

KLA-TENCOR CORPORATION
APRIL 26, 2018 CONFERENCE CALL TRANSCRIPT

Operator

Good day. My name is Jeff, and I'll be your conference operator today. At this time, I'd like to welcome everyone to the KLA-Tencor Third Quarter Fiscal Year 2018 Earnings Conference Call. All lines have been placed on mute to prevent any background noise. After the speakers' remarks, there will be a question-and-answer session. [Operator Instructions] Thank you.

And now I'd like to turn the call over to Mr. Ed Lockwood with KLA-Tencor Investor Relations. Sir, you may begin.

Ed Lockwood, Senior Director-Investor Relations

Thank you, Jeff. Good afternoon, everyone, and welcome to our conference call. Joining me on our call today are Rick Wallace, our President and Chief Executive Officer; and Bren Higgins, our Chief Financial Officer. We're here today to discuss quarterly results for the period ended March 31, 2018. We released these results this afternoon at 1:15 Pacific Time. If you haven't seen the release, you can find it on our website.

Today's discussion of our financial results will be presented on a non-GAAP financial basis, unless otherwise specified. The details reconciliation of GAAP to non-GAAP results can be found in today's earnings press release and in the investor presentation on KLA-Tencor's Investor Relations website. There, you'll also find a calendar of future investor events, presentations and conferences as well as links to the KLA-Tencor's SEC filings, including our annual report on Form 10-K for the year ended June 30, 2017.

In those filings, you'll find descriptions of risk factors that could impact our future results. As you know, our future results are subject to risks. Any forward-looking statements, including those we make on the call today are subject to those risks, and KLA-Tencor cannot guarantee those forward-looking statements will come true. Our actual results may differ significantly from those projected in our forward-looking statements.

With that, I'll turn the call over to Rick.

Richard P. Wallace, President, Chief Executive Officer & Director

Thanks, Ed, and thank you all for joining us. I plan to briefly cover three items in my prepared remarks today before handing off to Bren. First, a quick review of KLA-Tencor's outstanding result in the March quarter, followed by highlights of our very strong market performance in 2017 as reported by Gartner, and concluding with our updated growth outlook for the industry and for KLA-Tencor in calendar 2018.

Let's begin with the March quarter highlights. I'm very happy to report another record quarter for KLA-Tencor, with revenue topping \$1 billion for the first time in March and finishing at the upper end of the range of guidance. Diluted non-GAAP earnings per share was a record \$2.02. These results were driven by our ongoing focus on customer success and technology leadership, and reflect the strong momentum we are experiencing in the marketplace across each of our major product groups and in services.

Also on March 19, we announced the definitive agreement to acquire Orbotech, Ltd. This acquisition is the next chapter in the progression of KLA-Tencor strategies for profitable growth and long-term value creation. With this combination, KLA-Tencor will be a diversified technology leader in process and yield management solutions and services, extending our reach to address even more of the electronics value chain from semiconductor device manufacturing to packaging, printed circuit board and flat panel display manufacturing.

We have kicked off the integration planning and regulatory review efforts, and these processes are moving forward as planned. We are very impressed with the Orbotech team and are excited about the opportunities that this combination will create as we execute our strategies to benefit customers, stockholders and employees. Coupled with the momentum we are experiencing in our core inspection and measurement business, and with the prospect of augmenting that growth with the new assets from Orbotech, we are very excited about the opportunities that lie ahead for KLA-Tencor.

Turning now to highlights of the recently published Gartner market report for 2017. The data shows that the very strong year for wafer fab equipment investment and with memory customers accounting for approximately 65% of overall WFE demand in 2017, KLA-Tencor grew or maintained a strong market position and drove SAM expansion in each of our major product markets while addressing increasingly more complex inspection and measurement requirements in the marketplace.

With WFE forecasted to remain at a high level in 2018, we expect overall process control intensity to grow in the year, driven by growing value of inspection and measurement, in addressing critical customer problems and semiconductor industry expansion in China. As a leader in process control, KLA-Tencor continues to strengthen our position in China, both in terms of customer footprint and adoption.

We are still on the early stages of a multiyear investment cycle in China, which represents a tremendous opportunity for KLA-Tencor. The presence of subscale factories under tremendous pressure to yield while still in start-up mode and the overall complexity associated with developing a world-class semiconductor industry will drive significant growth for our business in the region.

In addition, the high level of investment by memory customers has driven an unprecedented investment cycle in unpatterned wafer inspection and metrology to support capacity growth and wafer manufacturers and IC fabs as well as to meet more stringent wafer cleanliness and wafer flatness specifications in vertical NAND. These products experienced record demand in 2017, with order momentum continuing in 2018 and with shipments and revenue expected to scale in this calendar year and into 2019.

Now for some product highlights that underlie our strong market performance. First, we saw particular strength in mask inspection in 2017. Gartner estimates the mask inspection market grew 64% in the year to \$538 million, fueled in large part by customer investment in EUV lithography and by continued strength in multi-patterning optical lithography.

KLA-Tencor's mask inspection technologies are critical to customer success in bringing EUV to market. We are collaborating with each of our major customers to accelerate EUV mask development, yield and requalification. Other process control challenges inherent to EUV include resist qualification and scanner control. These, along with the complex patterning and defectivity issues associated with the current EUV source technology, present market opportunities that we believe KLA-Tencor is uniquely positioned to address with the most comprehensive process control portfolio in the semiconductor industry.

EUV promises to be a positive catalyst for future growth at the advanced process control market and for KLA-Tencor. The overlay metrology market grew 29% in 2017 to \$456 million. KLA-Tencor is a pioneer in overlay metrology, deploying unique capability across two different technology platforms. The growth of memory investment in 2017 was a major factor in the strength in overlay metrology and in other metrology markets for KLA-Tencor in the year, driven by the increased complexity in advanced memory design architecture including multiple layers, in-film stacks and verticalization of structures.

Finally, in optical pattern wafer inspection, KLA-Tencor's largest serve market, SAM. SAM grew 6% in the year to over \$1.3 billion. And we experienced our strong market leadership driven by customer preference for our broadband

plasma and laser scattering optical inspection portfolio, over competing wafer inspection technologies including e-beam.

These are just a few of the product successes that led to our sales growth in SAM expansion in 2017. This growth is a result of the continued successful execution of product and service strategies that address increasing inspection and measurement challenges in today's marketplace. And through that, KLA-Tencor is helping to drive customer success in the period of strong growth for the semiconductor industry.

Turning to the overall industry environment for calendar 2018. Coming off an exceptionally strong year in 2017, the investment landscape in each of the major customer end markets today is solid, supporting a WFE industry growth outlook that is currently expected to be in the high single-digits to low double-digits in 2018.

In terms of our view of the end markets, we see memory once again comprising 70% or more of WFE investment in 2018, led by the ongoing ramp in 3D NAND, capacity expansion in DRAM and continued investment from China memory.

In foundry, we are expecting to see orders for the first wave of investment in five nanometers to begin in the second half of the year, with logic investment in 2018 focused on 10 nanometer.

And finally, we expect continued expansion of EUV lithography investment in foundry and DRAM in the year. Given our technology leadership, strong customer acceptance of new products, improving process control intensity and leading edge memory and our strength in China, KLA-Tencor is expecting to deliver revenue growth of 10% or more in 2018.

This does not include any contribution from the Orbotech acquisition which we expect to close by the end of the year. I will now turn the call over to Bren Higgins for his comments. Bren?

Bren D. Higgins, Chief Financial Officer

Thanks, Rick, and good afternoon, everyone. As Rick highlighted in his opening remarks, the March quarter represented an outstanding period of financial performance for the company.

Shipment, revenue, and GAAP and non-GAAP diluted earnings per share each came in at the upper end of the range of guidance in the quarter with revenue and earnings per share finishing at record levels. This result was driven by strong demand across our product portfolio as well as solid execution of our strategic objectives.

Revenue was \$1.021 billion in the quarter; GAAP diluted earnings per share was \$1.95; and non-GAAP diluted earnings per share was \$2.02. In our press release, you will find a reconciliation of GAAP to non-GAAP diluted earnings per share, with the exception of when I explicitly refer to GAAP results, my commentary will be focused on the non-GAAP results, which exclude the adjustments covered in the press release.

Now turning to highlights of the March demand environment in terms of shipments. Total shipments were \$1.019 billion, finishing at the top end of the guided range for the quarter, with upside driven by higher-than-expected customer pull for our overlay metrology products.

Looking forward, we are modeling June quarter shipments to grow sequentially and be in the range of 1.01 billion to 1.09 billion. Based on our current build plans and expected customer delivery timing, we continue to expect second half shipments to grow in the mid-single digits compared to the first half of the calendar year. For the full year, we expect shipment growth in the high single digits.

Memory was 78% of shipments and stronger than our original forecast for the quarter. DRAM accounted for 47% of total system shipments in the period. We expect memory will continue to dominate the system shipment mix in the June quarter with memory shipments forecasted to be approximately 68% of the total in Q2. Memory mix is expected to remain between 60% and 70% of shipments in the second half of 2018.

Foundry was 13% of shipments in March and foundry is forecasted to be about 24% of shipments in June. Logic was 9% of shipments in the March quarter, and our current outlook is for logic to be 8% of total system shipments next quarter.

In terms of the approximate distribution of shipments by product group; wafer inspection was 45%; patterning was 29%, patterning includes shipments for reticle inspection; service was 22%; and non-semi was approximately 4%.

I'll turn now to the income statement. Revenue was a record 1.021 billion in March, finishing at the upper end of the range of guidance. Service revenue was a contributor to the upside in the quarter as customer utilization at the installed base remained at a high level. We expect revenue to grow sequentially and be in the range of 1.02 billion to 1.08 billion in the June quarter, and for revenue in the second half of calendar 2018 to be in accordance with our outlook for full year revenue growth of 10% or greater.

Gross margin was 64%, in line with our guidance for the quarter. The factors driving our strong gross margin performance were consistent with recent margin trends in terms of product mix, efficient execution of new product introduction and variable cost management in service and manufacturing operations.

Looking forward to June, we expect gross margin to be in the range of 64% to 65% as a richer product mix is expected in the quarter. Our gross margin guidance of 63% to 64% in calendar 2018 remains unchanged. However, current trends support a bias towards the high end of this range.

Total operating expenses were 261 million in March, down about 2 million compared with December and operating margin was 38.5%. Operating expenses for the March quarter were approximately 5 million higher than guidance due to a number of factors, including higher material cost for next generation programs.

We continue to see many opportunities for future top line growth in our core business, and plan to maintain our investment roster with new programs including those supporting EUV and vertical memory applications. For the June quarter, we expect operating expenses to be approximately 262 million to 264 million.

In the second half of 2018, we are modeling operating expenses to be approximately 265 million to 270 million per quarter, with the variability around this operating expense level driven by the timing of non-head count engineering program development cost.

Our outlook is for operating margin of 2018 to be in excess of 38.5%, consistent with our published business model in the 4.2 billion to 4.5 billion annualized revenue range. The effective tax rate was 15% in the quarter, in line with our guidance and our long-term planning raised range. Finally, net income for the March quarter was a record 318 million, and we had 157 million fully diluted shares outstanding.

I'll turn now to highlights for the balance sheet and cash flow statement. Cash and investments ended the quarter at \$2.89 billion, an increase of approximately \$132 million compared with December. Cash from operations was \$353 million in March and free cash flow was \$338 million. In Q1, we paid an aggregate of \$92 million in regular quarterly dividends and dividend equivalents for fully vested restricted stock units and repurchased 85 million of common stock pursuant to our share repurchase program.

In February, we announced a 27% increase in our quarterly dividend level to \$0.75 per share. That's effective this quarter. At the end of the March quarter, we had 1 billion authorized under our new share repurchase program as well as authorization for an additional 1 billion contingent upon completion of the Orbotech acquisition.

We plan to resume share repurchases in the June quarter, consistent with our previously articulated approach. We expect the amount of share repurchases in the June quarter will be limited given legal restrictions following the distribution of the proxy statement and prospectus in connection with the Orbotech shareholder vote on the merger. Our current plan is to accelerate our share repurchase activity following the completion of the shareholder vote subject to market conditions.

Finally, I'll note that we will be adopting the new revenue recognition standard, ASC 606, starting in the September quarter, to coincide with the start of our fiscal year 2019. We will be adopting ASC 606 using the modified retrospective approach in which we will report financial results prospectively under the new standard but will not restate historical results. We will provide additional information on the impact of the new standard on KLA-Tencor's financial reporting in our next earnings call in July.

In conclusion, the results demonstrated by the company in the March quarter and in the 2017 Gartner report reflect the company's technology leadership, the critical nature of process control and our customer's growth strategies and the value of our industry-leading business model and capital allocation strategies. We are experiencing unprecedented growth in the electronics industry today, driven by new demand drivers such as artificial intelligence, big data, automotive and the Internet of Things layered on top of the traditional computing and mobility markets.

This is a fundamental shift in demand for semiconductors. As the market leader in semiconductor process control, and with the new opportunities presented by the pending Orbotech acquisition, we believe KLA-Tencor's uniquely positioned to benefit from this industry growth and to create long-term enduring value.

Looking forward to 2018 and beyond, we are energized by what lies ahead. Fueled by record total backlog of just under \$1.9 billion as of the end of the March quarter, we are positioned for revenue growth of 10% or more in the year against the backdrop of the overall WFE industry environment that is currently forecasted to grow in the high single digits to low double-digit range.

With that, to summarize, our guidance for the June quarter is, shipments in the range of \$1.01 billion to \$1.09 billion; revenue between \$1.02 billion and \$1.08 billion; and GAAP diluted EPS of \$2 to \$2.24 per share as well as non-GAAP diluted EPS of \$2.02 to \$2.26 per share.

With that, I'll now turn the call back over to Ed to begin the Q&A.

Ed Lockwood, Senior Director-Investor Relations

Okay. Thank you, Bren. At this point, we'd like to open up the call for questions. We request that you limit yourself to one question and one follow-up given the limited that we have today's call. Feel free to re-queue for additional questions as time permits.

All right, Jeff, we're ready for the first question.

Question & Answer Section

Operator

[Operator Instructions] Our first question comes from the line of Timothy Arcuri from UBS. You may go ahead.

Timothy Arcuri

Thank you very much. Hi. Hi, guys. So the first question obviously is on memory. I don't ever remember you guys shipping 65%, 70%, which is basically in line with the market. I don't ever remember you guys having memory concentration that's sort of in line with the market. Typically it's quite a bit lower. So I guess my question is, is that – is it like a one-time deal related to China? Is it a big up-tick in memory process control intensity? Can you just talk about that? Thanks.

Richard P. Wallace, President and Chief Executive Officer

Hi, Tim. I'll take it and then give it to Bren. Yes and yes. I mean, I think China definitely helps because of the greenfield fabs, which are always great for process control intensity, but also newer players needing to get the capabilities around.

The second part is that we have new capability which the market is recognizing the need for, and so we're seeing increased process control adoption as a result of that. And that's both in the developments in NAND, but also in DRAM as they continue to push design rules.

Bren D. Higgins, Chief Financial Officer

Hey, Tim, welcome back. So I don't have much more to add. I mean, to Rick's point, I mean, China, we did ship pretty significantly into DRAM project in China. We're going to ship into a NAND project this quarter. So we see a lot of momentum there.

I think from a metrology perspective and inspection perspective, we're seeing some solid adoption in both segments, NAND a little bit stronger than DRAM from a process control intensity perspective. So we're really I think excited about our positioning there, and we've got some products in the pipeline that hopefully will help drive intensity further.

Timothy Arcuri

Okay, great. Bren, can you – I guess, just as a follow-up, can you talk about the timing on those products? I know, sort of, the industry's been waiting for a product that can really help ramp yields in 3D NAND. You guys have been developing that product suite for now some time. Can you talk about when that's going to really ship? And when it's going to become meaningful in terms of revenue, and that could really drive that sort of organic memory in process control intensity up for you? Thanks.

Bren D. Higgins, Chief Financial Officer

Yeah. I mean, on the inspection side, the inspection problem is proving – it's a difficult challenge for customers and proving to be a pretty challenging engineering problem. We hope – we've got some tools out in the field, we're working with customers in evaluation phase. We'll see if that translates into a high-volume production product. If not, I think the jury's still out, but we're doing a lot of work on that front. And I think, that's one area.

I think on the other area is our product in metrology where we've shipped a couple of probe tools into the field for in-stack metrology. And so we're hopeful we'll get some traction there. I don't think these products contribute to the financial results we've been discussing or the outlook over the next six to nine months. But certainly as we move into 2019, we'll see – hopefully we'll get some traction there and we'll see those be a bigger percent of the total.

Timothy Arcuri

Great. Thank you so much.

Bren D. Higgins, Chief Financial Officer

Thank you.

Operator

Our second question comes from the line of Mr. Harlan Sur from JPMorgan. You may go ahead.

Harlan Sur

Good afternoon, guys. Thanks for taking my question and congrats on the good quarterly execution. We just got off the Intel call and they just pushed out their 10-nanometer ramp to the yield issues. We've also heard of yield challenges by some of your memory customers especially on the DRAM side. You guys have always characterized your flagship Gen 5 wafer inspection platform as more of an opportunity as EUV starts to get more proliferation. But just given all of the current yield challenges in logic and memory, have you guys seen some pull into the GEN 5 adoption into calendar 2018 by your customer base?

Richard P. Wallace, President and Chief Executive Officer

We have had good success with GEN 5. I think we are still in the mode of proving out the capability before it ramps into production. We do have a couple of places where we're seeing multiple units ramping. But it is a relatively long cycle. We have seen the pull in the product nodes. So in the case where we did think it'd be more tied to EUV, we've seen more work characterization of existing product nodes kind of to the problems that you're talking about. I think people felt like maybe they had resolved some of the yield challenges, are definitely using their initial capability to debug. So we are seeing some opportunity for that. But it's still -- it's kind of as we expected. It's relatively long adoption cycle once people get in evaluation. And most of the customers are encouraged by continuing to push back.

So Harlan, by the end of this year, we will have either shipped or booked for dollars somewhere near 18 to 20 systems into the field across all segments. And I think that's one of the things that we're encouraged by that we are solving issues and development across all segments with the customers around discovery use cases but also EUV use cases. So most of the roadmap for that product line right now is about how do you prepare for volume production for 5-nanometer and beyond. And most of the engineering effort on that tool is to speed up throughput and work through tunable sensitivity and some of the other opportunities to make it more production viable. So the traction is good. It's demonstrating value and it's demonstrating value across all segments, which we're encouraged with.

Harlan Sur

Yeah. Thanks for the insights there. And then according to some of those recent market share statistics that you were talking about, Bren, your reticle inspection business grew by over 2x in 2017. Obviously it's the highest profitability segment for you guys. Your EUV adoption I think was probably one of the strong drivers for the 2017 performance. But as we think about accelerated EUV adoption this year, do you guys think that the reticle inspection business can grow this year off the strong results last year? First question. And then can you guys just give us an update on your next-generation EUV e-beam reticle inspection platform? Thanks.

Richard P. Wallace, President and Chief Executive Officer

Yeah. Let me take it. Maybe to view it from a more portfolio perspective, we did see strength as you mentioned and we talked about in the prepared remarks due to a number of new tape outs at the advanced design rules and this, of course, being driven largely by people pushing designs and mask shock capability for EUV but not only that. Yes, we do see continued strength overall in support of EUV. And when we look at our overall process control intensity for EUV as compared to optical, if you look at the one scanner of optical deep EUV versus EUV you need a similar percentage maybe a little bit more percentage of process control intensity to support that. That includes the fractional use of retical tools as well as wafer tools in order to support it.

So we -- while the overall industry in general may see capital intensity decline in areas other than litho process control will track and maybe even outpace litho for process control intensity for EUV. So we're encouraged by that. In terms of e-beam, we're finding that there is a lot of appetite for the optical extensions that we have on the platform, and so we continue to support our customers with that. One of the notes of the comments of this slipping out of nodes due to yield, means there's also delaying advanced EUV insertion, which gives the optical a longer runway. So we feel very good very well-positioned to support that.

Bren D. Higgins, Chief Financial Officer

Harlan, this is Bren. The only thing I'd add to that is introducing this tool in the marketplace sometime in calendar 2019. Our views on that haven't changed. I would expect that it's more towards the end of 2019 than the first half. But our plans are moving forward and it's going to intersect HBM at the right time. So we're nothing really new to add on that front since we updated you with last quarter.

Harlan Sur

All right. Great. Thank you.

Operator

Our next question comes from the line of Farhan Ahmad from Credit Suisse. You may go ahead.

Farhan Ahmad

Hi. Thanks for taking my question. And congrats on the great set of results. Rick, my first question is in regards to the foundry shipments. It's two-part question, basically. First, when I look at the foundry shipments, they are pretty much at an all-time low. And I just want to add trajectory from here, it seems like even the back half, it's not going merely to the – that you have seen historically.

And second, as you talked about EUVs, when I look at the EUV shipment at the ASML is having in the foundry segment, it seems pretty strong recently, but I don't see that reflected in the foundry shipment that you are having. So is there a difference in timing in terms of when the EUV ships and when you would actually start to benefit?

Richard P. Wallace, President and Chief Executive Officer

Yeah, I'll take it, but I'll also have Bren comment as well. In support of EUV, the question we're just addressing, we have seen reticle. So I think the reticle timing of that is maybe more consistent with the shipments of EUV tools, and that is in support of the same development work that's going on.

We do expect to see an increase towards the end of the year in activity around the ordering for 5-nanometer node, and we talked about that in the prepared remarks. But I think that, that is coming and that's something that we'll see later. And to your point, we had a great quarter, but it wasn't really driven by our foundry business, and we expect that to be foundry late 2018 and carryover into 2019.

Bren D. Higgins, Chief Financial Officer

Yeah. I mean to the point it's -- I mean, and we are performing at a pretty high level here with a lot of unique inflections that are driving our business absent the strong foundry logic environment. And I think as we move through this year, stated memory centric but beyond that, we would expect foundry to coming a little bit stronger. To your point it's at the very low level, its historical level.

But when you look at the comments we made earlier around China, you look up the EUV development activity, you look at the activity we see in the wafers base and then improving process control relevance in and around the different memory segments.

It's a good story for us this year and they think as we move into the future bit stronger foundry environment, then we'll see that kick in. And as you know, the process control intensity and foundry logic tends to be closer to 2x what it is in memory. So not to every dollar of WFE is created equal when it comes to our business, and so certainly if you see a pickup in that segment so that's as a significant positive for us.

Farhan Ahmad

Got it. And then my second question is in regards to mask inspection and broadly the strength that you saw last year. I wanted to understand how much of it is just driven by increasing mix towards ASICs.

In cloud, we are seeing more and more companies moving to application-specific processes. So what I wanted to get a sense of as the foundry makes from which is a limited number of design starting of the fab to a high mix in an environment where there are a lot more designs running in the fab. How does that affect your business?

And secondly, as we think about the mask inspection business, the strong growth that you saw last year, was it the one-time phenomena? Or as the basic strength continues in the future, could this be a higher growth business for you?

Richard P. Wallace, President, Chief Executive Officer & Director

Well it certainly scales with a tape outs, right? And you could even have a situation where you see reticle capacity put in place where you don't necessarily see it coincide with wafer starts because you have to do the tape outs but move the volumes into the low-volume design.

So clearly, we're seeing more activity there, certainly even at 7-nanometer. And so you're seeing more investment in and around reticles with a 7-nanometer bid the multi-patterning screen streams that are being deployed.

It does drive a need for reticle capacity around writers and inspectors and if there's a nice ratio of one to two units to or one inspector to every two to three writers in a mask shop.

So that's certainly a driver for us. And we think that as we move through the end of this year and into next year he think that this momentum around that continues.

Farhan Ahmad

Thank you. That's all I have.

Thank you.

Operator

Our next question comes from the line of CJ Muse from Evercore. You may go ahead.

Christopher Muse

Yeah. Good afternoon. Thank you for taking my question. I guess first question if you look at the Gartner data you said earlier, process control grew at roughly half the rate of WFE. And obviously that make sense given how much the spent is driven by memory.

Curious what the scenario you would see where process control would outgrow WFE. And do you think that that's something we could see over the next 6, 12, 18, 24 months? And if so, what would be the precise drivers there?

Richard P. Wallace, President, Chief Executive Officer & Director

Yeah. CJ great question I think if we just observed, in other words if the towards memory and if you held memory server ratio to foundry logic with the same in a year where it was flat then of course we believe process control intensity would grow.

Even though process control intensity did go up in memory as Bren mentioned and as we all know, if that make up for the mix shift that we saw. And so I think that would be the main way of process control intensity because the growing memory market on a relative basis but on a process control intensity it goes down if you do a weighted average.

Bren D. Higgins, Chief Financial Officer

I mean, when we looked at it, CJ, I mean, a rule of thumb would be for about a 10-point swing in mix you end up with 70 or 80 basis points shift in intensity. So he tends to move around a little bit depending on who's buying and so on.

But that's a reasonable way to think about it. So to Rick's point certainly we start to see foundry as a percent of the total foundry logic as a percent of the total increase and that will be good for process control intensity.

And we've seen it closer to the 50% range and 50% to 60%, 50% foundry or so in that ballpark is where we've seen foundry process control outperform. To Rick's point I think as you move into an EUV environment certainly if the process control may be scaling with litho that certainly may be at a different element to the building process control to grow online.

Christopher Muse

That's helpful. And I guess as my follow-up, are you guys disclosing bookings backlog anymore? No?

Bren D. Higgins, Chief Financial Officer

We do in our 10-K. If I give you the backlog and the shipment and that sort of gives you gets you to the bookings number. But it will tell you that we were slightly below a book-to-bill of one this quarter.

Christopher Muse

Okay. And one quick follow in. As you think about the transaction with Orbotech, what are the restrictions on your ability to buy back shares between now and close?

Bren D. Higgins, Chief Financial Officer

So as I mentioned in the prepared remarks, there's a small window that they have this quarter prior to the – from the opening of our client period to the filing of the prospectus and the S-4. So it's a very small window where we will begin our activity but it will be limited.

So then I will – we have no restrictions – so we're restricted at that point and then we have no restriction after the shareholder vote has incurred. So based on current schedules and those could move around based on comments in the SEC and so on if you get those but that would imply that we would begin buying back in a more significantly sometime in the second half of next quarter, of the September quarter.

Christopher Muse

Very helpful. Thank you.

Operator

Our next question comes from the line of Patrick Ho from Stifel, Nicolaus. You may go ahead.

Patrick Ho

Thank you very much. Rick, maybe first off in terms of the capital intensity trends you're seeing in the memory market as a whole. Obviously 3D NAND has helped a lot of your metrology business. But DRAM has also picked up in terms of spending, for both 2018, and may carry it to 2019. I know your inspection business benefits from the more multi-patterning steps. But are there other areas or other applications that DRAM continues to shrink that also benefit, I guess, both process control intensity and to you specifically?

Richard P. Wallace, President, Chief Executive Officer & Director

Yes. For DRAM, we do see more capability for inspection. Both the high-speed kind of inspection that we do in monitoring, which is laser scanning base but also in development, which is GEN 5 oriented in the leading edge. We also see overlay challenges in DRAM are very significant, and it drives our metrology business for overlay. And so yes, there is an increasing trend. 3D NAND has had probably more growth and on a relative basis than DRAM but we do see increasing trends in DRAM as well.

Patrick Ho

Great. That's helpful. And my follow-up question going back to China for a second. I think last quarter, you talked about the Chinese foundry segment being an area, one of growth but also that's probably the area for us to where we see in the pickup. It seems like this call has kind of shifted a bit to the memory side of things. Is the Chinese foundry markets still tracking as you thought? And it's just being supplemented now by the memory market?

Richard P. Wallace, President, Chief Executive Officer & Director

I think that the Chinese foundry market has slowed a little bit, and we're seeing some delays there whereas the Chinese memory market continues to move forward with investment. And they're dealing with all the things you'd expect from bringing greenfield fabs up in terms of challenges with getting facilities ready and tools installed. But we do see strength in the memory. As Bren said, we'll see more of that. It has been a little bit softer on the foundry side, though.

Patrick Ho

All right. Thank you very much.

Just on the mix from an order perspective, and there's some lead time to these orders because of the site construction. But order profile in calendar 2018 is probably closer to 50-50. So the order profile in 2017 was heavier memory, and those are the tools that are shipping. So from a shipment perspective, it's more memory-centric. But the orders, which we'll start to come through and will ship into next year, have a more of an equal weight to them.

Patrick Ho

Great. Thank you.

Operator

Our next question comes from the line of Toshiya Hari from Goldman Sachs. You may go ahead.

Toshiya Hari

Great. Thank you so much. I guess on your foundry business, how should we think about the breadth of your business as the industry approach seven nanometer-plus and then five nanometer? Should we expect something similar to 28 where you had multiple customers investing pretty aggressively? Or fairly consolidated customer mix there?

We haven't really seen dropout happen for many players as we're going to seven. So I'd say the same people that were in. I think they're phased in terms of their investment. There aren't that many players doing the advanced design rules for foundry but they're all still in. And we expect them at various phases to be investing. So no real change in breadth from the foundries on the advanced nodes.

Toshiya Hari

Okay, got it. And then as my follow-up, I think last quarter, you guys talked about domestic China orders tripling in 2017. Curious what your expectations are for 2018, if any? Thank you.

Bren D. Higgins, Chief Financial Officer

Well, as we said in the prepared remarks, we see a continuation of the momentum there, just given where we are in terms of early innings in some of these investments. I would say the numbers look relatively flat to us from an order perspective. My leaded time comment earlier notwithstanding. So we'll see how it plays through as we move through the quarter. Obviously, there's some second-half dependency to that profile. But right now, it looks like it's fairly consistent versus what we saw last year.

Toshiya Hari

Thank you.

Operator

Our next question comes from the line of Romit Shah from Nomura Instinet. You may go ahead.

Romit Shah

Yes. Thank you. And I apologize I also have a question about foundry. I guess your major foundry customers, my impression is they generate a meaningful portion of the revenues from the mobile market. And that market is pretty subdued across the board. And so the question is can we see a sustained recovery in your foundry business as smartphone demand remains weak? Because -- seeing foundry revenues even for June down, a healthy double-digit percentage, it just doesn't seem like there's no transitions are enough.

Bren D. Higgins, Chief Financial Officer

Well, we're pretty down in foundry. So I mean, I think our profile is consistent with that. And we don't anticipate a lot of strength in foundry until we get later into the end of the year and into 2019. So all our commentary, all are forecasting agrees with your thesis that there's a point here we are seeing increased activities, however, around advanced node and investment and that's, of course, the precursor to more investment that's coming.

So we're definitely seeing some of the reticle business that we're seeing now is in support of that. So given historical patternings, the same path is being followed where you have the initial investment around the development followed by ramp. The size of those ramps may be smaller than in the past, and that's part of what we anticipate and model as we think about our business going forward.

Romit Shah

Okay. Great. Thanks, Bren

Operator

Our next question comes from the line of Atif Malik from Citigroup. You may go ahead.

Atif Malik

Hi. Thanks for taking my question. And good job on the quarter. Rick, you were a keynote speaker at a recent SEMICON China. I'm sure you got a chance to talk to some of the executives driving the China 2025 plan. How do you expect domestic Chinese spending to behave in the face of the recent trade tariffs and the tensions between U.S. and China? And then I have a follow-up.

Richard P. Wallace, President, Chief Executive Officer & Director

Right. There are -- I don't think anything has changed from the perspective of the Chinese in terms of what we've seen in terms of some of the discussions. This is a program to gain sufficiency -- self-sufficiency in memory and in logic over time because China's such a big importer of semiconductors. So I don't think there's any change. I thought you were going to ask me what does it sound like? And we take their numbers and cut them in half and we still a big growth forecast for China based on the investment level that we're seeing and the activity that's going on there. But I don't see any change as a result of any of the recent noise in the system around trade.

Atif Malik

Okay. And then as a follow-up on the Orbotech deal, I'm curious what kind of feedback have you received from your three big customers on this deal? And Bren, if you can just talk about the regulatory milestone required on this deal does it require more China Mothcom [ph] approval and some of the other approvals?

Richard P. Wallace, President, Chief Executive Officer & Director

I'll take the first part, and Bren could take the second. There's really been very little commentary for customers. This is such a different deal that even in the case where the larger customers are focused on some of them have interest in both areas, they're not the same organization so there's not much overlap. We think the one thing that our customers have said consistently is they don't want us to lose focus on what we're doing for them, and we're not. There's -- structurally we're going to organize in such a way that we will maintain every bit as much focus as we have today supporting our existing customers. But that has been the only commentary we've heard at all, is please continue to support it support us. But there is no assumption, by them, that we wouldn't. They just - when they felt compelled to voice something, that was it.

Bren D. Higgins Chief Financial Officer

And then on the regulatory front, I mean, by the end of this week, we will have had all of our filings submitted so -- which is our plan and according to schedule. There's one that will take another week or so, and that's not for any

reason other than that there's a holiday in that country that's delaying the submission, given the clock that exists on the review period. So everything moving according to plan.

Jeff. Our next question.

Operator

Our next question comes from the line of Edwin Mok from Needham. You may go ahead.

Edwin Mok

Great. Thanks for taking my question. So I guess just a quick follow-up on the Orbotech deal as well. So with kind of these trade tensions with China and U.S., do you see that potentially creates some challenges for you guys to get the regulatory approval from Mofcom?

Richard P. Wallace, President, Chief Executive Officer & Director

We don't. That's not something that we have heard about. I think that again, if you look at the nature of any of the deals that have had issues associated with that, they look nothing like this. So we don't anticipate that.

Edwin Mok

Okay, great. Thanks for clarifying that. And then Bren, on your -- answering one of the questions, you mentioned that you see EUV and DUV process control intensity similar in a similar or even the higher level. Can you clarify that? Is that mostly coming in with higher reticle inspection in EUV? And just to clearly are you talking about EUV versus similar type of multi-patterning EUV process you get a similar process control CapEx per CapEx spend if you can provide some color on that? Thank you.

Bren D. Higgins, Chief Financial Officer

Yeah, well we haven't worked on the entire model of that. But if you're just talking about what it takes in process control intensity to support a deep EUV scanner versus what it takes to support an EUV scanner, obviously an EUV scanner is more expensive. But the tool is necessary from a process control standpoint to support that -- or more advanced or more intense. So the resulting intensity around a scanner choice actually goes up slightly in terms of total dollars, acknowledging that the cost of an EUV scanner is higher, the process control intensity actually scale a little bit faster than the scanner cost in order to support it. And that's simply the ecosystem around the scanner. So, the reticle qualifying the wafer is qualifying the image, the measurements that are necessary to support that. It doesn't take into account all the other things that where there will be a reduction in layers. But just from that standpoint, so we view the EUV as being a catalyst for additional growth for KLA-Tencor as it comes online.

Edwin Mok

Great. Actually that's very helpful. Thank you.

Operator

[Operator Instructions] We have a follow-up question from Mr. Timothy Arcuri from UBS. You may go ahead.

Timothy Arcuri

I'm still trying to make sense of this foundry shipment into the back half of the year. If you look at Lam's shipments and I know that Lam's obviously a different company but and you sort of noodle through their guidance, it implies that foundry shipments are like up 2x second half versus first half. And if you graphed their shipments versus your shipments, there's a pretty strong correlation between the trend for them and the trend for you. And it seems like maybe this time it's like breaking down a little bit. And maybe the answers that you are seeing an offset from this change at a big logic customer, maybe that sort of offsetting some of the otherwise be a very, very strong foundry ramp. So that stuff ultimately comes back that maybe just guess pushed into next year I'm just trying to make sense of that? Thank you/

Bren D. Higgins, Chief Financial Officer

Yeah, Tim, it's Bren. So our foundry shipments in the second half are higher than the first half. So I want to be clear about that and in a pretty meaningful way. I mean, I think it's getting dwarfed by the amount of the memory shipments. But when you talk about shipment profile in a range that we discussed, somewhere in the \$4.2 billion to \$4.3 billion range, the 60% to 70% of that will be memory, and that's how we're seeing it. But there is a pickup. But on an absolute basis, certainly foundry is weaker overall compared to the inflections in memory we're seeing.

Timothy Arcuri

Okay. Bren, thanks.

Operator

Our next question comes from the line of Harlan Sur from JPMorgan. May you ask your questions.

Harlan Sur

Hey, guys. Thanks for taking my follow-up. KLA has always kind of separated itself from the pack due to its premium margin structure, free cash flow generation. I'm just trying to do a sanity check here. So pro forma for Orbotech, I think, the target operating margin is looking to be 36%. So are the free cash flow margins going to be somewhere in that kind of 32% to 34% range? Or how should we think about free cash flow margins pro forma for the combined company?

Bren D. Higgins, Chief Financial Officer

Yes. So when we look at pro forma operating margins in the timeframe of, let's say, post synergy realization 2020 pro forma, you'll end up with about 30 yes, 36% are still operating income. So everything against that level of income, we would see free cash flow margins somewhere in the consistent with where we are today, maybe slightly below because our operating margins are a little bit higher. But the capital intensity relative capital intensity of the two businesses are similar. So I think we're in and around that 30% range against that level of operating income.

And obviously it will vary depending on where we are in terms of working capital investments and so on. But one thing that's attractive about the business is the growth but also the lower capital intensity of it. And so as we bring it together, and as we start to drive through synergies and scale these businesses and get off to these mid to high 30% operating margins, we should be able to drive free cash flow margin somewhere in the right around 30% plus or minus.

Harlan Sur

Great. Thanks.

Bren D. Higgins, Chief Financial Officer

Thank you.

Operator

There are no further questions at this time. Mr. Ed Lockwood, please continue.

Ed Lockwood, Senior Director-Investor Relations

Okay. Thank you, Jeff. Thank you all for joining us today and for your continued interest in KLA-Tencor.

Operator

This concludes today's conference call. You may now disconnect.

Additional Information and Where to Find It

This transcript is provided in respect of a proposed business combination involving KLA-Tencor and Orbotech Ltd.. This transcript does not constitute an offer to sell or the solicitation of an offer to buy or subscribe for any securities or a solicitation of any vote or approval nor shall there be any sale, issuance or transfer of securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such jurisdiction. The proposed transaction will be submitted to the shareholders of Orbotech for their consideration. KLA-Tencor intends to file with the SEC a Registration Statement on Form S-4 that will include a preliminary prospectus with respect to KLA-Tencor's common stock to be issued in the proposed transaction and a proxy statement of Orbotech in connection with the merger of an indirect subsidiary of KLA-Tencor with and into Orbotech, with Orbotech surviving. The information in the preliminary proxy statement/prospectus is not complete and may be changed. KLA-Tencor may not sell the common stock referenced in the proxy statement/prospectus until the Registration Statement on Form S-4 becomes effective. The proxy statement/prospectus will be provided to the Orbotech shareholders. KLA-Tencor and Orbotech also plan to file other documents with the SEC regarding the proposed transaction.

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You may obtain copies of all documents filed with the SEC regarding this transaction, free of charge, at the SEC's website (www.sec.gov). In addition, investors and security holders will be able to obtain free copies of the proxy statement/prospectus (when they become available) and other documents filed with the SEC by KLA-Tencor on KLA-Tencor's Investor Relations page (ir.kla-tencor.com) or by writing to KLA-Tencor Corporation, Investor Relations, 1 Technology Drive, Milpitas, CA 95035 (for documents filed with the SEC by KLA-Tencor), or by Orbotech on Orbotech's Investor Relations page (investors.Orbotech.com) or by writing to Orbotech Ltd., Investor Relations, 7 Sanhedrin Boulevard, North Industrial Zone, Yavne 8110101 Israel (for documents filed with the SEC by Orbotech).