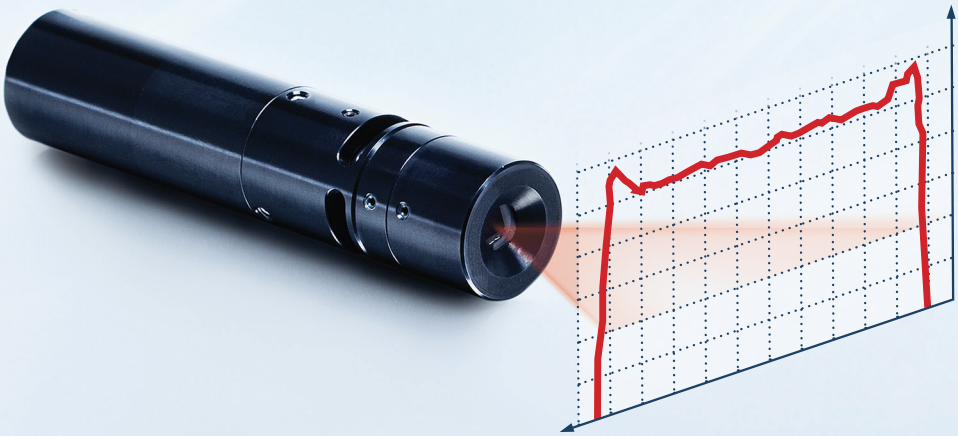
Osela Inc.

STRUCTURED LIGHT AND
LASER BEAM SHAPING SOLUTIONS

STREAMLINE LASER



INSTRUCTION MANUAL

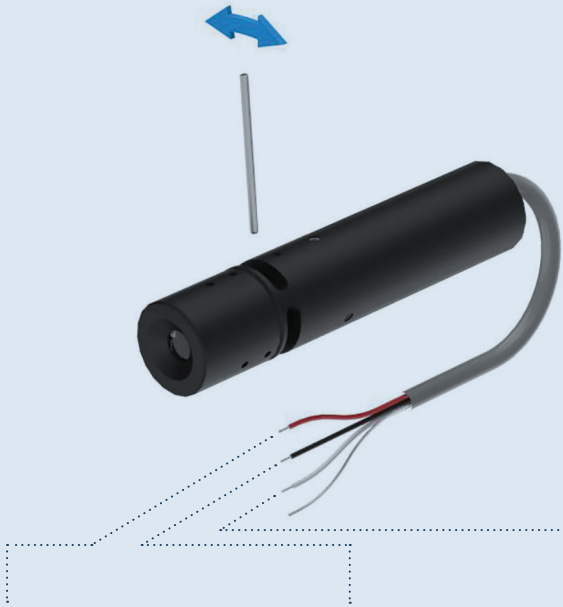
WARNING!

The laser light emitted by this unit may be in the infrared (non-visible) region of the electromagnetic spectrum. Avoid Exposure to direct or scattered radiation from the laser. Use extreme caution at all times when the laser is in use.

The output power of these laser devices is sometimes high enough to cause permanent damage to the human eye. You should wear appropriate laser safety goggles at all times when the laser is operational. All laser safety warning labels are provided on the unit and be taken into note. Warning labels comply with IEC-60825.1:2014.

OPERATING THE LASER

- The laser can be focused with the aid of a 1/16" dowel pin provided with the laser, or any other similar tool
- Fit the dowel pin in the notches as shown in the image. A half turn either way will allow you to move the focal point throughout its focus range from 100mm to infinity
- NOTE: some lasers (i.e. Micron Focus) have a factory set pre-focus, dowel pin will not be provided
- **As on Option**, Laser can be equipped with a trim potentiometer found on back of laser to linearly adjust intensity from 100% to 0%. Use an appropriate sized flat head screwdriver.



RED LEAD

- Connect to DC power supply
- The green LED on back of laser will be ON when the laser is emitting radiation

BLACK LEAD

- Connect to ground

WHITE LEAD

- Can be used for modulation using an analog signal.

Clamping area = For optimal performance and lifetime of the laser, fixing the laser using a C-mount bracket (or any bracket with increased contact area) is recommended. The designated clamping area of the laser can be found on the mechanical drawing in the Datasheet.

Refer to electronics table in troubleshooting section for operating voltages for your specific laser configuration.

OPERATING ENVIRONMENT

The lasers operating temperature range is from -10°C to 50°C. As a protection, at approximately 45°C the lasers will automatically shutdown. Full operation will resume once the laser falls within its normal working temperature range.

It is important to note, as a general rule of thumb the laser lifetime decreases 50% for every 10 degree increase in operating temperature.

Using a heat sink with the laser is recommended. As with all semiconductor materials, avoid exposure to electrostatic discharges.

Operate the laser in an environment in which there is normal aeration.

LASER SAFETY

It is extremely important to follow laser safety and wear appropriate eyewear when working around lasers. Do not shine laser in the direction of other people or at reflective surfaces that might cause exposure to the human eye. Do not intentionally mount laser at eye level.

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure. Modifications, which affect any aspect of the product's performance or intended functions, will require re-certification of the product in accordance with the provisions of 21CFR 1040.10 and 1040.11.

Class 3B lasers are not intended for use in surveying, leveling, alignment, or medical applications. Laser classification is performed according to United States Center for Devices & Radiological Health (CDRH) document 21 CFR 1040.10, and or the International Electro Technical Commission (IEC) document 60825-1:2nd edition.

CLASS 1M	Denotes lasers that do not pose a hazard under normal or single fault conditions. No risk to eyes including use of optical instrument. No risk to skin. Laser emitting devices are lasers that are safe under reasonably foreseeable conditions of operation, including the use of optical instruments for intra-beam viewing.
CLASS 2M	No risk to skin. Includes lasers emitting visible radiation (400 nm to 700 nm) where eye protection is normally provided by an aversion response (blink reflex). No risk to eyes for short time exposure including use of optical instruments. This means that the low power light is not intended for direct viewing.
CLASS 3R	Direct intra-beam viewing is potentially hazardous; a label must be used.
CLASS 3B	Denotes lasers that pose a hazard when viewed directly, whether magnifying viewing aids are used or not.

PRODUCT WARRANTY

The laser is guaranteed to be free from material & manufacturing defects for a period 12 months (diode dependent, please inquire) from the date of shipment. Should the product fail during this period, the company will, at its discretion, repair or replace the damaged unit. The repaired or replaced unit will be covered for the remainder of the original equipment warranty period. The warranty does not apply to the units examined by the company that are found to have failed due to abuse, acts of nature, mishandling, alteration, improper installation or negligence.

Removal of the laser safety sticker renders warranty null and void. All returns require a Return Merchandise Authorization number (RMA#). This number can be obtained by contacting the distributor from which the unit was purchased.

TROUBLESHOOTING

Please see table for some tips if laser is not operating as specified.

ISSUE	VERIFY THE FOLLOWING						
	Diode Wavelength	Power Supply Input Voltage		Modulation (White lead)			
		Standard Offering	Optional	Synchro (S)	Reverse Synchro (RS)	TTL (T)	TTL (RT)
Laser is not emitting or low output power	Above 600nm	Red Lead = 5VDC Black lead = Ground	Red Lead = 5-24VDC Black lead = Ground	0-0.7VDC = 100% optical power 0.7-4.2VDC = linear decrease 4.2-5VDC = 0% optical power	0-0.7VDC = 0% optical power 0.7-4.2VDC = linear increase 4.2-5VDC = 100% optical power	0-2VDC = 100% optical power 3-5VDC = 0% optical power	0-2VDC = 0% optical power 3-5VDC = 100% optical power
	Below 600nm	Red Lead = 9-30VDC Black lead = Ground	Red Lead = 5VDC Black lead = Ground	0-0.7VDC = 100% optical power 0.7-4.2VDC = linear decrease 4.2-5VDC ≈ 0%	0-0.7VDC = 0% optical power 0.7-4.2VDC = linear increase 4.2-5VDC = 100% optical power	0-2VDC = 100% optical power 3-5VDC = 0% optical power	0-2VDC = 0% optical power 3-5VDC = 100% optical power
Laser line is too thick	Please use the focusing tool to focus the laser at projection plane						
Laser line is incomplete or deformed	Please verify that the front screen of laser is clean and clear of any obstructions						

If you are encountering any of these issues and the above recommendations do not work, or an issue that is not listed, please contact the company you purchased the laser from for assistance.