

## Overview:

Use the gaussian diffuser to improve the performance of multi-mode laser applications. The gaussian diffuser modifies the laser beam, creating a better match to the needs of the application.

PowerPhotonic Gaussian Diffusers are thin glass windows, with a precision-machined freeform surface, designed to be easily integrated into your laser system.

Gaussian Diffusers from PowerPhotonic are an excellent solution to removing structure from a beam or light source. They are also perfectly suited to increase the beam divergence of the source by a precisely defined amount. Diffractive effects and hot spots can also be reduced using the Gaussian Diffuser.

## The PowerPhotonic Effect:

**>95%**

Shaping Efficiency

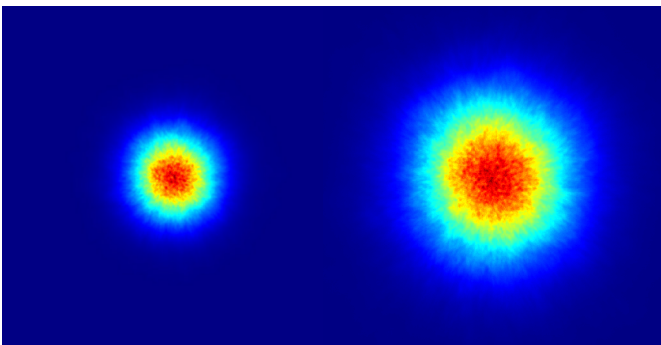
**>20kW**

CW Power Handling

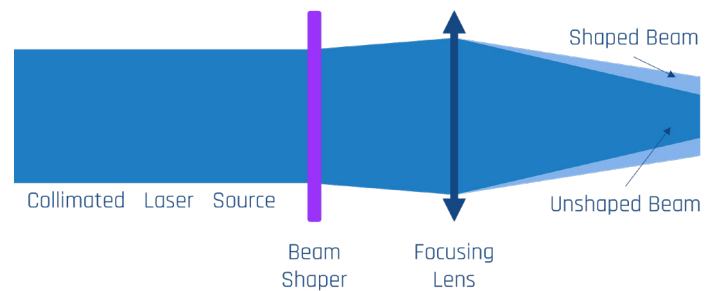
**>100J**

Pulsed Energy Handling

## Output Profile:



## Optical Layout:



## Key Features:

- Reduced Diffractive Effects
- Insensitive to input Parameters
- High Power Handling

## Target Applications:

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

# Gaussian Diffuser

## Standard Part:

Part Number	Design Wavelength (nm)	Clear Aperture Diameter (mm)	Output Divergence, Full Angle (deg)
PP-MW-W532-D1-AR	532	15	1
PP-MM-W532-D2-AR	532	15	3
PP-MW-W532-D3-AR	532	15	5

## General Specification:

Parameter	Value
Part Diameter (mm)	25.4±0.05
Part Thickness (mm)	1.01±0.05
Coating Wavelength Band (nm)	420-680
Coating Reflectance, Per Side (%)	<0.4

## Performance:

Parameter	Value
Output Divergence Angle Error, Full Angle (%)	<10

## Custom Options:

The PowerPhotonic Gaussian Diffuser 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.