

**SOKKIA**

**CX Series**  
COMPACT X-ELLENCe STATION

# Tradition Meets Innovation

- **RED-tech Technology Reflectorless EDM**
- **Long-range *Bluetooth*® Technology**
- **Advanced Angle Measurement System**
- **The Longest Battery Life – 36 Hours!**
- **Waterproof, Rugged, and Operator Friendly**
- **Advanced Security and Maintenance with TSshield™**



Exclusive  
TSshield  
technology built-in

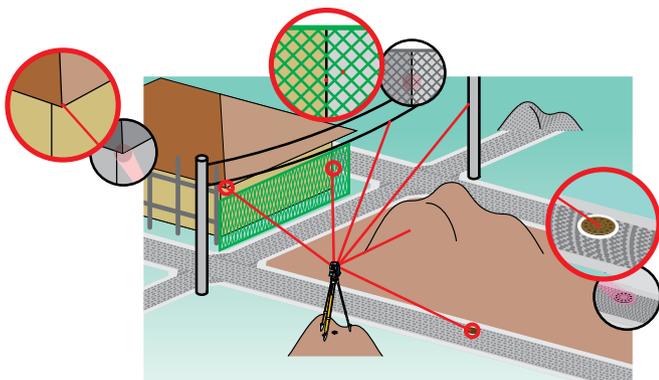
**World's First**  
integrated support service

# Inspired by Tradition, Ready for The Future.

## RED-tech Technology Reflectorless EDM

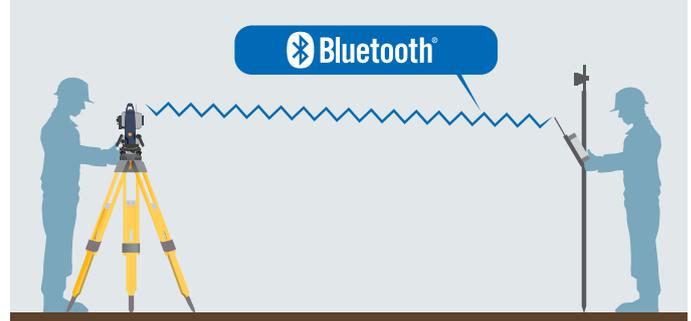


- Fastest measurement time in its class.
- Sokkia traditional pinpoint precision in reflectorless distance measurement.
- Reflectorless operation from 30cm to 500m.
- Coaxial EDM beam and laser-pointer provide fast and accurate aiming.
- Ensures accuracy even with reflective sheets.



The ultra-narrow EDM beam can precisely measure walls, corners, manholes on the road surface, even chain-link fences and tree branches.

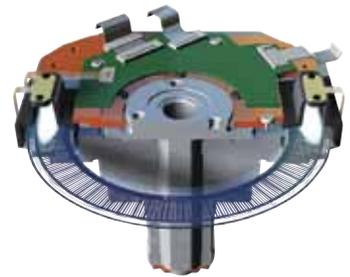
## Long-Range Bluetooth® Technology\*



- The CX series of total stations features *Bluetooth*® Class 1 wireless technology for reliable data communications.
- All CX data is instantly available at the *Bluetooth*®-equipped controller.  
\* Offered as an option in some areas.

## Advanced Angle Measurement System

- CX features Sokkia's original absolute encoders that provide long-term reliability in any job site condition. Dual-axis compensator ensures stable measurements even when setup on uneven terrain.
- Sokkia's traditional motion clamp and tangent screw are employed to ensure stable angle measurement.
- CX-101 and CX-102 feature groundbreaking IACS (Independent Angle Calibration System) technology for extremely reliable angle measurement.



## The Longest Battery Life - 36 Hours!

- The CX single battery can last up to 36 hours.\*
- Greatly reduces likelihood of low power during any full-days work.
- Eliminates the need for nightly recharging or carrying extra batteries.

\* Operating time will vary depending upon environmental conditions and CX activity.



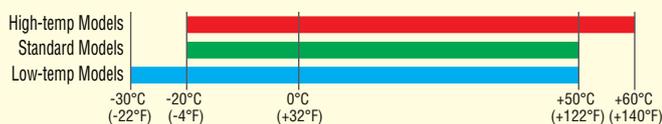
## Waterproof, Rugged, and Operator Friendly

- IP66 dustproof / waterproof rating.
- Metal chassis and heavy duty handle add ruggedness.
- Standard usage temperature range -20 to +50°C. Low temperature models can be used as low as -30°C\* and high temperature models up to +60°C.\*



\* Low and High temperature models available as options.

### Operating temperature range



- USB Type A port for convenient added memory. Use of included USB accessory assures IP66 protection.



- One-touch STAR key offers instant access to functions.



- Conveniently located "trigger" key lets you take a series of measurements with the push of a button without taking your eye off the telescope.



- Control panel features 10-key pad with large LCD that provides optimum viewing and convenience.\*

\* Control panel location may vary depending on region or model.



- Green / Red telescope guide light enhances work efficiency in a range up to 150m.



- Built-in laser plummet with five brightness levels is equipped for quick instrument setting in all lighting conditions. (optional)

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## TSshield™

Every CX total station is equipped with a telematics-based multifunction communications module providing the ultimate security and maintenance capabilities for your investment.

If an activated instrument is lost or stolen, you can send a coded signal to the instrument and disable it – Your total station is secure anywhere in the world!

And, in the same module, you have daily connectivity to cloud-based Sokkia servers that can inform you of available software updates and firmware enhancements.

\* For more detail of TSshield, please refer to the TSshield's leaflet.



Model	CX-101	CX-102	CX-103	CX-105	CX-107
<b>Telescope</b>					
Magnification / Resolving power	30x / 2.5"				30x / 3.5"
Others	Length: 171mm (6.7in.), Objective aperture: 45mm (1.8in.) (48mm (1.9in.) for EDM), Image: Erect, Field of view: 1°30' (26m/1,000m), Minimum focus: 1.3m (4.3ft.), Reticle illumination: 5 brightness levels				
<b>Angle Measurement</b>					
Display Resolution	0.5" / 1" (0.0001 / 0.0002gon, 0.002 / 0.005mil)	1" / 5" (0.0002 / 0.001gon, 0.005 / 0.02mil)			
Accuracy (ISO 17123-3:2001)	1"	2"	3"	5"	7"
IACS (Independent Angle Calibration System)	Provided				
Dual-axis compensator / Collimation compensation	Dual-axis liquid tilt sensor, working range: ±6' (±111mgon) / Collimation compensation available				
<b>Distance Measurement</b>					
Laser output <sup>1</sup>	Reflectorless mode: Class 3R / Prism / sheet mode: Class 1				
Measuring range (under average conditions <sup>2</sup> )	Reflectorless <sup>3</sup>	0.3 to 500m (1.0 to 1,640ft.)			
	Reflective sheet <sup>4/5</sup>	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.)			
	Mini prisms	CPO1: 1.3 to 2,500m (8,200ft.), OR1PA: 1.3 to 500m (1,640ft.)			
	One AP prism	1.3 to 4,000m (4.3 to 13,120ft.) / Under good conditions <sup>6</sup> : 5,000m (16,400ft.)			
	Three AP prisms	to 5,000m (16,400ft.) / Under good conditions <sup>6</sup> : to 6,000m (19,680ft.)			
Display Resolution	Fine/Rapid: 0.001m / 0.01ft. / 1/8in. Tracking: 0.01m / 0.1ft. / 1/2in.				
Accuracy <sup>2</sup> (ISO 17123-4:2001) (D=measuring distance in mm)	Reflectorless <sup>3</sup>	(3 + 2ppm x D) mm <sup>7</sup>			
	Reflective sheet <sup>4</sup>	(3 + 2ppm x D) mm			
	AP/CP prism	(2 + 2ppm x D) mm			
Measuring time <sup>8</sup>	Fine: 0.9s (initial 1.7s), Rapid: 0.7s (initial 1.4s), Tracking: 0.3s (initial 1.4s)				
<b>Interface and Data management</b>					
Display / Keyboard	Graphic LCD, 192 x 80 dots, backlight, contrast adjustment / Alphanumeric keyboard / 25 keys with backlight				
Control panel location <sup>9</sup>	On both faces				On one face
Trigger key	On right instrument support				
Data storage	Internal memory	Approx. 10,000 points			
	Plug-in memory device	USB flash memory (max. 8GB)			
Interface	Serial RS-232C, USB2.0 (Type A, for USB flash memory)				
Bluetooth <sup>®</sup> modem (option) <sup>10</sup>	Bluetooth <sup>®</sup> Class 1, Ver.2.1+EDR, Operating range: up to 300m (980ft.) <sup>11</sup>				
<b>General</b>					
Laser-pointer <sup>12</sup>	Coaxial red laser using EDM beam				
Guide light <sup>12</sup>	Green LED (524nm) and Red LED (626nm), Operating range: 1.3 to 150m (4.3 to 490ft.) <sup>12</sup>				
Levels	Graphic	6' (Inner Circle)			
	Circular level	10' / 2mm			
Optical plummet	Magnification: 3x, Minimum focus: 0.3m (11.8in.) from tribrach bottom				
Laser plummet (option)	Red laser diode (635nm±10nm), Beam accuracy: ≤1.0mm@1.3m, Class 2 laser product				
Dust and water protection	IP66 (IEC 60529:2001)				
Operating temperature <sup>13</sup>	-4 to +122°F (-20 to +50°C)				
Size with handle <sup>9</sup>	Control panel on both faces: W7.5 x D7.1 x H13.7in. (W191 x D181 x H348mm)				
	Control panel on one face: W7.5 x D6.9 x H13.7in. (W191 x D174 x H348mm)				
Weight with battery & tribrach	Approx. 12.3 lb. (5.6kg)				
<b>Power supply</b>					
Battery (BDC70)	Detachable battery	Li-ion rechargeable battery			
Operating time (20°C)	BDC70	Approx. 36 hours (single distance measurement every 30 seconds)			
	External battery <sup>14</sup> (Optional)	BDC60: approx. 44 hours, BDC61: approx. 89 hours (single distance measurement every 30 seconds)			

### Standard Accessories

- CX main unit
- Battery (BDC70)
- Battery charger (CDC68)
- Power cable
- Lens cap
- Lens hood
- Tool pouch
- Screwdriver
- Lens brush
- Adjusting pin x2
- Cleaning cloth
- Operation manual
- USB memory stick
- Laser caution sign-board
- Carrying case
- Carrying strap

<sup>1</sup> IEC60825-1:Ed.2.0:2007 / FDA CDRH 21 CFR Part 1040.10 and 11 <sup>2</sup> Average conditions: Slight haze, visibility about 20km (12 miles), sunny periods, weak scintillation. <sup>3</sup> 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. <sup>4</sup> When the measuring beam's incidence angle is within 30° in relation to the reflective sheet target. <sup>5</sup> Measuring range in temperatures of -30 to -20°C (-22 to -4°F) with Low Temperature models and 50 to 60°C (122 to 140°F) with High Temperature models: RS90N-K: 1.3 to 300m (4.3 to 980ft.), RS50N-K: 1.3 to 180m (4.3 to 590ft.), RS10N-K: 1.3 to 60m (4.3 to 190ft.) <sup>6</sup> Good conditions: No haze, visibility about 40km (25 miles), overcast, no scintillation. <sup>7</sup> Measuring range: 0.3 to 200m <sup>8</sup> Typical, under good conditions. Reflectorless measurement time may vary according to measuring objects, observation situations and environmental conditions. <sup>9</sup> Control panel location may vary depending on region or model. <sup>10</sup> Usage approval of Bluetooth wireless technology varies according to country. Please consult your local office or representative in advance. <sup>11</sup> No obstacles, few vehicles or sources of radio emissions/interference in the near vicinity of the instrument, no rain. <sup>12</sup> The laser-pointer and the guide light do not work simultaneously. <sup>13</sup> Low Temperature models: -30 to 50 °C (-22 to 122°F) and High Temperature models: -20 to 60°C (-4 to 140°F. No direct sunlight) are available on built-to-order basis. <sup>14</sup> For CX-101, CX-102 and Low temperature models.

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