FOCUS®

PERFORMANCE SPECIFICATIONS

Measurements

Angle measurement
Accuracy (Standard deviation based on DIN 18723)
3" model . . . . . 3" (1.0 mgons)
5" model . . . . . 5" (1.5 mgons)
Angle reading – Horizontal & vertical (least count)
Standard measurement . . . . . 1" (0.1 mgon)
Tracking . . . . . 2" (0.5 mgon)
Automatic level compensator
Dual-axis compensator . . . . . ±6' (±100 mgon)
Distance measurement
Accuracy (standard deviation)
Prism
Standard measurement . . . . . ±(0.01 ft + 3 ppm) ±(3 mm + 3 ppm)
Tracking . . . . . ±(0.032 ft + 3 ppm) ±(10 mm + 3 ppm)
Reflective foil
Standard measurement . . . . . ±(0.01 ft + 3 ppm) ±(3 mm + 3 ppm)
Tracking . . . . . ±(0.032 ft + 3 ppm) ±(10 mm + 3 ppm)
Reflectorless mode 16.4 ft–656 ft (5–200 m)
Standard measurement . . . . . ±(0.01 ft + 3 ppm) ±(3 mm + 3 ppm)
Tracking . . . . . ±(0.032 ft + 3 ppm) ±(10 mm + 3 ppm)
>200 m (656 ft) . . . . . ±(0.016 ft + 3 ppm) ±(5 mm + 3 ppm)
Shortest possible range
To prism . . . . . 6.56 ft (2 m)
Reflectorless . . . . . 6.56 ft (2 m)
Reflective foil . . . . . 6.56 ft (2 m)
Measuring time
Prism mode
Standard measurement vs. Tracking . . . . . 3 s vs. 0.4 s
Reflectorless mode
Standard measurement vs. Tracking . . . . . 3–7 s vs. 0.4 s
Range using prism*
1 prism . . . . . 8,200 ft (2,500 m)
1 prism Long Range . . . . . 18,040 ft (5,500 m) (max. range)
3 prisms . . . . . 11,480 ft (3,500 m)
3 prisms Long Range . . . . . 18,040 ft (5,500 m) (max. range)
Range using reflective foil*
Reflective foil 20 mm . . . . . 590 ft (180 m)
Reflective foil 20 mm Long Range . . . . . 2,624 ft (800 m)
Reflective foil 60 mm . . . . . 1,181 ft (360 m)
Reflective foil 60 mm Long Range . . . . . 5,248 ft (1,600 m)
Range Reflectorless measurement (typically)*
Kodak Gray Card (18% reflective)** . . . . . >656 ft (200 m)
Kodak Gray Card (90% reflective)** . . . . . > 1,968 ft (600 m)
Concrete . . . . . 656–984 ft (200–300 m)
Wood construction . . . . . 492–984 ft (150–300 m)
Metal construction . . . . . 492–656 ft (150–200 m)
Light rock . . . . . 492–820 ft (150–250 m)
Dark rock . . . . . 328–492 ft (100–150 m)

GENERAL SPECIFICATIONS

Light source . . . . . Pulsed laserdiode 870 nm, Laser class 1
Beam divergence
Horizontal . . . . . 0.4 mrad (0.13 ft/328 ft) (4 cm/100 m)
Vertical . . . . . 0.8 mrad (0.26 ft/328 ft) (8 cm/100 m)
Atmospheric correction . . . . . –60 to 195 ppm continuously
Leveling
Circular level in tribrach . . . . . 8'/0.007 ft (8'/2 mm)
Electronic 2-axis level in the LC-display with a resolution of . . . . . 6' (2 mgon)
Clamps and slow motions . . . . . Servo-drive. Endless fine adjustment
Centering
Centering system 3-pin
Optical plummet . . . . . Optical plummet in tribrach
Magnification . . . . . 2.4×
Focusing range . . . . . 1.6 ft (0.5 m) to infinity
Telescope
Magnification . . . . . 26×
Trunnion axis height . . . . . 8.1 in (205 mm)
Aperture . . . . . 1.57 in (40 mm)
Field of view at 100 m (328 ft) . . . . . 8.5 ft (2.6 m)
Focusing range . . . . . 5.58 ft (1.7 m) to infinity
Illuminated crosshair . . . . . Variable (15 steps)
Operating temperature . . . . . –4 °F to +122 °F (–20 °C to +50 °C)
Power Supply
Internal battery . . . . . Rechargeable NiMH battery 12 V, 1.8 Ah
Operating time approx. 3 hours (Servo only)
External battery . . . . External rechargable NiMH batteries 12 V, 3.8–11.4 Ah
Operating time approx. 11 hours Autolock, 9 hours Robotic (11.4 Ah)
Weight
Instrument with Focus CU . . . . . 14.1 lb (6.4 kg)
Instrument for Robotic Surveying . . . . . 16.5 lb (7.5 kg)
Tribrach . . . . . 1.5 lb (0.7 kg)
Internal battery . . . . . 0.9 lb (0.4 kg)

ROBOTIC SURVEYING

Range* . . . . . Up to 3,937 ft (1,200 m) depending on type of RMT
Tracker pointing precision at 656 ft (200 m) (standard deviation) . . . . . <0.007 ft (2 mm)
Angle reading (least count)
Standard measurement . . . . . 1" (0.1 mgon)
Tracking . . . . . 2" (0.5 mgon)
Search time (typical)*** . . . . . 2–10 s
Search area . . . . . 360 degrees (400 gon) or defined horizontal & vertical search window

* *Standard clear: No haze. overcast or moderate sunlight with very light heat shimmer. Range and accuracy are dependent on atmospheric conditions and background radiation.*
** *Kodak Gray Card, Catalog number E1527795.*
*** *Dependent on selected search window.*

FOCUS®

TRIPOD DATA SYSTEMS

Tripod Data Systems (TDS) develops hardware and software for mobile computing applications in extreme outdoor and industrial environments. TDS produces data collectors and software for land surveying and construction applications, and GIS systems for field data collection and automation. TDS is the distributor for Nikon® and Spectra Precision® survey products (U.S. and Puerto Rico) as well as Pacific Crest radios and accessories (U.S., Puerto Rico, and Canada). TDS Survey Pro is a line of data collection software that has been the #1 choice of surveyors since 1995.[1]

TDS, a wholly owned subsidiary of Trimble, is headquartered in Corvallis, Oregon and was founded in 1987.

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[1] *BNP Media, "Surveying and Mapping Industry Study" 1995–2006. Includes TDS software sold by dealers and TDS partner companies.*

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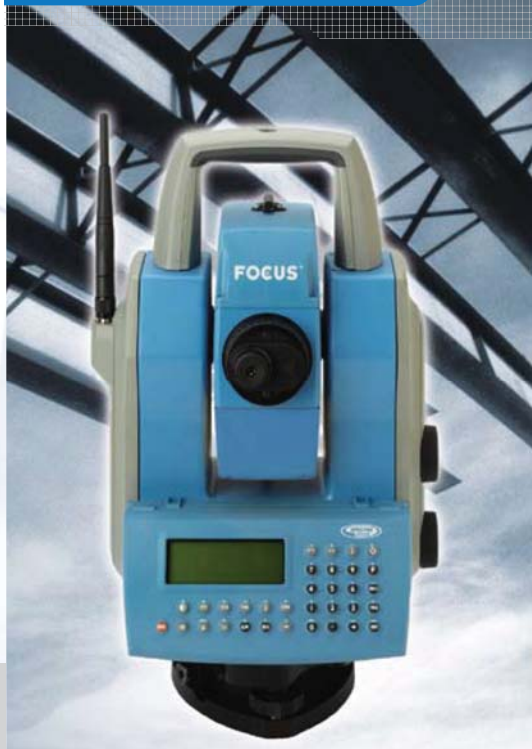
FOCUS® 10 *TOTAL STATION*

FOCUS®



FAST • RELIABLE • ACCURATE

A range of servo-driven reflectorless total stations that allow you to:

- **Choose from Servo or Robotic solutions**
- **Surpass the performance of any mechanical product**
- **Measure objects with or without a prism**
- **Increase your staking efficiency**

SPECTRA PRECISION

FOCUS®

FOCUS® 10 *TOTAL STATION*

FOCUS ON EFFICIENCY

As a surveyor, you never know what kind of job tomorrow will bring ... be ready for anything with the Spectra Precision® FOCUS® 10 Total Station. Spectra Precision's FOCUS product line consists of optical total stations featuring exceptional speed, accuracy and reliability.

If you're like most surveyors, you're interested in your efficiency and quickly establishing full control over the survey site. The servomotors that drive the FOCUS 10 Total Station provide a higher level of reliability, quality and control – allowing you to complete projects faster. Compare the performance to any mechanical product and it's clear that the FOCUS 10 is capable of enhancing your efficiency.

From high-order control surveys to fast-paced construction stakeout or topographic data collection, you can rely on the FOCUS 10, even in harsh outdoor conditions. Easy to use, affordable and tough, a FOCUS 10 Total Station is the solution you've been looking for.

ANGLE MEASUREMENT ACCURACY

The FOCUS 10 Total Station offers two angle accuracies to suit a variety of applications. Choose from:

- 3" for high-angular precision suitable for most land survey applications
- 5" for the ultimate topographical survey solution

REFLECTORLESS TECHNOLOGY

Increase your reach and improve safety for your survey crews. The FOCUS 10 comes standard with long-range, reflectorless technology, allowing you to measure remote objects without a prism. The FOCUS 10 enables you to reach greater than 1,970 ft (600 m) to a 90% reflective Kodak Gray Card and 656 ft (200 m) to a 18% reflective Kodak Gray Card. FOCUS 10 uses an eye-safe Laser Class 1 for optimal user operation.

SERVO

Do you want to increase your efficiency? Servo-driven instruments out perform mechanical total stations in survey precision and speed.

ROBOTIC

By adding a wireless communication between the rod and the instrument, it is possible to drive and manage measurements completely at the rod. Optical surveys can now be performed with only one operator, firmly placing the power at the place of measurement into the hands of the robotic operator.

HIGH-PRECISION PRISM MEASUREMENTS

Regardless of the model chosen, the FOCUS 10 allows measurements to a single prism up to 18,040 ft (5,500 m) with an accuracy of ±(3 mm +3 ppm). The accuracy of the FOCUS 10 assures the integrity of measurements taken with all instruments. By including sensor technology, the FOCUS 10 allows the operator to be absolutely certain that the signal is coming back from the reflector—not some other reflective object.

SERVOMOTOR-DRIVEN FOR SPEED

Not only are four-speed FOCUS 10 servomotors easy to use, they also provide increased productivity over mechanical staking and layout solutions. FOCUS 10's built-in servomotors control both horizontal and vertical motion. You control the servomotors with adjustment screws—simply turn the motion screws to activate the servomotor gears for fast, smooth and sensitive angle results. With no need for traditional motion locks, the slow motion tangents are endless. The adjustment screws are ergonomically designed so you can align the instrument with just a slight circular movement of the finger.

FASTER TARGET MEASUREMENTS

Save time when measuring multiple faces to targets–after the first set of measurements, the instrument can be automatically turned to face two to measure the targets again, allowing you to make the fine adjustments before measuring.

EFFICIENT STAKEOUT CAPABILITIES

To speed up stakeout applications, the servomotors turn the instrument to line with a single key press—the instrument can be positioned horizontally, vertically or both. The servomotors can also be used to save time extending a line—a single keystroke will turn the instrument 180 degrees.

TOP TOOLS FOR DATA COLLECTION

Want to make your FOCUS 10 even more powerful? Team your total station with a rugged TDS data collector (Ranger™, Recon® or Nomad™) and TDS Survey Pro software. Survey Pro makes data collection faster and easier, and you can rely on the capabilities of TDS data collectors to keep your data secure.