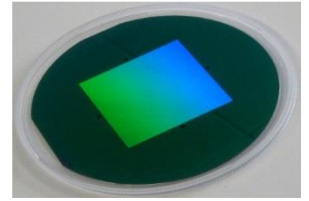


# PHOTONIC NANOIMPRINT TEMPLATES

Eulitha's photonic templates are made with its revolutionary PHABLE™ technology, which guarantees highest quality at an affordable price. Optimized silicon and quartz etching yields hole and pillar patterns with a slight positive slope that facilitates the imprint process. Standard templates with periodic structures on square and hexagonal lattices over large areas are available.

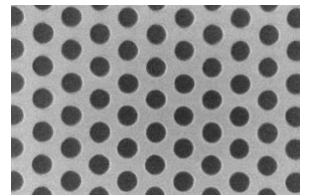


Hexagonal array – 600 nm pitch

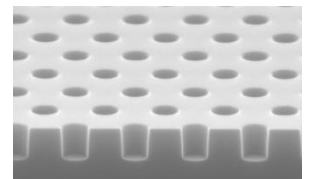
- LED Light extraction layers
- Templates for crystal growth
- Nanoimprint process development
- Sensor arrays
- Diffraction gratings
- Laser Bragg gratings
- Nanoparticle production

## Holes on Hexagonal Lattice

Product	Period	Area	Max. Etch depth (Si/quartz)
P200h_h_100d	200nm	100mm dia.	120nm / 100nm
P350h_h_100d	350nm	100mm dia.	200nm / 100nm
P450h_h_50d	450nm	50mm dia.	350nm / 150nm
P500h_h_100d	500nm	100mm dia.	500nm / 300nm
P600h_h_100d	600nm	100mm dia.	450nm / 200nm
P750h_h_51w51	750nm	51x51mm <sup>2</sup>	450nm / 200nm
P780h_h_50d	780nm	50mm dia.	450nm / 200nm
P870h_h_100d	870nm	100mm dia.	550nm / 250nm
P1000h_h_100d	1000nm	100mm dia.	600nm / 300nm
P1500h_h_51w51	1500nm	51x51mm <sup>2</sup>	600nm / 300nm
P1700h_h_100	1700nm	100mm dia.	800nm / 400nm
P2000h_h_100d	2000nm	100mm dia.	800nm / 400nm
P3000h_h_100d	3000nm	100mm dia.	1000nm / 400nm
P3450h_h_100d	3450nm	100mm dia.	1200nm / 500nm
P5200h_h_100d	5200nm	100mm dia.	1200nm / 500nm



Hexagonal array – 350 nm pitch

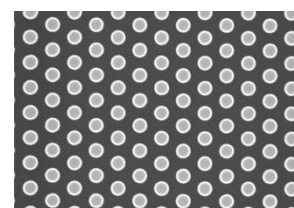


Hexagonal array – 600 nm pitch

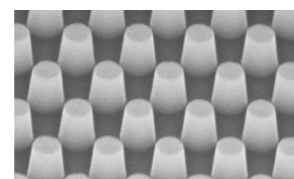
# PHOTONIC NANOIMPRINT TEMPLATES

## Pillars on Hexagonal Lattice

Product	Period	Area	Max. Etch depth (Si/quartz)
P200h_p_100d	200nm	100mm dia.	90nm / 80nm
P450h_p_50d	450nm	50mm dia.	350nm / 150nm
P500h_p_100d	500nm	100mm dia.	400nm / 200nm
P600h_p_100d	600nm	100mm dia.	450nm / 200nm
P750h_p_51w51	750nm	51x51mm <sup>2</sup>	450nm / 200nm
P780h_p_50d	780nm	50mm dia.	450nm / 200nm
P870h_p_100d	870nm	100mm dia.	550nm / 250nm
P1000h_p_100d	1000nm	100mm dia.	600nm / 300nm
P1500h_p_51w51	1500nm	51x51mm <sup>2</sup>	600nm / 300nm
P1700h_p_100d	1700nm	100mm dia.	800nm / 400nm
P2000h_p_100d	2000nm	100mm dia.	800nm / 400nm
P3000h_p_100d	3000nm	100mm dia.	1000nm / 400nm
P3450h_p_100d	3450nm	100mm dia.	1200nm / 500nm
P5200h_p_100d	5200nm	100mm dia.	1200nm / 500nm



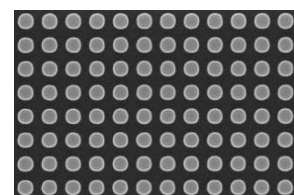
Hexagonal array – 600 nm pitch



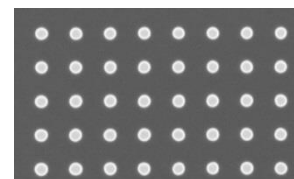
Hexagonal array – 600 nm pitch

## Pillars on Square Lattice

Product	Period	Area	Max. Etch depth (Si/quartz)
P125s_p_90d	125nm	90mm dia.	90nm / 60nm
P140s_p_80d	140nm	80mm dia.	75nm / 80nm
P150s_p_90d	150nm	90mm dia.	75nm / 80nm
P190s_p_100d	190nm	100mm dia.	200nm / 90nm
P200s_p_90d	200nm	90mm dia.	200nm / 90nm
P250s_p_90d	250nm	100mm dia.	200nm / 100nm
P280s_p_80d	280nm	80mm dia.	200nm / 100nm
P300s_p_100d	300nm	100mm dia.	200nm / 100nm
P380s_p_100d	380nm	100mm dia.	400nm / 300nm
P400s_p_100d	400nm	100mm dia.	300nm / 100nm
P470s_p_100d	470nm	100mm dia.	500nm / 400nm
P500s_p_100d	500nm	100mm dia.	400nm / 150nm
P560s_p_80d	560nm	80mm dia.	400nm / 150nm
P600s_p_100d	600nm	100mm dia.	500nm / 250nm
P760s_p_100d	760nm	100mm dia.	700nm / 600nm
P800s_p_100d	800nm	100mm dia.	500nm / 300nm



Square array – 500 nm pitch

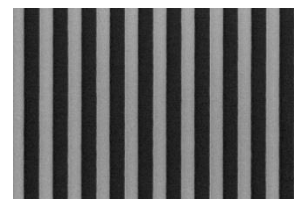


Square array – 300 nm pitch

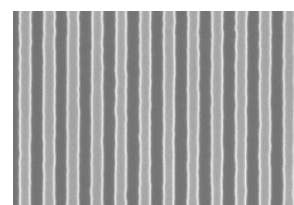
# PHOTONIC NANOIMPRINT TEMPLATES

## Linear Gratings

Product	Period	Area	Max. Etch depth (Si/quartz)
P125L_80d	125nm	80mm dia.	100nm / 80nm
P140L_80d	140nm	80mm dia.	100nm / 80nm
P150L_90d	150nm	90mm dia.	100nm / 80nm
P200L_90d	200nm	90mm dia.	150nm / 120nm
P250L_100d	250nm	100mm dia.	200nm / 100nm
P280L_80d	280nm	80mm dia.	200nm / 100nm
P300L_100d	300nm	100mm dia.	300nm / 100nm
P380L_100d	380nm	100mm dia.	400nm / 300nm
P400L_100d	400nm	100mm dia.	300nm / 150nm
P450L_100d	450 nm	100mm dia.	300nm / 150nm
P470L_100d	470nm	100mm dia.	500nm / 400nm
P500L_100d	500nm	100mm dia.	400nm / 200nm
P560L_80d	560nm	80mm dia.	400nm / 200nm
P600L_100d	600nm	100mm dia.	500nm / 250nm
P760L_100d	760nm	100mm dia.	700nm / 600nm
P800L_100d	800nm	100mm dia.	600nm / 300nm
P1000L_100d	1000nm	100mm dia.	800nm / 400nm
P1300L_75w55	1300nm	75x55mm <sup>2</sup>	1000nm/ 500nm



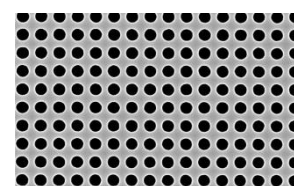
Linear grating – 600 nm pitch



Linear grating – 150 nm pitch

## Holes on Square Lattice

Product	Period	Area	Max. Etch depth (Si/quartz)
P125s_h_90d	125nm	90mm dia.	150nm / 100nm
P140s_h_80d	140nm	80mm dia.	150nm / 100nm
P150s_h_90d	150nm	90mm dia.	150nm / 100nm
P190s_h_100d	190nm	100mm dia.	180nm / 140nm
P200s_h_90d	200nm	90mm dia.	200nm / 150nm
P235s_h_100d	235nm	100mm dia.	200nm / 150nm
P300s_h_90d	300nm	90mm dia.	200nm / 150nm
P350s_h_100d	350nm	100mm dia.	300nm / 150nm
P375s_h_100d	375nm	100mm dia.	200nm / 100nm
P450s_h_100d	450nm	100mm dia.	300nm / 150nm

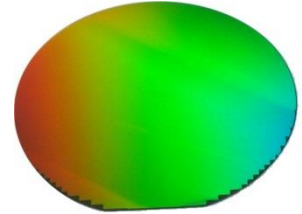


Square array – 350 nm pitch

# PHOTONIC NANOIMPRINT TEMPLATES

## Notes

- Photonic templates are provided on 4" Silicon or Fused Silica substrates as standard
- Dicing to smaller substrate size or other substrate sizes are available upon request
- Feature (hole or pillar) diameter is about half of the pattern pitch
- Please inquire, if other duty-cycles, e.g., small pillars or holes are required
- Templates are manufactured upon order according to the feature height requested by the customer
- Inquire for different feature heights that exceed the maximum indicated in the product tables
- In most cases these standard patterns can be produced on customer's own wafers, e.g. as photoresist patterns on GaN or sapphire wafers
- Anti-adhesion coating is available as an option on all NIL stamps



Hexogonal hole array on 4" wafer – 600 nm pitch