



BlueLyte Datasheet

Blue Laser Diode Module

Linear Control or Pulse Width Modulation

BlueLyte

The BlueLyte from Global Laser provides a user friendly, reliable & compact laser diode module in the Violet/Blue wavelength range with a number of market leading features.

Stable output power is offered over a wide temperature range with the additional benefit of a LC (Linear Control) control circuit. The LC control circuit allows you to control the output intensity linearly by applying a voltage of between 0 & 1 volt, to the control input. This same control circuit also provides analogue modulation with speeds in excess of 750kHz. The output intensity will faithfully replicate any arbitrary signal you wish to apply with a 0-1 Volt amplitude and within the limits of the laser module's maximum rise and fall time.

The PWM version allows you to use pulse width modulation of the intensity from a TTL level input signal, within the limits of the laser diode modules maximum rise and fall time. You can therefore control the mean intensity of the laser beam simply by changing the mark to space ratio, modulate the laser with coded information or synchronize with external measurement device such as a machine vision camera.

Further flexibility is provided by a choice of collimating lens providing circular or elliptical beams. The user adjustable collimating lens allows simple adjustment to provide a collimated beam or a focused spot at a required distance. A wide range of line generators and projection patterns are also available.

A wide range of output powers are available which combined with the compact 15mm diameter housing, robust industrial connector and choice of optional mounting clamps provides a complete blue laser solution.



Lens Options

The BlueLyte is available with two standard user collimating adjustable lens type. There are also a number of optional line lens assemblies available.

Standard Lenses:-

S Lens: Produces an elliptical collimated beam or focussed spot

C2 Lens: Produces a circular collimated beam or focussed spot

Please note we have a number of other collimating lens options. If the listed lenses do not meet your requirements please call us.

Optional Line Lens Assemblies:-

L4 Line Lens: Produces a gaussian line with a full fan angle of typically 8°

L8 Line Lens: Produces a gaussian line with a full fan angle of 16°

Aligned Rod Lens: Produces gaussian line with a full fan angle of typically 90°

Please note other fan angles are available upon request

	C2 Lens	S Lens
Beam Size at Aperture @ 1e² (mm)	1.9 by 1.4	3.0 by 1.4
Beam Size at Nearest Focus @ 1e² (µm)	<30 *	
Typical Beam Divergence (Full Angle) (mrad)	<0.3	<0.45
Minimum Focus Distance (mm)	10	
NOTES * Maximum beam size in one axis may be a smaller value due to exit beam size.		

Power Options

Wavelength	Power	Maximum Power Output With Lens	
		S Lens	C2 Lens
405nm	5, 15, 25, 50 & 75mW	75mW	50mW
Custom	Please call with your requirements		
NOTES Please note that wavelength tolerance can vary typically by ±10nm Not all the powers are available with all lens options.			

Specifications

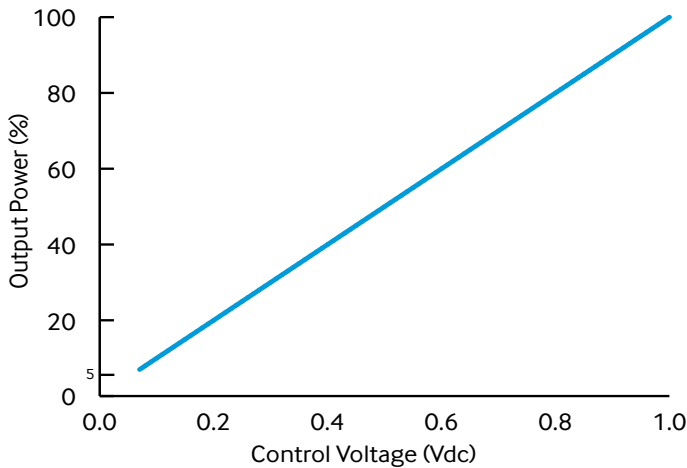
	LC	PWM
Mechanical Information		
Mass (grams)	17	
Dimensions (mm)	15 by 47	
Housing	Anodised Aluminum	
Isolated Body	Yes	
Lead Length (mm)	300 (Other lead length available on request)	
Connector Type	4pin Binder	
Optical Information		
Wavelength (nm)	405	
Power's (mW)	5, 15, 25, 50, 75	
Power Stability @ Fixed Temperature (Typical)	1.5%	
Bore Sighting (mrad)	≤10 (Note 1)	
Environmental Information		
Operating Case Temperature (°C)	0 to +50*	
Storage Temperature (°C)	-20 to + 85*	
Operating Humidity (%RH)	90 non condensing	
MTTF @ 25°C (hrs)	≥ 7000	
Electrical Specifications		
Input Voltage +ve (Vdc)	10	
Black Lead (Vdc)	0	
Yellow Lead	Modulation	
Blue Lead	TTL Enable	
Operating Current (mA)	≤200	
Reverse -Polarity protection	Yes	
Frequency Bandwidth	DC to 750kHz (Note 2)	DC to 500kHz
Control Voltage Range	0 - 1V (See chart)	N/A
Modulation Input Voltage	0 - 1V	TTL Low = Off TTL High = On
TTL Enable (Blue Lead)	Low = Off High = On	
NOTES * = Varies with Laser diode type Note 1: @ Factory set focus. Note 2: Measured with 90% modulation depth sine wave to -3dB. Specification are typical at 25 °C unless otherwise stated		

Standard Driver Types

Linear Intensity & Analogue Modulation Control

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 0Vdc 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 750 kHz. Please note: applying more than 1 V 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.*

TTL Enable (Blue Lead)

An on/off switch function is available via the blue wire. Applying 0V will switch the laser off whilst applying a V supply switches the laser on. This is particularly useful for safety interlocks or enable switch's required for laser systems.

A TTL switch can also be utilised via this lead. TTL High = on and TTL Low = off. Maximum frequency is 100 Hz. If not using this function please connect the blue lead to the V supply or the laser will not switch on.

Pulse Width Modulation TTL Digital Control (PWM Model)

The Acculase/Premier 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: < 1us*

Fall Time: <1us*

* = *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.

Mounting Options

Heavy Duty Mounting Clamp

The optional heavy duty mounting clamp allows the BlueLyte range 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.

Magnetic Mount

A magnetic base is also available which allows the heavy duty clamp to be magnetically attached to a ferrous surface, negating the need for any mounting holes.

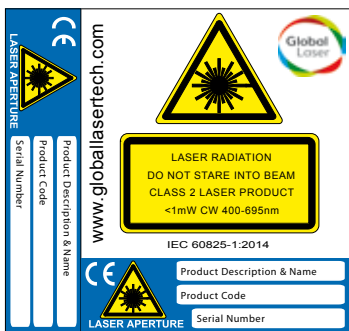
Swivel Mount Clamp

The optional swivel clamp allows the BlueLyte to be mounted securely. It offers the user up and down movement as well as $\pm 45^\circ$ horizontal swivel. The base plate has a series of holes which allows the clamp to be fixed directly onto a machine or workbench.

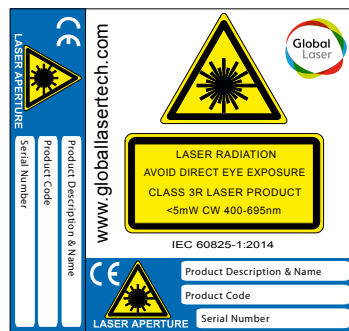


Laser Safety

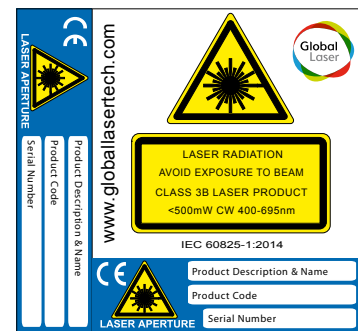
Our laser diode modules are compliant to IEC 60825-1: 2014 standards. The lasers fall within one of the following classifications depending on power and wavelength. The labels supplied with the units are shown below.



Class 2 Laser Label



Class 3R Laser Label



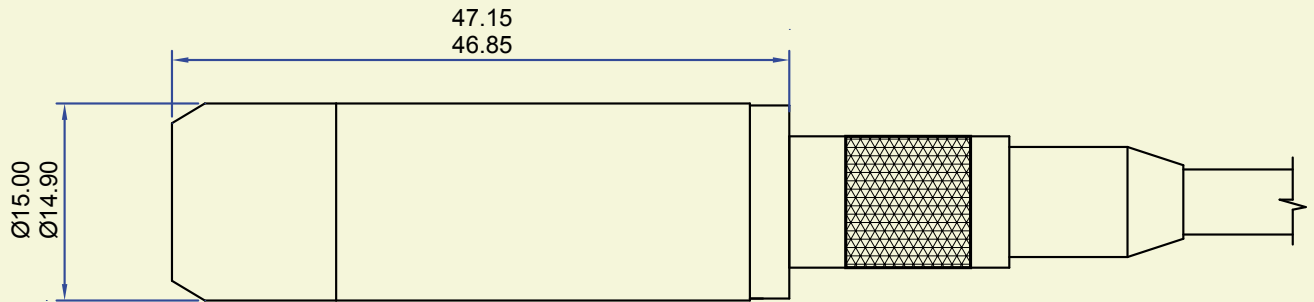
Class 3B Laser Label

Quality & Warranty

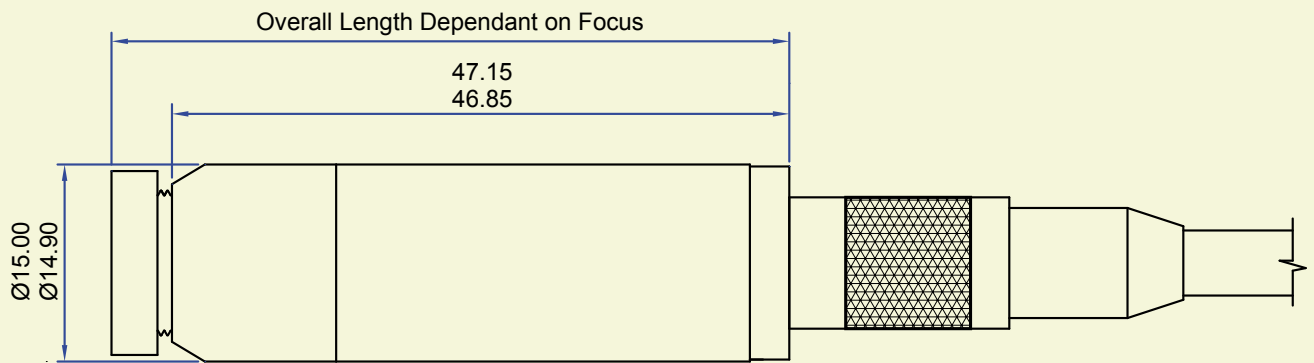
The BlueLyte range is supplied with a 24 month parts and labour warranty. Our manufacturing operations are certified to ISO9001.

Diagrams

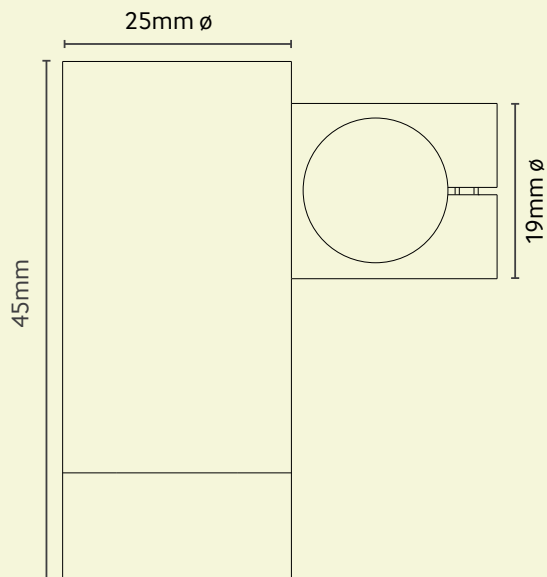
BlueLyte PWM



BlueLyte PWM with External Optics

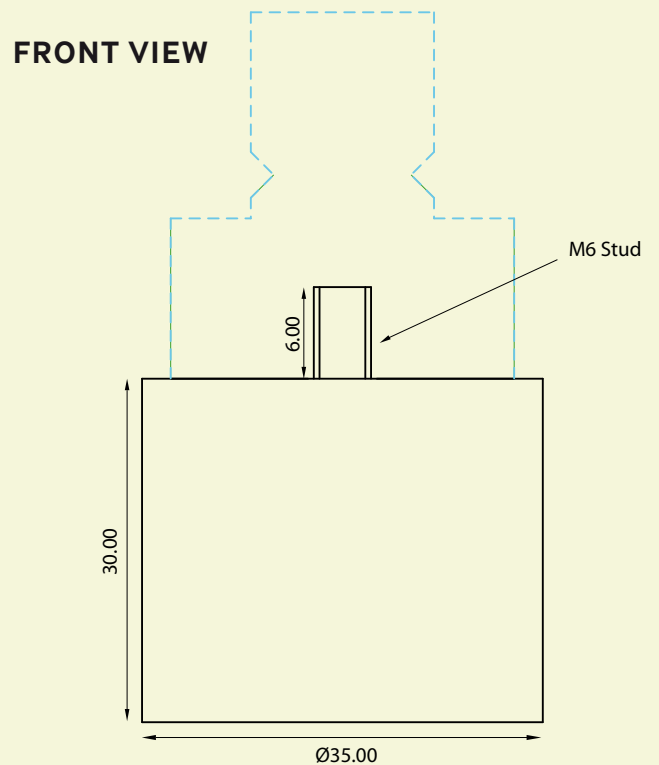


Heavy Duty Mounting Clamp

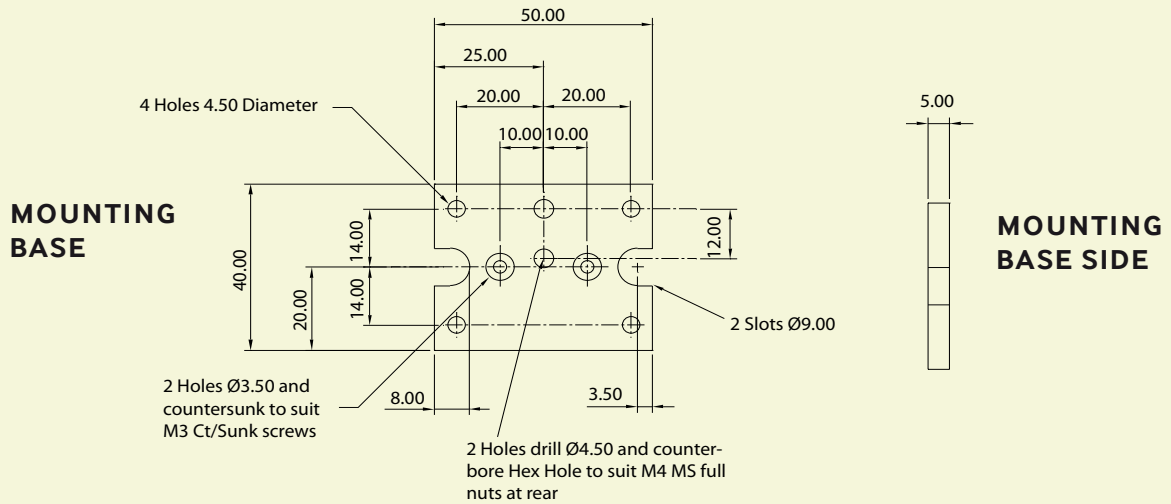
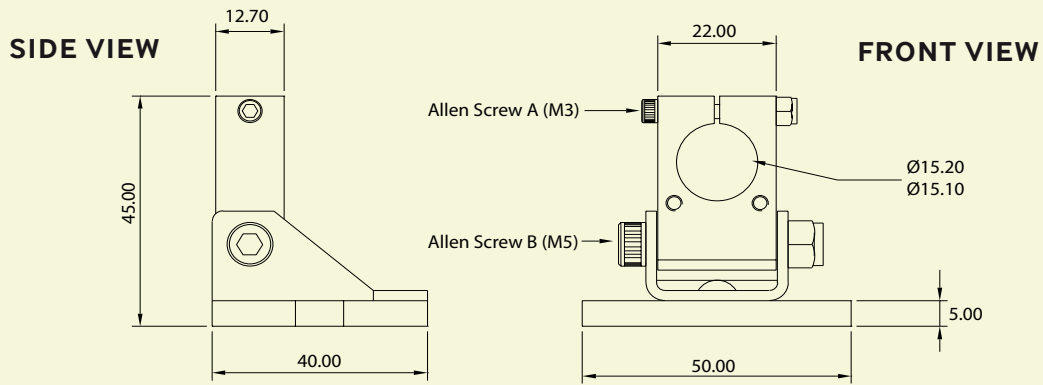


M5 Mounting hole on base

Magnetic Clamp



Swivel Mounting Clamp



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:



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

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