



# Long Phase Mask



## Features

- 120 mm long aperture
- Holographically recorded
- Linearly chirped

## Applications

- Dispersion compensation gratings (DCGs)
- DWDM
- Narrow bands filters

## Technical Specifications

|   |   |
|---|---|
| Operating Wavelength (nm)                   | 190 to 400  |
| Phase Mask Period ( $\mu\text{m}$ )         | 0.6 to 1.2  |
| Period Manufacturing Tolerance (nm)         | $\pm 0.3$ for unchirped masks ( $\pm 0.1$ optional)   |
| Period Measurement Accuracy (nm)            | $\pm 0.02$  |
| Dimensions                                  | Substrate size/Aperture<br>17.2 mm x 76.2 mm/10 mm x 60 mm<br>17.2 mm x 127.0 mm/10 mm x 120 mm |
| Chirp Range (for chirped masks)(nm/cm)      | 0.03 to 30  |
| Diffraction Efficiency (%)                  | $\leq 5$ in 0 <sup>th</sup> order; $\geq 30$ in $\pm 1^{\text{st}}$ order                       |
| Damage Threshold ( $\text{J}/\text{cm}^2$ ) | Better than 1 per pulse at 50 Hz at 248 nm  |
| Material                                    | Corning 7980, Suprasil  |
| Substrate Flatness                          | $\lambda$ at 248 nm, both sides   |
| Scratch and Dig                             | 20 to 10  |
| AR Coating                                  | Optional  |
| Wedge (arcsec)                              | $< 30$  |
| Thickness (mm)                              | $3.175 \pm 0.125$   |

For chirped masks: center period precision:  $\pm 0.5$  nm with  $\pm 200$   $\mu\text{m}$  center positioning error.

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### Ordering Information

LPM (LPMC if chirped) - <wavelength of laser> -  
<mask period> - <(grating dimension (W x L)) substrate dimension (W x L)>

*Example:* a 15 mm x 127 mm dimension phase mask to be used with a KrF excimer laser at 248 nm with a period of 1.0600  $\mu\text{m}$ , is specified as:

LPM - 248 - 1.0600

(10 x 120) 17.2 x 127

*Example for 0.083 nm/cm chirped mask:*

LPMC - 248 - 1.0600 - (10 x 120) 17.2 x 127 - 0.083 nm/cm



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