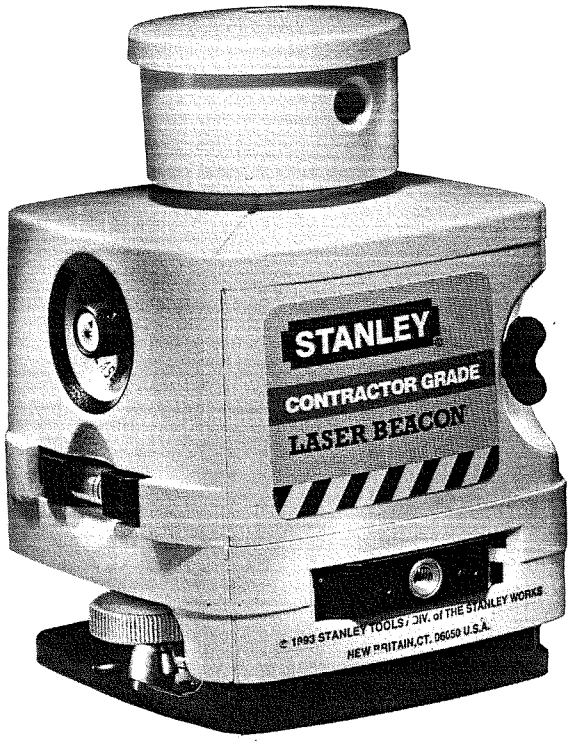
STANLEY®

42-000

CONTRACTOR GRADE



LASER BEACON®

PRECISION LEVELING AND ALIGNMENT TOOL

(Foreign and U.S. Patents Pending)

Operation Manual

Job Site Tough Made in U.S.A. 90 Day Warranty

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INTRODUCTION AND GENERAL INFORMATION

The Laser Beacon® product is specifically designed as an inexpensive alternative for all general construction and interior leveling and alignment applications.

The Model 42-085 Laser Beacon® tool provides a horizontal or vertical plane of rotating laser light for accurate control of a variety of leveling and alignment applications. The Laser Beacon® product projects a single beam through the top of the laser for 90° layout, plumb, and other applications.

The Laser Beacon® tool is a manually leveled unit which emits a rotating plane of highly visible laser light. The laser beam is created by a solid state laser diode which has been focused to achieve the optimal spot size and shape for all types of construction applications.

The Laser Beacon® product contains the very latest in laser diode technology. As such, it will serve you well into the future.

Important Information

The user of the Laser Beacon® tool is encouraged to read and follow all the operating instructions found in this manual and to periodically check the instrument and the work as it progresses.

For your permanent records, it is recommended that the serial number of your laser unit, as well as date and place of purchase, be recorded below.

Laser Beacon® Product Serial Number _____

Rod-Eye®-5 Receiver Serial Number _____

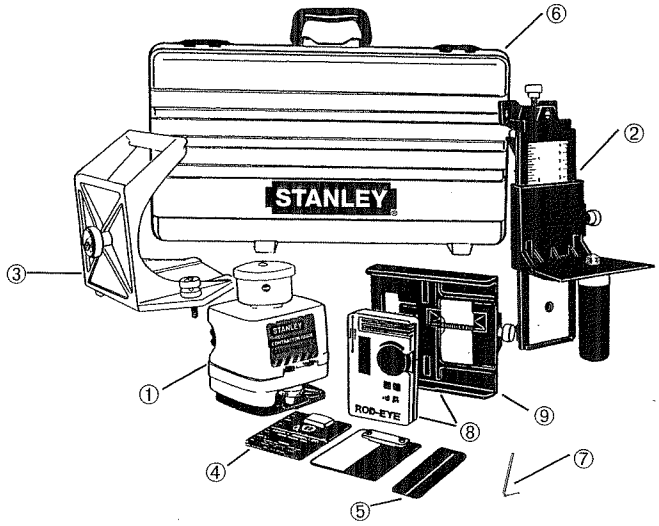
Date of Purchase _____

Place of Purchase _____

_____

_____

(Accessories shown are not included with all models)



LASER BEACON® PRODUCT KIT (42-000)

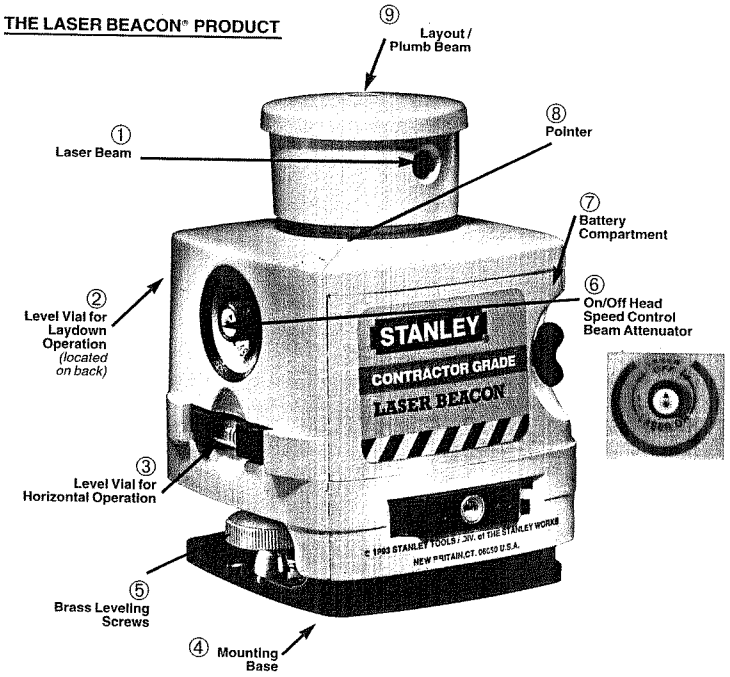
Item	Product Number	Description	Qty
1	42-085	Laser Beacon® Product*	1
2	42-047	Wall Mount Bracket	1
3	42-049	Laydown Bracket	1
4	42-021	Target, English/Metric	2
5	42-081	Viewing Card	1
6	42-022	Carrying Case	1
7	42-061	Hex Key 7/64"	1

* Batteries not included

LASER BEACON® PRODUCT ACCESSORIES

Item	Product Number	Description	Qty
8	42-001	Rod Eye®-5 w/Bracket	1
9	42-083	Rod Eye®-5 Bracket Only	1

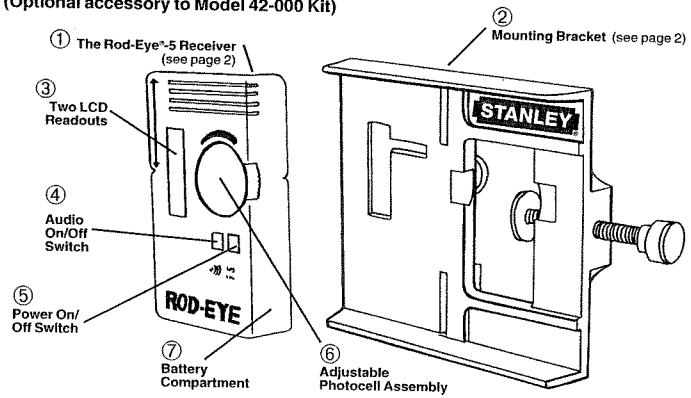
THE LASER BEACON® PRODUCT



1. The solid state laser diode emits a focused beam of laser light.
2. The laydown vial is used for fast, easy setup of the Laser Beacon® product to create a vertical plane of laser light.
3. The level vials at the base of the housing are easily adjusted using the two brass leveling screws.
4. The mounting base can free stand or mount to a ⅝"-11 tripod.
5. The rugged brass leveling screws are used to set up the laser in a level position.
6. The On/Off switch, when in the LASER OFF position provides an alternative to a beam attenuator. When in the LASER ON position, laser light is emitted from the aperture(s). Increased clockwise rotation increases head speed rotation to fit the job requirements.
7. The battery compartment holds four C–cell alkaline or nickel cadmium batteries. Alkaline batteries provide over 70 hours of operation.
8. Align the pointer with the mark on the rotating head for aligning the beam over a fixed point.
9. The Model 42-085 provides not only horizontal and vertical control, but also a plumb beam at a 90° angle to the main beam for layout applications.

ROD-EYE®-5 RECEIVER AND BRACKET – MODEL 42-001

(Optional accessory to Model 42-000 Kit)



1. The Rod-Eye®-5 receiver electronically senses the laser beam and indicates the position of the beam in the LCD readout.
2. The Rod-Eye®-5 receiver can be hand held, clamped to a stick, or attached to any standard survey rod using the Mounting Bracket.
3. The two LCD readouts on the front and back of the receiver indicate the position of the receiver relative to the laser light.
4. Audio Switch – The audio tone is used to locate the plane of laser light.
5. On/Off Switch – The Rod-Eye®-5 receiver will automatically shut off after seven minutes of non-use.
6. The adjustable photocell assembly can be rotated to change the sensitivity of the receiver.
7. The battery compartment holds one 9 volt alkaline battery for over 60 hours of continuous operation. (Battery not included)

SPECIAL FEATURES AND OPERATIONAL DETAILS FOR THE ROD EYE®-5 SENSOR

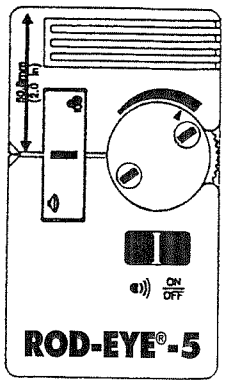
The ROD-EYE®-5 sensor is designed to work not only with the **LASER BEACON®** product, but will give excellent and consistent results with other commercial rotating diode and HeNe construction lasers as well. The plane of laser light is sensed by the unique two photo-cell receiving dial with adjustable accuracy.

Used with the **LASER BEACON®** tool, the mark on the photocell dial should be rotated to an approximate 1:00 o'clock position. With the photocells facing the rotating laser light, rotate the photocell dial clockwise or counter clockwise until the center "on-grade" bar is seen in the LCD display. The accuracy of the center bar can be increased or decreased by slight adjustments of the dial.

Significant changes in operating distance from the laser unit may require minor adjustments of the dial to maintain the desired accuracy.

USING THE ROD EYE®-5 RECEIVER WITH THE LASER BEACON® PRODUCT

- Standing 10-15' (3-5 meters) from the laser, position the mark on the photocell dial so that it is about ¼" (6 mm) from the far right setting.
- With the photocell dial facing the laser, isolate the center bar in the LCD display. Check movement up and down required to show directional arrows.
- Slightly rotate the photocell dial until the desired accuracy is obtained.
- Once set, the photocell dial may require only a slight adjustment when working within 10-100' (3-30 meters) radius of the laser.



Adjustable Photocell Assembly

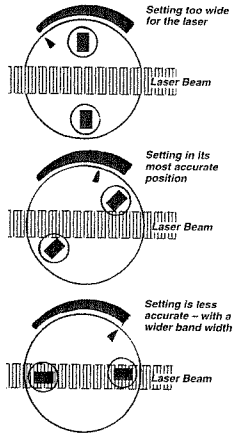
How the ROD EYE®-5 Receiver Works:

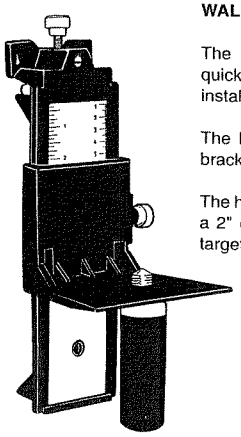
When the laser beam strikes the bottom or top photocell only, an up or down arrow is shown in the display. When the laser beam strikes both photocells at the same time, the center "on grade" bar is displayed.

With the mark on the photocell dial set to the far left, it is possible for the laser beam to pass between the photocells without triggering the sensor.

The photocell dial should be rotated to the right until both photocells are touched by the laser beam and a center "on grade" bar is shown in the display. This is the most accurate setting.

Rotating the photocells further to the right will increase the distance that the sensor can be moved while still triggering the center bar. *This will increase the width of the center band.*





WALL MOUNT BRACKET (Part # 42-047)

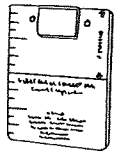
The adjustable wall mount bracket mounts quickly and easily onto the wall grid for installing acoustical ceilings.

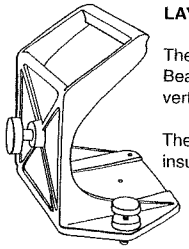
The Laser Beacon® product is locked onto the bracket by the 5/8"-11 threaded mounting stud.

The height of the laser light can be adjusted to a 2" (5 cm) offset for use with the magnetic target for adjustment of the ceiling grid.

STANDARD MAGNETIC TARGET
(Part # 42-021)

The Laser Beacon® product is used in combination with the Standard Magnetic Target for fast, repeatable control of the grid height.

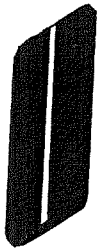




LAYDOWN BRACKET (Part # 42-049)

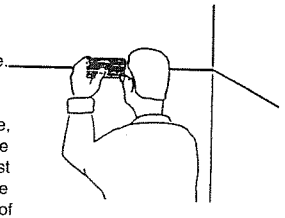
The laydown bracket is used to set up the Laser Beacon® product for 90° layout work, or when a vertical plane of light is required.

The three point structure of the laydown bracket will insure a stable setup on virtually any surface.



THE VIEWING CARD
(Part # 42-081)

In bright light conditions, the reflected beam can be viewed very easily on a wall or other surface simply by looking through the viewing card at the beam. Viewing and marking a line or point is easy with this simple device.

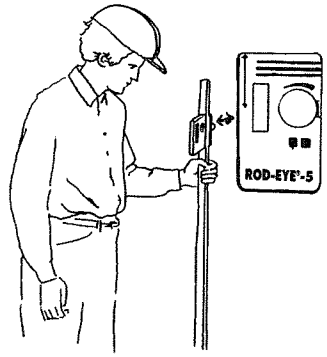


The viewing card has a strip of reflective tape which can be used to locate the beam from a distance. For example, when doing layouts, set the viewing card at the end of one line. Set the laser over the control point, level it and adjust the plumb beam until it is striking the reflective tape on the card. The rotating beam will now create a rotating plane of light at 90° to the plumb beam.

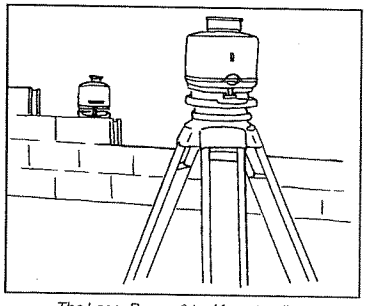
GENERAL APPLICATIONS

The Laser Beacon® product is designed to be simple and easy to use. It will attach to any 5/8"-11 tripod, the wall mount and laydown brackets and will also stand alone on its solid base.

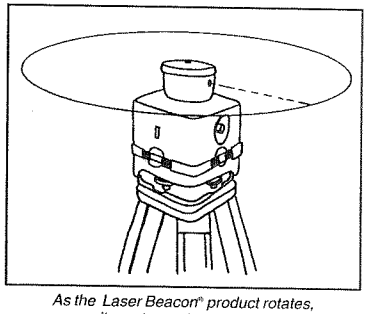
- For general construction applications, attach the Laser Beacon® product to a tripod or set it on a flat surface.
- Adjust the two brass leveling screws until the level vials are centered.
- Turn the laser on and adjust the head speed to full on.
- The laser is now rotating through a full 360°, rapidly establishing accurate elevations over the entire jobsite.
- **It is important to occasionally check the level vials before taking an elevation reading to insure that they have not been knocked out of alignment due to vibration or movement of the tripod.**



The Rod-Eye®-5 mounted to a 2 x 2 stick of wood for elevation readings.
(Also mounts on a standard Builders/Engineers Rod)



The Laser Beacon® tool freestanding and on a tripod.



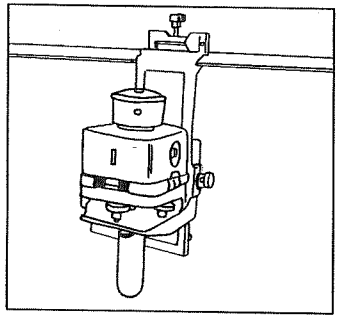
As the Laser Beacon® product rotates, it creates a plane of light.

- Most often in general construction applications, the laser is used in conjunction with the optional Rod-Eye®-5 receiver.
- The receiver and bracket can be attached to any standard survey rod or simply a piece of wood for quick elevation readings.
- The adjustable photocell assembly should be rotated to the desired sensitivity and accuracy.
- The LCD readout will show a center bar when the laser beam strikes the center of the photocell assembly. (See illustration.)

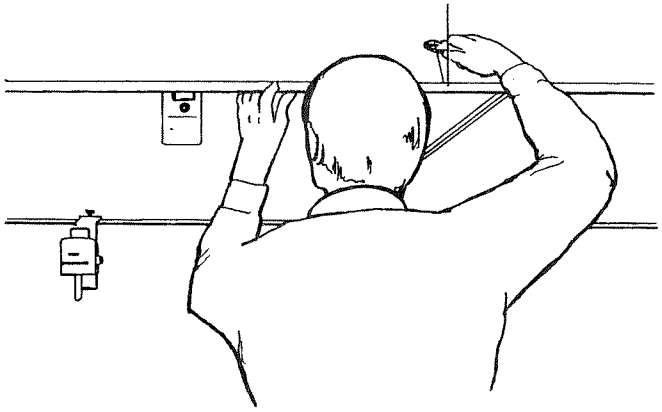
INTERIOR APPLICATIONS

For suspended ceilings, the Laser Beacon® product works well as an inexpensive alternative to more sophisticated ceiling lasers in offices, school rooms and basements.

- Attach the Laser Beacon® product to the Wall Mount Bracket and tighten securely.
- Once the first strip of angle trim has been mounted, the laser and bracket can easily be attached and clamped into place.
- Level the Laser Beacon® product by adjusting the two brass leveling screws.
- Set the height of the laser beam to 2" (5 cm) below the grid height for use with the magnetic targets. Recheck the level vials.
- Once the laser is set up, the ceiling grid is quickly and easily leveled using the rotating beam as a reference and viewing the beam through the target.



- **It Is Important to occasionally check the level vials when using the laser to Insure that they have not been knocked out of alignment due to vibration or movement of the wall bracket.**



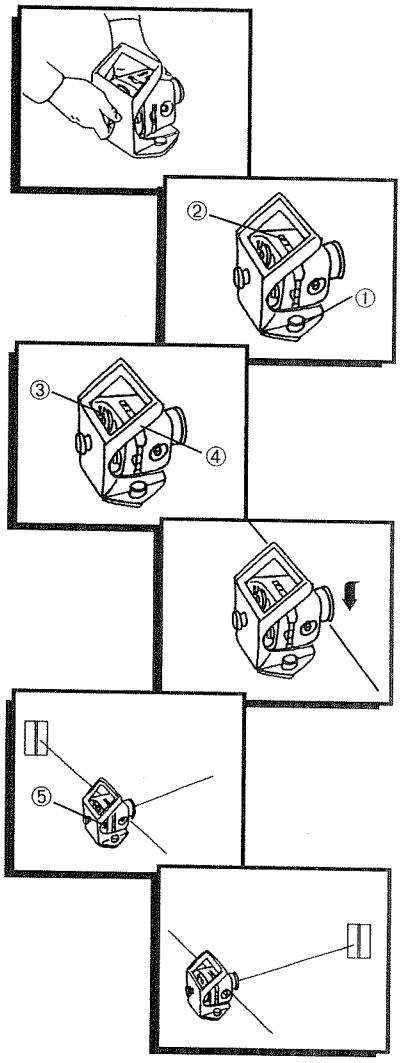
Adjust the height of the ceiling grid until the laser beam strikes the center of the target as viewed from the other side.

LAYDOWN OPERATION

The Laser Beacon® product is also designed to work laying on its side with the laydown bracket.

- Attach the Laser Beacon® product to the laydown bracket with the laydown vial facing up.
- Place the laser and bracket on the floor in the approximate position it is to be used and adjust the leveling foot on the bracket (1) until the cross axis vial (2) is level.
- Adjust the top leveling screw (3) on the laser until the vertical vial (4) is level.
- With your hand, rotate the head of the laser downward, align the mark on the rotating head with the pointer and position the laser beam over your reference line.
- Align the laser to your second reference point by turning the head toward the second point and adjusting the leveling screw (5) on the side of the laser.
- Check and final adjust the level vials if required.
- **It is important to occasionally check the level vials when the laser is being used with laydown bracket to insure that they have not been knocked out of alignment due to vibration or movement of the bracket.**

The rotating laser beam has now created a straight line between two points and a vertical plane to all points above this line.



SECTION III – Checking Level Calibration

The following procedures describe the steps required to check and calibrate the horizontal plane of the Laser Beacon® product.

1. Choose a location with a minimum distance of 50' (15 meters).
2. At one end, set up the laser on a flat level surface or a level ⅝"-11 tripod.
3. Level the Laser Beacon® product with the two brass leveling screws and mark the center of the beam at 50' (15 meters) either visually or using the Rod Eye®-5 receiver. (See Figure 1)

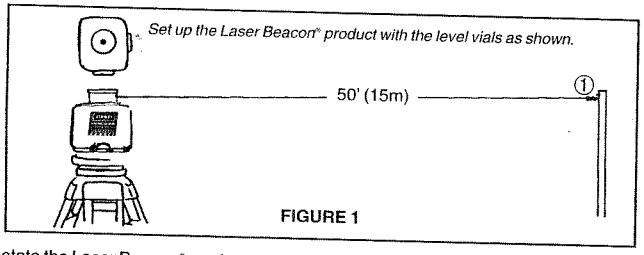


FIGURE 1

4. Rotate the Laser Beacon® product 180° and mark the second spot. (See Figure 2)

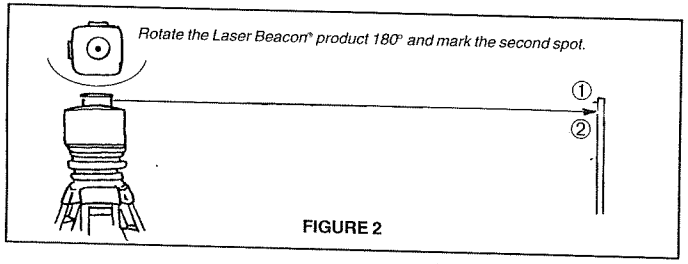
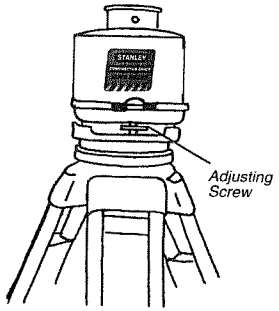


FIGURE 2

5. If a difference is noted between the first and second mark, move the laser beam to the middle of the two spots by adjusting the brass leveling screw and then adjust the level vial for that axis with the provided hex key wrench.
6. To adjust the level vial, tighten the appropriate side using a 7/64" (2.8 mm) hex key.
7. Recheck the axis by rotating the laser again.
8. Check and adjust the second axis using the same procedure.



SECTION IV - Maintenance and Warranty

MAINTENANCE

Maintenance and care of your Laser Beacon® product requires common sense.

- Keep your laser and accessories clean and free of dirt and moisture.
- Store the Laser Beacon® product in a cool, dry location.
- Store and transport the Laser Beacon® product in its carrying case. Do not allow the unit to bounce around in the back of your truck or vehicle.
- Perform periodic calibration checks to insure the accuracy of your unit.
- It is recommended that the batteries be removed from the laser if it is to be stored for an extended period of time.
- Replace the batteries when they lose their power. *(Recycle alkaline batteries appropriately – do not put in landfill.)*

CAUTION: The Laser Beacon® product and the Rod-Eye®-5 receiver contain static sensitive parts. Do not attempt to disassemble or repair either the laser or the receiver. Return these products to the place of purchase, or the manufacturer for repair.

CAUTION: Do not expose the Laser Beacon® product to extended use at temperatures greater than 104°F (40°C). Doing so may result in degradation and premature failure of the laser diode.

WARRANTY

Your Laser Beacon® product is guaranteed against defects in materials and workmanship under normal use and service for a period of 90 days provided that the unit has been properly used and cared for as stated on the warranty registration card. Any evidence of an attempt to repair the Laser Beacon® product by other than factory authorized personnel using Stanley certified replacement parts will automatically void the warranty.

Stanley's liability under this warranty is limited to repairing or replacing any product returned to Stanley Tools for that purpose. The foregoing states the entire liability of Stanley in connection with the Laser Beacon® product and they shall not be held responsible for any consequential damage of any kind. The foregoing is in lieu of all other warranties expressed or implied.

The user of the Laser Beacon® product is expected to follow all operating instructions, periodically checking the instrument and the work as it progresses. Maintaining the calibration of the unit is the responsibility of the user. Calibration and maintenance is not covered by the above warranty.

Government regulations require accurate records of sales and repairs of tools containing laser diodes. The enclosed warranty registration card must be returned to Stanley Tools in order to validate your warranty. Warranty claims cannot be honored if the warranty registration card is not on file.

THE LASER BEACON® PRODUCT

Working Radius ..... 75' (25 meters)
Accuracy ..... ⅛" in 50' (3 mm in 15 meters)
Dimensions .....4 x 4 x 7" (100 x 100 x 175 mm)
Weight .....3.5 lbs. (1.6 Kg.)
Leveling Method..... Two Screw, Manual Level
Power Source .....Uses four C-cell Alkaline or Rechargeable Batteries
Operating Time ..... More than 70 hours
Operating Temp.14°F to 104°F (-10°C to 40°C)
Storage Temperature ..... -4°F to 122°F (-20°C to 50°C)
Environmental ..... Water resistant (non-submersible)
Head Rotation ..... 0-9 RPS
Laser Diode ..... Semiconductor Laser Diode
Wavelength ..... 650 Nanometers
Output Power ..... Less than 5 Milliwatts
Classification ..... Class IIIa

THE ROD-EYE®-5 RECEIVER

LCD Readouts...Two Readouts, front and back
Adjustable Accuracy ..... From ⅛" (.8 mm)
Dimensions ..... 3 x 5 x 1" (75 x 125 x 25 mm)
Weight ..... 6.2 ounces (175 g.)
Power Source ..... 9 volt alkaline
Operating Time ..... More than 60 hours
Auto Shutoff ..... After 7 minutes
Audio Indication .... To locate the plane of light.

SAFETY INSTRUCTIONS AND LABELS

The Laser Beacon® product complies with and has been manufactured in accordance with the U.S. Department of Health and Human Services 21 CFR Chapter 1 subchapter J Parts 1010 and 1040, and is designed to provide a product which can be safely utilized. The instructions in this manual should be carefully read and followed to insure a complete understanding of the product.

CAUTION: Use of controls, adjustments or procedures other than those specified herein may result in hazardous radiation exposure.

The Laser Beacon® system contains a semiconductor laser diode with wavelength of 650 nanometers and is red in color. Its continuous output is 5 milliwatts or less. Never stare directly into the laser beam or view the beam with optical instruments. Wherever possible, set the laser above or below eyelevel. Turn the laser off when not in use. Do not point the laser unnecessarily at others.

The following labels are attached to every Laser Beacon® product. These are not to be removed or defaced.