



# EPIC Online Technology Meeting on Lithography

**Dr. Bedwyr Humphreys**

Strategic Business Development  
(Corporate Strategy & Marketing)

3<sup>rd</sup> July 2020

# Disclaimer

- This publication is subject to change without notice and contains confidential and proprietary information of ASML Holding N.V. or its affiliates (“ASML”).
- This documentation is for the intended purpose only and for the use the intended recipient only. Please retain control of this documentation. It is not to be forwarded or distributed. Any unauthorized review, copying, use, disclosure or distribution is strictly prohibited.
- The material herein is provided “AS-IS. and ASML makes no warranty of any kind with regard to this material. ASML shall not be liable for errors and omissions contained herein.
- If this document is in a language other than English, please read the following text carefully.
- While we strive to ensure that the information is translated correctly, no warranty or guarantee, express or implied, is given as to its accuracy or that it is as current as the English version. We accept no liability for any errors or omissions. If there is any conflict or difference between the translated version of this document and its English version, the English version is leading. If any part of the translated version is unclear, reference should be made to the English version.
- We shall not be liable for any damages (including, without limitation, damages for loss of business or loss of profits) arising in contract, tort or otherwise from the use of or inability to use this document, or any material contained in it, or from any action or decision taken as a result of using such material.

Copyright © 2018

ASML HOLDING N.V. (INCLUDING AFFILIATES). ALL RIGHTS RESERVED.

# Lithography systems for multiple markets

Our customers range from <7nm logic fabs to III-V photonic fabs



## EUV

### TWINSKAN NXE:3400C

Wavelength: 13.5 nm  
Resolution: 13 nm  
NA: 0.33  
Overlay: 1.0 nm  
Wafer size: 300 mm  
Productivity: 170 wph

In the same way that 0.33NA enables 7nm and 5nm Logic, **0.55NA** EUV will be needed to enable 3nm Logic



## Immersion

### TWINSKAN NXT:2000i

Wavelength: 193 nm  
Resolution:  $\leq 38$  nm  
NA: 1.35  
Overlay:  $\sim 1.5$  nm  
Wafer size: 300 mm  
Productivity: 275 wph

State-of-the-art immersion systems, in high-volume manufacturing of the 7nm Logic and advanced DRAM nodes



## Mature Products

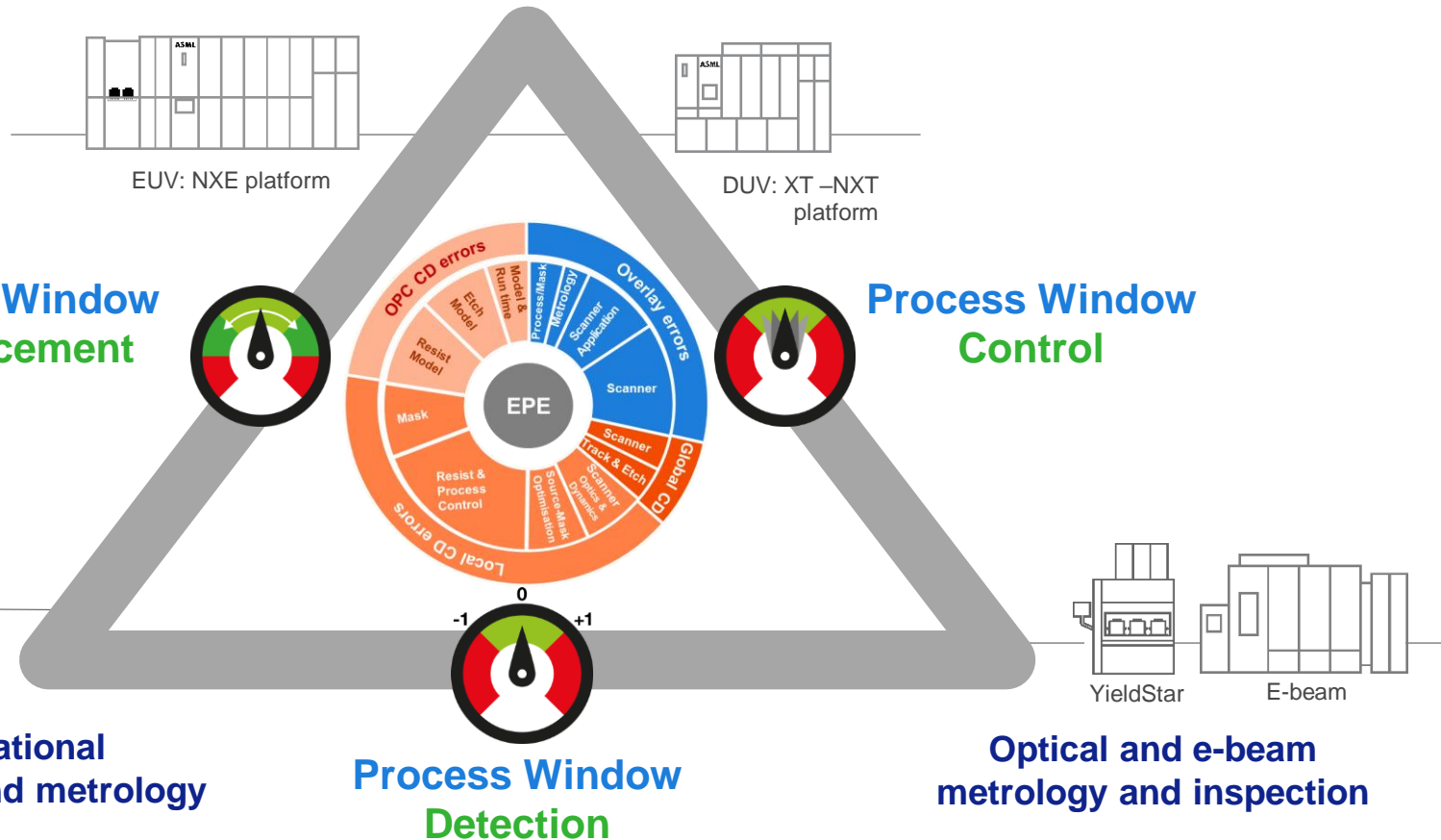
### Steppers & Scanners

Wavelength: 365 to 193 nm  
Resolution: 400 to 90 nm  
Overlay: 100 to 12 nm  
Wafer size: 75 to 200 mm  
Productivity: 100 - >200 wph

Emerging markets are taking advantage of the performance and productivity of our mature products

# Our holistic lithography portfolio underpins our success

## Lithography scanner with advanced control capability



# 2019 €11.8B - A record year

ASML sales grew by 8% despite an overall decline in our industry reflecting the increasing importance of lithography in the semiconductor industry

## €11.8bn

Revenue

### Compelling market drivers

Major innovation drivers such as **artificial intelligence, 5G, high-performance computing, autonomous driving and big data** are enabling new end-user applications.

These applications require a larger number of high-performance **Logic chips**, fueling demand for leading-edge nodes.

## €2.0bn

R&D

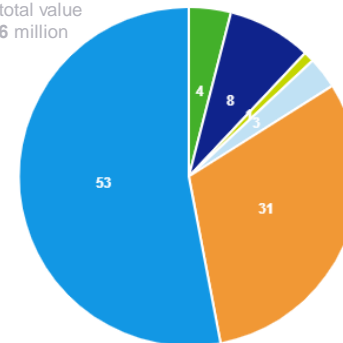
### Investing in the future

Our focus is on bringing our current EUV technology to the maturity level of our DUV systems and developing the next-generation EUV technology: High-NA.

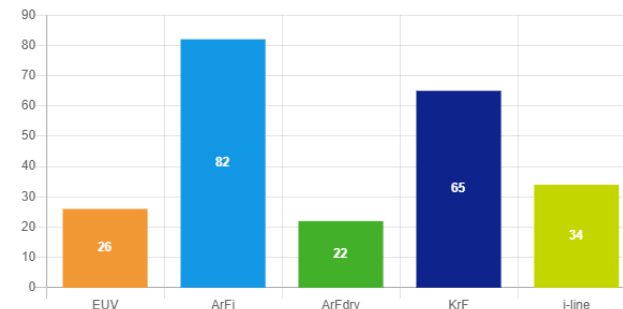
In addition to EUV developments, we continue to invest in our DUV technology and our Metrology & Inspection product portfolio.

Net system sales breakdown (% system sales)

2019 total value  
€8,996 million



Sales of lithography systems (units)



# Open Innovation from design to manufacturing



# ASML

Advanced Research Center  
for Nanolithography