

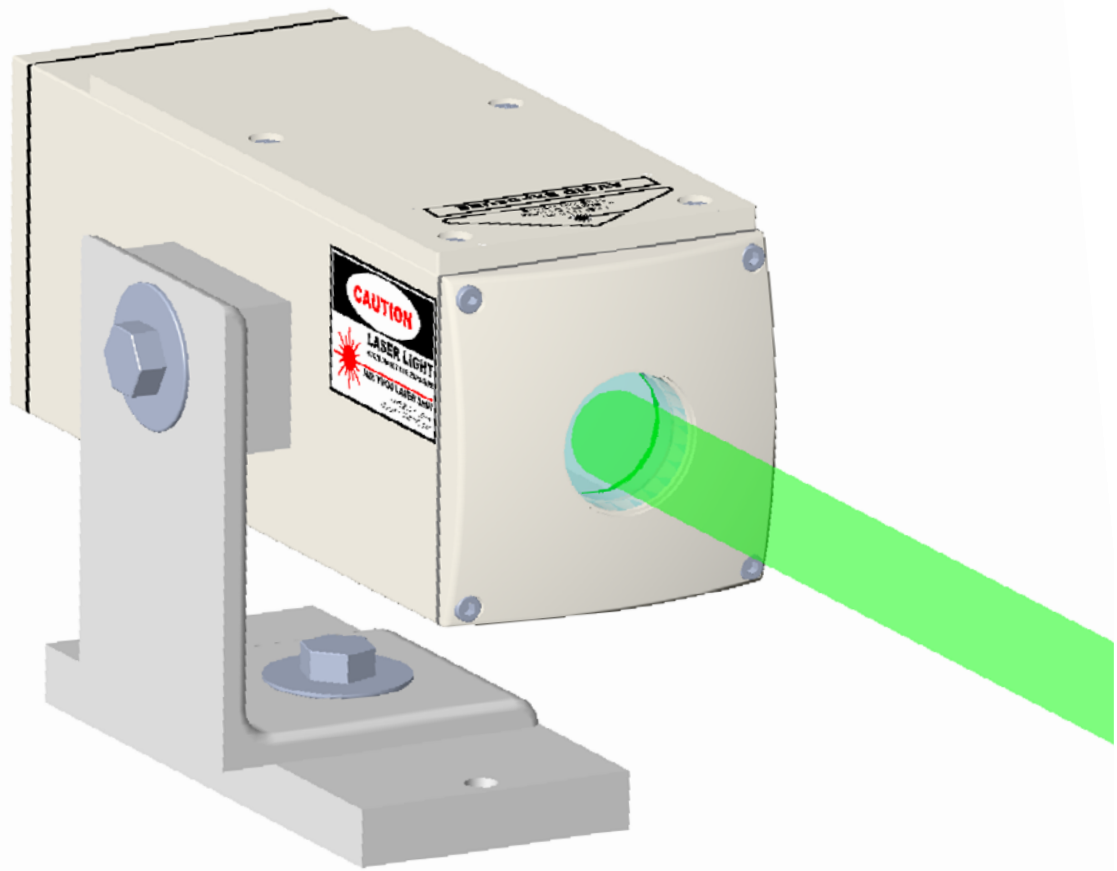
# **L LASERLINE MFG., INC.**

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## **GL3000PM** **OWNER'S MANUAL** **Guidance Alignment Laser**



**DISTRIBUTED BY:**



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# GL3000PM

## OWNER'S MANUAL

### Guidance Alignment Laser

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# SYSTEM OVERVIEW: WHAT IT DOES & HOW IT WORKS

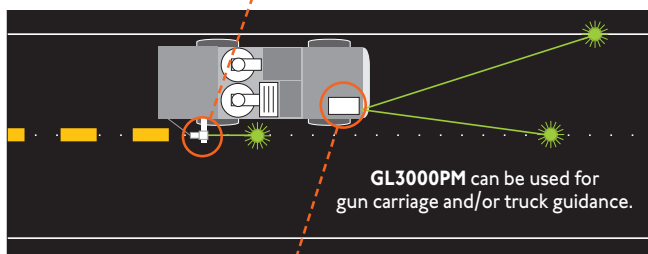
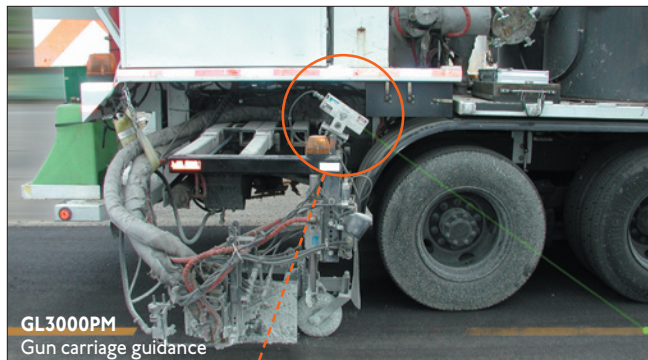
## The GL3000PM Guidance Alignment Laser

### THE SYSTEM

The GL3000PM Laser uses an ultra high visibility green laser to establish visual line control for your paint striping machine, gun carriage package, asphalt distributor, road widener, pavement profiler or virtually any application requiring vehicle line control.

The Operator adjusts the laser spot to the desired reference point on the road surface manually at the laser. The laser spot is impacted directly on the road surface and shows the Operator exactly where the vehicle is relative to “on line.” The laser spot is on the road ahead of the Operator so that the reference is in the driving field of view instead of a T.V. screen or boom pointer.

It is fast to set up and easy to use.



### THE PRODUCT

- Main Housing — Weatherproof, containing optic plate mounting platform, micro processor electronics, laser, laser mounting assembly, laser driver board, automatic cooling and heating system. The entire unit is dry nitrogen purged to protect all components.
- 20 Feet of Interconnect Cable with a waterproof, mil spec, in-line connector mounted between the laser main housing and the control panel mounted in the cab.
- Control Panel allows the Operator to turn the unit on and off on the manual version as well as aim the laser spot toward or away from the vehicle as well as left and right on the remote control version.
- 5 Feet of 12 Volt DC Cable running from the control box for connection to vehicle's 12 V power.

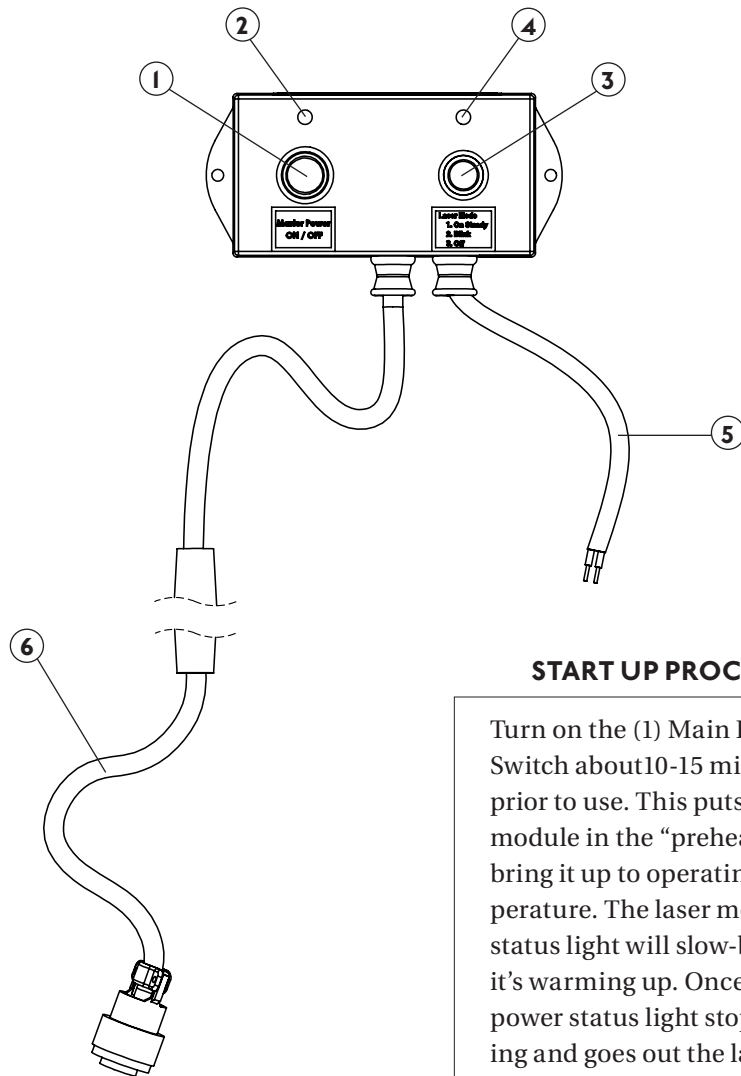
### THE ADVANTAGES

- For truck control, you can set your reference 20 to 30 feet out in front of the vehicle impacting on the road. For gun package control the laser is used to give the Operator “head’s up” time to move the gun package in and out for easy and precise alignment.
- You are looking in your natural driving field of view at the reference point.
- You can reduce or eliminate pre-marking and the high cost associated with it.
- Eliminates using a boom and the problems associated with it such as bouncing on rough surfaces, safety, and the mechanical size and constraint of the mechanism.
- Safer! Paint up to intersections without the worry of injury or damage to people or other vehicles caused by mechanical arm extending out in front of the truck.
- Eliminates having to drive looking at a T.V. screen instead of the road. Reduces or eliminates the problem of “white-out” in low sun conditions.
- Greatly increases the machine’s maneuverability.
- Much less strain on the Operator. It reduces fatigue and increases skill load.
- It’s more versatile. It’s easier. It’s faster. It’s safer.

# OPERATOR CONTROLS

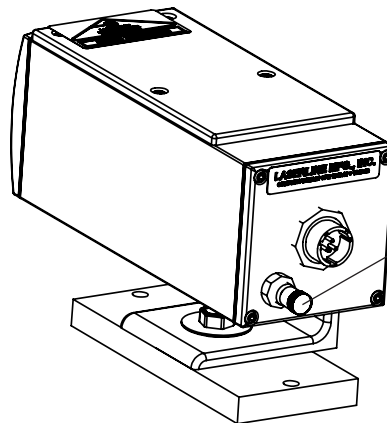
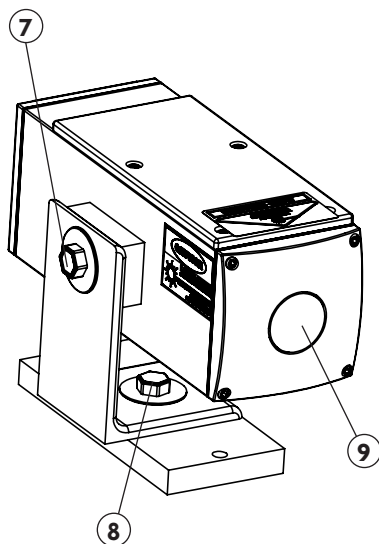
## CONTROL BOX

- 1 Main Power Switch
- 2 Power Indicator Light  
Main System
- 3 Laser Mode Switch  
1st depression = On Steady  
2nd depression = Blink Mode  
3rd depression = Off
- 4 Laser Status Light
  - On Steady
  - Blinking
  - Off
- 5 Power Cable to Vehicle 12 VDC.  
White wire positive.  
Black wire to ground.  
*Note: Attach to minimum 10 amp  
circuit using minimum 16 gauge wire.*
- 6 Laser Control Cable.



## POINTING: MECHANICAL

- 7 Loosen for Vertical Pointing  
(Range plus/minus 18 degrees)
- 8 Loosen for Horizontal Pointing  
(360 degrees)
- 9 Beam Exit. Turn Laser Off  
Before Cleaning



**WARNING! Do not open or tamper with purge valve. Laser is filled with dry nitrogen to prevent moisture from damaging optics.**

## START UP PROCEDURE

Turn on the (1) Main Power Switch about 10-15 minutes prior to use. This puts the laser module in the “preheat” mode to bring it up to operating temperature. The laser mode power status light will slow-blink while it’s warming up. Once the laser power status light stops blinking and goes out the laser will be ready to turn on—push (3) Laser Mode Switch once for on steady, push twice for on blinking—third push shuts off the laser.

# MAINTENANCE, SERVICE & INSTALLATION SUGGESTIONS

## MAINTENANCE

The only maintenance that may be required is:

- Periodically clean the Exit Window of the GL3000PM. Do this with a soft cloth or Kleenex. Be careful not to scratch the glass.

*Note: Always turn off power to the laser then cleaning the Exit Window.*

## SERVICE

No service is required and no service is to be performed by the Customer. Only LaserLine Mfg., is authorized to perform service. Any opening, tampering with, or modifying the GL3000PM Laser Housing by anyone other than LaserLine Mfg., Inc. will void the warranty.

**Warning!** Under no circumstances, attempt to open or disassemble Laser Housing. Doing so may cause exposure to potentially hazardous levels of laser radiation.

## INSTALLATION SUGGESTIONS

1. Mount the GL3000PM Laser on the vehicle at least 5 feet off the ground. Most Operators prefer to mount the laser on top of the cab. The higher up the laser is mounted, the farther ahead of the vehicle you can aim the laser. When using the GL3000PM for guiding the gun package in lieu of the vehicle, the laser can be set up as low as 2-1/2 to 3 feet. (See Fig. 1 for details.)

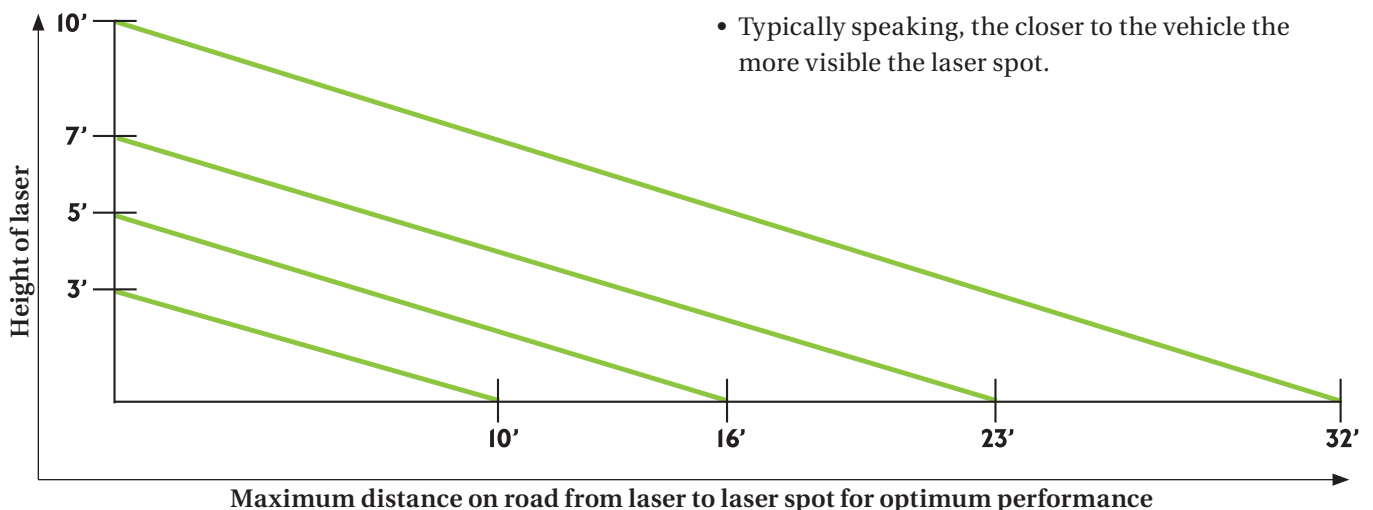
For best daylight visibility of the laser spot use the distance versus height chart (Fig. 1) as the maximum distance away from the laser the spot should be — closer will be brighter, farther away will be dimmer.

2. The laser must be mounted to a stable surface. If the laser base is vibrating (too flimsy a mount) on the vehicle, the vibration is magnified at the laser spot and can make it difficult to see. Stability of the laser mount is very important.

3. **Warning!** Do not mount the laser inside the cab and shoot the laser beam through the windshield without the use of a boot. This is an unsafe practice as the laser beam can reflect back off the windshield into the Operator's eyes (back scatter). Contact the factory for details.

4. **Warning!** Do not mount the GL3000PM laser unit in a location that allows the laser beam to be directed to hit any shiny or reflective surface on the vehicle such as chrome, side mounted rear view mirrors, or glass surfaces.

**FIG. 1 VEHICLE HEIGHT TO LASER SPOT ON ROAD CHART**



# USING THE GL3000PM LASER

## USING THE GL3000PM

1. Turn on the Main Power Switch about 10-15 minutes prior to use. This puts the laser module in the “preheat” mode to bring it up to operating temperature. The laser mode power status light will slow-blink while it’s warming up. **Once the laser power status light stops blinking and goes out the laser will be ready to turn on—push (3) Laser Mode Switch** once for on steady, push twice for on blinking—third push shuts off the laser.
2. Place vehicle at your desired location on the road.
3. Aim the laser spot to the desired reference point on the road; i.e. existing centerline stripe, road edge, etc. Once you have located the laser spot as your reference, as you are driving the spot will indicate your position relative to “on” center. If you are moving too far to the right, the laser will be to the right of your reference. If you are moving too far to the left, the laser will be to the left of your reference. The laser spot is designed to be used as a reference about 15 to 35 feet in front of the vehicle. The laser spot reference on the road usually appears the brightest at this distance.
4. Leave the Main System Power switch “On,” but turn the laser switch “Off” when taking an extended break, such as lunch. The electronics and cooling system will stay active so no warming up time is needed when the laser is turned back “On.”
5. The laser spot reference ahead of you is more visible or less visible depending on conditions such as the surface you are driving on and the brightness and location of the sun. One of the worst conditions is driving into low sun on new asphalt. This creates a condition where the surface looks almost white from all the glare.
6. Laser Enhancement Glasses (part number 3000-0435) block out glare and increase laser spot visibility for the driver in daylight operations.

# GL3000PM SPECIFICATIONS

<b>Laser</b>		532nm Class IIIA	<b>Laser Housing and Mount</b>	
<b>Power</b>		11 - 15 Volt DC Positive or Negative Ground	Height	5-3/8 Inches
<b>Power Draw</b>		4.00 Amps (Maximum Operating)	Length	7-7/8 Inches
		0.03 Amps (Sleep Mode)	Width	4-1/4 Inches
<b>Recommended Ambient</b>			<b>Cable Length From Laser Housing to Control Box</b>	20 Feet
Operating Temperature	+36°F to +120°F / +2.2°C to +48.8°C		<b>12 Volt Power Cable Length from Control Box</b>	5 Feet
Storage Temperature	-40°F to +150°F / -40°C to +65°C		<b>Shipping Weight</b>	20 Lbs.

# GL3000PM WARRANTY

This product is guaranteed against defects in materials and workmanship with parts and labor, under normal working conditions from one year from the date of purchase, except as noted herein.

LaserLine Mfg., Inc. liability under this warranty is limited to repairing or replacing any product returned to an authorized service center for that purpose. Any evidence of attempts to repair this unit by other than factory authorized personnel automatically voids the warranty.

**Warning! Under no circumstances, attempt to open or disassemble Laser Housing.**  
**Doing so may cause exposure to potentially hazardous levels of laser radiation.**

## FACTORY SERVICE CENTER

LaserLine MFG., INC.  
 1810 S.E. First Street, Suite H,  
 Redmond, OR 97756

**FACTORY SERVICE:** New Product Warranty service policy for new products stated above.

**SERVICE WARRANTY:** 1 year on replacement Parts, 90 days on Labor.

**FOR ALL WARRANTY:** Call **Order Processing** for RMA # at 541-548-0882. The Unit will be repaired and returned by prepaid freight.

## NON-WARRANTY

Send to: LaserLine MFG., INC. at above address.

# LASER SAFETY CONSIDERATIONS

When operating Class IIIa lasers with an output of less than 0.005 watts (5mW):

1. Operators and crew members shall read this manual and become familiar with all-operating procedures and Safety considerations on the vehicle.
2. Post at least one 10" x 7" Laser warning placard (Item 1) at each laser location.
3. Turn the laser off when it is not required or if left unattended.
4. Don't look directly into the laser or at the Laser Spot on a reflective surface. DO NOT point the laser at another person.
5. Set the laser up well above the heads of employees when possible. Otherwise, set it up well below.
6. Have "Laser Operator Training and Qualification" card (Wallet size) (Item 2) in the possession of individual responsible for laser operation.

## 1). Warning Placard



## 2). Operators Card

**LASER OPERATOR TRAINING AND QUALIFICATION CARD**

By signing below, \_\_\_\_\_  
indicates that he is familiar with the laser safety consideration on the reverse  
side of this card and is qualified to operate Laserline Manufacturing, Inc. laser  
with a power output of less than 0.005 watts. (5 mW)

\_\_\_\_\_  
Operator's Signature                      Date

This card must be kept in the laser operator's possession

**Laserline MFG., INC**                      1810 SE 1<sup>st</sup> St., Suite H  
Redmond, OR 97756  
Ph. 541-548-0882

Front

**Laser Safety Considerations**

When operation laser with an output power of less than 0.005 watts (5 mW)

1. Post at least one LaserLine laser warning placard at each laser location.
2. Turn the laser off when it is not required or is left unattended for a substantial period of time.
3. Do not look directly into the laser or point the laser at another person unless a fan lens is in use and the viewer is at least 500 feet away.
4. Set the laser up well above the heads of employees when possible: otherwise, set it up well below.

Back



# LASER SAFETY

The GL3000 Series Laser is a Class IIIa Laser Product generating less than 5 milliwatts of Laser Light. Class IIIa Lasers are used every day in construction and alignment applications. With every use, eye safety is a consideration.

The Operators of the laser are effectively the “Safety Persons”, and should think of themselves as the person responsible for preventing accidents and unwanted exposure.

Viewing or looking at the laser spot impacted on the road or highway is normal operating procedure for the GL3000 and is how the product is used for guidance applications. There is no known danger or hazard to the Operator or Driver using the laser in this manner.

## SAFETY CONSIDERATIONS:

- When installing the GL3000 Laser, do not mount the laser inside the cab and shoot the laser beam through the windshield. This is an unsafe practice as the laser beam can reflect back off the windshield into the Operator's eyes (backscatter).
- Do not mount the GL3000 Laser in a location that allows the laser beam to be directed to hit any shiny or reflective surface on the vehicle, such as chrome, side mounted rear view mirrors, or glass surfaces.
- Class IIIa Lasers are bright lights that can or may be aimed. Be aware of people and your surroundings.
- Therefore, think of the laser as the sun, something you do not stare back into. Do not look at the laser through optical devices, or look at it reflected off of shiny surfaces such as chrome, glass or mirrors.

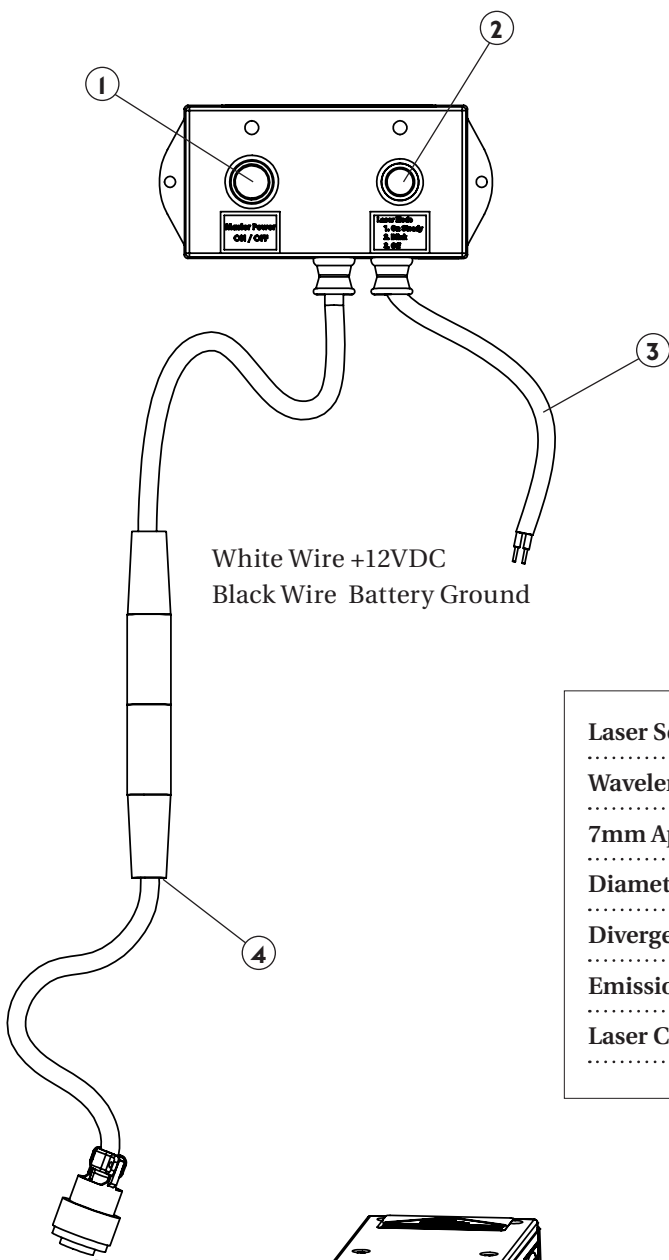
**CAUTION! The use of optical instruments with this product will increase eye hazard.**

- Viewing the laser beam or a reflection of the beam with optics, such as binoculars or cameras can be hazardous because they can gather or concentrate the laser right to the eye.
- Turn laser off in the event of potential exposures: i.e., stopped at a crosswalk in the vicinity of pedestrian traffic. Watch for the reflection off of bumpers, windows, etc.

**CAUTION! Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.**

**WARNING! Under no circumstances open or disassemble laser housing. Doing so may cause exposure to potentially hazardous levels of Laser Radiation.**

# CONTROLS & EMISSIONS

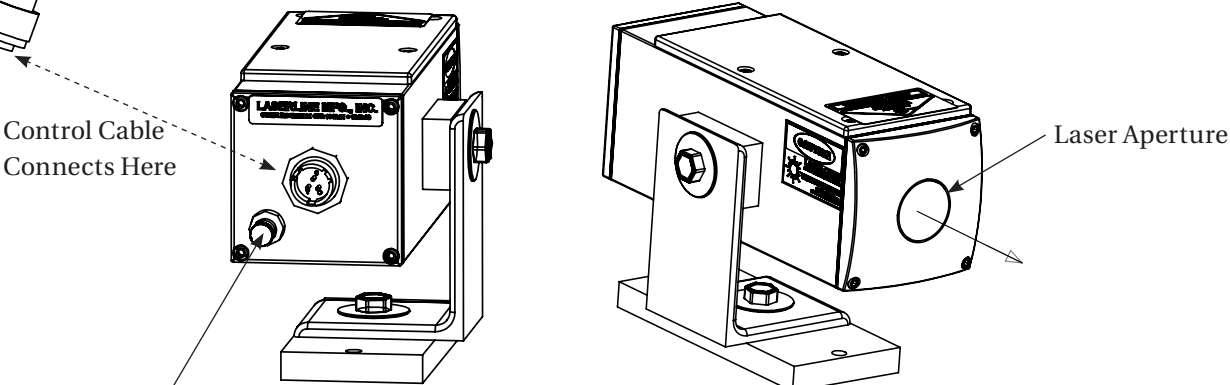


## CONTROLS

- 1 System Power Switch with Red LED
- 2 Laser Mode Switch with Green LED  
1st depression = On Steady Mode  
2nd depression = Blink Mode  
3rd depression = Off
- 3 Power Cable to Vehicle 12 VDC
- 4 Laser Control Cable

## LASER SPECIFICATIONS

Laser Source	YAG
Wavelength	532nm
7mm Aperture Power at 20cm Distance	< 5mW
Diameter	25mm
Divergence	< 0.1mrad
Emission	CW or 2Hz
Laser Class	IIIa

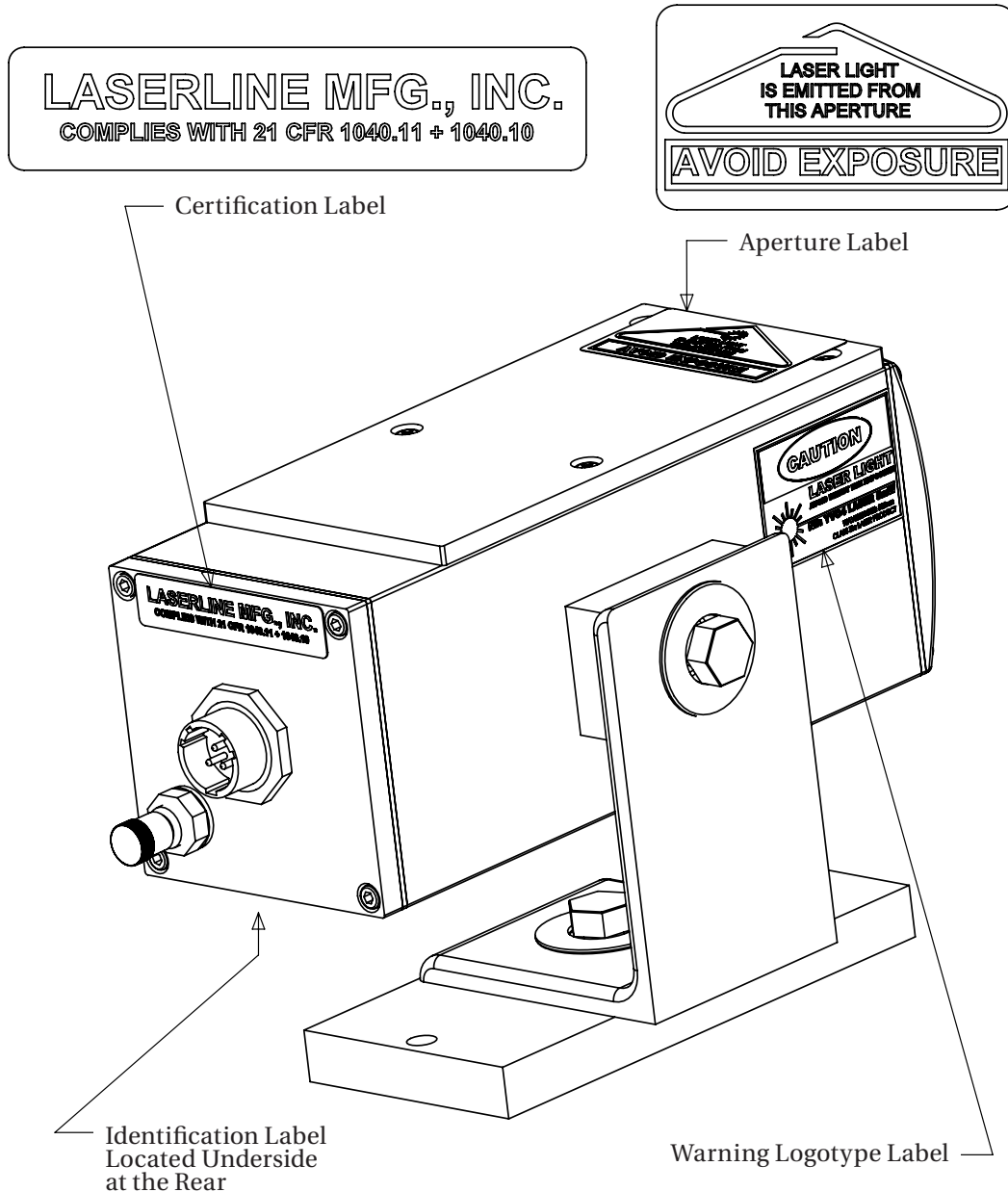


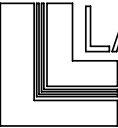
### WARNING!

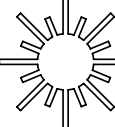
Do not open or tamper with purge valve, front, rear or top covers. Laser is filled with dry nitrogen to prevent moisture from damaging optics. No user access to interior components! Removal of covers will violate IEC/OSHA Regulations and Factory Warranty.

# GL3000PM PRODUCT LABELING

Note: Maintain these labels in there proper locations.



	<b>LASERLINE MFG., INC.</b> 1810 SE FIRST ST. SUITE H REDMOND, OR. 97756, USA
MODEL	<input type="text"/>
SERIAL	<input type="text"/>
MFG'D	<input type="text"/>

<b>CAUTION</b>	
<b>LASER LIGHT</b> AVOID DIRECT EYE EXPOSURE	
	ND: YVO4 LASER 5mW WAVELENGTH: 532nm CLASS IIIa LASER PRODUCT