iX-1500/700

Accurate, powerful, and versatile

Built for job site mobility, the flagship iX series Brushless Direct Current total station enables accurate and productive workflows for highly demanding survey and construction applications. Precisely lay out or survey more points in less time and improve quality and consistency. Easy-to-use digital processes with repeatably accurate results mean less rework and better quality control. The iX series is an all-in-one professional tool for survey and stake-out.

- Precise positioning with single-person operation
- High-speed advanced BLDC motors
- Easy-to-use with software
- Seamless integration into BIM workflows
- Available in iX-1500 and iX-700 models with multiple accuracy levels
- Three-year instrument and five-year motor warranty
- Ultra-rugged IP65 dust and water resistance

Specifications

Telescope	
Length	142 mm
Aperture	EDM: 38 mm
Magnification	30x
Image	Erect
Resolving power	2.5″
Field of view	1°30′
Minimum focus	1.3 m (4.3 ft.)
Reticle illumination	5 brightness levels
Angle Measurement	
Horizontal and vertical circles type	Rotary absolute encoder
Detecting	2 sides
Angle Units	Degree/Gon/Mil (selectable)
Minimun Display	
iX-1501/1502/701/702	0.5″ (0.0001 gon/0.002 mil) 1″ (0.0002 gon/0.005 mil) (selectable)
iX-1503/703	1″ (0.0002 gon/0.005 mil) 5″ (0.0010 gon/0.020 mil) (selectable)
Angle Accuracy (ISO 17123-3 : 2001)	
iX-1501/701	1″ (0.0003 gon/0.005 mil)
iX-1502/702	2″ (0.0006 gon/0.010 mil)
iX-1503/703	3″ (0.0010 gon/0.015 mil)
Collimation compensation	On/Off (selectable)
Measuring mode	Horizontal angle: Right/Left (selectable) Vertical angle: Zenith/Horizontal/Horizontal ± 90° /% (selectable)
Tilt Angle Compensation	
Type	Liquid 2-axis tilt sensor
Minimum display	1″
Range of compensation	± 6′ (0.1111 gon)
Automatic compensator	On (V and H/V) / Off (selectable)
Tilt offset	Can be changed
Distance Measurement	
Measuring method	Coaxial phase-contrast measuring system
Signal source	Red laser diode 690 nm Class 3R
(IEC60825-1 Ed. 3.0: 2014/FDA CDRH 21CFR Part1040.10 and 1040.11 (Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No.56, dated May 8, 2019.))	
Measuring Range	
Prism AP01 X 1*[2]	1.3 to 5,000 m (16,400 ft.)
360° Prism ATP1/ATP1S	1.3 to 1,000 m (3,280 ft.)
Mini pole prism OR1PA	1.3 to 500 m (1,640 ft.)
Reflective sheet RS90N-K*[3]	1.3 to 500 m (1,640 ft.)
Reflective sheet RS50N-K*[3]	1.3 to 300 m (984 ft.)
Reflective sheet RS10N-K*[3]	1.3 to 100 m (328 ft.)
Reflectorless (White)*[2]	0.3 to 1,000 m (3,280 ft.)
(Using the following reflective prism/reflective sheet target during normal atmospheric conditions*[1])	

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Minimum display	
Fine/Rapid measurement	0.0001 m (0.001 ft./ 1/16 inch) or 0.001 m (0.005 ft./ 1/8 inch)
Tracking measurement	0.001 m (0.005 ft./ 1/8 inch) or 0.01 m (0.1 ft./ 1/2 inch)
Maximum slope distance display (Tracking)	Reflectorless: 768 m (2,510 ft.) Prism/reflective sheet: 1,280 m (4,190 ft.)
Maximum slope distance display (Except for tracking)	Reflectorless: 1,200 m (3,937 ft.) Reflective sheet: 9,600 m (31,496 ft.)
Distance unit	m/ft./US ft./inch (selectable)
Distance accuracy (D: Measurement distance in mm)	
Circular or 360° prism ATP1	Fine: 1 mm (0.003 ft.) + 2 ppm x D Rapid: 5 mm (0.0016 ft.) + 2 ppm x D
Reflective sheet*3	Fine: 2 mm (0.006 ft.) + 2 ppm x D Rapid: 5 mm (0.016 ft.) + 2 ppm x D
Reflectorless (White)*4	Fine: 2 mm (0.006 ft.) + 2 ppm (0.3 to 200 m) x D 5 mm (0.016 ft.) + 10 ppm (200 to 350 m) xD 10 mm (0.032 ft.) + 10 ppm (350 to 1000m) x D Rapid: 6 mm (0.020 ft.) + 2 ppm (0.3 to 200 m) x D 8 mm (0.026 ft.) + 10 ppm (200 to 350 m) x D 15 mm (0.049 ft.) + 10 ppm (350 to 1000 m) x D
Measurement mode	Fine measurement (single/repeat/average) Rapid measurement (single/repeat) /Tracking (selectable)
Measuring time	
Fine measurement	1.5 s + every 0.9 s
Rapid measurement	1.3 s + every 0.6 s
Tracking measurement	1.3 s + every 0.4 s
Temperature input range	- 35 to 60°C (in 0.1°C step)/ - 31 to 140°F (in 1°F step)
Pressure input range	500 to 1,400 hPa (in 0.1 hPa step), 375 to 1,050 mm Hg (in 0.1 mm Hg step), 14.8 to 41.3 inch Hg (in 0.01 inch Hg step)
ppm input range	-499 to 499 ppm (in 0.1 ppm step)
Prism constant correction	-99 to 99 mm (in 0.1 mm step) 0 mm fixed for reflectorless measurement
Earth curvature and refraction correction	No/Yes K=0.142 Yes K=0.20 (selectable)
Sea level correction	No/Yes (selectable)

*1: Slight haze, visibility about 20 km, sunny periods, weak scintillation.
*2: No haze, visibility about 40 km, overcast, no scintillation.
*3: Figures when the laser beam strikes within 30° of the reflective sheet target.
*4: Figures when using Kodak Gray Card White side (reflection factor 90%) and brightness level is less than 5,000 lx (a little cloudy). When performing reflectorless measurement, the possible measurement range and precision will change depending on the target reflection factor, weather conditions and location conditions.

Rotation	
Max revolving speed (turning)	200 degrees per second
Max auto-tracking speed (iX-1500 models only)	20 degrees per second
UltraTrac™ tracking range	
Prism AP01	iX-1500: 1.3 to 1,000 m (3,280 ft.)
360 degree prism (ATP1)	2 to 600 m (1,960 ft.)
Auto Pointing accuracy	
Standing still at 100 m or less	1.2 mm or better
Standing still greater then 100 m	0.3 mm (0.001ft.) + 9 ppm x D
Guide light	
Light source	LED (red 626 nm/green 524 nm)
Visible distance	1.3 to 150 m
Visible angle	Right and Left/Upward and Downward: ± 4° (7 m/100 m)
Resolving power at center area (width)	4′ (about 0.12 m/100 m)
Brightness	3 levels (bright/normal/dim)
Memory and Data	
Internal memory	1 GB
External memory	USB flash memory (up to 32 GB)
Ports	Asynchronous serial RS232C compatible USB Revision 2.0 (FS) Host (Type A) Client (Type miniB)
Long-range Bluetooth® wireless technology	
Transmission method	FHSS
Modulation	GFSK (Gaussian-filtered frequency shift keying)
Frequency band	2.402 to 2.480 GHz
Bluetooth® profile	SPP, GATT
Power class	Class 1.5
Range	600 m (while in communication with the RC-PR5 (iX-1500 only) - no obstacles, few vehicles or sources of radio omissions/ interference in the near vicinity of the instrument, no rain)
Authentication	Yes/No (selectable)
Wireless LAN	
Communication distance	10 m
Access method	Infrastructure mode/ad hoc mode
Frequency range	2,412 to 2,462 MHz (1 to 11ch)
Transmission specification	IEEE802.11b/g/n

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Power supply	
Power source	Rechargeable Li-ion battery BDC72
Working duration at 20°C	BDC72: approx. 4 hours
Fine single measurement = every 30 seconds after worked 180 degrees and locking on prism	
Battery state indicator	4 levels
Auto power-off	5 levels (5/10/15/30 min/Not set) (selectable)
External power source	6.7 to12 V
Battery (BDC72)	
Nominal voltage	7.2 V
Capacity	5,986 mAh
Dimensions (w x d x h)	40 x 70 x 40 mm
Weight	approx. 220 g
Charging time at 25°C	approx. 8 hours for two batteries using CDC77 charger
Charger (CDC77)	
Voltage	AC 100 to 240 V
Charging temperature range	0 to 40°C
Storage temperature range	-20 to 65°C
Size (w x d x h)	94 x 102 x 36 mm
Weight	about 250 g
Operating system	
Windows Compact 7	
Display	
Color touchscreen 4.3 inch Transmissive TFT VWGA color LCD	
Backlight LED 9 brightness levels	
Touch panel resistance sensitive analog type	

Sensitivity of levels	
Circular level	10′/2 mm on tribrach 8′/2 mm on main unit (optional)
Electronic circular levels	Graphic display range: 6′ (inner circle) Digital display range: ± 6′ 30″
Optical plummet	
Image	Erect
Magnification	3X
Minimum focus	0.5 m
Environmental	
Operating temperature	Standard models: -20 to 50°C (-4 to 122°F) (no condensation)
Storage temperature	-30 to 60°C (-22 to 140°F) (no condensation)
Dust/Water rating	IP65 (IEC 60529: 2001)
Instrument height	192 mm from tribrach mounting surface
Size with handle (w x d x h)	212 x 172 x 355 mm
Weight iX-1500 (with RC-handle/ battery)	6.0 kg
Weight iX-700 (with normal handle/ battery)	5.9 kg
Certifications and Standards	
USA FCC Class A Europe R&TTE-Class1 Europe EMC-ClassB Canada ICES –ClassA Australia C-Tick N 13813 Europe WEEE Directive Europe Battery Directive California Proposition 65 California Perchlorate Material CR TELEC	

Specifications subject to change without notice.

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