



**Diode Collimator Assembly
Datasheet**

Diode Collimator Assembly

Global Laser's DCA (Diode Collimator Assembly) provides a low cost high quality OEM solution to manufactures looking for a compact assembly incorporating a laser diode, collimating lens and housing.

The DCA consists of an 8mm diameter aluminium housing, industrial laser diode and A/R coated collimating lens, with direct connection to the laser diode pins. The DCA is available with a large range of laser diodes covering a wide range of wavelengths and out put powers. The collimating lens is user adjustable for further flexibility and can be set to produce collimated beams or fine focused spots.

For suitable drive electronics please see our range of IC drivers and driver PCB's.

Features

- Visible or Infrared wavelengths
- Low cost sub assembly including laser diode and lens
- Elliptical collimated beam or fine focused spots
- User adjustable focus
- High reliability
- 8mm in diameter



Specification

Mechanical Specification	
Mass (grams)	10
Dimensions (mm)	Ø8.00 x 15.00
Housing	Aluminium
Isolated Body	No
Optical Options	
Beam Size @ Aperture (Typ) (mm)	3.2 by 1.5
Beam Divergence (Typ) (mrad)	<0.5 *
Bore Sighting (mrad)	≤10
Lens A/R Coated	Yes
User Adjustable Focus	Yes
NOTES	
<i>* These values will vary by laser diode type Specifications are typical @ 25°C unless otherwise stated.</i>	

Electrostatic Handling & Earthing Advice

Laser diode may be adversely affected by static electricity and surge current which consequently causes breakdown of element and reduction of reliability. Electrostatic handling guidelines should be followed at all times. Please note that the pins are connected together for shipping to prevent any electrostatic and handling problems.

Laser Diode Pin Connections and Heatsinking

The laser diode fitted to the DCA range are off the laser diode anode and photo diode cathode common to case pin out (please see diagram below for more information). This results in the DCA housing is connected to + Volts. If you require other pin out types such as diode cathode and photo diode anode common to case pin out, please contact us.

The case temperature should be kept within the specified range at all times, failure to do this could result in shortened lifetime or catastrophic failure. If the case temperature of the DCA exceeds its maximum specification, an additional heatsink should be used. Thermal transfer cream can be used to improve contact and heat dissipation. Do not restrict air circulation around the device. As a guide, laser diode lifetime decreases by a factor or two (approx) for every ten degree increase in operating temperature.

Pin 1 - Laser diode cathode

Pin 2 - Laser diode anode and photo diode cathode

Pin 3 - Photo diode anode

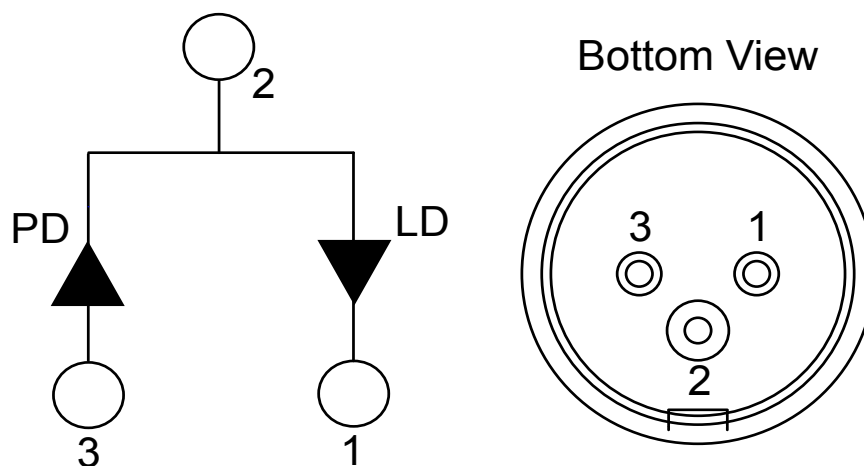


Table of Models

Wavelength (nm)	Power of Laser Diode Fitted (mW)
635	5 & 10
650	5 & 10
670	5 & 10
780	5 & 10
850	5 & 10
Custom	Please call with your requirements

635nm 5mW Diode

	Minimum	Typical	Maximum
Diode Power (mW)		5	
Maximum Output Power After Lens ($\pm 5\%$) (mW)		2.9	
Wavelength (nm)	630	635	640
Slope Efficiency (mW/mA)			
Operating Case Temperature (°C)		-10 to +45	
Storage Temperature (°C)		-40 to +85	
Threshold Current (mA)		30	40
Operating Current (mA)		30	40
Operating Voltage (Vdc)		2.2	2.6
Monitor Current (mA)	0.1	0.2	0.5
Laser Diode Reverse Voltage		2	
Photo Diode Reverse Voltage		30	
MTTF @25°C		>29,000	

635nm 10mW Diode

	Minimum	Typical	Maximum
Diode Power (mW)		10	
Maximum Output Power After Lens ($\pm 5\%$) (mW)		5.8	
Wavelength (nm)		637	645
Slope Efficiency (mW/mA)			
Operating Case Temperature (°C)		-10 to +45	
Storage Temperature (°C)		-40 to +85	
Threshold Current (mA)		35	50
Operating Current (mA)		55	75
Operating Voltage (Vdc)		2.2	2.5
Monitor Current (mA)	0.05	0.15	0.3
Laser Diode Reverse Voltage		2	
Photo Diode Reverse Voltage		30	
MTTF @25°C		>49,000	

650nm 5mW Diode

	Minimum	Typical	Maximum
Diode Power (mW)		5	
Maximum Output Power After Lens ($\pm 5\%$) (mW)		2.9	
Wavelength (nm)	650	655	660
Slope Efficiency (mW/mA)			
Operating Case Temperature (°C)		-10 to +45	
Storage Temperature (°C)		-40 to +85	
Threshold Current (mA)		21	30
Operating Current (mA)		28	35
Operating Voltage (Vdc)		2.2	2.6
Monitor Current (mA)	0.1	0.2	0.5
Laser Diode Reverse Voltage		2	
Photo Diode Reverse Voltage		30	
MTTF @25°C		>100,000	

650nm 10mW Diode

	Minimum	Typical	Maximum
Diode Power (mW)		10	
Maximum Output Power After Lens ($\pm 5\%$) (mW)		5.8	
Wavelength (nm)	645	655	660
Slope Efficiency (mW/mA)			
Operating Case Temperature (°C)		-10 to +45	
Storage Temperature (°C)		-40 to +85	
Threshold Current (mA)		20	25
Operating Current (mA)		36	45
Operating Voltage (Vdc)		2.3	2.6
Monitor Current (mA)	0.05	0.15	0.3
Laser Diode Reverse Voltage		2	
Photo Diode Reverse Voltage		30	
MTTF @25°C		>50,000	

670nm 5mW Diode

	Minimum	Typical	Maximum
Diode Power (mW)		5	
Maximum Output Power After Lens ($\pm 5\%$) (mW)		2.8	
Wavelength (nm)	660	670	680
Slope Efficiency (mW/mA)			
Operating Case Temperature (°C)		-10 to +55	
Storage Temperature (°C)		-40 to +85	
Threshold Current (mA)		40	60
Operating Current (mA)		50	70
Operating Voltage (Vdc)		2.3	2.6
Monitor Current (mA)	0.1	0.2	0.5
Laser Diode Reverse Voltage		2	
Photo Diode Reverse Voltage		30	
MTTF @25°C		>100,000	

670nm 10mW Diode

	Minimum	Typical	Maximum
Diode Power (mW)		10	
Maximum Output Power After Lens ($\pm 5\%$) (mW)		5.6	
Wavelength (nm)	660	670	680
Slope Efficiency (mW/mA)			
Operating Case Temperature (°C)		-10 to +55	
Storage Temperature (°C)		-40 to +85	
Threshold Current (mA)		40	60
Operating Current (mA)		50	70
Operating Voltage (Vdc)		2.3	2.6
Monitor Current (mA)	0.05	0.15	0.3
Laser Diode Reverse Voltage		2	
Photo Diode Reverse Voltage		30	
MTTF @25°C		>120,000	

780nm 5mW Diode

	Minimum	Typical	Maximum
Diode Power (mW)		5	
Maximum Output Power After Lens ($\pm 5\%$) (mW)		2.7	
Wavelength (nm)	770	785	800
Slope Efficiency (mW/mA)	0.3	0.5	0.7
Operating Case Temperature (°C)		-10 to +55	
Storage Temperature (°C)		-40 to +85	
Threshold Current (mA)		20	30
Operating Current (mA)		30	40
Operating Voltage (Vdc)		1.9	2.3
Monitor Current (mA)	0.1	0.2	0.5
Laser Diode Reverse Voltage		2	
Photo Diode Reverse Voltage		30	
MTTF @25°C		>120,000	

780nm 10mW Diode

	Minimum	Typical	Maximum
Diode Power (mW)		10	
Maximum Output Power After Lens ($\pm 5\%$) (mW)		5.6	
Wavelength (nm)	775	788	800
Slope Efficiency (mW/mA)	0.3	0.5	0.7
Operating Case Temperature (°C)		-10 to +55	
Storage Temperature (°C)		-40 to +85	
Threshold Current (mA)	8	12	18
Operating Current (mA)		22	40
Operating Voltage (Vdc)	1.5	1.8	2.4
Monitor Current (mA)	0.5	0.7	1.5
Laser Diode Reverse Voltage		2	
Photo Diode Reverse Voltage		30	
MTTF @25°C		>90,000	

850nm 5mW Diode

	Minimum	Typical	Maximum
Diode Power (mW)		5	
Maximum Output Power After Lens ($\pm 5\%$) (mW)		2.8	
Wavelength (nm)	845	850	855
Slope Efficiency (mW/mA)	0.4	0.7	0.9
Operating Case Temperature (°C)		-10 to +55	
Storage Temperature (°C)		-40 to +85	
Threshold Current (mA)	5	10	20
Operating Current (mA)	15	20	30
Operating Voltage (Vdc)		1.9	2.5
Monitor Current (mA)	0.2	0.4	0.6
Laser Diode Reverse Voltage		2	
Photo Diode Reverse Voltage		30	
MTTF @25°C		>90,000	

850nm 10mW Diode

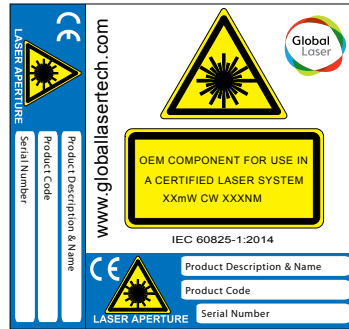
	Minimum	Typical	Maximum
Diode Power (mW)		10	
Maximum Output Power After Lens ($\pm 5\%$) (mW)		5.5	
Wavelength (nm)	845	850	855
Slope Efficiency (mW/mA)	0.4	0.7	0.9
Operating Case Temperature (°C)		-10 to +55	
Storage Temperature (°C)		-40 to +85	
Threshold Current (mA)	5	10	20
Operating Current (mA)	15	25	35
Operating Voltage (Vdc)		1.9	2.5
Monitor Current (mA)	0.1	0.3	0.5
Laser Diode Reverse Voltage		2	
Photo Diode Reverse Voltage		30	
MTTF @25°C		>100,000	

Custom Wavelength, Powers & Optics

Please call with you requirements

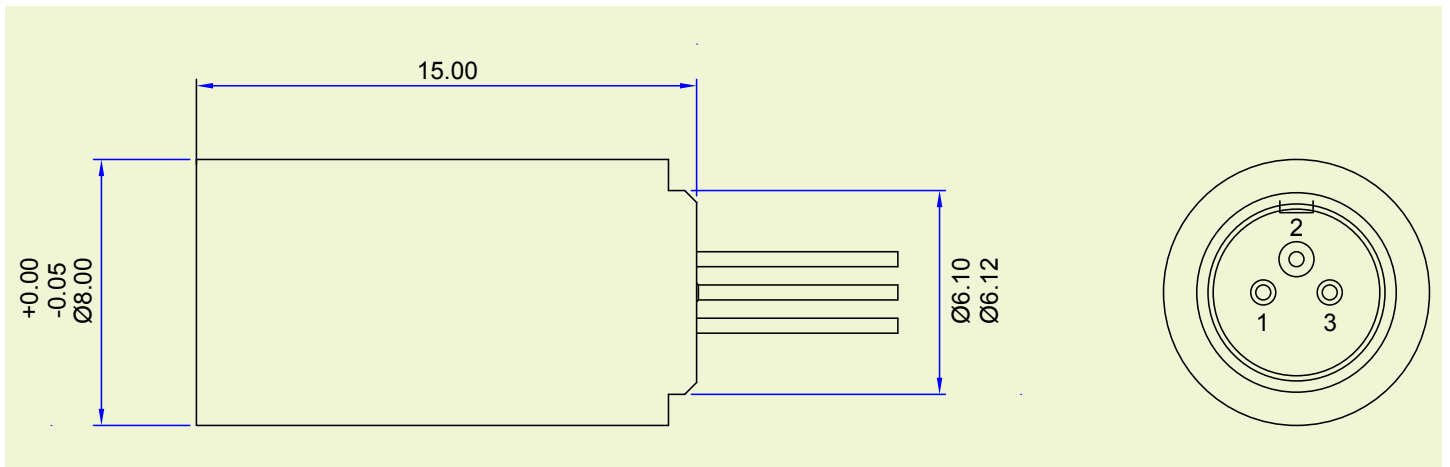
Laser Safety

The Diode Collimator Assembly does not include a laser driver circuit, therefore output powers cannot be set in accordance with EN60825-1 2017 since they are designed for OEM use and not certified user devices as defined in the specification. The manufacturer of the complete laser product is responsible for complying with the requirements of EN60825-1 2017. Manufacturers of products using laser diode collimators should be fully familiar with EN60825-1 2017 before using such devices. An example of a Global Laser OEM laser label is shown below.



OEM Laser Label

DCA



Drawings are not to scale

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



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