

# Premier-LC User Guide



## 1. PRODUCT OPERATION

Thank you for purchasing the Premier-LC laser. This emits a red / infra-red spot.

If you have any problems or require help when using the Premier-LC laser please call us on +44 (0)1495 212213 or contact your local representative.

## 2. PRODUCT OPERATION

Connect 4 way JST connector (see diagram A) to back of laser

### - CW Mode

To operate laser in CW mode the Red and Black leads should be connected to the following:

1. Red lead: +3.5Vdc to +5Vdc
2. Black lead: 0Vdc
3. Yellow lead: Not connected
4. Green / Yellow: Earth

### - Linear Modulation control function

To linearly modulate the laser any modulation signal up to 300kHz (dependant on diode) with an amplitude of 0V to +1Vdc can be applied to yellow lead.

1. Red lead: +3.5Vdc to +5Vdc
2. Black lead: 0Vdc
3. Yellow lead: input modulation signal 0 to +1Vdc
4. Green / Yellow: Earth

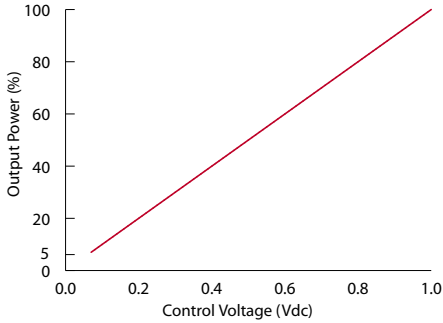
### - Setting power via a voltage

Alternatively the yellow lead can be used for a linear power control function. In this situation, the laser power is denoted by a voltage applied to the yellow lead, 0V turning the laser off and +1Vdc giving maximum power, with linear trend between. See linear intensity graph

1. Red lead: +3.5Vdc to +5Vdc
2. Black lead: 0Vdc
3. Yellow lead: input control voltage (0 to +1Vdc)
4. Green / Yellow: Earth



Technology Center, Cwmtillery Industrial Estate, Abertillery Gwent. NP13 1LZ  
T: +44 (0)1495 212213 F: +44 (0)1495 214004  
E: sales@globallasertech.com W: www.globallasertech.com



Linear intensity graph

### - Setting the power via a resistor

The control wire has a 10k Ohm input impedance connected to an internal 1V source which is used as the reference for the factory set power. This can be confirmed by measuring the voltage between the Yellow and Black wires with a high (>10M Ohm) impedance voltmeter, the reading should be 1 V ± 2%. Now connect a 10k Ohm resistance between the Yellow and Black wires, the reading should fall to 0.5V and the light output should be half the factory set power.

Other outputs between 0 and the factory set power can be achieved with a single resistor by using the formula:

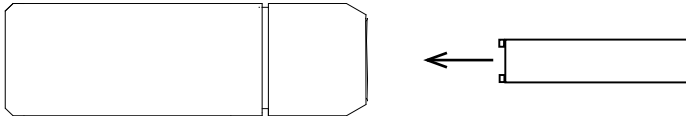
where  $P_o$  is the required power output  
as  $P_{fs}$  is the factory set power

$$R_x = \frac{P_o * 10k}{P_{fs} - P_o}$$

### 3. FOCUS ADJUSTMENT

The focus of the laser can be adjusted by using the supplied focus key (as shown in diagram C). Should you need to adjust the focus please follow the simple instructions below:

1. If supplied with line optics remove front unscrewable section (as shown in diagram D)
2. Insert focus key into laser barrel and align with focus control groves.
3. Turn until desired focus is achieved
4. Replace front unscrewable section if supplied.



### 5. SAFETY AND CLASSIFICATION

These modules are intended for incorporation into customer equipment. They are classified in accordance with IEC60825-1 Amendment 2/2001, 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.





OEM Laser Label



Class 2M Laser Label



Class 3R Laser Label

IEC 60825 Warning Labels (examples)

## 6. CLEANING THE OPTICS

If the laser pattern becomes fuzzy or unclear, please check the following:

1. Check the laser is in focus (see section 3)
2. Verify the optical lens is clean, if the area has been contaminated please remove dirt with dry air.

## 7. MOUNTING

It is recommended to ensure longer life and stability of the laser, the product is mounted in a suitable heatsink. Global Laser also offer a high quality industrial mount (as pictured in diagram E) that firmly clamps the laser and prevents movement against shock and vibration.

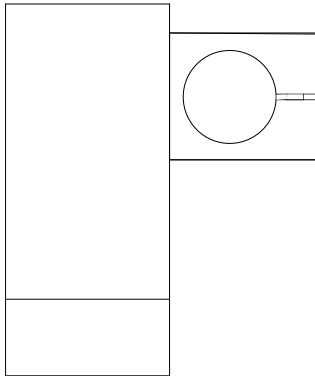
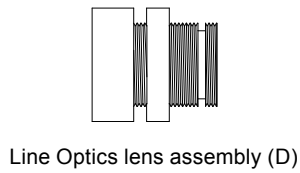
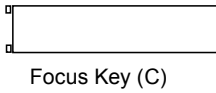
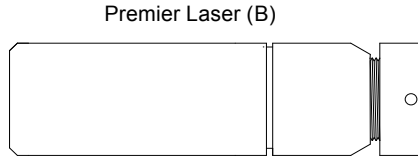
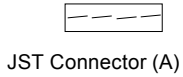
## 8. PRODUCT WARRANTY AND REPAIR

If your product develops a fault within 12 months from the date of purchase Global Laser will repair / replace the product. If you wish to return a faulty product contact your local representative or Global Laser to obtain a RMA (Return Material Authorisation code) and return to the address below:

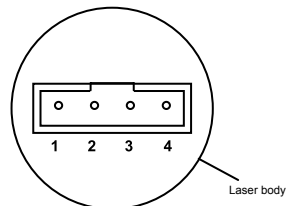


Technology Center, Cwmtillery Industrial Estate, Abertillery Gwent. NP13 1LZ  
T: +44 (0)1495 212213 F: +44 (0)1495 214004  
E: sales@globallasertech.com W: www.globallasertech.com

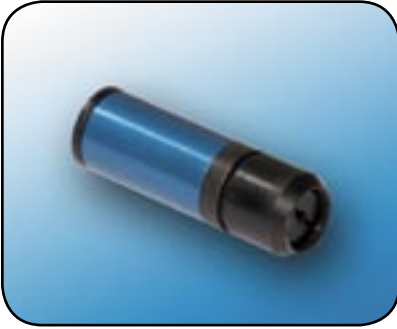
## 9. DIAGRAMS



Laser Pin Connection (F)  
Pin 1 = Red  
Pin 2 = Black  
Pin 3 = Yellow  
Pin 4 Green / Yellow



# Premier-PWM User Guide



## 1. PRODUCT OPERATION

Thank you for purchasing the Premier PWM laser. This emits a red / infra-red spot.

If you have any problems or require help when using the Premier laser please call us on +44 (0)1495 212213 or contact your local representative.

## 2. PRODUCT OPERATION

Connect 4 way JST connector (see diagram A) to back of laser

### - CW MODE

To operate laser in CW mode the Red,black,yellow and blue leads should be connected to the following:

1. Red lead: +5Vdc (+/- 5%)
2. Black lead: 0Vdc
3. Yellow Lead: +V supply
4. Blue Lead: Enable (active high)

### - PULSE WIDTH MODULATION MODE

With this version, the yellow wire can be utilised to be driven with a TTL input modulation signal, with positive TTL level resulting in maximum power and zero TTL level resulting in an off state.

1. Red lead: + 5Vdc (+/- 5%)
2. Black lead: 0Vdc
3. Yellow lead: input TTL signal
4. Blue Lead: Enable (active high)

### Enable Switch

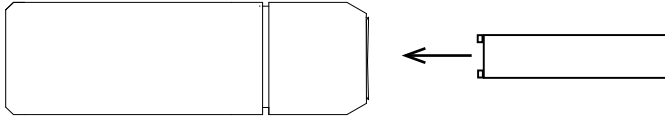
An on/off switch function is available via the blue wire. Applying 0V will switch the laser off whilst applying Vsupply leaves the laser on. A TTL switch can be utilised via this lead.



### 3. FOCUS ADJUSTMENT

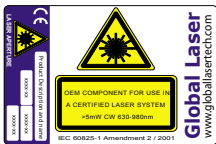
The focus of the laser can be adjusted by using the supplied focus key (as shown in diagram C). Should you need to adjust the focus please follow the simple instructions below:

1. If supplied with line optics remove front unscrewable section (as shown in diagram D)
2. Insert focus key into laser barrel and align with focus control grooves.
3. Turn until desired focus is achieved
4. Replace front unscrewable section if supplied.



### 5. SAFETY AND CLASSIFICATION

These modules are intended for incorporation into customer equipment. They are classified in accordance with IEC60825-1 Amendment 2/2001, 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.



OEM Laser Label



Class 2M Laser Label



Class 3R Laser Label

IEC 60825 Warning Labels (examples)

### 6. CLEANING THE OPTICS

If the laser pattern becomes fuzzy or unclear, please check the following:

1. Check the laser is in focus (see section 3)
2. Verify the optical lens is clean, if the area has been contaminated please remove dirt with dry air.

### 7. MOUNTING

It is recommended to ensure longer life and stability of the laser, the product is mounted in a suitable heatsink. Global Laser also offer a high quality industrial mount (as pictured in diagram E) that firmly clamps the laser and prevents movement against shock and vibration.

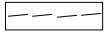


Technology Center, Cwmtillery Industrial Estate, Abertillery Gwent. NP13 1LZ  
T: +44 (0)1495 212213 F: +44 (0)1495 214004  
E: sales@globallasertech.com W: www.globallasertech.com

## 8. PRODUCT WARRANTY AND REPAIR

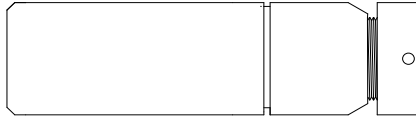
If your product develops a fault within 12 months from the date of purchase Global Laser will repair / replace the product. If you wish to return a faulty product contact your local representative or Global Laser to obtain a RMA (Return Material Authorisation code) and return to the address below:

## 9. DIAGRAMS

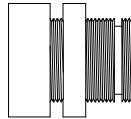


JST Connector (A)

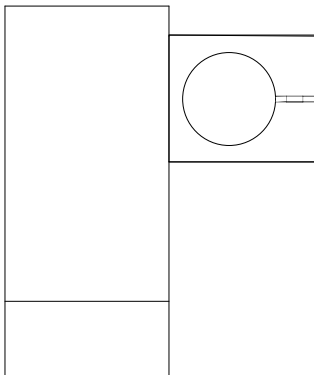
Premier Laser (B)



Focus Key (C)



Line Optics lens assembly (D)



Heavy Duty Mount (E)

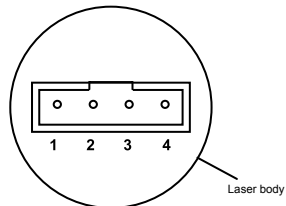
Laser Pin Connection (F)

Pin 1 = Red

Pin 2 = Black

Pin 3 = Yellow

Pin 4 Green / Yellow



Technology Center, Cwmtillery Industrial Estate, Abertillery Gwent. NP13 1LZ  
T: +44 (0)1495 212213 F: +44 (0)1495 214004  
E: sales@globallasertech.com W: www.globallasertech.com

## NOTES