



Trimble X7

3D LASER SCANNING SYSTEM

High-speed 3D laser scanning system with new innovations to simplify adoption, increase efficiency and provide confidence in the field.

Simple

- ▶ Reliable field workflows suitable for all users
- ▶ Intuitive Trimble Perspective software to operate, manage, view and validate scan data
- ▶ Fast image capture with Trimble® VISION™ technology
- ▶ Compact and lightweight for easy transport and mobility

Smart

- ▶ Breakthrough innovations for reliable data collection
- ▶ New Trimble X-Drive deflection system enables automatic calibration to ensure accuracy on every scan with no downtime for calibration service
- ▶ Unique Trimble Registration Assist for automatic registration, refinement, and reports to leave the site with confidence
- ▶ Automated survey grade self-leveling

Professional

- ▶ Reliable IP55 rating and industry leading 2-year standard warranty
- ▶ High sensitivity time-of-flight EDM to effectively capture dark and reflective surfaces
- ▶ Flexible operation with tablet or one-button workflow
- ▶ Data integration with Trimble and non Trimble software

Learn more: [geospatial.trimble.com/X7](https://www.trimble.com/geospatial/X7)



SYSTEM OVERVIEW

| | |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Trimble X7 | High-speed 3D laser scanner with combined servo drive/scanning mirror, integrated imaging, automatic calibration, automated registration technologies and survey-grade self-leveling |
| Trimble Perspective | Easy to use software for scanner control, 3D data visualization and processing. Capabilities include automated infield registration, annotations and measurements |

SCANNING PERFORMANCE

| GENERAL | |
|----------------------------------|----------------------------------------------------------|
| Scanning EDM Laser Class | Laser class 1, eye safe in accordance with IEC EN60825-1 |
| Laser Wavelength | 1550nm, invisible |
| Field of View | 360° x 282° |
| Scan Duration | Fastest 2 min 34 sec with images, 1 min 34 sec without |
| Scan Speed | Up to 500kHz |
| RANGE MEASUREMENT | |
| Range Principle | High speed, digital time-of-flight distance measurement |
| Range Noise ^{1,2} | <2.5 mm @30 m |
| Range ³ | 0.6 m - 80 m |
| High Sensitivity Mode | Dark (asphalt) and reflective (stainless steel) surfaces |
| SCANNING ACCURACY | |
| Validation | Guaranteed over lifetime with auto-calibration |
| Range Accuracy ^{1,2} | 2 mm |
| Angular Accuracy ^{1,5} | 21" |
| 3D Point Accuracy ^{1,5} | 2.4 mm @ 10 m, 3.5 mm @ 20 m, 6.0 mm @ 40 m |

SCANNING PARAMETERS

| DURATION ⁴ (MIN) | SCAN MODE | SPACING (MM) @ 10 M | SPACING (MM) @ 35 M | SPACING (MM) @ 50 M | NUMBER OF POINTS (MPTS) | MAX FILE SIZE (MB) |
|--------------------------------|------------------|------------------------|------------------------|------------------------|-------------------------|--------------------|
| 2 | Standard | 11 | 40 | 57 | 12 | 160 |
| 4 | Standard | 5 | 18 | 26 | 58 | 420 |
| | High Sensitivity | 9 | 33 | 47 | 17 | 190 |
| 7 | Standard | 4 | 12 | 18 | 125 | 760 |
| | High Sensitivity | 6 | 21 | 30 | 42 | 330 |
| 15 | High Sensitivity | 4 | 13 | 19 | 109 | 710 |

IMAGING PERFORMANCE

| | |
|-------------------|----------------------------------------------------------------------------|
| Sensors | 3 coaxial, calibrated 10MP cameras |
| Resolution | 3840 x 2746 pixels for each image |
| Raw Image Capture | Fast 1 minute - 15 images - 158MP Quality 2 minutes - 30 images - 316MP |
| Settings | Auto Exposure Auto White Balance correction and indoor/outdoor presets |

AUTOMATIC LEVEL COMPENSATION

| | |
|-----------------------|--------------------------------------------|
| Type | Automatic Self-leveling, Selectable on/off |
| Range | ± 5° (Survey Grade), ± 45° (Coarse) |
| Upside Down | ± 5° (Survey Grade) |
| Survey Grade Accuracy | < 3" = 0.3 mm @ 20 m |

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| AUTOMATIC CALIBRATION | |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Integrated Calibration System | Full auto-calibration of range and angular systems in 25 seconds with no user interaction or targets |
| Angular Calibration | Applies a correction to the collimation error, i.e., the deviation of the horizontal, vertical or sight axis |
| Range Calibration | Applies a distance correction in the albedo and the distance measurement |
| Smart Calibration | Monitors environmental temperature, ambient light, vibration, instrument temperature and vertical speed for optimum performance |
| TRIMBLE REGISTRATION ASSIST | |
| Inertial Navigation System | IMU tracks instrument position, orientation and movement |
| Auto-Registration | Automatic scan orientation and alignment with last or pre-selected scan |
| Manual Registration | Manual alignment or split screen cloud to cloud |
| Visual Checks | Dynamic 2D and 3D viewing for QA |
| Refinement | Automatic registration refinement |
| Registration Report | Report with project and station average error, overlap and consistency results |
| GENERAL SPECIFICATIONS | |
| WEIGHT AND DIMENSIONS | |
| Instrument (including battery) | 5.8 kg (12.78 lbs) |
| Internal Battery | 0.35 kg |
| Dimensions | 178 mm (W) x 353 mm (H) x 170 mm (D) |
| POWER SUPPLY | |
| Battery Type | Rechargeable Li-Ion battery 11.1V, 6.5Ah (Standard for Trimble Optical Instruments) |
| Typical Duration | 4 hours per battery |
| ENVIRONMENTAL | |
| Operating Temperature | -20 °C to 50 °C (-4 °F to 122 °F) |
| Storage Temperature | -40 °C to 70 °C (-40 °F to 158 °F) |
| Ingress Protection Rating | IP55 (dust protected and water jet) |
| OTHERS | |
| Remote Control | Trimble T10 tablet or comparable Windows® 10 tablet or laptop via WLAN or USB cable |
| Push Button | One-button scan operation |
| Communications / Data Transfer | WLAN 802.11 A/B/G/N/AC or USB Cable |
| Data Storage | Standard SD Card (32GB SDHC included) |
| Accessories | <ul style="list-style-type: none"> • Backpack for easy transport and airline carry-on • Lightweight carbon fiber tripod with bell connector • Quick release adapter for X7 and carbon fiber tripod |
| Warranty | 2 year standard |

Trimble X7 3D LASER SCANNING SYSTEM

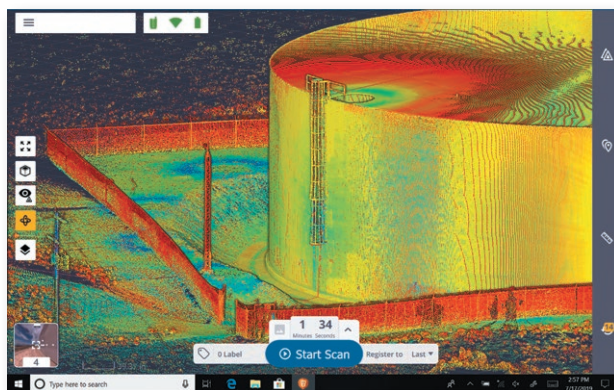
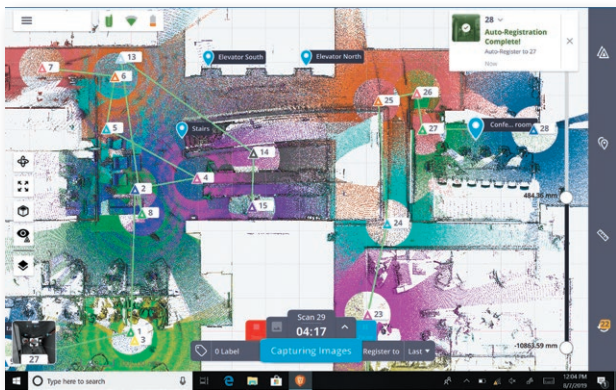
TRIMBLE PERSPECTIVE SOFTWARE

SYSTEM REQUIREMENTS

| | |
|------------------|----------------------------------------------------------------------|
| Operating System | Microsoft® Windows® 10 |
| Processor | Intel® 6th Generation Core™ i7 2.5 GHz processor or better |
| RAM | 8GB or better |
| VGA Card | Intel HD Graphics 520 or better |
| | 256 GB Solid State Drive (SSD), (512GB or more for best performance) |

FEATURES

| | |
|-----------------------------|---------------------------------------------------------------------------------------------------------------|
| Scanner Operation | Remote control or cable |
| Trimble Registration Assist | Automatic and manual registration, refinement and reporting. |
| Data Interaction | 2D, 3D and Station View |
| In-field Documentation | Scan labels, annotations, pictures and measurements |
| Auto Sync | Automatic data sync from one-button operation |
| Data Redundancy | Data stored on SD Card and tablet |
| Data Integration | Export formats to support Trimble and non-Trimble software File formats: TDX, TZF, E57, PTX, RCP, LAS, POD |



- 1 Specification given as 1 sigma.
- 2 On 80% albedo. Albedo given @ 1550 nm.
- 3 On matte surface with normal angle of incidence.
- 4 Durations are rounded up to the nearest minute and include auto-calibration.
- 5 When instrument leveled within ± 5°.

Specifications subject to change without notice.



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