KLEIN TOOLS 93LCLS Self-Leveling Cross Line Laser Level with Plumb Spot Instruction Manual

Contents

KLEIN TOOLS 93LCLS Self-Leveling Cross Line Laser Level with Plumb Spot

GENERAL SPECIFICATIONS

Klein Tools 93LCLS is a self-leveling laser alignment instrument that can be used to deliver horizontal and/or vertical cross lines for alignment and layout applications. Furthermore, 93LCLS can also deliver a plumb spot directly above the instrument.

- Operating Altitude: 6562 ft. (2000 m)
- Relative Humidity: <80% non-condensing
- Operating Temp: 20°F to 115°F (-10°C to 45°C)
- Storage Temp: -5°F to 140°F (-20°C to 60°C)
- Laser: 630-680nm, ≤1mW each beam, Class II Laser Product
- Accuracy: ±3/32″ per 33′ (±2mm per 10 m) (Vertical & Horizontal Beams)
- Battery Type: 3 x 1.5V AA Alkaline
- Dimensions: 5.3″ x 5.0″ x 2.8″ (134 x 127 x 65 mm)
- Weight: 26 oz. (820 g) without batteries (model 93LCLS)
- Calibration: Accurate for one year
- Standards: Conforms to: EN61326-1:2013, EN60825-1:2014.

Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

- Pollution degree: 2
- Ingress Protection: IP54 Dust & Water Resistant
- Electromagnetic Environment: IEC EN61326-1:2013. This equipment meets requirements for use in basic and controlled electromagnetic environments like residential properties, business premises, and light-industrial locations.

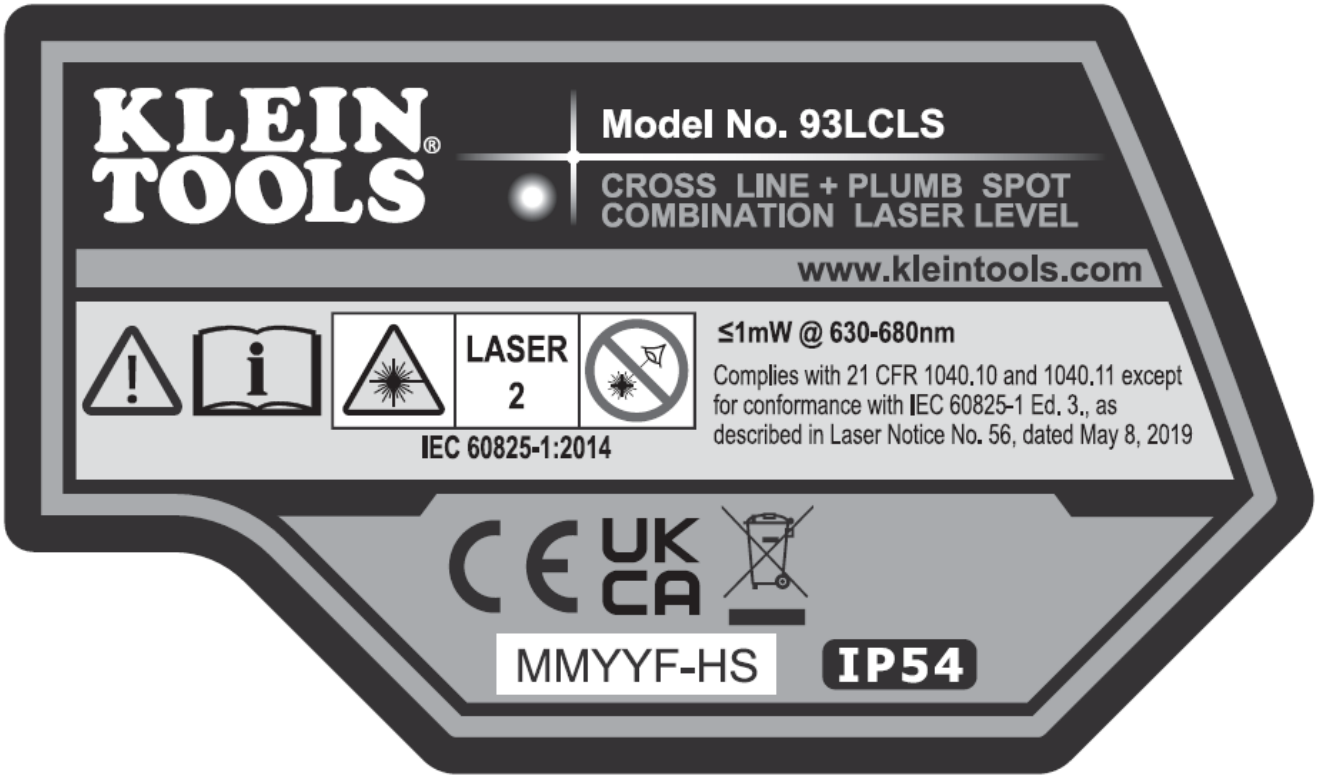
Specifications subject to change.

WARNINGS

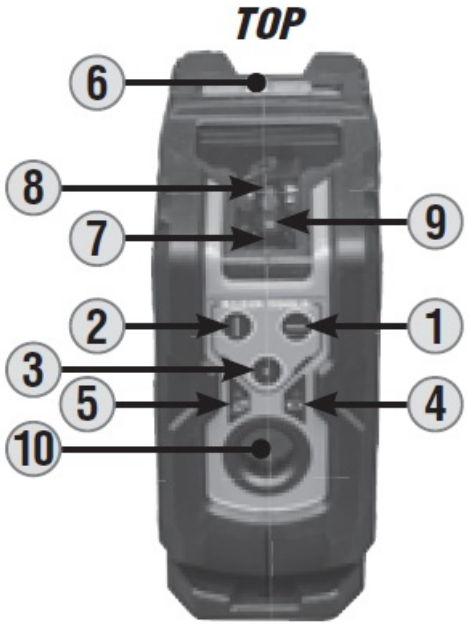
To ensure safe operation and service of the instrument, follow these instructions. Failure to observe these warnings can result in serious personal injury, fi re, or electrical shock. Retain these instructions for future reference.

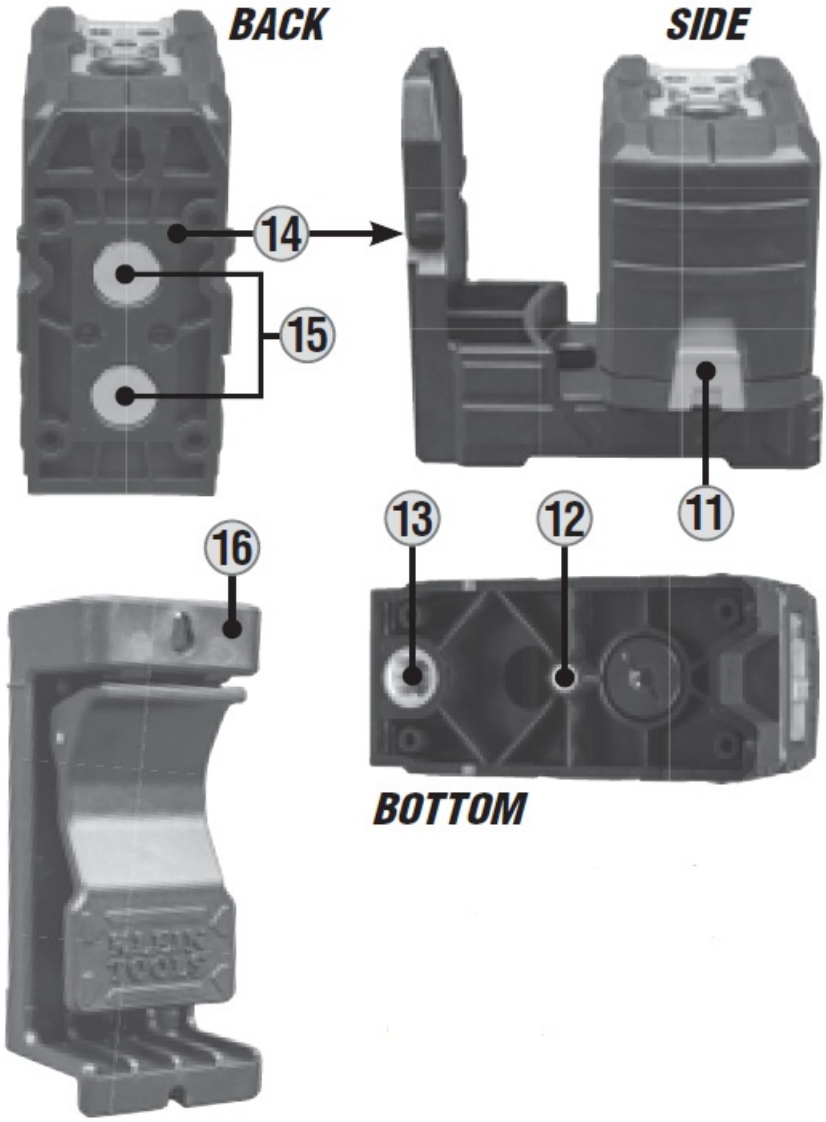
WARNING: LASER RADIATION. DO NOT STARE INTO BEAM. Class II Laser.

- Exposing eyes to laser radiation can result in severe and permanent eye injuries. NEVER look directly into the laser beam emitted by this instrument.
- Do not use the instrument if it appears to be damaged.
- Do not modify the instrument in any way, as to do so could result in emission of hazardous laser radiation than could result in severe eye injuries .
- Do not use optical equipment such as lenses, prisms, optical scopes, etc. to transmit, retransmit, or view the laser beam as this could result in severe eye injuries.
- This product should not be used by untrained operators or operators who have not read and fully understood the instructions.
- This product should not be used in any location that could result in somebody looking at or having their eyes inadvertently irradiated by the laser beam as this could result in severe eye injuries.
- The instrument should be powered off following use to minimize the risks of inadvertently exposure to hazardous laser radiation that could result in severe eye injuries.
- Do not remove warning labels from this instrument as this could result in serious personal injury and increases the risk of exposure to hazardous laser irradiation.
- The instrument should be securely located in a tidy work environment prior to operation as unexpected drops or movement of the instrument may result in damage to the instrument and increases the risk of inadvertent exposure to laser radiation that could result in severe eye injuries.
- This instrument is IP54 dust & water-resistant. Following any contact with water, thoroughly dry the instrument with a dry, lint-free cloth.
- There are no user-serviceable parts in this instrument.



FEATURE DETAILS





1. Horizontal Line On/Off Button
2. Vertical Line On/Off Button
3. Plum Spot On/Off Button
4. Battery Status Indicator
5. Excessive Tilt Indicator
6. Power/Pendulum Lock/Unlock Switch
7. Pendulum with Lasers
8. Horizontal Line Apeture
9. Vertical Line Apeture
10. Plum Spot Apeture
11. Battery Compartment Door
12. 1/4-20 Tripod Mount
13. 5/8-11 Survey Tripod Mount
14. Magnetic Mount Bracket
15. Magnets
16. Clamp-On Wall Adapter

NOTE: There are no user-serviceable parts inside this instrument.

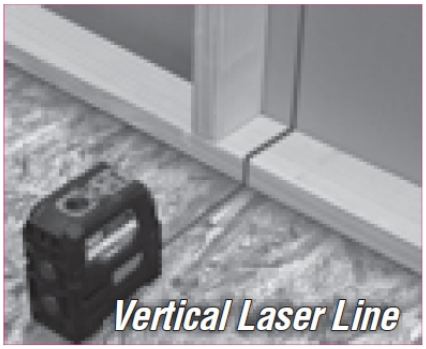
SYMBOLS ON INSTRUMENT

Vertical Laser Line	Battery Status Indicator (Green = charged, red = low)	Ingress Protection IP54 Rating – Dust & Water Resistant
Horizontal Laser Line	Excessive Tilt Indicator	Hazardous laser radiation
Plumb Spot Laser	Battery Polarity	Warning or Caution
WEEE: Electronics disposal	**Conformité Européenne:** Conforms with European Economic Area directives	**UKCA:** UK Conformity Assessment
LASER 2 Laser Class 2	DO NOT stare into beam or view directly with optical instruments	Read instructions

OPERATING INSTRUCTIONS

TURNING LASER BEAMS ON/OFF

Push the ON/OFF buttons for horizontal line 1 , vertical line 2 , and plumb spot 3 to turn ON and OFF their respective laser lines. These buttons are only active once the Pendulum Lock/Unlock Slider Switch 6 has been set to the Unlocked position. If the Pendulum Slider Switch is moved from the Unlocked to the Locked position while the laser beams are active, they will be turned OFF. The different laser lines can be operated independently or simultaneously.



NOTE: The plumb spot application projects laser beams both in upward and downward directions. The downward beam may be used to locate a specific point on a floor layout while the upward beam projects that same point to a ceiling.

PENDULUM SLIDER SWITCH & SELF-LEVELING

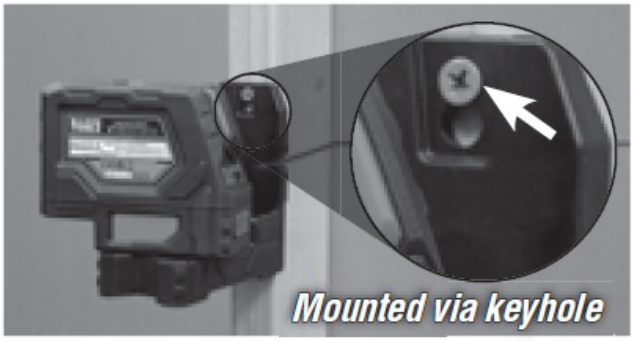
The laser assemblies are mounted on a pendulum so that the instrument can self-level. The Pendulum Slider Switch 6 must be in the unlocked position for the instrument to be self-level. If the instrument is tilted by >4° from the horizontal plane, the pendulum will not be capable of self-leveling; the active laser beams will flash and the Excessive Tilt Indicator 5 will blink to indicate that the instrument is not level and cannot self-level. The instrument must be repositioned on a more level geometry for the self-Leveling pendulum to function appropriately.

NOTE: If the instrument indicates that it is not level (via flashing beams and/or a blinking Excessive Tilt indicator 5), then it should not be used for laying out level or plumb lines.

NOTE: The following use, the active laser beams must be turned OFF and the Pendulum Slider Switch must be placed in the Locked position prior to storage.

MAGNETIC MOUNTING BRACKET 14

The instrument is attached to a magnetic mounting bracket. The bracket may be magnetically attached to any magnetic structure such as steel studs, ducts, structural beams, and steel doors. The bracket also features a key-hole for mounting the instrument using a screw or nail to non-magnetic structures. Once mounted to a structure via the mounting bracket the instrument can be rotated on the bracket through 360° to direct the laser beams.



CLAMP-ON WALL ADAPTER 16

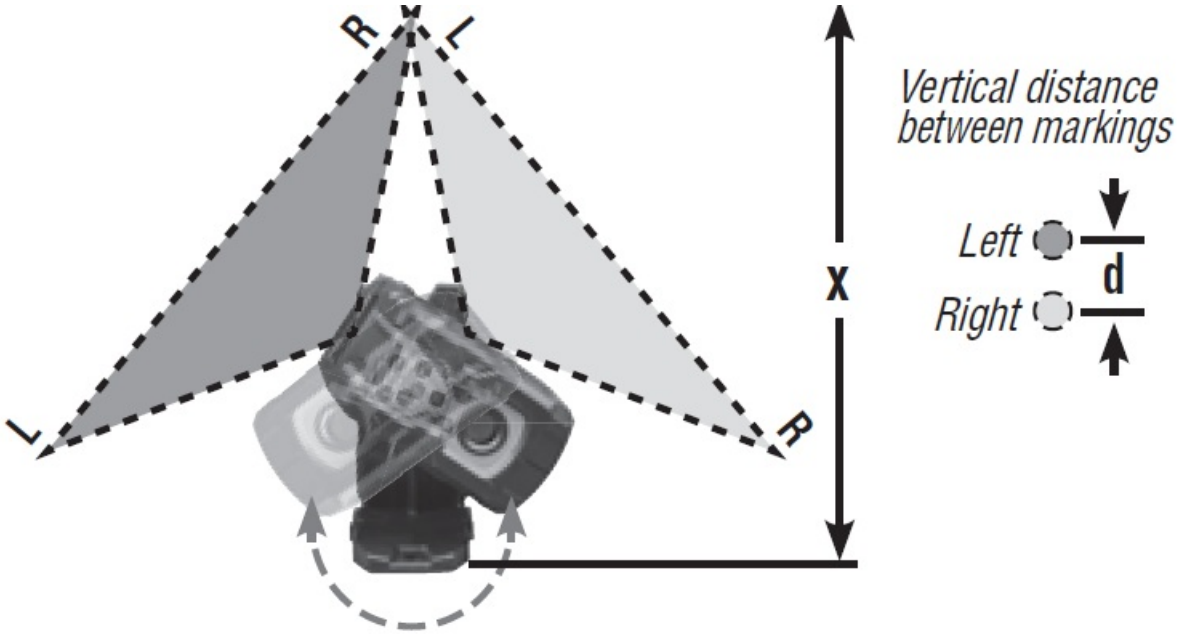
The clamp-on wall adapter may be clamped to a structural beam, or wall bracket for suspended ceiling installations, to present a steel surface onto which the instrument's magnetic mounting bracket may be attached. Once magnetically attached the instrument may be positioned to deliver the laser line at the required location. The clamp-on adapter also features a key-hole for mounting the instrument using a screw or nail.

VERIFYING ACCURACY OF LASER LINES

Horizontal Beam Left/Right Tilt

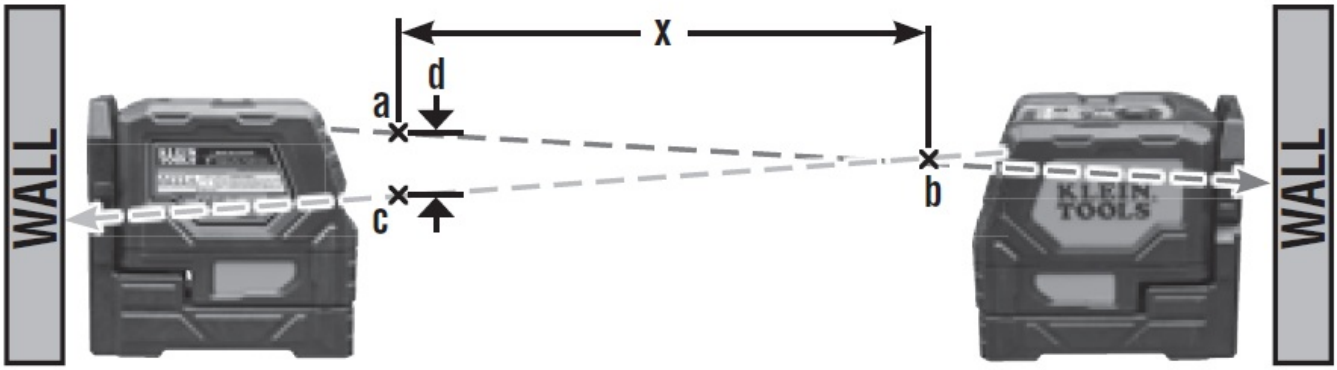
Secure instrument via its mounting bracket at a distance x from a vertical wall structure as shown. Rotate the instrument on the bracket to the left so that the right side of the beam is projected on the wall directly across from the instrument, mark the vertical location on the wall. Rotate the instrument to the right and repeat marking the vertical location of the left side of the beam. At ~33′ (10 m) the vertical distance d between the left-side and right-side markings should be ≤ 5/32″ (4 mm). For example, if x is set to 15′ (4.6 m), the vertical distance d should be ≤3/32″ (2 mm).

WALL



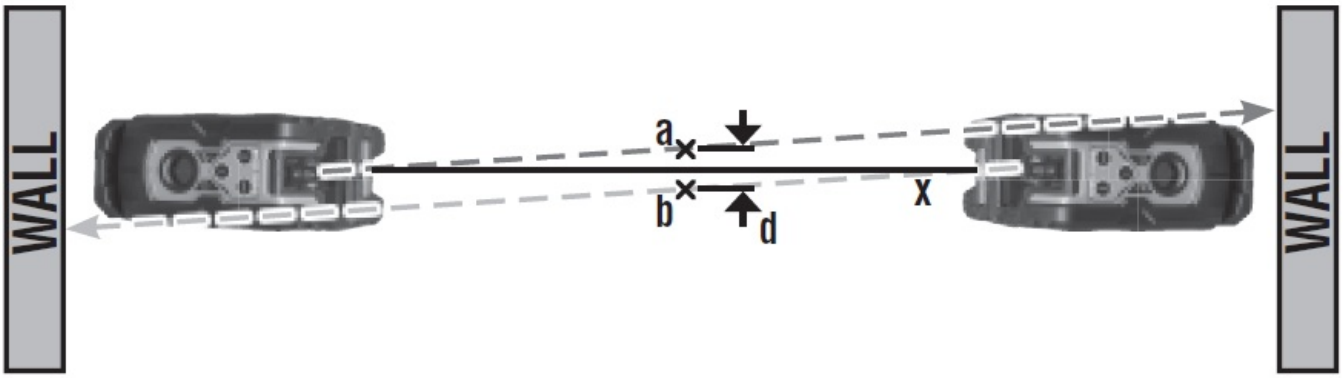
Horizontal Beam Out-of-Plane Tilt

Position the instrument parallel to a wall and project a beam along the wall, from left to right as shown. Mark two locations (a, b) along the beam separated by distance x. Position the laser at the other side of the wall and project the beam back through mark b, from right to left as shown, and mark position c. If x is 30′ (9.1 m), then the vertical distance d should be ≤ 5/32″ (4 mm). For example, if x is set to 15′ (4.6 m), then the vertical distance d should be ≤ 3/32″ (2 mm).



Vertical Beam Tilt

Position the instrument on the floor and project a vertical beam along a line x of about 6′ (1.9 m). Mark point a on the ceiling. Position the instrument on the other side of the line and repeat marking point b on the ceiling. The distance d should be ≤5/32″ (4 mm) for a 33′ (10 m) ceiling or ≤3/32″ (2 mm) for a 15′ (4.6 m) ceiling.



Plumb Spot
Position instrument on the floor and project a spot with the plumb spot laser to the ceiling. Rotate the laser by 180° and project the exact same spot to the ceiling. The distance d should be ≤1/4″ (6mm) for a 33′ (10m) ceiling or ≤1/8″ (3mm) for a 15′ (4.6m) ceiling.

CEILING

MAINTENANCE

BATTERY REPLACEMENT

When the Battery Status Indicator 4 is illuminated red, the batteries must be replaced.

1. Open the battery compartment door 11 .
2. Remove and recycle three spent AA batteries.
3. Install new batteries (note proper polarity).
4. The close battery compartment, ensures that it is securely shut.

CLEANING

Be sure laser level is turned off and wipe with a clean, dry lint-free cloth. Do not use abrasive cleaners or solvents.

STORAGE

Remove the batteries when the instrument is not in use for a prolonged period of time. Do not expose to high temperatures or humidity. After a period of storage in extreme conditions exceeding the limits mentioned in the General Specifications section, allow the laser level to return to normal operating conditions before using.

FCC AND IC COMPLIANCE

See this product's page at **www.kleintools.com** for FCC compliance information. Canada ICES-003 (B) / NMB-003 (B)

WARRANTY

www.kleintools.com/warranty

DISPOSAL / RECYCLE

Do not place equipment and its accessories in the trash. Items must be properly disposed of in accordance with local regulations. Please see **www.epa.gov/recycle** for additional information.

CUSTOMER SERVICE

KLEIN TOOLS, INC.
450 Bond Street Lincolnshire, IL 60069 1-800-553-4676 **customerservice@kleintools.com**
www.kleintools.com

Documents / Resources

	**KLEIN TOOLS 93LCLS Self-Leveling Cross Line Laser Level with Plumb Spot** [pdf] Instruction Manual 93LCLS, Self-Leveling Cross Line Laser Level with Plumb Spot, 93LCLS Self-Leveling Cross Line Laser Level with Plumb Spot

References

- Reduce, Reuse, Recycle | US EPA
- Klein Tools - For Professionals since 1857 | Klein Tools
- Warranty | Klein Tools