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Spectra Precision GL422N

Spectra Precision GL422N Dual Grade Laser Level

User Instruction Manual

Model: GL422N | Brand: Spectra Precision

1. Introduction

This manual provides essential information for the safe and effective operation, setup, and maintenance of your **Spectra Precision GL422N Dual Grade Laser Level**. The GL422N is an automatic, self-leveling rotary laser designed for precise level, grade, and vertical alignment applications in various construction environments. Please read this manual thoroughly before using the product.

2. Safety Information

Always observe safety precautions to reduce the risk of injury or damage to the instrument.

2.1. Laser Safety

The GL422N emits a visible laser beam. It is classified as a**Class 2 Laser Product**. Direct eye exposure to the laser beam should be avoided.

- Do not stare into the laser beam.
- Do not intentionally direct the laser beam at other people.
- Ensure the laser is set up in a manner that prevents the beam from inadvertently striking personnel at eye level.
- Use caution when operating near reflective surfaces.

2.2. General Safety

- Read and understand all instructions before operating the instrument.
- Use the instrument only for its intended purpose as described in this manual.
- Keep the work area clean and well-lit.
- Do not operate the instrument in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.
- Keep children and unauthorized persons away from the operating area.

- Use only specified batteries and chargers. Improper use can lead to fire, explosion, or electric shock.
- Protect the instrument from extreme temperatures, moisture, and strong impacts.

3. Package Contents

The **Spectra Precision GL422N** system typically includes the following components:

- GL422N Grade Laser Unit
- HL760 Laser Receiver
- C70 Adapter for HL Receiver
- 105516 Vertical Adapter for HL Receiver
- RC402N Radio Remote Control
- NiMH Rechargeable Batteries
- Battery Charger
- Hard Carrying Case



Figure 1: The complete GL422N Dual Grade Laser Level kit, including the laser unit, HL760 receiver, RC402N remote, and accessories, all housed within its protective carrying case.

4. Product Features and Components

The GL422N is engineered for durability and precision, offering a range of features to enhance productivity on the job site.

4.1. GL422N Laser Unit

The main laser unit provides automatic self-leveling and dual grade capabilities. Its robust construction ensures reliable performance in challenging conditions.

- **Automatic Self-Leveling:** Ensures quick and accurate setup.
- **Dual Grade Capability:** Allows for setting grade on two axes simultaneously.
- **Rugged Design:** Withstands drops and harsh weather conditions.
- **Height of Instrument Alert:** Notifies the user if the laser is disturbed, preventing erroneous readings.



Figure 2: The GL422N laser level (foreground) and the HL760 digital readout receiver (background), illustrating the primary components of the system.

4.2. HL760 Laser Receiver

The advanced HL760 Digital Readout (DRO) receiver provides precise elevation information and includes unique functions.

- **Digital Readout:** Displays exact elevation numerically.
- **Grade Match:** Automatically measures and displays existing grade.
- **PlaneLok:** Automatically locks onto an existing horizontal elevation or vertical alignment point, minimizing drift.
- **Fingerprint Function:** Ensures the receiver only accepts the beam from the paired laser.

4.3. RC402N Radio Remote Control

The remote control allows for convenient operation of the laser from a distance.

- Controls all laser functions from up to 330 ft (100 m) away.

5. Setup

5.1. Battery Installation and Charging

1. Open the battery compartment on the GL422N unit.
2. Insert the NiMH rechargeable batteries, ensuring correct polarity.

3. Close the battery compartment securely.
4. Connect the charger to the laser unit and a power source to charge the batteries before first use.

5.2. Mounting the Laser

The GL422N can be mounted on a tripod for stable operation.

1. Place the tripod on a stable, level surface.
2. Securely attach the GL422N unit to the tripod mounting screw.
3. Adjust the tripod height as required for your application.



Figure 3: The GL422N laser level mounted on a tripod, ready for operation at a construction site, demonstrating typical field setup.

5.3. Receiver Attachment

Attach the HL760 receiver to a grade rod using the C70 adapter, or use the 105516 vertical adapter for specific applications.

6. Operating Instructions

6.1. Power On/Off and Self-Leveling

1. Press the power button on the GL422N unit or the RC402N remote control.
2. The laser will automatically begin its self-leveling process. Wait for the laser to stabilize and emit a continuous beam.
3. To power off, press and hold the power button.

6.2. Setting Grade

The GL422N allows for setting grade on both X and Y axes.

1. Enter grade mode using the appropriate button on the unit or remote.
2. Use the arrow keys to adjust the grade percentage for the X-axis.
3. Repeat for the Y-axis if dual grade is required.
4. Confirm the settings.



Figure 4: A detailed view of the GL422N control panel, showing the display and buttons used for setting grade and other functions.

6.3. Vertical Alignment

For vertical alignment tasks, position the laser on its side using the vertical adapter.

1. Mount the GL422N in its vertical position.
2. The laser will self-level in the vertical plane.
3. Use the HL760 receiver to detect the vertical beam for alignment.

6.4. Using the HL760 Receiver

The HL760 receiver provides digital readout and advanced functions.

1. Power on the HL760 receiver.
2. Hold the receiver in the path of the laser beam. The digital display will show the exact distance from the on-grade position.
3. **Grade Match:** Activate this function on the receiver to measure and display the existing grade between two points.
4. **PlaneLok:** Use this feature to lock the laser plane to a specific elevation or alignment point, preventing drift.
5. **Fingerprint Function:** Ensure the receiver is paired with your GL422N laser to avoid interference from other lasers on the job site.



Figure 5: An operator using the HL760 receiver mounted on a grade rod to take readings from the GL422N laser level, demonstrating typical measurement procedures.

6.5. Using the RC402N Remote Control

The RC402N remote control mirrors most functions of the GL422N unit, allowing for adjustments from a distance.

- Ensure the remote control has fresh batteries.
- Point the remote towards the GL422N unit.
- Use the corresponding buttons to power on/off, adjust grade, or activate specific functions.

7. Maintenance

7.1. Cleaning

- Regularly clean the exterior of the laser unit, receiver, and remote control with a soft, damp cloth.
- Do not use harsh chemicals or abrasive cleaners.
- Keep the laser aperture and receiver sensor clean and free of dust or debris.

7.2. Battery Care

- Charge NiMH batteries fully before storage and periodically during long periods of inactivity.
- Remove batteries if the instrument will not be used for an extended period to prevent leakage.
- Dispose of old batteries according to local regulations.

7.3. Storage

- Store the GL422N and its accessories in the provided hard carrying case when not in use.
- Store in a cool, dry place, away from direct sunlight and extreme temperatures.

7.4. Calibration

While the GL422N is designed for high accuracy, periodic calibration checks are recommended. If you suspect the instrument is out of calibration, contact an authorized Spectra Precision service center.

8. Troubleshooting

This section addresses common issues you might encounter with your GL422N.

Problem	Possible Cause	Solution
Laser does not power on.	Dead or improperly installed batteries.	Charge or replace batteries. Ensure correct polarity.
Laser does not self-level.	Instrument is on an unstable surface or beyond its self-leveling range.	Place on a stable surface. Ensure the instrument is within its approximate leveling range.
HL760 receiver not detecting beam.	Receiver is out of range, not powered on, or not facing the laser.	Check receiver power. Ensure receiver is within operating range and oriented correctly towards the laser. Check for obstructions.
RC402N remote control not working.	Dead batteries in remote, out of range, or obstruction.	Replace remote batteries. Move closer to the laser unit. Ensure clear line of sight.
Height of Instrument Alert triggered frequently.	Laser unit is being bumped or the tripod is unstable.	Ensure the tripod is firmly set and the work area is free from vibrations or impacts.

If the problem persists after attempting these solutions, please contact Spectra Precision customer support.

9. Specifications

Feature	Specification
Model	GL422N
Brand	Spectra Precision
Operation Mode	Automatic Self-Leveling
Laser Type	Class 2 Visible Laser
Working Diameter	2,600 ft (800 m) with HL760 Receiver
Accuracy	±1/16 inch at 100 ft (±1.5 mm at 30 m)
Grade Range	-10% to +15%
Power Source	NiMH Rechargeable Batteries (2 D batteries included)
Item Weight	6.6 pounds (3 Kilograms)
Product Dimensions	20.08 x 10.63 x 16.14 inches
Material	Metal
Color	Black and Yellow
Remote Control Range	Up to 330 ft (100 m)

10. Warranty and Support

For detailed warranty information, please refer to the warranty card included with your product or visit the official Spectra Precision website. For technical support, service, or replacement parts, please contact your authorized Spectra Precision dealer or customer service directly.
Spectra Precision Contact Information: Please refer to the contact details provided on the official Spectra Precision website or in your product documentation.

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