

## Spot / Far Field high power Homogenizers

### Preliminary Datasheet -50130

Holo-Or introduces a new series DF Homogenizers that consist of pure fused silica with an optional high power AR V-Coating on both surfaces, which makes them superior to competing solutions. This can reduce the back reflection to a typical 0.2% (0.1% per surface).

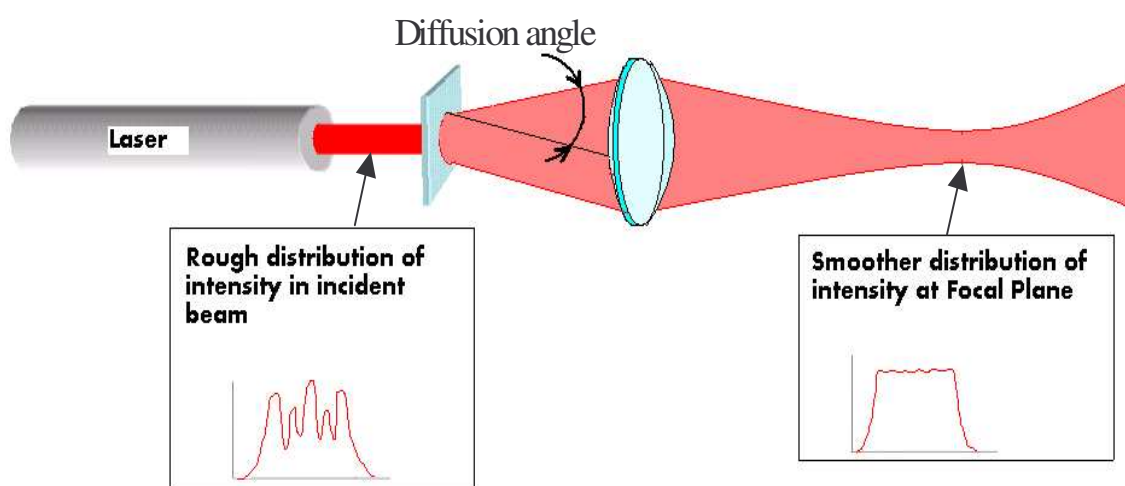
- ❑ High Damage Threshold
- ❑ Low Back Reflection
- ❑ Ar/Ar coated option
- ❑ High Efficiency
- ❑ Accepts any beamshape
- ❑ Pure Fused Silica
- ❑ Small diffusing angle
- ❑ Custom angles, wavelengths and dimensions possible

Application note: The homogenizer smoothens the profile of a spot focused in the focal plane of a lens AT ANY DISTANCE (spot operation), or at a working distance larger than the Minimum Working Distance (MWD) defined (Far field operation). If operated at shorter distances and not in a focal plane of a lens some undesired peaks may appear.

#### Standard Homogenizers

Part number	Full Angle	MWD	Wavelength	Part number	Full Angle	MWD	Wavelength
DF-106	0.5°	0.5m	1064nm	DF-1106	2.0°	0.07m	1064nm
DF-075	0.35°	0.75m	755nm	DF-1075	1.4°	0.1m	755nm
DF-069	0.33°	0.75m	694nm	DF-1069	1.33°	0.1m	694nm
DF-053	0.25°	1m	532nm	DF-1053	1.0°	0.13m	532nm
DF-035	0.17°	1.5m	355nm	DF-1035	0.68°	0.2m	355nm
DF-026	0.125°	2m	266nm	DF-1026	0.5°	0.3m	266nm
DF-024	0.12°	2m	248nm	DF-1024	0.48°	0.3m	248nm
DF-019	0.09°	3m	193nm	DF-1019	0.36°	0.4m	193nm

Fig 1. Typical Optical Scheme



*Options*

<b>Coating</b>	ARAR	<i>Back Reflection &lt; 0.5%</i>
	NC	<i>Back Reflection &lt; 9%</i>
<b>Grades</b>	A	Less than 5% energy in Zero Order @1064nm Less than 7.5% energy in Zero Order @532nm Less than 10% energy in Zero Order @355nm Less than 15% energy in Zero Order @266nm
	B	Less than 20% energy in Zero Order
	C	Typical less than 30% energy in Zero Order

*Dimensions*

<b>Dimensions</b>	25.4mm dia	11 X 11mm	11mm dia
<b>Clear Aperture</b>	23mm dia	9.5 X 9.5	9.5mm dia

*General specifications*

	<b>Ar/Ar Coated</b>	<b>Uncoated</b>	<b>Possible for Custom design</b>
<b>Transmission Efficiency:</b>	>92%	>84%	>95%
<b>Part of energy expected within Defined angle</b>	80%	72%	95%
<b>Zero Order</b>	<i>Depend on Grade</i>	<i>Depend on Grade</i>	< 2.5%
<b>Back Reflection</b>	< 0.5%	< 9%	< 0.2%

<b>Material:</b>	<i>Fused Silica</i>	<b>Angle of incidence:</b>	$0^{\circ}$
<b>Dimensions:</b>	+0/-0.2mm	<b>Damage threshold coating:</b>	> 10J/cm <sup>2</sup> (@5ns)

Specs –DF-XXX type

<b>Diffusion angle</b>	$0.5 \text{ deg} * \text{Operating Wavelength} / 1064\text{nm}$		
<b>Optimal Beam Dia</b>	>4mm	<b>Min Spike Dia at input</b>	1mm

Specs –DF-1XXX type

<b>Diffusion angle</b>	$2.0 \text{ deg} * \text{Operating Wavelength} / 1064\text{nm}$		
<b>Optimal Beam Dia</b>	>2mm	<b>Min Spike Dia at input</b>	0.5mm



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