Multimode Beam Shaper

Overview:

Improve the performance of multi-mode laser applications - use PowerPhotonic components to modify the multi-mode laser beam, creating a better match to the needs of the application.

Multimode beam shapers from PowerPhotonic are thin glass windows that are an excellent solution to the following problems:

- Generating an accurate Flat Top output from a Gaussian input
- Removing structure from a beam or light source
- Homogenizing a beam that has “hot spots”

If you want to customise the size or shape of the output spot, contact PowerPhotonic sales and technical team to discuss.

The PowerPhotonic effect:

>95%

Shaping Efficiency

>20kW

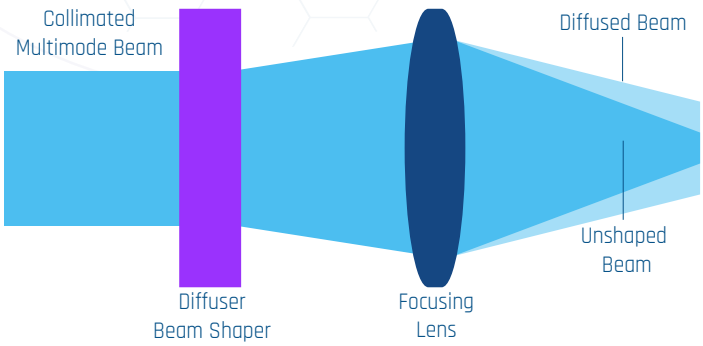
CW Power Handling

>100J

Pulsed Energy Handling

How it works:

Unique to PowerPhotonic, we create a diffuser surface from a multitude of randomised angled facets; so called Pseudo Random Intensity Mapping Elements (PRIME). The effect pf the PRIME surface is to add a Flat Top statistical distribution of divergence angles to the input beam. The full width angle of this distribution is the nominal design divergence of the PRIME. Users may then use a lens (not supplied by PowerPhotonic) to focus the beam to a flat top spot.



Key Features:

- No Diffractional Effects
- Insensitive to Input Parameters
- Uniform Flat Top Profile
- High LIDT Performance

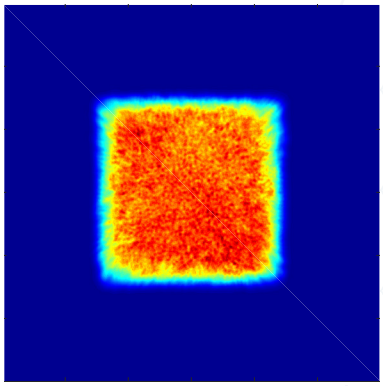
Target Applications:

- Laser Tattoo Removal
- Laser Skin Rejuvenation
- Laser Projection
- Source Homogenization

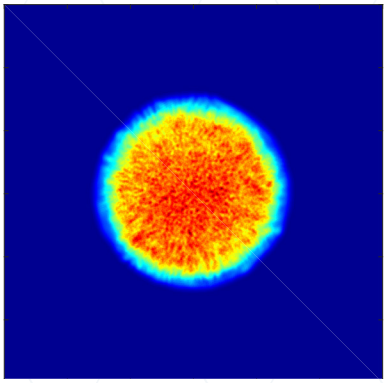
PowerPhotonic
Enhancing Beam Performance

Standard Product: Flat Top Diffuser

Part Number	Flat Top Shape	Clear Aperture Diameter (mm)	Output Divergence, Half Angle (deg)
PP-MM-SQFT-1.5-AR	Square	15	1.5
PP-MM-SQFT-3-AR	Square	15	3
PP-MM-CFT-1.5-AR	Circle	15	1.5
PP-MM-CFT-3-AR	Circle	15	3



PP-MM-SQFT-3-AR



PP-MM-CFT-3-AR

General Specification:

Parameter	Value
Part Diameter (mm)	25.4+0/-0.1
Part Thickness (mm)	1.01±0.1
Coating Wavelength Band (nm)	532-1064
Coating Reflectance (%)	<0.5 @532,755, 1064

Functional Performance:

Parameter	Value
Power in the Bucket (%)	>95
Flatness Factor, F_F	>0.7
Plateau Uniformity, U_p	<0.2

Custom Options:

Standard product designs can be readily modified for specific applications. Custom options include: different input beam diameter, different wavelength (in the window between 350nm and 2µm), smaller flat top spot, different spot shap and profile, different part diameter & thickness.

Sales and Technical

Japan
yoshiyuki.mori@powerphotonic.com
+81 80 1398 0331

www.powerphotonic.com
sales@powerphotonic.com

North America
PowerPhotonic Inc.
16220
S. La Cañada Drive
Sahaurita
AZ 85629
United States

United Kingdom
PowerPhotonic Ltd.
5A St. David's Drive,
Dalgety Bay
Fife
KY11 9PF
+44 1383 825 910

PowerPhotonic
Enhancing Beam Performance