



## Bullseye™ Auto-Leveling Laser & Stud Sensor BDL190S

### Technical Data

BDL190S	
Voltage	V
Battery Size	AA
Laser Power	mW
Laser Class	3R
Wave Length	nm
Self Leveling Range	Degree
Accuracy (at 3m)	mm
Operating Temperature	°C
Weight	kg

### Intended Use

This Black & Decker tool has been designed to project laser lines and to detect studs covered by wall boards to aid in DIY applications. This tool is intended for consumer use only.

### Safety Instructions

- Warning!** When using battery-powered tools, basic safety precautions, including the following, should always be followed to reduce the risk of fire, leaking batteries, personal injury and material damage.
- Read this entire manual carefully before operating the tool.
- Retain this manual for future reference.

The following symbols are used throughout this manual:

- Denotes risk of personal injury, loss of life or damage to the tool in case of non-observance of the instructions in this manual.**
- Denotes risk of electric shock.**
- Fire hazard.**

- Keep work area clean.** Cluttered areas and benches can cause accidents.

- Consider work area environment.** Do not expose the tool to rain. Do not use the tool in damp or wet conditions. Keep the work area well lit. Do not use the tool where there is a risk of causing fire or explosion, e.g. in the presence of flammable liquids and gases.

- Keep children away.** Do not allow children, visitors or animals to come near the work area or to touch the tool.

- Do not overreach.** Keep proper footing and balance at all times.

- Stay alert.** Watch what you are doing. Use common sense. Do not operate the tool when you are tired.

- Use appropriate tool.** The intended use is described in this instruction manual.

- Warning!** The use of any accessory or attachment or performance of any operation with this tool other than those recommended in this instruction manual may present a risk of personal injury.

- Check for damaged parts.** Before use, carefully check the tool for damage. Ensure that the tool will operate properly and perform its intended function. Do not use the tool if any part is damaged or defective.

- Store idle tools.** When not in use, tools and batteries should be stored in a dry, locked up or high place, out of reach of children.

- Repairs.** This tool complies with relevant safety requirements. Repairs should only be carried out by qualified persons using original spare parts; otherwise this may result in considerable danger to the user.

### Additional Safety Instructions for Non-rechargeable Batteries

- Never attempt to open for any reason.
- Do not store in locations where the temperature may exceed 40 °C.
- When disposing of batteries, follow the instructions given in the section "Protecting the environment". Do not incinerate the batteries.
- Do not charge batteries.
- Do not mix old and new batteries. Replace all of them at the same time with new batteries of the same brand or type.
- Remove dead batteries immediately and dispose of per local codes.
- Under extreme conditions, battery leakage may occur. When you notice liquid on the batteries, proceed as follows:
  - Carefully wipe the liquid off using a cloth.
  - Avoid skin contact.

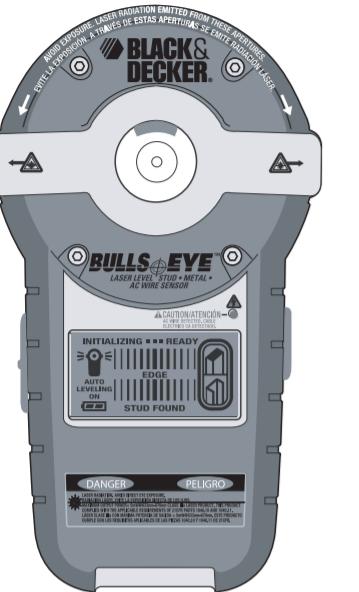
### Additional Safety Instructions for Lasers

- Read this entire manual carefully.**
- Product is not to be used by children under 16.**
- Warning! Laser radiation.**
- Do not look into the laser beam.**
- Do not view the laser beam directly with optical instruments.**
- Refer to the laser product characteristics.**

- This laser complies with class 2 according to IEC 60825-2001. Do not replace a laser diode with a different type. If damaged, have the laser repaired by an authorized repair agent.
- Do not use the laser for any purpose other than projecting laser lines.
- Never look into the laser beam directly and intentionally. Serious eye injury can result.
- Do not use optical tools to view the laser beam.
- Do not set up the tool at a position where the laser beam can cross any person at head height.
- You may like to mount the laser level on the wall using the brackets (8 or 9) as described above in "Wall Mounting" for hands free operation. Please make sure that you will mount the tool on the wall before turning on the power.

### Features (Fig. A)

- Laser on/off switch
- Stud/AC wire detecting element
- LCD screen
- Detector on/off button
- AC wire indicator LED
- Laser apertures
- Battery cover
- Keyhole hanging cone
- Drywall pin
- Protective cap

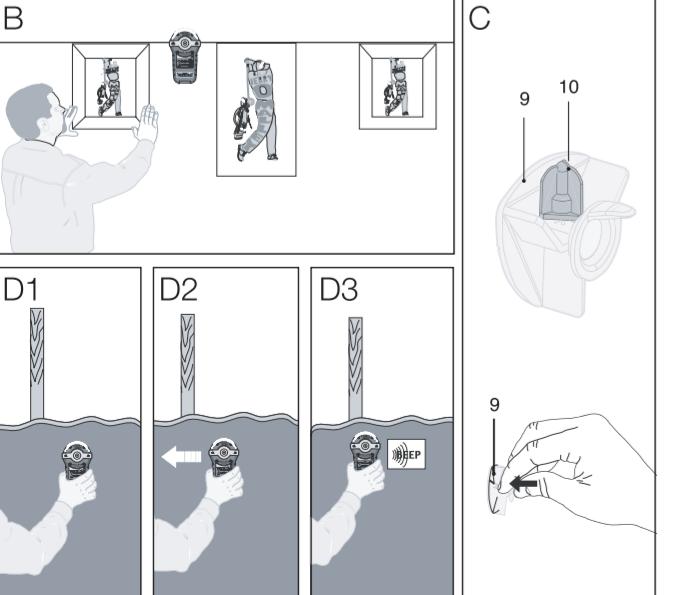
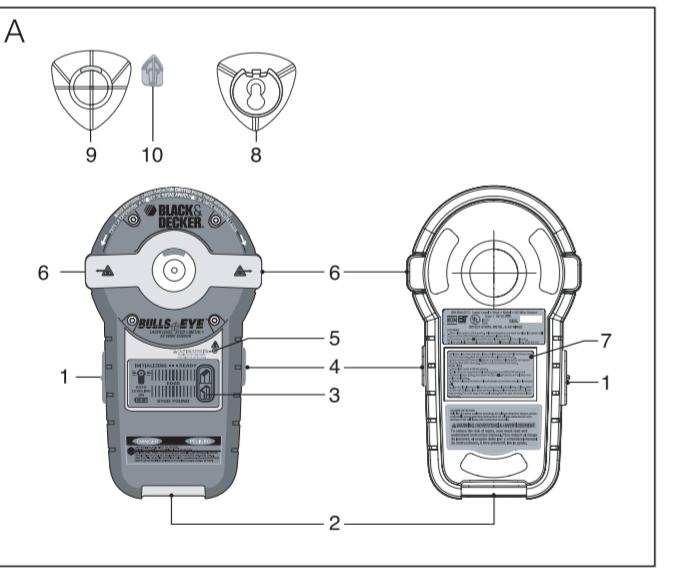


BDL190S

[www.BlackandDecker.com](http://www.BlackandDecker.com)

This manual is applicable for -KR, -A9, -TW, -B1 & -XD only

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### Assembly

**Warning!** Make sure that the laser on/off switch (1) is in the full off position by moving laser button to "0" position.

### Fitting The Battery (Fig. A)

- Remove the battery cover (7) from the tool.
- Insert 2 fresh 1.5 volt AA alkaline batteries making sure to match (+) and (-) terminals correctly.
- Refit the cover and let it click into place.

### Wall Mounting (Fig. A & B)

The unit can be mounted to walls using either the keyhole hanging cone (8) or the drywall pin (9). Figure B illustrates a typical application for the laser when it is wall mounted.

### Wall Pins (Fig. C)

**Caution:** Pins are sharp and should be handled with care. The drywall pin should always be pushed in by hand and never driven by a hammer.

If the unit is mounted to drywall or other soft materials, the wall pins (9) can be used:

- Remove the orange protective cap (10) from the drywall pin (9) and store it on the cone as shown.
- Push pin into drywall. When pressing pin into drywall, make sure it is straight and seated firmly.
- Hang the laser on the cone and check to make sure that the unit is secure on the wall.
- Please make it a habit to replace protective cap after each use.

**Note:** The pin is only for use on drywall NOT other surfaces including plaster.

### Keyhole Wall Mount (Fig. A)

For surfaces other than drywall, the (key hole) hanging cone (8) can be used with a standard nail or screw in a predrilled hole.

- To use the keyhole hanging cone, place it over a nail or screw on a vertical surface with the narrow portion of the opening pointing upward.
- Push the laser onto the hanging cone until it snaps into place.
- To remove the laser, lift it slightly and pull it straight off.
- The unit can also be used with the hanging cone attached to the back and then hanging the unit on the nail or screw.
- Make sure it is straight and seated firmly on the cone and that the unit is secure on the wall.

### Use

- Brightness of area may affect line visibility.
- When attaching to a mounting bracket, mount the laser securely.

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lines may be on while the pendulum lock is still engaged.

- Brightness of area may affect line visibility.
- Because studs are normally spaced 41cm (16") or 61cm (24") apart and are 3.8cm (1 1/2") wide, beware of anything closer together or of a different width. Doors and windows are constructed with studs and headers that are closer together.

### Avoid materials which have inconsistent density such as:

- Carpeting and padding
- Ceramic floor tile
- Wallpaper containing metallic foils or fibers. Generally, surfaces covered with regular wallpaper or fabric will scan with no difference in function.
- Walls that are freshly painted and are still damp.
- Excessively thick plaster and lath.

This product is not recommended for outdoor use.

**Warning:** Always turn off the power when working near electrical wires.

### Troubleshooting

Problem	Cause	Solution
Unit is not detecting any studs in search area.	Weak battery. Nothing to detect in that area. Check mode. May have been calibrated over a stud.	Replace with fresh battery. Start again moving farther to either side.
Unit finds too many studs in search area.	Detests other objects besides studs.	Because studs are normally spaced 41cm (16") or 61cm (24") apart and are 3.8cm (1 1/2") wide, beware of anything closer together or of a different width.
Laser does not project on wall.	Weak battery. The self leveling range of the unit is ±5 degrees. If the unit is not held within 5 degrees of vertical, the laser lines will not project on wall.	Replace with fresh battery. Be sure that the unit is as straight up and down as possible.
Laser projects on wall but lines are not level.	Wall on which the unit is mounted or held must be within ±5 degrees of vertical for the self leveling mechanism to function correctly. If this is exceeded, the lines will still project but may not be level.	Use the unit against vertical walls only. Lines will not be level on sloped walls or other non-vertical surfaces.
You suspect electrical wires, but do not detect any.	Weak battery. If wires are shielded behind metal wall coverings or in metal conduit, the sensor will not be able to detect them. The wires may not be "live". Wires may be too deep to sense. Use caution if area has plywood, thick wood backing behind drywall, or thicker than normal walls.	Replace with fresh battery. Be sure laser on/off switch is in the full on position. Replace wires.

### Cleaning And Maintenance

#### Storage

Always store the laser indoors in its protective case with the switch in the "O" position. Remove the batteries before storing it for extended periods of time.

#### Cleaning

Your tool has been designed to operate over a long period of time with a minimum of maintenance. Continuous satisfactory operation depends upon proper tool care and regular cleaning.

- To clean the tool, use only mild soap and a damp cloth. Never let any liquid get inside the tool and never immerse any part of the tool into liquid.

#### Important

To ensure product SAFETY and RELIABILITY, repairs, maintenance and adjustment (other than those listed in this manual) should be performed by authorized service centers or other qualified organizations, always using identical replacement parts. Unit contains no user serviceable parts inside.

### Protecting The Environment

#### Separate collection.

This product must not be disposed of with normal household waste.

Should you find one day that your Black & Decker product needs replacement, or if it is of no further use to you, do not dispose of it with household waste. Make this product available for separate collection.

Separate collection of used products and packaging allows materials to be recycled and used again.

Re-use of recycled materials helps prevent environmental pollution and reduces the demand for raw materials.

If necessary, contact your local municipality for proper disposal instructions in your city/town.

#### Battery

At the end of their useful life, discard batteries with due care for our environment.

- Remove the battery as described above.
- Place the battery in a suitable packaging to ensure that the terminals cannot be short-circuited.
- Take the battery to a local recycling station.

### Service Information

Black & Decker offers a full network of company-owned and authorized service locations throughout Asia. All Black & Decker Service Centers are staffed with trained personnel to provide customers with efficient and reliable power tool service.

Whether you need technical advice, repair, or genuine factory replacement parts, contact the Black & Decker location nearest to you.

### Helpful Hints

- If the laser light becomes dim or is no longer visible when the switch is in the position check or change the battery.
- The laser lines are only level on the wall against which the unit is held or hung. The short line visible on any adjacent wall is not level.
- The laser unit is a wall use tool only and only generates level lines when held against a vertical surface.
- The laser unit is equipped with a self leveling pendulum lock that stops pendulum motion when the laser on/off switch is moved to the off position.
- If the laser on/off switch is pushed part way to the on position, the laser

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### 技術數據

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