Multimode Beam Shaper

Overview:

Improve the performance of multimode laser applications with the PowerPhotonic Multimode Beam Shaper. This beam shaper converts a multimode beam into a flat top profile at the focus of a focusing lens.

Multimode Beam Shapers are thin glass windows, with a precision manufactured freeform surface, designed to be easily integrated intoyour laser system.

In tattoo removal, improve the effectiveness and speed of the process by using a controlled flat-top laser profile. The multimode beam shaper provides a uniform profile, perfect for laser cladding and powder bed additive manufacturing.

The high power handling and ease of integration make the PowerPhotonic Multimode Beam Shaper perfectly suited for your current and future multimode laser systems

The PowerPhotonic Effect:

>95%

Shaping Efficiency

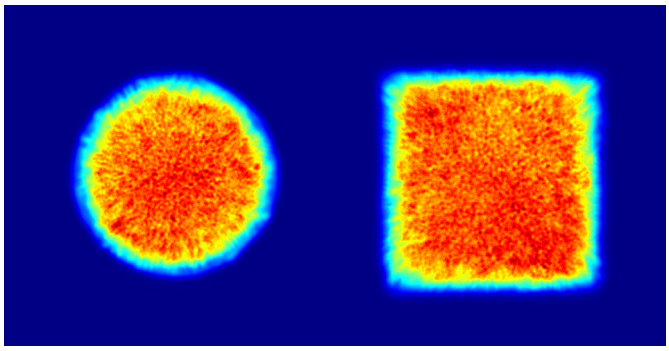
>20kW

CW Power Handling

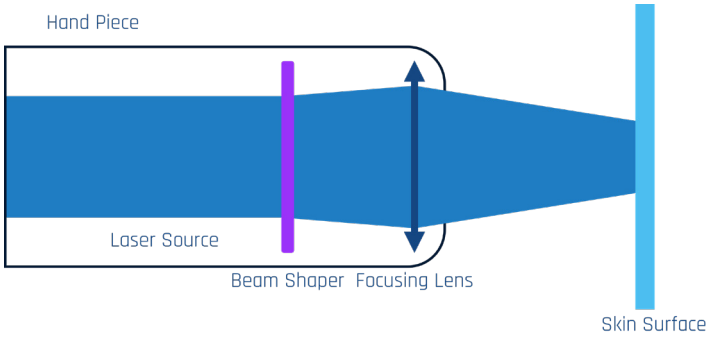
>100J

Pulsed Energy Handling

Output Profile:



Optical Layout:



Key Features:

- Reduced Diffractive Effects
- Insensitive to Input Parameters
- Uniform Flat Top Profile
- High Power Handling Capabilities

Target Applications:

- Laser Tattoo Removal
- Laser Skin Rejuvenation
- Laser Cladding
- Laser Projection

Multimode Beam Shaper

Standard Part:

Part Number	Flat Top Spot 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

*Designed at 755nm

General Specification:

Parameter	Value
Part Diameter (mm)	25.4±0.05
Part Thickness (mm)	1.01±0.05
Part Clear Aperture, Diameter (mm)	15
Coating Reflectance, Per Side[2] (%)	<0.4

Performance:

Parameter	Value
Flatness Factor[1], F_F	>0.7
Plateau Uniformity[1], U_p	<0.2
Power in the Bucket (%)*	>90

[1] As defined in ISO 13694:2019
* Power in the Bucket is defined as fractional power within the primary spot
[1] Reflectance per side

Custom Options:

The PowerPhotonic Multimode Beam Shaper can be readily modified for specific laser systems and processes. Our unique manufacturing and design process allows for efficient customisation without the need for masks or masters.

Some of the custom options available include:
Different laser wavelengths (between 450nm and 2μm), different input beam diameters, different output divergence angles, different output shapes, different extinction ratios and different part diameters and thickness.

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