

# HR1220 Receiver User Guide



## Introduction

Thank you for choosing the Spectra Precision® HR1220 Laser Receiver from the family of precision instruments. The HR1220 is a battery-operated laser receiver that detects a pulsed line laser beam and indicates its position relative to the beam using LCDs and audio signals.

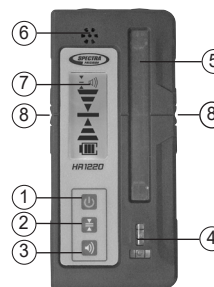
Before using the receiver, be sure to read this user guide carefully. Included in it is information about setting up, using, and maintaining the receiver. Also included in this manual are CAUTIONS and Notes. Each of these words represents a level of danger or concern. A CAUTION indicates a hazard or unsafe practice that could result in minor injury or property damage. A Note indicates important information unrelated to safety.

Your comments and suggestions are welcome; please contact us at:

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Dayton, Ohio 45377 U.S.A.  
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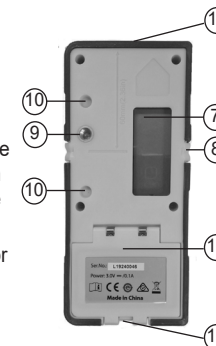
## Features

1. **Power Switch** – turns the receiver ON and OFF
- a. **LCD Backlight** – while ON, press to turn LCD backlight on; press again to turn off.
2. **Grade-Sensitivity Switch** – selects the receiver's on-grade sensitivity.
3. **Audio Switch** – Select beeper volume Loud, Low or Off
4. **Bubble vials** – aids in keeping receiver level in both horizontal and vertical planes.
5. **Photocell** – detects the laser beam when it strikes the receiver.
6. **Audio Port** – is the opening the sound comes out of.
7. **Liquid Crystal Display (LCD)** – displays the elevation, power, audio and battery status.



## Features (cont.)

8. **Marking Notches** (both sides) – align with the on-grade portion of the photocell and are used to mark elevation readings. The marking notches are 60 mm (2.36 in.) from the top of the receiver.
9. **Captive Screw Thread** – for rod clamp attachment
10. **Rod Clamp Guides** – for rod clamp alignment
11. **Magnets** – holds the receiver on a wall molding, cross-T, runner, etc.
12. **Battery Housing** – holds 2 AA alkaline batteries.
13. **Battery Door Latch** – opens the battery compartment.



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## How to Use the Receiver

### Installing/Removing the Batteries



1. Release the battery door latch using your fingers, a coin, or a screwdriver. Open the door.
2. Install/Remove the 2 AA batteries noting the positive (+) and negative (-) diagram on the bottom of the battery housing.
3. Close the battery door and latch it shut.

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## Learning the Receiver Functions

### Turning On/Off the Receiver

1. Press the power switch to turn on the receiver.  
**Note:** When the receiver is initially turned on or off, all LCD symbols and the audio signal are turned on for a brief period.
2. If the LCD backlight is desired, press the power switch with the receiver on to turn on. Press again to turn off.
3. Press and hold the power switch for one second to turn off the receiver.

### Selecting the Audio Function

The receiver always starts up with the audio mode (loud) active.

1. Press the audio switch repeatedly to cycle the audio level - loud, low or off.

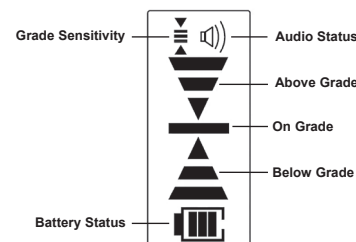
**Note:** If the audio function is on, the receiver beeps quickly when the receiver is above the laser beam, slowly when below it, and continuously when centered in the laser beam or on grade.

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## Using the Receiver with a Laser

1. Press the power switch to turn on the receiver. Also make sure the Receiver Mode indicator on the laser is ON (if not, press the RECEIVER button on the laser).
2. Position the receiver so that its photocell faces the laser.
3. Move the receiver up/down (or left/right for vertical applications) until the LCD show an on-grade reading.

**Note:** The LCD shows a down arrow when the receiver is above the laser beam, an up arrow when below it, and a horizontal line when centered in the laser beam.



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## LCD/Audio Information

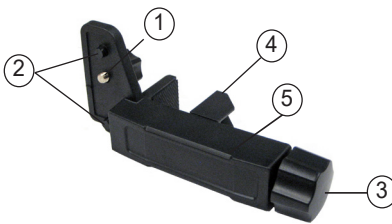
LCD Readout	Function		Audio Output
Down arrow	High	▼	Fast beeping tone
Center bar	On-grade	—	Continuous tone
Up arrow	Low	▲	Slow beeping tone
Fine Sensitivity	±1.0 mm (1/16 in.)	▼ — ▲	N/A
Coarse Sensitivity	±2.0 mm (1/8 in.)	▼ — ▲	N/A
Battery	Low battery	🔋	N/A
Beeper	Audio Loud	🔊	Loud
	Audio Low	🔊	Low
	Audio Off	🔊	None

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**General-Purpose Clamp**

The clamp (PN 1277-8110) allows the receiver to be attached to a survey rod or wooden pole.

1. Captive Rod Clamp Screw - attaches to the back of receiver.
2. Alignment Points (2) - help secure and align rod clamp.
3. Clamping Screw Knob - secures clamp to rods by moving the traveling jaw. Clockwise tightens; Counterclockwise loosens.
4. Traveling Jaw - moving jaw grips tightly to rods.
5. Reading Edge – aligns with the receiver's on-grade location.



**Attaching the Receiver to a Grade Rod**

1. Use the alignment points to align the clamp to the back of the receiver.
2. Tighten the rod clamp screw
3. Turn the clamping screw knob counterclockwise to open the clamp's jaws.
4. Slide the survey rod or wooden pole between the clamp's jaws.
5. Turn the jaws screw clockwise to hold the general-purpose clamp securely in place.



**Specifications**

Accuracy	±1.0 mm (1/16 in.) ±2.0 mm (1/8 in.)
Working Radius* *Laser dependent	80 m (260 ft.)
Elevation Readout	Front and rear LCDs
Audio Control	Loud / Low / Off
Capture Height	80 mm (3.1 in.)
Marking Notches	60 mm (2.36 in.) below top of receiver
Power Source	2 AA alkaline batteries
Battery Life	40+ hours
Low-Battery Indicator	Battery symbol on LCD
Automatic Shutoff	30 minutes after last laser strike
Water / Dust Rating	IP66
Operating Temperature	-10 °C to 50 °C (-14 °F to 122 °F)
Storage Temperature	-20 °C to 70 °C (-4 °F to 158 °F)

**Protecting the Environment**

The unit, accessories and packaging ought to be recycled.

All plastic parts are marked for recycling according to material type.



**Do not throw used batteries into the garbage, water or fire. Remove them in compliance with environmental requirements.**

**Request for Service**

To locate your local dealer or authorized Service Center outside the U.S.A for service, accessories, or spare parts, contact one of our offices listed below.

**Americas**

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3265 Logistics Lane, Suite 200  
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**Maintenance and Care**

**System Cleaning**

For maximum performance and accuracy always keep the display and receiver windows clean. When cleaning, apply very light pressure and use only a good quality glass cleaner on a soft cloth to clean the exterior of the receiver and its windows.

**CAUTION:** A dry cloth or abrasive organic cleaner could scratch or damage these surfaces.

**CAUTION:** Do not submerge the receiver.

**Warranty**

Spectra Precision LLC warrants the HR1220 receiver to be free of defects in material and workmanship for a period of three years.

Customers should send products to the nearest Authorized Factory, Dealer, or Service Center for warranty repairs, freight prepaid. In countries with Spectra Precision LLC Service Subsidiary Centers, the repaired products will be returned to the customer, freight prepaid.

Any evidence of negligent, abnormal use, accident, or any attempt to repair equipment by other than factory-authorized personnel Spectra Precision LLC certified or recommended parts, automatically voids the warranty.

Special precautions have been taken to ensure the calibration of the receiver; however, calibration is not covered by this warranty. Maintenance of the calibration is the responsibility of the user.

The foregoing states the entire liability of Spectra Precision LLC regarding the purchase and use of its equipment. Spectra Precision LLC will not be held responsible for any consequential loss or damage of any kind.

This warranty is in lieu of all other warranties, except as set forth above, including an implied warranty merchantability of fitness for a particular purpose, is hereby disclaimed. This warranty is in lieu of all other warranties, expressed or implied.



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