

Broadband Diffuser

Broadband diffusers are special beam shaping microrefractive diffusers dedicated to high power applications where more than a single wavelength is used in the same optical path.

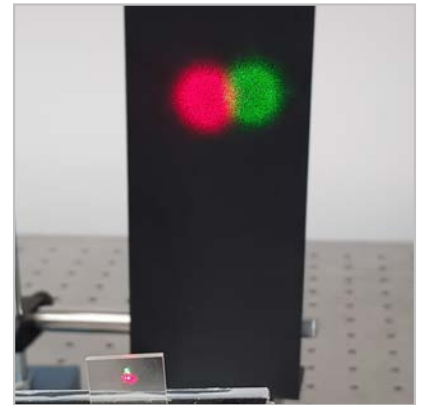
Typical applications are in the fields of aesthetic medicine where a few wavelengths are used for different procedures, microscopy applications with wide spectrum sources, laser display projection (cinema), and some very specific scientific applications.

A special manufacturing process that was developed in our company allows Holo/Or to make quick and affordable custom shapes and angles of the broadband diffuser with delivery time comparable with diffractive elements.

The broadband diffuser element can be used in the same optical setups as a diffractive element.

Designed using innovative modified fractal algorithms, the broadband diffuser delivers some additional advantages such as:

- Same performance for wide wavelength spectrum from UV to NIR
- High efficiency
- No zero order



Comparison Table: Broadband Diffuser versus Diffractive Homogenizer

	Broadband Diffuser	Diffractive Homogenizer
Sensitive to wavelength	No	Yes (zero order and diffusion angle)
High efficiency	>90%	typical 80%, up to 95%
Shaping flexibility	Limited to basic shape of-round, line, and rectangular	Any shape and profile
Transfer region	Good	Perfect
Alignment sensitivity	None	None
Wafer large volume production	Yes	Yes

Spec Table of first Broadband Diffuser Element, BD001:

Type	Broadband diffuser
Optical parameters	
Diffusion angle	5 degrees
Shape	Round
Efficiency	>90%
Input	Single or multi mode
Element parameters	
Size	15 mm x 15 mm
Central thickness	1.524 mm
Material	Fused silica