The Optech Polaris Terrestrial Laser Scanner (TLS) delivers accurate, precise data faster than ever before, bridging the gap between small, light-weight, short-range sensors and large, long-range, pulsed time-of-flight scanners. Built with surveyors in mind, the Polaris has a user-friendly on-board operator interface with menu-driven operations for quickly collecting and georeferencing point cloud data.

With a powerful quad-core processor, an integrated high-resolution camera, a digital compass and inclinometer, an L1 GNSS receiver and weather-proof housing, the Polaris can be deployed in various environments for a wide range of applications, using different workflows and setups. The Polaris leads the market in price versus performance, starting at a price that rivals short-range scanners while outperforming long-range scanners. With accelerated performance and all the built-in features surveyors need, the Polaris offers more flexibility than ever before. Whether on a tripod, vehicle, or moving platform, the outstanding performance of the Polaris makes it the most versatile and efficient terrestrial laser scanner on the market.

www.teledyneoptech.com
## Specifications

### Laser
- **Range measurement principle**: Pulsed
- **Wavelength**: 1550 nm (near infrared)
- **Laser safety classification**: 1
- **Sample collection rate**: Up to 2 MHz
- **Intensity recording**: 12 bits
- **Minimum range**: 1.5 m
- **Waveform digitizing technology (WFD)**: Yes
- **Number of returns recorded**: Up to 4 (first 2 and last 2)

### Scanning Resolution
- **Angular measurement resolution**: up to 12 µrad
- **Max. sample density [point to point spacing]**: 2 mm @ 100 m

### Accuracy and Repeatability
- **Range accuracy (1 sigma)**: 5 mm @ 100 m
- **Precision, single shot (1 sigma)**: 4 mm @ 100 m
- **Angular accuracy**: 80 µrad

### Scanning Characteristics
- **Max. field of view (vertical)**: 120° (-45 to +75°)
- **Max. field of view (horizontal)**: 360°
- **Min. angular step size (vertical)**: 12 µrad
- **Min. angular step size (horizontal)**: 20 µrad

### Additional Sensors and Features
- **Dual-axis inclinometer (accuracy)**: Up to 0.01°
- **GNSS receiver**: L1 GPS + GLONASS
- **External GNSS support**: Yes, incl. antenna mount
- **Compass**: Digital
- **Registration/orientation method**: GNSS and compass, backsighting, resection
- **On-board registration data**: Yes
- **On-board target acquisition RetroID**: Yes
- **Pause while scanning**: Yes
- **Multiple scan area selection**: Yes, multiple ROIs
- **On-board planning mode**: Yes
- **Mobile operation**: Yes

### System Peripherals
- **Data storage capacity**: 240 GB internal SSD

### Communications / Data Transfer
- **Wireless LAN**: Yes
- **USB connector**: Yes
- **Ethernet port**: Yes
- **Communications/data transfer**: 100 Mbps Ethernet, WLAN, USB

### Imaging System
- **Internal cameras**: Yes
- **Internal camera resolution**: 80-Mpix panoramic image
- **Export format of internal camera**: JPEG
- **External camera DSLR**: Yes with auto trigger
- **White-balancing DSLR**: Yes
- **Export format of ext. camera**: JPEG, NEF

### Power
- **Power supply input voltage**: 9 to 32-V DC
- **Battery type**: Internal, hot swappable Li-Ion batteries
- **Battery power**: 2.5 hours
- **Power consumption**: 60 W

### Operation Characteristics
- **Operating temperature (min.)**: -20°C (-4°F)
- **Operating temperature (max.)**: +50°C (122°F)
- **Storage temperature**: -40°C to +80°C (-40 °F to +176°F)

### Physical Characteristics
- **Height**: 323 mm (12.7")
- **Width**: 217 mm (8.5")
- **Total weight**: 11.2 kg (24.6 lbs.)

### Control Options
- **On-board display**: Touchscreen control, sunlight visible, 640x480, color

### ATLAScan Software
- **Remote scanner control**: Yes
- **Geo-referencing**: Automatic
- **Target-free automatic alignment**: Yes
- **Feature / primitive extraction**: Yes
- **Terrain mesh**: Yes
- **3D meshing**: Yes
- **Measurements and calculations**: Yes
- **Monitoring**: Yes
- **Automatic line features extraction**: Yes
- **Vegetation removal**: Yes

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<th>Specification</th>
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| Max range tested on flat targets, larger than the laser beam diameter, perpendicular angle of incidence | 1) Max range tested on flat targets, larger than the laser beam diameter, perpendicular angle of incidence.  
2) Max range tested on flat targets, larger than the laser beam diameter, and STD Clear visibility (23 km).  
3) Normal operation to -10°C, extended cold temperature operation to -20°C with Optech Cold Weather package.  
4) Defi nition of multiple ROIs in a single scan is possible using ATLAScan Control module  
5)  Successful pre-registration depends on the object geometry, scanning resolution and overlap (min. 20%)  
6) Automatic line extraction for break lines of a mesh (e.g. crests and toes of a terrain mesh).  
7) Laser plummet is built into the tribrach  
8) Laser plummet is built into the tribrach  
9) Laser plummet is built into the tribrach  
10) With the sensor capturing up to 4 returns, at up to 500 kHz pulse repetition frequency. |

### Ordering Information
Contact your local Teledyne Optech representative or an authorized Teledyne Optech dealer.

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All specifications are subject to change without notice.

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