FOCUS® 8 Series Total Stations

Datasheet

Simply Powerful

Key Features

- 2" and 5" angle accuracies
- Choice of onboard software
  - Survey Pro
  - Layout Pro
  - Survey Basic with Roads
- Reflectorless measurement up to 500m (1,640 ft)
- Hot swappable batteries
- Color touchscreen and Windows CE
- Laser pointer
- Bluetooth
- USB port
- Optional laser plummet

FOCUS® 8 Series

The Spectra Precision FOCUS 8 Total Station offers the versatility of three field software options to choose from. Advanced Spectra Precision Survey Pro field software and easy to use Survey Basic with Roads software both come pre-installed. Layout Pro field software can also be loaded for construction based layout work.

The FOCUS 8 instruments are compact, lightweight and built tough to use on any work site in all dust, dirt and weather conditions. The fast, long range EDM measures in both prism and reflectorless modes with both being available at the same time and initiated with a single key press.

All FOCUS 8 models support Bluetooth communications to external devices such as data collectors, and come standard with coaxial laser pointers and a traditional optical plummet - which can be upgraded to a laser plummet. Data transfer is fast, easy and portable using a USB memory stick.

FOCUS 8 Technical Specifications

Distance Measurement

- Range with specified prisms (Good conditions[1]) with reflector sheet 5 cm x 5 cm (2 in x 2 in)
  2"
  - 1.5 m to 270 m (4.9 ft to 886 ft)
  5"
  - 1.5 m to 300 m (4.9 ft to 984 ft)
- With single prism 6.25 cm (2.5 in)
  2"
  - 1.5 m to 3,000 m (4.9 ft to 9,843 ft)
  5"
  - 1.5 m to 5,000 m (4.9 ft to 16,404 ft)
- Reflectorless mode[2]

2"	Good[1]	Normal[4]	Difficult[5]
KGC[3] (18%)	350 m (1,148 ft)	250 m (800 ft)	200 m (656 ft)
KGC (90%)	500 m (1,640 ft)	400 m (1,312 ft)	250 m (820 ft)
5"	**Good**	**Normal**	**Difficult**
KGC (18%)	280 m (920 ft)	250 m (800 ft)	200 m (656 ft)
KGC (90%)	500 m (1,640 ft)	500 m (1,640 ft)	300 m (984 ft)

- Shortest possible range: 1.5m (4.9 ft)
- Accuracy[6] (Precise mode) ISO 17123-4
  - Prism: ±(2+2 ppm × D) mm
  - Reflectorless: ±(3+2 ppm × D) mm
- Measuring interval[7]

Prism mode	Precise mode	Normal mode
2"	1.6 sec	0.8 sec
5"	1.5 sec	0.8 sec

Reflectorless mode	Precise mode	Normal mode
2"	2.1 sec	1.2 sec
5"[8]	1.8 sec	1.0 sec
Least count	1 mm (0.002 ft)	10 mm (0.02 ft)

Angle Measurement

DIN 18723 accuracy

- horizontal: 2"/0.6 mgon
- vertical: 5"/1.5 mgon

- Reading system: Absolute encoder
- Circle diameter: 62 mm (2.4 in)
- Horizontal/Vertical angle: Diametrical

Minimum increment

- Degree: 1/5/10"
- Gon: 0.2/1/2 mgon

Telescope

- Tube length: 125 mm (4.9 in)
- Image: Erect
- Magnification: 30× (18×/36× with optional eyepieces)
- 2" Effective diameter of objective: 40 mm (1.6 in)
- 2" EDM diameter: 45 mm (1.8 in)
- 5" Effective diameter of objective: 45 mm (1.8 in)
- 5" EDM diameter: 50 mm (2.0 in)
- Field of view: 1°20'
- Resolving power: 3"
- Minimum focusing distance: 1.5 m (4.9 ft)
- Laser Pointer: Coaxial Red Light

Tilte Sensor

- Type: Dual-axis
- Method: Liquid-electric detection
- Compensation range: ±3.5'

Communications

- Communication ports: 1 x serial (RS-232C), 2 x USB (host and client)
- Wireless communications: integrated Bluetooth

Power

Internal Li–ion battery (x2)

- Output voltage: 3.8 V DC

Operating time[9]

- **2"**
  - approx. 12 hours (continuous distance/ angle measurement)
  - approx. 26 hours (distance/angle measurement every 30 seconds)
  - approx. 28 hours (continuous angle measurement)
- **5"**
  - approx. 7.5 hours (continuous distance/ angle measurement)
  - approx. 16 hours (distance/angle measurement every 30 seconds)
  - approx. 20 hours (continuous angle measurement)

Charging time

- Full charge: 4 hours

General Specifications

Level vials

- Sensitivity of Circular level vial: 10'/2 mm

Optical plummet

- Image: Erect
- Magnification: 3×
- Field of view: 5°
- Focusing range: 0.5 m (1.6 ft) to ∞
- Display face 1: QVGA,16 bit color, TFT LCD, backlit (320x240 pixel)
- Display face 2: Backlit, graphic LCD (128x64 pixel)
- Laser plummet (optional): 4 levels
- Point memory: 128 MB RAM, 1 GB Flash memory
- Dimensions (W x D x H): 149 mm x 145 mm x 306 mm (5.8 in x 5.7 in x 12.0 in)

Weight (approx.)

- 2" Main unit (without battery): 3.9 kg (8.6 lb)
- 5" Main unit (without battery): 3.8 kg (8.4 lb)
- Battery: 0.1 kg (0.2 lb)
- Carrying case: 2.3 kg (5.1 lb)

Environmental

- Operating temperature range: –20 °C to +50 °C (–4 °F to +122 °F)
- Storage temperature range: –25 °C to +60 °C (–13 °F to +140 °F)

Atmospheric correction

- Temperature range: –40 °C to +60 °C (–40 °F to +140 °F)
- Barometric pressure: 400 mmHg to 999 mmHg/533 hPa to 1,332 hPa/15.8 inHg to 39.3 inHg
- Dust and water protection: IP66

Certification

- Class B Part 15 FCC certification, CE Mark approval.
- C-Tick.
- Laser safety IEC60825-1 Ed. 2.0 : 2007
- 2" Reflectorless / Laser Pointer: Class 3R laser
- 5" Reflectorless : Class 1 laser
- 5" Laser Pointer: Class 2 laser
- Prism mode: Class 1 laser
- Laser Plummet (optional): Class 2 laser
- Bluetooth type approvals are country specific.

(1) Good conditions (good visibility, overcast, twilight, underground, low ambient light).

(2) Measuring distance may vary depending on targets and measuring conditions.

(3) Kodak Gray Card, Catalog number E1527795

(4) Normal conditions (normal visibility, object in the shadow, moderate ambient light).

(5) Difficult conditions (haze, object in direct sunlight, high ambient light).

(6) ±(3+3 ppm × D) mm –20 °C to –10 °C, +40 °C to +50 °C (–4 °F to +14 °F, +104 °F to +122 °F)

(7) Measuring time may vary depending on measuring distance and conditions. For the initial measurement, it may take a few more seconds.

(8) Measured to KGC 90% at 20 m (65 ft)

(9) Battery life specification at 25 °C (77 °F). Operation time may be shorter in low temperatures or if the battery is not new.

Contact Information:

AMERICAS

Spectra Precision Division
10368 Westmoor Drive
Westminster, CO 80021, USA

+1-720-587-4700 Phone
888-477-7516 (Toll Free in USA)

EUROPE, MIDDLE EAST AND AFRICA

Spectra Precision Division
Rue Thomas Edison
ZAC de la Fleuriaye - CS 60433
44474 Carquefou (Nantes), France

+33 (0)2 28 09 38 00 Phone

ASIA-PACIFIC

Spectra Precision Division
80 Marine Parade Road
#22-06, Parkway Parade
Singapore 449269, Singapore

+65-6348-2212 Phone

www.spectraprecision.com

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