

Provided by Xpert Survey Equipment
 Click Trimble V10 for Product Info and Updated Pricing

Key Features

12 calibrated cameras capture 60 MP panorama for full site visualization

Generate Survey, GIS or mapping accuracy positions from images

Rapid data collection with one-button capture of panoramas

Familiar, easy-to-use workflows in Trimble Access field software

Seamless integration with the Trimble R10 GNSS receiver or Trimble robotic total stations

Flexible, simple processing in Trimble Business Center to generate deliverables

trimble V10 imaging roVer

positions From piCtures

The Trimble V10 Imaging Rover with Trimble VISION technology is an integrated camera system that precisely captures 360 degree digital panoramas for efficient visual documentation and measurement of the surrounding environment. Either standalone or combined with a Trimble VX Spatial Station, S-Series Robotic Total Station or Trimble R10 GNSS receiver, the Trimble V10 Imaging Rover provides the means to quickly capture rich data and create comprehensive deliverables. Together with Trimble Access field software on the Trimble Tablet Rugged PC and Trimble Business Center office software, the Trimble V10 is the complete geospatial solution.

rapID Data Capture - trimble Vision at the roD

The Trimble V10 featuring Trimble VISION technology allows you to capture a 60 MP panorama image with the simple push of a button. A total of 12 calibrated cameras – seven panorama and five downward-looking – provide complete site documentation that can be used to make photogrammetric measurements. This metric imaging functionality is ideal to perform work where there are many features to collect, or where features are complex or difficult to capture. Field work that has traditionally taken hours for data collection can now be completed in just minutes. An easy-to-use workflow in Trimble Access field software on the Trimble Tablet is simple and intuitive to capture panoramas, review images and store observations.

Capture eVeryThing now, measure later

Avoid site rework and benefit from increased quality control and data validation by capturing data now and measuring later. From the field, the Trimble V10 Imaging Rover allows you to visually observe and capture the entire job site now and process in the office later.

Back in the office, use the enhanced photo point measurement functionality in Trimble Business Center to measure and create points, lines, polygons and other imaging components which can be used to prepare rich deliverables for GIS, engineering and survey applications.

Both automated and manual processes are available for data processing resulting in greater user control while integrated quality control features that also speed up office processing times for increased efficiency. Multiple user options allow for a variety of data to be generated based on accuracy needs. This system allows for the use of existing familiar workflows to create both traditional and new deliverables for your clients.

seamless integration with gnss and total stations

The Trimble V10 seamlessly integrates with the Trimble R10 GNSS receiver and Trimble robotic total stations, such as the Trimble VX spatial station.

to generate a highly accurate geospatial dataset or capture GNSS and total station data. With the existing data capture workflow in Trimble Access, add 360 degree panoramas to your dataset as needed for a complete integrated geospatial surveying solution. One push of a button does it all.

rugged Design

Designed to withstand outdoor conditions that geospatial professionals face, the Trimble V10 is two-meter pole drop tested and has an IP54 rating. The integrated sensors are calibrated to perform in extreme environments. Like the people who use it, the V10 is built to work all day.

a ComprehensivE system solution

The comprehensive Trimble V10 Imaging System offers unprecedented capabilities to the geospatial professional – never before has a picture been so powerful. By leveraging Trimble VISION technology, now available on the rod, along with other Trimble hardware and software offerings, the Trimble V10 enables you to capture more critical information that can be transformed into enhanced, rich geospatial deliverables. With the Trimble V10, a picture is worth a thousand points.



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panorama SpecificationS

| | |
|--|---------------|
| Total Panorama Resolution | .60 MP |
| Exposure modes | .Auto |
| White balance modes | .Auto |
| Live view frame rate, normal light conditions | .15 Fps |
| Live view frame rate, low light conditions | .7.5 Fps |
| Resolution of each camera | .5 MP |
| File format of images | .Jpeg |
| File size of one panorama | .10 MB–20 MB |
| Field of view angle captured by panorama cameras | .360° x 43° |
| Field of view angle captured by down looking cameras | .210° x 57.5° |
| Vertical field of view | .93.1° |

poSitioning performance

| | |
|---------------------------------------|------------|
| Position Accuracy (RMSE) ¹ | |
| Horizontal | .10 mm RMS |
| Vertical | .7 mm RMS |

Hardware

physical

| | |
|-------------------------------------|--------------------|
| Diameter of V10 housing | .113 mm (4.45 in) |
| Height of V10 housing | .124 mm (4.88 in) |
| Weight | |
| V10 | .900 g (1.98 lb) |
| Battery | .182 g (.40 lb) |
| Rod with battery compartment | .1.15 kg (2.54 lb) |
| Trimble Tablet adaptor | .300 g (.66 lb) |
| Trimble Tablet with large batteries | .1.60 kg (3.53 lb) |
| Bipod | .1.61 kg (3.55 lb) |
| R10 GNSS without battery | .910 g (2.01 lb) |

environmental

| | |
|------------------------------------|--|
| Temperature | |
| Operating | .–20 °C to +50 °C (–4 °F to +122 °F) |
| Storage | .–40 °C to +70 °C (–40 °F to +158 °F) |
| Operating humidity | .100% condensing |
| Dust and water protection | .IP54 |
| Shock: | |
| Non-operating drop test | .Designed to survive a 2 m (6.6 ft) pole drop onto concrete. |
| Vertical drop onto tip of the pole | .100,000 rep.@5 cm (15G) 100 rep.@30 cm (100G) |
| Vibration | .MIL-STD-810F, FIG.514.5C-1 |

electrical

| | |
|--|--------------------|
| Battery | |
| Voltage, nominal | .7.4 V |
| Capacity | .3.7 Ah |
| Smart Battery with capacity display | .Yes |
| Camera Operating time | |
| with 1 Battery in normal operating mode ³ | .4 h |
| Number of panoramas with one battery | .350 |
| Interfaces | .USB Mini B, USB A |

Built-in Sensors

| | |
|---|--------|
| 2 axis tilt sensor range | .15° |
| Tilt sensor accuracy using bipod | .0.03° |
| Magnetic sensor accuracy at undisturbed surrounding | .1° |

cameraS

| | |
|---|--------------------------------------|
| Panorama | |
| Orientation | .Landscape |
| Number of cameras | .7 |
| Field of view | .57.5° (horizontal) x 43° (vertical) |
| Downlooking | |
| Orientation | .Portrait |
| Number of cameras | .5 |
| Field of view | .43° (horizontal) x 57.5° (vertical) |
| Lens type | .f-theta |
| Temperature compensated | .Yes |
| Infrared blocking filter | .Yes |
| Angle per pixel | .0.39 mrad/Pix |
| Angle per pixel | .1.33 arcmin/Pix |
| Focal length | .3.63 mm (0.14 in) |
| Depth of field | .0.1 to ∞ m |
| Calibration of | |
| Camera better than | .1 Pix |
| Optical distortion, interior and exterior orientation | .Yes |
| Stability of calibration | .2 Pix |
| Calibration of Sensors with respect to the cameras | .Yes |

power rod

| | |
|---|------|
| Hot swappable dual smart batteries | .Yes |
| Shock absorbing tip. Shock load to user and camera reduced by factor of | .4 x |
| Exchangeable tip | .Yes |
| Compatible with 5/8 length extension | .Yes |

acceSSorieS

- 360-degree prism with quick release
- High-Accuracy Kit with power mount, prism base and two targets

- 1 The position accuracy expressed as Root Mean Square Error (RMSE) can be obtained with the following set-up conditions: Three panoramic images were taken from 3 photo stations on known locations with control point quality. Those locations had a triangular geometry with sides of 15 m, a base of 24 m, and an angle of 100°. The distance to the objects was up to 25 m resulting in intersection angles at the objects of close to 90deg. The object positions were determined with TBC photogrammetry software using manual tie points and full orientation option and then compared with the nominal object positions. Checker-board targets were used as objects. The use of the instrument is not limited to distances up to 25 m but the error increases with larger distance, smaller base length or worse geometry of the photo station locations.
- 2 The presence of control points visible in the panoramas and used in the photo point measurements will improve the orientation of the related photo stations both in horizontal and vertical direction, stabilize the whole bundle and result in even better horizontal and vertical accuracy.
- 3 Normal Operating mode is standard runtime capturing panoramas as needed, not continuously.



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NORTH AMERICA

Trimble Navigation Limited
10368 Westmoor Dr
Westminster CO 80021
USA

EUROPE

Trimble Germany GmbH
Am Prime Parc 11
65479 Raunheim
GERMANY

ASIA-PACIFIC

Trimble Navigation
Singapore Pty Limited
80 Marine Parade Road
#22-06, Parkway Parade
Singapore 449269
SINGAPORE

TRIMBLE AUTHORIZED DISTRIBUTION PARTNER

