

# 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:

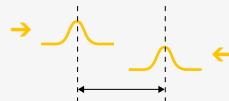
Both the Nikon XF and Nikon XF HP total stations can measure to prisms and non-prism objects at various ranges, the EDM technology in each lends itself to specific situations.

### Nikon XF



#### TIME OF FLIGHT EDM STRENGTHS

- + Long range
- + Very powerful, very fast



**TO PRISMS** <sup>1,4,6,7</sup>  
5,000 m Range  
± (2 + 2 ppm x D) mm  
0.5 s Measuring interval in normal mode

**TO NON-PRISMS** <sup>1</sup>  
800 m Range  
± (3 + 2 ppm x D) mm

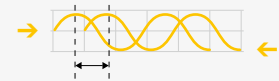
Beam divergence of 60 mm at 30 m  
12 h Operating time with Autofocus every 30 s  
Optical or laser plummet

### Nikon XF HP



#### PHASE SHIFT EDM STRENGTHS

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



**TO PRISMS** <sup>1,4,6,7</sup>  
3,000 m Range  
± (1 + 1.5 ppm x D) mm  
1.2 s Measuring interval in normal mode

**TO NON-PRISMS** <sup>1</sup>  
500 m Range  
± (2 + 2 ppm x D) mm

Beam divergence of 26 mm at 30 m  
18 h Operating time  
Optical plummet

## DISTANCE MEASUREMENT

### Range with specified prisms

Good conditions <sup>1</sup>	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 <sup>1</sup>	Normal <sup>2</sup>	Difficult <sup>3</sup>
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 <sup>1</sup>	Normal <sup>2</sup>	Difficult <sup>3</sup>
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 mode<sup>7</sup>

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

### Measuring interval<sup>4</sup>

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 ..... 30× (19×/38× 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 time<sup>5</sup>

	XF	XF HP
Continuous angle-only measurement	14 h	19 h
Distance and angle measurement every 30s	12 h (AF every 30s)	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 × D) mm, XF HP: ±(5+5 ppm × D) mm  
 EDM accuracy in fast mode for XF only: ±(20+5 ppm × D) mm.
- 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

Nikon XF



Nikon XF HP



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

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 locate your nearest distributor. Specifications  
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