



1030 nm to 1090 nm

Collimating Units

High-Power Beam Delivery

The Coherent collimating units are available from 50 mm up to 250 mm focal length in D25 and D50 assemblies. All focal lengths are offered in both air-cooled and water-cooled designs. For termination against the fiber optic cable several bayonet types are offered, all with a built-in temperature switch. The lenses are pre-aligned during assembly to minimize variation between units. Small outer dimensions and simple mechanical interface make the collimating units easy to integrate.

FEATURES & BENEFITS

- 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



Collimating Units: 1030 nm to 1090 nm Datasheet

SPECIFICATIONS	Water-Cooled	Air-Cooled
Maximum Power CW (kW)		
D25	10	3
D50	12	5
Wavelength (nm)	1030 to 1090	
Focal Length (mm)		
D25	50, 60, 70, 85, 100	
D50	100, 120, 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	
Thermoswitch	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.)		N/A
D25	f50 to f100: 1.8	
D50	f100 to f160: 0.5, f200 to f250: 0.6	
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 ² (kg)		
D25	0.5 to 0.6	0.4 to 0.5
D50	1.3 to 1.6	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 2015/863/EU	
REACH	Directive EC no 1907/2006	

¹ In combination with focusing units.

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

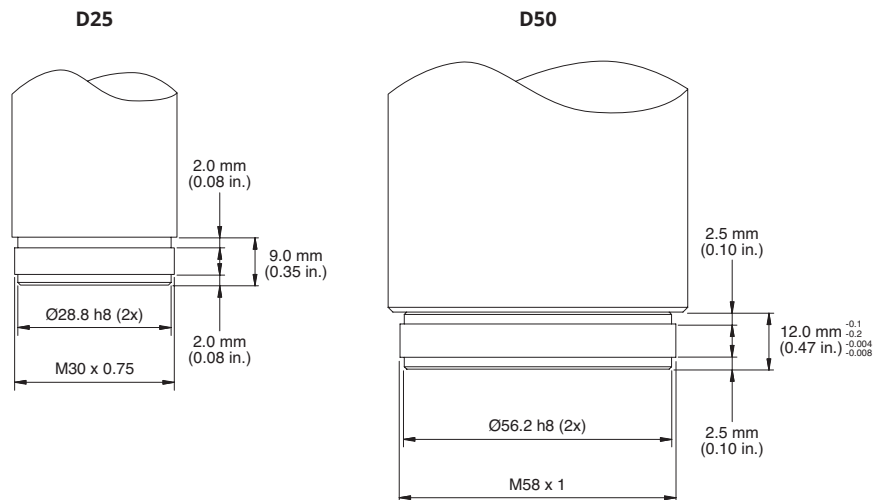
OPTICAL SPECIFICATIONS

	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%	\pm 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%	\pm 100	<2.0	0.146	0.203
	120	119.9 \pm 0.5%			0.121	0.168
	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 SPECIFICATIONS

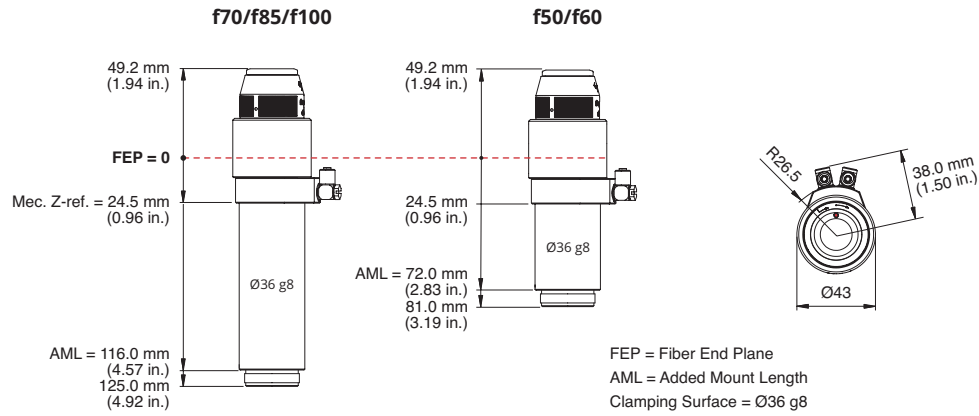
Exit Interface



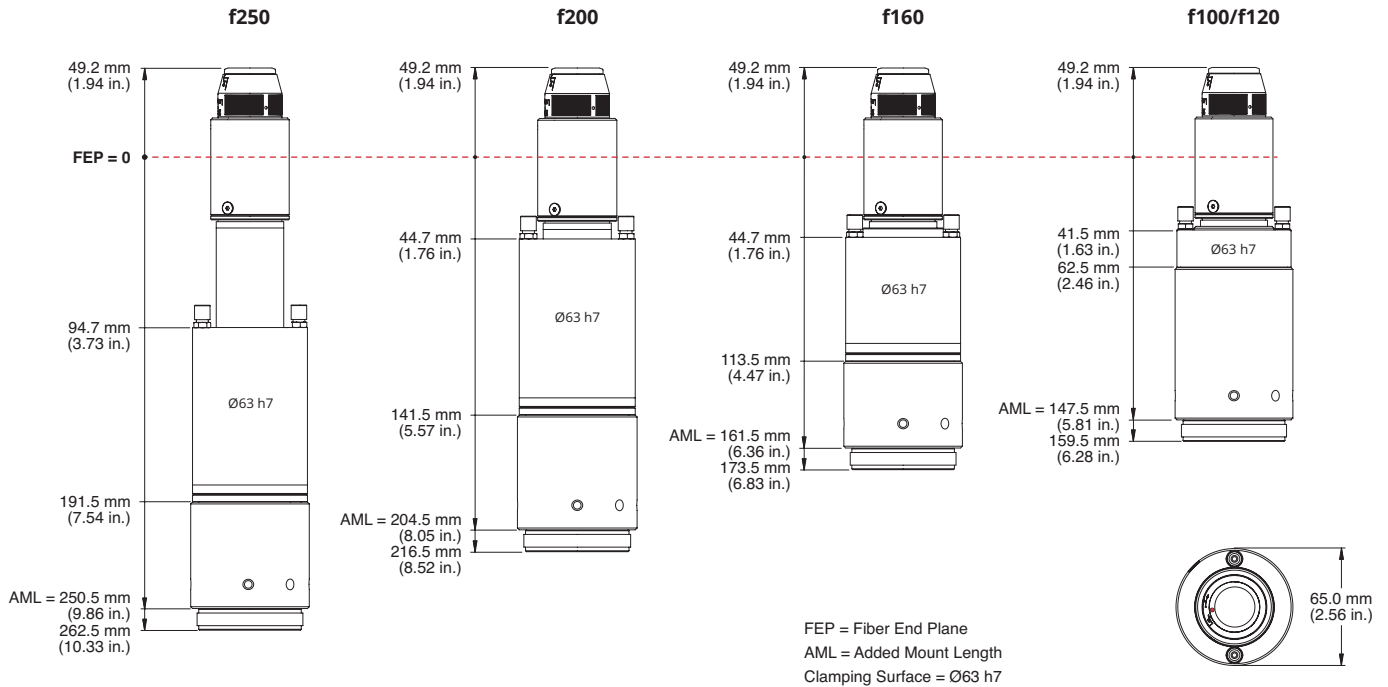
MECHANICAL SPECIFICATIONS

Collimating Unit Water-Cooled

D25 (design with QBH Fiber Interface)



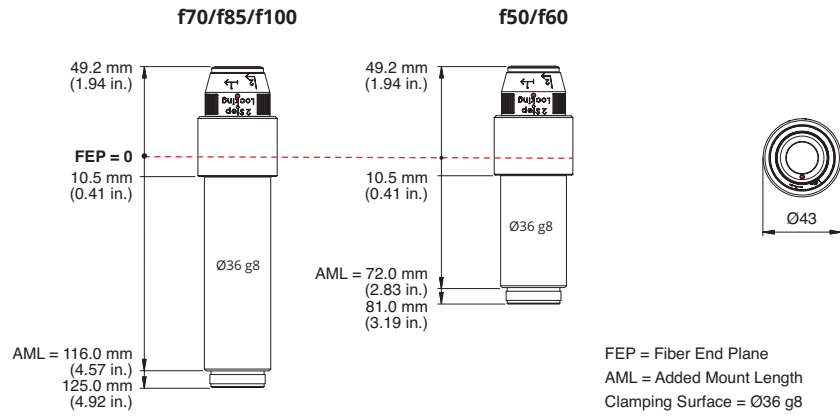
D50 (design with QBH Fiber Interface)



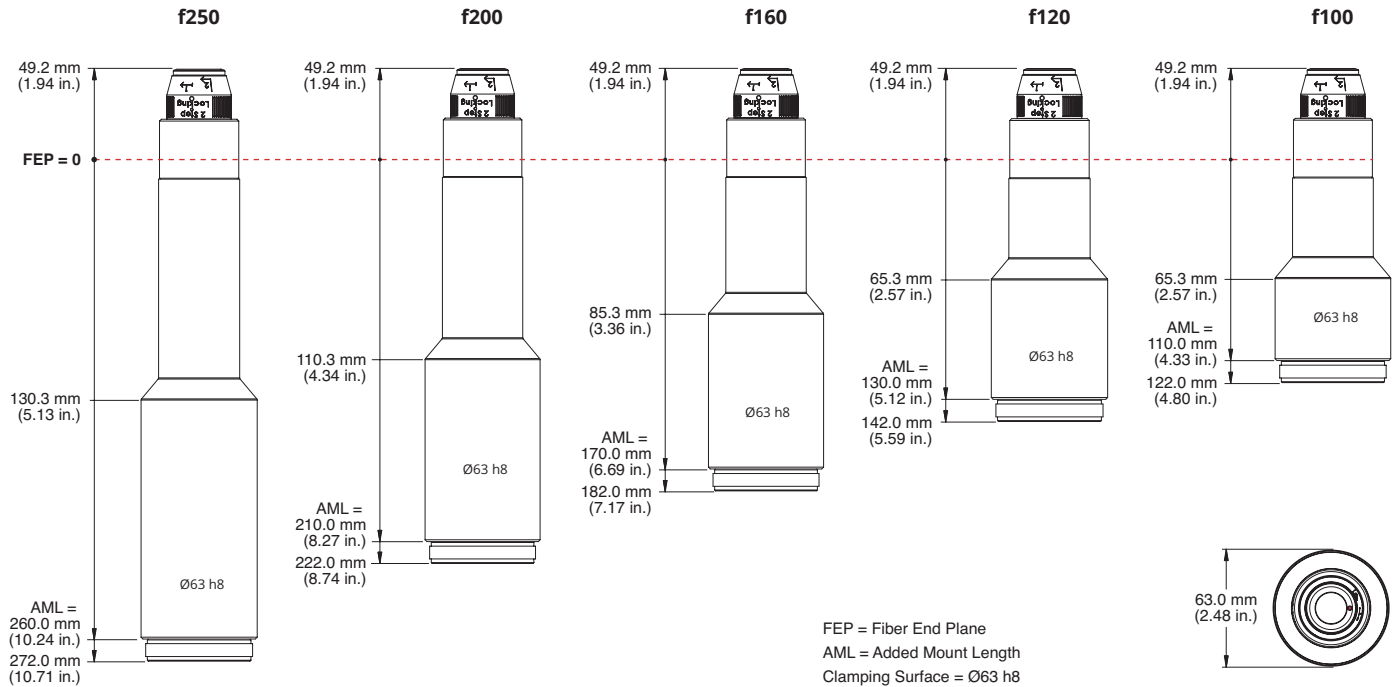
MECHANICAL SPECIFICATIONS

Collimating Unit Air-Cooled

D25 (design with QBH Fiber Interface)



D50 (design with QBH Fiber Interface)



PART NUMBERS

Collimating Units Water-Cooled

D25	Interface	50 mm	60 mm	70 mm	85 mm	100 mm
	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
D50	Interface	100 mm	120 mm	160 mm	200 mm	250 mm
	QBH	102789X01	102791X01	102795X01	102797X01	103203X01
	QD	1405402	103207X01	103208X01	103209X01	103201X01
	LKK-B (Q5)	-	103200X01	103205X01	103206X01	103202X01

Collimating Units Air-Cooled

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

Note: LKK-B (Q5) interface available upon request.

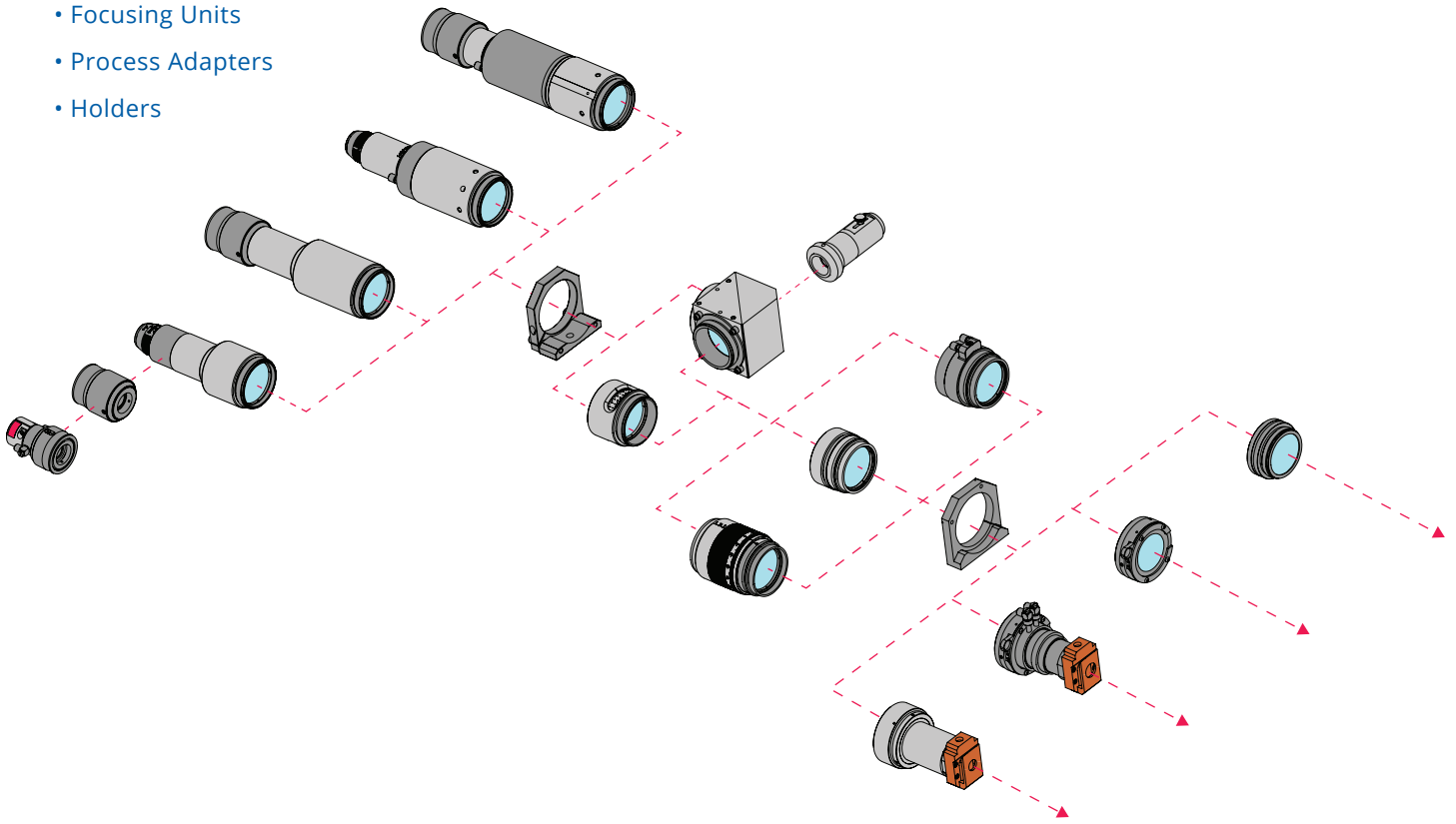
Accessories

Accessory	Part Number	Description
Coll Unit Holder, d25	1-9563X01	Holder for clamping surface
Coll 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



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Coherent offers a limited warranty for all Collimating Units. For full details of this warranty coverage, please refer to the Service section at www.coherent.com or contact your local Sales or Service Representative.
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