Varilite Development Kit Userguide

1. Product Overview

Thank you for purchasing the Varilite Development Kit. The module in this kit emits a red spot or projection.

The Varilite Development Kit provides a reliable, industrial laser light source in the form of Global Laser's Varilte. Depending on the kit you have purchased you will have either a 635nm 1mW , 635nm 5mW or a 660nm 20mW module. The Varilite has a user adjustable focus making it easy to focus over a wide range of distances and includes five interchangeable pattern optics. A heavy duty mounting clamp and a power supply is included in a rugged and attractive plastic carrying case designed to securely store all kits components.

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

2. Production Operation

Operating with a PS1

Your Varilite Development Kit is supplied as standard with a 110V/240V to 5Volt PS1 fitted with a key switch You will have the following items

Varilite Laser
1 Meter Extension Lead
Large Heavy Duty Mounting Clamp
110V/240V to 3. 5 Volt Switched PS1
IEC to Euro mains power lead
Euro to US Adaptor
Euro to UK Adaptor (fitted to the IEC lead as standard)

1. Connect the DC jack on the Lyte MV to PS1 cable into the DC socket on the PS-1 power supply and screw binder connector into the connector on the end of laser.
2. If you wish to use the power lead in a Euro socket simply unscrews the two screws in the front of the adaptor and open the lid and removes the adaptor from the power lead.
3. If you wish to use the power lead in a US socket simply unscrews the two screws in the front of the adaptor and open the lid and removes the adaptor from the power lead. Fit the plug in to the US adaptor, close the lid and tighten the screws.
4. Connect IEC plug to PS-1 power adaptor.
5. Plug the mains plug/adaptor into a mains socket.
6. Switch on the power supply via the supplied key switch.

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 instructions below:

1. Remove any interchangeable pattern optics, where fitted.
2. Insert focus key into laser barrel and align with focus control grooves (see diagram C).
3. Turn the focus key until desired focus is achieved .
4. Replace the interchangeable pattern optics if fitted and rotate to achieve the desired projection.

4.Fan Angle & Working Distance

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 degrees to the surface a line with a fan angle of 90 degrees will be longer then a line with a fan angle of 30 degrees.

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

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

Distance From Object (mm)	Fan Angle (Degrees)						Pattern/Line Length (mm)
	4.57	7	21.7	28.6	37	45	
250	20	31	96	127	167	207	
500	40	61	192	255	335	414	
750	60	92	287	382	502	621	
1000	80	122	383	510	669	828	
1250	100	153	479	637	836	1036	
1500	120	183	575	765	1004	1243	
1750	140	214	671	892	1171	1450	
2000	160	245	767	1020	1338	1657	
2250	180	275	862	1147	1506	1864	
2500	200	306	958	1274	1673	2071	
2750	219	336	1054	1402	1840	2278	
3000	239	367	1150	1529	2008	2485	
3250	259	398	1246	1657	2175	2692	
3500	279	428	1342	1784	2342	2899	
3750	299	459	1437	1912	2509	3107	
4000	319	489	1533	2039	2677	3314	
4250	339	520	1629	2167	2844	3521	
4500	359	550	1725	2294	3011	3728	
4750	379	581	1821	2422	3179	3935	
5000	399	612	1917	2549	3346	4142	
5250	419	642	2012	2676	3513	4349	
5500	439	673	2108	2804	2681	4556	

5. Changing The Optics

A set of 5 interchangeable pattern optics have been supplied with your Varilite Development Kit including:

Cross (100° fan angle)
7 Lines (21.7° fan angle)
Line (60° fan angle)
5 Concentric Circles (28.6° fan angle)
21x21 Dot Array (7° fan angle)

To change the pattern please follow the instructions below:
1. Remove any interchangeable pattern optics if fitted.
2. Replace the interchangeable pattern optics and rotate to achieve the desired projection.
3. Please ensure that any optics not fitted to the laser module is keep away from sources of dust etc.

6. 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.

Global Laser's Heavy Duty Mounting 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 preventing movement due to shock and vibration. The base plate of the Heavy Duty Mounting Clamp has a series of threaded holes to allow the Heavy duty clamp to be securely fastened to stable surface.

6A Mounting the Varilite in the Heavy Duty Clamp
1. Un-tighten allen screw A (see drawing B) with the supplied allen key
2. Slide the laser into the mounting hole (see drawing B) and tighten allen key A.
3. For vertical adjustment of the laser un-tighten grub screw A (dee drawing B). 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 B). 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 (see drawing B for thread details).

7. Warranty & Repair

If your product develops a fault within 24 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
Unit 9-10
Roseheyworth Business Park
Abertillery
Gwent, NP13 1SP
United Kingdom

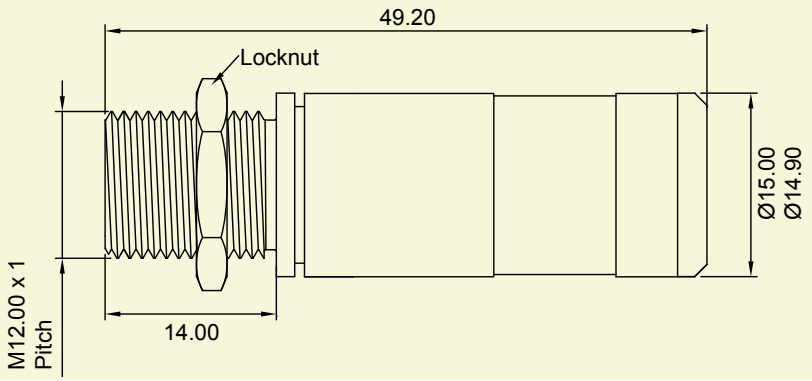
8. Safety & Classification

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

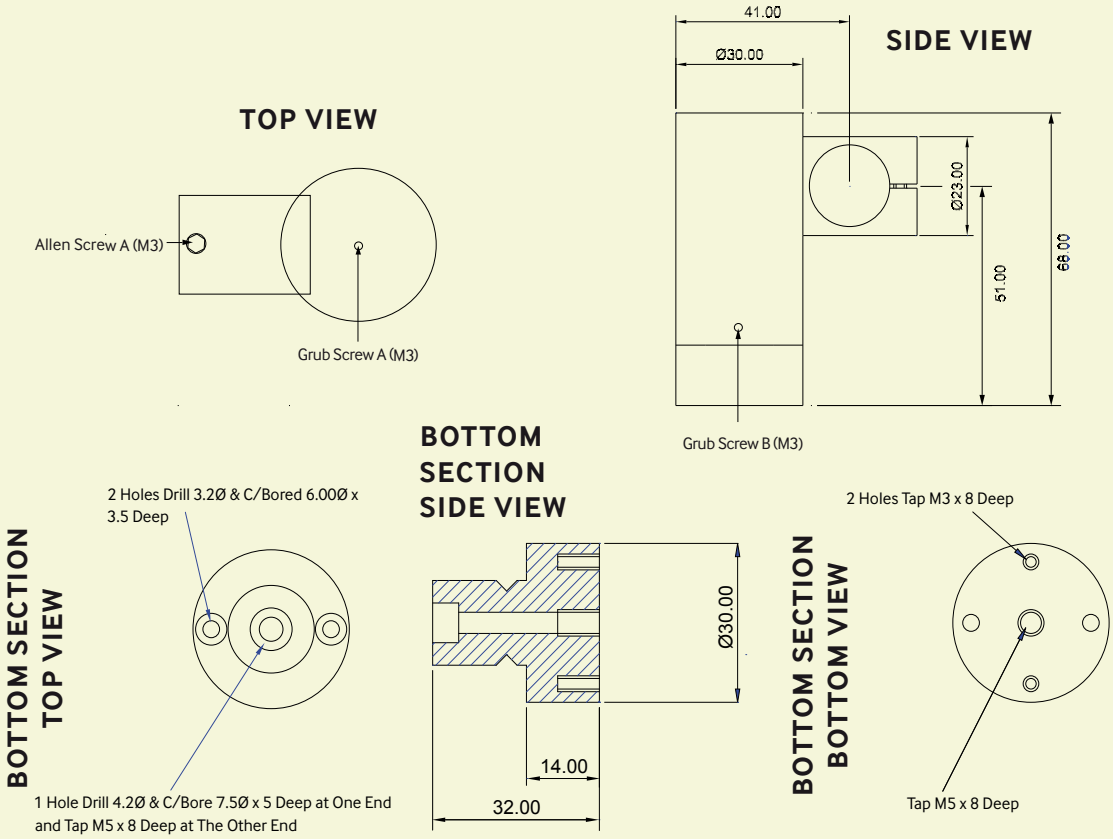
Class 3B Laser Label
IEC 60825 Warning Labels (examples)

9. Diagrams

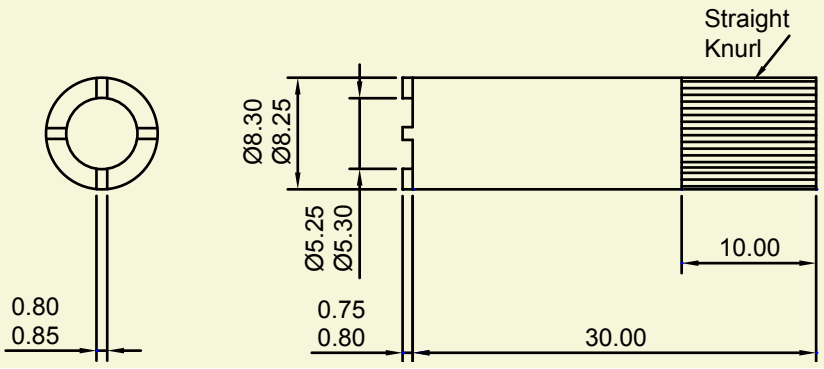
A) Varilite Laser Diode Module



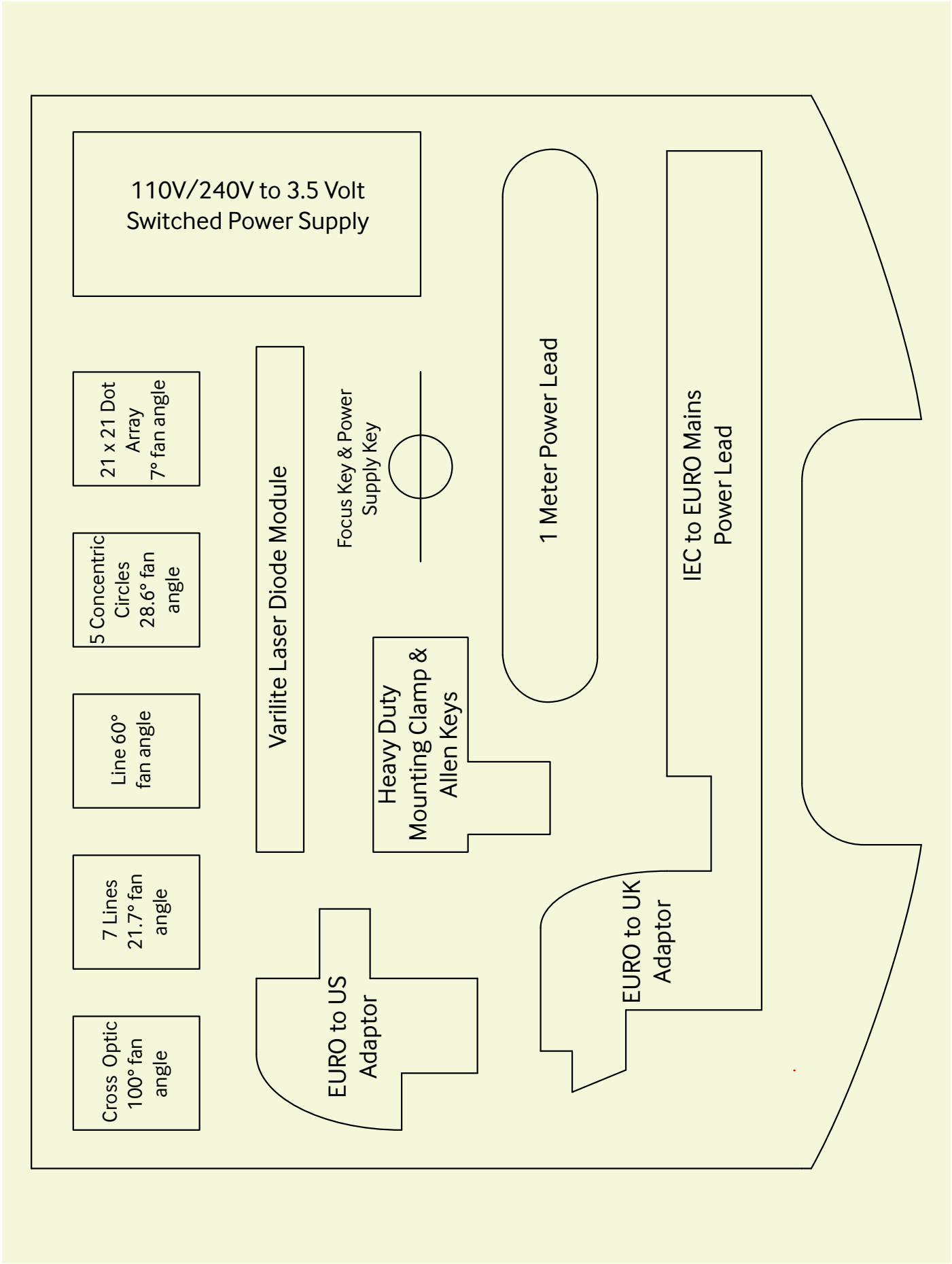
B) Large Heavy Mounting Clamp



C) Laser Focus Adjustment



9. Diagrams



Drawings are not to scale.

Notes.

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

ISO9001 Certified

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

9090-02-102 Rev 1 09/11/2015