

NIKON XF & XF HP TOTAL STATIONS



DATASHEET

1", 2", 3", and 5" accuracies

Choice of EDM

Survey Basic, Survey Pro

Dual color touchscreen displays

Fast on both Initial and repeat measurement

PIN security

Superior Nikon optics

Hot swappable batteries

Made in Japan

THE NIKON XF SERIES IS BUILT TOUGH FOR ALL OCCASIONS.

spectrageospatial.com

Nikon XF Series, a total station for everyone

The Nikon XF mechanical total station is packed with features that make survey work easier and faster. The superior Nikon optics give crisp, bright sightings even in low light conditions.

Nikon XF portfolio gives the opportunity to choose the electronic distance measuring (EDM) technology that works best for the type of work being performed.

Choose the EDM for the work you do:

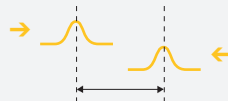
Both the Nikon XF and Nikon XF HP total stations can measure to prisms and non-prism objects at various ranges, the EDM technology in each lends itself to specific situations.

Nikon XF



TIME OF FLIGHT EDM STRENGTHS

- + Long range
- + Very powerfull, very fast



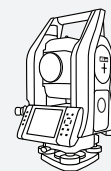
TO PRISMS ^{1, 4, 6, 7}

5,000 m Range
 $\pm (2 + 2 \text{ ppm} \times D) \text{ mm}$
 0.5 s Measuring interval in normal mode

TO NON-PRISMS ¹

800 m Range
 $\pm (3 + 2 \text{ ppm} \times D) \text{ mm}$
 Beam divergence of 35 mm at 30 m
 13 h Operating time with Autofocus every 30 s
 Optical or laser plummet

Nikon XF HP



PHASE SHIFT EDM STRENGTHS

- + Easy non-prism edge and corner measurements
- + High precision



TO PRISMS ^{1, 4, 6, 7}

3,000 m Range
 $\pm (1 + 1.5 \text{ ppm} \times D) \text{ mm}$
 1.2 s Measuring interval in normal mode

TO NON-PRISMS ¹

500 m Range
 $\pm (2 + 2 \text{ ppm} \times D) \text{ mm}$
 Beam divergence of 22 mm at 30 m
 18 h Operating time
 Optical plummet



NIKON XF & XF HP TOTAL STATIONS

DISTANCE MEASUREMENT Range with specified prisms

Good conditions ¹	XF	XF HP
With single prism 6.25 cm (2.5 in)	5,000 m (16,404 ft)	3000 m (9,843 ft)
With reflector sheet 5 cm x 5 cm (2 in x 2 in)	300 m (984 ft)	270 m (886 ft)

Non-Prism mode

XF	Good ¹	Normal ²	Difficult ³
KGC (18%)	400m (1312 ft)	300 m (984 ft)	235 m (771 ft)
KGC (90%)	800 m (2625 ft)	500 m (1640 ft)	250 m (820 ft)
XF HP	Good ¹	Normal ²	Difficult ³
KGC (18%)	350m (1,148ft)	250 m (820 ft)	200 m (656 ft)
KGC (90%)	500 m (1,640 ft)	400 m (1,312ft)	250 m (820 ft)

Accuracy in precise mode⁷

	XF	XF HP ⁸
Prism ⁶	±(2+2 ppm × D) mm	±(1+1.5 ppm × D) mm
Non-Prism	±(3+2 ppm × D) mm	±(2+2 ppm × D) mm

Measuring Time⁴

XF	Precise mode	Normal mode	Fast mode
Prism Mode	0.9s (initial 1.4s)	0.5s (initial 1.2s)	0.3s (initial 0.7s)
Non-Prism Mode	1.0s (initial 1.5s)	0.5s (initial 1.3s)	0.3s (initial 0.8s)
XF HP	Precise mode	Normal mode	
Prism Mode	1.6 s	1.2 s	
Non-Prism Mode	2.1 s	1.6 s	

ANGLE MEASUREMENT

Accuracy

(Standard Deviation based on ISO 17123-3) ... 1" (0.3 mgon), 2" (0.6 mgon), 3" (1.0 mgon), 5" (1.5 mgon)
Reading system Absolute encoder
Circle diameter 62 mm (2.4 in)
Horizontal/Vertical angle Diametrical/ Single
Minimum increment (Degree, Gon)
1" model 0.1" (0.02 mgon)
2", 3", 5" models 1.0" (0.2 mgon)

TELESCOPE

Tube length 128 mm (5.0 in)
Image Erect
Magnification 30× (19x/38x with optional eyepieces)
Effective diameter of objective
XF 45 mm
XF HP 40 mm
Field of view 1°25'
Resolving power 3"
Minimum focusing distance 1.5 m (4.9 ft)
Tracklight Yes
Reticle Illumination Yes, 4 steps

TILT SENSOR

Type Dual axis
Method Liquid-electric detection
Compensation range ±3'

COMMUNICATIONS

Communication ports 1 x serial (RS-232C), 2x USB (host and client)
Wireless Communications Integrated Bluetooth (Class 1, Long Range)

POWER

Hot swappable Li-ion battery (x2)

Output voltage 3.6V

Charging time

Full charge 6 h

Operating time⁵

	XF	XF HP
Distance and angle measurement every 30s	13 h ^{5a}	18 h
Continuous distance and angle measurement	7 h	10.5 h

GENERAL SPECIFICATIONS

Autofocus

XF Yes
XF HP No
Tangent Clamps Yes
Level vials
Sensitivity of Circular level vial on tribrach 10"/2 mm
Display face 1 LCD back-lit (640 x 480 pixel)
Display face 2 LCD back-lit (640 x 480 pixel)
Operating system Windows Embedded Compact 7
Processor Dual Core 800MHz
Memory 512 MB RAM, 4 GB Flash Memory

Internal Plummet

XF Optical or Class 2 Laser
XF HP Optical

Optical Plummet

Magnification 3x
Field of view 5°
Minimum focusing distance 0.5m

Dimensions

(W x D x H) 184 mm x 169 mm x 318 mm (7.2 in x 6.7 in x 12.5 in)

Weight (approx.)

Main unit
XF 4.3 kg (9.5lb)
XF HP 4.4 kg (9.7lb)
Carrying case 2.6kg(5.7lb)

ENVIRONMENTAL

Operating temperature range -20 °C to +50 °C (-4 °F to +122 °F)
Storage temperature range -25 °C to +60 °C (-22 °F to +140 °F)

Atmospheric Correction

Temperature range -40 °C to +60 °C (-40 °F to +140 °F)
Barometric pressure range 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. RCM Mark.
IEC60825-1 am 2007, IEC60825-1 am 2014, FDA notice 50, EAC / NCC
XF

Prism/Non-prism mode Class 1 laser
Laser Plummet / Laser Pointer Class 2 laser
XF HP

Prism mode Class 1 laser
Non-prism mode / Laser Pointer Class 3R laser

- 1 Good conditions (good visibility, overcast, twilight, low ambient light).
- 2 Normal conditions (normal visibility, object in the shadow, moderate ambient light).
- 3 Difficult conditions (haze, object in direct sunlight, high ambient light).
- 4 Measuring time may vary depending on measuring distance and conditions.
Specification based on average of repeated measurements.
- 5 Battery life specification at 25 °C (77 °F). Operation times may vary depending on the condition and deterioration of the battery.

5a 11 hours when EDM power save mode set to 6 seconds.

6 Standard Deviation based on ISO 17123-4

7 EDM accuracy in normal mode is: XF: ±(10+5 ppm × D) mm, XF HP: ±(5+5 ppm × D) mm

EDM accuracy in fast mode for XF only: ±(20+5 ppm × D) mm.

8 XF HP accuracy in standard measurement mode to a prism less than 1000m away is ±(1+1.5 ppm × D) mm. At a range greater than or equal to 1000m, the accuracy is ±(2+2 ppm × D) mm

Bluetooth type approvals are country specific.
Specifications subject to change without notice.

Nikon XF



Nikon XF HP



CONTACT INFORMATION:

Americas

10368 Westmoor Drive
Westminster, CO 80021 • USA
+1-720-587-4700 Phone
888-477-7516 (Toll Free in USA)

Europe, Middle East and Africa

Rue Thomas Edison
ZAC de la Fleuriaye - CS 60433
44474 Carquefou (Nantes) • FRANCE
+33-(0)2-28-09-38-00 Phone

Asia-Pacific

80 Marine Parade Road
#22-06, Parkway Parade
Singapore 449269 • SINGAPORE
+65-6348-2212 Phone

Please visit spectraprecision.com
for the latest product information and to
locate your nearest distributor. Specifications
and descriptions are subject to change
without notice.