PhableR™ Lithography System
## R&D and Low Volume Manufacturing of Photonic Patterns

- Augmented Reality / Virtual Reality
- DFB / DBR Lasers
- Telecom gratings
- Antireflection structures
- Wiregrid Polarizers
- Patterned curved optics
- Biosensors
- Nanowire growth substrates
- Patterned Sapphire Substrates (PSS)
- Structured colors
- Spectrometer gratings

- Photolithography system for printing of periodic patterns
- Non-contact: protects masks and wafers from damage and contamination
- Suitable for non-flat substrates (e.g. epi-wafers)
- Overlay alignment capability

- High resolution: 65 nm or 125 nm (minimum half pitch for UV and DUV versions)
- Practically unlimited depth-of-focus
- Highly uniform and reproducible printing
- Works with commercially available masks and photoresists

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Lithography for Photonics

PhableR

The PhableR 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.
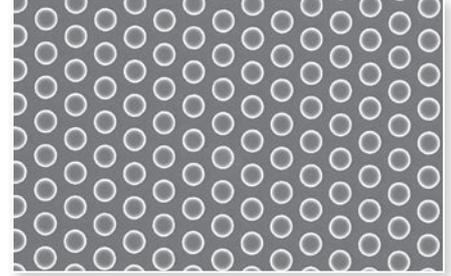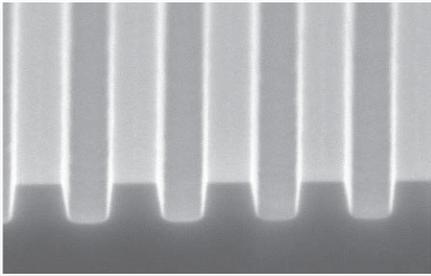
Pattern Examples
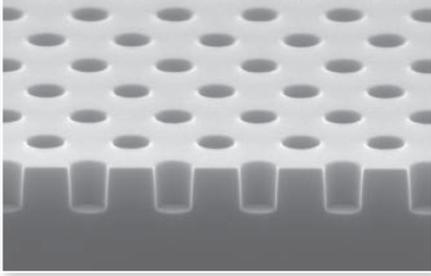
Hexagonal hole array
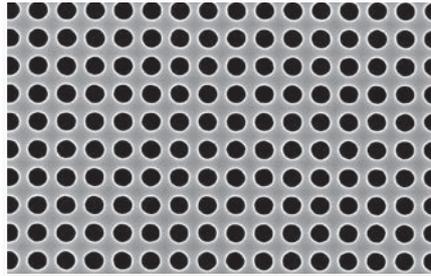600 nm pitch
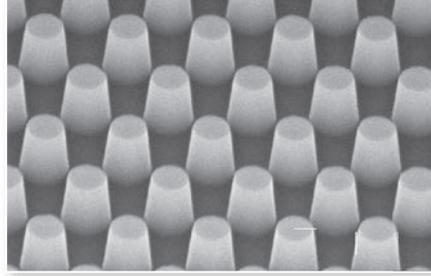
Hexagonal pillar array
600 nm pitch
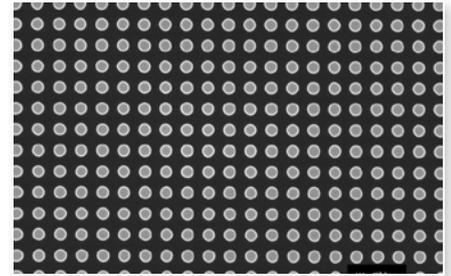

Hexagonal pillar array
3000 nm pitch

Linear grating
300 nm pitch

Square hole array
350 nm pitch

Square pillar array
300 nm pitch

Specifications

	UV	DUV
Resolution (linear grating)	125 nm half-pitch	65 nm half-pitch
Wafer size	100 mm, 150 mm, 200 mm, larger size on request	
Mask format	5'', 6'', larger size on request	
Illumination uniformity	< 3 %	
Pitch range*	300 nm - 3 µm	125 nm - 1.25 µm
Resist thickness	> 1 µm	> 0.1 µm
Operation	manual load - automatic exposure	
Overlay alignment	< 1 µm frontside, manual	

*Extended ranges upon request

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