

FOCUSING UNITS

1030 nm to 1090 nm

Focusing units designed for reliable, high-performance beam delivery and easy system integration. Available with focal lengths ranging from 60 mm to 500 mm, they are offered in both D25 and D50 assemblies to suit a wide range of applications.

All focal lengths are available in air-cooled and water-cooled configurations. For applications requiring additional flexibility, the D50 assembly is also available in a Z-adjustable version.

Each focusing unit is factory pre-aligned during assembly to ensure consistent optical performance and minimize unit-to-unit variation. Their compact design and simple mechanical interface enable straightforward integration into new or existing systems.



FEATURES

- Up to 12 kW (CW)
- Air- or water-cooled
- High-quality lenses
- Compact dimensions
- Factory aligned
- Z-adjustable version

APPLICATIONS

- Welding
- Cutting
- Surface Treatment
- Cladding
- 3D Additive Manufacturing

Specifications

Specifications		Water-Cooled	Air-Cooled
Maximum Power CW (kW)	D25	10	3
	D50	12	5
Wavelength (nm)		1030 to 1090	
Focal Length (mm)	D25	60, 100, 150, 200, 250, 300, 400, and 500	
	D50	100, 120, 160, 200, 250, 300, 400, and 500	
Focal Shift ($\Delta z/z_R$)/kW ¹		Typical <0.1	
Optics Material		Synthetic fused silica	
Optics Diameter (mm)		25 and 50	
Optics Surface Quality, Scratch/Dig		40/20, U.S. Standard MIL-PRF-13830B Section 3.5	
Z-adjustment Range ² (mm)		N/A	±5
Cooling			
Cooling Method		Water	Air (passive)
Flow Rate (l/min)		2.0	N/A
Pressure Drop (bar at 2 l/min.)	D25	1.6	N/A
	D50	1.3	N/A
Water Temperature (°C)		15 to 35 (non-condensing)	N/A
Dimensions & Weight			
Dimensions		See page 3 and 4	
Weight (kg)	D25	0.3	0.1
	D50	0.6	0.4 or 0.6 (z-adj.)
Environmental Conditions			
Humidity (% RH)		<80	
Operating Temperature (°C)		5 to 50 (non-condensing)	
Storage Temperature (°C)		-10 to 70	
Compliance Information			
RoHS		Directives 2011/65/EU and (EU) 2015/863	
REACH		Regulation (EC) No. 1907/2006	

1. In combination with collimating unit.
2. Available as D50 configuration.

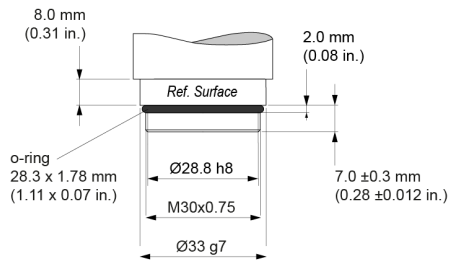
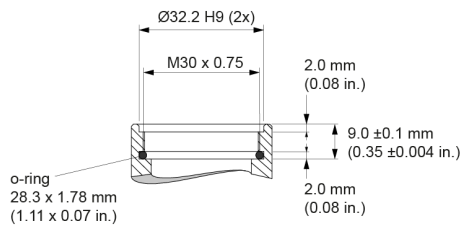
Optical Specifications

	Design Focal Length (mm)	Effective Focal Length (mm)	Z Tolerance δz_f (μm)	Radial Tolerance δr_f (μm)
D25	60	60.0 $\pm 0.5\%$	± 100	≤ 100
	100	100.1 $\pm 0.5\%$		≤ 150
	150	150.0 $\pm 0.5\%$		≤ 200
	200	200.0 $\pm 0.5\%$		≤ 250
	250	250.0 $\pm 0.5\%$		≤ 300
	300	300.0 $\pm 0.5\%$		≤ 400
	400	400.0 $\pm 0.5\%$		≤ 500
	500	500.0 $\pm 0.5\%$		
D50	100	100.0 $\pm 0.5\%$	± 100	≤ 150
	120	119.9 $\pm 0.5\%$		≤ 200
	160	160.1 $\pm 0.5\%$		≤ 250
	200	200.0 $\pm 0.5\%$		≤ 300
	250	250.0 $\pm 0.5\%$		≤ 400
	300	300.0 $\pm 0.5\%$		≤ 500
	400	399.9 $\pm 0.5\%$		
	500	500.0 $\pm 0.5\%$		

Mechanical Specifications

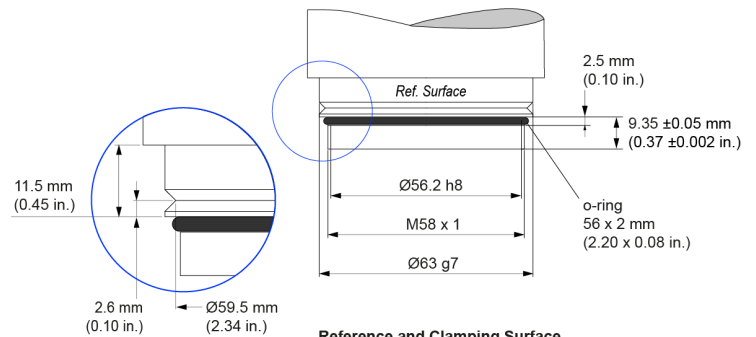
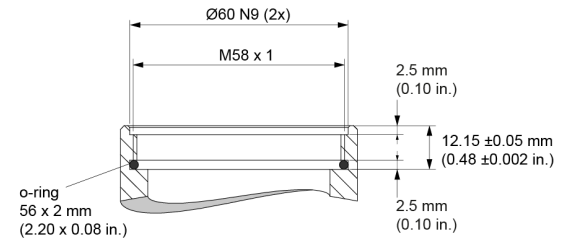
Focusing Unit Interfaces

D25:



Reference and Clamping Surface
 $\text{Ø}33 \text{ g7}$

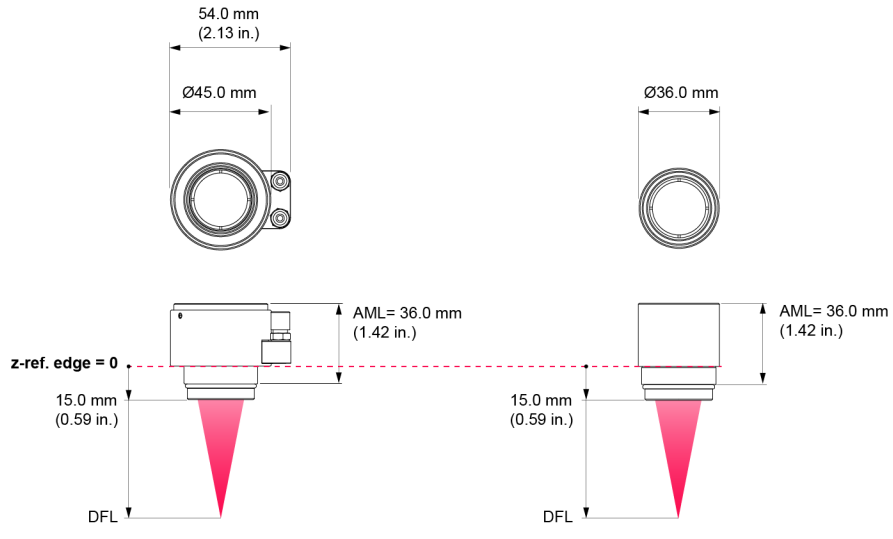
D50:



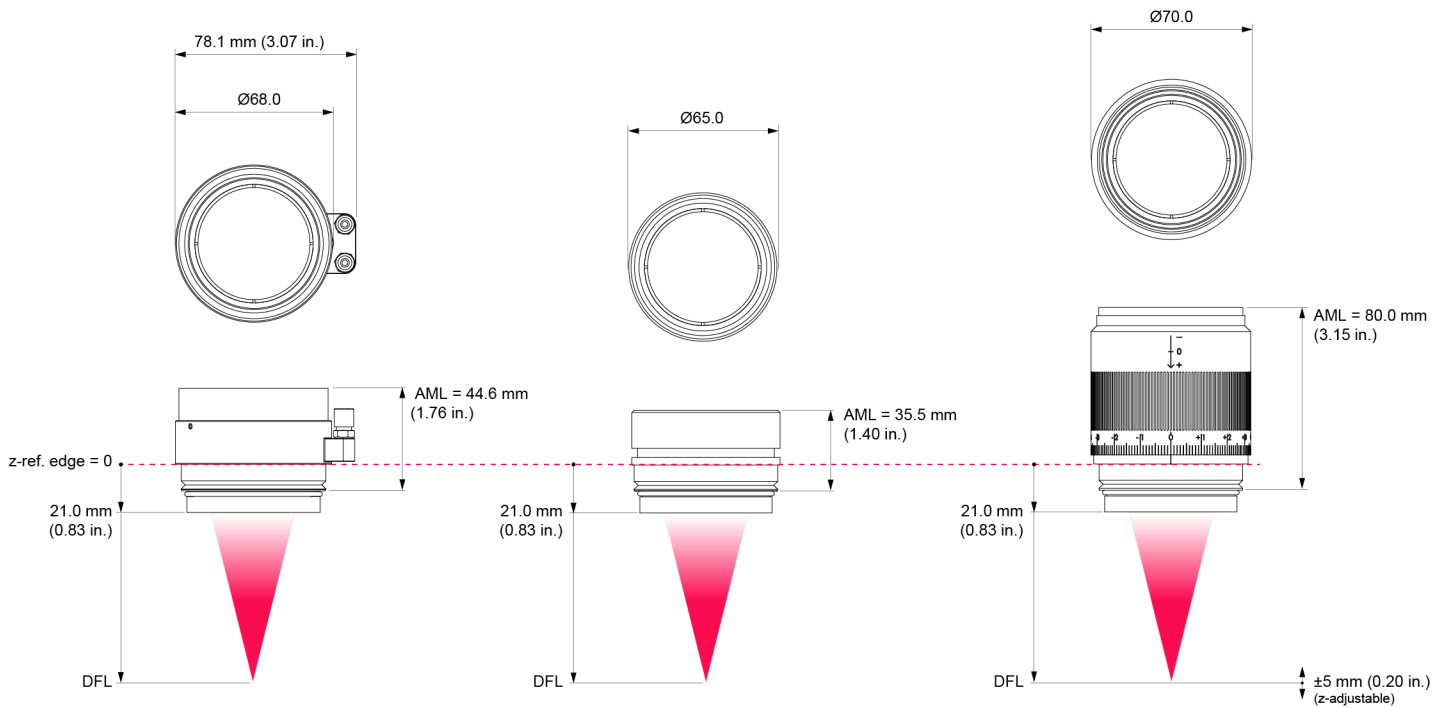
Reference and Clamping Surface
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Mechanical Specifications

D25



D50



Part Numbers

Diameter 25 mm

	Focal Length	Water-Cooled	Air-Cooled
D25	60 mm	1389067	2-9962X01
	100 mm	1389400	1-9555X01
	150 mm	1389051	3-9400X01
	200 mm	1389401	3-9401X01
	250 mm	1389063	3-9402X01
	300 mm	1389064	3-9403X01
	400 mm	1389065	3-9404X01
	500 mm	1389066	3-9405X01

Diameter 50 mm

	Focal Length	Water-Cooled	Air-Cooled	Air-Cooled, z-adj.
D50	100 mm	110853X01	104236X01	N/A
	120 mm	110854X01	102496X01	1-9427X01
	160 mm	110855X01	104237X01	1-9229X01
	200 mm	109030X01	102499X01	1-9230X01
	250 mm	109033X01	113105X01	109050X01
	300 mm	105207X01	104240X01	1-9261X01
	400 mm	110851X01	104241X01	1-9721X01
	500 mm	110852X01	102497X01	1-9723X01

Accessories

Description	Part Number	Details
Focusing Unit Holder, d25	1-9562X01	Holder with reference surfaces
Focusing Unit Holder, d50	1-9321X01	Holder with reference surfaces
Cover Slide Holder, d25	3-9337X01	Including cover slide (2-1146X03)
Cover Slide Holder, d50	4-9007X01	Including cover slide (0-1010X09)
Cover Slide Holder with drawer, d50	1-9354X01	Not including cover slide

Related Products

The complete product line of process optics includes:

- Collimating Units
- Intermediate Optics
- Focusing Units
- Process Adapters
- Holders

