

KEY FEATURES

Designed for performance in industrial environments

WAVEPULSE™ technology that maintains high accuracy over operating range

Clean, low-noise data

Data capture 54,000 points per second

Large 360° x 300° field of view

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



3D data inside Trimble RealWorks

The Trimble® CX scanner is an advanced 3D laser measurement instrument designed for use in industrial, shipbuilding and offshore platform environments as well as in selected civil survey applications. Providing highly accurate data that requires no additional processing after capture, the Trimble CX system provides real advantages for your project management, starting with the ability to perform QA/QC in the field on instantly delivered point clouds.

The Trimble CX scanner is a mobile and comparatively light weight instrument that allows for easy movement on a project. The proprietary WAVEPULSE™ technology combines the low noise sensitivity and high distance discrimination of time-of-flight technology with the high short range accuracy of phase shift technology.

The result is high-precision measurements over the full operating range that provide the clean 3D data needed for industrial plant scanning applications—allowing the user to realize increased productivity and reduced operating costs. And by requiring fewer setups and enabling faster processing time in an industrial plant environment, the Trimble CX solution can contribute to improved worker safety.

BUILT FOR EFFICIENCY IN THE PLANT

The Trimble CX solution is built for efficient data capture in the plant environment. With reliable scanning at 54,000 points per second, an 80 meter range and a 360 degree x 300 degree field of view, the solution provides widespread and efficient data capture from a single setup.

A rugged design, IP54 environmental rating and protective covering for the rotating mirror allows the scanner to deliver continuous and reliable results even in difficult industrial environments.

An integrated camera collects additional image information that can improve the visualization, post-processing and communication of the captured data.

The Trimble CX is supported by Trimble Access™ running on Trimble Tablet; it's easy to use and easy to learn and data can be seamlessly transferred to Trimble RealWorks® and Trimble LASERGen™ software packages.™

The Trimble CX can also capture data in controller-less mode using the dedicated features built in to the power supply system, representing a simplicity option in the case of repetitive scan modes.

CERTIFIED FOR TANK MEASUREMENTS

The Trimble CX solution, supported with the 3D Extractor software, is ideal for calibrating large storage tanks. The Trimble CX tank calibration solution significantly reduces time taken to calibrate storage tanks while also providing a richer data set that can be used for monitoring tank stability. The Trimble solution is certified by the Physikalisch-Technischen Bundesanstalt (the German national metrology Institute, PTB) in Braunschweig.

AN INTEGRAL SOLUTION FOR PLANT LIFECYCLE MANAGEMENT

To obtain a clear understanding of the location and conditions of plant assets, the Trimble CX provides a solution for engineers and managers to capture accurate and factual information. Applications include:

- Capturing existing condition data for accurate project planning, basic and detailed design;
- Ensuring dimensions of fabricated parts prior to transportation and installation;
- Verifying as-built construction for quality assurance and additional detailed design;
- Visualizing real world conditions for training and simulation;
- Monitoring plant assets and potential movement or deformation during use;
- Planning retrofit/revamp projects based upon accurate and factual data;
- Calibrating storage tanks by determining filling tables and sump volumes.

TOTAL SOLUTION

Data from the Trimble CX scanner can be used alone or it can be combined with data from other Trimble surveying instruments such as the Trimble FX™ and GX™ 3D Scanners and the Trimble VX™ Spatial Station.

TRIMBLE CX 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 size8 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 color video
Status indicators (power supply) multiple

PHYSICAL

Instrument dimensions: 120 D x 520 W x 355 H mm
weight: 11.8 kg (26 lb); power consumption: 50 W
Power supply Integrated unit: AC 90–240 V, 50–60 Hz;
DC 24 V nominal; 2 integrated batteries (chargers separate)
dimensions: 200 D x 320 W x 230 H mm; weight: 12.6 kg (28 lb)
Instrument case rugged, rolling;
dimensions: 795 D x 518 W x 394 H mm; weight: 12 kg (26.5 lb)
Environmental operating temp: 0 °C to 40 °C;
storage temp: –20 °C to 50 °C
light: operational under dark and ambient light conditions
sealing: IP64 (I.E.C.); shock: IEC 60721-3-2: 2M2 (scanner)
2M3 (scanner in case)
humidity: 20% to 85%, non-condensing
Standard accessories rolling instrument case;
integrated power supply pack; Trimble tribrach;
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. Users may also continue to use control software on a laptop PC.

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
- Visualization of instrument location



Standard accessories

- Rolling instrument case
- Trimble tribrach
- Data transfer cable
- USB flash drive
- Adhesive flat targets
- Power supply unit
- Batteries/chargers

Optional accessories

- Target kit

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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