

#### **SPECIFICATIONS**

Product Type									
Auto-tracking / Auto-Collimating Auto-collimating Auto-collimating Auto-collimating Auto-collimating Auto-collimating speed Auto-tracking speed Reflective shee (Auto-Collimating range* Collimating range Reflective speed (Auto-tracking speed Auto-tracking speed speed (Auto-tracking speed spe	Product Type		Auto-tracking Model						
Auto-colimating			iX-1001	iX-1003	iX-1005	iX-501	iX-503	iX-505/505E	
Motor type			T						
Motor type									
Rotation speed   Auto-tracking speed   Auto-tracking speed   Auto-tracking / Auto-Collimating range "   APPI/ATPIS 360° prism" : 2 to 600m (6.6 to 1,960ft.), CPI : 1.3 to 700m (4.3 to 2,290ft.)   OR.19A : 1.3 to 500m (4.3 to 1,400ft.), CPI : 1.3 to 700m (4.3 to 2,290ft.)   OR.19A : 1.3 to 500m (4.3 to 1,400ft.), CPI : 1.3 to 700m (4.3 to 2,290ft.)   OR.29 to 160ft.   Reflective sheet (Auto-collimation)" : RSI/300/50N-K : 5 to 50m (16 to 160ft.) / RS90N-K : 10 to 500m (24 to 160ft.)   OS.000m (4.3 to 1900ft.)   OS.000m (4.3 to									
Arbit/ArPlis 360° prism*: 2 to 600m (6.6 to 1,960ft.), CPD1: 1.13 to 70m (4.3 to 2,280 ft.) Reflective sheet (Auto-collimating)*: 2 to 600m (6.6 to 1,960ft.), CPD1: 1.13 to 70m (4.3 to 2,280 ft.) Reflective sheet (Auto-collimating)*: RS10/30/50N-K: 5 to 50m (16 to 160ft.) (RS90N-K: 10 to 50m (22 to 160ft.) Remote control range (RC handle + RC-PRSA)  2 to 300m (4.3 to 980ft.)* 2 to 300m (4.3 to 980ft.)* 2 to 300m (4.3 to 980ft.)*  2 to 300m (4.3 to 980ft.)*  2 to 300m (4.3 to 980ft.)*  2 to 300m (4.3 to 980ft.)*  2 to 300m (4.3 to 980ft.)*  2 to 300m (4.3 to 980ft.)*  2 to 300m (4.3 to 980ft.)*  3 x/ 2.5*  Length: 142mm (5.5mi.) Objective aperture : 38mm (1.5in.) (38mm (1.5in.) for EDM), image: Erect, Field of view: 1*30' (26m/1,000m), Minimum focus: 1.3m (4.3ft.) Angle measurement  0.57/1*  0.57/1*  0.000/20080000, 0.005 / 0.005/0.002m)  0.002 / 0.005/0.005/0.002m) 0.002 / 0.005/0.002/0.0003/0.000000, 0.007 / 0.0003/0.0002/0.0003/0.00000000000000000									
ORJAP: 1.3 to 500m (4.3 to 1.400ft.) One AP prism: 1.3 to 1,000m (4.3 to 3,280 ft.)   Reflective sheet (Autr-collimation)***: \$1 to 500m (1.4 to 160ft.) RS90N kt. 1 to 50m (32 to 160ft.)   Reflectorescope	Rotation speed / Auto-tracking speed								
Reflective sheet (Auto-collimation)**: R510/30/50N-K: 5 to 50m (16 to 160ft.) (R500N-K: 5 to 10 to 50m (12 to 160ft.) (R500N-K: 5 to 50m (16 to 160ft.) (R500N-K: 5 to 160ft.) (R500N-K: 13 to 50m (16 to 160ft.) (R500N-K: 13 to 50m (16 to 160ft.) (R500N-K: 13 to 160m (16 to 160ft.) (R500N-K:	Auto-tracking / Auto-Collimating range*2								
Remote control range (RC handle + RC-PRSA) 2 to 300m (4.3 to 980ft.) 2 to 300m (4.3 to 980ft.) 1  Telescope Magnification / Resolving power Length: 142mm (5.6in.), Objective aperture: 38mm (1.5in.) (38mm (1.5in.) for EDM), Image: Erect, Field of view: 1'30' (25m/1,000m), Minimum focus: 1.3m (4.3ft.) Angle measurement Display resolutions    0.57\sqrt{1"}									
Remote control range (Rc handle + RC-PR5A)   2 to 300m (4.3 to 980ft.)   2 to 300m (4.3 to 980ft.)									
Reflectories   South			•						
Magnification / Resolving power   30x / 2.5*   10   10   10   11   11   11   11   1			2 to 300m (4.3 to 980ft.)			2 to 300m (4.3 to 980ft.) 1			
Lends 1: 14Zmm (5.6in.), Objective aperture : 38mm (1.5in.) (38mm (1.5in.) for EDM), Image: Erect, Field of view: 1°30' (26m/1,000m), Minimum focus: 1.3m (4.3ft.) Angle measurement			20 (2.5"						
Angle measurement									
Display resolutions								focus: 1.3m (4.3ft.)	
Co.0001 / 0.0002 pon   Co.0001 / 0.0002 pon   Co.0001 / 0.0001 pon   Co.0002 / 0.001 pon   Co.0002 pon			2 = 1/4   1   1   1   1   1   1   1   1   1		0.51/411 411/511				
Accuracy (150 17123-3:2001)	Display resolutions		· '						
Dal-axis Inguid tit sensor, working range: ±6'   Dula-axis Inguid tit sensor, working range: ±6'				(0.0002 / 0.001go	n, 0.005 / 0.02mil)		(0.0002 / 0.001g	on, 0.005 / 0.02mil)	
Dual-axis compensator   Dual-axis liquid tilt sensor, working range: ±6'	(700 47400 0 0004)								
Distance measurement									
Reflectories mode : Class 3 R / Prismy/Sheet mode : Class 1			Duai-axis liquid tilt sensor, working range: ±6						
Measuring range (under average (un									
Reflective sheet*   RS90N-K: 1.3 to 500m (4.3 to 1,640ft), RS50N-K: 1.3 to 300m (4.3 to 980ft), RS10N-K: 1.3 to 100m (4.3 to 320ft)		D = 41 = +1 = -1 *7							
Mini prism   CPOI: 1.3 to 2,500m (4.3 to 8,200ft.), ORIPA: 1.3 to 500m (4.3 to 1,640ft.)									
One AP prism***			ROSUN-R: 1.3 to 300III (4.3 to 1,040II.), KSDUN-R: 1.3 to 300III (4.3 to 320II.), KSDUN-R: 1.3 to 100III (4.3 to 320II.)						
ATP1/ATP1S 360° prism									
Display resolution									
Tracking and Road : 0.001m (0.005ft / 1/8in.)/ 0.01m (0.1ft / 1/2in.)	Display resolution	ATPI/ATPIS 360° Prisiti							
Reflectorless'   Reflectorless'   (2 + 2ppm x D) mm"   (1 + 2ppm x D) mm   (1 + 2ppm	Display resolution								
(ISO 17123-42:2001) Reflective sheet*9 (2 + 2ppm x D) mm (Demeasuring distance in mm) Prism*10 (1 + 2ppm x D) mm (Measuring time*8*17 fine / Rapid / Tracking 0.9s (initial 1.5s) / 0.6s (initial 1.3s) / 0.4s (initial 1.3s)  OS, Interface and Data management Operating system  Control panel Display 4.3 inch, Transmissive TFT WVGA color LCD with LED backlight, Touch screen,  Keyboard 24 keys with backlight	Accuracy*6	Poflostorloss*7		Tracking and Ro	2 - 2 - 2000 1 Dad	J.003(/ 1/6)(1.)/ 0.01(( 0.1(/ 1/2)(1.)			
Communication   Prism   Pris									
Measuring times   Fine   Rapid   Tracking   0.9s (initial 1.5s)   0.6s (initial 1.3s)   0.4s (initial 1.3s)									
OS, Interface and Data management Operating system Control panel Display Eveyboard Location Display Data storage Display Display Data storage Internal memory Display									
Operating system									
Display   A.3 inch, Transmissive TFT WVGA color LCD with LED backlight, Touch screen, Keyboard   24 keys with backlight   26 keys minded   26 keys with backlight   26 keys minded   26 keys minded   26 keys with backlight   26 keys minded   26 keys with backlight   26 keys minded   26 k									
Keyboard   Location   On single face		Dienlay							
Trigger key	Control panel								
Trigger key  Data storage  Internal memory  Internal memory  Plug-in memory device  Calendar / clock function  Titlerface  Wireless  Cellular  Bluetooth modem*13  Wireless LAN  General  Guide light*15  Laser-pointer*15  Levels  Graphic  Circular level (on tribrach)  Plummet  Optical  Dotical  Laser (option)  Red laser diode (635nm±10nm), Beam accuracy: <=1.0mm@1.3m, Class 2 laser product  Dust and water protection*  Serial RS-232C, USB2.0 (Type A / miniB)  Wireless LAN  Cellular  Bluetooth Class 1, Ver.2.1+EDR, Operating range: up to 600m (1,960ft), (while in communication with RC-PR5A)*14  IEEE 802.11b/g/n  General  Gide light*15  Green LED (524nm) and Red LED (626nm), Operating range: 1.3 to 150m (4.3 to 490ft.)  Coaxial red laser using EDM beam  Levels  Graphic  Circular level (on tribrach)  Plummet  Optical  Aganification: 3x, Minimum focus: 0.5m (11.8in.) from tribrach bottom  Red laser diode (635nm±10nm), Beam accuracy: <=1.0mm@1.3m, Class 2 laser product  Dust and water protection*  Size with handle  Instrument height  Approx. 5.8kg (12.8lb)(with RC handle)  Approx. 5.7kg (12.6lb)(with standard handle)  Power supply  Battery  BDC70 detachable battery  Li-ion rechargeable battery									
Data storage   Internal memory   1GB internal memory (includes memory for program files)									
Plug-in memory device   USB flash memory (max. 32GB)									
Calendar / clock function  Interface  Serial RS-232C, USB2.0 (Type A / miniB)  Wireless  Cellular  Bluetooth modem*13  Wireless LAN  General  Guide light*15  Laser-pointer*15  Graphic  Circular level (on tribrach)  Plummet  Optical  Dust and water protection*16  Dust and water protection*16  Dust and water protection*16  Size with handle  Instrument height  Meight and read page									
Interface  Wireless Cellular Coaxial red laser using EDM beam Coaxial red l									
Wireless communication   Cellular   Bluetooth modem*13   Bluetooth Class 1, Ver.2.1+EDR, Operating range: up to 600m (1,960ft.) (while in communication with RC-PR5A)*14   Wireless LAN   IEEE 802.11b/g/n									
Communication    Bluetooth modem*****   Bluetooth Class 1, Ver.2.1+EDR, Operating range: up to 600m (1,960ft.) (while in communication with RC-PR5A)*****   Wireless LAN   IEEE 802.11b/g/n		Cellular							
General  Guide light*15 Laser-pointer*15 Levels Gircular level (on tribrach) Dust and water protection*16 / Operating temperature Size with handle Instrument height Wireless LAN  Wireless LAN  Green LED (524nm) and Red LED (626nm), Operating range: 1.3 to 150m (4.3 to 490ft.)  Coaxial red laser using EDM beam 6' (Inner Circle) Circular level (on tribrach) 10' / 2mm  Plummet Optical Laser (option) Red laser diode (635nm±10nm), Beam accuracy: <=1.0mm@1.3m, Class 2 laser product  Dust and water protection*16 / Operating temperature Size with handle 192.5mm from tribrach mounting surface Weight with battery & tribrach Power supply Battery  BDC70 detachable battery  BDC70 detachable battery  Li-ion rechargeable battery	communication	Bluetooth modem*13	Bluetooth Class 1,					on with RC-PR5A)*14	
General Guide light*15 Laser-pointer*15 Coaxial red laser using EDM beam Levels Graphic Circular level (on tribrach) Plummet Optical Laser (option) Again (635nm±10nm), Beam accuracy: <=1.0mm@1.3m, Class 2 laser product Dust and water protection*15 / Operating temperature Size with handle Instrument height Instrument height Weight with battery & tribrach Power supply Battery BDC70 detachable battery  Green LED (524nm) and Red LED (626nm), Operating range: 1.3 to 150m (4.3 to 490ft.) Green LED (524nm) and Red LED (626nm), Operating range: 1.3 to 150m (4.3 to 490ft.) Green LED (524nm) and Red LED (626nm), Operating range: 1.3 to 150m (4.3 to 490ft.)  Again (4.3 to 490ft.)  Magnification: 3x, Minimum focus: 0.5m (11.8in.) from tribrach bottom 10' / 2mm Magnification: 3x, Minimum focus: 0.5m (11.8in.) from tribrach bottom  Red laser diode (635nm±10nm), Beam accuracy: <=1.0mm@1.3m, Class 2 laser product  Dust and water protection*15 / Operating temperature  1P65 (IEC 60529:2001) / -20 to +50°C (-4 to +122°F) Size with handle 192.5mm from tribrach mounting surface  Weight with battery & tribrach Approx. 5.8kg (12.8lb)(with RC handle) Approx. 5.7kg (12.6lb)(with standard handle)  Power supply  Battery BDC70 detachable battery									
Guide light*15 Laser-pointer*15 Coaxial red laser using EDM beam Levels Graphic Circular level (on tribrach) Plummet Optical Laser (option) Dust and water protection*16 / Operating temperature Size with handle Instrument height Meight with battery & tribrach Struck tribrach Approx. 5.8kg (12.8lb)(with RC handle) Battery Battery BDC70 detachable battery  Green LED (524nm) and Red LED (626nm), Operating range: 1.3 to 150m (4.3 to 490ft.) Coaxial red laser (626nm), Operating range: 1.3 to 150m (4.3 to 490ft.) Coaxial red laser using EDM beam (6' (Inner Circle) (10' / 2mm Magnification: 3x, Minimum focus: 0.5m (11.8in.) from tribrach bottom Stem (11.8in.) from tribrach bottom Red laser diode (635nm±10nm), Beam accuracy: <=1.0mm@1.3m, Class 2 laser product IP65 (IEC 60529:2001) / -20 to +50°C (-4 to +122°F) Size with handle 192.5mm from tribrach mounting surface Weight with battery & tribrach Approx. 5.8kg (12.8lb)(with RC handle) Approx. 5.7kg (12.6lb)(with standard handle)  Power supply Battery BDC70 detachable battery	7.57								
Laser-pointer*15  Levels  Graphic Circular level (on tribrach) Plummet Optical Laser (option) Oust and water protection*16 / Operating temperature Size with handle Instrument height Megin (12.8lb) (with Sattery & tribrach)  Approx. 5.8kg (12.8lb) (with RC handle)  Battery  Coaxial red laser using EDM beam 6' (Inner Circle) 10' / 2mm Adagnification: 3x, Minimum focus: 0.5m (11.8in.) from tribrach bottom 10' / 2mm 10' / 2mm 10' / 2mm 11.8in.) from tribrach bottom Red laser diode (635nm±10nm), Beam accuracy: <=1.0mm@1.3m, Class 2 laser product 1P65 (IEC 60529:2001) / -20 to +50°C (-4 to +122°F) 1P65 (IEC 60529:2001) / -20 to +50°C (-4 to	Guide light*15		Green LED (524nm) and Red LED (626nm), Operating range: 1.3 to 150m (4.3 to 490ft.)						
Levels  Graphic Circular level (on tribrach)  Plummet Optical Laser (option)  Dust and water protection**  Dist and water protection**  Size with handle Instrument height  Weight with battery & tribrach  Weight with battery  BDC70 detachable battery  BDC70 detachable battery  Magnification: 3x, Minimum focus: 0.5m (11.8in.) from tribrach bottom  Red laser diode (635nm±10nm), Beam accuracy: <=1.0mm@1.3m, Class 2 laser product  IP65 (IEC 60529:2001) / -20 to +50°C (-4 to +122°F)  S12E With handle  212(W)x 172(D)x 355(H)mm  192.5mm from tribrach mounting surface  Weight with battery & tribrach Approx. 5.8kg (12.8lb)(with RC handle)  Approx. 5.7kg (12.6lb)(with standard handle)  Power supply  Battery  BDC70 detachable battery  Li-ion rechargeable battery									
Circular level (on tribrach)   10' / 2mm		Graphic	<u> </u>						
Plummet Optical Magnification: 3x, Minimum focus: 0.5m (11.8in.) from tribrach bottom  Laser (option) Red laser diode (635nm±10nm), Beam accuracy: <=1.0mm@1.3m, Class 2 laser product  Dust and water protection*16 / Operating temperature IP65 (IEC 60529:2001) / -20 to +50°C (-4 to +122°F)  Size with handle 212(W)x 172(D)x 355(H)mm  Instrument height 192.5mm from tribrach mounting surface  Weight with battery & tribrach Approx. 5.8kg (12.8lb)(with RC handle) Approx. 5.7kg (12.6lb)(with standard handle)  Power supply  Battery BDC70 detachable battery Li-ion rechargeable battery									
Laser (option)  Red laser diode (635nm±10nm), Beam accuracy: <=1.0mm@1.3m, Class 2 laser product  Dust and water protection*15 / Operating temperature  Size with handle  1965 (IEC 60529:2001) / -20 to +50°C (-4 to +122°F)  Size with handle  212(W)x 172(D)x 355(H)mm  Instrument height  192.5mm from tribrach mounting surface  Weight with battery & tribrach  Approx. 5.8kg (12.8lb)(with RC handle)  Power supply  Battery  BDC70 detachable battery  Li-ion rechargeable battery	Plummet								
Dust and water protection*16 / Operating temperature IP65 (IEC 60529:2001) / -20 to +50°C (-4 to +122°F)  Size with handle 212(W)x 172(D)x 355(H)mm  Instrument height 192.5mm from tribrach mounting surface  Weight with battery & tribrach Approx. 5.8kg (12.8lb)(with RC handle) Approx. 5.7kg (12.6lb)(with standard handle)  Power supply  Battery BDC70 detachable battery Li-ion rechargeable battery			Red lase						
Size with handle 212(W)x 172(D)x 355(H)mm  Instrument height 192.5mm from tribrach mounting surface  Weight with battery & tribrach Approx. 5.8kg (12.8lb)(with RC handle) Approx. 5.7kg (12.6lb)(with standard handle)  Power supply  Battery BDC70 detachable battery Li-ion rechargeable battery	Dust and water protection*16 / Operating temperature								
Instrument height 192.5mm from tribrach mounting surface  Weight with battery & tribrach Approx. 5.8kg (12.8lb)(with RC handle) Approx. 5.7kg (12.6lb)(with standard handle)  Power supply  Battery BDC70 detachable battery Li-ion rechargeable battery									
Weight with battery & tribrach Approx. 5.8kg (12.8lb)(with RC handle) Approx. 5.7kg (12.6lb)(with standard handle)  Power supply  Battery BDC70 detachable battery Li-ion rechargeable battery									
Power supply Battery BDC70 detachable battery Li-ion rechargeable battery	Weight with battery 8	& tribrach	Approx. 5.8kg (12.8lb)(with RC handle)  Approx. 5.7kg (12.6lb)(with standard handle)						
	Power supply								
Operating time (20°C) BDC70 detachable battery Approx. 4hours*16	Battery	BDC70 detachable battery							
	Operating time (20°C	C) BDC70 detachable battery	Approx. 4hours*16						

\*1 Auto-Tracking function can be added by upgrading. \*2 Average conditions: Slight haze, visibility about 20km (12 miles), sunny periods, weak scintillation. \*3 Figures when both the elevation and depression angles of the laser beam are within 15° and the instrument is facing the ATP1/ATP1S 360° prism \*4 When using a reflective sheet for Auto-collimating, the size of sheet (10 to 90 mm) must be selected to correspond to the distance being measured. Use smaller reflective sheets for shorter distances. Figures when the Auto-collimating beam strikes within 15° of the reflective sheet target. \*5 IEC60825-1:Ed.3.0:2014 / FDA CDRH 21 CFR Part 1040.10 and 11 \*6 Average conditions: Slight haze, visibility about 20km (12 miles), sunny periods, weak scintillation. \*7 With Kodak Gray Card White Side (90% reflective). When brightness on measured surface is 30,000 lx. or less. Reflectorless range/accuracy may vary according to measuring objects, observation situations and environmental conditions: \*8 Good conditions: No haze, visibility about 40km (25miles), overcast, no scintillation. \*9 When the measuring beam's incidence angle is within 30° in relation to the reflective sheet target. \*10 Face the prism toward the instrument during the measurement with the distance at 10m or less. \*11 Measuring range:0.66 to 200m \*12 Fastest time under good conditions, no compensation, EDM ALC at appropriate setting, slope distance. \*13 Usage approval of Bluetooth wireless technology varies according to country. Please consult your local office or representative in advance. \*14 No obstacles, few vehicles or sources of radio emissions/interference in the near vicinity of the instrument, no rain. \*15 The laser-pointer and the guide light do not work simultaneously. \*16 Figures will change depensing on the operating environment including temperatures and observation conditions.



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**Your local Authorized Dealer is:** 

SOKKIA

**Brand New Model** 

Newborn...

The next generation total station

The world's fastest!

**UltraSonic motor and direct drive system!** 

The world's smallest!

Redesigned to ultra-slim body!

The world's lightest!

Accomplished lightweight, 5.7kg robotic total station!

World's first Internet-connected (IoT) total station!

**Integrated cellular modem!** 

**Total station now offers Internet connectivity!** 

Highest quality in class!

Passes various environmental tests with SOKKIA quality!

**Actual size** 

# Fastest · Smallest · Lightest

## **Newborn...The next generation total station**





#### The world's fastest!

UltraSonic motor and direct drive system!

Accomplished the world's fastest turning speed of 180° per second with UltraSonic motor and direct drive system. This also contributes to ultra-



#### The world's smallest! Redesigned to ultra-slim body!

iX is designed by reviewing of the basis and edesigned to the world's smallest total station.



#### **Highest quality in class!** Passes various environmental tests

with Sokkia quality!

Tough designed iX, passes impact, vibration, high-temperature, and humidity testing provides consistent performance at any harsh environments.



### The world's lightest!\*

Accomplished weight-saving, 5.7 kg motor drive total station!

iX is a third smaller than any previous SOKKIA robotic instrument and the same weight as a manual total station — providing easy carrying and setup at a project site.



#### **World's first Internet**connected(IoT) total station!

Integrated cellular modem. Total station now with Internet connectivity!

iX is fully connected with cellular modem and wireless LAN. This allows direct connectivity to MAGNET® Enterprise and provides you close connection between a project site and office staff and managers.



<sup>\*</sup>As robotic total station, by our research on January 2016.

#### **Versatile functions**

#### **Bright, Sharp Guide Light**

The Guide Light allows you to instantly recognize the line between the instrument and the stakeout line, with clearly visible Green and Red lights.







#### Jog dial

move to right

You can rotate iX with smooth jog dial.



#### Large display

Large and high-resolution WVGA display provides clear visibility under the sunlight. Moreover, large size icon improves operability.



#### RC handle (iX-1000 series)

RC-PR5A sensor on the handle can be used for auto-prism searching. This allows easy, rapid prism searching regardless of your position.



#### Trigger key

Just "Rough Aim" and "Press Trigger button" to get precise aiming and measurement automatically and easily.



#### **USB** available

Serial cable and USB connections can be used (Max:32GB) for data transmission/reception.



#### **Dustproof and Waterproof:** IP65 design

Provides protection from dust and driving rain as well as other inclement weather conditions. Operates in temperatures from -20 to +50°C.





#### **Auto-tracking**

Enhanced prism-tracking strength under any conditions in case you lose the line-of-sight by interruption or strong sunlight.

Even if a prism lock is lost, you can easily turn iX and reacquire the prism with RC-PR5A and go back to work smoothly.



#### **Auto-collimating**

Precise measurement can be done by just "Rough Aim" and "Press Trigger button" without lens focus and other operations.

Auto-collimating provides consistent accuracy and speed regardless of operator's skill levels and condition.

