



DCLM Range Overview

Digitally Controlled Laser Modules

DCLM Product Range

The DCLM is a digitally-controlled laser diode module that allows you to program and control the laser output via a USB interface using software developed by Global Laser.

The USB interface provides you with multiple power supply options including a PC, USB hub, or USB adapter plug. This allows you to save space by eliminating the need for bulky external power supplies.

You don't need a function generator to modulate the DCLM. Its market-leading control circuit has a built-in function generator, and software is included free-of-charge. As a result, you can control the laser output in five distinct modes:

1. Continuous Wave (CW). Adjust the output power from 0-100%.
2. Sine wave modulation.
3. Triangle wave modulation.
4. Square wave modulation with fixed 50/50 duty cycle. Equivalent to TTL mode.
5. Pulse Width Modulation (PWM) with variable duty cycle.

Suitable for system integration, the DCLM software can be used to save laser output settings. The module then replicates your saved settings on power up without the need for a PC.

A DLL is available for you to interface the DCLM with software for cameras, detectors, and other devices. By calling a DLL function you can modify the laser output in real-time within your own C/C++, Python, MATLAB, LabView, or other application. The DCLM software, including the DLL, is compatible with 32 bit and 64 bit platforms for Windows 7, 8.1 & 10 operating systems.

DCLM control technology is available with various wavelengths, powers, and lens options in 6 flagship Global Laser products: Lyte-MV, Lyte-MV 2, Acculase, Premier, Varillite, and FiberLyte. Please refer to each module's datasheet for detailed specifications.



Module Key Features Overview



Lyte-MV

- Uniform non-Gaussian line with fan angles from 5° to 75°
- Powers up to 100mW in red and 200mW in IR
- Excellent focus and line quality
- 19 x 74mm dimension
- Electrically isolated case
- Qualified to EN61000
- Wide range of projections options
- User adjustable focus



Lyte-MV 2

- Uniform non-Gaussian line for use in machine vision
- Powers up to 120mW in red, 200mW in IR
- M18 threaded body for simple and easy mounting
- IP67 rated, water and dust proof
- External, user adjustable focus without removing the line optics
- Choice of projection optics
- 19 x 115 mm dimensions



Acculase

- High bore sighting accuracy <math><1\text{ mrad}</math>
- Choice of visible and IR wavelengths
- Powers up to 150mW
- Choice of lenses to provide circular/elliptical beams or lines
- 15 x 47mm dimension
- Electrically isolated case
- Reverse polarity protection
- User adjustable focus

Module Key Features Overview



Premier

- Choice of visible and IR wavelengths
- Powers up to 150mW
- Choice of lenses to provide circular/elliptical beams or lines
- 15 x 47mm dimension
- Electrically isolated case
- Reverse polarity protection
- User adjustable focus



Varilite

- M12x1 threaded front barrel
- Choice of visible and IR wavelengths
- Powers up to 150mW
- Choice of lenses to provide circular/elliptical beams or lines
- 15 x 47mm dimension
- Electrically isolated case
- Reverse polarity protection
- User adjustable focus



FiberLyte

- Fiber-coupled laser diode module
- Position laser output separately to drive electronics to reduce interference
- Recommended for material processing, telecommunications, spectroscopy and medical uses
- FC/APC, FC/PC and SMA connectors available
- Polarization-maintaining (PM), single and multi-mode (SM/MM) fibres available
- Violet to infrared wavelengths
- Linear Control (LC) or Pulse Width Modulation (PWM)
- 15 x 47 mm dimensions

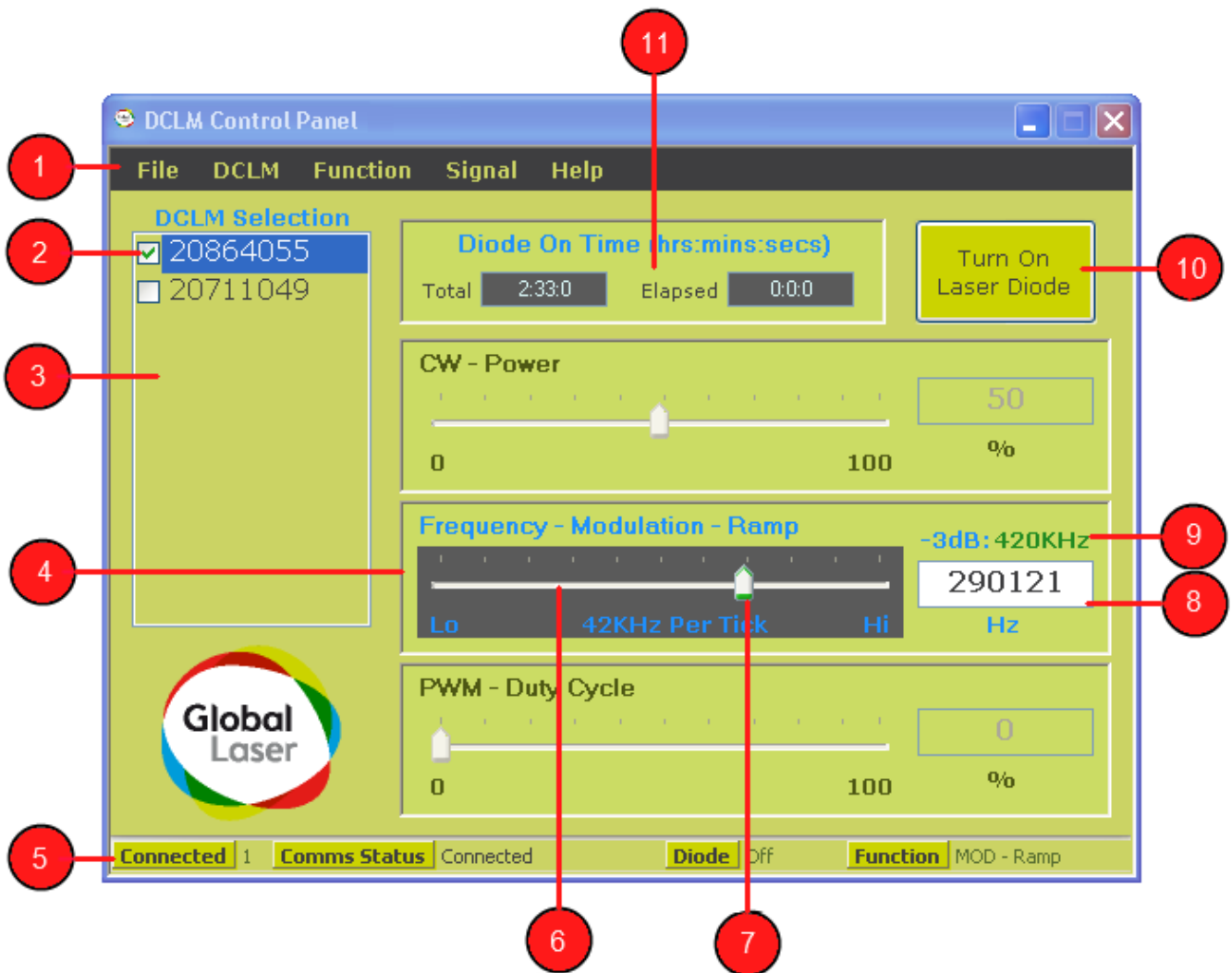
Specification

Mechanical Specification					
Lead Length (mm)		1000			
Connector Type		USB Micro B			
Optical Options					
Power Stability Over Temperature Range (Typ)		±3% #			
Electrical Specifications					
Power Requirements		Standard USB 3.0 specification (backwards compatible)			
		CW Mode	Sine & Triangle Wave	Square Wave	PWM
Typical Rise & Fall Time #	0-100% Power Control	N/A	≤1.9us	≤1.9us	
Frequency Range #		1Hz to 420KHz *	1Hz to 357 kHz	49KHz	
Duty Cycle		N/A	Fixed 50/50	Variable 0-100%	
NOTES # Varies with Laser Diode type and output power. This data is based on DCLM Lyte MV/660nm/35mW. *-3dB					

Wavelength	Power
635nm	Upto 60mW
650/660nm	Upto 50mW
670nm	Upto 5mW
685nm	Upto 50mW
785nm	Upto 90mW
808nm	Upto 200mW
850nm	Upto 50mW
905nm	Upto 10mW
980nm	Upto 50mW
Custom	Please call with your requirements
NOTES Wavelength tolerance can vary typically by +/-10nm Power levels refer to the maximum diode output power. Output power will vary depending on optical configurations Not all wavelengths and powers are available with all lens options.	

DCLM Control Panel (GUI)

The DCLM GUI allows you to connect and control up to 30 DCLM units. The screenshot below shows the control panel and a description of its key features.



- 1 Main Menu Bar.
- 2 Selected DCLM
- 3 Connected Lasers List Box
- 4 Function Control Box
- 5 Status bar
- 6 Slide control bar
- 7 Slide control tab
- 8 Function data entry
- 9 Maximum frequency at -3dB point
- 10 Turn DCLM Laser Diode On/Off button
- 11 Diode on time display panel

Overview of Functions

A DLL, available to customers wishing to interface the DCLM with their own software, is compatible with Windows 7, 8.1 & 10 in both 32 and 64 bit versions. It is included on a USB Memory Drive that is supplied with the laser.

DLL Function	Description
FindDCLM	Looks for attached DCLM devices on the USB ports.
ValidateDCLM	Verifies the DCLM is functioning correctly with no errors. Returns DCLM serial number.
SetDCLMLaserDiode	Turns the laser diode on or off.
SetDCLMOutputToCW	DCLM outputs a Continuous Wave at a specified percentage of full power.
SetDCLMOutputToModulation	DCLM outputs a Modulation signal at a specified waveform and frequency.
SetDCLMOutputToTTL	DCLM outputs a TTL level at a specified frequency.
SetDCLMOutputPWM	DCLM outputs a Pulse Width Modulation signal at a specified Mark percentage.
SetDCLMPowerLevel	Changes the output power level.
SetDCLMFrequency	Changes the Modulation or TTL frequency.
SetDCLMDutyCycle	Changes the PWM Mark percentage.
SaveDCLMSettings	Stores the active Function as the Start Up Function.
ResetDCLM	Causes the DCLM to reset and detach itself from the USB port.
RestoreDCLMToFactorySettings	Resets the DCLM to the factory configuration. Useful if the configuration data has been corrupted.
GetDCLMStatus	Retrieves information about the DCLM current running status.
GetDCLMConfiguration	Retrieves information about the DCLM setup.
GetDCLMDLError	Retrieves latest error information.
CloseDCLMDLL	Closes communication link with the DCLM and unloads the DLL.

Up to 30 DCLMs can be accessed through these functions, with even more available on request.

System Requirements

The Global Laser control panel software will currently only run on a Windows Operating System platform.

Supported Operating Systems

Windows 7

Windows 8.1

Windows 10

The software will run on both 32 bit and 64 bit platforms for all the above OSs.

Microsoft .Net Framework Configuration Requirement

DCLM software requires the Microsoft .Net Framework 3.5 or greater to be pre-installed on your PC or Laptop before this program will run. If you do not have the installed framework the installation program will download the file automatically from the internet.

Hardware Requirements

To deliver a satisfactory performance the minimum hardware requirements are:-

a. Processor

400 MHz Pentium processor or equivalent (Minimum); 1GHz Pentium processor or equivalent (Recommended).

b. RAM

Depending on operating system but 1GB should be treated as a minimum.

c. Hard Disk

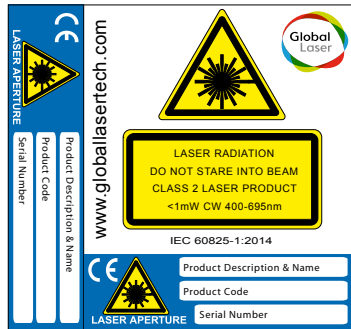
Up to 10 MB of available space may be required.

d. Display

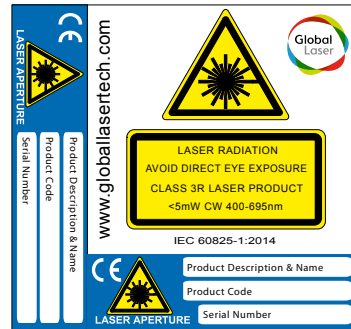
800 x 600, medium color, 16-bit (Minimum); 1024 x 768 high color, 32-bit (Recommended)

Laser Safety

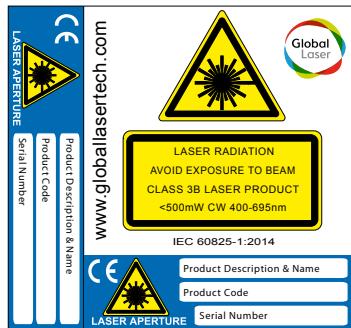
These modules are intended for incorporation into customer equipment. They are classified in accordance with IEC60825-1:2014, which should be consulted prior to designing or using any laser product. The following labels are supplied for attachment to the customer's equipment, but responsibility for compliance with the standard remains with the user.



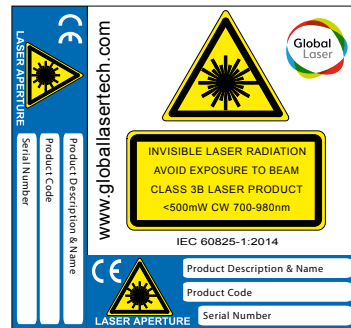
Class 2 Laser Label



Class 3R Laser Label



Class 3B Laser Label



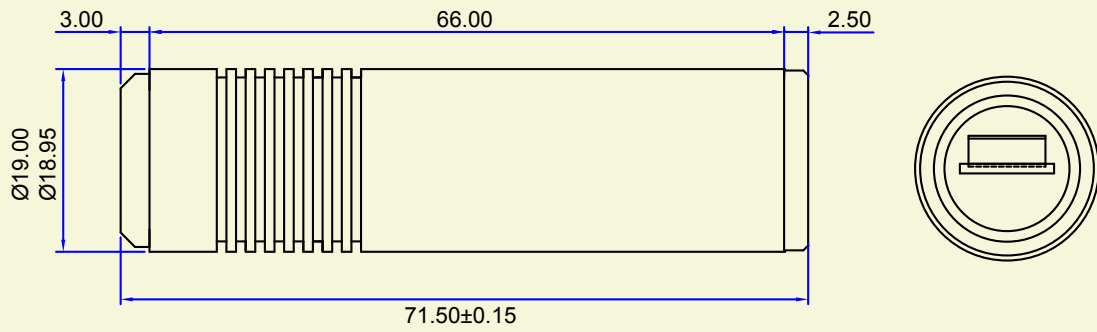
Class 3B (IR) Laser Label

Quality & Warranty

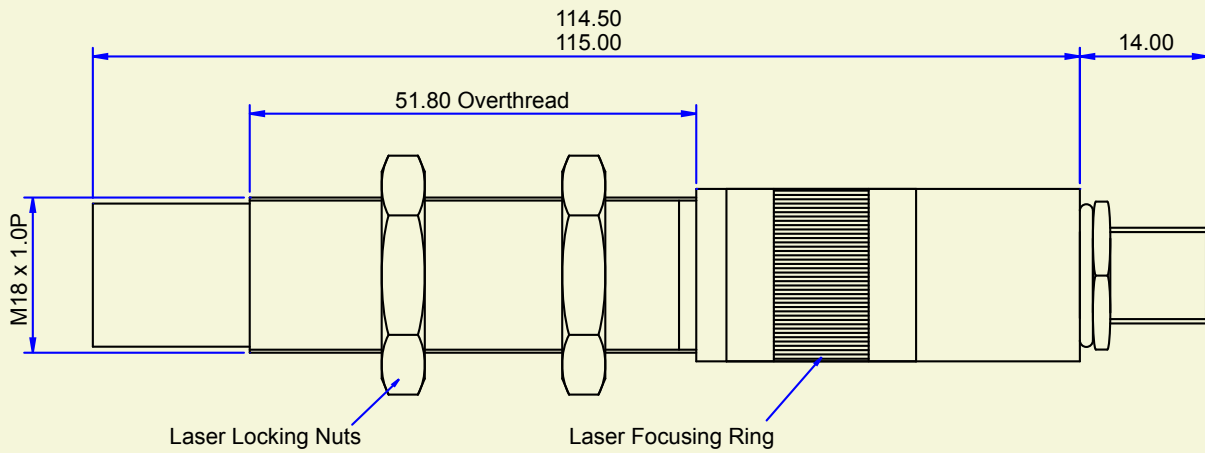
The DCLM range of lasers are supplied with a 24 month parts and labour warranty. Our manufacturing operations are certified to ISO9001.

Mechanical Drawings

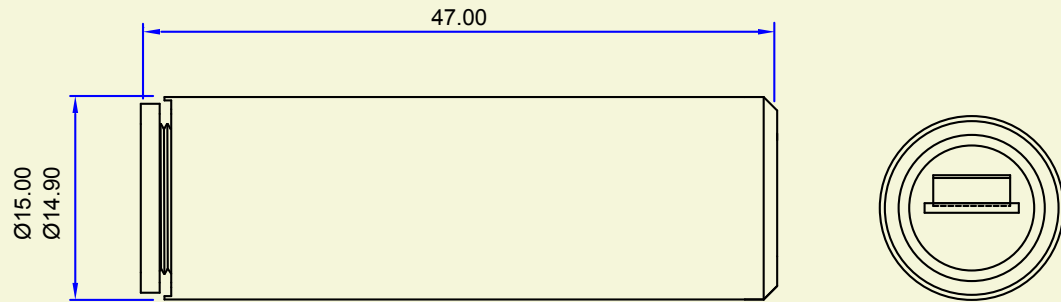
DCLM Lyte-MV Laser Module



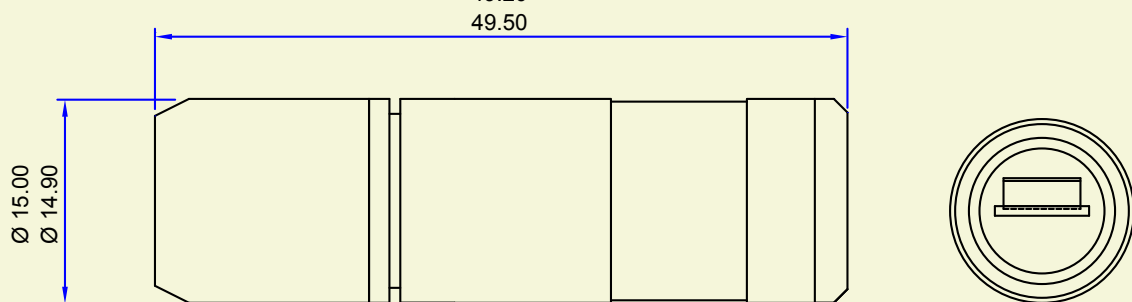
Lyte-MV 2 Laser Module



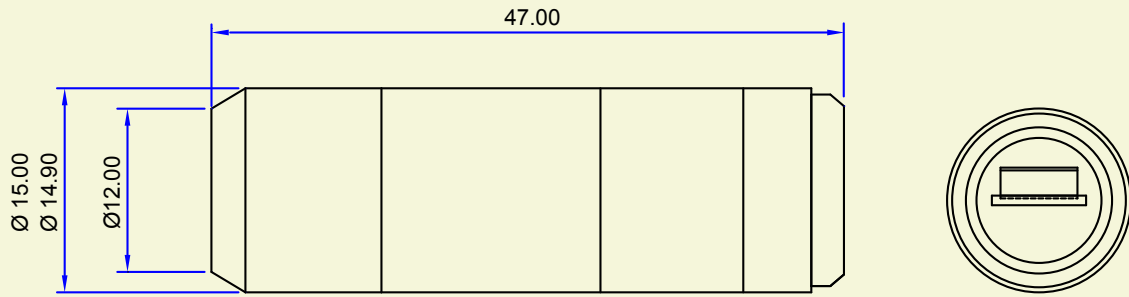
Acculase Laser Module



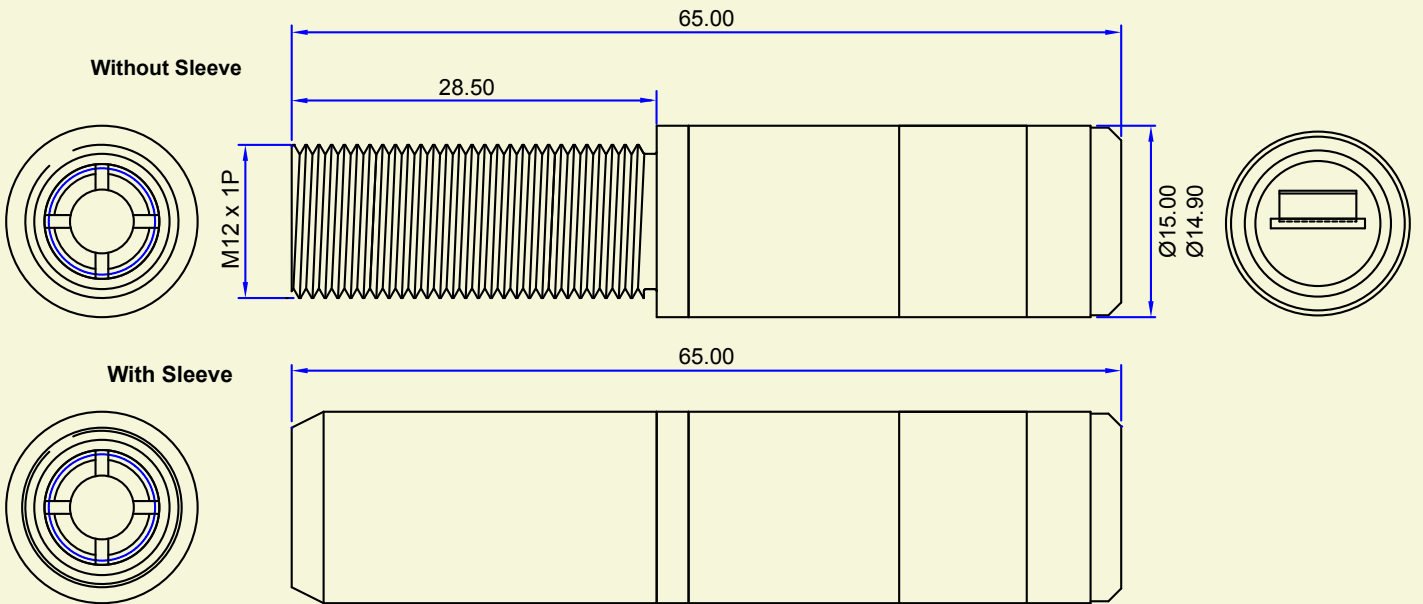
Premier Laser Module



Varilite Laser Module



FiberLyte Laser Module



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:

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



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