

APERÇU

Le [station totale spectra focus 35](#) est une station totale motorisée offrant une vitesse, une précision et une précision de mesure élevées. L'instrument robotique FOCUS 35 déplace la puissance de l'observateur de l'instrument vers le pôle de distance, améliorant ainsi l'efficacité. La vitesse d'observation et le positionnement précis de la station totale robotique FOCUS 35 sont assurés par la technologie de mouvement brevetée StepDrive™, qui contrôle le mouvement horizontal et vertical des moteurs, éliminant ainsi le besoin de verrous de mouvement traditionnels. Le FOCUS 35 comprend un capteur de suivi qui utilise la technologie de suivi LockNGo™ FastTrack, permettant à l'instrument de se verrouiller en permanence sur le prisme. Les modèles à fonctionnement prolongé FOCUS 35 RX offrent une autonomie de batterie inégalée sur le marché.

Le FOCUS 35 est disponible avec des précisions de 1", 2", 3" ou 5" et est contrôlé par le logiciel de terrain Spectra Geospatial Survey Pro™ à l'aide d'une interface à écran tactile Windows CE intégrée. Le FOCUS 35 est également conçu pour être contrôlé de manière externe par des collecteurs de données Ranger™, Nomad™ ou T41® exécutant le logiciel de terrain Survey Pro, Layout Pro ou FAST Survey sur le Ranger ou le Nomad. Vous pouvez également apporter votre propre contrôleur et vous connecter au FOCUS 35 via Bluetooth ou le pont radio SPDL.

Le FOCUS 35 est disponible en trois modèles :

- Robotique
- LockNGo
- RX

Tous les modèles incluent un système d'entraînement motorisé au niveau de l'instrument et un capteur de suivi pour suivre le pôle de distance et le prisme.

Modèle	Mouvement StepDrive	Suivi LockNGo	Communication sans fil	Écran embarqué	Système de batterie
ROBOTIQUE RX			Radio 2,4 GHz, Bluetooth à courte portée		Seul
			Radio 2,4 GHz Bluetooth longue portée	N / A	Double
LockNGo					Seul

Pour maintenir le contact entre l'instrument FOCUS 35 et l'observateur à distance avec la mire et le prisme, la solution robotique doit inclure une liaison de communication. Le FOCUS 35 Robotique et RX utilise un modem radio intégré de 2,4 GHz, tout comme le collecteur de données Ranger 7. Le modem radio 2,4 GHz permet des communications de données robotiques sans interférence.

Une fois que vos communications robotiques ont été établies, vous pouvez contrôler toutes les fonctions du FOCUS 35 à partir du poteau de portée pendant que vous vous déplacez sur le chantier en effectuant des mesures. Cela permet à un seul géomètre d'effectuer lui-même des implantations ou des levés topographiques de haute précision. Des levés de contrôle de haut niveau à la collecte de données topographiques ou à l'implantation de construction rapide, vous pouvez compter sur un FOCUS 35, même dans des conditions extérieures difficiles.

Le FOCUS 35 et Survey Pro vous offrent des solutions de classe mondiale pour toute application topographique. Un exemple de ces fonctionnalités comprend une technologie logicielle robotique unique qui peut être utilisée lors de l'association du FOCUS 35 à un récepteur GNSS à faible coût et au logiciel Survey Pro. Cette combinaison de technologies permet à l'utilisateur de profiter pleinement de la technologie Spectra Geospatial GeoLock™, pour rester verrouillé sur la cible.

Layout Pro™, le logiciel et le FOCUS 35 offrent ensemble la commodité de transporter, gérer, éditer et mettre en page votre plan de chantier. Cette combinaison est un outil essentiel dans le domaine de la disposition de la construction et est conçue pour rendre le processus de disposition plus productif, précis et fiable. Par exemple, utilisez Layout Pro pour guider la disposition des points principaux, ajouter des cotes de chaîne sur l'impression, ainsi que calculer des diagonales et des angles.

La solution robotique FOCUS 35 est mieux décrite comme simplement plus puissante. Présenté dans un design moderne, élégant et épuré, il est facile à utiliser, abordable et robuste. Les stations totales FOCUS 35 sont conçues pour répondre à tous vos besoins d'arpentage.

Accessoire

Le pont radio FOCUS SPDL 2.4 est un accessoire personnalisé robuste et léger conçu pour permettre la communication entre les stations totales robotiques et les appareils mobiles compatibles Bluetooth.

SPECTRA®
GEOSPATIAL

FOCUS 35



**PRODUCTIVE, RELIABLE AND AFFORDABLE
ROBOTIC TOTAL STATIONS**

FEATURING WORLD CLASS SPECTRA GEOSPATIAL FIELD SOFTWARE

Get to know the powerful Spectra Geospatial® FOCUS® 35 Series Total Stations. This fully robotic motorized solution provides improved speed, accuracy and precision in measurement. A robotic instrument moves the power of the observer from the instrument to the range pole improving the quality of your work.



The FOCUS 35 solution is best described as **Simply More Powerful**. Packaged in a modern, sleek, and streamlined design, it is easy-to-use, affordable, and tough.

ALL ROBOTIC INSTRUMENTS INCLUDE:

- Motorized drive system at the instrument
- A tracking sensor to track the range pole and prism
- A communication connection between the instrument and range pole and prism

FEATURES:

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



FOCUS 35 - Ranger 7

STEPDRIVE

The speed of observation and precise positioning of the FOCUS 35 robotic total station is provided by patented StepDrive™ technology. StepDrive controls the horizontal and vertical motion of the motors, so there is no need for traditional motion locks. Using the motorized drives it is possible to precisely turn to, and repeat angle measurements. This results in quick and reliable measurements which substantially increases your staking productivity.

LOCKNGO

All FOCUS 35 models include a tracking sensor that uses LockNGo technology enabling the instrument to constantly lock onto the prism. The benefit of LockNGo technology is the ability to follow the prism at all times and reduces downtime from not having to re-point the instrument on every observation. Additionally, LockNGo is compatible with most standard passive prisms, making the FOCUS 35 an ideal solution for anyone that wants to continue using accessories they already own.

COMMUNICATION LINK

To maintain contact between the FOCUS 35 instrument and the remote observer with the range pole and prism, the robotic solution must include a communication link. The Robotic and RX FOCUS 35 models use an integrated 2.4 GHz radio modem as does the Spectra Geospatial Ranger™ 7 data collector. The 2.4 GHz radio modems provide interference-free long range robotic data communications. Once your robotic communications have been established you can control all the functions of the FOCUS 35 from the range pole (up to 800m away) as you move through the job site making measurements. Alternatively, the LockNGo model provides Class 1 long range Bluetooth for similar functionality up to 200m away". This makes it possible for a single surveyor to perform high accuracy stakeout, layout or topographic surveys by themselves. From high-order control surveys to topographic data collection or fast-paced construction layout, you can rely on a FOCUS 35, even in harsh outdoor conditions.

FOCUS 35 AND SURVEY PRO

The FOCUS 35 and Survey Pro provide you with world class solutions for any surveying application. An example of these features includes a unique robotic software technology that can be used when associating the FOCUS 35 with a low-cost GNSS receiver and Survey Pro software. This combination of technologies allows the user to take full advantage of the Spectra Geospatial GeoLock™ technology to keep locked on target.

THE SPECTRA GEOSPATIAL GEOLock TECHNOLOGY

Offered in Survey Pro this technique allows a robotic total station to perform an aided search for an optical target using an initial GNSS 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.

FOCUS 35 AND LAYOUT PRO

Layout Pro™ software and the FOCUS 35 together offer the convenience of carrying, managing, editing, and laying out your job site blueprint. This combination is a critical tool in the field of construction layout and is designed to make the layout process more productive, accurate and reliable. For example, use Layout Pro to guide the layout of the major points, add string dimensions on the print, as well as calculate diagonals and angles.



FOCUS 35 RX

The FOCUS 35 RX models offer 12 hour extended operation through a unique dual battery system, eliminating any need to stop and change battery during a full day's work.

MODEL	FEATURES				
	StepDrive motion	LockNGo tracking	Wireless Communication	Onboard Screen	Battery System
ROBOTIC	✓	✓	2.4GHz radio, Short Range Bluetooth	✓	Single
RX	✓	✓	2.4GHz radio	N/A	Dual
LockNGo	✓	✓	Long Range Bluetooth	✓	Single

PERFORMANCE

Angle measurement

Accuracy^{1,2}

- 1": (0.3 mgon)
- 2": (0.6 mgon)
- 3": (1.0 mgon)
- 5": (1.5 mgon)

Angle reading (least count display)

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

Distance measurement⁴

Accuracy to Prism¹

- 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: 4,000 m (13,123 ft)
- 3 prisms: 7,000 m (22,966 ft)
- Foil Reflector 60 mm: 300 m (984 ft)

Range Reflectorless Mode

	Good ⁶	Normal ⁷	Difficult ⁸
KGC ⁵ (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	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

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

ROBOTIC SPECIFICATIONS

Robotic operation⁴

- 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.

GNSS Search GeoLock¹⁰

- GNSS Search GeoLock[™]: 360° (400 gon)
- Range: Full robotic operation range

COMMUNICATIONS

External foot connector

- USB cable connection
- External power supply

Wireless Communication

- Robotic Model
 - Internal/external: 2.4 GHz, frequency hopping, spread spectrum
 - Class 2 Short Range Bluetooth[®]
- RX Model
 - Internal/external: 2.4 GHz, frequency hopping, spread spectrum
- LockNGo Model
 - Class 1 Long Range Bluetooth[®]

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 Geospatial StepDrive[™] system
- Rotation speed maximum: 90°/sec (100 gon/sec)
- Rotation time Face 1 to Face 2: 3.7 sec.
- Positioning speed 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 supply⁹

- Internal battery: Li-Ion, 10.8V / 6.5Ah
- Operating time with one internal battery:
Approx. 6 hours
- Models with two internal batteries:
Approx. 12 hours

Weight

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

DATA COLLECTION

Control units fixed on alidade

Face 1 (models with onboard data collection)

- Display: 3.5" TFT color touch-screen, 640x480 pixels, backlight
- Keyboard: Alphanumeric keypad
- Memory (data storage): 512 MB RAM, 4 GB Flash
- Field application software: Survey Pro and Layout Pro

Face 2

- Display: 6 lines, monochrome, 96x49 pixels, backlight
- Keyboard: 4 keys
- Instrument software functions: Change Face, Radio and Instrument Settings, Measurement Value Display, Leveling

- 1 RX models are not available in 1" accuracy.
- 2 Standard deviation based on ISO 17123-3
- 3 Standard deviation based on ISO 17123-4
- 4 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.
- 5 Kodak Gray Card, Catalog number E152795.
- 6 Good conditions (good visibility, overcast, twilight, underground, low ambient light)
- 7 Normal conditions (normal visibility, object in the shadow, moderate ambient light).
- 8 Difficult conditions (haze, object in direct sunlight, high ambient light).
- 9 RX models have two internal batteries.
- 10 GeoLock is available inside of Survey Pro field software when used onboard a data collector.
- 11 Bluetooth range varies based on environmental conditions such as physical obstructions or interference from other nearby devices. Range also varies based on the transmitter strength and receiver sensitivity of both the controller and the FOCUS 35 total station.

