

# Lithography System for Industrial Manufacturing of Photonic Patterns

Field-test and proven tool for  
photonics fabrication



## PhableX™

- Photolithography system for high volume printing of periodic patterns
- Non-contact: protects masks and substrates from damage and contamination
- Cassette-to-cassette automatic wafer processing
- Highly uniform and reproducible printing
- 1D and 2D periodic pattern printing
- Suitable for non-flat substrates
- Suitable for thin glass substrates
- High Resolution: 60 nm half pitch
- Practically unlimited depth-of-focus
- Light source: UV and DUV Lasers
- Automatic overlay alignment capability
- Application support: Photoresists, Masks
- Low maintenance and production costs

## Applications

### XR (AR/VR/MR)

Near-Eye Waveguides  
Head-up Displays (HUD)

### BIO / MEDICAL

Bio Molecular Sensors  
X-Ray Imaging

### OPTOELECTRONICS

DFB/DBR Lasers  
VCSEL Polarizer Gratings  
PCSEL Photonic Crystals  
Nanowire Devices  
PSS

### COLOR/VISUAL EFFECT

Structural Colors  
Security Applications

### OPTICAL COMPONENTS

Telecom Gratings  
Anti-Reflective Surfaces  
DOE  
Laser Diffraction Gratings  
Spectrometer Gratings  
Wire Grid (Polarizer)  
WSS  
Sports optics – Reticles

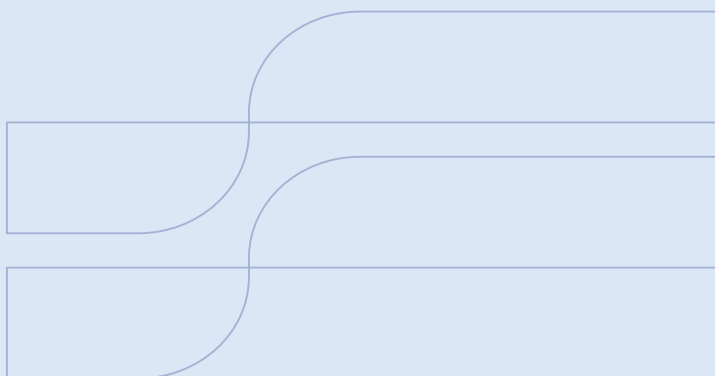


## LITHOGRAPHY FOR PHOTONICS

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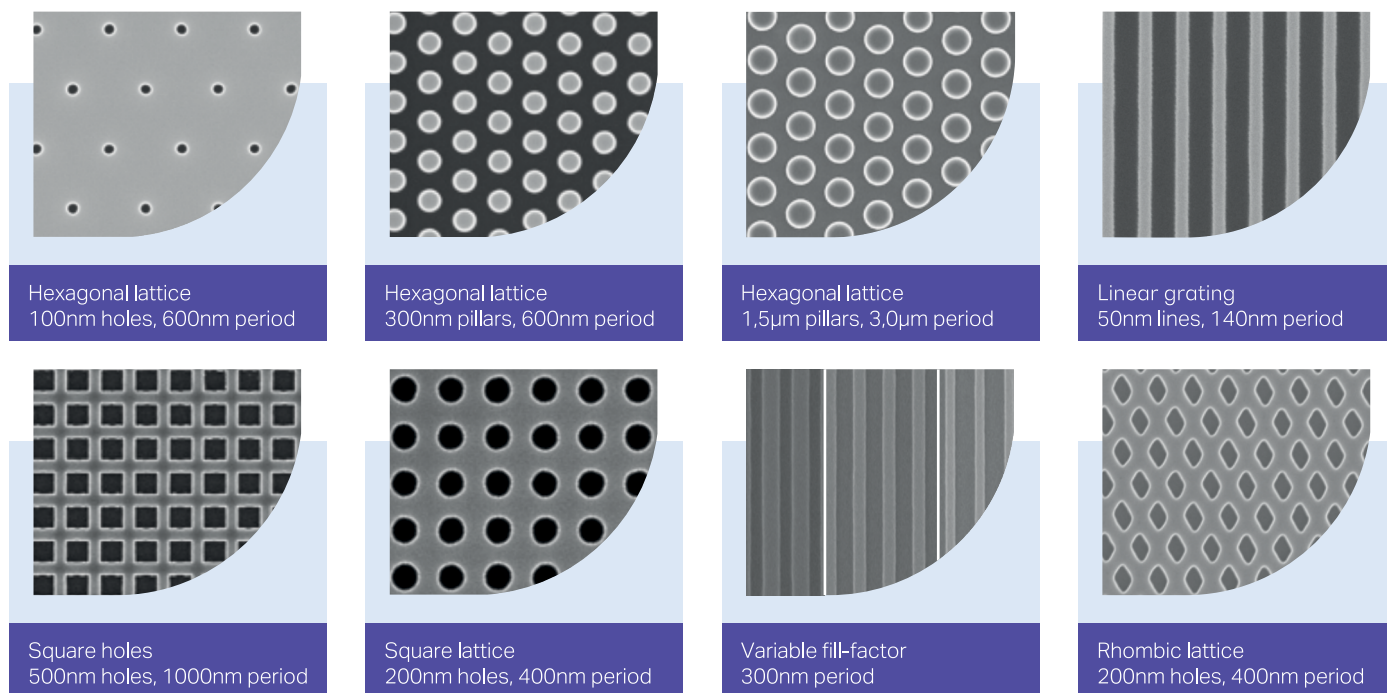
# PhableX



The PhableX tool provides unprecedented ability to print high resolution periodic structures in a low-cost photolithography system. It is similar to a conventional mask-aligner where a photoresist coated wafer is put in proximity to a mask and exposed by a beam of UV light, but thanks to the breakthrough PHABLE exposure technology of Eulitha the resolution is no longer limited by undesired diffraction effects.

Structures such as sub-micron period linear gratings and 2D patterns such as hexagonal and square lattices are printed with high uniformity and fidelity.

## PATTERN EXAMPLES



## SPECIFICATIONS

### UV

### DUV

SPECIFICATIONS	UV	DUV
Resolution (linear grating)	<150nm half-pitch	<65nm half-pitch
Wafer size	100mm, 150mm, 200mm, larger size on request	
Mask format	5", 6", larger size on request	
Illumination uniformity	<3%	
Pitch range (extended range upon request)	250µm - 3µm	125µm – 1.25µm
Resist thickness	>1µm	>0.1µm
Operation	Manual load – automatic exposure	
Overlay alignment	<1µm frontside, <5µm backside	
Duty cycle control	Variable duty cycle (optional)	
Beam size	105mm, 155mm, 205mm	