



Forensic Focus 35

TOTAL STATION

Introducing the powerful Spectra Precision® FOCUS® 35 Series Total Stations. These fully robotic, motorized solutions for forensics enable the user to stand at the range pole, providing improved speed, accuracy and precision at crime and accident scenes.

All robotic instruments include:

- ▶ Motorized drive system at the instrument
- ▶ Tracking sensor to track the range pole and prism
- ▶ Communication connection between the instrument and range pole and prism

StepDrive

The FOCUS 35 robotic total stations use patented StepDrive™ technology to increase the speed and precision of data collection at the scene. StepDrive controls the horizontal and vertical motion of the motors, so there is no need for traditional motion locks. The motorized drives allow users to precisely turn to, and repeat, angle measurements. The result: quick and reliable measurements, which substantially increase staking productivity.

LockNGo

The Robotic and LockNGo™ FOCUS 35 models include a tracking sensor that

uses LockNGo technology. This enables the instrument to continuously lock onto the prism, reducing downtime, since there's no need to re-point the instrument for every observation.

Communications Link

To maintain contact between the FOCUS 35 instrument and the user, the robotic FOCUS 35 and Spectra Precision Ranger™ 3 data collector use an integrated 2.4 GHz radio modem for interference-free robotic data communications. Once robotic communications have been established, you control all functions of the FOCUS 35 from the range pole as you move through the scene. This makes it possible for a single user to efficiently create highly accurate forensic maps.

Spectra Precision GeoLock

This innovative technology enables the robotic total station to perform an aided search for an optical target using an initial GPS position. The remote instrument can then be directed towards the robotic roving operator using the GPS position and a subsequent search is quickly performed to re-acquire the target at the robotic rover. This technique greatly reduces wasted time, improving your field work efficiency.

The FOCUS 35 delivers a powerful solution for all forensics applications. Packaged in a modern, sleek, streamlined design, it is easy-to-use, affordable and tough.

Key Features

- ▶ Available in 1", 2", 3" and 5" angle accuracies
- ▶ Long-range, reflectorless distance measurement
- ▶ Available RX models with extended operation dual battery system
- ▶ Trimble Forensics MFX software on-board (available models)
- ▶ GeoLock™ GPS-assist technology



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PERFORMANCE

Angle measurement

Accuracy¹
 (Standard deviation based on ISO 17123-3) 1" (0.3 mgon), 2" (0.6 mgon),
 3" (1.0 mgon), or 5" (1.5 mgon)

Angle reading (least count display)

Standard 1" (0.3 mgon)
 1" model 0.5" (0.15 mgon)
 Tracking 2" (0.6 mgon)

Distance measurement²

Accuracy to Prism
 (Standard deviation based on ISO 17123-4)
 Standard 2 mm + 2 ppm (0.007 ft + 2 ppm)
 1" model 1 mm + 2 ppm (0.003 ft + 2 ppm)
 Tracking 5 mm + 2 ppm (0.016 ft + 2 ppm)

Accuracy Reflectorless Mode

Standard
 <300 m (984 ft) 3 mm + 2 ppm (0.01 ft + 2 ppm)
 Standard
 >300 m (984 ft) 5 mm + 2 ppm (0.016 ft + 2 ppm)
 Tracking 10 mm + 2 ppm (0.033 ft + 2 ppm)

Measuring time

Prism Standard 2.4 sec.
 Prism Tracking 0.5 sec.
 Reflectorless Standard 3–15 sec.
 Reflectorless Tracking 0.7 sec.

Range Prism Mode

1 prism 4000 m (13,123 ft)
 3 prisms 7000 m (22,966 ft)
 Foil Reflector 60 mm 300 m (984 ft)

Range Reflectorless Mode

	Good ⁴	Normal ⁵	Difficult ⁶
KGC ³ (18%)	400 m (1,312 ft)	350 m (1,148 ft)	300 m (984 ft)
KGC (90%)	800 m (2,625 ft)	600 m (1,969 ft)	400 m (1,312 ft)
Foil Reflector 60 mm	1,000 m (3,280 ft)	1,000 m (3,280 ft)	800 m (2,625 ft)
Shortest possible range	1.5 m (4.9 ft)		

Automatic level compensator

Type dual-axis
 Accuracy 0.5" (0.15 mgon)
 Working Range ±5.5' (±100 mgon)

EDM SPECIFICATIONS

EDM Laser and Principle

Light source Laser Diode 660 nm
 Principle Phase Shift

EDM Beam divergence

Horizontal 4 cm/100 m (0.13 ft/328 ft)
 Vertical 3 cm/100 m (0.10 ft/328 ft)
 Atmospheric Correction -150 ppm to 160 ppm continuously

GENERAL SPECIFICATIONS

Coarse Leveling

Electronic coarse leveling range ±3° (±3.3 gon)
 Circular level in tribrach 8/2 mm (8/0.007 ft)

Drives

Drive system Spectra Precision® StepDrive™ system
 Rotation time maximum 90°/sec (100 gon/sec)
 Rotation time Face 1 to Face 2 3.7 sec.
 Positioning time 180° (200 gon) 3.5 sec.
 Clamps and slow motions StepDrive driven, endless fine adjustment

Centering

Centering system 3-pin
 Plummet Built-in optical plummet
 Magnification 2.4 x
 Focusing distance 0.5 m to ∞ (1.6 ft to ∞)

Telescope

Magnification 31x
 Aperture 50 mm (1.96 in)

Field of view 1°30'
 Focusing distance 1.5 m to ∞ (4.9 ft to ∞)
 Illuminated crosshair Standard
 Tracklight built in Standard
 Trunnion axis height 196 mm (7.71 in)

Environmental

Operating temperature -20 °C to +50 °C (-4 °F to +122 °F)
 Dust and water proofing IP55

Power supply⁷

Internal battery Li-Ion, 11.1 V/5.0 Ah
 Operating time with one internal battery Approx. 6 hours
 Models with two internal batteries Approx. 12 hours

Communications

External foot connector USB cable connection and external power supply
 Wireless communication Bluetooth™ (optional)

Weight

Instrument 5.0 kg (11.0 lb)
 Tribrach 0.7 kg (1.54 lb)
 Internal battery 0.3 kg (0.66 lb)

ROBOTIC SPECIFICATION

Robotic Operation²

Maximum Robotic Range 300 m to 800 m (984 ft to 2,625 ft)
 Point precision at 200 m (656 ft) <2 mm (0.007 ft)
 Maximum Search Distance 300 m to 800 m (984 ft to 2,625 ft)
 Search Time (typical) 2–10 sec.

Communications

Internal/external 2.4 GHz, frequency hopping, spread spectrum

GPS Search GeoLock⁸

GPS Search GeoLock™ 360° (400 gon)
 Range Full robotic operation range

DATA COLLECTION

Control Units fixed on alidade

Face 1 (optional)
 Display 3.5" TFT color touch screen, 320x240 Pixel, backlight
 Keyboard Alphanumeric keypad
 Memory (data storage) 128 MB RAM, 1 GB Flash
 Field App. Software Survey Pro and Layout Pro
 Face 2
 Display 6 lines, monochrome, 96x49 Pixel, backlight
 Keyboard 4 keys
 Instrument Software Functions Change Face
 Radio and Instrument Settings, Measurement Value Display, Leveling

CERTIFICATION

Class B Part 15 FCC certification, CE Mark approval, C-Tick,
 Laser safety IEC 60825-1 am2:2007
 Prism Mode: Class 1
 Reflectorless/Laser Pointer: Class 3R laser
 Bluetooth type approvals are country specific.

- 1 RX models are not available in 1" accuracy.
- 2 Standard clear: No haze, overcast or moderate sunlight with very light heat shimmer. Range and accuracy are dependent on atmospheric conditions, size of prism and background radiation.
- 3 Kodak Gray Card, Catalog number E1527795.
- 4 Good conditions (good visibility, overcast, twilight, underground, low ambient light)
- 5 Normal conditions (normal visibility, object in the shadow, moderate ambient light).
- 6 Difficult conditions (haze, object in direct sunlight, high ambient light).
- 7 RX models have two internal batteries.
- 8 Spectra Precision GeoLock is available on data collectors after station setup.



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