**Safe Harbor**

This presentation contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Except as otherwise specifically indicated herein, the information included in this presentation is as of the date it is delivered.

These forward-looking statements, including statements regarding (i) calendar 2019 and/or calendar 2019-2023 estimates of: total revenues, EPS and diluted EPS, gross margin, operating margin, return on invested capital, adjusted EBITDA, R&D as a percentage of sales and operating expenses, semiconductor industry revenue growth, data center and automotive semiconductor growth CAGR, SAM, R&D investments, free cash flow, revenue CAGR from semiconductor process control, process control revenue and revenue mix, WFE industry CAGR, service revenue, revenue mix, revenue CAGR and operational statistics, Orbotech service revenue, addressable market for service, Orbotech revenue, revenue CAGR, revenue split and R&D as a percentage of revenue, PCB, FPD and SPTS revenue and revenue CAGR, Orbotech’s total addressable market, advanced packaging SAM, SPTS EFEM annualized cost savings, auto electronics semiconductor revenue growth and CAGR, process control growth in auto electronics and associated CAGR, growth opportunity in auto electronics, ratio of gross debt to EBITDA, uses of cash and dividend increases, achievement of synergy targets, and (ii) the number of high tech jobs to be generated in the state of Michigan over the next five years, which are subject to risks and uncertainties. For the factors that may cause actual results to differ materially from those projected and anticipated in the forward-looking statements in this presentation, please refer to the Company’s annual report on Form 10-K for the year ended June 30, 2019, subsequently filed quarterly reports on Form 10-Q and other filings with the Securities and Exchange Commission (including, without limitation, the risk factors described therein). The Company assumes no obligation to, and does not currently intend to, update these forward-looking statements.
## Today’s Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 a.m.</td>
<td>WELCOME &amp; OPENING REMARKS</td>
<td>Ed Lockwood</td>
<td>Senior Director, IR</td>
</tr>
<tr>
<td></td>
<td>KLA OVERVIEW &amp; STRATEGIC INITIATIVES</td>
<td>Rick Wallace</td>
<td>CEO &amp; President</td>
</tr>
<tr>
<td></td>
<td>SYSTEMS OVERVIEW</td>
<td>Ahmad Khan</td>
<td>President, KLA Semiconductor Process Control</td>
</tr>
<tr>
<td>9:35 a.m.</td>
<td>Break</td>
<td></td>
<td></td>
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<tr>
<td>9:45 a.m.</td>
<td>SERVICES OVERVIEW</td>
<td>Brian Lorig</td>
<td>EVP, Global Support &amp; Services</td>
</tr>
<tr>
<td></td>
<td>ORBOTECH OVERVIEW</td>
<td>Oreste Donzella</td>
<td>EVP &amp; CMO</td>
</tr>
<tr>
<td></td>
<td>OPPORTUNITIES IN AUTOMOTIVE ELECTRONICS</td>
<td>Oreste Donzella</td>
<td>EVP &amp; CMO</td>
</tr>
<tr>
<td></td>
<td>FINANCIAL FRAMEWORK &amp; OUTLOOK</td>
<td>Bren Higgins</td>
<td>EVP &amp; CFO</td>
</tr>
<tr>
<td></td>
<td>CLOSING REMARKS</td>
<td>Rick Wallace</td>
<td>CEO &amp; President</td>
</tr>
<tr>
<td>11:45 a.m.</td>
<td>Q&amp;A</td>
<td></td>
<td></td>
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<tr>
<td>12:30 p.m.</td>
<td>Lunch</td>
<td></td>
<td></td>
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</tbody>
</table>
KLA Overview and Strategic Initiatives

Rick Wallace | CEO and President
Key Messages

1. **Global leader** in process control and supplier of process-enabling solutions for the data era

2. **Sustained technology leadership** allows us to remain at forefront of industry trends with new capabilities and technologies, enabling our profitable growth strategy

3. **Competitive moat** driven by deep, collaborative customer relationships, a broad IP portfolio, significant R&D investments, and differentiated solutions to solve our customers’ most complex challenges

4. **Experienced and energized leadership team** utilizing the **KLA Operating Model** to instill a high-performance culture driving efficiency and operating performance

5. **Track record of strong cash flow generation** supported by diversification of revenue streams; balanced capital allocation delivering superior shareholder value
Well Positioned as a Global Leader in the “Data” Era

Semiconductor Industry Revenue ($B)


Sources: Industry data and Company estimates.
# More Complexity & Semiconductor Devices Drive Greater Demand

KLA is Differentiated with Solution Centric and Product Agnostic Approach

**MEGA TRENDS ACROSS...**

- **ARTIFICIAL INTELLIGENCE**
  - Core engine of KLA products’ performance
  - Clear opportunities as a user and supplier
  - Expanding the scope of advanced logic nodes
  - Significant inflections in packaging via multi-chip integration

- **5G CONNECTIVITY**
  - Embedded in technologies in the next 5 years
  - Building infrastructure increases demand for KLA
  - Mobile implementation in 2021E-2023E, driving new smartphone cycle
  - Significant opportunities across our entire portfolio

- **MOBILE**
  - #1 consumer of semiconductor ($100B+ / year)
  - >30% growth of semiconductor content in future 5G phones
  - Leading with new technology inflections
  - Highest process control intensity industry

- **DATA CENTER**
  - High growth industry
  - Strong driver of leading-edge semiconductor
  - End customers designing their own chips
  - Strategic collaborations to influence semiconductor supply chain

- **AUTOMOTIVE**
  - Secular transformation with connectivity/autonomous/electrification
  - Fastest growing semiconductor segment
  - Highest semiconductor quality and reliability standards

---

**KEY INDUSTRIES**

**Sources:** Gartner, Yole and Company estimates.
KLA at a Glance (NASDAQ: KLAC)

Diversified Global Leader in Electronics Value Chain

**KEY STATISTICS**

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Founded</td>
<td>1976</td>
</tr>
<tr>
<td>Headquarters</td>
<td>Milpitas, CA</td>
</tr>
<tr>
<td>Employees</td>
<td>~10,000</td>
</tr>
<tr>
<td>Countries</td>
<td>18</td>
</tr>
<tr>
<td>Market-Cap</td>
<td>$23.8B</td>
</tr>
<tr>
<td>Revenue</td>
<td>$5.1B</td>
</tr>
<tr>
<td>Adj. EBITDA</td>
<td>$1.9B</td>
</tr>
<tr>
<td>R&amp;D (% of Sales)</td>
<td>15%</td>
</tr>
</tbody>
</table>

**2019E REVENUE SPLIT**

- **by Business**
  - Systems: 75%
  - Services: 25%

- **by Market**
  - Semiconductor Process Control: 80%
  - Printed Circuit Board, Display, Components: 13%
  - Semiconductor Specialty Process: 7%

- **by Region**
  - Taiwan: 26%
  - Mainland China: 13%
  - Korea: 13%
  - U.S.: 12%
  - Japan: 6%
  - EU: 4%
  - SEA: 26%

---

1 As of 6/30/19 unless otherwise noted; 2 As of 9/12/19; 3 Based on 2019E consensus estimates as of 9/12/19.
Our Shared Purpose Across KLA Continues to Define Us

MISSION
Improve customer yield, performance and time-to-market, enabling the data era

STRATEGY
Provide leading technologies, differentiated solutions and superior customer experiences through collaboration, innovation and execution

OBJECTIVES
Achieve world-class results in market leadership, product differentiation and operational excellence with our diverse and inclusive global organization
Corporate Social Responsibility and Sustainability is in Our DNA
Reducing overall environmental impact by focusing on improving yield and efficiency for our customers

**Sustainable Environmental Initiatives**

- **Transportation**: Avoiding wasted space and saving fuel by utilizing custom tailored and collapsible containers in product shipments
- **Energy & Emissions**: Saving 80,000 metric tons of CO₂ over the next five years from recent switch to third-party provider of energy with nearly 100% sourced from renewable energy
- **Waste**: Improved diversion rate to over 80%, up from 50% a decade ago
- **Supply Chain Environmental & Social Responsibility Management**: Requiring suppliers to meet more stringent sustainability criteria as a member of Responsible Business Alliance (RBA)

**Community Programs & Initiatives**

- **KLA Foundation**: Inspires individual philanthropy and supporting programs focusing on health/wellness, social services, and educational programs and institutions
- **CSR Award**: KLA Singapore received CARES Award from American Chamber of Commerce for our efforts in charity and volunteering
- **Key Initiatives**:
  - StandUp For Kids
  - SEMI Hi Tech U at KLA
  - Hsiang-Tien Elementary School Programs
  - STEM Robotics Competition
  - Disaster Relief
  - Urbanek Scholarships

**Corporate Governance**

- **Board of Directors**: 12 members
- **Diversity**: Seasoned board comprised of independent business leaders, 25% female
- **Board Tenure**: Well balanced tenure of independent directors, with six directors serving < 10 years, and six directors serving > 10 years
- **Management Aligned with Shareholders**: Compensation of management and board aligned with shareholder interests

---

1 Note: statistics are for the Milpitas, CA facility.
Seasoned, Internally-Developed Leadership Team Driving Results

- **RICK WALLACE**
  - CEO & President
  - Joined: 1988

- **BREN HIGGINS**
  - EVP, CFO
  - 1999

- **ORESTE DONZELLA**
  - EVP, CMO
  - 1999

- **AHMAD KHAN**
  - President, KLA Semiconductor Process Control
  - 2004

- **BRIAN LORIG**
  - EVP, Global Support & Services
  - 1998

- **BEN TSAI**
  - EVP, CTO Corporate Alliances
  - 1984

- **TERI LITTLE**
  - EVP, Chief Legal Officer & Corp. Secretary
  - 2002

- **JOHN VAN CAMP**
  - Chief Human Resources Officer
  - 2006

- **BOBBY BELL**
  - EVP, Chief Strategy Officer
  - 1994
Strategic Objectives | Continue to Win in Our Markets

- Market Leadership
- Product Differentiation
- Operational Excellence
- Attract and Develop Talent
Market Leadership

Highly Valued and Trusted Partner

Listen and Confirm Understanding
Partner, Commit and Deliver
Follow Up and Ensure Value
Measure and Continuously Improve

Collaborate
Partnering with customers onsite

Innovate
Centers of excellence worldwide

Execute
Solving industry’s most complex challenges

Process Control Market Share

4x NEAREST COMPETITOR ACROSS ALL REGIONS

Source: Gartner April 2019.
Product Differentiation

Leadership in Design, Technology, Performance and Customer Success

Embedded in R&D with customers

Working two generations ahead

Continued leadership in innovation

Investing to Sustain Technology Leadership

R&D INVESTMENTS ($M)

- 2015: $481
- 2016: $499
- 2017: $567
- 2018: $625
- 2019: ~$800

~15% Avg. R&D as a % of Sales

Incl. Orbotech
Operational Excellence

Cycle of Success

- Investment in Growth and New Products
- Market Leadership and Differentiated Solutions
- Strong Margins and FCF
- Cash Returns to Stockholders

FREE CASH FLOW ($M)

- 2015: $819
- 2016: $823
- 2017: $1,141
- 2018: $1,303
- 2019E: ~$1,000

FCF Conversion\(^1\): 102% Avg.

COMMENTARY

- Introducing new products at 2x the pace of our competitors
- Achieving market share of 4x our nearest competitor
- Strong gross margins and FCF conversion via differentiation
- ~70% of FCF returned to shareholders through dividends and share repurchases

\(^1\) FCF Conversion = FCF / Net Income.
High-Performance Culture to Attract and Develop Talent

- High-caliber graduates from top-tier universities across the world
- Career development opportunities through multi-faceted and broad-based programs
- Extensive education benefits and advanced-degree tuition reimbursement programs
- Investing in Ann Arbor, Michigan Innovation Center to attract new talent in a cost-efficient labor market and collaborate with top universities
- 80% goal of Vice President promotions from within – tracking at ~85%

Global Holistic Approach with Emphasis on Diversity and Inclusion

EMPLOYEE TURNOVER

Well below average¹ turnover in Silicon Valley

- 2014: 4.8%
- 2015: 5.2%
- 2016: 5.5%
- 2017: 4.2%
- 2018: 4.9%

¹ Company estimate of ~10%.
Strategic Talent Sourcing
HQ2 and R&D Facility in Ann Arbor, Michigan

- **Talent Pipeline:** Attractive talent pool with relatively lower cost of living, higher quality of life and proximity to Detroit Metropolitan Airport

- **Long-term Partnership:** Strong collaborative relationship with University of Michigan, including research and continuing education for employees

- **Proximity to Growing Automotive Electronics:** Supporting semiconductor manufacturing requirements for improved device reliability and defect control

- **Economic Incentives:** $39M in projected incentives from both state and local sources

~$175M Total Capital Investment

600 New High-Tech Jobs Over Next 5 Years

2021 Completion of New Innovation Center
Introducing the KLA Operating Model

**CONSISTENT STRATEGY AND EXECUTION**
- Application of common processes and discipline
- Cascades throughout the organization
- Strong focus on talent development

**MANAGEMENT BY METRICS**
- Culture of performance and accountability
- Expectation of continuous improvement
- Superior margins driven by market leadership and differentiation

**FINANCIAL DISCIPLINE AND RIGOR**
- Exert efficiency and operating discipline in our investments
- Strong track record of high returns
- Focused on enhancing shareholder value

Focused on Driving Sustainable Profitability and Growth
KLA Operating Model Enables Sustainable Competitive Benefits

- **Significant R&D investments** drives technology leadership and creates **differentiated products**
- **Strong track record** of effectively deploying capital and meeting deleveraging commitments
- **Growing service business** provides strong, **recurring revenue**
- **Integrating strategic acquisitions** to diversify revenue streams and enhance profitable growth opportunities
- **Home-grown, experienced management team**
- **Low capital requirements** to efficiently operate the business
- **Leadership positions** with focus on penetration and share gains within new markets
- **KLA Operating Model instills culture of excellence** with deep customer focus
Strategic Transformation through Disciplined Acquisitions for 20+ Yrs

1997: KLA-Tencor
- Merger of two leading semiconductor inspection and metrology companies

1997: KLA-Tencor
- Merger of two leading semiconductor inspection and metrology companies

1998
- Amray Inc.
- Nanopro
- Quantox
- VARS
- Ultrapointe

1999
- Acme Systems

2000
- Fab Solutions
- FINLE

2001
- Phase Metrics

2004
- Candela Instruments
- Wafer Inspection Systems

2006
- ADE

2007
- OnWafer Technologies
- SensArray Corporation
- Therma-Wave Corporation

2008
- ICOS Vision Systems
- MIE BU, Vistec Semiconductor Systems

2010
- Ambios Technology

2014
- Luminescent Technologies

2017
- Zeta Instruments

2018
- Nanomechanics
- MicroVision

2019: Orbotech
- Extends technology and market reach into electronics value chain
- Complementary geographic and customer mix
- Exposure to fast growing markets

Other Acquisitions Further Expanding Our Scope

2019
- MicroSense
- Filmetrics
- Capres
- Qoniac
The Evolution of Our Transformational Story

**PRE-1997**
- **KLA Instruments**
  - $0.8B REVENUE (1996)
  - $1.5B SAM (1996)
- NEW END MARKETS
  - IC Fabs
  - Mask Suppliers
- NEW OFFERINGS
  - Wafer, Mask Inspection
  - Overlay Metrology

**1997-2018**
- **KLA-Tencor**
  - $4.3B REVENUE (2018)
  - $6.6B\(^1\) SAM (2018)
- NEW END MARKETS
  - Wafer Suppliers
  - Semiconductor OEMs
- NEW OFFERINGS
  - Film and CD Metrology
  - Computational Litho
  - Wafer Geometry
  - Component Inspection

**2019-2023**
- **KLA**
  - >$7.0B REVENUE (2023E)
  - >$10B SAM (2023E)
- NEW END MARKETS
  - Advanced Packaging
  - Printed Circuit Board (PCB)
  - Flat Panel Display (FPD)
- NEW OFFERINGS
  - Semiconductor Process Equipment
  - PCB Inspection and Repair
  - PCB Process Tools
  - FPD Inspection and Test

\(^1\) Excludes Services SAM.
## Expanding Presence and Leadership in Served Addressable Markets

### PROCESS CONTROL

<table>
<thead>
<tr>
<th>Advanced Semiconductors&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Metrology</th>
<th>Data Analysis</th>
<th>Process</th>
<th>Electrical Test</th>
<th>Repair</th>
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<td>$3,400M</td>
<td>$2,200M</td>
<td>$200M</td>
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<th>Data Analysis</th>
<th>Process</th>
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<th>Repair</th>
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<td>$200M</td>
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<td>$700M&lt;sup&gt;3&lt;/sup&gt;</td>
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<th>IC Components, Printed Circuit Board</th>
<th>Metrology</th>
<th>Process</th>
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<th>Repair</th>
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<td>$200M</td>
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<td>$600M&lt;sup&gt;4&lt;/sup&gt;</td>
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<td>$50M</td>
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<th>Flat Panel Display</th>
<th>Metrology</th>
<th>Process</th>
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<td>$250M</td>
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<td>$200M</td>
<td>$100M</td>
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### SAM

- **~$8.5B**
- **$2.0B** Increase in SAM from Orbotech
- **$2.0B** #1 KLA (ex-Orbotech) Markets of $6.6B
- **$1.9B** #1 Orbotech Markets of $1.9B

**SAM Source:** Gartner and Internal KLA Research excluding service; <sup>1</sup> includes WLP, Wafer and Masks; <sup>2</sup> Power, MEMS, RF; <sup>3</sup> Etch, Deposition; <sup>4</sup> Digital Imaging, laser drilling.
2023E Financial Targets

$7.0B - $7.5B
REVENUE

$14.50 - $15.50
EARNINGS PER SHARE
Key Takeaways

1. **Global leader** in process control and supplier of process-enabling solutions for the data era

2. **Sustained technology leadership** allows us to remain at forefront of industry trends with new capabilities and technologies, enabling our profitable growth strategy

3. **Competitive moat** driven by deep, collaborative customer relationships, a broad IP portfolio, significant R&D investments, and differentiated solutions to solve our customers’ most complex challenges

4. **Experienced and energized leadership team** utilizing the KLA Operating Model to instill a high-performance culture driving efficiency and operating performance

5. **Track record of strong cash flow generation** supported by diversification of revenue streams; balanced capital allocation delivering superior shareholder value
Systems Overview
Ahmad Khan | President, KLA Semiconductor Process Control
Key Messages

1. Consistently creates and deploys highly differentiated inspection and metrology products to support customers’ growth

2. Cultivate and maintain intimate relationships with key customers to sustain leading market share

3. Foresee and understand the most complex industry technical challenges; continuously optimize our innovative product portfolio

4. Collaborate with services business to enhance our complete product delivery and service model

5. Delivering on the KLA Operating Model for sustainable profitability and growth; strategic growth opportunities both internally and externally
## KLA Semiconductor Process Control Systems at a Glance

### Key Statistics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td><strong>REVENUE CAGR (’19E - ’23E)</strong></td>
<td>6% - 7% Semiconductor mfg.</td>
</tr>
<tr>
<td><strong>GROSS MARGIN</strong></td>
<td>~63% Including service</td>
</tr>
<tr>
<td><strong>MARKET SHARE</strong></td>
<td>4x Nearest competitor</td>
</tr>
<tr>
<td><strong>BREADTH OF PORTFOLIO</strong></td>
<td>10 out of 12 Gartner segments by end of 2019¹</td>
</tr>
<tr>
<td><strong>% OF MAJOR SEMI CUSTOMERS SERVED</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

### 2019E Revenue Mix

- Reticle: ~$3.1B
- Metrology: 25%
- Inspection: 60%
- Metrology: 15%

### Comprehensive Solutions

- Analyze defectivity and metrology issues at critical points in the wafer, reticle, IC manufacturing and packaging processes
- Locate source of defects and metrology variation to resolve underlying process issues and enable our customers to improve control over their manufacturing
- Key supplier of yield management solutions for next gen products

### Strong Through Cycle Performance and Profitable Growth

¹ Source: Gartner April 2019.
KLA Systems Markets Overview

#1 IN 8 OUT OF 10 SERVED MARKETS\(^1\)

- Mask Metrology
- Optical Pattern Wafer Inspection
- Mask Inspection and Review
- Unpatterned Wafer Inspection
- Overlay Metrology
- Macro Defect Inspection
- Thin Film Metrology
- Control Software

Strategic Portfolio Addressing Customers’ Critical Needs

\(^{1}\) Sources: Gartner; other served markets include wafer level packaging inspection and SEM Review.
KLA Operating Model Enables Sustainable Competitive Benefits

- Intimate relationships with key customers
- Differentiation through technical innovation
- Early access to tomorrow’s hardest problems
- Largest installed Process Control portfolio
- Continued large R&D investments
- Global organization with strong talent base

Revenue Growth > WFE while Maintaining Strong Gross Margins
Semiconductor Process Control | 2010 – 2019E Revenue Bridge

Outperformed WFE in a Memory Intensive Cycle

- In-line with WFE
- Increasing device complexity
- Higher adoption of Process Control in memory
- Gen5
- Bare Wafer

2010 – 2019E

- 5% WFE Industry CAGR
- 6% KLA Semi PC CAGR

Intensity $= \frac{PC \text{ revenue}}{total \text{ equipment revenue}}.$
More Complexity & Semiconductor Devices Drive Greater Demand

KLA is Differentiated with Solutions to Support Semiconductor Growth & Technology Inflections

**MEGA TRENDS ACROSS...**
- ARTIFICIAL INTELLIGENCE
- 5G CONNECTIVITY

**...KEY INDUSTRIES**
- MOBILE
- DATA CENTER
- AUTOMOTIVE

**KLA IS WELL POSITIONED AS WE ARE CREATING UNIQUE TOOLS FOR INFLECTIONS**
- EUV
- NANOSHEET
- ADVANCED MEMORY
- AUTOMOTIVE ELECTRONICS

**MARKET READINESS FOR TECHNICAL CHALLENGES**
- Reticle EUV pattern quality
- Reticle cleanliness in mask shop and wafer fab
- Highly accurate 3D structure control
- Material composition control
- Buried defects
- High aspect ratio structures
- New failure mechanisms
- Buried defects
- Increasing silicon content
- Complex systems
- Logic, memory, advanced packaging

KLA is Differentiated with Solutions to Support Semiconductor Growth & Technology Inflections
Well Positioned to Expand Systems SAM

Inflections and Increasing Complexity Drive Process Control Market Growth

~$6B
2019E SAM

~$3.1B
2019E Revenue

~$7.5B
2023E SAM
+ Inflections

~$4B
2023E Revenue
+ Intensity
+ Share Gain

MARKET DRIVERS

Inflections
- EUV
- Nanosheet
- Advanced Memory

Intensity / Share
- Gen5 EUV extension
- EUV Reticle
- X-Ray
- EBEAM
Leveraging and Applying the KLA Operating Model to Our Strategic Path Forward

Market Leadership

Product Differentiation

Operational Excellence
Complete EUV Qualification Solution

<table>
<thead>
<tr>
<th>TODAY</th>
<th>FUTURE (N + 1)*</th>
<th>EUV SOLUTIONS</th>
</tr>
</thead>
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</tbody>
</table>

**MASK**

- Optical Inspection for EUV

**WAFER**

- Implementing Gen5 EUV Extension

**MASK SHOP**

- Extension of existing proven optical technology
- Complementary multi-column reticle inspection

**WAFER FAB**

- Leveraging Gen5 platform
- Unique wavelength range
- Custom algorithms

**WAVELENGTH**

λ : 190-260nm

**ALGORITHMS**

- High Signal / Noise

Driving Intensity Growth through High End EUV Solutions

* Variability based on node transition timing.
Case Study | Solving 3D Challenges with Leading Memory Customer

**BACKGROUND**
Customer yielding issue related to inability to monitor effectiveness in high-aspect ratio etching in advanced 3D NAND and DRAM

**KLA SOLUTION**
- Developed XRAY (SAXS) technology
- Partnered with customer and provided alpha learning tool to obtain unique data

**OUTCOME**
- Enabled yield enhancement for customer
- Improved inline control
- Shortened time to market for next gen devices

**Intensive Gain**
- New device architecture; immeasurable in production
- Close collaboration; alpha tool built and shipped to customer
- Win/Win: tool concept validated, and customer gets inline monitor

**Improving Yields for Customers and Increasing Memory Intensity**
Case Study | KLA EBEAM + Optical Opportunity

**CHALLENGE**

Traditional EBEAM tools cannot run at high speed while maintaining high resolution

Missing critical defects in small inspected area

**KLA UNIQUE SOLUTION**

- KLA EBEAM unique connectivity with KLA Optical tools enables fast detection for ultra small defects

**OPPORTUNITY**

Reduce time cycle of learning for customer

Accelerates yield ramp

Early customer engagements have been promising; full product release expected in 2020

**KLA Provides a Seamless Single Inspection Solution for All Defect Types**
Semi Process Control | 2019E – 2023E Revenue Bridge

Revenue Growth > WFE through Intensity and Share Grains

2019E – 2023E

4% - 5%
WFE Industry CAGR

6% - 7%
KLA Semi PC CAGR

~$3.1B

$400M - $500M

Intensity (New Products)
- EUV
- Nanosheet
- New memory architecture
- Gen5 EUV extension
- EUV reticle
- X-Ray
- Automotive Electronics

Share
- EBEAM

~$4.0B

2019E
Core Growth
Intensity / Share Gain
2023E
Key Takeaways

1. Consistently creates and deploys highly differentiated products to support customers’ growth

2. Cultivate and maintain intimate relationships with key customers to sustain leading market share

3. Foresee and understand the most complex industry technical challenges; continuously optimize our innovative product portfolio

4. Collaborate with services business to enhance our complete product delivery and service model

5. Delivering on the KLA Operating Model for sustainable profitability and growth; strategic growth opportunities both internally and externally
BREAK
Services Overview

Brian Lorig | EVP, Global Support and Services
1. **Strong customer value proposition**: we help customers maximize the value of their KLA assets

2. Increasingly important business and **growing faster than the installed base**

3. **Unique portfolio of resources** enables a broad range of service offerings and professional services

4. **Industry-leading service model** with >70% of revenue coming from subscription-like service contracts

5. **Leverage KLA Operating Model** to drive operational excellence
## KLA Services at a Glance

### 2019E KEY STATISTICS

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue (2019E)</td>
<td>$1.3B</td>
</tr>
<tr>
<td>CAGR (2019E-2023E)</td>
<td>9% - 11%</td>
</tr>
<tr>
<td>Attach Rate</td>
<td>&gt;70%</td>
</tr>
<tr>
<td>Renewal Rate</td>
<td>&gt;90%</td>
</tr>
<tr>
<td>Installed Base</td>
<td>&gt;44,000</td>
</tr>
<tr>
<td>Service Calls</td>
<td>&gt;150,000</td>
</tr>
<tr>
<td>Customers (Fab End User)</td>
<td>&gt;1,400</td>
</tr>
<tr>
<td>Spare Parts/Assemblies</td>
<td>&gt;120,000</td>
</tr>
<tr>
<td>CSEs (Customer Service Engineers)</td>
<td>&gt;2,000</td>
</tr>
</tbody>
</table>

### 2019E REVENUE MIX

- **Systems**: 75%
- **Services**: 25%

### COMPREHENSIVE OFFERINGS

- Training
- Software Applications
- Optimization
- Predictive Maintenance Services
- Ramp Management
- Enhancements and Upgrades
- Lifecycle Management
- Certified Refurbished Systems
Orbotech and SPTS Service Optimization Plan

**LEVEL I**
*KLA Operating Model Sharing*
- 5-year growth/operating plans
- Standardized KPIs
- Benchmarking sessions
- Quarterly reviews

**LEVEL II**
*Operations Optimization*
- Depots and logistics
- Training and documentation
- Call center
- Service processes and methods
  - Parts planning
  - Resource management
  - Escalation management

**LEVEL III**
*Go-to-Market*
- Optimize sales processes and tools
- Shared professional services
- Standardized new product offerings

0 – 6 Months
6 – 12 Months
12 – 24 Months
Case Study | KLA Operating Model: Services

BACKGROUND

A key factor in M&A is the existence of a service business

Significant opportunity to leverage our KLA Operating Model to improve acquired businesses

KLA SOLUTION

Utilizing KLA Operating Model to create, expand and optimize legacy services businesses

▪ Brought services in-house versus through distributors, increasing customer satisfaction with consistent and higher quality service support

▪ Expanded service offerings and resources driving greater services revenue

▪ Improved scale of operations with larger footprint, better infrastructure and enhanced data analytics

OUTCOME/IMPACT

Direct partnership with customers to drive maximum value of KLA asset

Increased Service revenue CAGR from low single digits to >15%

Drove revenue from subscription-like service contracts from <10% to >70%

Increased customer satisfaction and KLA profitability

KLA Operating Model Improves Acquired Service Businesses
More Complexity & Semiconductor Devices Drive Greater Demand

MEGA TRENDS ACROSS...

- ARTIFICIAL INTELLIGENCE
- 5G CONNECTIVITY

...KEY INDUSTRIES

- MOBILE
- DATA CENTER
- AUTOMOTIVE

KLA SERVICES WELL POSITIONED BY

- Aiding leading-edge development in ramping production
- Improving yield among leading edge manufacturers
- Maintaining tool uptime and performance
- Increasing utilization of mature fabs
- Extending lifetime of older tools and improving performance of existing tools
- Offering fab optimization services

KLA Service Provides Differentiated Solutions and Fleetwide Support

Sources: Gartner, Yole and KLA research.
Expanding Our Total Addressable Market

Growth from Leading Edge Plus Increasing Penetration of Trailing Edge

<table>
<thead>
<tr>
<th>Market Dynamics</th>
<th>Leading Edge</th>
<th>Trailing Edge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development</td>
<td>~$650M</td>
<td>~$450M</td>
</tr>
<tr>
<td>Manufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth Rate</td>
<td>9% - 11%</td>
<td></td>
</tr>
</tbody>
</table>

End Market Drivers

- 5G
- Artificial Intelligence
- Mobile
- Data Centers
- Automotive

- 5G
- Internet of Things
- Automotive

1 Excludes Orbotech Service revenue.
## KLA Operating Model Enables Sustainable Competitive Benefits

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmatched Availability and Breadth of Spare Parts</td>
<td></td>
</tr>
<tr>
<td>Global Network of Certified and Experienced Customer Service Engineers (CSEs)</td>
<td></td>
</tr>
<tr>
<td>Professional Services with Access to More Data and Better Analytics</td>
<td></td>
</tr>
<tr>
<td>Comprehensive Training and Certification Program for All Products</td>
<td></td>
</tr>
<tr>
<td>Leverage Diverse Installed Base Effectively and Efficiently</td>
<td></td>
</tr>
<tr>
<td>Technology and Product Complexity Never Diminishes</td>
<td></td>
</tr>
</tbody>
</table>

Well Positioned as Global Service Aggregator for Diversified Product Lines & Broad Portfolio
Leveraging and Applying the KLA Operating Model to Our Strategic Path Forward
## Strong Customer Focus

<table>
<thead>
<tr>
<th>CUSTOMER GOAL</th>
<th>KLA STRATEGY</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ramp Faster</strong>&lt;br&gt;Leading-edge Development</td>
<td>Develop, ramp and transfer new technology to high volume manufacturing</td>
<td>New product introduction and service solutions to maximize uptime of KLA tools</td>
</tr>
<tr>
<td><strong>Higher Yield</strong>&lt;br&gt;Leading-edge Manufacturing</td>
<td>Maximize good wafers out at lowest possible cost</td>
<td>Optimized production monitoring while reducing customer cost of ownership</td>
</tr>
<tr>
<td><strong>Lifecycle Mgmt.</strong>&lt;br&gt;Trailing-edge Manufacturing</td>
<td>Return on assets</td>
<td>Lifecycle management through fab optimization, enhancements and services</td>
</tr>
</tbody>
</table>

Helping Customers Maximize the Value of their KLA Assets
Three Components to Our Differentiated Services

**PEOPLE TO PERFORM TASK**
- 1,200+ highly educated, trained and experienced Customer Service Engineers (CSEs)
- Tech support engineer per every 6 CSEs, primary and secondary CSE for each tool
- Tracker for proficiency and tool hours to allocate parts and CSE resources based on demand

**PARTS TO SOLVE ISSUE**
- Quick access to global network of 90,000+ spare parts
- Stocking plan enables service of machines within 24 hours
- Mature logistics infrastructure allows for efficient execution repeatedly

**KNOWLEDGE TO COMPLETE TASK**
- 1,000+ tools with data for predictive maintenance and machine learning
- Award-winning training programs held at our 4 regional facilities
- Comprehensive 9-18 months training process per tool to develop expertise
- Access to a network of highly skilled Tech Support Engineers (TSEs)

Strong Foundation to Exceed Customer Needs
Longevity of Installed Base Enhances Productivity

Phase I: Services business designed to support tool shipments and assure customers tools will be available

Phase II: Build out infrastructure as a larger, global company

Phase III: Grow Service business top line and profitability

Phase IV: Integral part of KLA business model providing differentiated value to our customers

Over the Life of Tool, Services Revenue ~0.5x Sales Price

Average Tool Age Increasing from ~4 years in 2000 to ~14 years in 2019 as our Installed Base Increased by ~2.7x
Productivity and Resiliency of Our Services Business

**KLA SERVICES REVENUE**

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>$200</td>
</tr>
<tr>
<td>2003</td>
<td>$300</td>
</tr>
<tr>
<td>2004</td>
<td>$400</td>
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<td>2005</td>
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<td>2010</td>
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<tr>
<td>2011</td>
<td>$1,100</td>
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<tr>
<td>2012</td>
<td>$1,200</td>
</tr>
<tr>
<td>2013</td>
<td>$1,300</td>
</tr>
<tr>
<td>2014</td>
<td>$1,400</td>
</tr>
<tr>
<td>2015</td>
<td>$1,500</td>
</tr>
<tr>
<td>2016</td>
<td>$1,600</td>
</tr>
<tr>
<td>2017</td>
<td>$1,700</td>
</tr>
<tr>
<td>2018</td>
<td>$1,800</td>
</tr>
<tr>
<td>2019E</td>
<td>$1,900</td>
</tr>
</tbody>
</table>

**COMMENTARY**

- 9% CAGR\(^3\) since 2002
- Resilient revenue growth with only YoY decline of ~15% in 2009
- >70% revenue from subscription-like service contracts
- Growing installed base of 22,000 tools

More Consistent, Less Volatile Long-term Revenue Growth
Revenue Bridge and Diversification¹

- HIGHLY DIFFERENTIATED PRODUCTS AND SERVICES
- ACCELERATE CUSTOMERS TIME-TO-MARKET

- ~$250M
  - Comprehensive asset relocation services
  - Applications support
  - Enhanced tool performance

- ~$50M
  - Extensions
  - Upgrades
  - Customized service offerings
  - Fab optimization

- ~$150M

- ~$1B

2019E  |  Installed Base Growth  |  Professional Services  |  Mature Market Growth  |  2023E

¹ Excludes Orbotech Service revenue.
Key Takeaways

1. **Strong customer value proposition**: we help customers maximize the value of their KLA assets

2. Increasingly important business and **growing faster than the installed base**

3. **Unique portfolio of resources** enables a broad range of service offerings and professional services

4. **Industry-leading service model** with >70% of revenue coming from subscription-like service contracts

5. Leverage **KLA Operating Model** to drive operational excellence
Orbotech Overview

Oreste Donzella | EVP, Chief Marketing Officer
Key Messages

1. **Leading supplier of process and process control equipment** for the global electronics manufacturing industry

2. **Exposure to fastest growing industries** benefitting from strong secular trends

3. **Focus on customer success and innovation** within new or adjacent markets, expanding our total addressable market

4. Leveraging broad product portfolio and capturing co-development opportunities to create **differentiated technology**

5. **Opportunity to optimize shared sales channels and supply chain cost synergies** to **drive profitable growth**
Orbotech at a Glance

**KEY STATISTICS**

| **FOUNDED** | 1981 |
| **HEADQUARTERS** | Yavne, Israel |
| **EMPLOYEES** | ~2,900 |
| **COUNTRIES** | 18 |
| **REVENUE** | ~$1.0B |
| **R&D SPEND (as % of revenue)** | 14% |

**2019E REVENUE SPLIT**

- **By Market**
  - Printed Circuit Board: 38%
  - Specialty Semiconductor Process (SPTS): 23%
  - Flat Panel Display (FPD): 37%
  - Other: 2%

- **By Geography**
  - Mainland China: 46%
  - U.S.: 17%
  - Taiwan: 12%
  - Europe: 8%
  - Japan: 5%
  - Korea: 5%
  - SEA: 6%
  - Other: 6%

---

1 As of 6/30/19 unless otherwise noted; 2 2019E as of 2/20/19; 3 Includes Service; 4 Based on 1H'19 data; 5 PCB, FPD and Other belongs to PCB, Display and Component Inspection in accordance to SEC filing.
Sustainable Competitive Benefits Aligned with KLA

- **Market leadership within PCB and specialty semiconductor process**
- **Exposure to fastest growing industries with niche applications**
- **Track record of innovation and new product development**
- **Longstanding, deep customer relationships**
- **Culture of operational excellence**
- **High technological differentiated products**
**Printed Circuit Board (PCB) Overview**

- Strong service business with double-digit growth
  - >40% revenue; >90% subscription based
- Highly fragmented markets with over 500 customers
- Strong connection with end-users (e.g., smartphone suppliers)

### REVENUE ($M)

- 2015: ~$160M
- 2016: ~$200M
- 2017: ~$250M
- 2018: ~$300M
- 2019E: ~$360M

9% CAGR

### BROAD PRODUCT OFFERING

**#1 Position in 6 of 7 Markets Served**

- CAM
- Direct Imaging
- AOS
- AOI
- Laser Plotting
- Inkjet 3D Printing
- Via Drilling

### KEY ACQUISITION AND JV MILESTONES

**Proven Ability to Grow New Market via Partnership and Acquisition**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>Established AOI Israel</td>
</tr>
<tr>
<td>1996</td>
<td>Jenoptics JV Direct Imaging Germany</td>
</tr>
<tr>
<td>1999</td>
<td>Frontline, Valor JV CAM Israel</td>
</tr>
<tr>
<td>2007</td>
<td>New Systems Acquisition InkJet Italy</td>
</tr>
<tr>
<td>2018</td>
<td>Frontline Acquisition</td>
</tr>
</tbody>
</table>
Flat Panel Display (FPD) Overview

**REVENUE ($M)**

- **2015**: $100M
- **2016**: $200M
- **2017**: $250M
- **2018**: $300M
- **2019E**: $350M

5% CAGR

**BROAD PRODUCT OFFERING**

#1 Position in Inspection and Test

- Test
- AOI
- Repair
- Yield Management Software

**KEY ACQUISITION AND JV MILESTONES**

- **1991**: Established AOI Israel
- **1999**: KLA Acrotec Acquisition AOI Japan
- **2008**: PDI Acquisition Test & Repair U.S.

- Consolidated market with 15 customers
- Full-loop process control solution (inspection, test, repair)
- Capacity-driven business
- Occasional, high-volume technology inflections (e.g., OLED, foldable displays, etc.)
Specialty Semiconductor Process (SPTS) Overview

- "More than Moore" applications within the broad WFE
- Differentiated IP portfolio for plasma-based process solutions
- Highly customized solutions to meet loyal customers’ requirements

**REVENUE ($M)**

- 10% CAGR
- ~$350M+¹

**BROAD PRODUCT OFFERING**

#1 Position in Specialty Semi Markets

- Versalis
- Etch
- Release Etch
- MVD
- PVD
- CVD

**KEY ACQUISITION AND JV MILESTONES**

- 1979: Introduced 1st cassette-to-cassette plasma tool
- 1982: Introduced 1st cassette-to-cassette PVD tool
- 1993: Co-developed Bosh process for Mem
- 1998: First-to-market with ultra low CVD dielectric
- 2007: Entered 3D TSV applications
- 2015: Introduced 1st PVD tool for advanced packaging

¹ Includes Service.
Areas of Expertise within Specialty Semiconductor Markets

**MEMS**
- Micro Electro-mechanical Systems in automobiles, smart-phones, game consoles, tablets

**LEDs**
- LED-backlit TVs, general indication, and automotive / industrial / domestic lighting

**Power Devices**
- Control / reduce / generate power used in electronic and power systems

**RF**
- Transmitters to increase the speed / performance of communication between devices

**Advanced Packaging**
- Packaging innovations to extend semiconductor roadmap beyond conventional scaling
From Your Smart Mobile Device...

30+ Electronic Components Utilized in Production of Latest Generation Smartphones

FPD
Flat Panel Display
- Automated Optical Inspection
- Test
- Repair

PCB
Printed Circuit Board
- Automated Optical Inspection
- Automated Optical Shaping
- Direct Imaging
- UV Drilling
- CAM

SPTS
Semiconductor
- Physical Vapor Deposition (PVD)
- Chemical Vapor Deposition (CVD)
- Plasma Etch
- Vapor Release Etch
- Molecular Vapor Deposition (MVD)

Automated Optical Inspection
Test
Repair
...To Your Smart Vehicle

Mission-Critical Solutions for the New Automotive Revolution

**PCB**
Printed Circuit Board
- Automated Optical Inspection
- Automated Optical Shaping
- Direct Imaging
- UV Drilling
- CAM

**SPTS**
Semiconductor
- Physical Vapor Deposition (PVD)
- Chemical Vapor Deposition (CVD)
- Plasma Etch
- Vapor Release Etch
- Molecular Vapor Deposition (MVD)

**POWER MEMS**
- Micro Electronic Mechanical Systems

**LED RF**
- Radio Frequency

**FPD**
Flat Panel Display
- Automated Optical Inspection
- Test
- Repair
## High Exposure to Mega Trends and Fast-Growing Industries

### MEGA TRENDS ACROSS...

<table>
<thead>
<tr>
<th>Artificial Intelligence</th>
<th>5G Connectivity</th>
<th>Mobile</th>
<th>Data Center</th>
<th>Automotive</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI based defect classification in PCB and FPD inspection tools</td>
<td>High RF content in base stations and handsets</td>
<td>Accelerated transition to 2(^{nd}) wave of mSAP(^1) in PCB</td>
<td>Transition from conventional PCB to advanced IC Substrate</td>
<td>Transition from conventional to High Density PCB</td>
</tr>
<tr>
<td>Significant inflections in packaging via multi-chip integration</td>
<td>Packaging innovations driving customized process solutions</td>
<td>Foldable phones (and wearable) driving transition to flex PCB and displays</td>
<td>Strategic collaborations to influence semiconductor and PCB supply chain</td>
<td>More displays in cars (dash, head-on and infotainment)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High content of MEMS, sensors, RF devices</td>
<td></td>
<td>Transition to new material (SiC, GaN) in EV</td>
</tr>
</tbody>
</table>
Expanding Orbotech’s Total Addressable Market

- Increase exposure to fast growing markets (RF, Auto, AP)
- Leverage KLA channel and technology
- Enter new Advanced Packaging and IC Substrate segments

**TOTAL ADDRESSABLE MARKET**

<table>
<thead>
<tr>
<th></th>
<th>SPTS</th>
<th>PCB</th>
<th>FPD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019E</td>
<td>~$700M</td>
<td>~$750M</td>
<td>~$550M</td>
</tr>
<tr>
<td>2023E</td>
<td>~$1,150M</td>
<td>~$1,000M</td>
<td>~$650M</td>
</tr>
<tr>
<td>CAGR</td>
<td>~13%</td>
<td>~7%</td>
<td>~4%</td>
</tr>
</tbody>
</table>

~$2.8B 2023E TOTAL MARKET
~$2.0B 2019E TOTAL MARKET
Leveraging and Applying the KLA Operating Model to Our Strategic Path Forward

Market Leadership

Product Differentiation

Operational Excellence

Extending Technology and Market Reach; Capitalizing on Revenue and Cost Synergies
Collaboration and Innovation Drove the Direct Imaging Success

BACKGROUND
- Mid 1990s: PCB moved to higher density
- 1996: Formed JV with Jenoptics to co-develop DI technology
- 2000: Assumed 100% ownership
- 2004: Launched 1st product (high-end PCB)
- 2011: DI becomes industry standard for smartphone PCB

SOLUTION
- Collaboration with top optics supplier to develop imaging technology
- Collaboration with smartphone maker to promote/validate DI value
- Innovation in multi-wave light source, large scan optics, fast image acquisition and algorithms
- Resilient Service business with >90% recurring revenue
- ~$200M business that we can grow with differentiated solutions
Case Study | Advanced Packaging Business Development

**BACKGROUND**
- Mid 2010s: Lateral Scaling slowed down or become too expensive
- Advanced packaging enabled performance at lower cost
- New technologies were developed in mobile and computing chip packaging
- Inflection opened new market opportunity for SPTS
- Market leader in key etch and film applications

**SOLUTION**
- Targeted key underserved applications
- Customize existing technology to serve advanced packaging market
- Collaborate with industry leaders to validate differentiated performance
- Technology choice for Fan Out wafer level package at #1 foundry

**REVENUE TREND**
- Strong Track Record of Business Development

Customer Collaboration, Technology Flexibility and Execution
Targeting New SAM | Advanced Packaging

**KLA:** ICOS

**Orbotech:** PCB

**KLA:** SWIFT, ICOS

**Orbotech:** PCB, SPTS

**KLA:** All Semi PC Products

**Orbotech:** SPTS

---

2019E SAM

- KLA: $900M
- Orbotech: $430M

2019E KLA

- KLA: $430M

2019E SAM

- KLA: $900M
- Orbotech: $430M

---

**Incremental Addressable Market**

**Wafer Level Packaging**

- KLA: SWIFT, ICOS
- Orbotech: PCB, SPTS

**Panel Level Packaging**

- KLA: ICOS
- Orbotech: PCB

**Component**

- KLA: All Semi PC Products
- Orbotech: SPTS

**Advanced IC Substrates**

- KLA: SWIFT, ICOS
- Orbotech: PCB, SPTS

**Advanced Packaging, Advanced Substrate**

- KLA: SWIFT, ICOS
- Orbotech: PCB, SPTS

---

**Advanced Packaging: Interconnect 1µm to 5µm, Panel and Wafer Opportunities**

- 10µm
- 5µm
- 2µm
- 1µm
- 0.1µm

---

**SAM 2019E**

- KLA: $350M → ~$1,350M (2023E)
- $620M → ~$1,350M (2023E)

---

**Advanced Semi**

- Revenue, which includes Service; ² PCB + ICOS CI; ³ SPTS AP + SWIFT BE + ICOS Zeta, F160; ⁴ 8% CAGR + 3D WLP + Adv ICS + SPTS ECD; ⁵ SPTS + SEMI PC System + SEMI PC Service.
### Optimizing Sales Channel in Packaging Industry

#### 2018 Packaging Revenue by Customer

- **Top 5 Semi Companies**: 35%
- **Other**: 65%

**Expected to Grow**

<table>
<thead>
<tr>
<th>Products</th>
<th>Process Control (KLA SWIFT)</th>
<th>Die Sorting (KLA ICOS)</th>
<th>Process (SPTS)</th>
<th>Inspection and Imaging (PCB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 5 Semi Packaging Customers</td>
<td>KLA</td>
<td>KLA</td>
<td>SPTS (partial)</td>
<td>PCB (partial)</td>
</tr>
<tr>
<td>Specialty Semi Packaging</td>
<td>KLA</td>
<td>KLA</td>
<td>SPTS</td>
<td></td>
</tr>
<tr>
<td>OSAT1 Packaging</td>
<td>KLA (partial)</td>
<td>KLA (partial)</td>
<td>SPTS (partial)</td>
<td></td>
</tr>
<tr>
<td>IC Substrate</td>
<td>KLA (partial)</td>
<td></td>
<td></td>
<td>PCB</td>
</tr>
</tbody>
</table>

**Opportunity Area**

- Expand customer penetration through existing relationships
- Reduce costs consolidating organizations

---

1. OSAT = Outsourced Semiconductor Assembly & Test.
| DI (Direct Imaging)  
3μm and 5μm, Advanced ICS and Panel | AOI (Automated Optical Inspection)  
3μm, Advanced ICS and Panel | 3D Inspection  
Wafer Level Packaging |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Large Scale Optics</td>
<td>▪ Multi-Wave Illumination</td>
<td>▪ Market Validation</td>
</tr>
<tr>
<td>▪ Large Depth of Focus</td>
<td>▪ On-the-Fly 2D Metrology</td>
<td>▪ Product Requirement Specs</td>
</tr>
<tr>
<td>▪ Advanced Algorithms</td>
<td>▪ New 3D Module</td>
<td>▪ Feasibility Study</td>
</tr>
</tbody>
</table>

**Leverage Technology to Better Address Market Needs**
Synergy Opportunities through Supply Chain and Logistics

**OPPORTUNITIES**

- ✔ Mutual supplier rebate
- ✔ Mutual cost reduction
- ✔ Enlarge base
- ✔ Terms comparison for current contract manufacturing clean room
- ✔ Consolidate common contract manufacturing supply base
- ✔ Manufacturing site consolidation
- ✔ Freight
- ✔ Warehouse

**SPTS EFEM\(^1\) Cost Reduction**

*Already Materialized*

**Annualized Cost Savings**

*(50 bps Gross Margin Improvement)*

\(^1\) EFEM = Equipment Front End Module.
Orbotech Long-term Revenue Plan ($M)

Outperforming Broad WFE at Double-Digit Growth
Key Takeaways

1. Leading supplier of process and process control equipment for the global electronics manufacturing industry

2. Exposure to fastest growing industries benefitting from strong secular trends

3. Focus on customer success and innovation within new or adjacent markets, expanding our total addressable market

4. Leveraging broad product portfolio and capturing co-development opportunities to create differentiated technology

5. Opportunity to optimize shared sales channels and supply chain cost synergies to drive profitable growth
Opportunities in Automotive Electronics

Oreste Donzella | EVP, Chief Marketing Officer
Automotive Electronics Video

- Semiconductor drivers
  - Automotive is fastest growing segment

- Automotive semiconductor content
  - Number of semiconductors increasing
  - Safety and reliability are required

- Latent defect overview

- KLA is leading the way
  - Find latent defects before they escape the fab
Key Messages

1. Secular transformation within industry driving significant increase of semiconductor content per vehicle

2. Well positioned in fastest growing semiconductor segment at >2x industry rate

3. Develop, define and provide new process control standards to meet industry demands for quality and reliability

4. Leverage innovative portfolio of solutions to meet yield and reliability goals of the industry

5. Target growth opportunities across the entire KLA portfolio
Why Automotive Electronics?

Semiconductors at Audi
a necessary new core competency

>100
Connected Electronic Control Units (ECU)

6,000 – 10,000
Semiconductors per Vehicle

2 yrs. vs. 7 yrs.
Development of Semiconductors vs. Auto

>80%
of Innovations Enabled by Semiconductors

Data and Connectivity Will Change the Automotive Industry Forever

"I believe the auto industry will change more in the next five to ten years than it has in the last 50"

Mary Barra, CEO and Chairman of GM

Semiconductors Will Enable the Automotive Revolution

Connectivity

- Higher RF/Modem content
- Linked to 5G mega trend

Electrification

- Introduction of new and unproven materials such as SiC and GaN

Autonomous

- Shift to more advanced technologies

Apply Test and Metrology Expertise for Broad Range of Industry Components

- Power
- Processor
- Memory
- RF
- MEMS
Auto Electronics is the Fastest Growing Semiconductor Segment

2018 – 2023E Semiconductor Revenue CAGR

- Average: 4.9%

COMMENTARY

- ~10% CAGR, >2x semiconductor industry average
- Electric car with L2 automation has 4x more Semiconductor content than a fuel injection car
- Average Semiconductor content per car expected to grow ~2x by 2023

Autonomy and Electrification Driving Significant Growth

Source: Gartner.
Our Targeted, Strategic Initiatives within Auto Electronics

**2010+**

**Initial Entry into Industry**
- Provide process control systems and services to Semiconductor Wafer Fabs (i.e., ICs)

**2018+**

**Strengthen Industry Position**
- Development of internal capabilities: I-PAT\(^1\) in-line quality screening methodology
- Formal industry outreach: host workshops and build awareness

**2019+**

**Fortify Industry Leadership**
- Define industry standards
- Expand Automotive Semiconductor solutions through the acquisition of Orbotech (Feb 2019)

**2020+**

**Capitalize on Secular Trends**
- Leverage strengths of KLA portfolio of differentiated solutions

---

\(^1\) I-PAT: In-Line Parts Average Testing.
We Are an Integral Partner with OEMs and Automotive ICs

**DELIVERING COMMITMENT AND EXPERTISE TO OEMs**

- Strategically located R&D center in Ann Arbor, MI with proximity to U.S. auto capital
- Consult on best practices with industry experts
- Attend and/or host workshops and conferences
- Building awareness through articles, ads, social media and tradeshows

**PROVIDING QUALITY CONTROL SOLUTIONS FOR AUTOMOTIVE ICs**

- Defects reduction
  - Surfscan® Series
- Zero-defect screening
  - 8 Series (certified and relaunched)
- Advanced node transition
  - 39xx and 29xx Series; eDR7xxx™ Series
- IC packaging
  - ICOS™ Series
- New material (SiC, GaN)
  - Candela® CS920; SPTS Omega Etch; SPTS Sigma PVD

Industry is More Willing to Collaborate, Powering the Future of Automotive
Defining Standards to Address Industry Challenges

>50% of Failure Sources Are Due to Electronic Defects

- Systematic Failures: 29%
- Random Failures: 18%
- Test Coverage Failures: 14%
- Wire Bonding: 4%
- Other: 35%

Critical to Meet ‘Zero-Defect’ Quality and Reliability Industry Standards

KLA Opportunities to Address

- Advancing design rules
- New “exotic” materials (e.g., Si Carbide)
- Extreme operating environment
- Rigorous in-line screening methodology
- Optimized electrical test coverage

Source: Auto OEMs; Other includes: NTF (no trouble found), EIPD (electrically induced physical damage) and delamination.
Current screening methodology is a statistical technique that was introduced by Automotive Electronics Council (AEC) in 1997 and based on an Electrical Test (EWS).

2016: 5M vehicle recall after defects found within corroding airbag semiconductors, resulting in a cost of ~$10B to manufacturers.

2019: KLA defines new screening methodology to minimize failures in automotive semiconductor technology.
Secular transformation within industry driving significant increase of semiconductor content per vehicle

Well positioned in fastest growing semiconductor segment at >2x industry rate

Develop, define and provide new process control standards to meet industry demands for quality and reliability

Leverage innovative portfolio of solutions to meet yield and reliability goals of the industry

Target growth opportunities across the entire KLA portfolio
Affirms Q3-CY19 Guidance

- **Revenue**: $1.31B - $1.39B
- **Non-GAAP Diluted EPS**: $2.04 - $2.34
Key Messages

1. Ability to achieve **significant revenue growth** with diversified revenue stream

2. **Superior margin profile** driven by strong customer value proposition and operational discipline

3. **Strong operating leverage** and **cash flow generation** to fuel investments and returns

4. **Disciplined balance sheet** and **balanced capital allocation** strategy to support growth initiatives

5. Well positioned for profitable growth to **deliver superior shareholder value**
Maintaining Financial Rigor as We Execute Our Strategy

**WHAT REMAINS THE SAME?**

**Continued Focus**
- R&D spend to maintain technological leadership and add value to the markets we serve
- Management by metrics focused on market leadership, productivity, talent and cash flow generation
- 40%-50% incremental operating margin
- Cash fuels high return investments, strategic M&A with market leaders, dividends and buybacks (balanced approach with ~70% combined target payout)
- Disciplined capital structure management

**WHAT IS CHANGING?**

**Heightened Emphasis**
- Expanding presence and leadership in served addressable markets (e.g., Orbotech)
- Investments in broader range of growth opportunities
  - Leveraging KLA technology and engineering competencies
  - Deploying KLA Operating Model to drive value creation from investments
- Improving operating leverage in acquired positions in new markets

Continued Focus on Increasing Shareholder Value
Revenue Growth and Diversification ($M)

Note: Calendar year figures; 1 Based on consensus estimates as of 9/12/19.
Strong Financial Performance

- **GROSS MARGIN\(^1\)**
  - 59% (2015)
  - 63% (2016)
  - 63% (2017)
  - 64% (2018)
  - 60% (2019E\(^3\))

- **OPERATING MARGIN\(^1\)**
  - 29% (2015)
  - 37% (2016)
  - 38% (2017)
  - 40% (2018)
  - 32% (2019E\(^3\))

- **DILUTED EPS\(^1\)**
  - $3.58 (2015)
  - $5.60 (2016)
  - $7.03 (2017)
  - $8.13 (2019E\(^3\))

- **ROIC\(^2\)**
  - 19% (2015)
  - 26% (2016)
  - 29% (2017)
  - 39% (2018)
  - 28% (TTM\(^4\))

- GM% ranked among leaders in Semi industry
- Disciplines returns based pricing
- Global footprint and supply chain to optimize for cost
- Leverage service offerings to drive efficiencies
- Superior margin profile vs. peer group\(^5\)
- Drive critical investments in new inflection opportunities
- Actively manage portfolio to optimize competitive position
- Cost discipline drives operating leverage
- Operating model focus while investing for long run
- Growing accretive recurring revenue
- Prudent capital structure
- Long-term secular earnings growth accelerated by acquisitions and buybacks
- Design strategy to meet differentiation requirements and protect recurring revenue
- Leverage balance sheet to maintain flexibility to meet customer commitments
- Opportunity to improve cash conversion of acquired businesses

Note: Calendar year figures;\(^1\) Non-GAAP measure, please see Appendix for reconciliation. \(^2\) ROIC = TTM Non-GAAP operating profit after tax / Average invested capital; Invested Capital = Total Debt + Total Shareholder Equity. \(^3\) Based on consensus estimates as of 9/12/19. \(^4\) TTM as of 6/30/19. \(^5\) Peers include: ASML, AMAT and LRCX.
Margins Among the Best in the Semiconductor Industry

GROSS MARGIN\(^1\)

OPERATING MARGIN\(^1\)

Source: Bloomberg / FactSet; \(^1\) Non-GAAP measure, please see Appendix for reconciliation. \(^2\) Based on consensus estimates as of 9/12/19; \(^3\) Includes AMAT, ASML, LRCX; \(^4\) Includes ADI, TXN, XN, MXIM, MCHP.
R&D and Applications ~70% of Operating Expenses ($M)

Investments Drive Market Leadership

1 Excluding Applications.
## Market Leadership Sustained by New Product Introductions

<table>
<thead>
<tr>
<th>Year</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>2900 / 2905</td>
</tr>
<tr>
<td>2013</td>
<td>2910 / 2915</td>
</tr>
<tr>
<td>2014</td>
<td>2920 / 2925</td>
</tr>
<tr>
<td>2015</td>
<td>3900 / 3905 2930 / 2935</td>
</tr>
<tr>
<td>2016</td>
<td>3900 / 3905 2930 / 2935</td>
</tr>
<tr>
<td>2017</td>
<td>2920 / 2925</td>
</tr>
<tr>
<td>2018</td>
<td>3920 / 3925 2950 / 2955</td>
</tr>
<tr>
<td>2019</td>
<td>3920 / 3925 2950 / 2955</td>
</tr>
</tbody>
</table>
High Level of R&D Investment Powers Market Leadership

2018 PROCESS CONTROL REVENUE ($M)

- KLA Revenue
- Applied Materials
- Hitachi High-Technology
- NANO / Rudolph
- ASML
- Lasertec
- KLA R&D Investment

Source: Gartner April 2019 and Company estimates.
Enhancing Gross Margin from Platform Extendibility

**EXAMPLE 1 | WAFER INSPECTION**

- Iteration 1: 1.0x
- Iteration 2: 1.2x
- Iteration 3: 1.6x
- Iteration 4: 1.8x

Average Selling Price (ASP) Index: 1.0 to 1.8

Gross Margin % Improvement: ~600 bps

**EXAMPLE 2 | METROLOGY**

- Iteration 1: 1.0x
- Iteration 2: 1.2x
- Iteration 3: 1.6x
- Iteration 4: 1.8x
- Iteration 5: 1.9x

Average Selling Price (ASP) Index: 1.0 to 1.9

Gross Margin % Improvement: ~750 bps
Operational Excellence in Action | Margin Improvement from Acquired Business

Leveraging KLA Operating Model and Portfolio to Drive Margin Expansion

OUTCOMES & BENEFITS

1.6x Gross Margin Improvement

Half from Pricing from Market Leadership

Half from Operational Excellence Leveraging KLA Global Supply and Manufacturing

<table>
<thead>
<tr>
<th>AVERAGE SELLING PRICE</th>
<th>2008</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVG. COST OF GOODS SOLD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross Margin</td>
<td>1.0x</td>
<td>1.6x</td>
</tr>
<tr>
<td>Material / Parts</td>
<td>0.4x</td>
<td></td>
</tr>
<tr>
<td>Install / Wty.</td>
<td></td>
<td>0.9x</td>
</tr>
<tr>
<td>Mfg. / Logistics</td>
<td></td>
<td>1.3x</td>
</tr>
</tbody>
</table>
Disciplined, Flexible Balance Sheet

**CONSOLIDATED BALANCE SHEET** ($M)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>$1,739</td>
</tr>
<tr>
<td>Working Capital</td>
<td>$2,797</td>
</tr>
<tr>
<td>Total Assets</td>
<td>$9,009</td>
</tr>
<tr>
<td>Debt</td>
<td>$3,423(^2)</td>
</tr>
<tr>
<td>Total Shareholders’ Equity</td>
<td>$2,678</td>
</tr>
</tbody>
</table>

**BOND MATURITY PROFILE**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds Outstanding</td>
<td>$3,450M</td>
</tr>
<tr>
<td>Weighted Average Coupon</td>
<td>4.47%</td>
</tr>
<tr>
<td>Weighted Average Life</td>
<td>9.1 years</td>
</tr>
</tbody>
</table>

**INVESTMENT GRADE CREDIT RATINGS**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Moody’s</td>
<td>Baa1</td>
</tr>
<tr>
<td>S&amp;P</td>
<td>BBB</td>
</tr>
<tr>
<td>Fitch</td>
<td>BBB+</td>
</tr>
</tbody>
</table>

1 As of 6/30/19; \(^2\) Difference between debt of $3.423B and gross debt of $3.450B is un-amortized debt issuance discounts and costs.
Balanced Capital Allocation Strategy

### USE OF CASH PRIORITIES

<table>
<thead>
<tr>
<th>2016-2019E</th>
<th>2020E-2023E</th>
</tr>
</thead>
<tbody>
<tr>
<td>~$12B</td>
<td>~$14B-$15B</td>
</tr>
</tbody>
</table>

#### PRIMARY
- Working Capital\(^1\)
- R&D
- Acquisitions\(^2\)
- Capex (PP&E)

#### SECONDARY
- Share Repurchases
- Dividends

### STRONG TRACK RECORD OF ANNUAL DIVIDEND INCREASES

<table>
<thead>
<tr>
<th>Year</th>
<th>Dividend ($) (per share)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>$0.54</td>
</tr>
<tr>
<td>2008</td>
<td>$0.60</td>
</tr>
<tr>
<td>2009</td>
<td>$0.60</td>
</tr>
<tr>
<td>2010</td>
<td>$0.80</td>
</tr>
<tr>
<td>2011</td>
<td>$1.20</td>
</tr>
<tr>
<td>2012</td>
<td>$1.50</td>
</tr>
<tr>
<td>2013</td>
<td>$1.70</td>
</tr>
<tr>
<td>2014(^3)</td>
<td>$1.90</td>
</tr>
<tr>
<td>2015</td>
<td>$2.04</td>
</tr>
<tr>
<td>2016</td>
<td>$2.10</td>
</tr>
<tr>
<td>2017</td>
<td>$2.26</td>
</tr>
<tr>
<td>2018</td>
<td>$2.84</td>
</tr>
<tr>
<td>2019(^E)</td>
<td>$3.10</td>
</tr>
</tbody>
</table>

*Current Annual Run Rate of $3.40*

\(^1\) Working Capital (as of 6/30/2019) = Current Assets – Current Liabilities; \(^2\) Acquisitions includes $1.3B equity issued for Orbotech share exchange; \(^3\) Excludes $16.50 per share special dividend.

$0.10 Quarterly Dividend Increase to $0.85; Additional Share Repurchase Authorization of $1.0B
Disciplined and Strategic Approach to M&A

- Sustainable operating leverage and differentiation
- Leverages KLA Operating Model
- Broaden portfolio in complementary areas
- Recurring revenue opportunities
- Growth and differentiation
  - Aligned with KLA growth strategy
  - High utilization and long useful life systems
- Attractive Markets
- Profitability
- Scale, Synergies, Alignment
- Intellectual Property
- Diversification
- Market Leadership
- Proprietary technology
  - Complementary IP position to drive new product opportunities
  - Product complexity
  - Complex systems integration

Financial Criteria

- Long run risk adjusted net income return > share repurchase alternative
- IRR > cost of equity
- Earnings accretion within first 6-12 months
- Sustainable cost synergies that exceed control premium
- Long run ability to drive corporate level operating leverage on incremental revenue growth
# M&A Scorecard

<table>
<thead>
<tr>
<th>STRATEGIC FOCUS</th>
<th>ADE</th>
<th>SENSARRAY / ONWAFER</th>
<th>ICOS</th>
<th>ORBOTECH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>SPTS</td>
<td>PCB</td>
<td>FPD</td>
</tr>
<tr>
<td>Differentiated Products</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Attractive Markets</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Market Leadership</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Profitability</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Diversification and Growth</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Scale, Synergies Alignment</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Margin Improvement Since Purchase</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>IRR &gt; Cost of Equity</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Earnings Accretion within First 6-12 Months</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

✓ Met and/or Exceeded Filter  ✓ Partially Met  ✓ Did Not Meet (with Lessons Learned)
Orbotech Cost Synergies Progress

Ongoing Focus on Operational Excellence to Drive Synergies

On Track for ~$50M Synergies in First 12-24 Months; Opportunity for Upside
2010-2019E Market Forecasts

**SEMICONDUCTOR CAPITAL INTENSITY**

$\text{Semiconductor Revenue}$  $\text{Capex}$  $\text{Capital Intensity}$

<table>
<thead>
<tr>
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<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$0$</td>
<td>$10,000$</td>
<td>$20,000$</td>
<td>$30,000$</td>
<td>$40,000$</td>
<td>$50,000$</td>
<td>$60,000$</td>
<td>$70,000$</td>
<td>$80,000$</td>
<td>$90,000$</td>
<td>$100,000$</td>
</tr>
</tbody>
</table>

**PROCESS CONTROL GROWS IN-LINE WITH WFE**

$\text{WFE (includes WLP)}$  $\text{Process Control}$

<table>
<thead>
<tr>
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<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$0$</td>
<td>$1,000$</td>
<td>$2,000$</td>
<td>$3,000$</td>
<td>$4,000$</td>
<td>$5,000$</td>
<td>$6,000$</td>
<td>$7,000$</td>
<td>$8,000$</td>
<td>$9,000$</td>
<td>$10,000$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{Semi Revenue}$</td>
<td>$4%$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{WFE (including WLP)}$</td>
<td>$5%$</td>
</tr>
<tr>
<td>$\text{Process Control}$</td>
<td>$6%$</td>
</tr>
</tbody>
</table>
Long-term Revenue Model Update

2017 MODEL

GROWTH DRIVERS

Industry Growth
- Diversification of end markets
- Flat-to-increasing capital intensity
- New applications

Intensity Improvement / Share Gain
- New product pipeline
- Higher Process Control intensity

Service Growth
- Growth in installed base
- High fab utilization
- Service opportunities in acquired businesses

Through-Cycle Revenue Growth Targets

2023E MODEL

- ~2%
- 1% - 2%
- 4% - 5%

6-8%

7-9%
2023E Target Model Revenue Bridge

- **2019E**: ~$5.1B
  - 4% - 5% CAGR
- **Semi PC Systems Core Growth**: $400M - $500M
  - 1% - 2% Growth
  - 9% - 11% CAGR
- **Semi PC Systems Intensity / Share Gain**: $400M - $500M
- **Semi PC Services**: $200M - $250M
  - ~11% CAGR
- **SPTS**: $200M - $250M
  - ~7% CAGR
- **PCB, Display and Component**: $250M - $350M
- **M&A**: $200M - $250M
- **2023E**: $7.0B - $7.5B

1 Based on consensus estimates as of 9/12/19.
## Updated Normalized Business Model (Revenue Scenarios)

<table>
<thead>
<tr>
<th>Revenue</th>
<th>$5.0B - $5.5B</th>
<th>$5.5B - $6.0B</th>
<th>$6.0B - $6.5B</th>
<th>$6.5B - $7.0B</th>
<th>$7.0B - $7.5B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gross Margin</strong></td>
<td>59% - 60%</td>
<td>60% - 61%</td>
<td>60% - 61%</td>
<td>60% - 61%</td>
<td>61%+</td>
</tr>
<tr>
<td><strong>R&amp;D</strong></td>
<td>15% - 16%</td>
<td>14% - 15%</td>
<td>14% - 15%</td>
<td>13% - 14%</td>
<td>~13%</td>
</tr>
<tr>
<td><strong>SG&amp;A</strong></td>
<td>12% - 13%</td>
<td>11% - 12%</td>
<td>10% - 11%</td>
<td>10% - 11%</td>
<td>~10%</td>
</tr>
<tr>
<td><strong>Operating Margin</strong></td>
<td>32% - 33%</td>
<td>33% - 34%</td>
<td>34% - 35%</td>
<td>35% - 36%</td>
<td>36%+</td>
</tr>
</tbody>
</table>

### Assumptions
- Reflects continuation of Semi Process Control business model and addition of new businesses
- Through cycle performance
- Aggregate new M&A of ~$300M at ~20%+ operating margin (%), including SBC
- 40% - 50% incremental operating margin
- $50M+ in combined company synergies from Orbottech acquisition

---

**Leverage to Growth and Resiliency in Downturns**

Note: Non-GAAP
# 2023E Long-term Targets

**Driving Profitable Growth and Delivering Shareholder Value**

<table>
<thead>
<tr>
<th></th>
<th>2023E Targets</th>
<th>Ongoing Financial Framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>$7.0B - $7.5B</td>
<td>7% - 9% CAGR</td>
</tr>
<tr>
<td>Operating Margin</td>
<td>36%+</td>
<td>40% - 50% (Incremental)</td>
</tr>
<tr>
<td>Earnings Per Share</td>
<td>$14.50 - $15.50</td>
<td>~1.5x Revenue Growth Rate</td>
</tr>
<tr>
<td>Capital Allocation</td>
<td>Target Payout ~70% of FCF</td>
<td>Balanced Between Dividend and Share Repurchase</td>
</tr>
</tbody>
</table>

**MACRO ASSUMPTIONS**
- Semiconductor industry CAGR of 4% - 5%
- Capital intensity ~flat
- ~60% memory / ~40% foundry/logic mix
- Process Control Market grows with WFE

**BUSINESS ASSUMPTIONS**
- Intensity/market share gain at leading edge
- Greater exposure to trailing edge markets
- New market penetration
- M&A with synergy execution
Key Takeaways

1. Ability to achieve **significant revenue growth** with diversified revenue stream

2. **Superior margin profile** driven by strong customer value proposition and operational discipline

3. **Strong operating leverage** and **cash flow generation** to fuel investments and returns

4. **Disciplined balance sheet** and **balanced capital allocation** strategy to support growth initiatives

5. Well positioned for profitable growth to **deliver superior shareholder value**
Closing Remarks

Rick Wallace | CEO and President
Investment Summary

1. **Global leader** in process control and supplier of process-enabling solutions for the data era

2. **Sustained technology leadership** allows us to remain at forefront of industry trends with new capabilities and technologies, enabling our profitable growth strategy

3. **Competitive moat** driven by deep, collaborative customer relationships, a broad IP portfolio, significant R&D investments, and differentiated solutions to solve our customers’ most complex challenges

4. **Experienced and energized leadership team** utilizing the KLA Operating Model to instill a high-performance culture driving efficiency and operating performance

5. **Track record of strong cash flow generation** supported by diversification of revenue streams; balanced capital allocation delivering superior shareholder value
Q&A Session
All Presenters
Appendix
## Reconciliation of GAAP & Non-GAAP Financial Measures

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Total Revenues</strong></td>
<td>$2,486</td>
<td>$3,165</td>
<td>$3,127</td>
<td>$2,813</td>
<td>$2,885</td>
<td>$2,848</td>
<td>$3,259</td>
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<td>$4,305</td>
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<td><strong>GAAP Gross Income</strong></td>
<td>$1,475</td>
<td>$1,868</td>
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<td>$1,644</td>
<td>$1,653</td>
<td>$2,051</td>
<td>$2,406</td>
<td>$2,768</td>
</tr>
<tr>
<td>% Margin</td>
<td>59%</td>
<td>59%</td>
<td>57%</td>
<td>58%</td>
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<td><strong>Non-GAAP Gross Income</strong></td>
<td>$1,498</td>
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<td>% Margin</td>
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<td>58%</td>
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<td>59%</td>
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<td><strong>GAAP Operating Expense</strong></td>
<td>$718</td>
<td>$799</td>
<td>$846</td>
<td>$905</td>
<td>$946</td>
<td>$880</td>
<td>$882</td>
<td>$985</td>
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<td>30%</td>
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<tr>
<td><strong>Non-GAAP Operating Expense</strong></td>
<td>$697</td>
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<td>$834</td>
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<td>27%</td>
<td>32%</td>
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<td><strong>Non-GAAP Operating Income</strong></td>
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<td>$751</td>
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<td>31%</td>
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<td>25%</td>
<td>29%</td>
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## Reconciliation of GAAP & Non-GAAP Financial Measures

<table>
<thead>
<tr>
<th>($M)</th>
<th>CY 2015</th>
<th>CY 2016</th>
<th>CY 2017</th>
<th>CY 2018</th>
<th>6/30/19 TTM</th>
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<tr>
<td><strong>Total Revenues</strong></td>
<td>$2,848</td>
<td>$3,259</td>
<td>$3,798</td>
<td>$4,305</td>
<td>$4,569</td>
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<td><strong>GAAP Gross Income</strong></td>
<td>$1,653</td>
<td>$2,051</td>
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<td>Merger-related Charges</td>
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<td>1</td>
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<tr>
<td><strong>Non-GAAP Gross Income</strong></td>
<td>$1,672</td>
<td>$2,055</td>
<td>$2,411</td>
<td>$2,711</td>
<td>$2,825</td>
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<tr>
<td><strong>GAAP Operating Expense</strong></td>
<td>$880</td>
<td>$882</td>
<td>$985</td>
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<td>Merger-related Charges</td>
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<td>16</td>
<td>9</td>
<td>-</td>
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<tr>
<td><strong>Non-GAAP Operating Expense</strong></td>
<td>$843</td>
<td>$865</td>
<td>$976</td>
<td>$1,065</td>
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<tr>
<td><strong>GAAP Provision for Income Tax</strong></td>
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<td>$204</td>
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<td>Income Tax Effect of Non-GAAP Adjustments</td>
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<td>(6)</td>
<td>(5)</td>
<td>(1)</td>
<td>(55)</td>
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<tr>
<td>Discrete Tax Items</td>
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<td>442</td>
<td>(18)</td>
<td>(9)</td>
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<tr>
<td><strong>Non-GAAP Provision for Income Tax</strong></td>
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<td><strong>GAAP Income Used in Calculation of ROIC</strong></td>
<td>$642</td>
<td>$965</td>
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<td><strong>Non-GAAP Income Used in Calculation of ROIC</strong></td>
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<td>26%</td>
<td>18%</td>
<td>39%</td>
<td>25%</td>
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<tr>
<td><strong>Non-GAAP ROIC</strong></td>
<td>19%</td>
<td>26%</td>
<td>29%</td>
<td>39%</td>
<td>28%</td>
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</tbody>
</table>
# Reconciliation of GAAP & Non-GAAP Financial Measures

<table>
<thead>
<tr>
<th>($M, except per share amounts)</th>
<th>CY 2015</th>
<th>CY 2016</th>
<th>CY 2017</th>
<th>CY 2018</th>
</tr>
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<tbody>
<tr>
<td><strong>GAAP Net Income</strong></td>
<td>$ 531</td>
<td>$ 864</td>
<td>$ 656</td>
<td>$ 1,421</td>
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<td><strong>Adjustments to Reconcile GAAP Net Income to Non-GAAP Net Income</strong></td>
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<tr>
<td>Acquisition-related Charges</td>
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<tr>
<td>Restructuring, Severance and Other Related Charges</td>
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</tr>
<tr>
<td>Merger-related Charges</td>
<td>9</td>
<td>17</td>
<td>9</td>
<td>-</td>
</tr>
<tr>
<td>Income Tax Effect of Non-GAAP Adjustments</td>
<td>(17)</td>
<td>(6)</td>
<td>(5)</td>
<td>(1)</td>
</tr>
<tr>
<td>Discrete Tax Items</td>
<td>-</td>
<td>(3)</td>
<td>442</td>
<td>(18)</td>
</tr>
<tr>
<td><strong>Non-GAAP Net Income</strong></td>
<td>$ 570</td>
<td>$ 876</td>
<td>$ 1,108</td>
<td>$ 1,423</td>
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<td>Shares Used in Diluted Shares Calculation</td>
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<td>GAAP Diluted EPS</td>
<td>$ 3.34</td>
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<td>Non-GAAP Diluted EPS</td>
<td>$ 3.58</td>
<td>$ 5.60</td>
<td>$ 7.03</td>
<td>$ 9.14</td>
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</tbody>
</table>
Speaker Biographies
Rick Wallace, serves as the CEO and President of KLA Corporation as well as a member of the Company’s Board of Directors. He began as an applications engineer at KLA Instruments in 1988 and has held various general management positions throughout his 30+-year tenure with the Company. Earlier in his career, he held positions with Ultratech Stepper and Cypress Semiconductor.

Wallace currently serves on the board of directors for Proofpoint, Inc., a security and compliance company.

Wallace earned his Bachelor of Science degree in electrical engineering from the University of Michigan and his Master of Science degree in engineering management form Santa Clara University.
Bren Higgins | EVP, Chief Financial Officer

Bren Higgins is Executive Vice President and Chief Financial Officer of KLA Corporation. Higgins, who has been CFO since 2013, oversees and manages the Company’s finance, accounting and control functions, global manufacturing and procurement operations, corporate business development, and investor relations.

Higgins began his tenure at KLA in 1999 and held a variety of financial roles across the Company. These roles include multiple division and business group controller assignments; senior director of financial planning and analysis; and vice president of corporate finance, where he had responsibility for treasury operations, investor relations, and supported corporate business development activities.

Higgins earned his bachelor’s degree from the University of California, Santa Barbara, and his master’s degree in finance from the University of California, Davis.
Oreste Donzella | EVP, Chief Marketing Officer

Oreste Donzella is an Executive Vice President at KLA Corporation, where he currently serves as Chief Marketing Officer.

In his 20 years at KLA, he has held leadership roles in the field of customer engagement, process control solutions, application development, strategic marketing and product development. Before joining KLA, Donzella worked at Texas Instruments and Micron, where he held various engineering and management positions in process integration and yield enhancement.

Donzella currently serves in SEMI North America advisory board.

Donzella earned his master’s degree in electrical engineering from the University La Sapienza in Rome, Italy.
Ahmad Khan serves as President of KLA Semiconductor Process Control, where he ensures product and business success for all inspection and metrology markets.

Khan joined KLA Corporation in 2004 with responsibilities for Business Development before moving into management for multiple product divisions. He was named General Manager of the Optical Film Metrology division in 2007, and more recently was appointed Group Vice President for the Patterning Division, which included reticle inspection, optical CD, overlay and 5D Process Control. Prior to joining KLA, Khan held various product engineering and management roles at Applied Materials.

Khan earned his Bachelor of Science in electronics engineering technology from DeVry University.
Brian Lorig | EVP, Global Support and Services

Brian Lorig is Executive Vice President and has served as general manager of KLA Corporation’s Global Support and Services organization since 2016. This organization includes the Company’s services group and KLA Pro Systems, which enable customers to maintain high performance and productivity through multiple tool generations.

Lorig joined the Company in 1998 and has held a number of leadership positions in Manufacturing Operations and Service, including Vice President of U.S. Manufacturing and Operations Group, and Vice President of Global Support and Services Field Operations.

Lorig earned his Bachelor of Science in supply chain management from Arizona State University and his MBA from Santa Clara University.