



Acculase Direct Drive Green PWM Laser Diode Modules

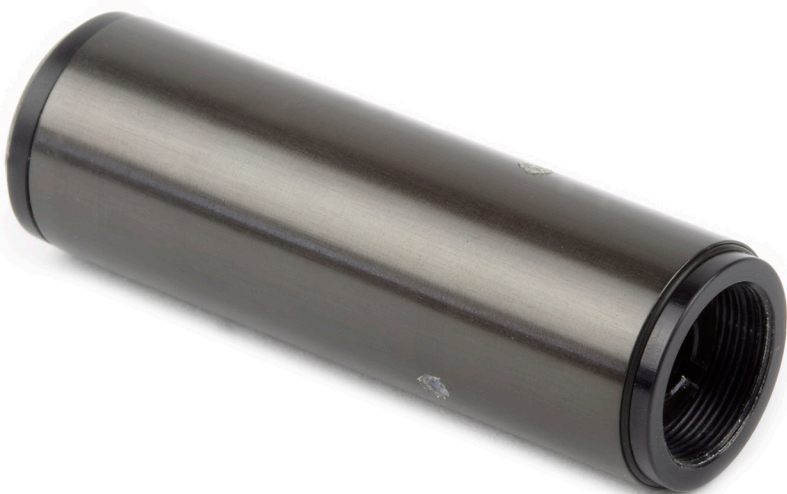
Acculase Direct Drive Green

Available in 520nm wavelength and with powers output powers up to 35mW the Acculase Direct Drive Green PWM represents the highest level of optical and electrical performance at an economical price, a combination that is unmatched in the marketplace. It also has the additional benefit of the output beam being accurately aligned to the outer sleeve during manufacture.

The secret of their superiority is a control circuit design that not only gives you excellent output power stability over time and temperature, but also offers fast, closed-loop modulation with an extinction ratio as high as 10,000:1. The PWM version allows you to use pulse width modulation of the output intensity from a TTL level input signal, again within the limits of the laser diode module's maximum rise and fall time. You can therefore control the mean intensity of the laser beam simply by changing the mark to space ratio or modulate the laser with coded information.

A range of wavelengths, powers and lens options are available, each combination having been carefully selected to provide you optimum performance, while ensuring the laser diode is never over driven.

The direct drive green laser diode offers significant advantages over green DPSS laser diode modules in terms of beam quality, efficiency, stability and lifetime making them suitable for a wide range of applications.



Specifications

	10V Version	24V Version
Mechanical Information		
Weight (grams)	44	
Diameter (mm)	15	
Length (mm)	47 (53.5 with optional line lens)	
Housing	Anodized Aluminium	
Isolated Body	Yes	
Connector Type	JST PHR4 4 pin	
Lead Length (mm)	500	
Optical Information		
Wavelength (nm)	520 ±15	
Output Powers (mW)	1, 5, 20, 35	
Power Stability at a fixed temperature (Typical)	≤1%	
Beam Size at Aperture (mm)	See Lens Option Table	
Beam Divergence (mRad)	See Lens Option Table	
Bore Sighting (mRad)	<1 (Note 1)	
Environmental Information		
Operating Case Temperature (°C)	0 to +55	
Storage Temperature (°C)	-10 to +80	
Operating Humidity (%RH)	90 (non condensing)	
MTTF at 25°C	>5000 Hours	
Electrical Specifications		
Input Voltage (Red Lead) (Vdc)	10 ± 250mV	10 - 30
Black Lead (V)	0	
Operating Current* (mA)	≤200	≤150
Reverse Polarity Protection	Yes	
Typical Rise & Fall Time* (µs)	≤1	≤3
Frequency Range (KHz)	500	100
Modulation Input (Yellow Lead)	TTL High = On TTL Low = Off	
Enable (Blue Lead)	High = On Low = Off	
<p style="text-align: right;">NOTES - * = Varies with laser diode type and output power Note 1:Q Factory set focus All Specifications are typical @ 25 °C</p>		

Lens Options

Three standard user adjustable collimating lens type are available. These are as follows:-

Standard Lenses:-

S Lens: Produces an elliptical collimated beam or focussed spot

C2 Lens: Produces a circular collimated beam or focussed spot

HG: Produces an elliptical collimated beam or well defined spot over working distance

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 typically 16°

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

Please note other fan angles are available on request.

	C2 Lens	S Lens	HG Lens
Description	2 mm aperture lens	Standard collimating lens	High quality aspheric lens
Beam Size at aperture (mm)	1.8	4.7 by 2.4	6.0 by 3.8
Beam size at nearest focus ($\sqrt{\lambda} 1e^2$) (μm)	< 35	< 25	< 20
Typical Beam Divergence (Full Angle) (mrad)	0.5	0.25	0.2
Minimum focus distance (mm)	25	25	50

* = the beam specification of this model is dependant on the external lens that it is used with

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

Power Options

		Maximum Power Output With Lens	
Wavelength	Power	S & HG Lens	C2 Lens
520nm	1, 5, 15, 35mW	35mW	15mW
Custom	Please call with your requirements		

NOTES:-

Wavelength tolerance can vary typically by $\pm 10\text{nm}$.

Power levels refer to the maximum diode output power. Output power will vary depending on optical configuration.

Not all wavelengths and powers are available with all lens options or driver PCB options.

Standard Driver Types

Pulse Width Modulation TTL Digital Control (PWM Model)

The Acculase Direct Drive PWM laser is 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.

Mounting Options

Heavy Duty Mounting Clamp

The optional heavy duty mounting clamp allows the Acculase Direct Drive Green PWM 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.

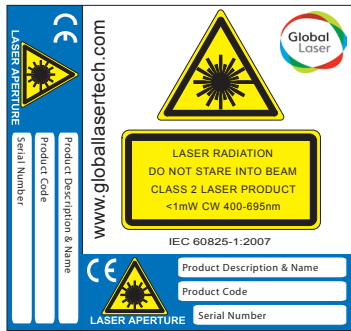
Swivel Mount Clamp

The optional swivel clamp allows the Acculase Direct Drive Green PWM 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.

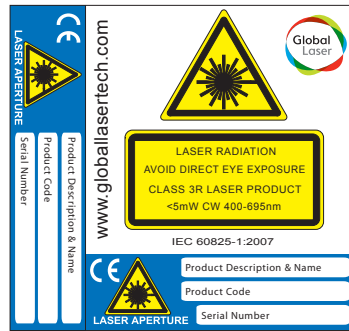


Laser Safety

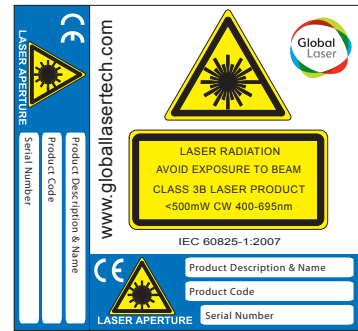
Our lasers are compliant to IEC 60825-1 2007 standards. The lasers fall within one of the following classifications depending on power and wavelength.



Class 2 Laser Label



Class 3R Laser Label



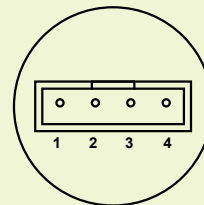
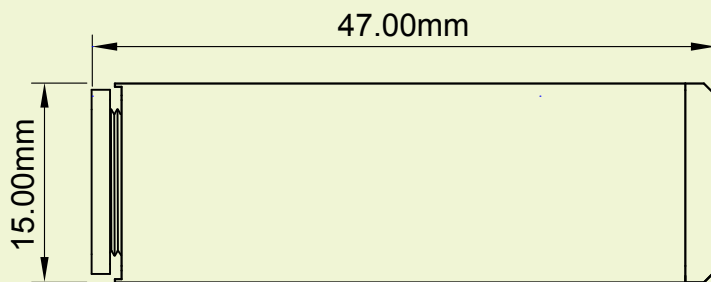
Class 3B Laser Label

Quality & Warranty

The Acculase Direct Drive Green PWM range is supplied with a 12 month parts and labour warranty. Our manufacturing operations are certified to ISO9001.

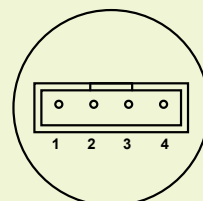
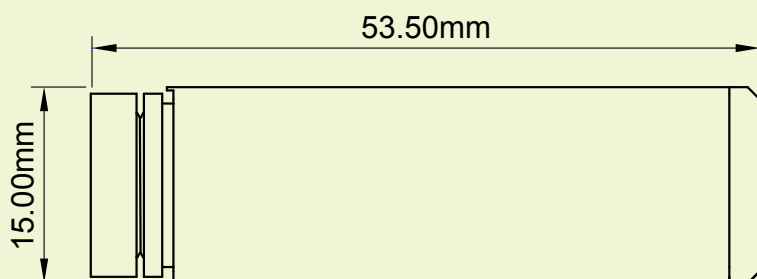
Mechanical Drawings

Acculase Direct Drive Green PWM



- Pin 1 - Red
- Pin 2 - Black
- Pin 3 - Yellow PWM
- Pin 4 - Blue Enable

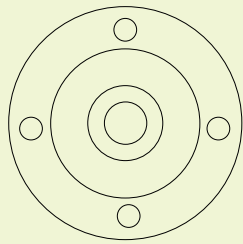
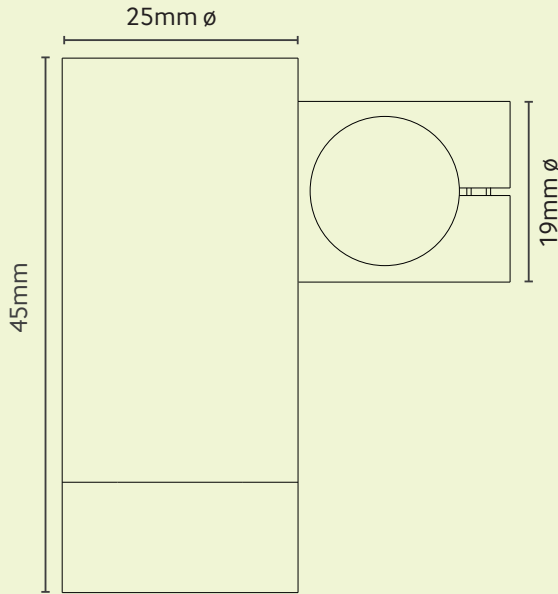
Acculase Direct Drive Green PWM with Optional Line Lens



- Pin 1 - Red
- Pin 2 - Black
- Pin 3 - Yellow PWM
- Pin 4 - Blue Enable

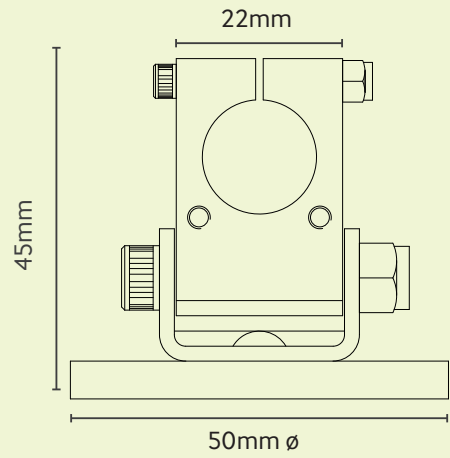
Mechanical Drawings

Heavy Duty Mounting Clamp

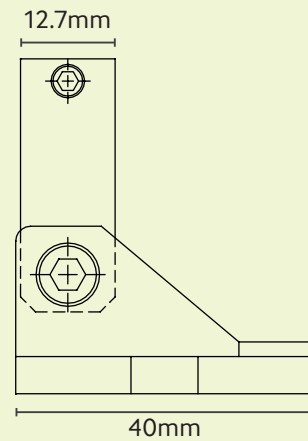


M5 Mounting hole on base

Swivel Clamp



Mounting hole on base 4 x 4.5mm



Drawings not to scale

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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