

NIKON XF & XF HP TOTAL STATIONS



DATASHEET

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

Choice of EDM

Survey Pro and
Layout Pro onboard

Dual color touchscreen displays

Optional L2P asset protection

PIN security

Superior Nikon optics

Hot swappable batteries

Made in Japan

**THE NIKON XF
SERIES IS BUILT
TOUGH FOR ALL
OCCASIONS.**

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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:

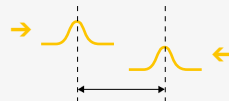
Both the Nikon XF and Nikon XF HP total stations can measure to prisms and non-prism objects at various ranges, the EDM technology in each lends itself to specific situations.

Nikon XF



TIME OF FLIGHT EDM STRENGTHS

- + Long range
- + Very powerful, very fast



TO PRISMS ^{1,4,6,7}
5,000 m Range
 $\pm (2 + 2 \text{ ppm} \times D)$ mm
0.5 s Measuring interval in normal mode

TO NON-PRISMS ¹
800 m Range
 $\pm (3 + 2 \text{ ppm} \times D)$ mm

Beam divergence of 60 mm at 30 m

12 h Operating time

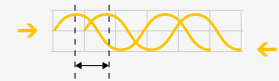
Optical or laser plummet

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

TO NON-PRISMS ¹
500 m Range
 $\pm (2 + 2 \text{ ppm} \times D)$ mm

Beam divergence of 26 mm at 30 m

18 h Operating time

Optical plummet

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 x D) mm	±(1+1.5 ppm x D) mm
Non-Prism	±(3+2 ppm x D) mm	±(2+2 ppm x D) mm

Measuring interval⁴

XF	Precise mode	Normal mode	Fast mode
Prism Mode	1.0 s	0.5 s	0.3 s
Non-Prism Mode	1.0 s	0.5 s	0.3 s
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

TELESCOPE

Tube length 128 mm (5.0 in)
 Image Erect
 Magnification 30x (19x/38x with optional eyepieces)
 Effective diameter of objective
 XF 45 mm
 XF HP 40 mm
 EDM Diameter
 XF 50 mm
 XF HP 45 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

Internal Li-ion battery (x2)
 Output voltage 3.6V

Charging time

Full charge 6 h

Operating time⁵

	XF	XF HP
Continuous angle-only measurement	14 h	19 h
Distance and angle measurement every 30s with Autofocus	12 h	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) 206 mm x 169 mm x 318 mm (8.1 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 3.3 kg (7.3 lb)

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

- Good conditions (good visibility, overcast, twilight, low ambient light).
- Normal conditions (normal visibility, object in the shadow, moderate ambient light).
- Difficult conditions (haze, object in direct sunlight, high ambient light).
- Measuring time may vary depending on measuring distance and conditions. Specification based on average of repeated measurements.
- Battery life specification at 25 °C (77 °F). Operation times may vary depending on the condition and deterioration of the battery.
- Standard Deviation based on ISO 17123-4
- EDM accuracy in normal mode is: XF: ±(10+5 ppm x D) mm, XF HP: ±(5+5 ppm x D) mm EDM accuracy in fast mode for XF only: ±(20+5 ppm x D) mm.
- XF HP accuracy in standard measurement mode to a prism less than 1000m away is ±(1+1.5 ppm x D) mm. At a range greater than or equal to 1000m, the accuracy is ±(2+2 ppm x 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.