

QUAD 1000H DU

VERTICAL CONTROL LASER OWNERS MANUAL



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QUAD 1000HDU Laser Package Includes:

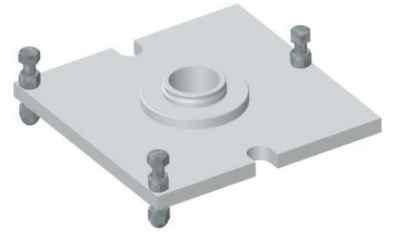
QUAD 1000HDU Laser *P/N 4003-0000-U*

5 arc second zenith (Upward) laser featuring electronic servo self-leveling with variable temperature compensation for the most accurate and consistent readings. Features a downward shooting plumb laser for getting over your point. Upward zenith laser up to 2,000 feet (609.6 meters) and one button operation with bright backlit LCD display. Waterproof and dry nitrogen charged.



Mounting Trivet Plate *P/N 4003-0002*

3 point leveling base with quick disconnect rotational mount for QUAD 1000HDU laser.



(2) Alignment Targets *P/N 4001-0010*

"Ultra-bright" bulls-eye for the most visible and precise readings at any distance. Targets feature laser pass through allowing multiple readings at one time, special hard coating that protects the graphics on the target face and two ¼ inch holes for custom mounting.



Carrying Case *P/N 3000-0182*

Blow molded, custom fit foam inserts and two locking latches for securing your items.



Power Cord, *P/N 2020-0203*

3 Pin Military grade connector with positive and negative alligator clips. Length=20 Ft. (6.096 Meters)



***OPTIONAL:** *P/N 1140-3*

The 1140 Series Power Converter will run your laser at 13VDC with 90 to 260 VAC. The 1140 senses what voltage it is hooked up to and automatically runs the laser on that voltage.



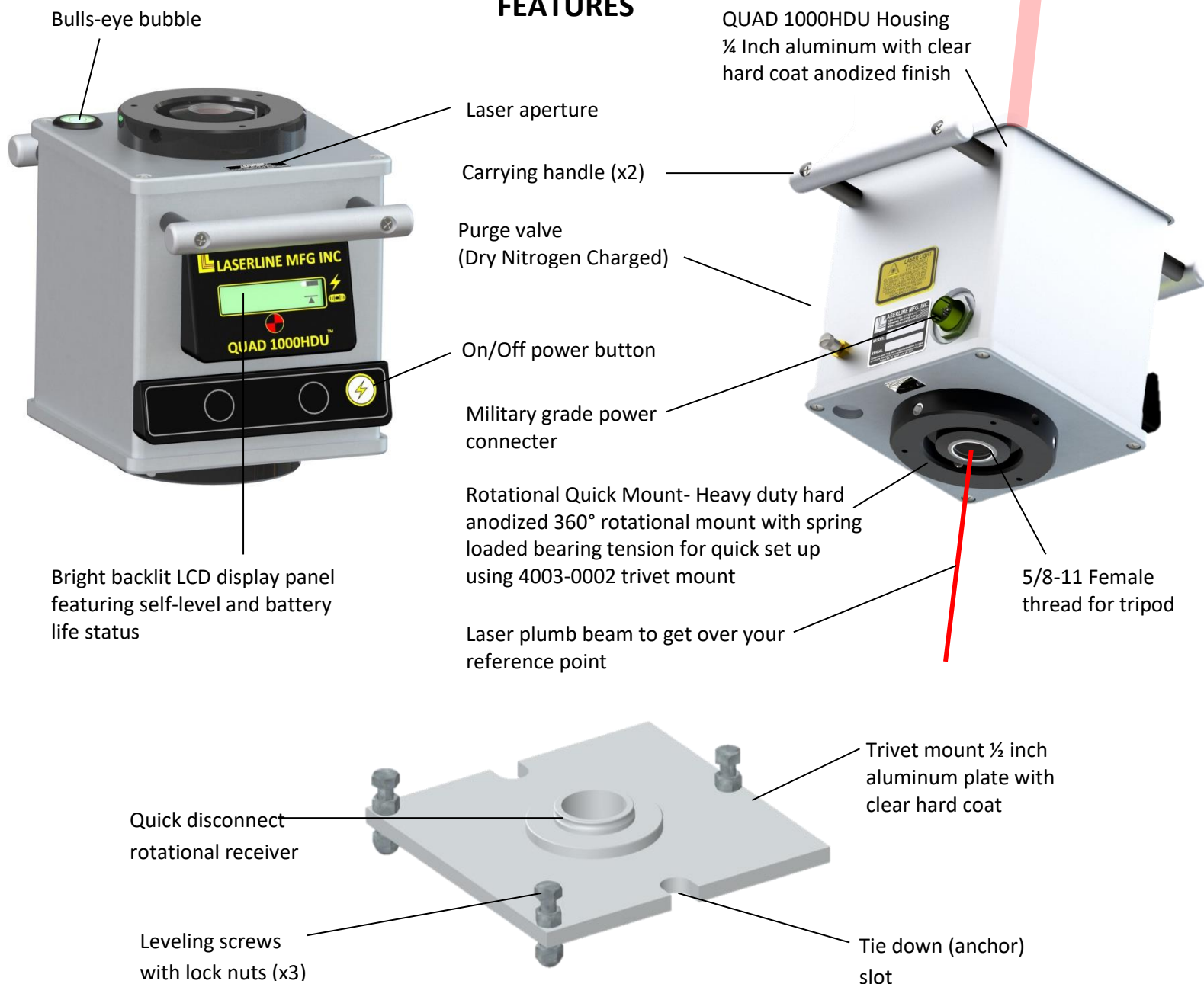
OVERVIEW

The Quad 1000HDU projects a precise laser beam straight up (Zenith) to 2,000 feet/609.6m for the purpose of providing plumb control for your project. It also features a short range downward shooting laser beam that is used like a plumb-bob or optical tribrach to easily get directly over your point.

The Quad 1000HDU is a self-leveling instrument with electronic temperature compensation. It measures or senses ambient temperature changes while in operation and continually recalibrates itself to maintain the highest degree of accuracy possible. This insures consistent, accurate readings for plumb control on your project throughout the course of the job.

- ✓ **Accurate:** ± 5 arc seconds ($\pm 1/32$ inch per 100 feet) (.793mm per 30.48 meters)
- ✓ **Long Range:** Provides zenith plumb control up to a height of 2,000 feet (609.6 meters)
- ✓ **Rugged:** Heavy duty $\frac{1}{4}$ inch thick aluminum housing with hard coat anodized finish
- ✓ **Dust and waterproof:** Purged and dry nitrogen filled with IP67 rating

FEATURES



WHAT HAPPENS WHEN YOU POWER-UP?

The Quad 1000H DU is activated and controlled by a single button. When you push the power button, the unit begins to self-level. Leveling status and battery power are displayed on the LCD screen. The downward shooting smaller beam (plumb-bob) is activated and will be blinking. Once the Quad has self-leveled to within its operating spec, the plum-bob laser comes on steady and the long range upward (Zenith) shooting laser beam is activated.

Self-leveling time is normally under ten seconds. After five minutes has elapsed, the downward shooting plumb-bob laser automatically shuts off to save battery power. If at a later time you want to check to see if you are over your point, just push the power button to **OFF**, then push again to **ON**. This will activate the plum-bob laser for five more minutes.



SETTING UP

Note: Always set the Quad 1000HDU on the ground floor or lowest floor possible and leave it in that location for the duration of the job. Do not move the Quad 1000HDU up from floor to floor as the building progresses. This can create compounding errors.

USING THE TRIVET MOUNT: *(This is the preferred method)* It keeps the instrument low to the deck and closer to your reference point. Also, since the unit is only inches off the ground, it won't be so vulnerable to getting knocked over like with a tripod.

- Attach the Quad 1000HDU to the quick disconnect rotational receiver mount.
- Place the trivet over your reference point on the ground floor.
- Level the Quad 1000HDU bulls-eye bubble by using the 3 adjustable leveling bolts on the trivet mount.
- Power up the Quad 1000HDU and allow it to self-level. The plumb-bob laser will blink until it has leveled.
- Once leveled, slide the trivet until the plumb laser is directly over your point. The instrument is now projecting a beam reference at Zenith



USING A TRIPOD:

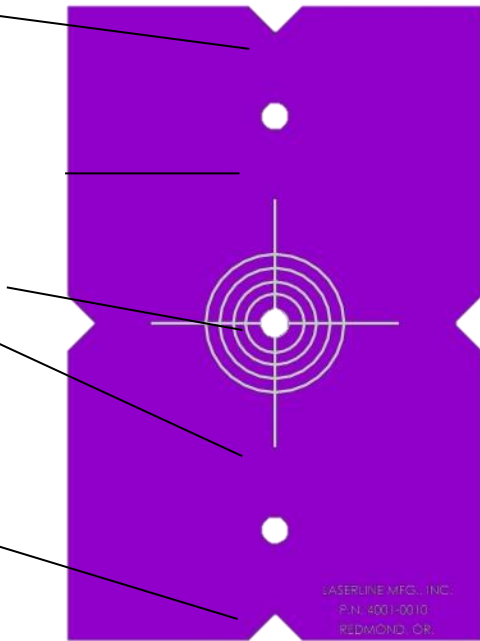
(Standard Flat Head with 5/8 x 11 Attachment)

- Set the tripod over your point on the ground floor with the head fairly level.
- Attach the Quad1000HDU to the tripod with the 5/8 x 11 bolt. (Snug only, do not over tighten)
- Power up the unit.
- Level the bulls- eye bubble on the Quad 1000HDU by adjusting the tripod legs up or down.
- Loosen the 5/8 x 11 attachment bolt and slide the Quad 1000HDU until the laser plumb-bob is directly over your point. Re-tighten attachment bolt to snug.

Tripod leg adjustment for leveling
the bulls- eye bubble



ALIGNMENT / TEMPLATE TARGETS (2ea.)

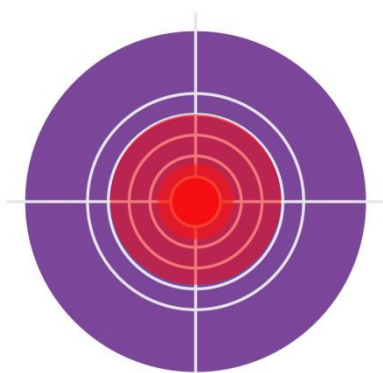


- A) They can be used as a centering template for floor/deck marking as described above. (4 template notches)
- B) The targets are made of a translucent material allowing the laser spot to be read from the opposite side that the laser spot is impacting the target face.
- C) The centering rings (bulls-eye target) make it easy to read the target and center the laser spot
- D) One target features a $\frac{1}{4}$ inch hole through the target center that allows the center of the laser spot to pass through so that more than one target can be used at the same time.
- E) There are two mounting holes in each target to allow for custom mounting at the job site.

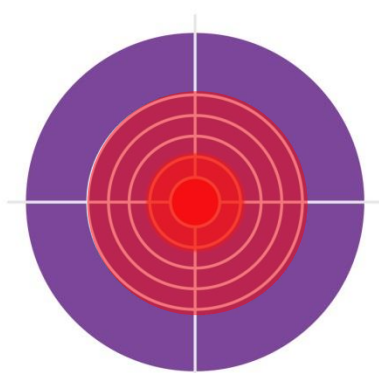
WARNING:

*Turn the laser **OFF** when centering up on the alignment target with an optical plummeted instrument. (Transferred points from floor to floor) Viewing the laser spot through an optical plummet can increase the chance of eye hazard.*

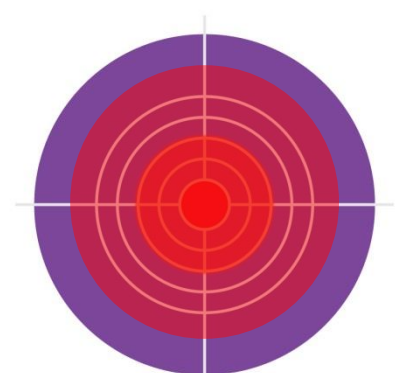
Approximate Beam Size at Distance (1:1 scale)



500 ft. / 152m
0.80" / 2cm



1000 ft. / 305m
1.10" / 2.8cm



1500 ft. / 457m
1.40" / 3.6cm

JOBSITE CALIBRATION CHECK

(Recommend performing calibration check once a week at minimum)

1. Using the trivet mount or tripod, get the Quad 1000HDU precisely over your reference point on the ground floor.
2. Place the target / template precisely centered on the laser spot at the highest point possible above the Quad 1000HDU. (At least 100 feet if possible) Secure the target so it will not move.
3. Rotate the Quad 1000HDU 180°; If using a tripod, make sure you are still positioned over your reference point.
4. Go back to the target and measure any change of the laser spot relative to the bulls-eye target.

Given the dynamics and movement of structures due to temperature, wind, loads etc., the target relation to the Quad 1000HDU laser may be moving and not providing a constant. This should definitely be taken into consideration so as a result, depending on conditions, you could be getting readings of $\pm 1/16$ or $\pm 1/8$ at the target per 100 vertical feet. If you are not comfortable or confident with the field calibration check, have it checked by your Dealer Service Department.

MAINTENANCE

The Quad 1000HDU requires no maintenance other than periodically cleaning the laser output lens. Use a soft cloth with Windex or alcohol.

****NOTE: Laser must be turned OFF when cleaning the lens!***

CERTIFICATION

USA EN/IEC 60824-1 2007 Class 3R

LASER SAFETY

Laser Light-Avoid Direct Eye Exposure

The maximum power output of this laser is less than 5mw. A laser safety kit is supplied with the Quad 1000HDU laser. The kit contains operator qualification cards and a sign that should be posted near the laser whenever it is in use.

Observe the following rules:

- Never look directly into a laser beam or point the beam into the eyes of others. Set the laser at a height that prevents the beam from shining directly into people's eyes.
- DO NOT remove any warning signs from the laser.
- Only properly trained people are to use this product.
- Service to be performed only by factory trained personnel; unit contains no user serviceable parts.

LABELS

(Required for this product)



Aperture Label
(Top)



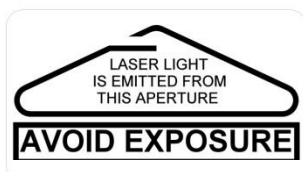
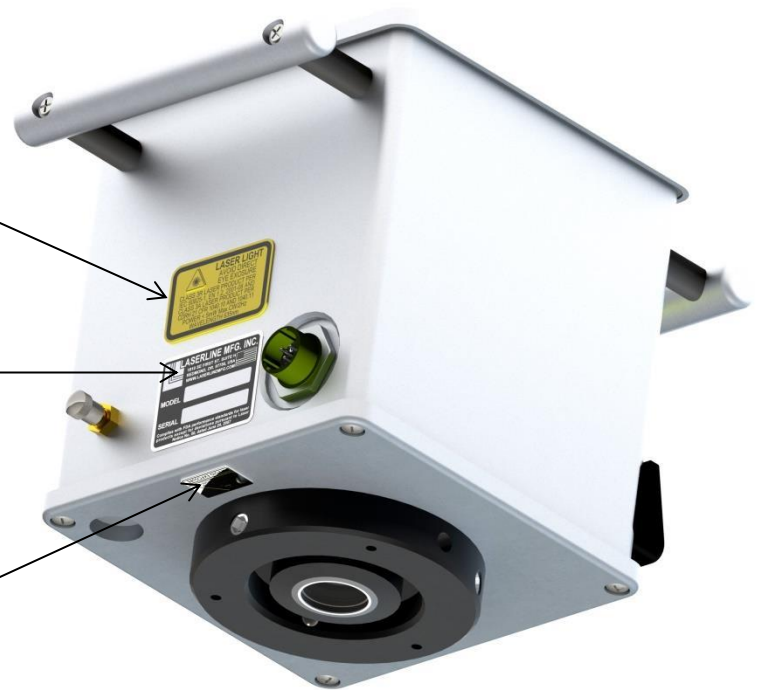
Non-Interlocked Warning Label
(Top)



Explanatory and Warning
Label-Hazard Symbol



Identification and Certification



Aperture Label
(Bottom)

LASER SPECIFICATIONS

Self-leveling: Electronic servo with variable temperature compensation

Plumb beam accuracy: ± 5 arc seconds ($\pm 1/32$ inch per 100 feet) (.793mm per 30.48 meters)

Range: Upward (Zenith) up to 2,000 feet (609.6 meters)

Laser "Up" spot size: At Source = .500" (12.7mm)

***NOTE**—Atmospheric conditions can negatively affect range and spot size/quality.

Plumb beam down accuracy: 1 arc minute @ 15ft. (4.57m)

Laser Power: 5.0 mw

USA EN/IEC 60824-1 2007 Class 3R

International IEC 60825-1 2014 Class 3R

USA OSHA compliant: Meets all Federal and International standards

Power source: 12 VDC or 110-220 VAC with optional 1140 power converter

Operating temperature: 0 to + 122 degrees F (-18 to +50 c)

Storage temperature: -4 to +158 F (-20 to +70c)

Dimensions:

Height: 8" (20.32cm)

Width: 6" $\frac{1}{2}$ x 6" $\frac{1}{2}$ (16.50x16.50cm) at bottom

Width Handles Side: 9" $\frac{3}{4}$ (23.6cm)

Weight: 10.5 lbs. (4.77 kgs)

Dust and waterproof: Purged and dry nitrogen filled with IP67 rating
(Heavy duty $\frac{1}{4}$ inch thick aluminum housing with hard coat anodized finish)

Warranty: 24 months parts and labor for defective workmanship and material.

WARRANTY

This product is guaranteed against defects in materials and workmanship for both parts and labor, under normal working conditions for two years 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. LaserLine Mfg., Inc. does not take liability for any damages caused by non-accuracy of this product. Before using the product always check for accuracy per the enclosed instructions in this manual.

Warning!

Under no circumstances, attempt to open or disassemble the Laser Housing. Doing so may cause exposure to potentially hazardous levels of laser light.

Caution: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.

Factory Service Center

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(Email) laserline@laserline.net

For all Warranty: Call Order Processing for RMA # at 541-548-0882. The Unit will be repaired and returned by prepaid freight.

All Non-Warranty Repairs:

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

Out of Warranty Repairs: 1 Year on replacement parts, 90 days on labor.

NOTES