

Coronagraph Phase Masks

Phase Masks are used in Coronagraph instrumentation for solar corona observation or exo-planet detection. They are an improved version of the primary Lyot amplitude mask developed in 1930 and can have different shapes (single circular zone, dual circular zone⁽¹⁾, four quadrants⁽²⁾,...). They reduce the central high intensity coming from the star to permit the observation of a very lower intensity object close to it.

Specifications*

Substrate

<i>Diameter:</i>	up to 100 mm
<i>Thickness:</i>	from 0.5 mm to 9.5 mm
<i>Material:</i>	fused silica, BK7, ...

Pattern

<i>Data:</i>	Phase Map data provided by customer.
<i>CD and positioning:</i>	down to 0.5 - 1 micron
<i>Etching accuracy:</i>	+/- 5-10 nm (+/- 3-5 nm on request)
<i>Wavefront PTV:</i>	0 to 2π

* Please contact us for other specifications

Amplitude Mask

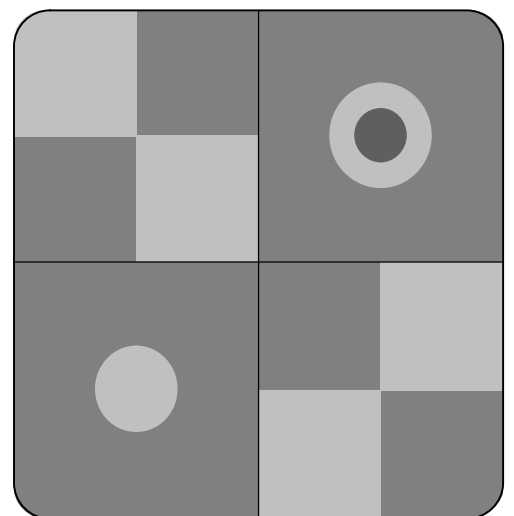
Amplitude Masks are also available as Lyot mask (binary profile) or more complex Masks (multilevel profiles).

Fields

Astronomy

Category

Phase component



⁽¹⁾ R.Soummer, K.Dohlen, and C.Aime - *Achromatic dual-zone phase mask stellar coronagraph. Publications of Astronomy & Astrophysics. 403,369-381 (2003).*

⁽²⁾ D.Rouan, P.Riaud, A.Boccaletti, Y.Clénet and A.Labeyrie - *The Four-Quadrant Phase-Mask Coronagraph.I.Principle. Publications of the Astronomical Society of the Pacific, 112:1479-1486, 2000 November.*