Neither KLA-Tencor nor Orbotech can provide assurance that any such conditions, terms, obligations or restrictions will not result in the delay or abandonment of the Merger.

Procedures for Surrendering Orbotech Shares in the Merger

Following the Effective Time, American Stock Transfer & Trust Company, LLC, the exchange agent, will mail to each Orbotech shareholder, other than holders of Orbotech 102 Shares, certain instructions regarding surrendering the Orbotech shares whether they are certificated or not and making required certifications of the applicability of tax withholding. Orbotech Equity Awards that are being cancelled and converted into Merger Consideration will be processed through payroll. Orbotech 102 Shares and 102 Compensatory Awards or other equity held by the 102 Trustee will receive instructions from the 102 Trustee.

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If you are an Orbotech shareholder with Orbotech shares held in street name, which means your Orbotech shares are held in an account at a broker, bank or other nominee, you will receive instructions from your broker, bank or other nominee.

For further information, see Merger Agreement Exchange Agent; Letter of Transmittal.

Dividend Policy

The Merger Agreement provides that no dividends or other distributions with a record date after the Effective Time with respect to KLA-Tencor common stock will be paid to the holder of any Orbotech shares until such holder properly surrenders its shares in accordance with the procedures described in section entitled Exchange Agent; Letter of Transmittal. After proper surrender, KLA-Tencor will cause such holder to be paid, without interest, (1) at the time of the proper surrender the amount of dividends or other distributions with a record date after the Effective Time and theretofore paid with respect to such shares of KLA-Tencor common stock to which such holder is entitled pursuant to the Merger Agreement and (2) at the appropriate payment date, the amount of dividends or other distributions (a) with a record date after the Effective Time but prior to such surrender and (b) with a payment date subsequent to such surrender payable with respect to such shares of KLA-Tencor common stock.

Listing of Additional Shares of KLA-Tencor Common Stock

KLA-Tencor shall use its reasonable best efforts to cause the shares of KLA-Tencor common stock to be issued in the Merger to be approved for listing on NASDAQ, subject to official notice of issuance, prior to the Effective Time.

De-Listing and Deregistration of Orbotech Shares

If the Merger is completed, the Orbotech shares will be delisted from NASDAQ and deregistered under the Exchange Act, and Orbotech shares will no longer be publicly traded.

Appraisal Rights

Under Israeli law, holders of Orbotech shares are not entitled to statutory appraisal rights in connection with the Merger.

Litigation Related to the Merger

On June 4, 2018, Orbotech, KLA-Tencor, Merger Sub and each of the members of the Orbotech Board were named as defendants in an action in the United States District Court for the District of Delaware (the Franchi Action). The Franchi Action was brought on behalf of a putative class of Orbotech shareholders, alleges certain violations of the Securities Exchange Act of 1934 and seeks, among other things, attorneys' fees and injunctive relief to prevent the Merger from being consummated or, in the event that the Merger is consummated, rescissory damages. Each of Orbotech, KLA-Tencor and Merger Sub believes that the Franchi Action lacks merit and intends to defend against it vigorously.

Table of Contents**THE MERGER AGREEMENT**

The following discussion summarizes material provisions of the Merger Agreement entered into by KLA-Tencor, Merger Sub and Orbotech. This summary does not propose to be complete and is qualified in its entirety by reference to the Merger Agreement, which is attached as Annex A to this proxy statement/prospectus and is incorporated by reference herein. The rights and obligations of the parties are governed by the express terms and conditions of the Merger Agreement and not by this summary. The Merger Agreement should not be read alone, but should instead be read in conjunction with the other information provided elsewhere in this proxy statement/prospectus, including the annexes and the documents incorporated by reference into this proxy statement/prospectus, before making any decisions regarding the Merger.

The Merger Agreement is described in this proxy statement/prospectus only to provide you with information regarding its terms and conditions and is not intended to provide any factual information about KLA-Tencor, Orbotech or their respective businesses. The representations, warranties and covenants contained in the Merger Agreement have been made solely for the benefit of the parties to the Merger Agreement. In addition, such representations, warranties and covenants: (1) have been made only for purposes of the Merger Agreement; (2) have been qualified by certain disclosures made by the parties to one another not reflected in the text of the Merger Agreement; (3) may be subject to materiality qualifications contained in the Merger Agreement which may differ from what may be viewed as material by you; (4) were made only as of March 18, 2018 or dates specified in the Merger Agreement; and (5) have been included in the Merger Agreement for the purpose of allocating risk between the contracting parties rather than establishing matters as facts. Accordingly, the summary of the Merger Agreement is included in this proxy statement/prospectus only to provide you with information regarding the terms of the Merger and not to provide you with any other factual information regarding KLA-Tencor, Orbotech or their respective businesses. Moreover, information concerning the subject matter of the representations, warranties and covenants may change after March 18, 2018, which subsequent information may or may not be fully reflected in KLA-Tencor's or Orbotech's public disclosures.

The Merger

On March 18, 2018, KLA-Tencor, Orbotech and Merger Sub (Merger Sub) entered into the Merger Agreement, pursuant to which KLA-Tencor agreed to acquire Orbotech by way of a merger of Merger Sub with and into Orbotech, with Orbotech surviving the Merger as a wholly owned subsidiary of KLA-Tencor (the Surviving Company). The Surviving Company shall (i) be governed by the Laws of the State of Israel; (ii) maintain a registered office in the State of Israel; and (iii) succeed to and assume all of the rights, properties and obligations of Merger Sub and Orbotech in accordance with the provisions of Sections 314-327 of the ICL.

On May 11, 2018, KLA-Tencor, Orbotech and Merger Sub entered into an amendment (the Amendment) to the Merger Agreement. The Amendment: (i) clarified that the Excluded Shares (as defined below) would remain outstanding through the Effective Time of the Merger, (ii) provided that Merger Sub (and, as a result of the Merger, the Surviving Company) may be a wholly owned direct or indirect subsidiary of KLA-Tencor, and (iii) contained an acknowledgment that the confirmation received from the Israeli Investment Center of the Israeli Ministry of Economy (the Investment Center) that the approval of the Investment Center is not required with respect to the change in ownership of the Company to be effected by the Merger was sufficient to satisfy the closing condition relating to Investment Center approval, unless such confirmation is revoked, withdrawn, or amended by the Investment Center prior to Closing.

Structure of the Merger

The Merger Agreement provides for the Merger, in which Merger Sub will be merged with and into Orbotech, with Orbotech surviving the Merger as a wholly owned subsidiary of KLA-Tencor.

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After the completion of the Merger, Orbotech's Charter Documents in effect immediately prior to completion of the Merger will be the memorandum of association and articles of association, respectively, of Orbotech as the surviving corporation of the Merger, and the directors and officers of Merger Sub immediately prior to the completion of the Merger will be the directors and officers, respectively, of Orbotech as the surviving corporation in the Merger.

Merger Consideration

Each ordinary share, New Israeli Shekels (NIS) 0.14 nominal (par) value per share, of Orbotech (an Orbotech share) issued and outstanding immediately prior to the consummation of the Merger (except for Orbotech shares held in the treasury of Orbotech, reserved for future grants under Orbotech's employee and director equity compensation plans, owned on behalf of Orbotech by the trustee appointed by Orbotech from time to time in accordance with the provisions of the ITO (the 102 Trustee) or held by KLA-Tencor or any direct or indirect wholly-owned subsidiary of Orbotech or KLA-Tencor (collectively, the Excluded Shares)) will be converted into the right to receive, without interest and less any applicable withholding taxes, (a) \$38.86 in cash (the Cash Consideration) plus (b) 0.25 of a share of KLA-Tencor common stock (the Stock Consideration, and, together with the Cash Consideration, the Merger Consideration) in each case upon the terms and subject to the conditions and restrictions set forth in the Merger Agreement.

In lieu of any fractional share of KLA-Tencor common stock that otherwise would be issuable pursuant to the Merger, each holder of Orbotech shares who otherwise would be entitled to receive a fraction of a share of KLA-Tencor common stock pursuant to the Merger will be paid an amount in cash (without interest) equal to (i) the fraction of a share of KLA-Tencor common stock to which such holder would otherwise be entitled multiplied by (ii) KLA-Tencor Average Closing Price.

In the Merger Agreement, the KLA-Tencor Average Closing Price is defined as the volume-weighted average of the trading prices on NASDAQ of shares of KLA-Tencor common stock (as reported by Bloomberg L.P. or, if not reported by Bloomberg L.P., in another authoritative source mutually selected by the parties) for the ten most recent days ending on (and including) the last trading day immediately prior to the date on which the Effective Time occurs.

Closing and Effective Time

Unless the Merger Agreement is terminated, the consummation of the Merger shall take place on a date to be agreed upon by KLA-Tencor, Merger Sub and Orbotech, which shall be no later than the second business day following the satisfaction or waiver (to the extent permitted in the Merger Agreement) of the last to be satisfied or waived of the conditions to Closing (other than those conditions that by their nature are to be satisfied at Closing, but subject to the satisfaction or waiver (to the extent permitted in the Merger Agreement), of those conditions), or on such other date as KLA-Tencor, Merger Sub and Orbotech may mutually agree in writing.

As soon as practicable after the determination of the date on which Closing is to take place in accordance with the Merger Agreement, each of Orbotech and Merger Sub shall, in coordination with each other, deliver to the Companies Registrar of the State of Israel (the Registrar) a notice of the contemplated Merger and the proposed date of the Closing, in which the parties shall request that the Registrar issue a certificate evidencing the Merger in accordance with Section 323(5) of the ICL (the Certificate of Merger) on the date that the parties shall provide notice to the Registrar that the Closing has occurred, and the parties shall deliver such notice to the Registrar on the Closing Date. The Merger shall become effective upon the issuance by the Registrar of the Certificate of Merger in accordance with Section 323(5) of the ICL.

Table of Contents**Exchange Agent; Letter of Transmittal**

Prior to the Effective Time, KLA-Tencor shall (i) designate a bank or trust company reasonably acceptable to Orbotech to act as the payment agent for the Merger (the **Paying Agent**); (ii) enter into and deliver to Orbotech an agreement with the Paying Agent in a form to be agreed by Orbotech and KLA-Tencor (**Paying Agent Agreement**); and (iii) at the request of Orbotech, engage an information and paying agent reasonably acceptable to Orbotech and KLA-Tencor (the **Information Agent**) to assist in obtaining any requisite residency certificate or other declaration for Israeli Tax withholding purposes and, in connection therewith, shall enter into an agreement with the Information Agent in a form reasonably satisfactory to the Orbotech.

On the Closing Date, KLA-Tencor shall deposit (or cause to be deposited) with the Paying Agent, the Information Agent, or if KLA-Tencor so elects, the 102 Trustee or another entity reasonably acceptable to Orbotech (any, or any combination, of the foregoing, the **Exchange Fund Agent**) for payment to (i) the holders of Orbotech shares pursuant to the provisions of the Merger Agreement (excluding Orbotech shares issued upon the exercise or settlement of Orbotech Equity Award granted under Section 102 of the ITO (**Orbotech 102 Shares**) and excluding any Orbotech shares otherwise held by the 102 Trustee); (ii) the holders of Orbotech 102 Shares and 102 Compensatory Awards (other than 102 Compensatory Awards which are Assumed Orbotech Options, Assumed Orbotech RSUs or Assumed Orbotech RSAs) and the holders of Orbotech shares and Orbotech Equity Awards otherwise held by the 102 Trustee, in each case in respect of which KLA-Tencor shall cause payment to be made by the Exchange Fund Agent to the 102 Trustee; and (iii) the holders of Orbotech Equity Awards (other than 102 Compensatory Awards, Orbotech Equity Awards otherwise held by the 102 Trustee, the Assumed Orbotech Options, the Assumed Orbotech RSA and the Assumed Orbotech RSUs), in respect of which KLA-Tencor shall cause payment to be made by the Exchange Fund Agent to Orbotech pursuant to the Merger Agreement, (A) evidence of KLA-Tencor common stock issuable pursuant to the Merger in book-entry form sufficient to pay the aggregate Stock Consideration, (B) by transfer of immediately available funds, an amount of cash sufficient to pay the aggregate Cash Consideration, and (C) by transfer of immediately available funds, an amount of cash sufficient to pay any fractional cash amounts due to the holders of Orbotech shares under the Merger Agreement (such amount referenced in clauses (B) and (C) together with the evidence of book-entry shares of KLA-Tencor common stock, the **Exchange Fund**).

KLA-Tencor shall be responsible for all fees and expenses of the Exchange Fund Agent. The Exchange Fund, once deposited with the Exchange Fund Agent, shall, pending its disbursement to the holders of Orbotech shares (other than the Orbotech 102 Shares), Orbotech (for the benefit of holders of Orbotech Equity Awards (other than the 102 Compensatory Awards)) and the 102 Trustee (for the benefit of holders of Orbotech 102 Shares and 102 Compensatory Awards and of any Orbotech shares and Orbotech Equity Awards otherwise held by the 102 Trustee), be held in trust for the benefit of such holders and shall not be used for any other purpose.

Promptly following the Effective Time, KLA-Tencor and the Surviving Company shall cause the Exchange Fund Agent to mail to each holder, as of immediately prior to the Effective Time, of (x) a certificate or certificates (the **Certificates**) that immediately prior to the Effective Time represented outstanding Orbotech shares and (y) uncertificated Orbotech shares (the **Uncertificated Shares**), in each case whose shares were converted into the right to receive the Merger Consideration pursuant to the Merger Agreement other than Orbotech 102 Shares (A) a letter of transmittal in customary form (which shall be approved by Orbotech and shall specify that delivery shall be effected, and risk of loss and title to such Orbotech shares shall pass, only upon delivery of (1) the Certificates (or affidavits of loss in lieu thereof) or (2) an acknowledgment of the conversion of such holder's Uncertificated Shares into the right to receive the Merger Consideration, as the case may be, to the Exchange Fund Agent) (the **Letter of Transmittal**); (B) a declaration in which the beneficial owner of Orbotech shares provides certain information necessary for KLA-Tencor to determine whether any amounts need to be withheld from the Merger Consideration payable to such beneficial owner pursuant to the terms of the ITO (in each case, subject to the provisions of the Merger Agreement), the Code, or

any applicable provision of state, local, Israeli, U.S. or other Law, and (C) instructions for use in effecting the surrender of the Certificates or acknowledging the conversion of the Uncertificated Shares into the right to receive the Merger

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Consideration payable in respect thereof pursuant to the provisions of the Merger Agreement including, in the case of the Uncertificated Shares, instructions for identifying the deposit account through which such Uncertificated Shares are held. Upon delivery to the Exchange Fund Agent of the Letter of Transmittal and the declaration for Tax withholding purposes or a Valid Tax Certificate, duly completed and validly executed in accordance with the instructions thereto, and, if applicable, surrender of Certificates (or affidavit of loss in lieu thereof) for cancellation to the Exchange Fund Agent, the holders of such Certificates or Uncertificated Shares, as applicable, shall be entitled to receive in exchange therefor an amount in cash equal to the Cash Consideration to which the holder thereof is entitled pursuant to the Merger Agreement (less any applicable withholding taxes payable in respect thereof subject to the provisions of the Merger Agreement), that number of whole shares of KLA-Tencor common stock representing the Stock Consideration to which the holder thereof is entitled pursuant to the Merger Agreement, cash in lieu of any fractional shares of KLA-Tencor common stock to which the holder thereof is entitled to receive pursuant to the Merger Agreement, and an amount in cash sufficient to pay any dividends or other distributions to which the holder thereof is entitled pursuant to the Merger Agreement. KLA-Tencor shall cause the Exchange Fund Agent to accept such Certificates or acknowledgments of the conversion of the Uncertificated Shares upon compliance with the foregoing exchange procedures.

Any Merger Consideration payable in respect of Orbotech 102 Shares shall be transferred by KLA-Tencor to the Exchange Fund Agent and KLA-Tencor shall cause the Exchange Fund Agent on the Closing Date to make payment of such Merger Consideration to the 102 Trustee for the benefit of the beneficial owners thereof, and such Merger Consideration shall be released by the 102 Trustee to the beneficial holders of such Orbotech 102 Shares, in accordance with the requirements of Section 102 of the ITO and the Option Tax Ruling (as defined in the section entitled *Material Israeli Tax Consequences*), if obtained.

Promptly following the Effective Time, KLA-Tencor shall cause the Exchange Fund Agent to transfer the aggregate Merger Consideration payable with respect to Orbotech shares covered by Orbotech Equity Awards granted under Section 102 of the ITO (collectively, the *102 Compensatory Awards*) and with respect to other Orbotech Equity Awards that are otherwise held by the 102 Trustee, in each case, that are not Assumed Orbotech RSUs, Assumed Orbotech RSAs, or Assumed Orbotech Options and pursuant to the Merger Agreement, to the 102 Trustee, on behalf of holders of 102 Compensatory Awards, in accordance with Section 102 of the ITO and the Option Tax Ruling, if obtained (the *102 Amounts*), and holders of other Orbotech Equity Awards otherwise held by the 102 Trustee. The 102 Amounts shall be held in trust by the 102 Trustee pursuant to the applicable provisions of Section 102 of the ITO and the Option Tax Ruling, if obtained, and shall be released by the 102 Trustee, together with any interest earned thereon by virtue of the investment of such amounts by the 102 Trustee, in accordance with the terms and conditions of Section 102 of the ITO and the Option Tax Ruling, if obtained.

Withholding

KLA-Tencor, its subsidiaries, Orbotech, its subsidiaries, the Surviving Company, the 102 Trustee and the Exchange Fund Agent (each a *Payor*) shall be entitled to deduct and withhold from any payment or consideration made pursuant to the Merger Agreement the amounts as may be required to be deducted and withheld with respect to the making of such payment under any applicable tax law (including U.S. federal, state, local, Israeli or other tax law). If a Payor deducts and withholds any such amounts, such amounts shall be timely remitted to the appropriate taxing authority and will be treated for all purposes of the Merger Agreement as having been paid to the persons from whom they were withheld. For more information, please see the section entitled *Tax Rulings* .

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Dividends and Distributions

The Merger Agreement provides that no dividends or other distributions with a record date after the Effective Time with respect to KLA-Tencor common stock will be paid to the holder of any Orbotech shares until such holder properly surrenders its shares in accordance with the procedures described in the section entitled Exchange Agent; Letter of Transmittal . After proper surrender, KLA-Tencor will cause such holder to be paid, without interest, (1) at the time of the proper surrender, the amount of dividends or other distributions with a record date after the Effective Time and theretofore paid with respect to such shares of KLA-Tencor common stock to which such holder is entitled pursuant to the Merger Agreement and (2) at the appropriate payment date, the amount of dividends or other distributions (a) with a record date after the Effective Time but prior to such surrender and (b) with a payment date subsequent to such surrender, payable with respect to such shares of KLA-Tencor common stock.

Representations and Warranties

The Merger Agreement contains representations and warranties made by KLA-Tencor, Merger Sub and Orbotech to, and solely for the benefit of, each other. You should not rely on the representations and warranties in the Merger Agreement as characterizations of the actual state of facts about KLA-Tencor or Orbotech and should see the section entitled Where You Can Find More Information for the location of documents that are incorporated by reference into this proxy statement/prospectus for information regarding KLA-Tencor and Orbotech and their respective businesses.

The Merger Agreement contains customary representations and warranties made by Orbotech relating to its business regarding, among other things:

corporate matters, including organization, power to conduct its business and qualification and good standing;

Orbotech's subsidiaries;

authority to execute and deliver the Merger Agreement and to consummate the transactions contemplated by, and to perform its obligations pursuant to, the Merger Agreement;

Orbotech's capital structure;

no conflicts with organizational documents as a result of the Merger and consents from governmental entities required to be obtained in connection with the Merger;

the accuracy of Orbotech's filings with the SEC;

Orbotech's SEC reports and financial statements;

maintenance of disclosure controls and procedures and internal control over financial reporting;

the absence of undisclosed liabilities;

the absence of certain changes since December 31, 2017 through March 18, 2018 with respect to the business of Orbotech and its subsidiaries, including no Material Adverse Effect (as defined in the section entitled "Material Adverse Effect") on Orbotech in that period;

Orbotech's material contracts and its compliance with such contracts;

compliance with applicable laws and government regulations;

compliance with all material permits required to conduct Orbotech's business as currently conducted;

the absence of certain legal proceedings, orders, claims and actions;

no material disputes with Orbotech's largest customers and suppliers;

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the timely filing of taxes and the accuracy and completeness of certain tax matters;

compliance with applicable environmental laws;

Orbotech's employee benefit plans and compliance with applicable laws related to employee benefits and the Employment Retirement Income Security Act of 1974, as amended;

certain other employment and labor matters, including compliance with applicable laws related thereto;

ownership and leasehold rights to real property;

sufficiency and adequacy of, and valid title or right to use of, assets material to Orbotech's business;

ownership of or right to intellectual property and absence of infringement;

compliance with laws related to export controls and import restrictions;

the existence and maintenance of insurance;

compliance with various anti-bribery laws;

the absence of undisclosed related party transactions;

broker or finder fees payable in connection with the Merger;

the receipt of a fairness opinion in respect of the Merger Consideration;

the inapplicability of various anti-takeover laws and agreements; and

information supplied for inclusion or incorporation by reference in this proxy statement/prospectus.

The Merger Agreement contains customary representations and warranties made by KLA-Tencor and Merger Sub relating to their respective businesses regarding, among other things:

corporate matters, including organization, power to conduct its business and qualification and good standing;

authority to execute and deliver the Merger Agreement and to consummate the transactions contemplated by, and to perform its obligations pursuant to, the Merger Agreement;

no conflicts with organizational documents as a result of the Merger and consents from Governmental Entities required to be obtained in connection with the Merger;

the absence of certain legal proceedings, orders, claims and actions;

the absence of certain changes since December 31, 2017 through March 18, 2018 with respect to the business of KLA-Tencor and its subsidiaries, including no Material Adverse Effect on KLA-Tencor in that period;

KLA-Tencor's capital structure;

the accuracy of KLA-Tencor's filings with the SEC;

KLA-Tencor's SEC reports and financial statements;

maintenance of disclosure controls and procedures and internal control over financial reporting;

the absence of undisclosed liabilities;

the timely filing of taxes and the accuracy and completeness of certain tax matters;

compliance with applicable environmental laws;

ownership of and rights to intellectual property and absence of infringement;

sufficiency of funds;

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compliance with applicable laws and government regulations;

compliance with laws related to export controls and import restrictions and any approvals related thereto;

compliance with various anti-bribery laws;

the operations of Merger Sub;

no ownership of Orbotech shares;

the absence of undisclosed related party transactions;

broker or finder fees payable in connection with the Merger; and

information supplied for inclusion or incorporation by reference in this proxy statement/prospectus.

The representations and warranties in the Merger Agreement of each of Orbotech, KLA-Tencor and Merger Sub do not survive the Effective Time.

Orbotech's representations and warranties are qualified by the information included in (1) Orbotech's confidential disclosure letter delivered to KLA-Tencor on March 18, 2018 (the "Orbotech Disclosure Letter") and (2) certain of Orbotech's filings with the SEC. KLA-Tencor's and Merger Sub's representations and warranties are qualified by the information included in (i) the KLA-Tencor's confidential disclosure letter delivered to Orbotech on March 18, 2018 (the "KLA-Tencor Disclosure Letter") and (ii) certain of KLA-Tencor's filings with the SEC.

Material Adverse Effect

The Merger Agreement provides that a "Material Adverse Effect" with respect to either of Orbotech or KLA-Tencor means any fact, event, violation, condition, occurrence, inaccuracy, circumstance, change, development, effect or other matter (any such item, an "Effect") that, individually or when taken together with all other Effects that exist or have occurred prior to or at the date of determination of the occurrence of the Material Adverse Effect, is or would reasonably be expected to (i) be materially adverse to the business, financial condition or results of operations of Orbotech and its subsidiaries or KLA-Tencor and its subsidiaries, as applicable, taken as a whole; or (ii) prevent, materially delay or materially impair the ability of such person or its subsidiaries to consummate the transactions contemplated by the Merger Agreement in accordance with the terms thereof. The parties have agreed that, solely with respect to clause (i) above, in no event will any Effect resulting from any of the following, either alone or in combination, be taken into account when determining whether a Material Adverse Effect has occurred or would reasonably be expected to occur:

(A) general economic conditions in the United States, Israel or any other country or region in the world;

(B) general conditions in the industries in which such person or any of its subsidiaries conduct business;

(C) changes in foreign exchange and currency rates (including financial exposure associated with currency exchange rate fluctuation and the effect of such fluctuations on a person's results of operations);

(D) changes in GAAP or other accounting standards (or the interpretation thereof) or changes in law or other legal or regulatory conditions (or the interpretation thereof);

(E) political conditions (or changes in such conditions) in Israel, the U.S. or any other country or region in the world, or acts of war (whether declared or not declared), armed hostilities, sabotage or terrorism (including any escalation or general worsening of any such acts of war, armed hostilities, sabotage or terrorism) in Israel, the U.S. or any other country or region in the world;

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- (F) earthquakes, hurricanes, tsunamis, tornadoes, floods, mudslides, wild fires or other natural disasters, weather conditions and other force majeure events in Israel, the U.S. or any other country;
- (G) the public announcement of discussions among the parties regarding a potential Merger, the public announcement, execution, delivery or performance of the Merger Agreement, or the identity of KLA-Tencor and Merger Sub;
- (H) with respect to Orbotech, certain matters disclosed in the Orbotech Disclosure Letter or the impacts thereof;
- (I) any actions (or omissions) such person has taken (or not taken) with the consent of the other party or as required to comply with the terms of the Merger Agreement (other than actions required solely by Section 5.1 of the Merger Agreement (in the case of Orbotech) without giving effect to any consent thereunder, and actions required solely by Section 5.3 of the Merger Agreement (in the case of KLA-Tencor) without giving effect to any consent thereunder);
- (J) any failure by such person to meet published analysts' estimates, projections or forecasts of revenues, earnings or other financial or business metrics, in and of itself (it being understood that the underlying cause of any such failure may be taken into consideration);
- (K) any decline in the market price or change in the trading volume of Orbotech shares (with respect to Orbotech) or KLA-Tencor common stock (with respect to KLA-Tencor), in and of itself (it being understood that the underlying cause of any such failure may be taken into consideration); or
- (L) any legal proceeding made or brought by any of the current or former shareholders of Orbotech or stockholders of KLA-Tencor (on their own behalf or on behalf of Orbotech or KLA-Tencor) against Orbotech or KLA-Tencor arising out of the Merger or in connection with the transactions contemplated by the Merger Agreement.

In the case of each of clauses (A) through (F), such Effects may be taken into account when determining whether a Material Adverse Effect has occurred to the extent that they disproportionately affect the applicable person and its subsidiaries, taken as a whole, in any material respect relative to other companies of comparable size in the same industries and geographies in which such person operates.

Restrictions on Orbotech's Business Pending the Closing

Under the Merger Agreement, Orbotech has agreed, subject to certain exceptions set forth in the Merger Agreement and in the Orbotech Disclosure Letter, on behalf of itself and its subsidiaries, that it shall carry on its business in all material respects in the ordinary course in substantially the same manner and use commercially reasonable efforts, consistent with past practices and policies to (i) preserve intact its rights to intellectual property, business organization and material assets; (ii) keep available the services of its directors, officers and employees; and (iii) preserve its relationships with customers, suppliers, distributors, licensors, licensees and others with which it has significant business dealings.

In particular, Orbotech has agreed, subject to certain exceptions set forth in the Merger Agreement and in the Orbotech Disclosure Letter, on behalf of itself and its subsidiaries, to certain restrictions on its and their ability to, from the date of the Merger Agreement until the earlier of the Effective Time or the termination of the Merger Agreement, among other things:

amend Orbotech's Charter Documents;

issue, sell or deliver any securities of Orbotech or any of its subsidiaries, except for certain permitted issuances;

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acquire or redeem, directly or indirectly, or amend any Orbotech securities or its subsidiary securities, except for certain permitted acquisitions and redemptions;

other than cash dividends made by any direct or indirect wholly owned subsidiary of Orbotech to Orbotech or one of its subsidiaries, split, combine or reclassify any share capital, declare, authorize, set aside or pay any dividend or other distribution (whether in cash, shares or property or any combination thereof) in respect of any share capital, or make any other actual, constructive or deemed distribution in respect of the share capital;

adopt a plan of complete or partial liquidation, dissolution, merger, consolidation, restructuring, recapitalization or other reorganization of Orbotech or any of its subsidiaries (other than the transactions contemplated by the Merger Agreement, including the Merger);

(i) redeem, repurchase, prepay (other than prepayments of revolving loans), defease, incur, assume, endorse, guarantee or otherwise become liable for or modify in any material respects the terms of any long-term or short-term debt indebtedness for borrowed money or debt securities, except for certain permitted redemptions; (ii) assume, guarantee, endorse or otherwise become liable or responsible (whether directly, contingently or otherwise) for the obligations of any other person except with respect to obligations of direct or indirect wholly owned subsidiaries of Orbotech; (iii) make any loans, advances or capital contributions to or investments in any other person except for certain permitted loans; or (iv) mortgage or pledge or grant a lien on any of its subsidiaries, other than certain permitted liens;

except as required by applicable law or any employee plan or collective bargaining agreement (each as defined in the Merger Agreement) in effect as of the date of the Merger Agreement, or as otherwise permitted by the Merger Agreement, (i) enter into, adopt, materially amend, modify or terminate any employee plan (excluding offer letters that provide for no severance or change in control benefits other than those required by applicable law), (ii) increase in any manner the compensation or fringe benefits of any director, officer or employee, (iii) pay any special bonus or special remuneration to any director, officer, consultant, independent contractor or employee, (iv) take any action to accelerate any payment or benefit, or the funding of any payment or benefit, payable or to become payable to any current or former director, officer, consultant, independent contractor or employee or (v) pay any benefit not required by any employee plan; provided, however, that the foregoing clauses (i) through (iv) shall not restrict Orbotech or any of its subsidiaries from (A) entering into or making available to newly hired employees or to employees in the context of promotions based on job performance or workplace requirements, (to the extent otherwise permitted by the Merger Agreement) and in the ordinary course of business, plans, agreements, benefits and compensation arrangements that have a value that is consistent with the past practice of making compensation and benefits available to newly hired or promoted employees in similar positions or (B) entering into indemnification and exculpation agreements with current or former directors and officers of Orbotech or any of its subsidiaries pursuant to resolutions of Orbotech's Board that were adopted prior to the date of the Merger Agreement;

forgive any loans to any employees, officers or directors of Orbotech or any of its subsidiaries, or any of their respective affiliates;

take any action to fund or in any other way secure the payment of compensation or benefits under the employee plans; other than, in each case, as required by applicable law or any employee plan in effect on the date of the Merger Agreement;

except as required by any collective bargaining agreement in effect on the date of the Merger Agreement, enter into, amend, or extend any collective bargaining agreement;

hire or offer to hire, any senior management (as defined in the Merger Agreement) employee or potential senior management employee, other than such hires or offers to hire that are made to fill any currently existing senior management position that becomes vacant after the date of the Merger Agreement;

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reassign, demote or promote, or offer to reassign or promote, any employee, except as otherwise permitted by the Merger Agreement;

terminate the employment of any employee of Orbotech who is eligible to receive payments or benefits upon a termination of employment in connection with a change in control pursuant to any employee plan, other than any such benefits required by applicable law, in all cases excluding terminations that are for cause or non-performance of material duties;

send any written communications (including electronic communications) to any significant group of employees regarding the Merger Agreement or the transactions contemplated by the Merger Agreement or make any communications to the employees that, in each case, are inconsistent with the Merger Agreement, other than any such communication that is consistent with information previously publicly disclosed by Orbotech to its shareholders in compliance with the Merger Agreement;

acquire, sell, lease, license or dispose of any of its material property or assets in any single transaction or series of related transactions, except for certain permitted acquisitions and dispositions;

except as may be required as a result of a change in applicable law or in GAAP, make any change in any of the accounting principles or practices used by it;

(i) make (except for elections made in the ordinary course of business) or change any material tax election; (ii) amend any income or other material tax return; (iii) settle or compromise any material liability for taxes; (iv) adopt or make any material change to any tax accounting method or (v) except in the ordinary course of business, consent to any extension or waiver of any limitation period with respect to any material claim or assessment for taxes;

other than in the ordinary course of business and consistent with past practice, (i) enter into, amend or grant any release of any material rights under any Orbotech intellectual property agreement; (ii) enter into any agreement or modify any existing agreement with respect to the development of any intellectual property rights or technology with a third party that is or would be material to Orbotech and its subsidiaries, taken as a whole; or (iii) sell, assign, transfer, abandon, cancel, allow to lapse, fail to maintain or protect or grant any security interest in, to or under any material Orbotech intellectual property;

other than in the ordinary course of business and consistent with past practice (i) enter into any material lease or sublease of real property (whether as a lessor, sublessor, lessee or sublessee); (ii) materially modify or amend or exercise any right to renew any material lease or sublease of real property or waive or violate any material term or condition thereof or grant any material consents thereunder; (iii) grant or otherwise create or consent to the creation of any easement, covenant, restriction, assessment, lien or charge affecting any real property or any part thereof except as would not reasonably be expected to interfere with the intended use thereof; (iv) convey any material interest in any real property; or (v) make any material changes in the construction or condition of any such property other than those in process or contemplated as of the date of

the Merger Agreement, in each case of clauses (i) through (v), for an aggregate cost in excess of \$5,000,000 and provided that Orbotech will provide KLA-Tencor with prior notice thereof and consult in good faith with KLA-Tencor with respect thereto;

other than in the ordinary course of business consistent with past practice, enter into or amend any Contract that is or would be material to Orbotech and its subsidiaries, taken as a whole;

settle or compromise (i) any pending or threatened legal proceeding or pay, discharge or satisfy or agree to pay, discharge or satisfy any claim, liability or obligation (absolute or accrued, asserted or unasserted, contingent or otherwise), other than the settlement, compromise, payment, discharge or satisfaction of legal proceedings, claims and other liabilities up to or immaterially in excess of such amounts reflected or reserved against in the balance sheet or incurred since the date of the Balance Sheet in the ordinary course of business consistent with past practice, and which does not (A) include any material obligation (other than the payment of money) to be performed by Orbotech or its

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subsidiaries following the Effective Time and that, individually or in the aggregate, is not and would not reasonably be expected to be material to Orbotech and its subsidiaries, taken as a whole or (B) impose or require, expressly or by implication, any license, covenant or other agreement that restricts the enforcement of Orbotech intellectual property; or (ii) any of the matters disclosed in the Orbotech Disclosure Letter;

commence any legal proceedings in excess of \$3,000,000 in the aggregate against any person other than (i) for the routine collection of accounts receivable; or (ii) in such cases where it in good faith determines that failure to commence suit could result in the impairment of a valuable aspect of its business, so long as it provides KLA-Tencor with prior notice to the filing of a suit, or (iii) for a breach of the Merger Agreement;

hire any employee without requiring them to execute Orbotech's standard form of confidentiality and inventions assignment agreement; or

commit or enter into a contract to do any of the foregoing.

These restrictions, which are subject to various exceptions and qualifications agreed by KLA-Tencor and Orbotech, are described in more detail in the Merger Agreement.

Restrictions on KLA-Tencor's Business Pending the Closing

Under the Merger Agreement, KLA-Tencor has agreed, subject to certain exceptions set forth in the Merger Agreement and in the KLA-Tencor Disclosure Letter, on behalf of itself and its subsidiaries, that it shall carry on its business in all material respects in the ordinary course in substantially the same manner and use commercially reasonable efforts, consistent with past practices and policies to (i) preserve intact its rights to intellectual property, business organization and material assets; (ii) keep available the services of its directors, officers and employees; and (iii) preserve its relationships with customers, suppliers, distributors, licensors, licensees and others with which it has significant business dealings.

In particular, KLA-Tencor has agreed, subject to certain exceptions set forth in the Merger Agreement and in the KLA-Tencor Disclosure Letter, on behalf of itself and its subsidiaries, to certain restrictions on its and their ability to, from the date of the Merger Agreement until the earlier of the Effective Time or the termination of the Merger Agreement, among other things:

amend KLA-Tencor's Charter Documents;

issue, sell or deliver any securities of KLA-Tencor or its subsidiary securities, except for certain permitted acquisitions and redemptions;

other than KLA-Tencor's quarterly dividend (to the extent KLA-Tencor determines to pay such a dividend) and cash dividends made by any direct or indirect wholly owned subsidiary of KLA-Tencor to KLA-Tencor or one of its subsidiaries, split, combine or reclassify any share capital, declare, authorize, set aside or pay any dividend or other distribution (whether in cash, shares or property or any combination thereof) in respect

of any share capital, or make any other actual, constructive or deemed distribution in respect of the share capital;

authorize or announce an intention to authorize, or enter into agreements providing for, any acquisitions of an equity interest in or a substantial portion of the assets of any person or any business or division thereof, or any mergers, consolidations or business combinations or any acquisitions of equity or assets, mergers, consolidations or business combinations that, in any case, would reasonably be expected to prevent or materially delay or impede the consummation of the Merger or that would require approval by the stockholders of KLA-Tencor; provided that KLA-Tencor will consult in advance with Orbotech with respect to any acquisition in excess of \$250,000,000; or

commit or enter into a contract to do any of the foregoing.

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These restrictions, which are subject to various exceptions and qualifications agreed by KLA-Tencor and Orbotech, are described in more detail in the Merger Agreement, a copy of which is attached as Annex A to this proxy statement/prospectus.

No Solicitation of Alternative Proposals

Orbotech has agreed that it will not, directly or indirectly:

solicit, initiate, knowingly encourage, facilitate or induce the making, submission or announcement of an acquisition proposal or the making of any inquiry, offer or proposal that constitutes or would reasonably be expected to lead to any Acquisition Proposal (as defined below);

in connection with or in response to any Acquisition Proposal or any inquiry, offer or proposal that would reasonably be expected to lead to an Acquisition Proposal, furnish to any third party any non-public information relating to Orbotech or any of its subsidiaries, or afford access to the business, properties, assets, books or records of Orbotech or any of its subsidiaries to any third party, or take any other action intended to assist or facilitate the making of any Acquisition Proposal or any inquiry, offer or proposal that would reasonably be expected to lead to an Acquisition Proposal;

participate or engage in negotiations regarding an Acquisition Proposal or knowingly engage in discussions with any third party that is seeking to make or has made an Acquisition Proposal;

approve, endorse or recommend an Acquisition Proposal;

execute or enter into any letter of intent, memorandum of understanding or contract contemplating or otherwise relating to an Acquisition Transaction (as defined below); or

except to the extent that the Orbotech Board determines that the failure to do so would be reasonably likely to be inconsistent with its fiduciary duties under applicable law, terminate, amend, modify, waive or fail to enforce any rights under any standstill or other similar agreement between Orbotech or any of its subsidiaries and any third party.

Orbotech also agreed to immediately cease and cause to be terminated any and all activities, discussions or negotiations with any third party concerning any Acquisition Proposal existing as of the date of the Merger Agreement.

However, until Orbotech shareholders approve the Merger, if Orbotech receives a bona fide written Acquisition Proposal from any person that did not result from a material breach of its non-solicitation obligations that the Orbotech Board concludes in good faith is or is reasonably likely to lead to a Superior Proposal (as defined below), Orbotech may, directly or indirectly:

engage or participate in discussions or negotiations with such third party; or

furnish to such third party any non-public information relating to Orbotech or any of its subsidiaries pursuant to a confidentiality agreement no less favorable to Orbotech (other than with respect to standstill or similar terms) than that between Orbotech and KLA-Tencor.

Any action taken pursuant to the foregoing paragraph may be taken only if (1) at least 24 hours prior to engaging or participating in any such discussions or negotiations with, or furnishing any non-public information to, such third party, Orbotech gives KLA-Tencor written notice of the identity of such third party and all of the terms and conditions of such Acquisition Proposal (and if such Acquisition Proposal is in written form, Orbotech gives KLA-Tencor a copy thereof) and of Orbotech's intention to engage or participate in discussions or negotiations with, or furnish non-public information to, such third party; and (2) contemporaneously with furnishing any non-public information to such third party Orbotech furnishes such non-public information to KLA-Tencor (to the extent that such information has not been previously furnished by Orbotech to KLA-Tencor).

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Orbotech must promptly, and in all cases within 36 hours of its receipt, advise KLA-Tencor orally and in writing of any (i) Acquisition Proposal; (ii) request for information that would reasonably be expected to lead to an Acquisition Proposal; or (iii) inquiry with respect to, or that would reasonably be expected to lead to, any Acquisition Proposal, the terms and conditions of such Acquisition Proposal, request or inquiry, and the identity of the Person or group making any such Acquisition Proposal, request or inquiry.

Orbotech must keep KLA-Tencor reasonably informed of the status of discussions relating to, and material terms and conditions (including all amendments or proposed amendments to such material terms and conditions) of, any Acquisition Proposal and must promptly (and in no event later than 36 hours thereafter) upon receipt or delivery of any of the following provide KLA-Tencor with copies of all documents and written (including electronic) communications relating to any Acquisition Proposal (including the financing thereof), request or inquiry exchanged between Orbotech, its subsidiaries or any of their respective representatives, on the one hand, and the third party making such Acquisition Proposal, request or inquiry (or such third party's affiliates or representatives), on the other hand. In addition to the foregoing, Orbotech must provide KLA-Tencor with at least 72 hours (or such shorter period of notice as is given to each of the members of Orbotech Board or the relevant committee thereof, as applicable) prior written notice of a meeting of the Orbotech Board (or any committee thereof) at which the Orbotech Board (or any committee thereof) is reasonably expected to consider an Acquisition Proposal, an inquiry relating to a potential Acquisition Proposal, or a request to provide non-public information to any Person.

The Merger Agreement provides that the term **Acquisition Proposal** means any offer, proposal, inquiry or indication of interest from any third party relating to any Acquisition Transaction.

The Merger Agreement provides that the term **Acquisition Transaction** means any transaction or series of related transactions (other than the transactions contemplated by the Merger Agreement) involving: (i) any acquisition by any third party, directly or indirectly, of 15% or more of the outstanding Orbotech shares, or any tender offer (including a self-tender) or exchange offer that, if consummated, would result in any third party beneficially owning (as defined under Section 13(d) of the Exchange Act) 15% or more of the Orbotech shares; or (ii) any acquisition by any third party, directly or indirectly, of 15% or more of the assets (including equity securities of Orbotech's subsidiaries) of Orbotech (on a consolidated basis with its subsidiaries), measured at the fair market value thereof as of the last day of Orbotech's last fiscal year, in the case of each of clause (i) and (ii), whether pursuant to a merger, consolidation or other business combination, sale of shares of capital stock, sale of assets, tender offer or exchange offer or otherwise, including any single or multi-step transaction or series of related transactions.

The Merger Agreement provides that the term **Superior Proposal** means any bona fide, written Acquisition Proposal (with references to 15% in the definition thereof being deemed to be replaced with references to 50%), with respect to which the Orbotech Board shall have determined in good faith (after consultation with its financial advisor and its outside legal counsel, and after taking into account the financial, legal, regulatory and other aspects of such Acquisition Proposal and all of the terms and conditions of such Acquisition Proposal (including any termination or break-up fees, expense reimbursement provisions and any conditions, potential time delays or other risks to consummation), as well as any counter-offer or proposal made by KLA-Tencor pursuant the Merger Agreement) that the proposed Acquisition Transaction is (a) more favorable to Orbotech and Orbotech's shareholders, from a financial point of view, than the transactions contemplated by the Merger Agreement, including the Merger (or any counter-offer or proposal made by KLA-Tencor or any of its affiliates pursuant to the Merger Agreement), and (b) reasonably capable of being completed, in the case of each of clause (a) and (b), taking into account all financial, legal, regulatory and other aspects of such Acquisition Proposal and the identity and financial capability of the third party making such Acquisition Proposal.

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Orbotech's Agreement Not to Change the Orbotech Board Recommendation

In addition, Orbotech has agreed that the Orbotech Board will not:

fail to make, withdraw, amend or modify, or publicly propose to withhold, withdraw, amend or modify, in a manner adverse to KLA-Tencor or Merger Sub, its recommendation that Orbotech shareholders approve the Merger (the Orbotech Board Recommendation); or

approve, endorse, adopt or recommend, or publicly propose to approve, endorse, adopt or recommend, any Acquisition Proposal or Superior Proposal.

Any of the actions in the first two bullets above is referred to as an Orbotech Change of Recommendation.

Notwithstanding anything to the contrary set forth in the Merger Agreement, the Orbotech Board may (1) make an Orbotech Change of Recommendation or (2) terminate the Merger Agreement at any time prior to obtaining the approval of the Merger by Orbotech's shareholders in response to its receipt of a bona fide Acquisition Proposal that did not result from a material breach of Orbotech's non-solicitation obligations, if and only if:

the Orbotech Board determines in good faith (after consultation with outside legal counsel and after considering in good faith any counter-offer or proposal made by KLA-Tencor pursuant to clause (iv) below), that (x) such Acquisition Proposal constitutes a Superior Proposal and (y) in light of such Superior Proposal, failure to effect an Orbotech Change of Recommendation would be reasonably likely to be inconsistent with the fiduciary duties of the members of Orbotech Board under Israeli law;

prior to effecting such Orbotech Board Recommendation Change, Orbotech Board gives KLA-Tencor at least four business days' notice (the Superior Proposal Notice Period) of such determination;

Orbotech has, during the Superior Proposal Notice Period, negotiated with KLA-Tencor in good faith modifications to the terms and conditions of the Merger Agreement so that such Acquisition Proposal ceases to be a Superior Proposal, if KLA-Tencor, in its discretion, proposes to make such modifications;

after taking into account any counter-offer or proposal KLA-Tencor shall have made, if any, within the Superior Proposal Notice Period, the Orbotech Board again makes the determination set forth in the first bullet above; and

in the event of the termination of the Merger Agreement in response to such a Superior Proposal, Orbotech concurrently pays to KLA-Tencor the \$125.0 million termination fee pursuant to and in accordance with the Merger Agreement;

In addition, notwithstanding anything to the contrary set forth in the Merger Agreement, at any time prior to obtaining the approval of the Orbotech Shareholders for the Merger, the Orbotech Board may, in response to an Intervening

Event (as defined below), effect an Orbotech Board Recommendation Change if, and only if:

the Orbotech Board determines in good faith (after consultation with outside legal counsel and after considering in good faith any counter-offer or proposal made by KLA-Tencor pursuant to the Merger Agreement), that, in light of such Intervening Event, failure to effect an Orbotech Board Recommendation Change would be reasonably likely to be inconsistent with the fiduciary duties of the members of Orbotech Board under Israeli law;

prior to effecting such Orbotech Board Recommendation Change, the Orbotech Board shall have given KLA-Tencor at least four business days notice (the Intervening Event Notice Period) thereof (which notice shall describe in reasonable detail the Intervening Event and the reasons for such proposed Company Board Recommendation Change);

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Orbotech has, during the Intervening Event Notice Period, negotiated with KLA-Tencor in good faith modifications to the terms and conditions of the Merger Agreement, if KLA-Tencor, in its discretion, proposes to make such modifications; and

after taking into account any counter-offer or proposal KLA-Tencor shall have made, if any, within the Intervening Event Notice Period, the Orbotech Board again makes the determination set forth in first bullet above.

The Merger Agreement provides that the term **Intervening Event** means any material Effect occurring, arising or coming to the attention of Orbotech Board after the date of the Merger Agreement and prior to obtaining the approval of the Orbotech shareholders for the Merger, the and that was not known to the Orbotech Board or Orbotech management as of or prior to the date of the Merger Agreement or, if known, the probability or magnitude of the consequences were not known. **Intervening Event** excludes any Effect related to: (i) any Acquisition Proposal; (ii) the fact that Orbotech meets or exceeds published analysts' estimates, projections or forecasts of revenues, earnings or other financial or business metrics, in and of itself (it being understood that the underlying cause of such fact may be taken into consideration); (iii) the failure of KLA-Tencor to meet or exceed published analysts' estimates, projections or forecasts of revenues, earnings or other financial or business metrics, in and of itself (it being understood that the underlying cause of such failure may be taken into consideration); or (iv) any change in the market price or change in the trading volume of Orbotech shares or KLA-Tencor common stock, in and of itself (it being understood that the underlying cause of any such change may be taken into consideration).

Preparation of the Form S-4 and the Proxy Statement/Prospectus; Orbotech Special Meeting

As soon as reasonably practicable following the date of the Merger Agreement, (i) Orbotech has agreed to prepare (with KLA-Tencor's reasonable cooperation) and cause to be furnished to the SEC on Form 6-K a proxy statement to be sent or otherwise made available to the shareholders of Orbotech relating to the Orbotech meeting (together with any amendments or supplements thereto, the **Proxy Statement**); and (ii) KLA-Tencor has agreed to prepare (with Orbotech's reasonable cooperation) and cause to be filed with the SEC this Form S-4, in which the Proxy Statement is included as a prospectus.

KLA-Tencor and Orbotech have agreed to use their respective reasonable best efforts to have this Form S-4 declared effective under the Securities Act as soon as reasonably practicable after such filing. Each of Orbotech and KLA-Tencor shall furnish all information concerning it and its affiliates to the other, and provide such other assistance, as may be reasonably requested in connection with the preparation, filing and distribution of this Form S-4 and the Proxy Statement, and this Form S-4 and the Proxy Statement shall include all information reasonably requested by such other party to be included therein.

Reasonable Best Efforts

Upon the terms and subject to the conditions set forth in the Merger Agreement, each of KLA-Tencor, Merger Sub and Orbotech shall use their reasonable best efforts to take, or cause to be taken, all actions, and to do, or cause to be done, and to assist and cooperate with the other party or parties to the Merger Agreement in doing, all things reasonably necessary, proper or advisable to consummate and make effective, in the most expeditious manner practicable, the transactions contemplated by the Merger Agreement (including the Merger) and the transactions described in the joint press release referred to in the Merger Agreement and issued at signing of the Merger Agreement, including using reasonable best efforts to:

cause the conditions to the Merger to be satisfied or fulfilled;

obtain all necessary or appropriate consents, waivers and approvals under any contracts to which Orbotech, KLA-Tencor or any of their subsidiaries is a party in connection with the Merger Agreement

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and the consummation of the transactions contemplated hereby (including the Merger) so as to maintain and preserve the benefits under such contracts following the consummation of the transactions contemplated hereby (including the Merger); and

obtain all necessary actions or non-actions, waivers, consents, approvals, orders and authorizations from governmental entities, as may be required under any applicable antitrust laws or otherwise, including the expiration or termination of any applicable waiting periods and making all necessary registrations, declarations and filings (including registrations, declarations and filings with governmental entities, if any); and execute or deliver any additional instruments reasonably necessary to consummate the transactions contemplated by, and to fully carry out the purposes of, the Merger Agreement.

Notwithstanding the obligations referred to in the foregoing paragraph, neither KLA-Tencor nor Merger Sub shall be under any obligation to (1) litigate or contest any administrative or judicial proceeding or any decree or injunction in respect of the Merger or (2) make proposals, execute or carry out agreements, enter into consent decrees or submit to orders providing for any of the following in order to obtain governmental approval to consummate the Merger:

the sale, divestiture or other disposition or holding separate (through the establishment of a trust or otherwise) of any assets or categories of assets of KLA-Tencor or any of its affiliates or Orbotech or any of its subsidiaries; or

the imposition of any license or condition or the commitment to take any action (or to refrain from taking any action) that limits in any manner its freedom of action with respect to, or its ability to operate, any of the assets or businesses of KLA-Tencor or Orbotech or any of their respective subsidiaries, except, to the extent such license, condition or commitment does not materially (with materiality determined relative to the size of the business and operations of Orbotech and its subsidiaries, and not relative to those of KLA-Tencor and its subsidiaries) impact in an adverse manner (x) KLA-Tencor and its subsidiaries (including the Surviving Company) business or operations, taken as a whole, or (y) the benefits to be derived by KLA-Tencor and its Subsidiaries from the transactions contemplated hereby, including the Merger (any of (A) or (B), subject to the foregoing exception with respect thereto, an Antitrust Restraint).

In addition, Orbotech (x) will not, in connection with obtaining regulatory approval of the transactions contemplated by the Merger Agreement, take or agree to take any action identified in the two immediately preceding bullets without the prior written consent of KLA-Tencor and (y) if so requested by KLA-Tencor, will use reasonable best efforts to effect any license, divestiture, disposition or holding separate of any of Orbotech's assets or businesses necessary to obtain clearances or approvals required for the Closing under the Antitrust Laws, provided that any such action shall be conditioned on the consummation of the Merger and no such action shall be effective prior to the Closing.

Furthermore, neither KLA-Tencor nor Orbotech shall, nor shall it permit any of its subsidiaries or affiliates to, acquire or agree to acquire any business, person or division thereof, or otherwise acquire or agree to acquire any assets if the entering into of a definitive agreement relating to such acquisition or the consummation of such acquisition would reasonably be expected to result in (i) the failure to obtain or materially impair or delay the obtaining of the expiration or termination of the waiting period in respect of the Merger and the other transactions contemplated by the Merger Agreement under any applicable law, (ii) the entry, the commencement of litigation seeking the entry, or failure to effect the dissolution, in each case, of any injunction, temporary restraining order or other order that would prevent or materially impair or delay the consummation of the Merger and the other transactions contemplated by the Merger Agreement or (iii) failure to obtain, or materially impair or delay the obtaining of, all waivers, authorizations,

consents, orders and approvals of governmental entities necessary for the consummation of the Merger and the other transactions contemplated by the Merger Agreement.

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Access

At all times during the period commencing with the execution and delivery of the Merger Agreement and continuing until the earlier to occur of the termination of the Merger Agreement and the Effective Time, to the extent permitted by applicable law, Orbotech shall afford KLA-Tencor and its representatives reasonable access during normal business hours, upon reasonable notice, to all of Orbotech's properties (not including the right to conduct an environmental site assessment and audit, including any right to conduct environmental sampling or testing, of the properties), offices, books and records, contracts, permits, documents and personnel of Orbotech to enable KLA-Tencor to obtain all information as may be reasonably requested by KLA-Tencor concerning the business, including the status of product development efforts, properties, results of operations and personnel of Orbotech.

Orbotech shall not be required to provide to KLA-Tencor or its representatives with access to or to disclose (i) information that is subject to the terms of a confidentiality agreement with a third party entered into prior to the date of the Merger Agreement (provided, however, that Orbotech shall use its reasonable best efforts to make appropriate redactions to any information subject to such a confidentiality agreement to disclose the maximum extent of such information that does not result in a violation of such obligation of confidentiality), (ii) information the disclosure of which would violate any applicable law (provided, however, that Orbotech shall use its reasonable best efforts to make appropriate substitute arrangements to permit reasonable disclosure not in violation of any applicable law) or (iii) information that is subject to any attorney-client, attorney work product or other legal privilege (provided, however, that in such event, Orbotech shall use its reasonable best efforts to allow for such access or disclosure to the maximum extent that does not result in a loss of any such attorney-client, attorney work product or other legal privilege). KLA-Tencor will use its reasonable best efforts to minimize any disruption to the business of Orbotech that may result from its requests for access, data and information pursuant to the Merger Agreement.

Notification

At all times during the period commencing with the execution and delivery of the Merger Agreement and continuing until the earlier to occur of the termination of the Merger Agreement and the Effective Time, Orbotech shall give prompt notice to KLA-Tencor, and KLA-Tencor shall give prompt notice to the Orbotech, upon becoming aware that any representation or warranty made by it in the Merger Agreement has become untrue or inaccurate in any material respect, or of any failure of such party to comply with or satisfy in any material respect any covenant, condition or agreement to be complied with or satisfied by it under the Merger Agreement.

At all times during the period commencing with the execution and delivery of the Merger Agreement and continuing until the earlier to occur of the termination of the Merger Agreement and the Effective Time, Orbotech shall give prompt notice to KLA-Tencor, and KLA-Tencor shall give prompt notice to the Orbotech, of any notice or other communication received by such person or any of its subsidiaries from any third party, subsequent to the date of the Merger Agreement and prior to the Effective Time, alleging that the consent of such third party is or may be required in connection with the transactions contemplated by the Merger Agreement (including the Merger).

Certain Litigation

Orbotech shall promptly advise KLA-Tencor, and KLA-Tencor shall promptly advise Orbotech, orally or in writing, of any legal proceeding commenced after the date of the Merger Agreement against such party or any of its directors by any stockholder of such party (on their own behalf or on behalf of such party) relating to the Merger Agreement or the transactions contemplated hereby (including the Merger) and shall keep the other party

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reasonably informed regarding any such legal proceeding. Each party shall give the other party the opportunity to consult with respect to the defense or settlement of any such stockholder litigation and shall consider the other party's views with respect to such stockholder litigation and Orbotech shall not settle any such stockholder litigation without the prior written consent of KLA-Tencor, which consent shall not be unreasonably withheld, conditioned or delayed, except that KLA-Tencor shall not be obligated to consent to any settlement which does not include a full release of KLA-Tencor and its affiliates or which imposes an injunction or other equitable relief after the Effective Time upon KLA-Tencor or any of its affiliates (including the Surviving Company).

Financing Cooperation

KLA-Tencor shall, and shall use its reasonable best efforts to cause its representatives to, keep Orbotech informed as promptly as practicable in reasonable detail of the status of its efforts to arrange any debt financing related to the Merger and the transactions contemplated by the Merger Agreement, including those announced in the joint press release issued by the parties upon signing of the Merger Agreement. KLA-Tencor shall furnish Orbotech with copies of any documents and drafts related to the debt financing as promptly as practicable following receipt from any financing sources. Orbotech has agreed to use its commercially reasonable efforts prior to Closing to provide KLA-Tencor with customary support for such financing efforts to the extent requested by KLA-Tencor.

Confidentiality

KLA-Tencor, Merger Sub and Orbotech acknowledge that KLA-Tencor and Orbotech have previously executed a confidentiality agreement, which shall continue in full force and effect in accordance with its terms, except that each of the parties agreed that the confidentiality agreement is amended by the Merger Agreement to match the governing law, jurisdiction and waiver of jury trial provisions of the Merger Agreement.

Public Disclosure

KLA-Tencor and Orbotech have agreed upon the initial joint press release with respect to the execution of the Merger Agreement, and have issued such press release promptly following the execution of the Merger Agreement. Thereafter, so long as the Merger Agreement is in effect, neither Orbotech nor KLA-Tencor, nor any of their respective affiliates, shall issue or cause the publication of any press release or other public announcement with respect to the Merger Agreement, the Merger or the other transactions contemplated by the Merger Agreement without the prior consent of the other party (such consent not to be unreasonably withheld, conditioned or delayed), except as may be required by applicable law or any listing agreement with a national securities exchange, in which event such party shall use reasonable best efforts to consult with and to provide a meaningful opportunity to the other party to review and comment upon such press release or other announcement in advance; provided, however, that neither party shall be required to provide any such review or comment to the other party in connection with Orbotech's receipt and existence of an Acquisition Proposal, Superior Proposal or in the event of a Orbotech Board Recommendation Change and matters related thereto. Notwithstanding the foregoing (i) KLA-Tencor and Orbotech may make press releases or public announcements concerning the Merger Agreement or the transactions contemplated thereby that consist solely of information previously disclosed in all material respects in previous press releases or announcements made by KLA-Tencor and/or Orbotech in compliance with the Merger Agreement, and (ii) KLA-Tencor and Orbotech may make public statements in response to specific questions by the press, analysts, investors or those attending industry conferences or financial analyst conference calls, so long as any such statements consist solely of information previously disclosed in all material respects in previous press releases, public disclosures or public statements made jointly by Orbotech and KLA-Tencor and do not reveal material, non-public information regarding the other parties, the Merger Agreement, the Merger or the other transactions contemplated by the Merger Agreement.

Table of Contents**Treatment of Orbotech Equity Awards**

Orbotech Equity Awards that are outstanding immediately prior to the Effective Time will generally be treated in the manner described below.

Orbotech Restricted Share Units

At the Effective Time, each Assumed Orbotech RSU will be assumed by KLA-Tencor and subject to substantially the same terms and conditions as were applicable to such Assumed Orbotech RSU immediately prior to the Effective Time (including the same applicable service-based vesting schedule and right to receive any accrued but unpaid dividends, but not any performance-based vesting conditions). The number of shares of KLA-Tencor common stock subject to each Assumed Orbotech RSU will be determined by multiplying the number of Orbotech shares subject to such Assumed Orbotech RSU as of immediately prior to the Effective Time (assuming, in the case of an Assumed Orbotech RSU that is subject to performance-based vesting conditions, that any applicable performance goals have been attained at maximum levels) by the Exchange Ratio, rounded to the nearest whole share. The Exchange Ratio is equal to 0.25 shares of KLA-Tencor common stock (the Stock Consideration) plus a fraction, the numerator of which is \$38.86 in cash, without interest (the Cash Consideration) and the denominator of which is the KLA-Tencor Average Closing Price. In addition, Assumed Orbotech RSUs may be subject to potential accelerated vesting and payout or settlement upon certain terminations of employment following the Merger. For more information, see the section entitled The Merger Interests of Orbotech Directors and Executive Officers in the Merger Treatment of Orbotech Equity Awards Potential Accelerated Vesting and/or Payout of Assumed Orbotech Equity Awards Upon Certain Terminations of Employment .

At the Effective Time, each Cancelled Orbotech RSU will be cancelled and converted into the right to receive, without interest, the Merger Consideration for each Orbotech share subject to such Cancelled Orbotech RSU plus any accrued but unpaid dividends with respect to such Cancelled Orbotech RSU.

Orbotech Restricted Share Awards

At the Effective Time, each Assumed Orbotech RSA will be assumed by KLA-Tencor and subject to substantially the same terms and conditions as were applicable to such Assumed Orbotech RSA immediately prior to the Effective Time (including the same applicable service-based vesting schedule and right to receive any accrued but unpaid dividends, but not any performance-based vesting conditions). The number of shares of KLA-Tencor common stock subject to each Assumed Orbotech RSA will be determined by multiplying the number of Orbotech shares subject to such Assumed Orbotech RSA as of immediately prior to the Effective Time multiplied by the Exchange Ratio, rounded to the nearest whole share. In addition, Assumed Orbotech RSAs may be subject to potential accelerated vesting and payout or settlement upon certain terminations of employment following the Merger. For more information, see the section entitled The Merger Interests of Orbotech Directors and Executive Officers in the Merger Treatment of Orbotech Equity Awards Potential Accelerated Vesting and/or Payout of Assumed Orbotech Equity Awards Upon Certain Terminations of Employment .

At the Effective Time, each Cancelled Orbotech RSA will be cancelled and converted into the right to receive, without interest, the Merger Consideration for each Orbotech share subject to such Cancelled Orbotech RSA plus any accrued but unpaid dividends with respect to such Cancelled Orbotech RSA.

Orbotech Options

At the Effective Time, each Assumed Orbotech Option will be assumed by KLA-Tencor and subject to substantially the same terms and conditions as were applicable to such Assumed Orbotech Option immediately

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prior to the Effective Time (including the same applicable service-based vesting schedule, but not any performance-based vesting conditions); provided that, (i) the number of shares of KLA-Tencor common stock subject to such Assumed Orbotech Option will be equal to the number of Orbotech shares subject to such Assumed Orbotech Option as of immediately prior to the Effective Time (assuming, in the case of an Assumed Orbotech Option that is subject to performance-based vesting conditions, that any applicable performances goals have been attained at maximum levels) multiplied by the Exchange Ratio (rounded down to the nearest whole share) and (ii) the per share exercise price of such Assumed Orbotech Option will be determined by dividing the applicable exercise price of such Assumed Orbotech Option immediately prior to the Effective Time by the Exchange Ratio (with the resulting exercise price rounded up to the nearest whole cent). In addition, Assumed Orbotech Options may be subject to potential accelerated vesting and payout or settlement upon certain terminations of employment following the Merger. For more information, see the section entitled *The Merger Interests of Orbotech Directors and Executive Officers in the Merger Treatment of Orbotech Equity Awards Potential Accelerated Vesting and/or Payout of Assumed Orbotech Equity Awards Upon Certain Terminations of Employment* .

At the Effective Time, each Cancelled Orbotech Option will be cancelled and converted into the right to receive the Merger Consideration for each net share subject to such Cancelled Orbotech Option determined using the KLA-Tencor Average Closing Price. A net share means, with respect to each Cancelled Orbotech Option, the quotient obtained by dividing (i) the product of (A) the excess, if any, of the sum of (1) the Cash Consideration plus (2) the product of (x) the Stock Consideration and (y) the KLA-Tencor Average Closing Price (such sum, the Cash Equivalent Consideration), over the per share exercise price of such Cancelled Orbotech Option and (B) the number of Orbotech shares subject to such Cancelled Orbotech Option, by (ii) the Cash Equivalent Consideration.

Section 102 Orbotech Equity Awards

Each Cancelled Orbotech RSU, Cancelled Orbotech RSA and Cancelled Orbotech Option that was granted under Section 102 of the ITO shall be treated in accordance with Section 102 of the ITO.

Section 16 Matters

Prior to the Effective Time, KLA-Tencor shall take all such steps as may be required to cause that the acquisition of any shares of KLA-Tencor common stock in connection with the transactions contemplated by the Merger Agreement by any individual who is or shall become a director or officer of KLA-Tencor subject to the reporting requirements of Section 16(a) of the Exchange Act with respect to KLA-Tencor, or the assumption by KLA-Tencor of Assumed Orbotech RSUs, Assumed Orbotech RSAs or Assumed Orbotech Options held by such individuals, in each case, shall be exempt under Rule 16b-3 under the Exchange Act.

Operations in Israel; Employee Matters

KLA-Tencor currently intends, with respect to Orbotech following the Merger, to continue KLA-Tencor's existing policies of investment and expansion in the State of Israel and, in furtherance of the foregoing, confirmed that it has no present intention to, after the Closing, move Orbotech's headquarters, or the operations conducted at such headquarters, outside of the State of Israel.

For a period of one-year following the Closing of the Merger, KLA-Tencor will (or will cause the surviving company to) provide to each employee of Orbotech or any of its subsidiaries as of immediately following the Closing (each, a Continuing Employee) with (i) base salary and short- and long-term incentive opportunities that are no less favorable than those provided immediately prior to the Effective Time, (ii) severance benefits that are no less favorable than the severance benefits that would have been provided immediately prior to the

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Effective Time and (iii) other employee benefits that are no less favorable in the aggregate than such benefits provided immediately prior to the Effective Time. In addition, KLA-Tencor will honor all Orbotech benefit plans and compensation agreements or arrangements in accordance with their terms as in effect as of the Effective Time.

KLA-Tencor will (or will cause the surviving corporation to) generally recognize each Continuing Employee's period of service with Orbotech and its subsidiaries and predecessors for purposes of all benefit plans and compensation arrangements or agreements in which such Continuing Employee participates following the Effective Time, waive any pre-existing condition exclusions and waiting periods under the benefit plans it maintains, and provide credit for any co-payments, deductibles and other out-of-pocket expenses that were paid prior to the Effective Time.

KLA-Tencor has acknowledged that a change in control or change of control within the meaning of any Orbotech benefit plan or compensation agreement or arrangement will occur upon the Effective Time.

Directors and Officers Indemnification and Insurance

From and after the Effective Time, KLA-Tencor shall cause the Surviving Company and its subsidiaries to honor and fulfill in all respects the obligations of Orbotech and its subsidiaries under their respective articles of association (and other similar organizational documents) and all indemnification and exculpation agreements between Orbotech or any of its subsidiaries and any of their respective current or former directors and officers (the Indemnified Parties) in effect as of the date of the Merger Agreement or which may be entered into subsequent to the date of the Merger Agreement. From and after the Effective Time, in the event that the Surviving Company or any of its successors or assigns (i) consolidates with or merges into any other person and is not the continuing or surviving corporation or entity of such consolidation or merger, (ii) transfers or conveys all of or substantially all of its properties and other assets to any person, (iii) transfers any material portion of its assets in a single transaction or in a series of transactions or (iv) KLA-Tencor takes any action to materially impair the financial ability of the Surviving Company and its applicable subsidiaries to satisfy the obligations in the Merger Agreement then, and in each such case, KLA-Tencor shall either (A) guarantee, expressly assume, or shall cause proper provision to be made so that the successors and assigns of the Surviving Company shall expressly assume, the obligations set forth in the Merger Agreement; or (B) take any other action to ensure that the ability of the Surviving Company to satisfy such obligations will not be diminished in any material respect. For seven years after the Effective Time, KLA-Tencor shall (and shall cause the Surviving Company and its subsidiaries to) cause the articles of association, certificate of incorporation or bylaws (or any other similar organizational documents) of the Surviving Company and its subsidiaries to contain provisions with respect to indemnification, advancement of expenses and exculpation that are at least as favorable to the Indemnified Parties as the indemnification, advancement of expenses and exculpation provisions contained in the articles of association of Orbotech immediately prior to the date of the Merger Agreement, and such provisions shall not be amended, repealed or otherwise modified in any manner that would adversely affect the rights thereunder of individuals who were covered by such provisions, except as required by applicable law.

For a period of seven years after the Effective Time, KLA-Tencor and the Surviving Company shall maintain in effect Orbotech's current directors' and officers' liability insurance (D&O Insurance) in respect of acts or omissions occurring at or prior to the Effective Time (including acts or omissions occurring in connection with the approval of the Merger Agreement, any ancillary documents, the Merger and the other transactions contemplated hereby and thereby and the consummation thereof), covering each person covered by the D&O Insurance immediately prior to the Effective Time (the Insured Parties), on terms with respect to the coverage and amounts no less favorable, than those of the D&O Insurance in effect on the date of the Merger Agreement.

Prior to the Effective Time, notwithstanding anything to the contrary set forth in the Merger Agreement, Orbotech may purchase a seven-year tail prepaid policy (the Tail Policy) on the D&O Insurance on terms and

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conditions no less favorable than the D&O Insurance and for an amount not to exceed 300% of the annual amount payable by Orbotech for the D&O Insurance. In the event that Orbotech does not purchase the Tail Policy, KLA-Tencor may purchase a Tail Policy on the D&O Insurance on terms and conditions no less favorable, than the D&O Insurance. In the event that either Orbotech or KLA-Tencor purchases such a Tail Policy prior to the Effective Time, KLA-Tencor and the Surviving Company shall maintain such Tail Policy in full force and effect and continue to honor their respective obligations thereunder, in lieu of all other obligations of KLA-Tencor and the Surviving Company under the first sentence of the immediately preceding paragraph for so long as such Tail Policy shall be maintained in full force and effect.

Each of the Indemnified Parties or other persons who are beneficiaries under the D&O Insurance or the Tail Policy (and their heirs and representatives) are third party beneficiaries of the foregoing, with full rights of enforcement as if a party thereto.

Obligations of KLA-Tencor and Merger Sub

KLA-Tencor shall take all action necessary to cause Merger Sub and the Surviving Company to perform their respective obligations under the Merger Agreement and to consummate the transactions contemplated by the Merger Agreement, including the Merger, upon the terms and subject to the conditions set forth in the Merger Agreement.

Israeli Tax Rulings

Orbotech has requested tax rulings from the Israel Tax Authority with respect to (i) exemption of Orbotech shareholders who are non-Israeli residents and who meet certain conditions from withholding of Israeli tax on payments of the Merger Consideration paid to them, (ii) deferral of the obligation of Israeli tax resident holders of Orbotech shares, to pay Israeli tax on the exchange of the Orbotech shares for KLA-Tencor common stock in accordance with the provisions of Section 104H of the ITO and (iii) the application of Israeli tax withholding and other Israeli tax treatment applicable to holders of Orbotech Options, RSUs and shares issued to certain directors and employees under Section 102 of the ITO and to certain directors and others under Section 3(i) of the ITO.

Stock Exchange Listing

KLA-Tencor shall use its reasonable best efforts to cause the shares of KLA-Tencor common stock to be issued in the Merger to be approved for listing on NASDAQ, subject to official notice of issuance, prior to the Effective Time.

Conditions to Completion of the Merger

Under the Merger Agreement, each party's obligation to effect the Merger is subject to satisfaction or, to the extent permitted where permissible under applicable law, mutual waiver at the Effective Time of each of the following conditions:

The approval of Orbotech's shareholders shall have been obtained.

All (i) applicable waiting periods (and extensions thereof) applicable to the transactions contemplated by the Merger Agreement (including the Merger) under the HSR Act shall have expired or been terminated and (ii) any affirmative exemption or approval of a governmental entity required under any antitrust law set forth

on the Orbotech Disclosure Letter as of the date of the Merger Agreement shall have been obtained and any mandatory waiting periods related thereto (including any extension thereof) shall have expired (collectively, the Regulatory Approvals).

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No governmental entity of competent jurisdiction shall have (i) enacted, issued, promulgated, entered, enforced or deemed applicable to the Merger any applicable law that is in effect and has the effect of making the Merger illegal in any jurisdiction or which has the effect of prohibiting or otherwise preventing the consummation of the Merger in any jurisdiction; or (ii) issued or granted any order (whether temporary, preliminary or permanent) that has the effect of making the Merger illegal in any jurisdiction or which has the effect of prohibiting or otherwise preventing the consummation of the Merger in any jurisdiction.

The shares of KLA-Tencor Common Stock issuable as Stock Consideration pursuant to the Merger Agreement shall have been approved for listing on NASDAQ, subject to official notice of issuance.