1. Product Overview

Thank you for purchasing the LaserLyte alignment system. This emits a visible spot/projection. If you have any problems or require help when using the LaserLyte alignment system please call us on +44 (0)1495 212213 or contact your local representative.

The latest G version utilises a semiconductor green laser diode to provide projections in highly visible green light. This allows the projections to be viewed in high ambient light levels or at longer distances whilst keeping laser power levels within a safe laser classification. The laser wavelength of 515nm is 3 times brighter to the human eye than the equivalent power in 635nm.

The G Range has two power ranges, the G10 (515nm, 10mW) and G50 (515nm, 50mW). The G10 power range offers six projections ranging from dots to crossed lines. A unique focus mechanism also allows the user to adjust the focus without removing any optics or exposing the user to the raw laser beam. This ensures all G10 models conform to Class 2 and 2M. The G50 models offer higher power levels for the most demanding applications and conforms to laser class 3R.

A range of mounts, mounting brackets, electrical leads and power supplies allow the system to provide a complete solution ready to use with no previous laser experience required.

2. Production Operation

2A Operating with a PS1 or PS4
If you have purchased a LaserLyte alignment system with a 100V/240V to 10Volt PS1 you will have the following items.

LaserLyte Laser Diode Module
1.5 Meter Extension Lead (Optional extension leads up to 10 meters are available)
100V/240V to 10Volt PS1
Mains socket to PS1 power lead (UK, Euro or US)

1. Plug the male DC Jack end of the extension lead into the DC socket on the PS1, and then plug the male DC Jack on the Extension Lead into the DC socket on the rear of the laser.
2. Connect IEC plug to PS1 power adaptor.
3. Plug the main plug into a mains socket.
4. Switch on the power supply via key switch (If you have purchased a PS1 fitted with a key switch) or switch on at the mains socket.

3. Focus Adjustment

The focus of the laser can be adjusted by using the supplied focus key. Should you need to adjust the focus please follow the simple instructions below:

1. Insert focus key into focus hole on laser barrel.
2. Turn until desired focus is achieved (if the key turns to maximum limit re-insert and continue to turn until focus is achieved).

4. Manipulating The Pattern

A number of the LaserLyte alignment system modules have user adjustable patterns which are controlled by rotating the front section of the lens assembly by an adjustment pin (as shown in diagram A). Below is a summary of the futures .

RXL Model: Varies the angle between the crossed line so a 90° cross is achieved at any angle of mounting.
VLL Model: The length of the line can be adjusted between a 30 and 80° fan angle.
VLL+D Model: The length of the line can be adjusted .
Dvi Model: The intensity (brightness) of the dot can be varied.
Xvi Model: The intensity (brightness) of the cross can be varied.

5. Mounting

To ensure the lifetime and the stability of the laser it is recommended that it is mounted in a suitable Heat sink/mount. The case temperature should be kept within the specified range at all times. Failure to do this could result in shortened lifetime or catastrophic failure. As a guide, laser diode lifetime decreases by a factor of two (approx) for every ten degree increase in operating temperature.

There are two mounting clamps available as stranded from Global laser for the LaserLyte alignment system.

Global Laser's MK1 mounting kit provides a cost effect mounting solution; the laser clamp rotates horizontally through 360° and vertically through 180° and the mounting post allows vertical movement. The mounting clamp is compatible with Global laser's mounting brackets and is supplied with two different lengths of machine screws to increase the range of mounting surfaces which can be utilised.

Global Laser's Heavy Duty Clamp has parallel and vertical adjustment which allows the user to aim the laser in any required direction or angle, the robust aluminium construction also assists in conducting heat away from the laser body as well as prevents movement due to shock and vibration. The base plate of the Heavy Duty Clamp has a series of threaded holes to allow the Heavy Duty Clamp to be securely fastened to a stable surface. A magnetic base is also available which simply screws in to the base of the Heavy Duty Clamp and allow it to be fitted to a ferrous surface.

A range of brackets are also available with M5 holes at regular intervals are also available to complement the mounting clamps.

B12	30cm/12" metal mounting bracket with M5 holes at regular intervals.
B6	15cm/6" metal mounting bracket with M5 holes at regular intervals.
B4	10cm/4" metal mounting bracket with M5 holes at regular intervals.
B2	Right angles 10cm/4" metal mounting bracket with M5 holes at regular intervals.
BS	A set containing one of each of the above brackets.

5a Mounting the LaserLyte module in the Heavy Duty Clamp

1. Un-tighten Allen screw A (see drawing C) with the supplied Allen key.
2. Slide the laser into the mounting hole (see drawing C) and tighten Allen key A.
3. For vertical adjustment of the laser un-tighten Grub screw A (see drawing C). This will allow the section mounting the laser to be adjusted. When the vertical posting is complete re-tighten grub screw A.
4. For horizontal adjustment of the laser un-tighten Grub screw B (see drawing C). This will allow the main body of the mount to be moved. When the horizontal positing is complete re-tighten grub screw B.
5. To secure the Heavy duty clamp to a surface machine screw or studs can be used in conjunction with the base section.

5b Mounting the LaserLyte module in the Heavy Duty Clamp with the Magnetic Base

1. Un-tighten Allen screw A (see drawing C) with the supplied Allen key.
2. Slide the laser into the mounting hole (see drawing C) and tighten Allen key A.
3. For vertical adjustment of the laser un-tighten Grub screw A (see drawing C). This will allow the section mounting the laser to be adjusted. When the vertical posting is complete re-tighten grub screw A.
4. For horizontal adjustment of the laser un-tighten Grub screw B (see drawing C). This will allow the main body of the mount to be moved. When the horizontal positing is complete re-tighten grub screw B.
5. To secure the magnetic base to the Heavy Duty Clamp simple screw the stud on the top of the magnetic base into the centre hole in the base of the Heavy Duty Clamp until tight.
6. Remove the keeper from the magnetic base and place on a ferrous surface to secure.

5C Mounting the LaserLyte module in the MK1 Mounting Kit

1. Fix the mounting clamp to the mounting surface or bracket using the supplied machine screw A (both an M5*25 & an M5*35 machine screw and two M5 hex nut & washers are supplied) Tighten with an Allen key (M3) to lock into position. If you wish to adjust the height of the post slacken machine screw A and set the height of the mounting post and retighten machine screw A (see drawing B).
2. Un-tighten Phillips screw A (see drawing B) on the laser clamp with a Phillips head screw-driver.
3. Slide the laser into the mounting hole (see drawing B) and rotate the laser clamp to the desired position and tighten Phillips screw A to lock into position.

6. Working Distances

The size of the fan angle (or spread of the beam) will determine how long the line is. When viewed from the same distance and at 90° to the surface, a line with a fan angle of 80° will be longer than a line with a fan angle of 30°.

Fan Angle (°)	Distance to Object (mm)	Line Length (mm)
30	100	54
80	100	168

As a guide to relationship between working distance, line length and fan angle please see the table below.

		Fan Angle (°)		
		30	**55**	**90**
Distance From Object (mm)	**250**	134	260	500
	500	268	521	1000
	750	402	781	1500
	1000	536	1041	2000
	1250	670	1301	2500
	1500	804	1562	3000
	1750	938	1822	3500
	2000	1072	2082	4000
	2250	1206	2343	4500
	2500	1340	2603	5000
	2750	1474	2863	5500
	3000	1608	3123	6000
	3250	1742	3384	6500
	3500	1876	3644	7000
	3750	2010	3904	7500
	4000	2144	4165	8000
	4250	2278	4425	8500
	4500	2412	4685	9000

Line Length (mm)

If you require a longer line than a 80° fan angle will produce at the working distance then a possible solution may be to change the mounting position and angle of the laser. By moving the laser to the end of the working area and angling the laser to a 50° angle relative to the work surface the line length is increased by a factor of 3. See the table below and the diagram for a compression.

Working Distance (mm)	Line Length (mm)
250	1418
500	2836
1000	5671
2500	14178
5000	28356
10000	56713

7. Warranty & Repair

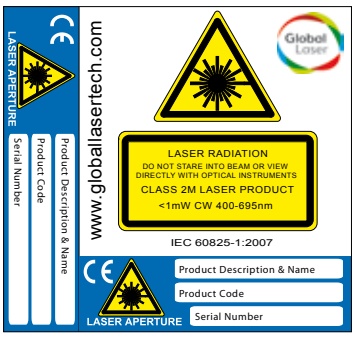
If your product develops a fault within 12 months from the date of purchase Global Laser will repair / replace the product. If you wish to return a faulty product contact your local representative or Global Laser to obtain a RMA (Return Material Authorisation code) and return to the address below:

Global Laser Ltd
Units 9-10
Roseheyworth Business Park
Abertillery
Gwent, NP13 1SP
United Kingdom

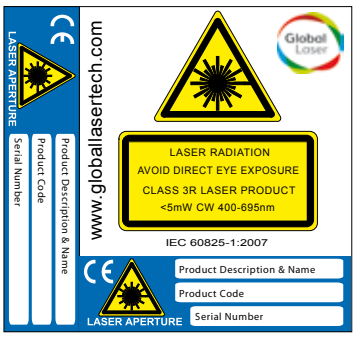
8. Safety & Classification

These modules are intended for incorporation into customer equipment. They are classified in accordance with IEC60825-1: 2007, 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



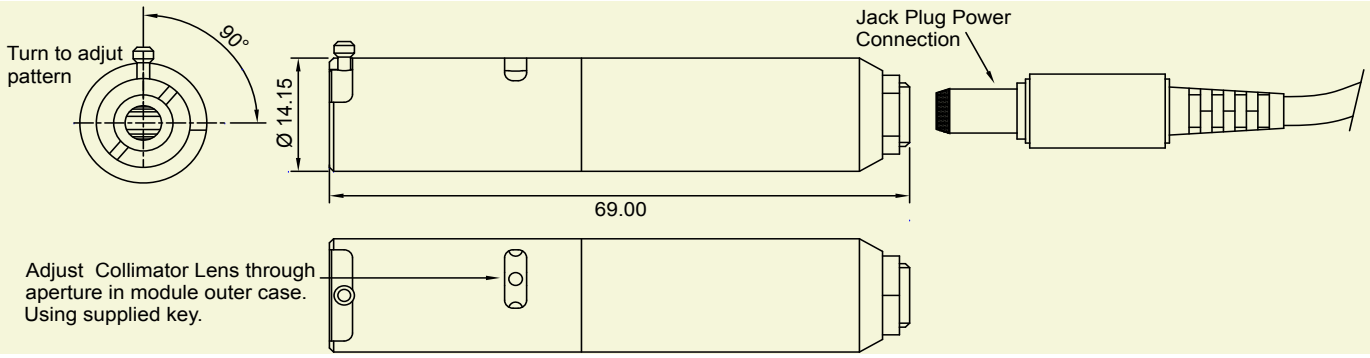
Class 2M Laser Label



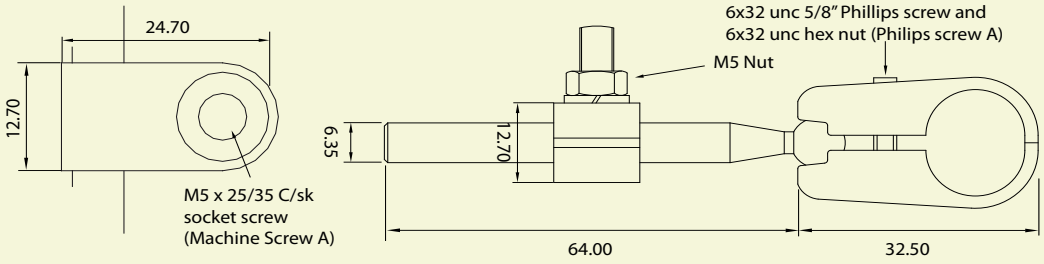
Class 3R Laser Label

10. Diagrams

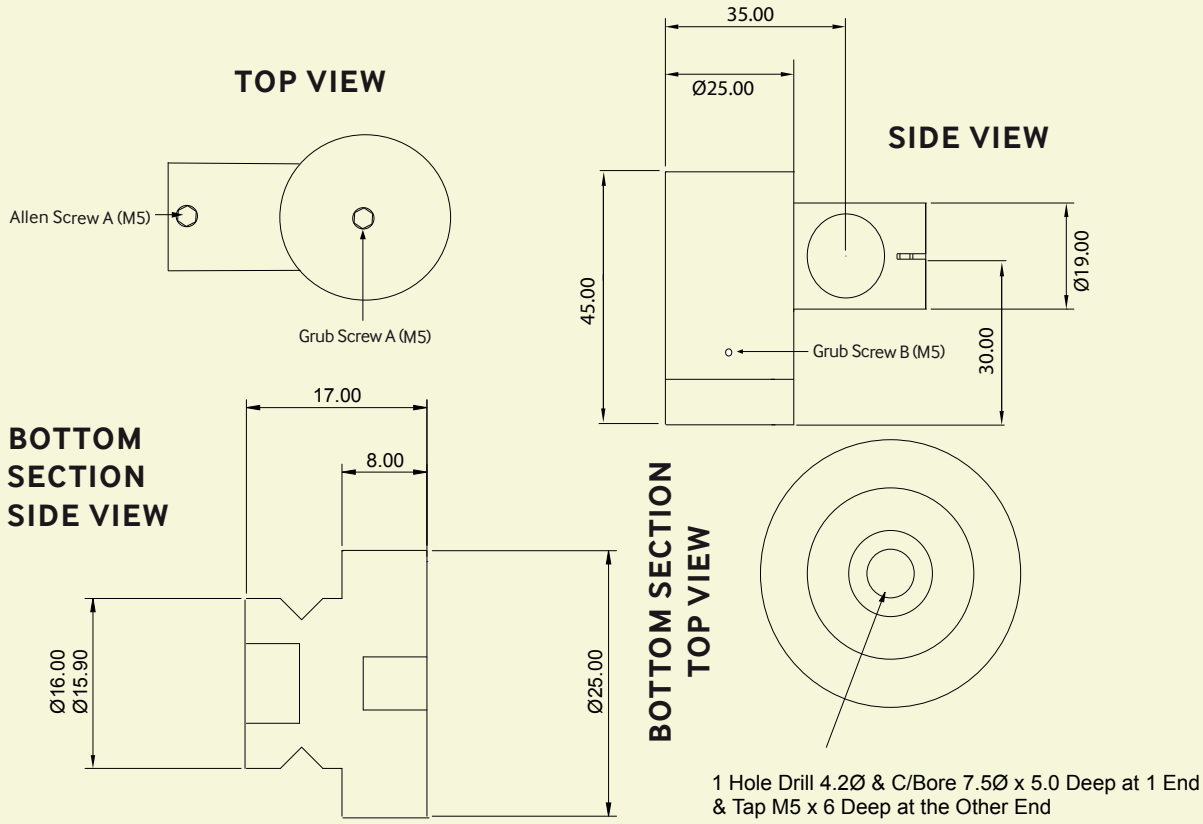
A) LaserLyte



B) MK1 Mounting Kit



C) Heavy Duty Mounting Clamp



Drawings not to scale

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