DATASHEET

TRIMBLE VX SPATIAL STATION

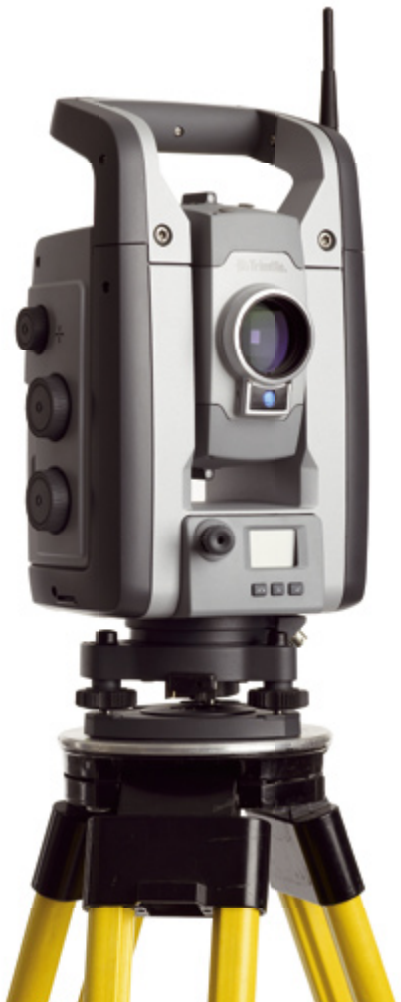
KEY FEATURES

Collect rich data for creating enhanced 2D and 3D deliverables in RealWorks Survey software

Combine Trimble terrestrial accuracy with geospatial information

Experience a new, faster and easier way to measure points

Create new business opportunities in Spatial Imaging and Surveying



The Trimble® VX™ Spatial Station offers scalable configurations of advanced optical technologies. Whether capturing standard coordinate data or 3D point clouds, the Trimble VX enables surveyors to incorporate the power of images for instrument control, analysis and client-ready deliverables.

THE TRIMBLE VX WILL RADICALLY ENHANCE THE WAY YOU MEASURE

The Trimble VX Spatial Station introduced Trimble VISION™ and Spatial Imaging to the surveying world. With sophisticated features and MagDrive™ servo technology, it catapults field productivity and office automation to previously unattainable levels.

Remote and Coarse Aiming Are Easier, Faster
Now, your instrument eye piece is only needed for fine aiming.

Trimble VISION technology streams real-time digital images of your job site through the controller[1]. So, instead of looking through the eye-piece for remote and coarse aiming, you can simply select the point you want to measure using the controller touch screen. The Trimble VX then guides itself to the point.

Reduce Rework and Duplication with 3D Data Overlay
On the Trimble controller, Trimble VISION lets you display collected 3D data over the digitally streamed image of the work area. This capability ensures all required points are measured… and only once…so rework and duplication are minimized.

With a camera built-in, you can capture an image of the work area so that the 3D data overlay can also be used in the office.

3D Scanning
For applications such as 3D modeling and volume calculation, advanced versions of the Trimble VX include a 3D scanning function for collecting a large number of points quickly. Polygon framing selection ensures you capture only the points needed for even greater measuring speed and productivity in the field.

Note: *The standard version of the Trimble VX with onboard camera is enabled with Surface Scan for reduced-resolution scanning. In combination with digital image capture and 3D data overlay, The Trimble VX Spatial Station also supports the creation of enhanced deliverables with Trimble RealWorks® survey software.*

BROADEN BUSINESS OPPORTUNITIES IN NEW APPLICATIONS

For surveyors, the Trimble VX Spatial Station creates new market opportunities in Transportation and Civil Engineering; Utilities & Communications; Natural Resources Management; and Government and Military. And its scalable configurations enable businesses to enter these opportunities at the level most suitable—with options to grow.

Many applications use airborne geospatial information that becomes more usable when combined with precise terrestrial measurements. At the same time, traditional surveying deliverables enhanced with video and spatial information make surveying businesses more competitive.

With its unique, scalable capabilities the Trimble VX Spatial Station is poised to rewrite the scope of services offered by "geospatial" and surveying businesses everywhere. It enables those businesses to produce the complete, rich deliverables that their industries now demand.

A PROTECTED INVESTMENT

The Trimble VX Spatial Station is protected from theft and tampering by the Trimble eProtect™ security feature, which blocks unauthorized access to the instrument.

1 *A Trimble controller such as the Trimble TSC2, which is running Trimble Survey Controller software.*

Trimble®

PERFORMANCE

Scanning *(not enabled on all models)*
- Range[1, 2] . . . . . >150 m (492 ft)
- Speed[3] . . . . . up to 15 points/sec, typical 5 points/sec
- Minimum point spacing . . . . . 10 mm (0.032 ft)
- Standard deviation . . . . . 3 mm @ ≤150 m (0.011 ft @ ≤492 ft)
- Single 3D point accuracy . . . . . 10 mm @ ≤150 m (0.032 ft @ ≤492 ft)

Angle accuracy . . . . . 1" (0.3 mgon)

Automatic level compensator
- Type . . . . . Centered dual-axis
- Accuracy . . . . . 0.5" (0.15 mgon)
- Range . . . . . ±6' (±100 mgon)

Other distance measurement

Accuracy (S. Dev.)
- Prism mode
  - Standard . . . . . ±(3 mm + 2 ppm) ±(0.01 ft + 2 ppm)
  - Tracking . . . . . ±(10 mm + 2 ppm) ±(0.032 ft + 2 ppm)
- DR mode
  - Standard . . . . . ±(3 mm + 2 ppm) ±(0.01 ft + 2 ppm)
  - Tracking . . . . . ±(10 mm + 2 ppm) ±(0.032 ft + 2 ppm)
  - Standard measurement >300 m (656 ft) . . . . . ±(5 mm + 2 ppm) ±(0.016 ft + 2 ppm)

Measuring time
- Prism mode
  - Standard . . . . . 1.2 s
  - Tracking . . . . . 0.4 s
  - Averaged observations[4] . . . . . 1.2 s per measurement
- DR mode
  - Standard . . . . . 1–5 s
  - Tracking . . . . . 0.4 s
  - Averaged observations[4] . . . . . 1–5 s per measurement

Range (under standard clear conditions[5,6])
- Prism mode
  - 1 prism . . . . . 2500 m (8202 ft)
  - 1 prism Long Range mode . . . . . 5500 m (18,044 ft) (max. range)
  - 3 prism . . . . . 3500 m (11,482 ft)
  - 3 prism Long Range mode . . . . . 5500 m (18,044 ft) (max. range)
  - Shortest possible range . . . . . 0.2 m (0.65 ft)
- DR mode (typically)
  - Kodak Gray Card (18% reflective)[2] . . . . . >300 m (984 ft)
  - Kodak Gray Card (90% reflective)[2] . . . . . >800 m (2625 ft)
  - Reflective foil 20 mm . . . . . 800 m (2,625 ft)
  - Reflective foil 60 mm . . . . . 1600 m (5,249 ft)
  - Shortest possible range . . . . . 2 m (6.56 ft)

ROBOTIC OPERATION

Range[6]
- Passive prisms . . . . . 500–700 m (1,640–2,297 ft)
- Trimble MultiTrack Target . . . . . 800 m (2,625 ft)

Autolock pointing precision at 200 m (656 ft) (Standard deviation)[6]
- Passive prisms . . . . . <2 mm (0.007 ft)
- Trimble MultiTrack Target . . . . . <2 mm (0.007 ft)

Shortest search distance . . . . . 0.2 m (0.65 ft)

Type of radio internal/external . . . . . 2.4 GHz frequency-hopping, spread-sprectrum radios

Search time (typical)[7] . . . . . 2–10 s

1 Target color, atmospheric conditions, and scanning angles will impact range.
2 Kodak Gray Card, Catalog number E1527795.
3 Target shape, texture, and color; grid size; and distance and angle to target; will impact speed.
4 Repeats for defined number of measurements up to 99.
5 Standard clear: No haze. Overcast or moderate sunlight with very light heat shimmer.
6 Range and accuracy depend on atmospheric conditions, size of prisms and background radiation.
7 Dependent on selected size of search window.
8 0.5 frames per second with remote operation.
9 The capacity in –20 °C (–5 °F) is 75% of the capacity at +20 °C (68 °F).
10 Bluetooth type approvals are country specific. Contact your local Trimble Authorized Distribution Partner for more information.

SYSTEM SPECIFICATIONS

Leveling	
Circular level in tribrach	8'/2 mm (8'/0.007 ft)
Electronic 2-axis level in the LC-display with a resolution of	0.3" (0.1 mgon)
Servo system	MagDrive servo technology, integrated servo/angle sensor electromagnetic direct drive
Rotation speed	115 degrees/sec (128 gon/sec)
Rotation time Face 1 to Face 2	3.2 sec
Positioning speed180 degrees (200 gon)	3.2 sec
Clamps and slow motions	Servo-driven, endless fine adjustment
Centering	
Centering system	Trimble 3-pin
Optical plummet	Built-in optical plummet
Magnification/shortest focusing distance	2.3×/0.5 m–infinity (1.6 ft–infinity)
Telescope	
Magnification	30×
Aperture	40 mm (1.57 in)
Field of view at 100 m (328 ft)	2.6 m at 100 m (8.5 ft at 328 ft)
Shortest focusing distance	1.5 m (4.92 ft)–infinity
Illuminated crosshair	Variable (10 steps)
Autofocus	Standard
Camera	
Chip	Color Digital Image Sensor
Resolution	2048 x 1536 pixels
Focal length	23 mm (0.07 ft)
Depth of field	3 m to infinity (9.84 ft to infinity)
Field of view	16.5° x 12.3° (18.3 gon x 13.7 gon)
Digital zoom	4-step (1x, 2x, 4x, 8x)
Exposure	Automatic
Brightness	User-definable
Contrast	User-definable
Image storage	Up to 2048 x 1536 pixels
File format	JPEG
Compression ratio	User-definable
Video streaming[8]	5 frames per second
Operating temperature	–20 °C to +50 °C (–4 °F to +122 °F)
Dust and water proofing	IP55
Power supply	
Internal battery	Rechargeable Li-Ion battery 11.1 V, 4.4 Ah
Operating time[9]	
One internal battery	Approx. 5 hours
Three internal batteries in multi-battery adapter	Approx. 15 hours
Robotic holder with one internal battery	Approx. 12 hours
Weight	
Instrument	5.25 kg (11.57 lb)
Trimble CU controller	0.4 kg (0.88 lb)
Tribrach	0.7 kg (1.54 lb)
Internal battery	0.35 kg (0.77 lb)
Trunnion axis height	196 mm (7.71 in)
Communication	USB, Serial, Bluetooth®[10]
Security	Dual-layer password protection

EDM SPECIFICATIONS

Light source	Pulsed Laser diode 870 nm; Laser class 1
Laser pointer coaxial	Laser class 2
Beam divergence Prism mode	
Horizontal	4 cm/100 m (0.13 ft/328 ft)
Vertical	8 cm/100 m (0.13 ft/328 ft)
Beam divergence DR mode	
Horizontal	4 cm/100 m (0.13 ft/328 ft)
Vertical	8 cm/100 m (0.13 ft/328 ft)
Atmospheric correction	–130 ppm to 160 ppm continuously

Bluetooth™

TRIMBLE AUTHORIZED DISTRIBUTION PARTNER

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