LR Display Receivers for Grading and Excavating

Laser Display System Benefits

- Allows operator to check grade from the cab; increases productivity and safety and reduces labor
- Reduces rework because material is moved only one time
- Increases overall operator and machine efficiency, saving fuel and time
- Can easily and quickly be moved from one machine to another
- Wireless remote capability
- Works with your existing rotating laser - no longer need a second person with a rod mounted laser receiver

Getting to Grade Faster Increases Operator and Machine Productivity

Spectra Precision® LR Display Systems let you spend less time walking the job site and more time in the cab being productive. The laser display receiver guides the operator to the desired elevation or depth without a grade checker. Your accuracy will improve and your profits will increase. The operator optimizes machine time, effectiveness, efficiency and increases safety.

You can use these rugged, highly flexible display systems on a wide range of machines. The receivers are self-contained, portable and easily moved from machine to machine for greater operator and machine efficiency.

A wireless remote display and quick mounting accessories add to the versatility of the receivers.

Used on

- Backhoes
- Excavators
- Skid Steer Attachments
- Box Blades
- Dozers
- Trenchers
Versatile, 360-Degree Reception
Works with all types of rotating lasers and on all types of machinery for fast, no-hassle setup.

Multiple Accuracy Choices
Offers maximum flexibility to meet jobsite requirements, from rough grading to final finishing.

Wireless Remote Capability
Provides in-cab display of elevation and audible signals

Adjustable, Ultra-bright LED with Green On-Grade Display
Provides user selectable, easy-to-see display to match ambient lighting conditions.

Out-of-Laser Beam Indication
Indicator directs which way to move and get back in the beam. Selectable on or off.

Two-Year Warranty
Reliability you can count on.

Power Options
Choose alkaline batteries, nickel metal hydride rechargeable batteries, or a power cord that connects directly to the machine power.

Rugged & Waterproof
Durable polycarbonate and aluminum die cast housings withstand all weather and construction site conditions. Internal isolating shock mounts protect the electronics.

LR20 for Grade and Depth Control
Ideal for use on mini-excavators and compact machines
- 8-inch, 360-degree laser reception provides large working area and range
- Built in plumb indicator for fast, accurate grade checking in mini-excavator applications
- Super bright grade display with green “on-grade” LEDs provides superior depth/elevation indication
- Push button setup for ease of use and application flexibility
- System package with mini magnetic mount fits in compact carrying case for easy storage and transport
- Center and offset on-grades are ideal for both grading and excavating applications

LR30 for General Grading
Used on dozers and leveling equipment
- Use on grading equipment including dozers, scrapers, skid steers and levelers
- Five channels of grade information plus directional and out-of-beam indicator
- Three selectable accuracies meet job tolerances from rough grading to final finishing
- Full 360-degree reception picks up the laser from all directions
- LR30W links wirelessly to the RD20 in-cab display

LR50 for Excavating and Grading
Features built-in blade tilt and excavator boom plumb indicator
- Built-in blade tilt indicator helps the operator keep the blade level for increased accuracy and productivity
- Center On-grade provides an equal amount of grade information above and below on-grade. Use on dozers, graders, scrapers and box blades
- Built-in plumb indicator for fast, accurate grade checking in excavation applications
- Offset on-grade gives you more range above grade using the entire receiver for more productive excavation
- LR50W links wirelessly to the RD20 in-cab display

Spectra Precision Machine Display Receiver Features and Benefits

Accessories
RD20 Wireless Remote Display
Wireless remote mounts in the cab and displays grade information to the operator. Helps keep focus on the work and not on the receiver for higher productivity. Works with LR30W, LR50W & LR60W.
**LR50 for Excavating and Grading**

- Built-in blade tilt and excavator boom plumb indicator
- **Built-in blade tilt indicator** helps the operator keep the blade level for increased accuracy and productivity.
- **Center On-grade** provides an equal amount of grade information above and below on-grade. Use on dozers, graders, scrapers and box blades.
- **Built-in plumb indicator** for fast, accurate grade checking in excavation applications.
- **Offset on-grade** gives you more range above grade using the entire receiver for more productive excavation.
- **LR50W** links wirelessly to the RD20 in-cab display.

**MM-1 Magnetic Mount**

The MM-1 quickly attaches to the dipper arms of excavators or backhoes. Strong dual magnet packs will not slip on the machine and are adjustable for quick installation and set-up.

**DM-20 Dozer Mast**

The DM-20 is an easy-to-install rigid mast for grading machines. No welding is required and no drilling/tapping is required for Trimble Ready™ machines.

**Specifications**

<table>
<thead>
<tr>
<th></th>
<th>LR50 / LR50W</th>
<th>LR60 / LR60W</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Display Channels</strong></td>
<td>5-Channel Display</td>
<td>5-Channel Display</td>
</tr>
<tr>
<td><strong>Accuracy: Center on grade mode (grading)</strong></td>
<td>Fine: 5 mm (0.20 in) Standard: 10 mm (0.40 in) Wide: 20 mm (0.80 in)</td>
<td>Fine: 5 mm (0.20 in) Standard: 12 mm (0.45 in) Wide: 32 mm (1.25 in)</td>
</tr>
<tr>
<td><strong>Accuracy: offset on grade mode (excavating)</strong></td>
<td>Fine: 12 mm (0.50 in) Standard: 25 mm (1.0 in) Wide: 50 mm (2.0 in)</td>
<td>NA</td>
</tr>
<tr>
<td><strong>ACE—Angle Compensation Mode</strong></td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Blade-Tilt Accuracy</strong></td>
<td>± 0.5°, ± 1.5°, ± 2.5°</td>
<td>± 0.5°, ± 2.5°</td>
</tr>
<tr>
<td><strong>Plumb-Swing Accuracy</strong></td>
<td>± 0.5°, ± 2.5°</td>
<td>± 0.5°, ± 2.5°</td>
</tr>
<tr>
<td><strong>Vertical Reception</strong></td>
<td>203 mm (8 in)</td>
<td>171 mm (6.75 in)</td>
</tr>
<tr>
<td><strong>LED Battery Life</strong></td>
<td>Alkaline Bright/Dim 50 / 75 hrs</td>
<td>Ni-MH Bright/Dim 45 / 75 hrs</td>
</tr>
<tr>
<td><strong>Wireless with remote on</strong></td>
<td>35 hrs</td>
<td>30 / 40 hrs</td>
</tr>
<tr>
<td><strong>Wireless with remote on</strong></td>
<td>40 / 50 hrs</td>
<td>20 / 30 hrs</td>
</tr>
<tr>
<td><strong>Receiver Warranty</strong></td>
<td>2 Years</td>
<td>2 Years</td>
</tr>
</tbody>
</table>
## Rugged Laser Transmitters Built for the Jobsite

### Specifications

<table>
<thead>
<tr>
<th></th>
<th>LL500</th>
<th>LL400HV</th>
<th>GL412N/GL422N</th>
<th>GL612/GL622</th>
<th>UL633</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level Accuracy</strong></td>
<td>1.5 mm @ 30 m</td>
<td>1.5 mm @ 30 m</td>
<td>1.5 mm @ 30 m</td>
<td>1.5 mm @ 30 m</td>
<td>1.5 mm @ 30 m</td>
</tr>
<tr>
<td></td>
<td>(1/16&quot; @ 100 ft)</td>
<td>(1/16&quot; @ 100 ft)</td>
<td>(1/16&quot; @ 100 ft)</td>
<td>(1/16&quot; @ 100 ft)</td>
<td>(1/16&quot; @ 100 ft)</td>
</tr>
<tr>
<td></td>
<td>10 arc seconds</td>
<td>10 arc seconds</td>
<td>10 arc seconds</td>
<td>10 arc seconds</td>
<td>10 arc seconds</td>
</tr>
<tr>
<td><strong>Grade Range</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>-10 to +15% Single / Dual Axes</td>
<td>-25 to +25% Single / Dual Axes</td>
<td>-25 to +25% Single / Dual Axes</td>
</tr>
<tr>
<td><strong>Operating Diameter</strong></td>
<td>500 m (1600 ft)</td>
<td>800 m (2600 ft)</td>
<td>800 m (2600 ft)</td>
<td>800 m (2600 ft)</td>
<td>800 m (2600 ft)</td>
</tr>
<tr>
<td><strong>Temperature Compensation</strong></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Laser Type / Classification</strong></td>
<td>3 mW 670 nm, Class 2</td>
<td>3 mW 650 nm, Class 2</td>
<td>3 mW 650 nm, Class 2</td>
<td>3 mW 650 nm, Class 2</td>
<td>&lt;5 mW 650 nm, Class 3A/3R</td>
</tr>
<tr>
<td><strong>Rotation Speed</strong></td>
<td>600 rpm</td>
<td>600 rpm</td>
<td>300, 600 rpm</td>
<td>300, 600 rpm</td>
<td>0 - 900 rpm</td>
</tr>
<tr>
<td><strong>Drop Height on Concrete</strong></td>
<td>N/A</td>
<td>1 m (3 ft)</td>
<td>1 m (3 ft)</td>
<td>1 m (3 ft)</td>
<td>1 m (3 ft)</td>
</tr>
<tr>
<td><strong>Laser Warranty</strong></td>
<td>5 Years</td>
<td>5 Years</td>
<td>5 Years</td>
<td>5 Years</td>
<td>5 Years</td>
</tr>
<tr>
<td><strong>Standard Receiver</strong></td>
<td>Choice of HL700 Digital Readout receiver or CR600 combo receiver</td>
<td>Choice of HL760 Digital Readout receiver or CR600 combo receiver</td>
<td>Choice of HL760 Digital Readout receiver or CR600 receiver</td>
<td>Choice of HL760 Digital Readout receiver or CR600 receiver</td>
<td>HL750 Digital Readout receiver</td>
</tr>
<tr>
<td><strong>Standard Receiver Warranty</strong></td>
<td>3 Year “No Excuses”</td>
<td>3 Year “No Excuses”</td>
<td>3 Year “No Excuses”</td>
<td>3 Year “No Excuses”</td>
<td>3 Year “No Excuses”</td>
</tr>
<tr>
<td><strong>Wireless Remote Receiver</strong></td>
<td>N/A</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Elevation Monitoring</strong></td>
<td>CR602 Digital Readout receiver</td>
<td>CR602 Digital Readout receiver</td>
<td>CR602 Digital Readout receiver</td>
<td>CR602 Digital Readout receiver</td>
<td>CR602 Digital Readout receiver</td>
</tr>
<tr>
<td><strong>Operating Temperature</strong></td>
<td>-20° to +50°C (-4° to +122°F)</td>
<td>-20° to +50°C (-4° to +122°F)</td>
<td>-20° to +50°C (-4° to +122°F)</td>
<td>-20° to +50°C (-4° to +122°F)</td>
<td>-20° to +50°C (-4° to +122°F)</td>
</tr>
<tr>
<td><strong>Remote Control</strong></td>
<td>N/A</td>
<td>Optional RC402N Full 2-way communication</td>
<td>RC402 Digital Readout receiver</td>
<td>Remote elevation monitoring (CR600 receiver)</td>
<td>Remote elevation monitoring (CR600 receiver)</td>
</tr>
<tr>
<td><strong>Remote Operating Range</strong></td>
<td>N/A</td>
<td>100 m (330 ft) radius</td>
<td>100 m (330 ft) radius</td>
<td>100 m (330 ft) radius</td>
<td>100 m (330 ft) radius</td>
</tr>
</tbody>
</table>

### Applications

- **LL500 Laser Level**
  - Long range accuracy and field proven reliability
  - The workhorse of the industry for decades
  - Applications:
    - Level work
    - General elevation control
    - General construction
    - Cut and fill

- **LL400HV Laser Level**
  - Fast setup, automatic electronic self leveling and long range
  - Rugged design - Warranted to withstand 1 m (3 ft) drop
  - Applications:
    - Level and manual slope work
    - General elevation control
    - Cut and fill
    - Vertical self-leveling

- **GL412N/GL422N Grade Lasers**
  - Powerful, easy-to-use single or dual slope grade lasers with radio remote
  - Three lasers in one - Level, grade, and vertical alignment
  - Applications:
    - Level and automatic slope (grade) work
    - Site preparation
    - General construction

- **GL612/GL622 Grade Lasers**
  - Accurate horizontal, vertical, single or dual slope grade lasers with radio remote
  - Automatic Grade Match and Planekok functions, for precision concrete applications
  - Applications:
    - Levelling concrete forms
    - Grade/elevation control
    - Remote elevation monitoring (HL750 receivers)

- **UL633 Universal Laser**
  - Versatile grade laser with total control in X, Y and Z axes
  - Automatic Planekok functions for precision concrete laser screed applications
  - Applications:
    - Levelling concrete forms
    - Grade/elevation control
    - Machine control
    - Pipe laying and layout

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PN 022507-326B (09/2015)