

Provided by Xpert Survey Equipment
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KEY FEATURES

WAVEPULSE[®] technology that maintains high accuracy over operating range

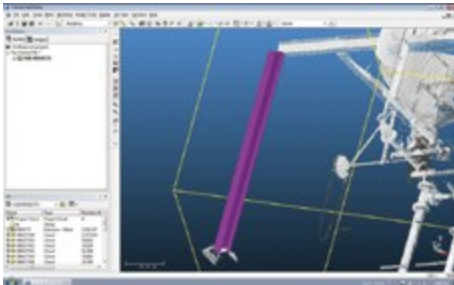
Data capture 54,000 points per second

Data integration with Trimble Access for Spatial Imaging running on Trimble Tablet.

Large 360° x 300° field of view

Autonomous Operation Mode for repetitive scan situations

Trimble Access writes Trimble RealWorks project files in the field to eliminate the need for data conversions in the office



For contractors working on adaptive reuse or renovation construction projects, creating an accurate model of existing building conditions to understand the current structure and spatial utilization of a building is critical. The Trimble[®] CX 3D laser scanner is an advanced 3D laser measurement instrument designed to help building contractors solve this very problem. With the Trimble CX, contractors can feel confident with the quality and accuracy of the data collected due to the instrument's highly accurate data capture process. And operating the instrument couldn't be easier. Utilizing easy-to follow workflows, contractors can choose from either field software to control the instrument or collect data with the simple press of a button.

BUILT FOR EFFICIENCY ON THE JOBSITE

The Trimble CX is designed with easy set-up as well as efficient data capture in mind. With reliable scanning at 54,000 points per second, an 80 meter range and a 360° x 300° field of view, the instrument provides widespread and efficient data capture from a single setup. Eliminate the need to make follow up visits to the project collecting data that was "missed" the first time—now you can easily and efficiently capture the data needed in a single visit.

Trimble's proprietary WAVEPULSE technology in the Trimble CX 3D laser scanner combines the high short-range accuracy of phase-shift (carrier wave) technology with the low-noise sensitivity and high-distance characteristics of time-of-flight (pulse) technology. This ensures high-precision measurements over the full operating range to provide clean 3D data. An integrated camera allows contractors to collect images, which improves the visualization, post-processing and communication of captured data.

A rugged design with IP64 rating and protective housing for the rotating laser and camera ensures the Trimble CX 3D laser scanner delivers continuous, reliable results in typical construction environments.

AN INTEGRAL SOLUTION FOR ADAPTIVE REUSE AND RENOVATION CONSTRUCTION

To obtain a clear understanding of the existing conditions of a building, the Trimble CX provides a solution for contractors to capture accurate and detailed information. Applications include:

- Capturing existing condition data for accurate adaptive reuse and renovation construction planning and design;
- Comparing the existing structure against the planned design to identify "clashes" prior to construction;
- Verify the "flatness" of the existing floors to determine if improvements are needed before reuse construction or renovation begins;
- Ensuring pre-fabricated parts will fit in their intended location prior to transportation and installation on the project;
- Creating as-built construction drawings for quality assurance purposes;
- Create a 3D model of the complete facility for daily operation planning and analysis by building owners.

A TOTAL SOLUTION

With the intuitive, streamlined Trimble Access[®] software running on the Trimble Tablet Rugged PC, capturing data with the Trimble CX 3D laser scanner is fast and easy to learn. Data can then be seamlessly transferred from Trimble Access to Trimble RealWorks[®] survey software. Once in Trimble RealWorks contractors can easily manipulate the point cloud and export data to the detailing package of choice.

TRIMBLE CX 3D LASER SCANNER

PERFORMANCE

WAVEPULSE technology combined time-of-flight, phase shift
 Range (typically under standard clear conditions)^{1,2} 80 m to 90% reflective surface³
 50 m to 18% reflective surface³
 Scanning speed 54,000 points per second
 Standard deviation⁴ 1 mm @ ≤30 m;
 1.25 mm @ ≤50 m; 1.8 mm @ ≤80 m
 Single point accuracy⁴ position = 4.5 mm @ 30 m; 7.3 mm @ 50m
 distance = 1.2 mm @ 30 m; 2 mm @ 50m
 Hz angle = 15" (70 μrad); Vt angle = 25" (120 μrad)
 Modeled surface precision ±3 mm (depending on method)²
 Luminance resolution 16 bits
 Leveling circular level in tribrach: 8' dual-axis compensator (user selectable); resolution 0.005°; operating range ±10°
 Data integrity Vertical compensation
 Spot size 8 mm @ 25 m; 13 mm @ 50 m
 Scan grid minimum angular step (horiz. & vert.): 0.002°
 scan row (hz): 180,000 points ; scan row (vt): 150,000 points

SYSTEM SPECIFICATIONS

Laser type: 660 nm, red
 Class: IEC 60825-1 – Class 3R
 beam divergence: 0.2 mrad, 3 mm at exit
 Field of view 360° x 300°
 Optics separate channel emission/reception
 Data transfer ~~USB flash drive; Ethernet~~
 Digital imaging ~~real time integrated~~
 Status indicators (power supply)

PHYSICAL

Instrument dimensions: 120 D x 520
 weight: 11.8 kg (26 lb); power consu
 Power supply ~~Integrated unit: AC 90-224~~
 DC 24 V nominal; 2 integrated batteries (charg
 dimensions: 200 D x 320 W x 230 H mm; weight:
 Instrument case
 dimensions: 795 D x 518 W x 394 H mm; weight:
 Environmental operating temp:
 storage temp:
 light: operational under dark and ambient light
 sealing: IP64 (I.E.C.); shock: IEC 60721-3-
 2M3 (S
 humidity: 20% to 85%, no
 Standard accessories ~~rotating~~
 integrated power supply pack; Trim
 50 adhesive flat targets; USB flash drive;
 data transfer cable, WLAN antenna
 Optional accessories Trimble Tablet
 Target Kit, Trimble Tri-Max tripod

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FIELD SOFTWARE

Trimble Access for Spatial Imaging is control software that runs on Trimble Tablet to control the Trimble CX. In addition to instrument control, Trimble Access includes specialized applications that allow users to create deliverables directly in the field on the Trimble Tablet controller.

- Efficient in-field registration:**
- Station setup and resection routines
 - Electronic leveling
 - Dual axis compensation
 - Automatic target recognition
 - Target re-check

- Refined framing capabilities:**
- Fast framing on video, point cloud, panorama or image
 - Rectangular and polygonal framing
 - Video-based remote instrument control

- Scanning advantages:**
- Full dome scanning
 - Autonomous scanning mode
 - Scan time estimation and resolution control
 - Return intensity and colored point cloud

- Sophisticated display:**
- Real-time 3D visualization, pan and zoom, even while scanning
 - Live video streaming
 - True color or intensity mapped point cloud display
 - Simulated surface rendering and environmental lighting



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1 Standard clear: No haze. Overcast or moderate sunlight with very light heat shimmer.
 2 Range and precision depend on atmospheric conditions, size of targets and background radiation.
 3 Kodak Gray Card, Catalog number E1527795.
 4 Figures (typical values at 99% albedo) given for standard data capture, single shot, on distance measurement.

Specifications subject to change without notice.



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