

COLLIMATING UNITS

1030 nm to 1090 nm

Coherent collimating units are available with focal lengths ranging from 50 mm to 250 mm in D25 and D50 assemblies. All focal lengths are offered in both air-cooled and water-cooled configurations.

Several bayonet interfaces are available for connection to the fiber optic cable, all featuring a built-in temperature switch. The lenses are pre-aligned during assembly to minimize variation between units and ensure consistent performance.

The compact design and simple mechanical interface allow easy integration into a wide range of laser systems.



FEATURES

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

APPLICATIONS

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

Specifications		Water-Cooled	Air-Cooled
Maximum Power CW (kW)	D25 D50	10 12	3 5
Wavelength (nm)		1030 to 1090	
Focal Length (mm)	D25 D50	50, 60, 70, 85,100 100, 120, 140, 160, 200, 250	
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	
Temperature Switch		70°C ±5° (reset temp >30°C)	
Cooling			
Cooling Method		Water	Air (passive)
Flow Rate (l/min)		2.0	N/A
Pressure Drop (bar at 2 l/min.)	D25 D50	f50 to f100: 1.8 f100 to f160: 0.5, f200 to f250: 0.6	N/A
Water Temperature (°C)		15 to 35 (non-condensing)	N/A
Fiber Delivery System			
Fiber Interfaces		QBH / QD / LLK-B (Q5)	
Dimensions & Weight			
Dimensions		See page 4	See page 5
Weight (kg) ²	D25 D50	0.5 to 0.6 1.3 to 1.6	0.4 to 0.5 0.7 to 1.3
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 focusing unit.

2. Weight for units with QB interface. Additional weight QD: +0.4 kg and Q5: +0.3 kg.

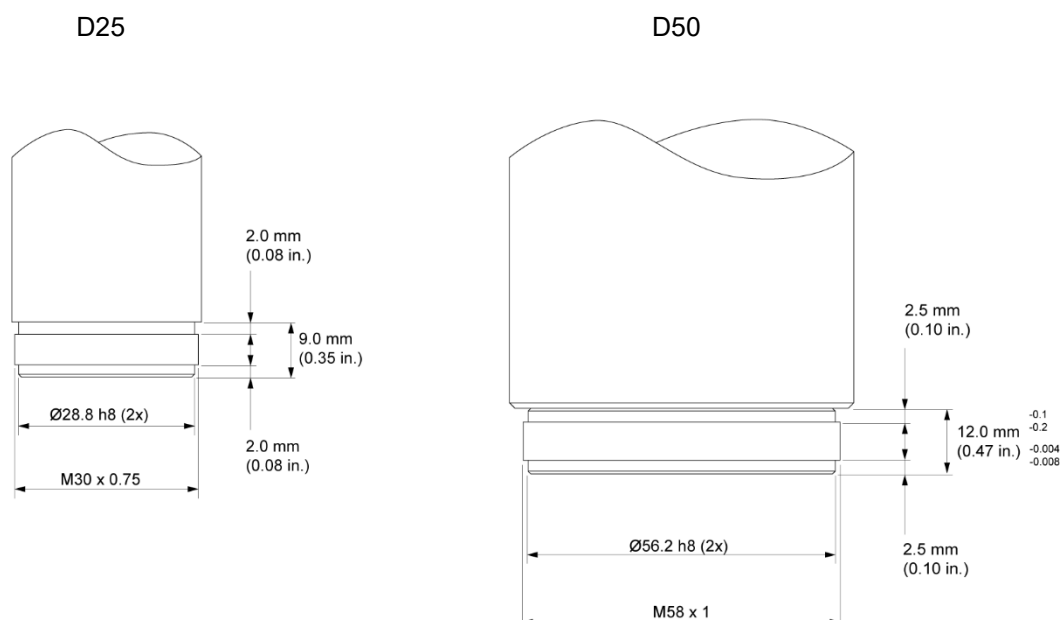
Optical Specifications

	Design Focal Length (mm)	Effective Focal Length (mm) ¹	Z Tolerance δz_c (μm)	Angular Fault $\delta\alpha_c$ (mrad)	Max. Beam NA at $1/e^2$	
					Gauss (SM)	Flat-top
D25	50	49.9 $\pm$ 0.5%	± 100	<3.0	0.145	0.202
	60	60.0 $\pm$ 0.5%			0.121	0.168
	70	70.0 $\pm$ 0.5%		<2.5	0.103	0.144
	85	85.0 $\pm$ 0.5%		<2.0	0.083	0.116
	100	100.1 $\pm$ 0.5%			0.069	0.098
D50	100	100.0 $\pm$ 0.5%	± 100	<2.0	0.146	0.203
	120	119.9 $\pm$ 0.5%			0.121	0.168
	140	140.0 $\pm$ 0.5%			0.103	0.144
	160	160.1 $\pm$ 0.5%		<1.5	0.089	0.125
	200	200.0 $\pm$ 0.5%		<1.0	0.069	0.098
	250	250.0 $\pm$ 0.5%			0.053	0.076

1. EFL at 1070 nm.

Mechanical Interfaces

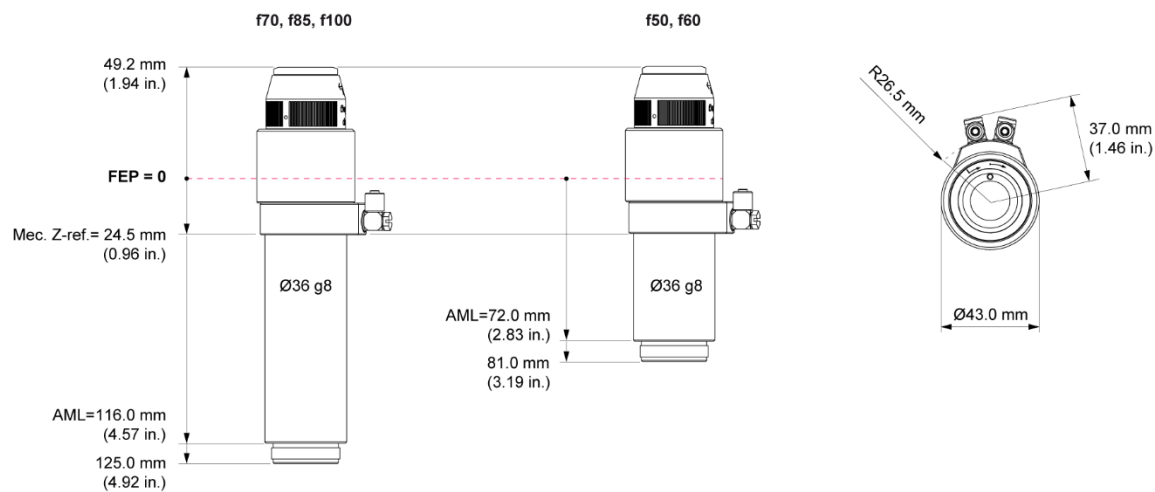
Exit



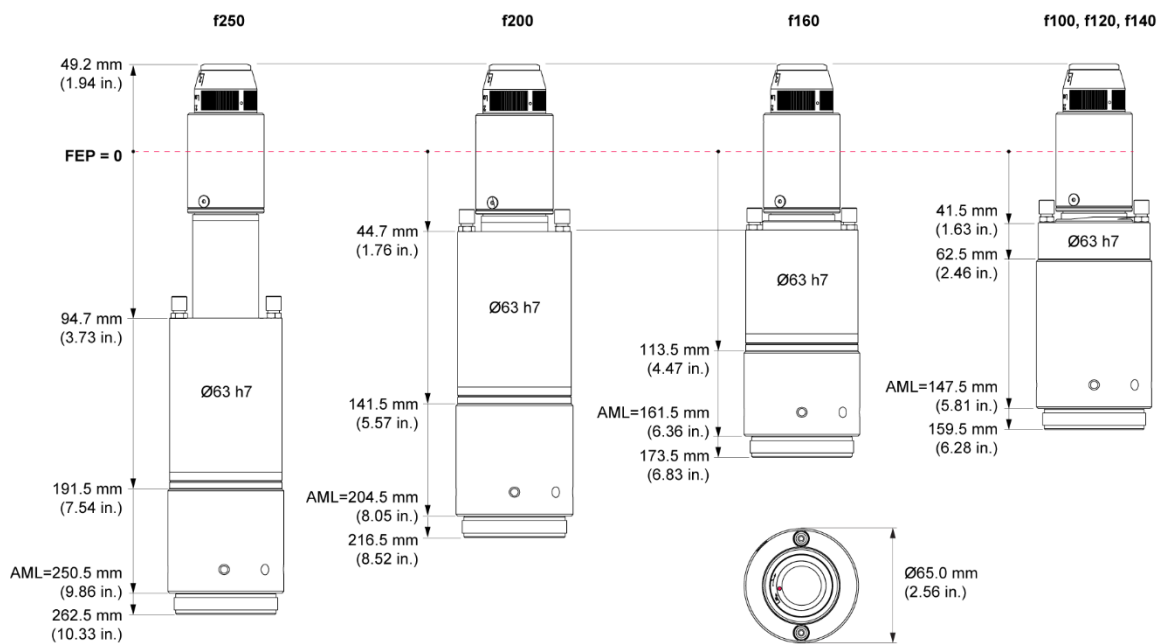
Mechanical Specifications

Collimating Unit Water-Cooled

D25 (QBH)



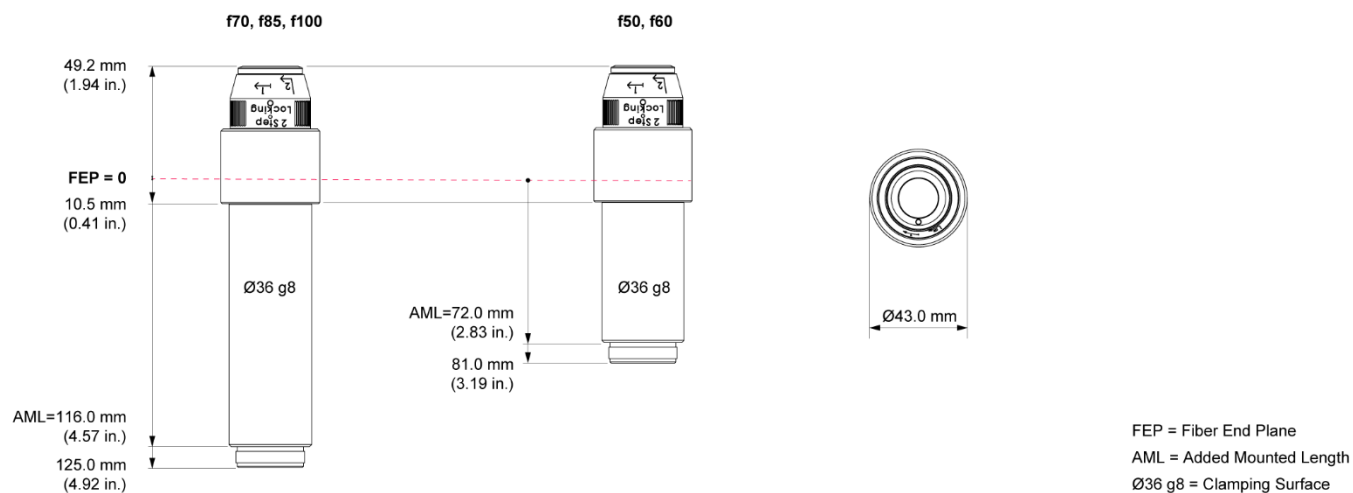
D50 (QBH)



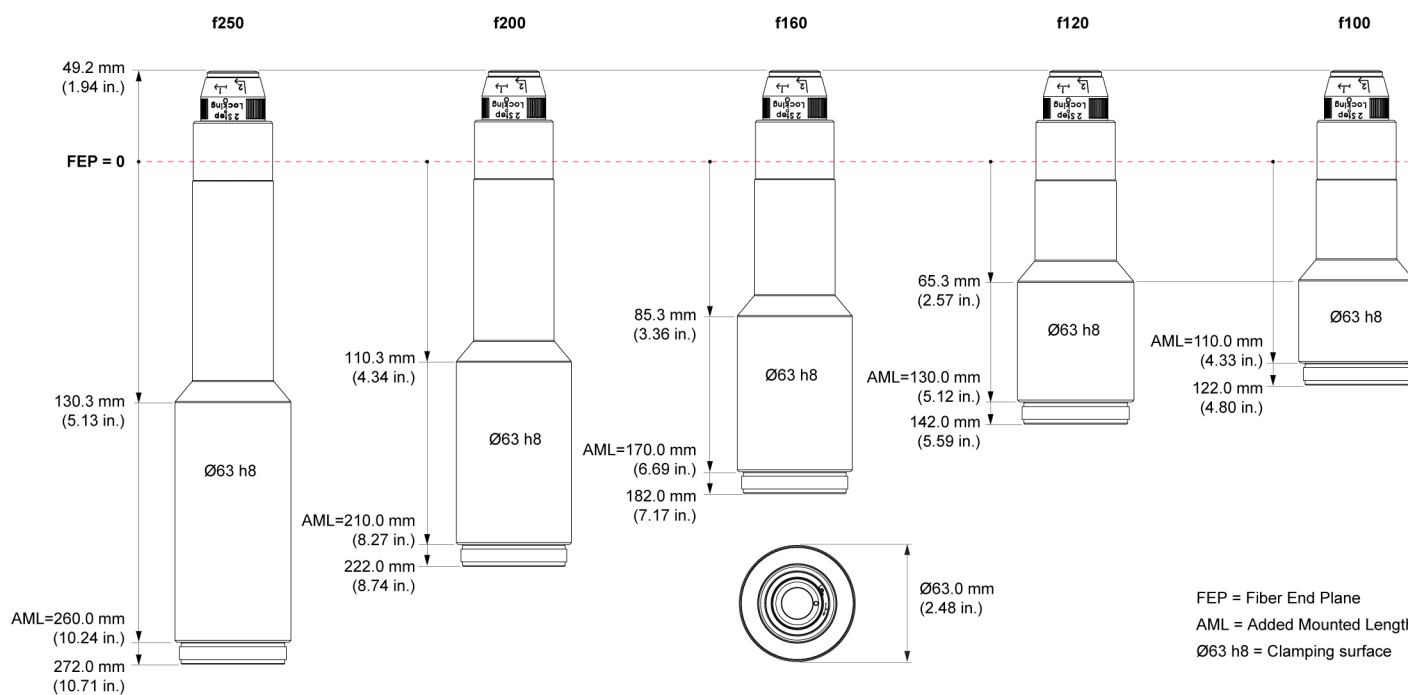
Mechanical Specifications

Collimating Unit Air-Cooled

D25 (QBH)



D50 (QBH)



Part Numbers

Water-Cooled

	Interface	50 mm	60 mm	70 mm	85 mm	100 mm	
D25	QBH	2-9670X01	2-9671X01	2-9656X01	2-9657X01	2-9658X01	
	QD	2-9678X01	2-9679X01	2-9659X01	2-9660X01	2-9661X01	
	LKK-B (Q5)	2-9638X01	2-9650X01	2-9662X01	2-9663X01	2-9664X01	
	Interface	100 mm	120 mm	140 mm	160 mm	200 mm	250 mm
D50	QBH	102789X01	102791X01	1389556	102795X01	102797X01	103203X01
	QD	1405402	103207X01	1391638	103208X01	103209X01	103201X01
	LKK-B (Q5)	-	103200X01	-	103205X01	103206X01	103202X01

Air-Cooled

	Interface	50 mm	60 mm	70 mm	85 mm	100 mm	
D25	QBH	102870X01	102872X01	102860X01	102861X01	102862X01	
	QD	112704X01	112705X01	112706X01	112707X01	112708X01	
	Interface	100 mm	120 mm	160 mm	200 mm	250 mm	
D50	QBH	106394X01	106395X01	106397X01	106400X01	106402X01	
	QD	112709X01	112710X01	112711X01	112712X01	112713X01	

Accessories

Product Description	Part Number	Details
Collimating Unit Holder, d25	1-9563X01	Holder for clamping surface
Collimating Unit Holder, d50	1-9361X01	Holder for clamping surface
Cover Slide Holder, d25	3-9337X01	Possible to mount directly after the collimating unit
Cover Slide Holder, d50	4-9007X01	Possible to mount directly after the collimating unit

Related Products

The complete product line of process optics includes:

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

