

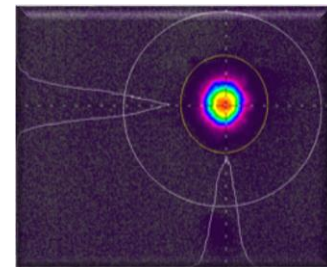


Overview

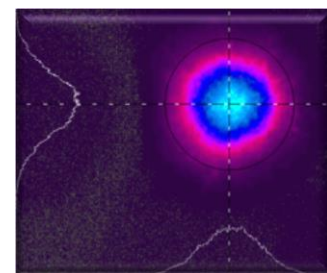
PowerPhotonic's Pseudo Random Intensity Mapping Element (PRIME) flat-top diffusers use a unique freeform direct-write process to fabricate a highly non-uniform surface in fused silica.

These quasi-random optics are designed to impart a well-defined and tightly controlled divergence angle which can range from fractions of a degree up to 10 degrees (FWHM) with potential transmission efficiencies in excess of 99%.

The Gaussian properties of the focused spot can be easily customized by supplying desired parameters to maximize system performance, creating both supra- and super-Gaussian distributions.



26.2 mrad Half Angle



61.1 mrad Half Angle

Key Features

- All fused silica optics
- Customizable divergence (<math><1^\circ</math> to - Customizable Gaussian parameters
- Very low divergences achievable
- Suitable for multi-mode lasers (

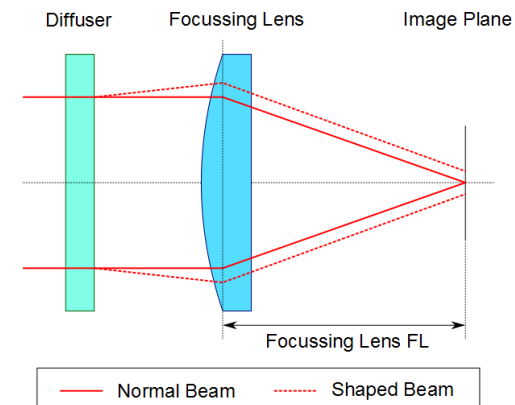
Target Applications

- **Materials processing: high power**
 - Laser cutting
 - Conduction welding, cladding, brazing, soldering
 - Laser peening and heat treatment
- **Diode array and pump beam homogenization**
- **Laser Projectors**

Benefits

- Highest system efficiency possible >98%
- Dramatic increase in beam uniformity
- High power handling, >20kW CW
- High laser damage threshold, >100J/cm²
- Good through-focus performance
- Insensitive to input beam properties

How they are Used

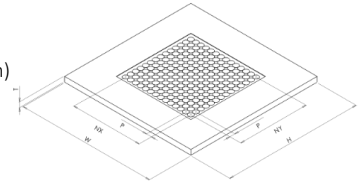


Standard Product Selection – Gaussian Diffusers

Part Number	Divergence Angle (FWHM - Degrees)	Clear Aperture H (mm)	Clear Aperture W (mm)	Height H (mm)	Width H (mm)	Thickness T (mm)
PP-GD-D10-V1	1.00	15.0	15.0	25.40	25.40	1.00
PP-GD-D30-V1	3.00	15.0	15.0	25.40	25.40	1.00
PP-GD-D70-V1	7.00	15.0	15.0	25.40	25.40	1.00
PP-GD-Dxx-Vx-Arx	Custom	Custom	Custom	Custom	Custom	Custom

Optical coating on request at extra cost
All custom parameters can be customer specified

W: Width (+/-0.10mm)
H: Height (+/- 0.10mm)
T: Thickness (+/- 0.02mm)



Customization Program

Due to the unique nature of the PowerPhotonic manufacturing process, our standard products can be easily modified to meet specific requirements. Please contact PowerPhotonic for additional information.

Options

- ④ Clear Aperture Width and Height
- ④ Substrate Width, Height and Thickness
- ④ Divergence Angle

About Us

PowerPhotonic is a global leader in precision micro-optics products. Our business was founded with the objective of providing unsurpassed excellence in all aspects of design and manufacture of micro-optics for optical and laser applications. Our world-class design skills are supported by an innovative and flexible manufacturing process that allows the company to design both a broad range of state-of-the art standard micro-optics products and uniquely, to offer a low cost and rapid fabrication service for creating completely freeform optical surfaces

For Sales and Technical Support

United Kingdom

PowerPhotonic Ltd.
1 St. David's Drive
Dalgety Bay, Fife, KY11 9PF
United Kingdom

Tel: +44 1383 825 910
Fax: +44 1383 825 739

sales@powerphotonic.com

North America

PowerPhotonic, Inc.
4900 Hopyard Road, Suite 100
Pleasanton, CA 94588
USA

Tel: +1 925 463 4876
Fax: +1 925 475 7422

sales@powerphotonic.com



PowerPhotonic
Enhancing Beam Performance

All specifications are correct at the time of production. We reserve the right to change our specifications without notice. © PowerPhotonic Ltd. 2016.