



FiberLyte Datasheet

FiberLyte Overview

As an addition to Global Laser's module range a selection of high quality Fibre Laser Modules have been introduced. These are useful in applications where the laser beam needs to be positioned separately to the drive electronics or installed in hazardous environments. An examples of this, include situations where interference such as heat and static would cause damage to the drive electronics. Fibre Lasers open the possibility of moving the laser output into a controllable and flexible form making a wider range of applications possible.

Ranging from violet through to infra red wavelengths with different optical powers and thermoelectric cooler (TEC) controls are available covering many different applications.

Applications include material processing, broadband telecommunications, spectroscopy and medical uses.

The module can be mounted on to a control board which, when installed can be temperature and humidity controlled in a more suitable environment providing a long life and more reliable solution.

Our Fibre Optic range is designed to meet our high quality standards and deliver excellent performance capabilities that have become to be expected from Global Laser.



Fibre Type

There are 3 standard fiber types available for the Fibre Optic Lyte Range. These include polarization maintaining, single and multi-mode fibres. Other specialised fibres are available upon request.

Fibre Terminations

There are 3 standard connector types available for the Fibre Optic Lyte Range. These include FC/APC, FC/PC and SMA connectors. Alternatively the unit can be supplied with no connectors, a customised connector or a lens assembly upon request.

Power Options

Wavelength	Powers Upto
405nm	50mW
488nm	35mW
635nm	10mW
655nm	2mW
660nm	30mW
670nm	2mW
685nm	15mW
730nm	25mW
780nm	40mW

Wavelength	Powers Upto
808nm	80mW
830nm	20mW
850nm	30mW
905nm	50mW
980nm	100mW
1310nm	2mW
1550nm	2mW
Custom	Please Call

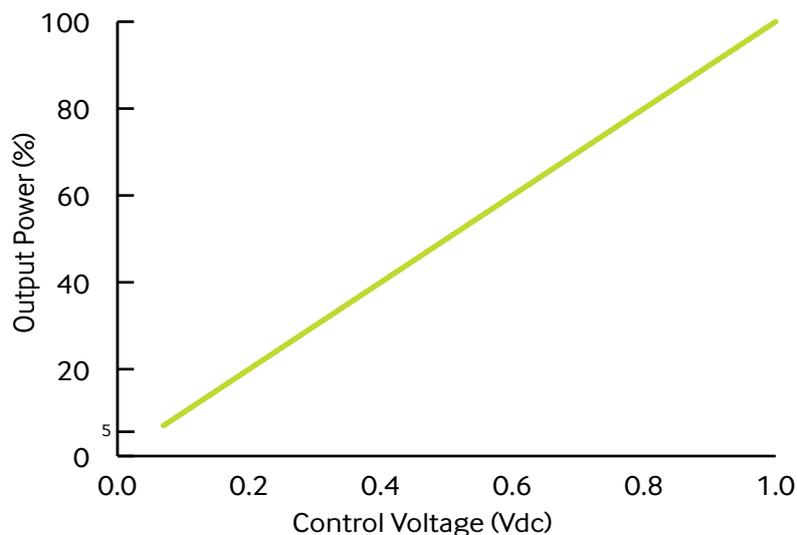
Standard Driver Types

Two driver boards are available for the Fibre Optic Lyte Range, either a Linear control or Pulse Width Modulation.

Linear Intensity & Analogue Modulation Control (LC Model)

User Adjustable Intensity Control

Using the yellow control lead output power intensity may be linearly controlled from zero to the maximum factory set value. This may be achieved using a simple resistor or by applying a control voltage between 0 and 1V where 0 Vdc is off and +1 Vdc is maximum, with a linear relationship for every value between, e.g. an input of 0.5V would produce an output intensity of half maximum.



Modulation

Using the yellow control lead the laser may be modulated by using an external signal. The required voltage range is 0 to +1 Vdc (to set the maximum intensity), frequency range is DC to 300 kHz. Please note: applying more than 1V does not increase the power above maximum but it can reduce the maximum frequency of modulation.

Note: Intensity control and modulation functions may be used together.

Pulse Width Modulation TTL Digital Control (PWM Model)

The Fibre Optic Lyte Range laser is also available with a TTL driver board that allows the unit to be gated on and off, or pulse-width modulated at TTL voltage levels via the yellow control lead.

Rise Time: < 0.5us*

Fall Time: , 0.5us*

* = *Varies with model*

4th Pin - Enable Function

The PWM/TTL versions have a 4th pin enable function which is also responsive to TTL voltage levels and functions as an electronic switch to quickly turn the laser on and off without the need to disturb the power supply. A TTL level high turns the laser on and a TTL level low turns the laser off.

Specifications

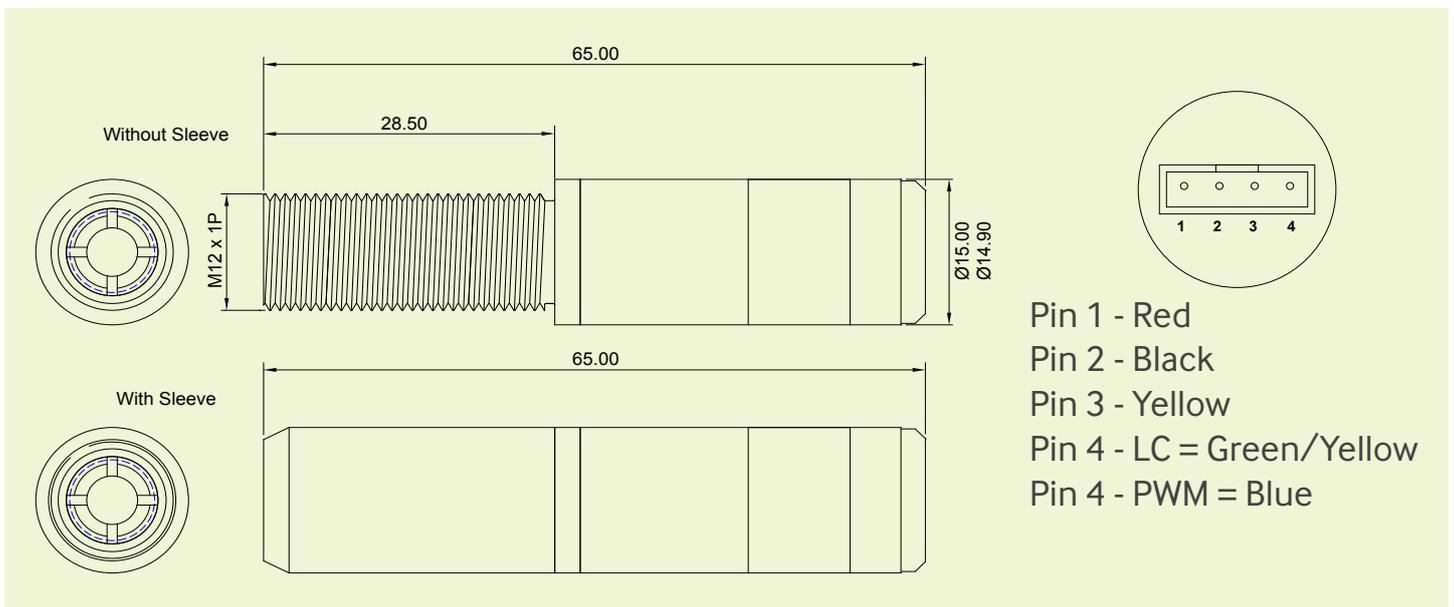
	LC	PWM
Mechanical Information		
Mass (grams)	14	
Dimensions (mm)	15 x 47	
Housing	Anodised Aluminium	
Isolated Body	Yes	
Lead Length (mm)	500 (Other lead lengths available on request)	
Connector Type	JST PHR4 4pin	
Optical Information		
Diode Power (mW)	1 to 100	
Typical Power Stability over Temperature range (%)	≤1% #	
Wavelength (nm)	405 to 980	
Fiber Type	Dependent on model	
Fiber Numerical Aperture	Dependent on model	
Fiber Length	Dependent on model	
Environmental Information		
Operating Case Temperature (°C)	-10 to +45 (Note 1)	
Storage Temperature (°C)	-10 to +80	
Operating Humidity (%RH)	90 (non condensing)	
MTTF @ 25°C (hrs)	>5,000*	
Electrical Specifications		
Input Voltage V+ (Red Lead)	5 Vdc ±5% (Note 2)	
Input Voltage (Black Lead)	0 Vdc	
Operating Current Drive Circuit (mA)	4mA (Typical)	
Operating Current (mA)	Varies with laser diode type and temperature	
Reverse Polarity Protection	Yes	
Rise & Fall Times	1 us	<.5 us
Frequency Range	DC to 300kHz (Note 2)	DC to 1mHz
Control Voltage Range	0 - 1 Volt	<0.4V = Off >2V = On
TTL Enable (Blue Lead)	Low = Off High = On	
<p>NOTES</p> <p># Varies with laser diode type and output power. Data based on 650nm 1mW</p> <p>* Varies with laser diode type</p> <p>Note 1 - The operating case temperature range is depended 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.</p> <p>Note 2 - Measure with 90% modulation depth sine wave to -3dB</p> <p>All specifications are typical @ 25°C</p>		

Fibre Laser Mounting

The Fibre Laser Module allows for multiple methods of mounting. The 15mm cylindrical body is designed to be used with any of the range of Global Laser's 15mm mounts, or can be mounted by any other custom clamping method. Unscrewing the front sleeve reveals an M12x1 threaded front barrel which can be screwed into any matching thread or mounted in a bulkhead utilising the supplied M12x1 nut. In any of the mounting methods stated, ensuring good contact with a heat conductive mount helps heat sinking and improves laser lifetime, all internal electronics are isolated from the housing to stop interference.

Mechanical Drawings

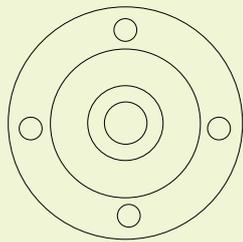
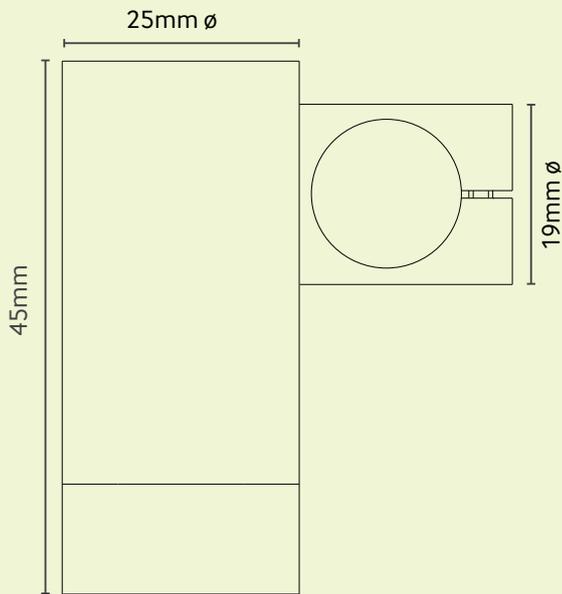
Fibre Optic Lyte Module



Alternative packages include mini-dil and 14-Pin Butterfly, also customised packages are available upon request.

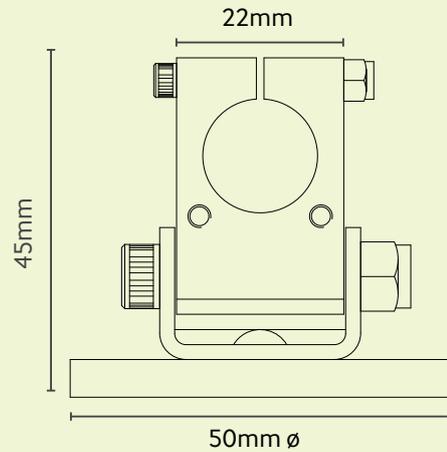
Mechanical Drawings

Heavy Duty Mounting Clamp

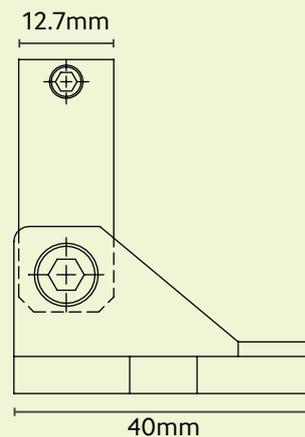


M5 Mounting hole on base

Swivel Clamp



Mounting hole on base 4 x 4.5mm



Drawings not to scale

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



For further information about any of our products please contact your local distributor or you can contact Global Laser in the UK. Your Local Distributor is:

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