



Collimating Lenses & Focus Keys Datasheet

Lens Assemblies

Global Laser's range of collimating lenses provide replacement lens assemblies for the vast majority of laser diode modules available from RS Components. These allow the user to tailor the modules to fit their optical requirement by circularising output beams, improving beam divergence or changing spot or beam dimensions.

The assemblies cover two focal lengths and a variety of aperture sizes. The material is either A/R coated glass or plastic. All are supplied in holders with the choice of M9 x 0.5 or M11 x 0.5 threads and the holder position can be adjusted in the holder via a focus key.

Spare focus keys for the majority of laser diode modules are also available.

Warning:

Laser diode modules are OEM products, and are supplied with labels showing their classification for wavelength and output power conforming to EN:60825-1:2007. The removal of the factory fitted lens assembly and replacement with a different assembly can change the factory specified laser class. This is particularly relevant when the substituted lens assembly has a larger aperture than the factory fitted lens assembly. Users should consult the relevant laser safety regulation (IEC:60825:2007) and are responsible for implementing any required additional safety measures and re-labelling.

M11 Specifications

Information					
RS Part Number	RS194-048	RS127-1546	RS127-1545	RS127-1544	RS127-1543
Global Laser Part Number	1125-48-000	1125-373-000	1125-372-000	1125-371-000	1125-370-000
Description	S Lens Assembly	HG Lens Assembly	C3 Lens Assembly	C2 Lens Assembly	C1 Lens Assembly
Thread	M11 x 0.5				
Number of Elements	1				
Lens Material	Plastic	Glass	Plastic		
Wavelength (nm)	670				
Focal Length (mm)	7.9 ±0.05	11	7.9 ±0.05		
Numerical Aperture	0.3				
Clear Aperture (mm)	5	6.5	3.5	2	1
A/R Coated	Yes (MgF ₂)				
Exit Beam Size (mm) *	~5 x 2.2	~6.5 x 2.5	~3.5 x 2.2	~2	~1
Beam Divergence (mRad) *	≤0.2	≤0.15	≤0.25	≤0.5	≤1
Focus Spot Size @ 50mm (1e ²) (μm) *	~11 by 26	~8 by 18	~16 by 26	~31	~59
Transmission Loss @ 650nm *	~30%	~37%	~47%	~73%	~82%
Transmission Loss @ 650nm #	~20%	~25%	~33%	~70%	~80%

NOTES

All specifications are typical @ 25°C

* Calculated with a laser diode with a 8 x 30° divergence angle (FWHM)

Calculated with a laser diode with a 8 x 20° divergence angle (FWHM)

RS Part Number	Description	S	HG	C3	C2	C1
RS127-1557	Acculase-PWM-520-1-C2 (1421-94)	●	●	●	■	●
RS127-1556	Acculase-PWM-520-5-S (1421-93)	■	●	●	●	●
RS127-1555	Acculase-PWM-520-35-S (1421-92)	■	●	●	●	●
RS105041	Acculase-PWM-635-5-S (1421-26)	■	●	●	●	●
RS105170	Acculase-LC-635-5-S (1420-43)	■	●	●	●	●
RS105013	Acculase-PWM-650-1-S (1421-24)	■	●	●	●	●
RS105029	Acculase-LC-650-1-S (1420-41)	■	●	●	●	●
RS105186	Acculase-PWM-650-5-S (1421-25)	■	●	●	●	●
RS127-1552	Acculase-LC-650-5-C2 (1420-94)	●	●	●	■	●
RS127-1554	Acculase-PWM-650-5-C2 (1421-80)	●	●	●	■	●
RS105164	Acculase-LC-650-5-S (1420-42)	■	●	●	●	●
RS488-1465	Acculase-LC-650-5-S (1420-10)	■	●	●	●	●
RS488-1471	Acculase-LC-650-20-S (1420-11)	■	●	●	●	●
RS127-1553	Acculase-PWM-660-20-S (1420-79)	■	●	●	●	●
RS194-004	Beta TX Modulatable Laser 670nm 3mW (1060-42)	■	●	●	●	●
RS564-504	Beta TX Laser Module 670nm 1mW (1060-41)	●	●	■	●	●
RS194-010	Beta CW 670nm 1mW (1068-42)	●	●	■	●	●
RS194-026	Beta CW Laser Module 670nm 3mW (1068-43)	■	●	●	●	●
RS111-346	Beta CW Laser 635nm 1.5mW (1068-40)	■	●	●	●	●
RS213-3613	Beta CW 670nm 3mW Long Line Lens (1068-45) *	●	●	●	●	●
RS111-346	Beta CW Laser 635nm 1.5mW S Lens (1068-40) *	●	●	●	●	●

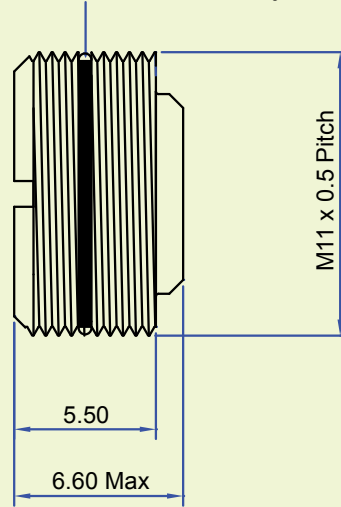
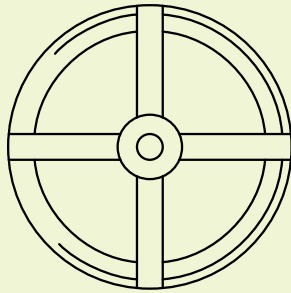
■ Factory Fitted Lens

● Compatible

* Fitted with a gaussian line lens

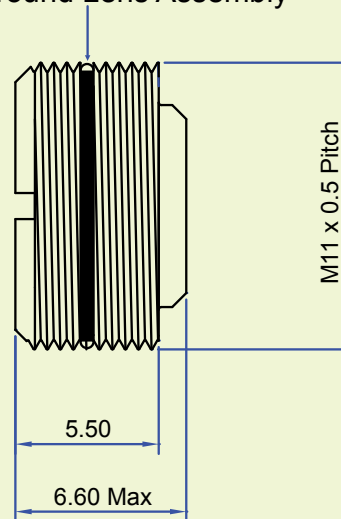
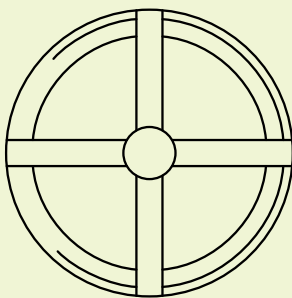
C1 M11 x 0.5 Lens Assembly

O Ring Fitted Around Lens Assembly



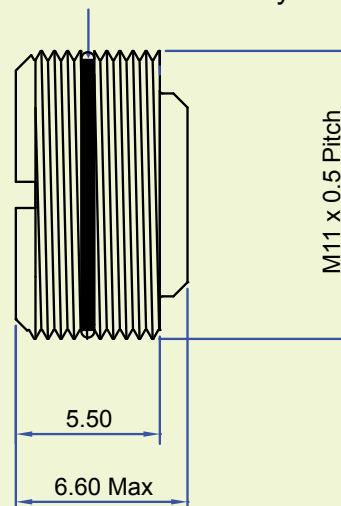
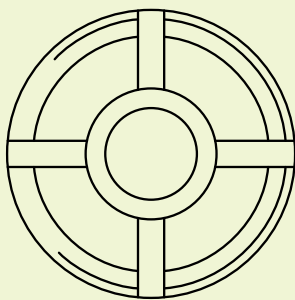
C2 M11 x 0.5 Lens Assembly

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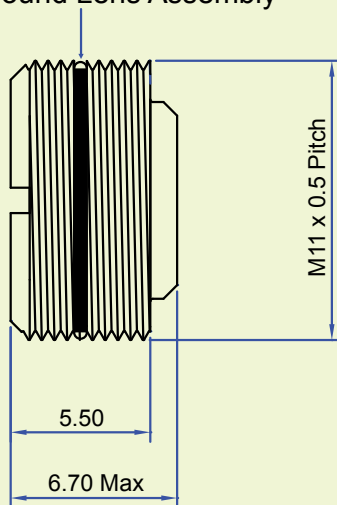
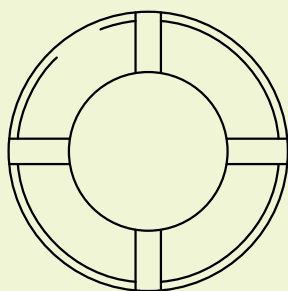
C3 M11 x 0.5 Lens Assembly

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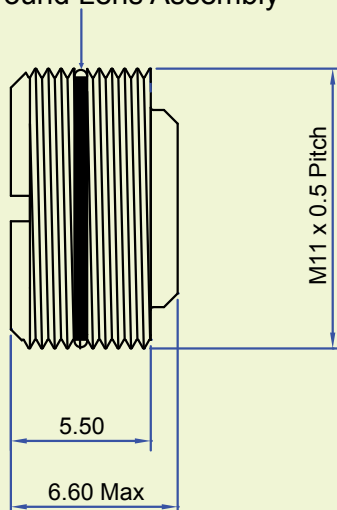
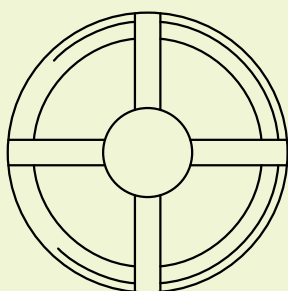
HG M11 x 0.5 Lens Assembly

O Ring Fitted Around Lens Assembly



S M11 x 0.5 Lens Assembly

O Ring Fitted Around Lens Assembly



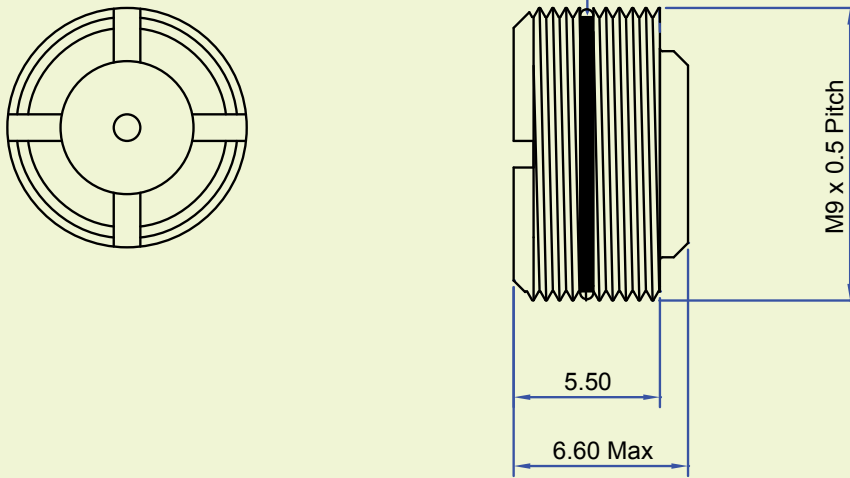
M9 Specifications

Information					
RS Part Number	RS127-137	RS127-1542	RS127-1541	RS127-1539	RS127-1538
Global Laser Part Number	1125-360-000	1125-364-000	1125-363-000	1125-362-000	1125-361-000
Description	S Lens Assembly	HG Lens Assembly	C3 Lens Assembly	C2 Lens Assembly	C1 Lens Assembly
Thread	M9 x 0.5				
Number of Elements	1				
Lens Material	Plastic	Glass	Plastic		
Wavelength	670nm				
Focal Length (mm)	7.9 ±0.05	11	7.9 ±0.05		
Numerical Aperture	0.3				
Clear Aperture (mm)	5	6.5	3.5	2	1
A/R Coated	Yes (MgF ₂)				
Exit Beam Size (mm) *	~5 x 2.2	~6.5 x 2.5	~3.5 x 2.2	~2	~1
Beam Divergence (mRad) *	≤0.2	≤0.15	≤0.25	≤0.5	≤1
Focus Spot Size @ 50mm (1e ²) (μm) *	~11 by 26	~8 by 18	~16 by 26	~31	~59
Transmission Loss @ 650nm *	~30%	~37%	~47%	~73%	~82%
Transmission Loss @ 650nm #	~20%	~25%	~33%	~70%	~80%
NOTES					
All specifications are typical @ 25°C					
* Calculated with a laser diode with a 8 x 30° divergence angle (FWHM)					
# Calculated with a laser diode with a 8 x 20° divergence angle (FWHM)					

RS Part Number	Description	S	HG	C3	C2	C1
RS213-3562	Cameo 635nm 0.8mW C2 Lens (1250-33)	●	●	●	■	●
RS213-3584	Cameo 635nm 3mW S Lens (1250-32)	■	●	●	●	●
RS213-3590	Cameo 670nm 0.8mW C2 Lens (1250-34)	●	●	●	■	●
RS213-3607	Cameo 670nm 3mW S Lens (1250-35)	■	●	●	●	●
RS442-3299	Gated Cameo 635nm 3mW C2 Lens (1260-02)	■	●	●	●	●
RS442-3306	Gated Cameo 650nm 1mW S Lens(1260-03)	●	●	●	■	●
RS442-3328	Gated Cameo 650nm 3mW C2 Lens (1260-04)	■	●	●	●	●
RS697-3513	Red Laser Alignment Kit (1951-01)	■	●	●	●	●
RS127-1572	LaserLyte-Flex 635nm 1mW Dot (3117-12)	■	●	●	●	●
RS697-3557	LaserLyte Flex 635nm 5mW Dot (3117-10)	■	●	●	●	●
RS127-1571	LaserLyte-Flex 635nm 10mW Dot (3117-11)	■	●	●	●	●
<p>■ Factory Fitted Lens</p> <p>● Compatible</p>						

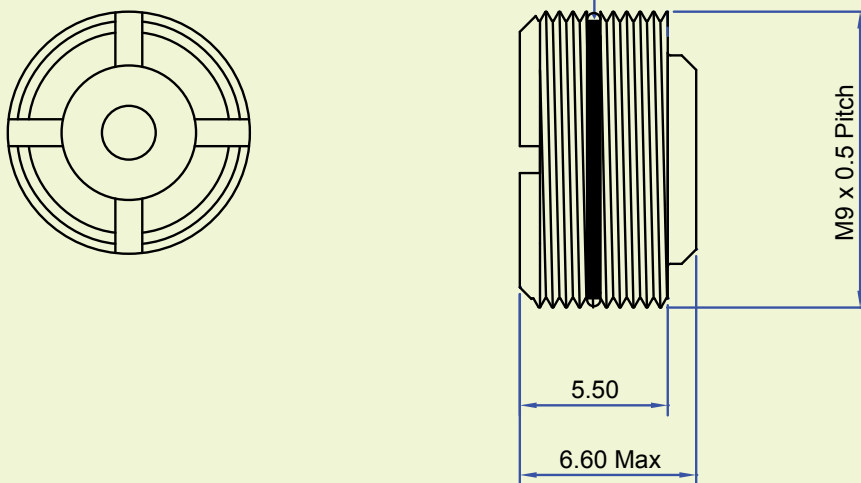
C1 M9 x 0.5 Lens Assembly

O Ring Fitted Around Lens Assembly



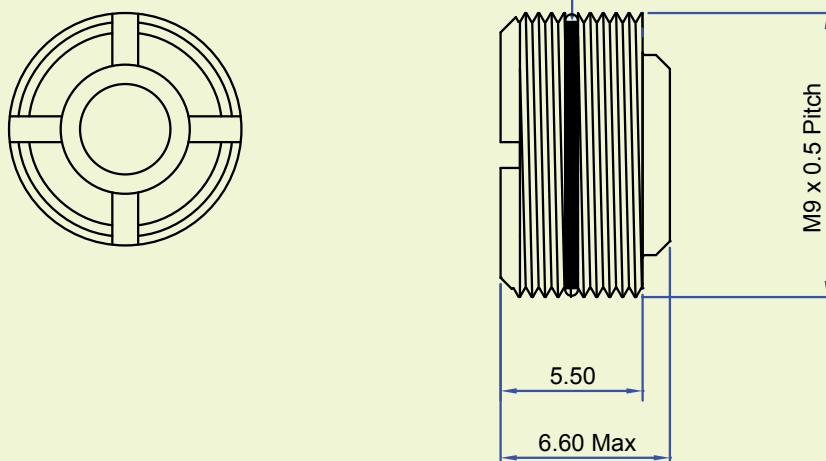
C2 M9 x 0.5 Lens Assembly

O Ring Fitted Around Lens Assembly



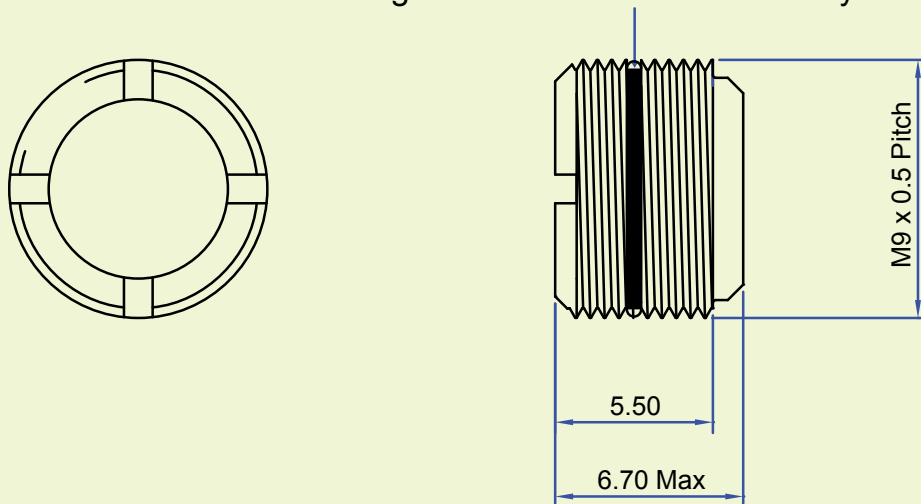
C3 M9 x 0.5 Lens Assembly

O Ring Fitted Around Lens Assembly



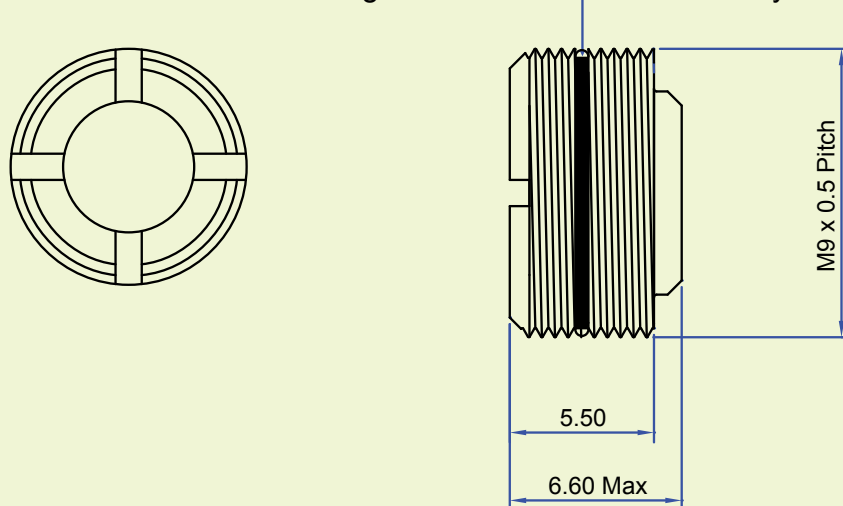
HG M9 x 0.5 Lens Assembly

O Ring Fitted Around Lens Assembly



S M9 x 0.5 Lens Assembly

O Ring Fitted Around Lens Assembly



Focus Keys

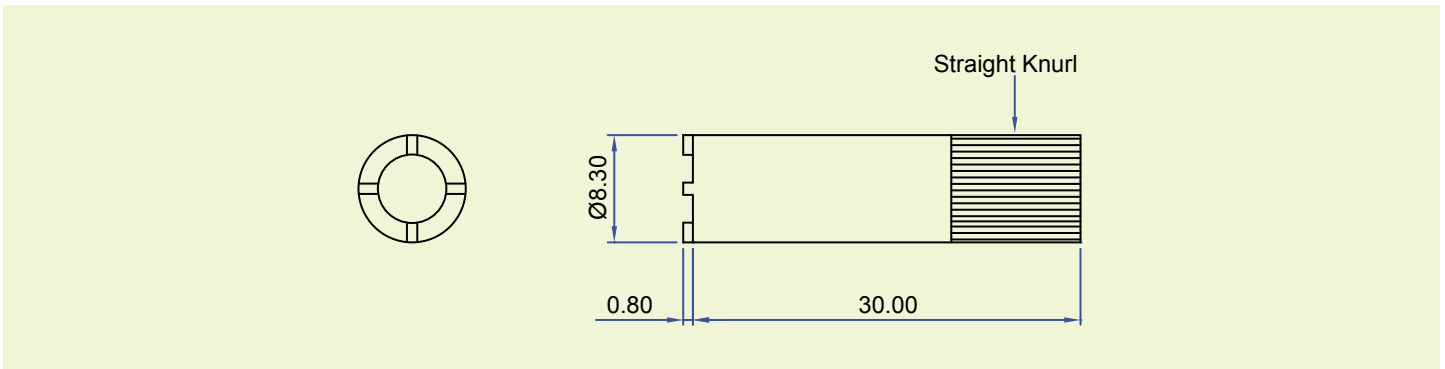
Below is a table of current products supplied through RS Components and the focus key they require.

RS Part Number	Description	M9	M11	M14
RS213-3562	Cameo 635nm 0.8mW C2 Lens (1250-33)	■		
RS213-3584	Cameo 635nm 3mW Laser Diode Module (1250-32)	■		
RS213-3590	Cameo Laser Module 670nm 0.8mW C2 Lens (1250-34)	■		
RS213-3607	Cameo Laser Diode Module 670nm 3mW (1250-35)	■		
RS442-3299	Gated Cameo 635nm 3mW (1260-02)	■		
RS442-3306	Gated Cameo 650nm 1mW (1260-03)	■		
RS442-3328	Gated Cameo 650nm 3mW (1260-04)	■		
RS697-3513	Red Laser Alignment Kit (1951-01)	■		
RS127-1572	LaserLyte-Flex 635nm 1mW Dot	■		
RS697-3557	LaserLyte-Flex 635nm 5mW Dot	■		
RS127-1571	LaserLyte-Flex 635nm 10mW Dot	■		
RS127-1568	Gated Cameo Laser Development Kit	■		
RS697-3507	Blue Laser Module 15mm 405nm 5mW (4000-03)		■	
RS697-3516	Blue Laser Module 15mm 405nm 15mW (4000-01)		■	
RS127-1557	Acculase-PWM-520-1-C2 (1421-94)		■	
RS127-1556	Acculase-PWM-520-5-S (1421-93)		■	
RS127-1555	Acculase-PWM-520-35-S (1421-9)		■	
RS105041	Acculase-PWM-635-5-S (1421-26)		■	
RS105170	Acculase-LC-635-5-S (1420-43)		■	
RS105013	Acculase-PWM-650-1-S (1421-24)		■	
RS105029	Acculase-LC-650-1-S (1420-41)		■	
RS105186	Acculase-PWM-650-5-S (1421-25)		■	
RS127-1552	Acculase-LC-650-5-C2 (1420-94)		■	
RS127-1554	Acculase-PWM-650-5-C2 (1421-80)		■	
RS105164	Acculase-LC-650-5-S (1420-42)		■	
RS488-1465	Acculase-LC-650-5-S (1420-10)		■	
RS488-1471	Acculase-LC-650-20-S (1420-11)		■	
RS127-1553	Acculase-PWM-660-20-S (1427-79)		■	
RS194-004	Beta TX Modulatable Laser 670nm 3mW (1060-42)		■	
RS564-504	Beta TX Laser Module 670nm 1mW (1060-41)		■	
RS194-010	Beta CW 670nm 1mW (1068-42)		■	
RS194-026	Beta CW Laser Module 670nm 3mW (1068-43)		■	
RS111-346	Beta CW Laser 635nm 1.5mW (1068-40)		■	
RS194-032	Beta CW Laser Module 670nm 3mW L8 Line Lens (1068-44)		■	
RS213-3613	Beta CW 670nm 3mW Long Line Lens (1068-45)		■	
RS697-3519	Laser Machine Vision Development Kit (1952-01)		■	

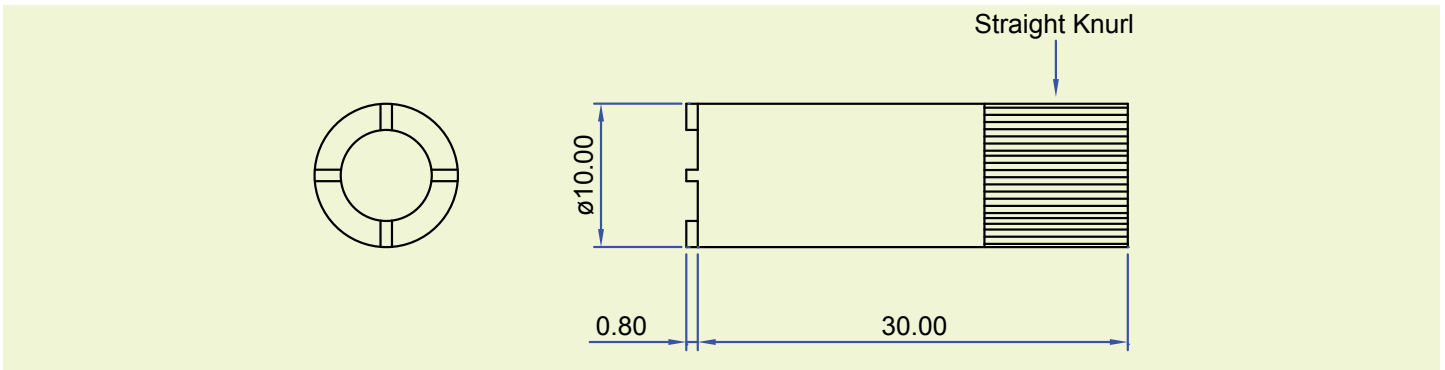
RS Part Number	Description	M9	M11	M14
RS105035	Firefly-5-L (1711-41)			■
RS105057	Firefly-5-D-TTL (1711-30)			■
RS105079	Firefly-5-D (1711-31)			■
RS105085	Firefly-5-C (1711-43)			■
RS697-3522	Green Laser Alignment Kit (1950-00)			■
RS488-1421	GreenLyte Alignment Laser (5710-03)			■
RS442-3249	GG HV 532nm Cross Laser (1710-07)			■

■ Compatible

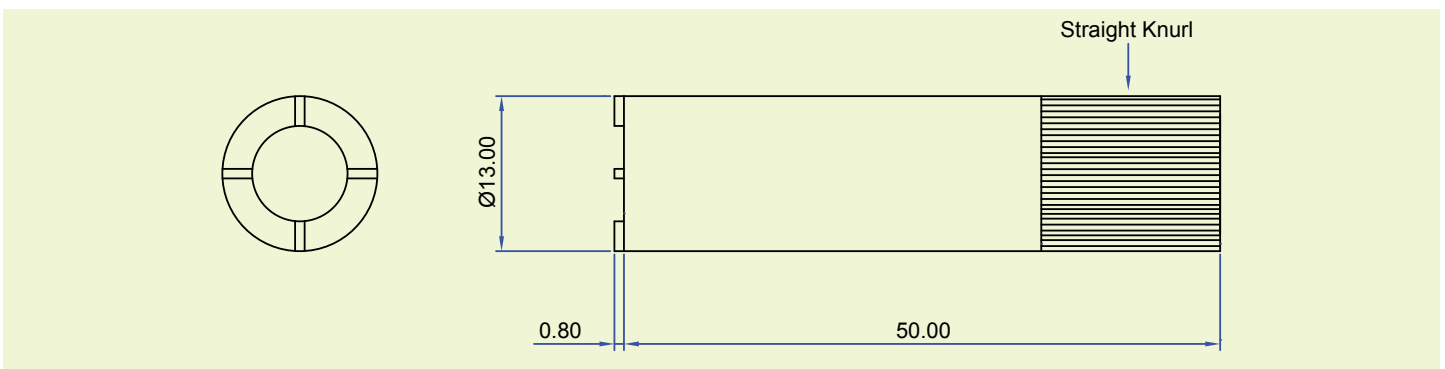
M9 Focus Key



M11 Focus Key



M14 Focus Key



Notes

Please Note: Global Laser reserve the right to change descriptions and specifications without notice.



T: +44 (0)1495 212213
F: +44 (0)1495 214004
E: sales@globalasertech.com
www.globalasertech.com

Global Laser Ltd
Unit 9-10
Roseheyworth Business Park
Abertillery, Gwent NP13 1SP UK