

InViso™

Laser Diode Module



InViso - Easy Mounting, Instant Alignment.

InViso™ is an innovative range of laser diode modules designed to deliver real benefits to customers. InViso™ incorporates a flat mounting surface with the output beam referenced to this surface which means the beam is automatically aligned on installation. This removes the need for lengthy and tedious adjustments to ensure precise beam alignment.

InViso™ laser modules offer additional advantages over existing lasers currently used in many machine vision applications. A unique external focus mechanism preserves factory set alignment & bore sight settings when adjusting the focus without the use of complex tools. Various optical configurations allow for a wide range of focus and beam shaping options. Both standard and custom configurations provide cost-effective solutions for any size or scope of business.

Key Features

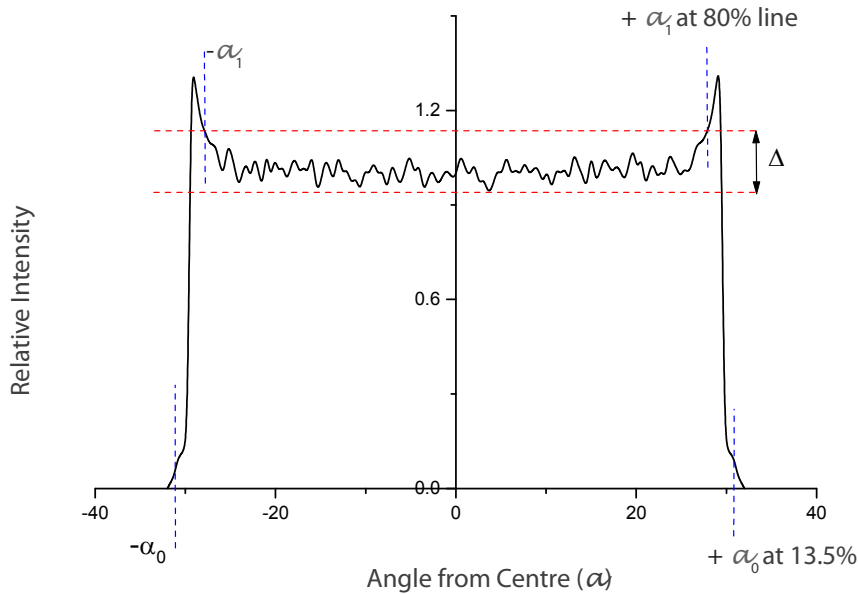
- Flat mounting surface for instant beam alignment
- Easy externally adjustable focus
- Excellent uniformity
- Line width of 30µm at 120mm
- Available with a wide range of options including wavelengths, power levels, intensity control and strobe

Key Applications

- 3D measurement
- High speed sorting & classification
- High precision alignment
- Automated inspection

Uniformity

InViso lasers can deliver a range of uniformities dependent on customer requirements. The graph below shows a typical intensity profile along the length of a line and our method for defining the uniformity and beam angle. InViso achieves a standard uniformity of $\pm 22.5\%$. A higher uniformity option is available with a uniformity of $\pm 12.5\%$.



I : Optical power

$2\alpha_0$: Fan angle

$$\alpha_1 = 2 \operatorname{Arctan} \left(0.8 \tan \frac{\alpha_0}{2} \right)$$

$$\Delta : \operatorname{Max} I(-\alpha_1, \alpha_1) - \operatorname{Min} I(-\alpha_1, \alpha_1)$$

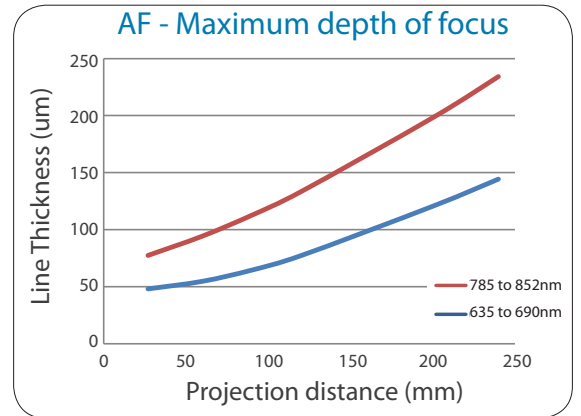
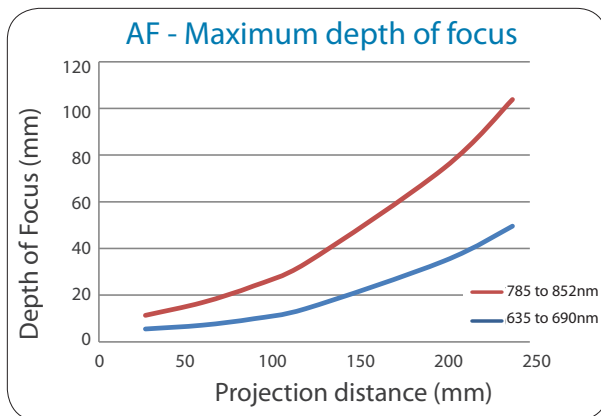
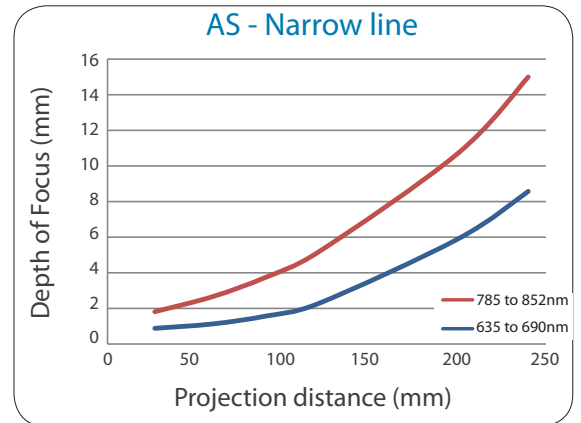
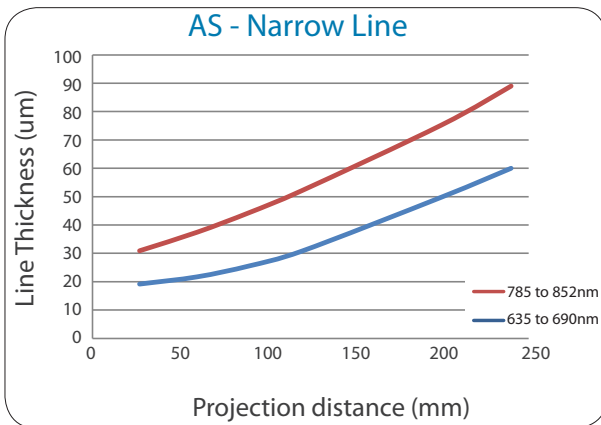
$$\text{Uniformity} = \pm \frac{\Delta}{2I(-\alpha_1, \alpha_1)} * 100$$

$I(-\alpha_1, \alpha_1)$: average intensity between $(-\alpha_1, \alpha_1)$

Uniformity		
S	Standard	$\pm 22.5\%$
H	Higher	$\pm 12.5\%$

Focusing and Depth of Focus performance

The following graphs show the focusing and depth of focus performance of InViso at different wavelengths, representing two different optical configurations. AS will provide a narrower line while AF will provide a greater depth of focus. The focus charts indicate the minimum line thickness achievable for a specific projection distance. The depth of focus is defined as the region around the nominal working distance where the line width does not increase by more than a factor of $\sqrt{2}$.



Product Specifications

Mechanical Specifications	
Weight	<90g
Housing Material	Anodized Aluminum
Protection Category	IP56
Electrical Isolation	Potential-free Housing
Bore Sighting	<1mrad

Wavelength (nm)	Diode Power Options (mW)							
	1	5	10	15	30	35		
635	1	5	10	15	30	35		
660	1	5	10	20	35	50	80	100
670	5	10	15					
690	20	35						
785	35	50	100					
830	50	100						
850	50							

Other wavelengths and power levels are available on request

Please Note: Power Levels refer to diode power. Output power will vary depending on the optical configuration

Electrical and Environmental Specifications	Min	Max
Input Voltage	5VDC	30VDC
Input Current	Up to 200mA	
Mode of Operation	Automatic Power Control with current limiting	
Optical Power Stability	±3%	
Operating Temperature*	-10°C	40°C
Storage Temperature	-10°C	80°C
Reverse polarity voltage	-30VDC	
Digital Modulation	TTL, DC up to 1MHz	
Analog Modulation	0 - 3.3VDC, DC up to 100kHz	

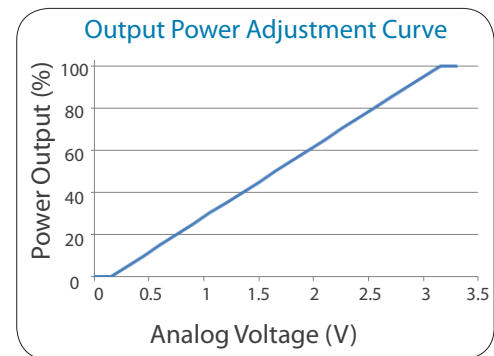
*Module surface temperature

Fan Angle
10°, 20°, 30°, 45°, 60°, 75°, 90°

Diffractive Options	
L01	1 Line
L05	5 Lines
L07	7 Lines
↓	↓
L65	65 Lines
S01	Spot
X01	Crosshair

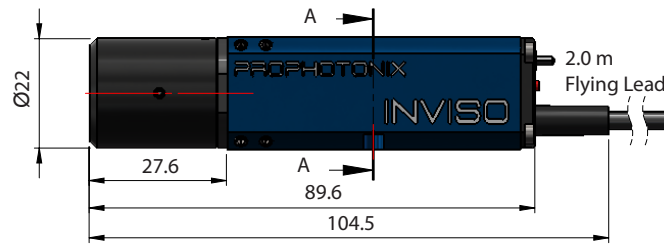
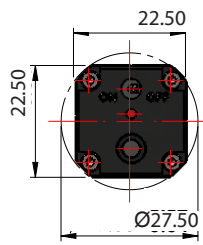
Other Diffractive Options are available on request

Electronic Options	
S	Standard
A	Analogue Control
T	TTL Modulation
B	Both Analogue & TTL



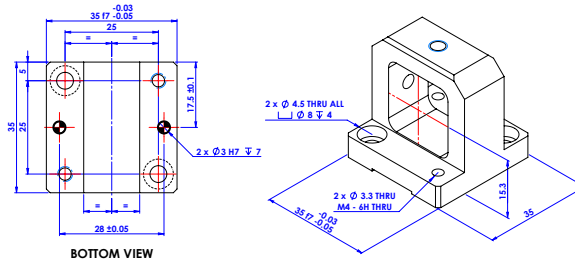
Custom Solutions

ProPhotonix specializes in custom solutions and can provide other wavelengths, diode powers and optics if required.



Analogue and TTL connection via SMA connectors

To order your InViso mounting bracket use V-MOUNT-001



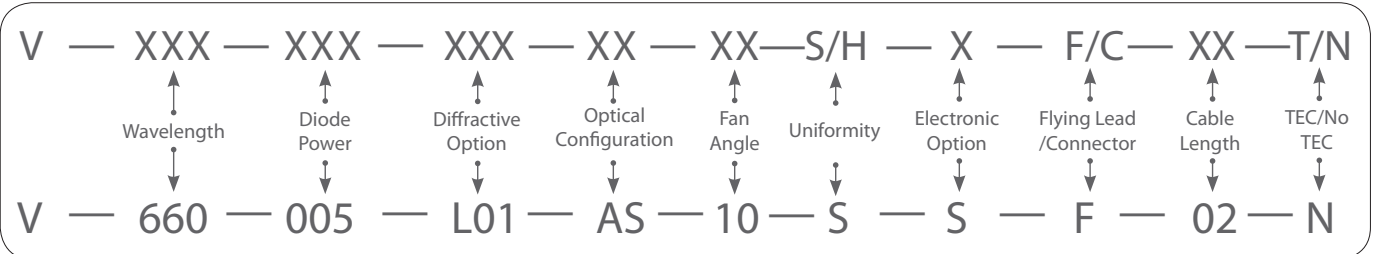
Electrical Connection		
F	Flying Lead	See Drawing
C	Connector	LEMO FGG OB Series

Part Numbers

InViso Lasers are covered by a 2 year warranty.

To order your InViso Laser use the product code V – Select Wavelength(XXX)- Select Diode Power (XXX) – Select Diffractive Option (XXX) - Select Optical configuration (see graph) (XX)- Select Fan Angle (XX) – Select Standard or Higher Uniformity (S/H) -Select Electronic Option (X) – Select Flying lead/Connector – Select Cable Length in metres (XX)- Select TEC/No TEC (T/N)

E.G. V – 660 – 005 – L01 - AS -10 – S –S –F – 02 – N



Laser Safety Information

Our lasers are compliant with IEC 60825 standards. For further information please contact us.

250112

North/South America Sales

32 Hampshire Road
Salem, NH 03079
sales@prophotonix.com
Tel: +1 800-472-4633
Fax: +1 603-898-8851

LED Solutions

3020 Euro Business Park,
Little Island, Cork, Ireland
sales@prophotonix.com
Tel: +353-21-5001313
Fax: +353-21-4297749

Laser Solutions

Sparrow Lane, Hatfield Broad Oak
Hertfordshire, CM22 7BA, UK
sales@prophotonix.com
Tel: +44-1279-717170
Fax: +44-1279-717171

ProPhotonix and the ProPhotonix logo are trademarks of ProPhotonix, Inc. All other brand and product names are trademarks or registered trademarks of their respective holders. Copyright © 2012 ProPhotonix, Inc. Printed in the USA. All rights reserved.



Visit us on the Web: www.prophotonix.com