Providing the Industry with the Leading Terrestrial Laser Scanner (TLS)

The Optech ILRIS Terrestrial Laser Scanner enables surveyors to capture and define the world point by point. From single to multiple scans, you can coordinate and document your subject in 3 dimensions. An ideal complement to a surveyor’s tool-kit, the ILRIS brings high-density engineering and survey-grade data to the table—even at extremely long range.

The Optech ILRIS Terrestrial Laser Scanner is a fully portable, laser-based, ranging and imaging system for the commercial survey, engineering, mining and industrial markets. A compact and highly integrated instrument with digital image capture and sophisticated software tools, the ILRIS is an industry-leading solution that addresses the needs of commercial users. The ILRIS is field-ready and requires no specialized training for deployment. Similar in size to a motorized total station, with an on-board high-resolution digital camera and a large-format LCD viewfinder, the ILRIS has a visual interface similar to that of a digital camera.
### ILRIS Terrestrial Laser Scanner

#### Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>ILRIS-HD</th>
<th>ILRIS-HD-ER</th>
<th>ILRIS-LR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range 80% reflectivity</td>
<td>1250 m (4101 ft)</td>
<td>1800 m (5905 ft)</td>
<td>3000 m (9842 ft)</td>
</tr>
<tr>
<td>Range 10% reflectivity</td>
<td>400 m (1312 ft)</td>
<td>650 m (2132 ft)</td>
<td>1330 m (4363 ft)</td>
</tr>
<tr>
<td>Minimum range</td>
<td>3 m (9 ft, 10 in)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laser repetition rate (peak and effective PRF)</td>
<td>10,000 Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency (effective PRF/peak PRF)</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw range accuracy ³, ⁴</td>
<td>7 mm @ 100 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw range accuracy ³, ⁴</td>
<td>4 mm @ 100 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw angular accuracy</td>
<td>8 mm @ 100 m (80 μrad)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Scanner Performance

- Field of view: 40° × 40° (-20° through 90°, -90° through 20° with 3D option)
- Minimum step size ⁵: 0.001146° (20 μrad)
- Maximum density (point-to-point spacing): 2 cm @ 1000 m (1 in @ 3280 ft)
- Rotational speed: 0.001 to 20°/sec
- Rotational step size (minimum): 0.001146° (20 μrad)
- Beam diameter (1/e²): 19 mm @ 100 m, 27 mm @ 100 m
- Beam divergence: 0.008594° (150 μrad), 0.014324° (250 μrad)
- Laser wavelength: 1535 nm, 1064 nm
- Laser class ⁶, ⁷: 1 or 1M
- Integrated camera: 3.1 MP

#### Physical and Environmental

- Size (L × W × H): 320 × 320 × 240 mm (12.6 × 12.6 × 9.5 in)
- Weight: 14 kg (31 lbs)
- Operating temperature: -20°C to +40°C (-4°F to +104°F)
- Storage temperature: -20°C to +50°C (-4°F to +122°F)
- Relative humidity: 0 – 95% non-condensing
- Power consumption: 75 W
- Battery operation (standard battery pack, hot-swappable): 5 hours operation
- Data storage: Removable USB drive

#### Optional Configuration

- 3D: Automated pan/tilt base (7 kg/16 lbs)
- MC: Motion compensation option: Enables GPS timestamping (from INS system)

#### Standard Accessories

- Scanner control software for Windows-based computers
- Automated alignment software
- User manuals
- Interconnect power/battery cables

#### Optional Accessories

- Manual pan/tilt base
- PDA, UMPC, Notebook PCs
- Backpack
- GPS/external camera mounting kit
- Batteries and chargers
- Cold-weather jacket

---

1 PRF is pulse repetition frequency.
2 All ranges quoted are with ER Mode enabled.
3 All accuracies are 1 sigma, as performed under Optech test conditions. Details available on request.
4 Average of 4 shots minimum.
5 Independent fully-selectable vertical and horizontal step size selection.
6 Laser class in accordance with IEC 60825-1 and US FDA 21 CFR 1040.
7 ILRIS-LR laser Class 3 when viewing between 0-114 m (0-374 ft). Class 1M when viewing at ranges greater than 114 m (374 ft).

---

For more detailed specifications and features, please refer to the Optech website or contact Optech Incorporated.