



Beta CW Laser Module Datasheet

Beta-CW Range

The Beta CW from Global Laser is a robust, high quality laser diode module which provides a reliable laser source to a wide range of applications including alignment, edge detection and bar code reading.

A wide range of standard wavelength and powers are available for the Beta CW which also features the benefits of an isolated housing and reverse polarity protection as standard. Optical options include an A/R coated user adjustable collimating lens produces an elliptical output beam which can be focused to produce a fine focused spot. Lens assemblies which circularize the beam or provide lower beam divergence can also be supplied.

A wide variety of additional collimating lenses and line lens assemblies are available as optional accessories.



Beta CW 635/0.36/Circular

Beta CW 635/15/Elliptical

Beta CW 650/20/Elliptical

Part Numbers

RS Part Number	TBC	TBC	TBC
Global Laser Part Number	1088-11-000	1088-12-000	1068-55-000

Mechanical Information

Mass (grams)	16.5		
Dimensions (mm)	Ø15 x 46		
Housing	Anodised Aluminium		
Isolated Body	Yes		
Lead Length (mm)	250		
Connector Type	Flying Leads		

Optical Information

Output Power (mW)	0.36	15	20
Wavelength (nm)	635	635	650
Laser Class (IEC 60825:1 2014)	1	3B	3B
Beam Size at Aperture (mm)	3.5	5 by 1.5	5 by 1.5
Beam Divergence (mRad)	<0.4	<0.5	<0.5
Minimum Focus Distance (mm)	25		
Beam Size at Nearest Focus (µm)	<60*	<50 *	<50 *
Power Stability Over Temperature Range	±3.6% #		
Bore Sighting (mRad)	≤10		

Environmental Information

Operating Case Temperature (°C)	-10 to +45		-10 to +55
Storage Temperature (°C)	-10 to +80		
Operating Humidity (%RH)	90 non condensing		
MTTF @ 25°C (hrs)	≥29,000	≥57,000	≥40,000

Electrical Specifications

Input Voltage (Vdc) (Red Lead)	+3.5 to 5.0		
Input Voltage (Vdc) (Black Lead)	0		
Operating Current (mA)	34	60	80
Reverse Polarity Protection	Yes		

NOTES

* Varies with Laser Diode Type

Varies with Laser Diode type and output power. This data is based on Beta CW 670nm, 3mW

Note 1: The operating case temperature range is dependant on the laser diode fitted. The quoted information is the typical range. Some wavelengths and powers may have a wider operating temperature range. Please contact us for the temperature range for individual models

Specifications are typical at 25° unless otherwise stated

Optional Accessories

The Beta CW has a wide range of options to suit a variety of applications. These options include mounting clamps, collimating lenses, line lens, red laser enhancement glasses and laser safety glasses.

Mounting Clamps

The heavy duty mounting clamp allows the Beta CW to be securely fixed at any required direction or angle. The base plate has a series of threaded holes which allows the clamp to be fixed directly onto a machine or workbench.

The swivel clamp provides 180° tilt movement and $\pm 45^\circ$ swivel. Its base has a series of holes that allow the swivel clamp to be fixed directly onto a machine or workbench.

RS Part Number	Global Laser Part Number	Description
TBC	1240-17-000	Heavy Duty Mounting Clamp (15mm Ø)
RS213-3641	1200-00-000	Swivel Mount (15mm Ø)



Heavy Duty Mounting Clamp



Adjustable Swivel Clamp

Red Laser Enhancement Glasses

To compliment our wide range of alignment laser diode modules we have introduced a range of Laser Enhancement Glasses which enhance projections in the red wavelength range (630nm to 670nm) by blocking light in other wavelengths, thus improving the visibility in outdoors or bright lighting conditions. The glasses also meet ANSI Z87 impact standard. This can be purchased directly from RS Components, the product number is RS127-1570.



Red Laser Enhancement Glasses

Collimating Lenses

A range of collimating lenses provide replacement lens assemblies for Beta CW laser modules. 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 M11 x 0.5 threads holders and the holder position can be adjusted in the holder via a focus key. Below is a list of what is available in RS Components.

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	Global Laser Part Number	Description	S	HG	C3	C2	C1
TBC	1088-11-000	Beta CW Laser 635nm 0.36mW Circular Spot	●	●	■	●	●
TBC	1088-12-000	Beta CW Laser 635nm 15mW Elliptical Spot	■	●	●	●	●
TBC	1068-55-000	Beta CW Laser 650nm 20mW Elliptical Spot	■	●	●	●	●
RS194-004	1060-42-000	Beta TX Modulatable Laser 670nm 3mW	■	●	●	●	●
RS564-504	1060-41-000	Beta TX Modulatable Laser 670nm 1mW	●	●	■	●	●
RS194-010	1068-42-000	Beta CW Laser 670nm 1mW	●	●	■	●	●
RS194-026	1068-43-00	Beta CW Laser 670nm 3mW	■	●	●	●	●
RS111-346	1068-40-000	Beta CW Laser 635nm 1.5mW	■	●	●	●	●
RS213-3613	1068-45-000	Beta CW Laser 670nm 3mW Long Line Lens *	●	●	●	●	●
RS111-346	1068-40-000	Beta CW Laser 635nm 1.5mW S Lens *	●	●	●	●	●

■ Factory Fitted Lens

● Compatible

* Fitted with a gaussian line lens

Line Lenses

A range of gaussian line lens assemblies for Beta CW laser are available from RS Components. These interchangeable optics simply screw on and off the the front of the Beta CW to produce a line. All are supplied in M11 x 0.5 threads holders. A choice of fan angles are available.

RS Part Number	Global Laser Part Number	Description
TBC	1125-501-000	8° Line Optic compatible with Beta CW/TX
RS194-054	1125-49-000	16° Line Optic compatible with Beta CW/TX
TBC	1125-502-000	60° Line Optic compatible with Beta CW/TX
RS213-3629	1125-50-000	106° Line Optic compatible with Beta CW/TX

Warning:

Laser diode modules are OEM products, and are supplied with labels showing their classification for wavelength and output power conforming to EN:60825-1:2014. The removal of the factory fitted lens assembly and replacing with a different assembly can change the factory specified laser class. This is particularly relevant when the substituted lens assembly has a bigger aperture than the factory fitted lens assembly. Users should consult the relevant laser safety regulation (IEC:60825-1:2014) and are responsible for implementing any required additional safety measure and re-labelling.

Laser Safety Glasses

To compliment the Beta CW range there are a number of laser safety glasses. These provide a protection or block out for a wide range of wavelengths. All glasses are provided in an over glasses style which can be work over prescription glasses. Below is list of the available options in RS Components. Please refer to the individual datasheets for full specification.

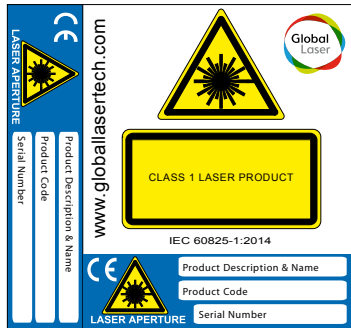
RS Part Number	Global Laser Part Number	Description
TBC	1990-24-000	190 to 398nm Laser Safety Glasses
RS697-3525	1990-00-000	395 to 540nm Laser Safety Glasses
RS697-3529	1990-01-000	630 to 700nm Laser Safety Glasses
RS697-3531	1990-03-000	615 to 700nm Laser Safety Glasses
RS697-3538	1990-02-000	870 to 1085nm Laser Safety Glasses
TBC	1990-23-000	1010 to 1500nm Laser Safety Glasses



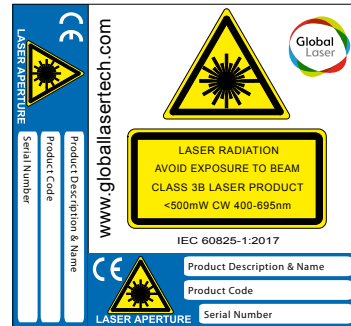
Frame Style Example

Laser Safety

Our lasers are compliant to IEC 60825-1:2014 standards. The lasers fall within one of the following classifications depending on power and wavelength. Examples of the labels are shown below.



Class 1 Label



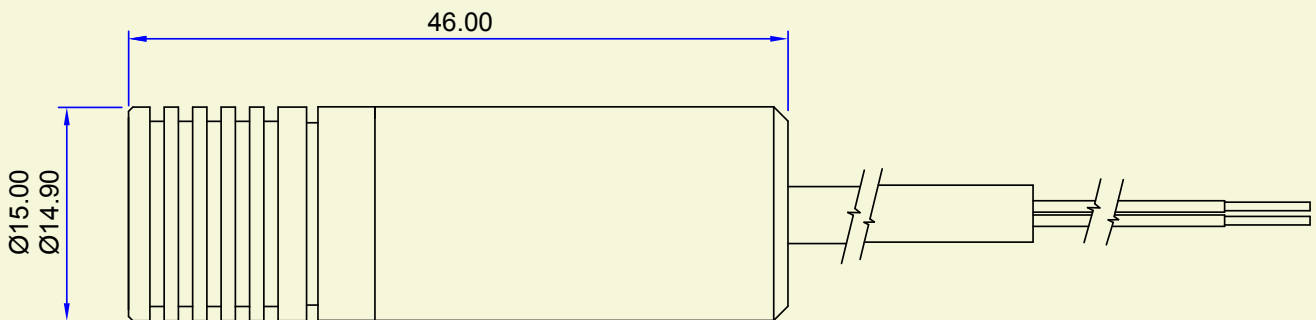
Class 3B Label

Quality & Warranty

The Beta CW range is supplied with a 12 month parts and labour warranty. Our manufacturing operations are certified to ISO9001:2015.

Mechanical Dimensions

Beta CW



Drawings not to scale

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



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