



## **GuideLine 2**

*Highly Visible Alignment Lasers for Visually Demanding Surfaces*

# The Guideline 2 Range

The GuideLine 2 provides a reliable and robust industrial alignment laser for a wide range applications including the alignment and positioning of materials including garments, cloth, paper, wood and metal. It features IP67 protection, a threaded barrel and the ability to operate from industrial voltage sources such as 24Vdc.

The laser is available in two power levels in 635nm, which is the brightest red wavelength. For more visually demand application a version in 520nm green is available which is ~ 4 times more brighter then the same power in 635nm .For all three models, a range of different line generators with fan angles from 20 to 90° are available. Two different cross projections are also available. The user can also adjust the focus via an external control ring.

The laser features an IP67 rated housing to protect it from dirt and debris and a thread barrel to simply mounting with bulkheads and mounting blocks. Electrical connection is via an IP67 jack plug with an operating voltage input range of 5 to 30Vdc (520nm models 10 to 30Vdc).

A comprehensive range of accessories including mounting clamps and rail systems, mains power supplies and laser safety and enhancement glass are also available to complement the Guideline 2.



# Selection Guide

This catalogue covers our complete GuideLine 2 range and is broken down into various sections. Please use the guide below to go straight to the relevant section.

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3	Features	List of the GuideLine 2's key features.
4	GuideLine 2 - 10mW Version	Full comprehensive specification for the GuideLine 2 - Red 10mW Version.
5	GuideLine 2 - 40mW Version	Full comprehensive specification for the GuideLine 2 - Red 40mW Version.
6	GuideLine 2 - Green Version	Full comprehensive specification for the GuideLine 2 - Green Version.
7	Fan Angle & Working Distance	A guide to the relationship between working distance, line length and fan angle.
8 & 9	Laser Safety	Laser safety information and examples of the safety labels provided.
10	Options & Accessories	Here you will find information on a variety of options and including.
11	Mechanical Dimensions	Detailed technical drawing of the Lyte-MV 2.

# Features



## Highly Visible Red and Green Laser Outputs

Available in two power levels in 635nm, which is the brightest red wavelength. The Guideline 635nm 10mW provides an economical entry level models for application where low levels of ambient light or shorter working distance are present. The Guideline 635nm 40mW provides more output power to compensate for increases in working distance or ambient light levels.

For the most visually demanding application where higher levels of ambient light are present, the material is absorbent to red wavelengths or at longer working distances, a version in 520nm green which is ~ 4 times more brighter to the human eye than the same power in 635nm is available.

## IP67

The GuideLine 2 features a rugged IP67 rated housing which ensures protection of the internal optics from liquids and debris, while still allowing the user to adjust the focus of the laser.

The threaded barrel allows the user to mount the laser to bulkheads and mounting blocks while ensuring continuous heat sinking, two mounting nuts are supplied to assist with this. Alternatively, Global Laser has a number of compatible mounting clamps and rail systems for the Guideline 2.

## Focus Control

If the user requires the focus to be adjusted (alter the line thickness/cross line thickness) this can be done by turning the focusing control (brass knurled section) on the middle of the laser until the desired result is achieved. This allows the laser to be set to each individual application or subject material if required.



## Operating Voltage

The Guideline 2 can be powered from an industry standard 24VDC supply. The 635nm models feature an input voltage range of 5-30VDC, while 520nm models require 10-30VDC. A number of 110/240V AC power adaptors are also available for users with a mains supply.

# GuideLine 2 - Red 10mW Version

	GuideLine 2 635nm, 10mW 20° Line	GuideLine 2 635nm, 10mW 56° Line	GuideLine 2 635nm, 10mW 90° Line	GuideLine 2 635nm, 10mW 14° Cross	GuideLine 2 635nm, 10mW 65° Cross
<b>Mechanical Information</b>					
Mass (grams)	98				
Dimensions (mm)	19/M18				
Length (mm)	115				
Housing	Hard Anodised				
Isolated Body	Yes				
Connector Type	2.5mm IP68 DC				
<b>Optical Information</b>					
Diode Power (mW)	10				
Wavelength (nm)	635				
Line Fan Angle (°)	20	56	97	N/A	N/A
Cross Fan Angle (°)	N/A	N/A	N/A	14	65
Line Type	Gaussian				
Factory Set Focus Distance (meter)	1				
Typical Line Width @1m (Q1e <sup>2</sup> ) (µm)	<500	<550	<400	<1200	<1400
Typical Line Length @1m (mm)	~350	~1000	~2260	~245	~1270
User Adjustable Focus	Yes				
Laser Class (IEC 60825:1 2007)	3R	1M	1M	3R	1M
<b>Environmental Information</b>					
Operating Case Temperature (°C)	-10 to +45				
Storage Temperature (°C)	-10 to +80				
Operating Humidity (%RH)	90 (non condensing)				
MTTF @ 25°C (hrs)	≥ 50,000				
IP Rating	67				
<b>Electrical Specifications</b>					
Input Voltage (Vdc)	5 - 30				
Operating Current @ 5Vdc (mA)	≤60				
Operating Current @ 24Vdc (mA)	≤20				
Reverse Polarity Protection	Yes				
NOTES All specifications are typical @ 25°C					

# GuideLine 2 - Red 40mW Version

	GuideLine 2 635nm, 40mW 20° Line	GuideLine 2 635nm, 40mW 56° Line	GuideLine 2 635nm, 40mW 90° Line	GuideLine 2 635nm, 40mW 14° Cross	GuideLine 2 635nm, 40mW 65° Cross
<b>Mechanical Information</b>					
Mass (grams)	98				
Dimensions (mm)	19/M18				
Length (mm)	115				
Housing	Hard Anodised				
Isolated Body	Yes				
Connector Type	2.5mm IP68 DC				
<b>Optical Information</b>					
Diode Power (mW)	40				
Wavelength (nm)	640				
Line Fan Angle (°)	20	56	97	N/A	N/A
Cross Fan Angle (°)	N/A	N/A	N/A	14	65
Line Type	Gaussian				
Factory Set Focus Distance (meter)	1				
Typical Line Width @1m (Q1e <sup>2</sup> ) (µm)	<500	<550	<400	<1200	<1400
Typical Line Length @1m (mm)	~350	~1000	~2260	~245	~1270
User Adjustable Focus	Yes				
Laser Class (IEC 60825:1 2007)	3B	3R	1M	3R	1M
<b>Environmental Information</b>					
Operating Case Temperature (°C)	-10 to +45				
Storage Temperature (°C)	-10 to +80				
Operating Humidity (%RH)	90 (non condensing)				
MTTF @ 25°C (hrs)	≥ 50,000				
IP Rating	67				
<b>Electrical Specifications</b>					
Input Voltage (Vdc)	5 - 30				
Operating Current @ 5Vdc (mA)	≤100				
Operating Current @ 24Vdc (mA)	≤30				
Reverse Polarity Protection	Yes				
NOTES All specifications are typical @ 25°C					

# GuideLine 2 - Green Version

	GuideLine 2 520nm, 40mW 20° Line	GuideLine 2 520nm, 40mW 56° Line	GuideLine 2 520nm, 40mW 90° Line	GuideLine 2 520nm, 40mW 14° Cross	GuideLine 2 520nm, 40mW 65° Cross
<b>Mechanical Information</b>					
Mass (grams)	98				
Dimensions (mm)	19/M18				
Length (mm)	115				
Housing	Hard Anodised				
Isolated Body	Yes				
Connector Type	2.5mm IP68 DC				
<b>Optical Information</b>					
Diode Power (mW)	40				
Wavelength (nm)	520				
Line Fan Angle (°)	20	56	97	N/A	N/A
Cross Fan Angle (°)	N/A	N/A	N/A	14	65
Line Type	Gaussian				
Factory Set Focus Distance (meter)	1				
Typical Line Width @1m ( $Q_{1e^{-2}}$ ) (µm)	<500	<550	<400	<1200	<1400
Typical Line Length @1m (mm)	~350	~1000	~2260	~245	~1270
User Adjustable Focus	Yes				
Laser Class (IEC 60825:1 2007)	3B	3R	1M	3R	3R
<b>Environmental Information</b>					
Operating Case Temperature (°C)	-10 to +55				
Storage Temperature (°C)	-10 to +80				
Operating Humidity (%RH)	90 (non condensing)				
MTTF @ 25°C (hrs)	≥ 10,000				
IP Rating	67				
<b>Electrical Specifications</b>					
Input Voltage (Vdc)	10 - 30				
Operating Current @ 10Vdc (mA)	≤100				
Operating Current @ 24Vdc (mA)	≤50				
Reverse Polarity Protection	Yes				
NOTES All specifications are typical @ 25°C					

# 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 97 degrees will be longer than a line of 20 degrees.

Fan Angle (Degrees)	Distance to Object (mm)	Line Length (mm)
20	100	35
97	100	226

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

		Fan Angle (Degrees)			
		20°	56°	65°	97°
Distance From Object (mm)	250	88	266	319	565
	500	176	532	637	1130
	750	264	798	956	1695
	1000	353	1063	1274	2261
	1250	441	1329	1593	2826
	1500	529	1595	1911	3391
	1750	617	1861	2230	3956
	2000	705	2127	2548	4521
	2250	793	2393	2867	5086
	2500	882	2569	3185	5651
	2750	970	2924	3504	6217
	3000	1058	3190	3822	6782
	3250	1146	3456	4141	7347
	3500	1234	3722	4459	7912
	3750	1322	3988	4778	8477
	4000	1411	4254	5097	9042
	4250	1499	4520	5415	9608
4500	1587	4785	5734	10173	
4750	1675	5051	6052	10738	
5000	1763	5317	9371	11303	

## Visibility

For more visually demand applications it is recommended that the 520nm green models are used. A 520nm model is ~ 4 times brighter then the same model in 635nm. Laser Enhancement Glasses can also be enhance projections from the 635nm models which is usefull were there are high levels of ambient light.



# Options & Accessories

The GuideLine 2 has a wide range of options to suit a variety of applications. These options include projection optics, power supplies, rail systems and laser safety glasses.

## Mounting Clamps

The heavy duty mounting clamp allows the GuideLine 2 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. For more information on any of the options please refer to the Accessories Datasheet.



Heavy Duty Mounting Clamp



Magnetic Mounting Base

## Power Supplies and Leads

For users that require an off the shelf power supply a 110/240 Vac power adaptor is available. A 5V version will power all 635nm versions and a 10V will power all 520nm version of the GuideLine 2. For more information on any of the options please refer to the Accessories Datasheet. A range of power leads are also available ranging in length from 2 to 10 meters. Custom lengths are available upon request.



110 / 240 Vac Power adaptor



Power Leads

## Laser Safety Glasses

To compliment the GuideLine 2 range there are a number of laser safety glasses, below is an example of some of the available glasses. For more information on any of the options please refer to the Laser Safety Glasses Datasheet.



DIA - Protection against Red  
50mW



AL3 - Protection against Green  
50mW

## Mounting Rails

Options range from the simple slide rail system where carriages can be moved by hand and locked into position, to computer controlled, motor driven systems. All systems incorporate long life/ low friction polymer bearings which are self lubricating, removing the need for messy dirt, attracting oils and greases. All rail systems are also available in stainless steel. This makes the systems ideal for aggressive environments with high levels of dirt and dust or areas subject to wash down or high levels of moisture.



Rail and Mounting Clamp

## Laser Safety Glasses

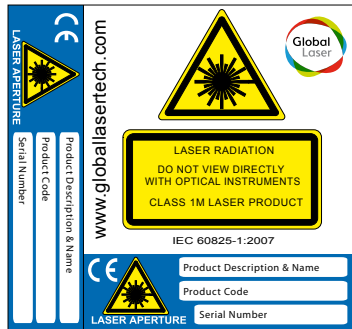
To compliment our wide range of alignment laser diode modules we have introduced a range of Laser Enhancement Glasses which enhance projections in the red wavelength range (630nm to 670nm) by blocking light in other wavelengths, thus improving the visibility in outdoors or bright lighting condition's. The glasses also meet ANSI Z87 impact standard. For more information on any of the options please refer to the Red Enhancement Glasses Datasheet.



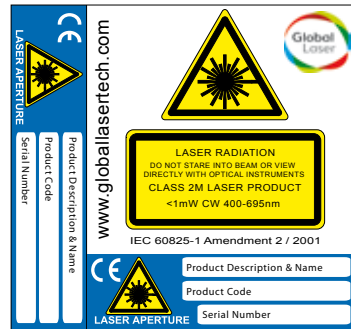
Red Laser  
Enhancement Glasses

# Laser Safety

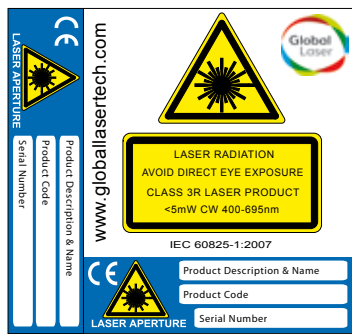
Our Lasers are compliant to IEC 60825-1 2007 standards. The lasers fall within one of the following classifications depending on power, wavelength and fan angle. The labels supplied with the units are shown below.



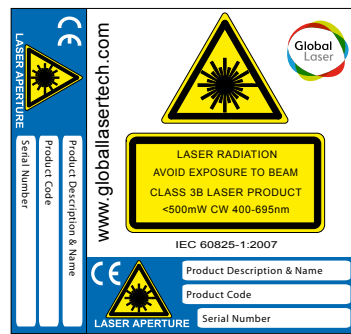
Class 1M Label



Class 2M Label



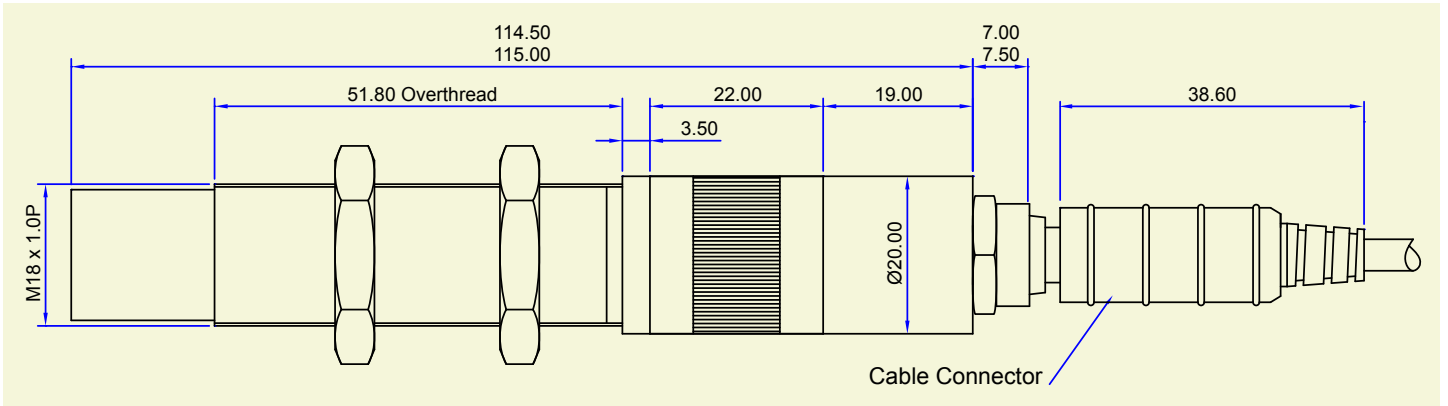
Class 3R Label



Class 3B Label

# Mechanical Dimensions

## GuideLine 2 Outline



Drawings are not to scale

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

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:

