

## **Strong DUV demand drives solid Q1 results and confirms positive outlook for 2018**

Multiple EUV orders, including High-NA, demonstrate further adoption of EUV technology

VELDHOVEN, the Netherlands, April 18, 2018 - ASML Holding N.V. (ASML) today's Investor Call - 2018 first-quarter results.

### **Peter Wennink**

Good morning / good afternoon ladies and gentlemen and thank you for joining us for our Q1 2018 results conference call.

Before we begin the Q & A session Wolfgang and I would like to provide an overview and some commentary on the first quarter, as well as provide our view of the coming quarters. Wolfgang will start with a review of our Q1 financial performance with added comments on our short-term outlook. I will complete the introduction with some additional comments on the current business environment and on our future business outlook.

Wolfgang if you will

### **Wolfgang Nickl**

Thank you Peter and welcome everyone.

I will first highlight some of the first-quarter accomplishments and then provide our guidance for the second-quarter of 2018.

Q1 net sales came in at 2.29 billion Euros, somewhat stronger than guided driven by product mix and a strong DUV business. Net system sales of 1.67 billion Euros, was primarily driven by strong memory revenue, which contributed 74% of sales. Logic, which now combines Foundry and IDM sales, made up 26% of system sales. Installed Base Management sales for the quarter came in at 617 million Euros, which was just above our guidance. Gross margin for the quarter came in at 48.7%, which was 70 basis points above the upper end of our guidance range, driven by both volume and mix. Overall OPEX came in slightly above guidance, with R&D expenses at 357 million Euros and SG&A expenses at 114 million Euros.

Turning to the balance sheet, we ended last quarter with cash, cash equivalents and short-term investments at a level of 3.19 billion Euros. During the quarter we purchased approximately 170

million Euros worth of shares. This means we still have 2.33 billion Euros of our 2018/2019 share buyback program remaining.

Moving to the order book, Q1 system bookings came in at a strong 2.44 billion Euros. 57% of the order in-take was from logic customers, driven by EUV. Memory made up the remaining 43% of order volume, driven by DUV. We took nine new EUV orders in the quarter.

Additionally, we received four orders for High-NA R&D systems from three customers and on top of this we sold options for eight High-NA Early Volume Systems. High-NA is our next generation EUV system which will enable geometrical shrink beyond the next decade. The initial selling price for these High NA systems is around 270 million Euros. We will receive 40% as a down payment and the remaining 60% will be milestone based, with the majority of the milestone payments expected before shipment. The options were sold for 50 million Euros each, with payments starting this year.

At this point I would like to comment on our reporting of bookings and backlog going forward. As we have communicated a number of times in the past, we establish our joint demand forecasts with our customers via very routine and comprehensive planning cycles. Order flow can be lumpy and therefore does not always reflect our business accurately. We believe reporting bookings and backlog provides limited value and therefore backlog will no longer be reported. As we want to provide some additional visibility during our initial EUV ramp phase, we will continue to report bookings throughout this year. We currently plan to no longer report bookings beginning in 2019.

With that I would like to turn to our expectations and guidance for the second quarter of 2018. We expect Q2 total net sales between 2.5 and 2.6 billion Euros. Our total net sales forecast includes almost 600 million Euros for our EUV business while we target to ship three EUV systems in the quarter. Our Q2 EUV revenue forecast is a combination of revenue upon shipment and deferred revenue from prior quarters. This catch up of deferred revenue was previously forecasted for the second half of the year. On EUV revenue guidance, we have communicated that we will provide quarterly guidance until we are recognizing the majority of revenue for a system at the time of its shipment. We expect this to happen in Q2 and will therefore no longer provide quarterly EUV revenue guidance starting in 2019.

For the full year, our shipment plan has changed from 22 to 20 EUV systems. This change was due to a combination of anticipated end of year shipment logistics challenges, due to multiple shipments in the fourth quarter, as well as customer fab readiness. The two affected systems this year will ship early 2019 and will not impact customers' EUV production ramp plans. As a result of this adjustment, our EUV revenue for 2018 is now expected to be around 2.1 billion Euros versus 2.3 billion Euros that we had indicated previously. I would like to highlight though that we expect this reduction to be more than compensated by stronger DUV and Applications businesses.

We expect our Q2 Installed Base Management revenue to again come in around 600 million Euros. Gross margin for Q2 is expected to be around 43%, impacted by the significant increase in EUV sales in the quarter. R&D expenses for Q2 will reflect continued accelerated investments in our portfolio and will come in around 375 million Euros. SG&A is expected to come in at about 115 million Euros.

We have started a new share buyback program for 2018/19 of up to 2.5 billion Euros. In Q1, 170 million Euros worth of shares were repurchased. Additionally, we have also proposed a 17 percent increase in our dividend to 1.40 Euros per share to our annual shareholder meeting which takes place on April the 25th in Veldhoven. The dividend payment is valued at around 600 million Euros.

We are excited about 2018. Customers' demand for our products continues to be strong with strengthening demand in DUV as well as Applications. In addition, we see strong demand for EUV as customers ramp this technology in production and have committed to this next generation technology. We look forward to a year of continued strong growth in both revenue and profitability.

With that I'd like to turn the call back over to you Peter.

## **Peter Wennink**

Thank you, Wolfgang.

I would like to start off by announcing a major milestone reached this quarter regarding our next generation EUV technology, called High-Numerical Aperture or High-NA. We have aligned our development timeline with customers and received orders for four High-NA R&D systems from three leading semiconductor manufacturers targeted to start shipping in Q4 2021. We also sold to customers options to buy eight early volume systems targeted to start shipping in 2024. This is a significant milestone in that it demonstrates customers' commitment to EUV technology for future nodes and provides great growth opportunity as we extend lithography technology beyond the next decade. I will highlight some of the key product features in more detail later but I would like to first address our view of the business and demand drivers.

As Wolfgang has highlighted, we had a good start to the year and our business continues to perform very well. The positive industry environment and increasing litho intensity, as customers migrate to more advanced nodes, continues to drive strong demand for our products in both logic and memory markets. Although this does not come as a surprise, we are increasingly optimistic about our 2018 outlook as compared to a quarter ago as we see strengthening demand in memory while logic demand remains solid. Based on expected growth and current guidance, we expect to see a significant increase in revenue in the second half of the year. In summary, stronger DUV will be primarily driven by memory and stronger EUV will be primarily driven by logic.

We plan to ship to over 15 greenfield fabs in 2018. It may be interesting to note that of these fabs, the majority will be in the China region of which 7 are for domestic Chinese customers.

Memory strength in both DRAM and NAND is driven by increasing content as well as expanding end market applications. In DRAM, our customers continue to migrate to the 1X nm node, along with required wafer capacity additions to meet bit demand. In NAND, a number of customers continue to ramp new greenfield fabs and scale vertically via stack of stacks, which requires additional lithography. With strengthening demand in both DRAM and NAND, we see significant year over year growth. Based on current third party estimates for both DRAM and NAND bit demand growth against our view of bit supply growth, we don't see major concerns regarding supply-demand balance through the year.

Logic demand continues to be solid as customers ramp 10nm and 7nm nodes while the initial demand for the latter is the primary driver behind the significant increase in EUV demand this year.

On the ASML product side let me start with an update of our EUV business.

In EUV, we continue to make progress as this technology starts to ramp in volume production. We delivered a configuration that achieved 125 wafers per hour at a customer site and continue to drive improvements in throughput performance, demonstrating 140 wafers per hour at ASML factory. We continue to focus on improving availability and work with our customers in support of infrastructure around EUV in volume production. Demand from our customers continues to be strong as they start ramping this technology in production. With a plan of 20 shipments in 2018, this represents a doubling of output over last year's shipments. As we now move into the volume phase of this new technology ramp we will focus our operations and industrialization efforts on managing our supply chain and helping our customers with their fab readiness preparations. As Wolfgang mentioned, we have shifted two systems to early 2019 due to a combination of customer fab readiness and anticipated challenges regarding the logistics around year end shipments. However, based on our discussions with customers', our previously communicated estimates of their EUV layer adoption plans remain unchanged. As a reflection of their continued commitment to EUV production plans, we took orders for nine NXE:3400 systems this quarter in support of our 2019 shipment plan of at least 30 systems.

As mentioned in my introduction, High-NA is our next generation EUV technology, which extends lithography and enables cost effective scaling beyond the next decade. The NA, numerical aperture, of the new optical system will increase from 0.33, on current EUV systems, to 0.55 on High-NA systems. In addition to new advanced optics driving improvements in imaging, platform innovations in stage technology will drive improvements in overlay and productivity. We are currently targeting an initial increase in productivity to 185 wafers per hour. Last year's investment in Carl Zeiss SMT will further solidify our development timeline and reduces the execution risk. With the addition of High-NA, ASML's product portfolio will include 0.33 NA and 0.55 NA EUV, dry and immersion DUV, i- line as well as Holistic products, all designed to work together seamlessly in production.

In DUV, we will increase our factory output to meet the market demand. Furthermore, our focus on productivity means we continue to boost our new system output and we expect to exceed the record productivity level reached last year. In addition to increasing the maximum configuration output per system, we are also continuously increasing productivity of our systems in the field. For instance, we achieved an output of 6000 wafers per day on an NXT system in a NAND fab, which translates to a five percent increase in productivity over 12-month period. With both increased system shipment output as well as productivity increases of systems in the fabs, we are delivering further value to our customers via capacity and cost efficiency.

In Holistic Lithography, we continue to see growth across our full portfolio of software and metrology products. Our YieldStar metrology continues to gain broadening adoption with recent growth via expansion in the memory market. We also shipped our first YieldStar 1375 system, which measures actual in-device lithography performance, enabling more accurate measurement of the device and thus driving yield improvements. We have shipped multiple pattern fidelity metrology tools, ePfm5, and are seeing initial positive customer results. This technology, where ASML's high resolution e-beam technology is combined with our computational lithography software, will enable e-beam based feedback to the scanner and deliver improved yield performance in volume production. To further drive e-beam productivity performance and expand application opportunity in volume production, we are developing multi-beam technology. We successfully captured first images from our three by three beam proof of concept system. We see great growth opportunity in Holistic Litho business and expect its growth rate to exceed our overall revenue growth rate in the coming years.

To summarize, this year we expect continued solid growth in both sales and profitability. We are more optimistic about our view on the year than we were a quarter ago due to the continued strengthening of memory demand while logic demand continues to be solid. We are on track to achieve our 2020 targets with significant growth potential beyond 2020. We plan to communicate our growth opportunity beyond 2020 at our Investor Day on November 8th this year.

Last but not least as many of you know, this quarterly call is the last call with Wolfgang online helping us to bring clarity to our results and operations. It goes without saying that at least we at ASML will miss him dearly and we would like to take the opportunity to thank him

wholeheartedly for his invaluable contributions to ASML. We wish him all the best in his new challenge at Bayer and we will follow him closely, rest assured.

With that we would be happy to take your questions.