



Polaris TLS

for Structural Engineering

The Polaris Terrestrial Laser Scanner (TLS) meets the needs of structural engineering by embedding Teledyne Optech's advanced lidar technology in a redesigned instrument complete with an easy-to-use and flexible workflow. Whether the application is as-built surveys, continual structural monitoring, or inspection of existing structures, the Polaris delivers highly accurate geo-referenced 3D data in a package so simple that any operator can handle the collection regardless of training or skill level.



To save time and money, powerful planning tools let surveyors and engineers arrange the survey parameters and positions without leaving the office, while field crew execute the plans with the press of a single button. Even levelling and positioning can be done completely hands-off thanks to Polaris' integrated tilt compensator, optical plummet, compass, and GNSS antenna. Combined with an excellent data acquisition rate, this makes it easy for operators doing as-built surveys to take multiple collections from different positions, capturing every nook and cranny of complex structures.

Despite this simple workflow, the Polaris still has the accuracy and angular resolution to create engineering-grade models colorized by its integrated camera, or detect sub-centimeter movement or deformation in buildings, bridges and other structures.

These are only a few of the potential uses for this flexible sensor. With its 1.5 to 1600 m range envelope, the Polaris can do both short-range indoor surveys and long-range collections of inaccessible or hazardous targets. An open API enables surveyors to customize the Polaris and

integrate it with third-party sensors to suit their unique application, including infrared cameras, inertial navigation systems, or even sonar.

Back at the office, the Polaris delivers data in several common formats directly into 3rd-party software. Teledyne Optech also provides tailored workflows that fit the specific needs of specific applications and reduce the time spent producing data products.

TLS customers expect a complete solution – survey planning, setup, scanner operation, registration (alignment), and seamless processing (parsing) in one software package. The Polaris is intended to be the tripod-mounted static scanner that will be the easiest to operate for surveyors familiar with total stations. While it will have the look and feel of a total station, it will generate 3-D point clouds with corresponding camera images. In addition to a competitive price point for mid-market users, our focus will be on implementing market-specific workflows and minimizing setup time and complexity so as to reduce the skill and training requirements for field operators.

MARKET DRIVERS

- Construction planning
- Route planning
- Set-up and layout
- Location and verification
- As-built construction

POLARIS VALUE PROPOSITION

- Precision
- Ease-of-use (geo-referencing)
- Internal camera
- External integration options

PRODUCT OBJECTIVES

- One-button scanning
- Project planner
- Back-sighting/resection
- Multiple returns
- Optical plummet
- Tilt compensation
- GPS receiver
- Data quality
- API to facilitate 3rd party application development



FEATURES

SUNLIGHT-VISIBLE OPERATOR INTERFACE
SINGLE-CHANNEL INTENSITY

BACK-SIGHTING
GPS RECEIVER
SURVEY REFERENCE POINT

1" TILT COMPENSATOR
LEVELING ADJUSTMENTS
OPTICAL PLUMMET

INTEGRATED COMPASS

MULTIPLE RETURNS

IN-OFFICE SURVEY PLANNING



BENEFITS

ENHANCED OPERATOR EXPERIENCE

GEO-REFERENCING SUPPORT
EASY USER ADOPTION

SUPERIOR LEVELING CAPABILITY
ENHANCED OPERATOR EXPERIENCE

REGISTRATION AID

DATA IMPROVEMENT

EASY FIELD DEPLOYMENT