SOKKIA

MADE TO FIT YOUR WORLD.

iM-120 Series

Total Station

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Big capability, built for the field

Easy to use, highly accurate, rugged, and reliable, the iM-120 total station is designed to support both surveying and civil engineering workflows. Combining advanced EDM technology, built-in field applications, and long operating time, the iM-120 delivers the performance needed for efficient site layout, stakeout, and survey operations.

Built to withstand demanding jobsite conditions, the iM-120 features a durable IP66-rated design and up to 28 hours of battery life, helping crews stay productive throughout the workday. Like all Sokkia solutions, it provides the flexibility to adapt to your workflow and project requirements.

- High-end EDM performance
- Reflectorless measurements up to 1,000 m
- Built-in surveying and civil engineering programs
- Dual-axis compensation
- Guide light and trigger key
- IP66 dust and water resistance
- Up to 28 hours of battery life
- Internal memory for up to 99,999 points

High-end performance

Featuring a powerful EDM engine, the iM-120 delivers the speed, range, and accuracy required for everyday surveying and construction tasks. Measurements can be taken up to 6,000 m with a prism and up to 1,000 m in reflectorless mode, making it ideal for control surveys, topographic surveys, and site layout applications. Measurement accuracy of 1.5 mm + 2 ppm to prisms provides dependable results across a wide range of field conditions.

Ready for the jobsite

Engineered for reliable operation in challenging environments, the iM-120 combines IP66 protection with extensive testing for vibration, temperature, humidity, and drop resistance. Designed to perform in temperatures from -20 °C to +60 °C, it delivers dependable operation wherever the work takes you.

Efficient field workflows

A dedicated trigger key enables one-touch distance measurements while aiming through the telescope, helping streamline stakeout and survey operations. The integrated guide light system uses red and green LEDs to assist field crews during stakeout, improving communication and positioning accuracy over longer distances.

Built-in applications

The iM-120 comes equipped with a comprehensive suite of surveying and construction programs, including resection, radiation, stakeout, REM, 3D coordinate measurement, route calculation, offset measurement, area calculation, intersection, and point-to-line functions. With the tools needed for common field tasks already onboard, crews can work efficiently from the first setup.

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Specifications

MODEL*		iM-121	iM-122	iM-123	iM-125
Telescope					
Magnification / Resolving power		30x / 2.5″			
Others		Length : 171 mm (6.7 in.), Objective aperture : 45 mm (1.8 in.) (48 mm (1.9 in.) for EDM), Image: Erect, Field of view: 1°30′ (26 m / 1,000 m), Minimum focus: 1.3 m (4.3 ft.), Reticle illumination: 5 brightness levels			
Angle Measurement					
Minimum Display (selectable)		1" (0.0002 gon / 0.005 mil) / 0.5" (0.0001 gon / 0.002 mil)	1" (0.0002 gon / 0.005 mil) / 5" (0.0010 gon / 0.02 mil)		
Accuracy (ISO 17123-3:2001)		1″	2″	3″	5″
Detecting		2 sides			
Dual-axis compensator		Dual-axis liquid tilt sensor, working range: ±6′			
Collimation compensation		On/Off (selectable)			
Distance Measurement					
Laser output [1]		Reflectorless mode : Class 3R / Prism/sheet mode : Class 1			
Measuring range (under average conditions [2])	Reflectorless [3]	0.3 to 1000 m (3,280 ft.)			
	Reflective sheet [4/5]	RS90N-K: 1.3 to 500 m (4.3 to 1,640 ft.), RS50N-K: 1.3 to 300 m (4.3 to 980 ft.), RS10N-K: 1.3 to 100 m (4.3 to 320 ft.)			
	Mini pole prism Prism-5	1.3 to 500 m (4.3 to 1,640 ft.)			
	Standard prism Prism-2	1.3 to 5,000 m (4.3 to 16,400 ft.)			
Minimum Display		Fine / Rapid : 0.0001 m (0.001 ft. / 1/16 in.) / 0.001 m (0.005 ft. / 1/8 in.) (selectable) Tracking / Road : 0.001 m (0.005 ft. / 1/8 in.) / 0.01 m (0.02 ft. / 1/2 in.) (selectable)			
Accuracy [2] (ISO 17123-4:2001) (D=measuring distance in mm)	Reflectorless [3]	(2 + 2ppm x D) mm [6]			
	Reflective sheet [4/5/7]	(2 + 2ppm x D) mm			
	Prism [8]	(1.5 + 2ppm x D) mm			
Measuring time [9]	Fine	0.9 s (initial 1.5 s)			
	Rapid	0.6 s (initial 1.3 s)			
	Tracking	0.4 s (initial 1.3 s)			
OS, Interface and Data management					
Operating system		Linux			
Display / Keyboard		Graphic LCD, 192 x 80 dots, backlight : on/off (Selectable) / Alphanumeric keyboard / 28 keys with backlight			
Operation panel		On one side or on both sides, depending on the model and sales region			
Data storage	Internal memory	Approx. 99,999 points			
	External memory	USB flash memory (up to 64 GB)			
Interface		Serial RS-232C, USB2.0 (Type A for USB flash memory)			
	Bluetooth modem (option) [10]	Bluetooth Class 1.5, Operating range: up to 10 m [11]			
General					
Laser-pointer		Coaxial red laser using EDM beam			
Guide Light	Light source	LED (red 626 nm / green 524 nm)			
	Visible distance	1.3 to 150 m			
Levels	Graphic	6′ (Inner Circle)			
	Circular level (on tribrach)	10′ / 2 mm			
Plummet [12]	Optical	Magnification: 3x, Minimum focus: 0.5 m (19.7 in.) from tribrach bottom			
	Laser	Red laser diode (635 nm ± 10 nm), Beam accuracy: <=1.0 mm @ 1.3 m, Class 2 laser product			
Dust and water protection / Operating temperature		IP66 (IEC 60529:2001) / -20 to +60 °C (-4 to +140 °F)			
Size with single display and handle		200 x 176 x 348 mm (W x D x H)			
Size with dual display and handle		200 x 181 x 348mm (W x D x H)			
Instrument height		192.5 mm from tribrach mounting surface			
Weight with single display, battery and tribrach		5.1 kg (11.3 lb)			
Weight with dual display, battery and tribrach		5.3 kg (11.7 lb)			
Power Supply					
Battery		Li-ion rechargeable battery BDC72			
Operating time (20 °C) [11]		Approx. 28 hours [13]			

** Available models depend on the sales region [1] IEC60825-1:Ed.3.0:2014/ FDA CDRH 21CFR Part1040.10 AND1040.11 [2] Average conditions: Slight haze, visibility about 20 km (12 miles), sunny periods, weak scintillation. [3] 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. [4] When the measuring beam's incidence angle is within 30° in relation to the reflective sheet target. [5] Measuring range in temperatures of 50 to 60 °C (122 to 140 °F): RS90N-K: 1.3 to 300 m (4.3 to 980 ft.), RS50N-K: 1.3 to 180 m (4.3 to 590 ft.), RS10N-K: 1.3 to 60 m (4.3 to 190 ft.) [6] Measuring range:0.3 to 200 m [7] Figures when the laser beam strikes within 30° of the reflective sheet RS10N-K. When using other reflective sheet targets, face them directly toward the instrument and measure in both Faces 1 and 2 (direct and reverse). [8] Face the prism toward the instrument during the measurement with the distance at 10 m or less. [9] Good conditions: No haze, visibility about 40 km (25 miles), overcast, no scintillation. [10] Presence of Bluetooth modem depends on model and region. Usage approval of Bluetooth wireless technology varies according to country. Please consult your local office or representative in advance. [11] No obstacles, few vehicles or sources of radio emissions/interference in the near vicinity of the instrument, no rain. [12] Plummet type depends on model and region [13] Figures will change depending on the operating environment including temperatures and observation conditions. [14] In use of EDM eco mode.*

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