

SOKKIA

Multiply Your Surveying Possibilities

POSITIONING INSTRUMENTS
CATALOG 2011





SRX

Flagship Total Stations

SRX1X/SRX2X/SRX3X/SRX5X

New Auto-Tracking Technology
New Motor Drive Mechanism
1000m (3280ft) Reflectorless Measurement



Measuring beam spot size (reflectorless mode)

| Distance | 10m (33ft.) | 40m (131ft.) | 100m (328ft.) |
|---|-----------------------------|-------------------------------|-------------------------------|
| Beam spot size (height x width) | 7 x 9mm (0.28 x 0.35in.) | 14 x 14mm (0.55 x 0.55in.) | 29 x 24mm (1.14 x 0.95in.) |

The New SRX Features Innovative Auto-Tracking and EDM Technologies that Maximize the Robotic Surveying Capability

Extremely Robust Auto-Tracking

The new SRX total stations feature cutting-edge laser technology, optimized optical design, newly-developed motor drive mechanism, and further refined tracking algorithm, to achieve extremely robust Auto-Tracking capability. The new SRX constantly tracks a moving prism even in strong backlight or with repetitive interruptions in the line-of-sight, dramatically reducing possibility of losing a prism lock. Even if the lock is lost, the advanced on-demand remote control system allows the SRX to instantly recover the prism lock, ensuring increased productivity in all robotic surveying and setting-out tasks.

1,000m (3,280ft.) Reflectorless Measurement Range

New RED-tech 800 EDM provides increased accuracy and range in distance measurements with or without reflectors, incorporating the new optical design, the enhanced signal processing algorithm, as well as the ultra-high signal modulation frequencies of up to 468.75MHz. The RED-tech 800 provides measurement accuracy of 1.5mm + 2ppm with 360° prisms or standard prisms, and 2mm + 2ppm without a reflector. It measures up to 6,000m (19,680ft.) distance with a single prism, and up to 800m (2,620ft.) without a reflector. The reflectorless measurements of up to 1,000m (3,280ft.) range is possible when the brightness at object surface is 500 lux or less, regardless of ambient brightness conditions.



RC-PR4

RC-Controller

- The RC-PR4 RC-Controller further enhances the SRX system.
- The RC-PR4 consists of a search beam emitter, directional sensor and *Bluetooth* wireless modem.



| | RC-PR4 |
|--------------------------------------|---------------------------------------|
| Range* ¹ (slope distance) | 2 to 300m (7 to 980ft.)* ² |

*1 Good conditions.

*2 When the height difference between total station and RC-PR4 is within 20m (66ft.).

ATP1/ATP1S

Most Versatile and Accurate Prism System

- The high-precision 360° prisms can be mounted at either the top or bottom of a range pole.
- The new, compact 360° Sliding Prism ATP1S slides along the Pin Pole PP2 to enable quick adjustment of a prism height.
- In combination with a pin pole, prism height can be set as low as 10cm (4in.). The lower prism height improves measurement accuracy by minimizing error caused by tilt of a pole.



ATP1



ATP1S



| | | SRX1X | SRX2X | SRX3X | SRX5X |
|--|------------------------------|---|------------------------|-----------------------|-------------------------|
| Measuring range (Average conditions) | Reflectorless* ¹ | 0.3 to 800m (1 to 2,620ft.) / 0.3 to 1,000m (1 to 3,280ft.)* ² | | | |
| | With reflective sheet target | 1.3 to 500m (4.3 to 1,640ft.) with RS90N-K (90x90mm) reflective sheet | | | |
| | With ATP1(S) 360° Prism | 1.3 to 1,000m (4.3 to 3,280ft.) | | | |
| | With 1 AP prism | 1.3 to 5,000m (4.3 to 16,400ft.) / to 6,000m (to 19,680ft.) under good conditions | | | |
| Distance accuracy (ISO17123-4:2001) | Reflectorless* ¹ | (2 + 2ppm x D)mm : 0.3 ≤ D ≤ 200m (1 ≤ D ≤ 650ft.) (5 + 10ppm x D)mm : 200 < D ≤ 350m (650 < D ≤ 1,140ft.) (10 + 10ppm x D)mm : 350 < D ≤ 1,000m (1,140 < D ≤ 3,280ft.) | | | |
| | With reflective sheet target | (2 + 2ppm x D)mm | | | |
| | With prism | (1.5 + 2ppm x D)mm | | | |
| Angle display resolutions (selectable) | Degree | 0.5" / 1" | | 1" / 5" | |
| | Gon | 0.0001 / 0.0002gon | | 0.0002 / 0.001gon | |
| | Mil | 0.002 / 0.005mil | | 0.005 / 0.02mil | |
| Angle accuracy (ISO17123-3:2001) | H&V | 1" / 0.3mgon / 0.005mil | 2" / 0.6mgon / 0.01mil | 3" / 1mgon / 0.015mil | 5" / 1.5mgon / 0.025mil |
| Auto-Tracking range / Auto-Pointing range | With AP Prism | 1,000m (3,280ft.) | | | |
| | With ATP1(S) 360° Prism | 600m (1,960ft.) | | | |

*1 Kodak Gray Card white side (90% reflective). Reflectorless range/accuracy may vary according to measuring objects, observation situations and environmental conditions.

*2 When brightness at object surface is 500 lux or less, regardless of ambient brightness conditions.



SET X Windows CE Reflectorless Total Stations SET1X/SET2X/SET3X/SET5X

SOKKIA CLASSIC

The SET X total station is a blend of traditional and advanced engineering. Featuring the latest key technologies, the SET X succeeds in delivering reliability and long-lasting precision.



Measuring beam spot size (reflectorless mode)

| Distance | 10m (33ft.) | 40m (131ft.) | 100m (328ft.) |
|---------------------------------|-----------------------------|-------------------------------|-------------------------------|
| Beam spot size (height x width) | 7 x 9mm (0.28 x 0.35in.) | 14 x 14mm (0.55 x 0.55in.) | 29 x 24mm (1.14 x 0.95in.) |



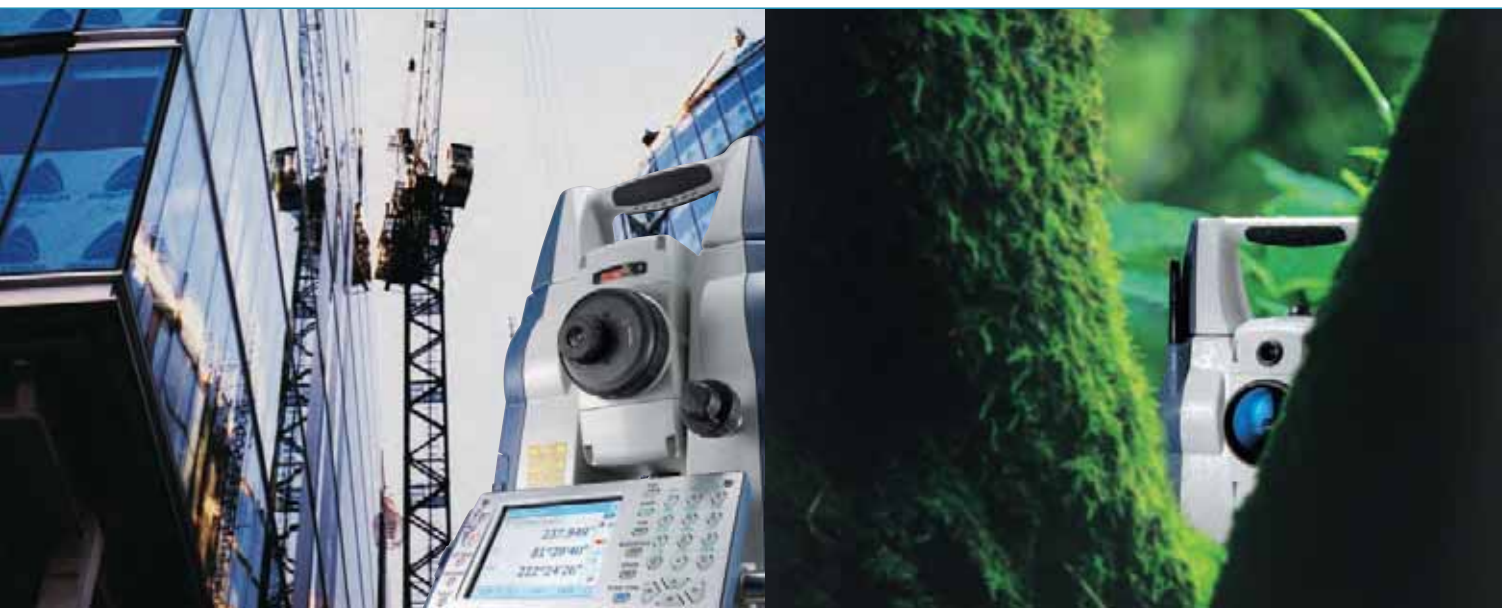
The SET X offers the highest in environmental protection IP65 for Windows CE total stations. Furthermore, the SET X maintains its IP65 rating even with the external battery or serial cable connected.



- RED-tech EX EDM uses an ultra-narrow laser beam for reflectorless measurement to ensure pinpoint accuracy. It measures from the industry's shortest distance of 30cm (1ft.) to 500m (1,640ft.).
- Using a single AP prism, it measures distances up to 6,000m (19,680ft.) and 500m (1,640ft.) using reflective sheet targets.
- The unique absolute encoders provide reliable angle measurement. SET1X and SET2X employ the innovative IACS (Independent Angle Calibration System) technology to ensure lifetime dependability.
- The finely balanced trigger key and fine motion screws allow quick sighting and measurement.



- License-free Class 1 Bluetooth modem is equipped as standard for wireless communications up to 200m (650ft.).
- Windows CE operating system makes it possible to choose your favorite data collection software.
- SET X has 1MB of internal memory, CF card slot and USB ports. An SD card can also be used with a CF-type adapter.
- The standard BDC58 battery provides power for 14 hours. An optional external battery BDC61 continuously supplies power for 38.5 hours.



| | | SET1X | SET2X | SET3X | SET5X |
|--|---------------------------------|---|------------------------|-----------------------|-------------------------|
| Measuring range (Average conditions) | Reflectorless*1 | 0.3 to 500m (1 to 1,640ft.) | | | |
| | With reflective sheet target | 1.3 to 500m (4.3 to 1,640ft.) with RS90N-K (90x90mm) reflective sheet | | | |
| | With 1 AP prism | 1.3 to 5,000m (4.3 to 16,400ft.) / 1.3 ≤ 6,000m (4.3 ≤ 19,680ft.) under good conditions | | | |
| Distance accuracy (ISO17123-4:2001) | Reflectorless*1 | (3 + 2ppm x D)mm : 0.3 ≤ D ≤ 200m (1 ≤ D ≤ 650ft.) | | | |
| | With reflective sheet target | (3 + 2ppm x D)mm | | | |
| | With CPS12 high precision prism | (1.5 + 2ppm x D)mm | | — | |
| Angle display resolutions (selectable) | With prism | (2 + 2ppm x D)mm | | | |
| | Degree | 0.5" / 1" | | 1" / 5" | |
| | Gon | 0.0001 / 0.0002gon | | 0.0002 / 0.001gon | |
| Angle accuracy (ISO17123-3:2001) | Mil | 0.002 / 0.005mil | | 0.005 / 0.02mil | |
| | H&V | 1" / 0.3mgon / 0.005mil | 2" / 0.6mgon / 0.01mil | 3" / 1mgon / 0.015mil | 5" / 1.5mgon / 0.025mil |

*1 With Kodak Gray Card white side (90% reflective).

SRX and SET X Common Features

■ Guide Light Unit

The standard Guide Light Unit assists setting-out measurements. Green and red lights are emitted from a single aperture to easily locate a prism on a line-of-sight in a range of 1.3 to 150m (4.3 to 1,640ft.).



■ Weatherproof Multi Port

Serial cable or external power can be connected to a single weatherproof port without compromising dust/water protection.



■ Multiple Data Interfaces

Multiple data interfaces provide seamless data handling and transmission for a variety of file types.



CompactFlash Card Slot

USB Type A Port

USB Type miniB Port

■ SFX

Using an internet-capable mobile phone or a CompactFlash modem, wireless data transfer can be performed between field and office.



■ Powerful Onboard Software

The Sokkia data collection software is preinstalled as standard.

Series 50RX Reflectorless Total Stations SET250RX/SET350RX/SET550RX/SET650RX

Featuring enhanced RED-tech II EDM, easy-to-operate alphanumeric keypad, powerful onboard software and market-proven reliability, the Series 50RX sets a new standard for reflectorless total stations for all surveying and engineering applications.

- Enhanced RED-tech II EDM features wide reflectorless measuring range from 30cm to 400m.
- Ultra-narrow visible laser beam ensures pinpoint accuracy. The same beam is used as a laser pointer.

Measuring beam spot size (reflectorless mode)

| Distance | 10m (33ft.) | 40m (130ft.) |
|---------------------------------|--------------------------|--------------------------|
| Beam spot size (height x width) | 6.5 x 7mm (.26 x .28in.) | 19 x 14mm (.75 x .55in.) |

- Laser output level is automatically switched to Class 1 specifications in "prism" and "reflective sheet" modes to ensure safety.
- Innovative optics provides ideal light paths both for EDM and telescope.
- Sokkia's advanced coding and digital processing technologies have given the Series 50RX a capability to automatically detect and correct misreading of encoder patterns.
- The 2" model incorporates IACS (Independent Angle Calibration System) to further enhance measurement reliability.
- Fully backlit alphanumeric keys and customizable softkeys allow quick operation in any lighting conditions.
- An optional wireless keyboard SF14 maximizes the operation efficiency (except 6" model).
- Powerful onboard software.
- In addition to the 10,000-point internal memory, data can be stored in SD/SDHC cards and USB memory devices.
- Password protection to prevent unauthorized use.
- Green/red Guide Light is built into the telescope as a standard feature, enhancing setting-out work efficiency in a range of 1.3 to 150m.
- Complies with the highest in its class IP66 dust and water protection.
- Internal Bluetooth module (option) is available for wireless connection with a data collector.
- Built-in laser plummet for quick instrument setting (factory option).
- Optional large Ni-MH external batteries are available for 2" model and all Low Temperature models.
- Low Temperature models (2"/3"/5") operate in broader temperature range from -30°C to +50°C (-22°F to +122°F).
- High Temperature models (2"/3"/5"/6") operate in the heat of up to +60°C (+140°F) without compromising low temperature range of -20°C (-4°F).



SF14 wireless keyboard*1



SET350RX



*1 Option for SET250RX/350RX/550RX
*2 Option for all models

| | | SET250RX | SET350RX | SET550RX | SET650RX |
|--|------------------------------|---|-------------------|---------------------|--------------------|
| Measuring range (Average conditions) | Reflectorless*1 | 0.3 to 400m (1 to 1,310ft.) | | | |
| | With reflective sheet target | 1.3 to 500m (4.3 to 1,640ft.) with RS90N-K (90x90mm) reflective sheet | | | |
| | With 1 AP prism | 1.3 to 4,000m (13,120ft.) / 1.3 to 5,000m (16,400ft.) under good conditions | | | |
| Distance accuracy (ISO17123-4:2001) | Reflectorless*1 | (3 + 2ppm x D)mm : 0.3 to 200m (1 to 650ft.) | | | |
| | With reflective sheet target | (3 + 2ppm x D)mm | | | |
| | With prism | (2 + 2ppm x D)mm | | | |
| Angle display resolutions (selectable) | Degree | 1" / 5" | | | |
| | Gon | 0.0002 / 0.001gon | | | |
| | Mil | 0.005 / 0.02mil | | | |
| Angle accuracy (ISO17123-3:2001) | H&V | 2" | 3" | 5" | 6" |
| | | 0.6mgon 0.01mil | 1mgon 0.015mil | 1.5mgon 0.025mil | 1.9mgon 0.03mil |

*1 With Kodak Gray Card white side (90% reflective).

Total Stations

Series 50X

Total Stations

SET250X/SET350X/SET550X/SET650X

The Series 50X total stations provide exceptionally dependable performance at affordable costs.

Extended measuring range, increased measurement speed, field-proven accuracy, all-weather dependability, easy-to-use powerful onboard software, and a variety of data management capabilities -- all the advanced features are packaged in a tough and compact body.

The Series 50X – Ultimate Standard from Sokkia.

- High-speed, long range laser EDM
- World-proven, time-tested angle reading system
- Highest protection against dust and water
- Quick operation in all conditions
- Security and data management
- Built-in laser plummet (option)
- An optional built-in Bluetooth® module for wireless connection with a data collector



SF14 wireless keyboard*1



SET550X



*1 Option for SET250X/350X/550X

| | | SET250X | SET350X | SET550X | SET650X |
|--|------------------------------|--|-----------------------|-------------------------|------------------------|
| Measuring range (Average conditions) | With reflective sheet target | 1.3 to 150m (4.3 to 490ft.) with RS90N-K (90x90mm) reflective sheet | | | |
| | With 1 AP prism | 1.3 to 3,500m (4.3 to 11,480ft.) / 1.3 to 4,000m (13,120ft.) under good conditions | | | |
| Distance accuracy (ISO17123-4:2001) | With reflective sheet target | (3+2ppm x D)mm | | | |
| | With prism | (2+2ppm x D)mm | | | |
| Angle display resolutions (selectable) | Degree | 1" / 5" | | | |
| | Gon | 0.0002 / 0.001gon | | | |
| | Mil | 0.005 / 0.02mil | | | |
| Angle accuracy (ISO17123-3:2001) | H&V | 2" / 0.6mgon / 0.01mil | 3" / 1mgon / 0.015mil | 5" / 1.5mgon / 0.025mil | 6" / 1.9mgon / 0.03mil |

Gyro Station

GP1 X/GP2 X/GP3 X/GP5 X

Gyro Station

Locate true north at any time regardless of visibility or weather conditions, even when working underground, and without the need of a reference station. A combination of the GP1 manual gyroscope and reflectorless total station SET X, the GYRO STATION locates true north and determines azimuth with a 20 arc-second (6mgon, 0.1mil) precision. The calculated azimuth is instantly set to the total station's horizontal angle. The DLC1 3-key remote trigger facilitates Enter key operation during gyro measurement procedures. It also allows distance measurement to be triggered wirelessly.

Reflectorless Total Station Unit

| | | SET1X | SET2X | SET3X | SET5X |
|--|------------------------------|---|-------------------|-------------------|--------------------|
| Measuring range (Average conditions) | Reflectorless*1 | 0.3 to 500m (1 to 1,640ft.) | | | |
| | With reflective sheet target | 1.3 to 500m (4.3 to 1,640ft.) with RS90N-K (90x90mm) reflective sheet | | | |
| | With 1 AP prism | 1.3 to 6,000m (4.3 to 19,680ft.) | | | |
| Distance accuracy (ISO17123-4:2001) | Reflectorless*1 | (3 + 2ppm x D)mm : 0.3 to 200m (1 to 650ft.) | | | |
| | With reflective sheet target | (3 + 2ppm x D)mm | | | |
| | With prism | (2 + 2ppm x D)mm | | | |
| Angle display resolutions (selectable) | Degree | 0.5" / 1" | | 1" / 5" | |
| | Gon | 0.0001 / 0.0002gon | | 0.0002 / 0.001gon | |
| | Mil | 0.002 / 0.005mil | | 0.005 / 0.02mil | |
| Angle Accuracy (ISO17123-3:2001) | H&V | 1" | 2" | 3" | 5" |
| | | 0.3mgon / 0.005mil | 0.6mgon / 0.01mil | 1mgon / 0.015mil | 1.5mgon / 0.025mil |

*1 With Kodak Gray Card white side (90% reflective).



DLC1



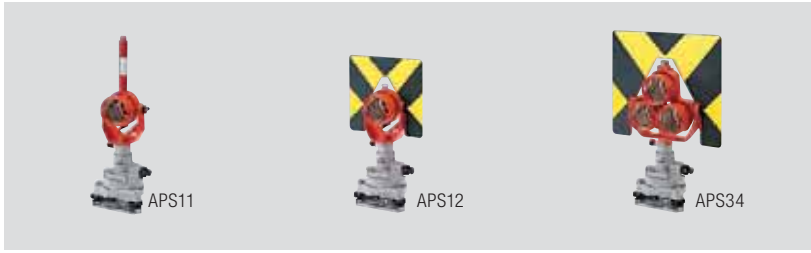
GP3X

Gyro Unit

| | |
|--|----------------------|
| Accuracy of azimuth determination (Standard deviation) | ±20" (6mgon, 0.1mil) |
| Measuring time | Approx. 20min. |
| Weight of gyro unit | 3.8kg (8.4lb.) |

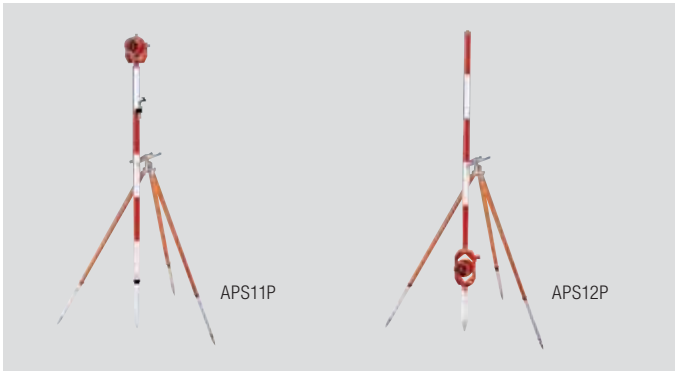
Reflective Prisms

Prism Sets with detachable tribrach

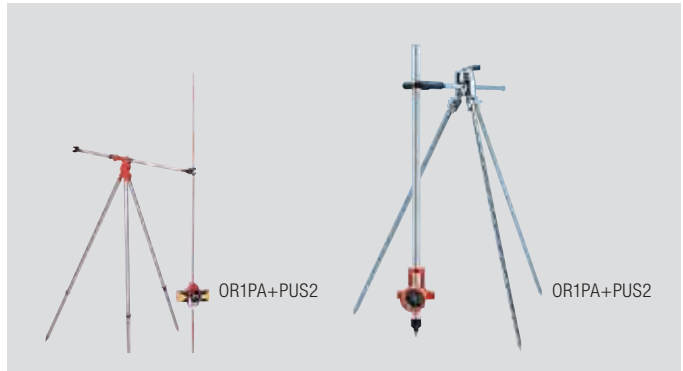


| Model | Description |
|------------------|--|
| APS11-MAR | Single tilting prism complete with WA100 tribrach |
| APS12-MAR | Single tilting prism complete with coaxial target and WA100 tribrach |
| APS34-MAR | Triple tilting prism complete with coaxial target and WA100 tribrach |

Range Pole Prisms



Mini Prisms



Reflective Sheet Targets and Staves

Reflective Sheet Targets

RS Series Reflective Sheets (self-adhesive type)

| Model | Size (mm) | Model | Size (mm) |
|----------------|-----------|----------------|-----------|
| RS10N-K | 10 x 10 | RS50N-K | 50 x 50 |
| RS15N-K | 15 x 15 | RS70N-K | 70 x 70 |
| RS20N-K | 20 x 20 | RS90N-K | 90 x 90 |
| RS30N-K | 30 x 30 | RS00-K | 230 x 230 |



2RT500-K Two-Point Target

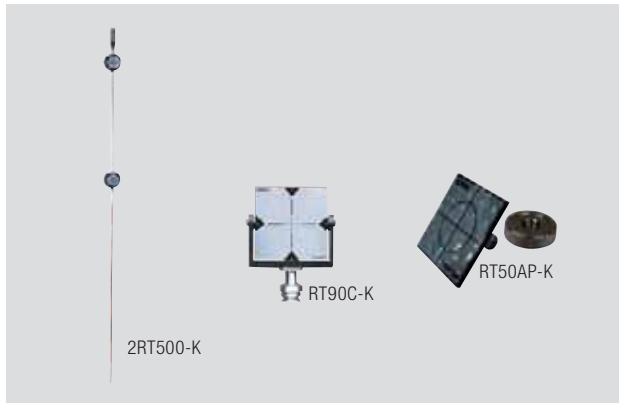
Two reflective targets attached on a narrow pole for 2-distance offset measurements of hidden points with all of the SOKKIA total stations.

RT90C-K Detachable Rotary Target

A 90 x 90mm, fully rotatable reflective target to be used on tribrachs or prism poles.

RT50AP-K Reflective Sheet Target for AP Prism Mount

A 50 x 50mm sheet target to be used with AP11 Single Tilting Mount of AP Series glass prism.



Reflective Staves

BRS55 Aluminum RAB-Code Reflective Staff

The BRS55 can be used for distance and height measurement with total stations, as well as for height measurement using SOKKIA digital levels. Front: metric graduation on reflective surface. Reverse: RAB-Code 5.0m (16.7ft.), 5 sections, 1.95kg (4.3lb.), metric

Data collector

SHC25/SHC25A Data collector

Lightweight, ultra-compact body not only fits in your pocket, but also meets the military standard to withstand extremely rough conditions. The Sokkia SHC25/25A offers the affordable choice for surveying and GIS data collection applications.

- MIL-STD-810G Ruggedness
- IP65 Dust/Water Protection
- Integrated 20ch GPS Receiver
- Built-in 3MP Camera, Compass, and Altimeter (SHC25A)
- 2GB Flash Memory
- WLAN / *Bluetooth*[®] Wireless
- Field-replaceable Li-ion Battery



SHC25

| | |
|----------------------------------|--|
| OS | Windows Mobile version 6.5 |
| Processor | Samsung S3C2450, 533MHz |
| Memory | 256MB SDRAM |
| Display | 3.5 in., VGA 640 x 480, sunlight-active TFT color touch-screen display |
| Dust and water protection | IP65 (IEC 60529:2001) |
| Weight w/Battery | 320g (0.7lb.) |

SHC250 Data collector

The SHC250 data collector incorporates the latest Windows Mobile[®] 6.5 and the Spectrum Survey Field software that fully controls Sokkia GPS/GNSS receivers and total stations with unsurpassed ease and speed.

- User-friendly intuitive operation fully utilizing the Windows Mobile 6.5 and large touch screen display.
- High-speed processor and large memory for productivity.
- Internal *Bluetooth* module.
- IP66 dust/water protection.



| | |
|----------------------------------|--|
| OS | Windows Mobile Version 6.5 |
| Processor | 806 MHz XScale processor |
| Memory | 256 MB SDRAM / 1 GB flash memory |
| Display | 3.7 in., VGA 640 x 480, sunlight-active TFT color touch-screen display |
| Dust and water protection | IP66 (IEC60529:2001) |
| Weight w/Battery | 720g (1.6lb.) |

SHC2500 Data collector

The advanced data collector SHC2500 integrates full alphanumeric keyboard and a wide array of features in a rugged waterproof body.

- Full 55 keys for the quickest input of attributes, coordinates and other features.
- High-speed processor and large memory for maximum speed and productivity.
- Internal *Bluetooth* module.
- Hot swappable two batteries.
- 5MP digital camera.
- Rugged shock-proof body.

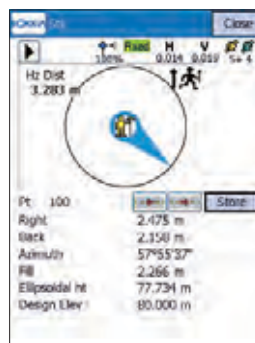


| | |
|----------------------------------|---|
| OS | Windows CE.NET Version 5.0 |
| Processor | 624 MHz XScale processor |
| Memory | 256 MB SDRAM / 2 GB flash memory |
| Display | 3.5 in., QVGA 320 x 240, sunlight-active TFT color touch-screen display |
| Dust and water protection | IP67 (IEC60529:2001) |
| Weight w/Battery | 1.1kg (2.3lb.) |

Spectrum Survey Field Data Collection Software

Fast, powerful, yet user-friendly data collection software.

- Leveraging a large graphical display, the Spectrum Survey Field provides easy-to-use intuitive user interface that minimizes the learning curve.
- Maximizes the productivity in all kinds of surveying, construction setting out and GIS data collection tasks.
- Easily handles multiple surveying instruments using individual configuration files stored for each instrument.
- Superior data management and exchange capability in numerous file formats.



GNSS/GPS System



GRX 1 GNSS Receiver

The GRX1 brings a new level of versatility and flexibility into precision GNSS positioning applications. Whether it's used for RTK base or rover, for network RTK rover or even as a static receiver, the GRX1 provides unmatched usability and convenience that increases field work efficiency on every job site.

The GRX1 GNSS receiver fully integrates GPS+GLONASS receiver and antenna, digital UHF modem, GSM/GPRS module, *Bluetooth* module and detachable battery into a compact and rugged magnesium alloy body.

- Fully scalable architecture maximizes your return on investment. It allows you to start with an L1 GPS+GLONASS receiver with a minimal initial cost, which can be upgraded up to 72-channel L1/L2 GPS+GLONASS receiver at any time.
- 72 universal channels are available for GPS, GLONASS and SBAS signals tracking.
- Supports GPS L2C signals.
- Triple wireless technologies: All of three commonly-used wireless technologies can be integrated into GRX1 receiver.
 1. Digital UHF Modem (Rx/Tx): for RTK base and rover
 2. GSM/GPRS Module: for network RTK
 3. Bluetooth Module: for controller and other PC (Class 1 long-range specifications)

* Internal "UHF modem" and "UHF+GSM/GPRS modem" are available as factory options.

Maximum Versatility in RTK Applications

Utilizing full wireless connectivity and the Sokkia-invented voice navigation system, the GRX1 dramatically facilitates the use of both RTK and network RTK technologies.

- Built-in GSM/GPRS modem makes the GRX1 an ideal rover receiver for network RTK positioning.
- The GRX1 can be used for both private RTK base and RTK rover using internal digital UHF modem without any extra device.
- Voice messages notify the users when RTK is fixed or lost, or other problems occur, eliminating a need for repeated checks with the controller display.



| | | |
|----------------------------------|-----------------|---|
| Position accuracy | RTK L1+L2 | H:10mm + 1ppm, V:15mm + 1ppm |
| | Static L1+L2 | H:3mm + 0.5ppm, V:5mm + 0.5ppm |
| | L1 only | H:3mm + 0.8ppm, V:4mm + 1ppm |
| | DGPS | <0.5m |
| Channels | | 72 channels |
| Memory | | SD / SDHC card |
| Wireless communication | UHF radio*1 | 410-470MHz, receiver/transmitter |
| | GSM*1 | GSM/GPRS module |
| | Bluetooth | V.1.1, Class 1 |
| Size | | Dia. 184 x H 95mm (Dia. 7.24 x 3.74 in.) |
| Dust and water protection | | IP67 (IEC60529:2001) |
| Weight | GRX1 receiver | 1.1kg (2.43 lb.) |
| | BDC58 battery | 195g (6.9 oz.) |
| | Internal modems | 115 to 230g (4.1 to 8.2 oz.), depending on modem |

*1 Internal "UHF modem" or "UHF+GSM modem" available as factory options.



MONMOS 3D Coordinate Measuring System

The MONMOS handles large-scale 3D measurement tasks with unmatched ease and speed, allowing a single operator to instantly acquire precise 3D coordinate values.

MONMOS applications include:

- Deformation/displacement monitoring of large structures.
- Precise baseline management.
- Tunnel, bridge, railroad and power plant constructions.
- Manufacturing and maintenance of ships, vehicles, railcars and aircrafts.

NET05AX Automated 3D Station

Featuring 0.5" angle accuracy and sub-millimeter EDM, the NET05AX offers maximum precision in a broad range of applications.

- 0.5" angle accuracy
- Sub-millimeter EDM
- Sub-millimeter 0.5mm + 1ppm accuracy using reflective sheets within the range of 200m (650ft.).
- 0.8mm + 1ppm precision with standard prisms up to 3,500m (11,480ft.).
- Reflectorless measurement can be performed with 1mm + 1ppm precision up to 100m (320ft.).
- 0.01mm ultra-fine distance resolution for industrial measurement applications.

NET05AX/NET1AX New Features

- 1" auto-pointing accuracy with a standard prism.
- Enlarged 3.7 inch LCD with automatic brightness control.
- Reflector Prescan* can be used to quickly locate target positions, dramatically reducing initial setup time for structural monitoring.
- Rapid 2D Monitoring* enables fast recognition of vertical and horizontal movements of targets for real-time subsidence monitoring and alarming applications.

* Available when operating the NET via command operation from an external PC or other devices.

NET1AX Automated 3D Station

The NET1AX incorporates longer range EDM and a laser beam emitter option designed for tunnelling and general construction applications.

- 1" angle accuracy
- Longer-range EDM
- 1mm + 1ppm precision up to 300m (980ft.) range with reflective sheets.
- Extended 400m (1,310ft.) reflectorless range with 2mm + 1ppm accuracy.
- The LSP1 optional laser beam emitter can be built into the telescope. The bright laser beam can be utilized for automatic profile projection on tunnel faces as well as various setting out tasks in underground constructions. Narrow parallel beam reaches up to 700m (2,300ft.).

NET05AX/NET1AX Common Features

- Specialized Auto-Pointing algorithm enhances reliability of periodic monitoring with predetermined prisms.
- Constantly tracks a moving prism up to 90km/h at a distance of 100m (56mph at 320ft.).
- Built-in target illumination for use in dim lighting conditions.
- Robust IP64 dust/water protection.
- Long-range Bluetooth module available as an option.

 Bluetooth®



NET05AX

NET05X 3D Station

Equipped with a variety of innovative features, the NET05X provides ideal solutions for the most demanding surveying and measurement tasks that require the highest in precision.

- 0.5" angle accuracy.
- Sub-millimeter EDM with 0.5mm + 1ppm precision with reflective sheets.
- Windows CE.
- IP65 dust/water protection.
- Long-range *Bluetooth* module option.



NET1200 3D Station

Compact and lightweight body provides maximum mobility, making the NET1200 easy to carry around large-scale sites or in a number of different plants.

- 1" angle accuracy.
- 0.6mm + 1ppm precision with reflective sheets in a range of up to 200m (650ft.).
- IP66 industry's highest dust/water protection.
- Class2 *Bluetooth* option for wireless connection with control terminal or data collector.



Application Software for MONMOS

Contact your local SOKKIA representative for details.

| | NET05AX | NET05X | NET1AX | NET1200 |
|--|---|-----------------------------|--------------------------------------|---|
| Angle Display resolutions (Selectable) | 0.1" / 0.5", 0.00002 / 0.0001gon, 0.0005 / 0.002mil | | | 0.5"/1", 0.0001 / 0.0002gon, 0.002 / 0.005mil |
| Angle Accuracy (ISO 12857-2:1997) | 0.5", 0.15mgon, 0.0025mil | | 1" / 0.3mgon / 0.005mil | |
| Measuring range With reflective sheet target | 1.3 to 200m (4.3 to 650ft.) | | 1.3 to 300m (4.3 to 980ft.) | 1.3 to 200m (4.3 to 650ft.) |
| Reflectorless* ¹ | 0.5 to 100m (1.6 to 320ft.) | 0.3 to 100m (1.0 to 320ft.) | 0.5 to 400m (1.6 to 1,310ft.) | 1.3 to 40m (4.3 to 130ft.) |
| With 1 AP Prism | 1.3 to 3,500m (4.3 to 11,480ft.) | | | |
| Minimum distance resolution (selectable) Fine mode | 0.00001m (0.01mm) 0.0001ft., 1/64in. | | 0.0001m (0.1mm) 0.001ft., 1/16in. | 0.0001m / 0.1mm 0.001ft., 0.01in. |
| Distance Accuracy (ISO17123-4:2001) Reflective sheet target | (0.5 + 1ppm x D)mm | | (1+1ppm x D)mm | ± (0.6 + 2ppm x D)mm |
| Reflectorless* ¹ | (1 + 1ppm x D)mm | | (2+1ppm x D)mm | ± (1 + 2ppm x D)mm |
| With Prism | (0.8 + 1ppm x D)mm | | (1 + 1ppm x D)mm | ± (2 + 2ppm x D)mm |
| Auto-Pointing range With 1 AP prism | 2 to 1,000m (6.6 to 3,280ft.) | - | 2 to 1,000m (6.6 to 3,280ft.) | - |
| With reflective sheet (RS50N-R) | 5 to 50m (16.4 to 160ft.) | - | 5 to 50m (16.4 to 160ft.) | - |
| Auto-Tracking range With ATP1(S) 360° prism | 2 to 600m (6.6 to 1,970ft.) | | 2 to 600m (6.6 to 1,970ft.) | |
| Auto-Pointing Accuracy * ² With Prism | 1"(1mm@200m) | | 1"(1mm@200m) | |
| With reflective sheet | 1mm@50m | | 1mm@50m | |

*1 With Kodak Gray Card white side (90% reflective).

*2 Auto-pointing accuracy is verified using the methods specified by the ISO 17123-3.

Targets for MONMOS

The industry's widest variety of reflective targets ensures full functionality of the MONMOS 3D Measuring System.

Reflective Sheets RS Series

Self-adhesive sheets can be directly attached to the objects to be measured.

- Choose from various sizes according to measuring distance.
- "T" type sheets feature 0.3mm thin cross lines for higher sighting accuracy.
- The unique "Half" type targets provide further measurement flexibility.



Reflective Sheets
RS Series

Half Type Reflective Sheets

| | RS20H-R | RS30H-R | RS50H-R | RS90H-R |
|-----------------------------|---------|---------|---------|---------|
| Size (mm) | 10×20 | 15×30 | 25×50 | 45×90 |
| Number of targets per sheet | 200 | 98 | 32 | 8 |
| Cross-line thickness | 0.5mm | | | |

Reflective Sheets

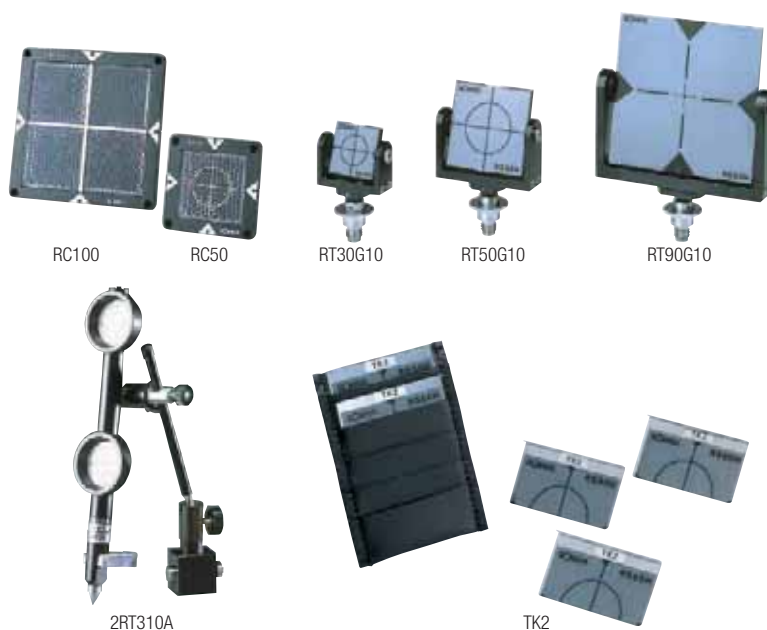
| | RS00-R | RS10N-R | RS15N-R | RS20N-R | RS30N-R | RS50N-R | RS70N-R | RS90N-R | RS05T-R | RS10T-R | RS15T-R | RS20T-R | RS30T-R |
|-----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Size (mm) | 230×230 | 10×10 | 15×15 | 20×20 | 30×30 | 50×50 | 70×70 | 90×90 | 5×5 | 10×10 | 15×15 | 20×20 | 30×30 |
| Number of targets per sheet | 1 | 441 | 196 | 100 | 49 | 16 | 9 | 4 | 1600 | 441 | 196 | 100 | 49 |
| Cross-line thickness | Plain | 0.5mm | | | | | | 0.3mm | | | | | |

Note: NET1200 can also adopt the "K" type targets for normal total stations.

Specialized Targets

- Plastic Targets for long-range measurement.
- Rotary Targets provide easy connection of coordinate systems when instrument position is shifted.
- 2-point Target for hidden measurement points, Detachable Anchor Grip Type Targets, and more.

Consult your local SOKKIA agent for further details.



| | CPS12 | KUS1 | RC50 | RC100 | RT1A | RT30G10 | RT50G10 | RT90G10 | RT50M | RT90M | 2RT310A | TK1 | TK2 |
|----------------------------------|----------------------|--------------|----------------------|-----------|-----------------------|--|---------|---------|------------------------------|---------|------------------|-----------------------|------------------------|
| Product name | High-Precision Prism | Magnet Block | Plastic Type Targets | | High-Precision Target | Anchor Grip Type Rotary Targets w/10mm male screws | | | Magnetic Type Rotary Targets | | Two-Point Target | Corner Half Target | Surface Half Target |
| Target size and/or configuration | w/tribrach | 6 pcs. | 50×50mm | 100×100mm | 90×90mm w/tribrach | 30×30mm | 50×50mm | 90×90mm | 50×50mm | 90×90mm | w/magnet arm | 3pcs., 25×50mm w/case | 5pcs., 25×50mm, w/case |

Theodolites

DT240/DT540/DT740/DT940/ DT540L/DT740L/DT940L Digital Theodolites

Quality, Performance, and Affordability that Ensure Maximum Profitability

- Superior Performance and Durability
All models feature superior optics, mechanics, advanced absolute encoder systems, proven tilt compensators, and the industry's highest IP66 protection grade.
- Power-Saving Technology Saves Battery Costs
Four AA alkaline batteries provide extra-long operating time from 100 to 170 hours, saving costs for replacement batteries. The DT Series instruments operate for two to five weeks without changing batteries*.

* When used for seven hours a day, five days a week, excluding the use of laser pointers.

- Laser Pointer to Increase Construction Work Efficiency
(Laser models) (The laser models incorporate built-in coaxial laser pointers that maximize construction work efficiency.

• The applications include:

- Layout (Setting-Out)
- Horizontal/Vertical Alignment
- Leveling
- Grading
- Squaring



DT540L



DT240



DT940



| | DT240 | DT540 | DT740 | DT940 | DT540L | DT740L | DT940L |
|---|------------------------|-------|-----------------------|-------|------------------------------|--------|-------------------------------|
| | Standard Model | | | | Laser Model | | |
| Laser visible range | Daylight / Indoor | | | | 50m (160ft.) / 200m (660ft.) | | |
| Telescope Magnification | 30x | | | | 30x | | |
| Display resolutions (selectable) | 1" / 5" 0.2 / 1mgon | | 5" / 10" 1 / 2mgon | | 1" / 5" 0.2 / 1mgon | | 26x 10" / 20" 2 / 5mgon |
| Angle Accuracy | 2" | | 5" | | 5" | | 7" |
| Automatic compensator | Working range | | | | ±3'(±55mgon) | | |
| Control panel layout | On both faces | | | | On single face | | |
| Weight w/ batteries | 4.1kg (9.0lb.) | | | | 3.5kg (7.7lb.) | | |
| Battery | LR6/AA batteries x 4 | | | | LR6/AA batteries x 4 | | |
| Operating time with alkaline batteries (approximate) | Theodolite only | | | | 140hours | | |
| | Laser only | | | | 150hours | | |
| | Theodolite + laser | | | | 170hours | | |
| | | | | | 80hours | | |
| | | | | | 45hours | | |

LDT520 Laser Digital Theodolite

The LDT520 emits a red laser beam along the telescope's line of sight for direction control or positioning in tunnel, underground or building constructions.

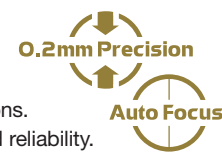
- Emits both "focused beam" and "parallel beam" without a need for attachments or accessories.
- Variable laser output from 1.0 to 4.5mW.
- Focused beam reaches over 600m (1,960ft.) while parallel beam up to 200m (650ft.).
- Superior dust and water protection IP66.

| | | |
|--|---------------------------------|--------------------------------------|
| Beam spot diameter | Focused beam | 2.1mm@20m, 10.3mm@100m, 15.5mm@150m |
| | Parallel beam | 15.1mm@20m, 15.3mm@100m, 15.5mm@150m |
| Laser output | 1.0 to 4.5mW (variable) | |
| Telescope magnification | 30x | |
| Display resolutions | 1"/5", 0.2/1mg, 0.005/0.02mil | |
| Angle accuracy (ISO17123-3:2001) | 5"/1.5mg / 0.025mil | |
| Continuous use with a standard rechargeable battery | 13.5 hours (laser output 1mW) | |
| | 12.5 hours (laser output 4.5mW) | |



SDL1X Digital Level

The SDL1X is designed to achieve the highest precision and productivity in leveling and height measurement applications. From Intelligent Auto Focus to wireless operation, a number of innovative technologies are implemented for unmatched reliability. The SDL1X sets the ultimate benchmark for the precision digital levels.



Saving Measurement Time by up to 40%

- The combination of advanced "Auto Focus" and "View Finder" reduce the total measurement time by up to 40% compared to manual focus digital levels.

Intelligent Auto Focus

- The SDL1X automatically focuses exclusively on the RAB-Code staff, eliminating false focusing on undesirable objects.
- Auto Focus eliminates the incomplete focusing that often causes inaccurate measurement with digital levels.
- Seamless switching between Auto Focus and manual focusing.

Measurement and Recording Programs

- Onboard software supports height difference measurement and data recording in the following procedures:
BF, BFFB, BBFF, BFBF, aBF, aBFFB, aBFFB
(B: Backsight, F: Foresight, a: alternating)
- Measurement tolerance can be set in each route for on-site accuracy checks.

World's Highest 0.2mm Precision

- The SDL1X achieves the highest in precision when combined with the New Super-Invar RAB-Code Staff BIS30A that boasts the industry's lowest linear expansion coefficient $\pm 0.1\text{ppm}/^\circ\text{C}$.
- Ideal for first-order leveling as well as sub-millimeter height and subsidence measurement applications.

Eight innovative features never before available in the industry:*

- 0.2mm precision (ISO17123-2)
- Auto Focus for high-end digital level
- View Finder for quick sighting
- Remote Trigger for wireless operation
- Dual-axis Tilt Sensor that ensures precision
- SD card slot for data storage
- 100m (320ft.) Bluetooth wireless communication
- BIS30A staff with $\pm 0.1\text{ppm}/^\circ\text{C}$ linear expansion coefficient

* As of Dec. 1, 2010

| | |
|---|---|
| Height accuracy *1 (with RAB-Code staffs) | 0.2mm (0.008in.)*2 (with New Super-Invar BIS30A) 0.3mm (0.012in.) (with Invar BIS20/30) 1.0mm (0.04in.) (with Fiberglass BGS40/50/50G3) |
| Distance accuracy (with RAB-Code staffs) | Up to 10m (33ft.) : Within $\pm 10\text{mm}$ ($\pm 0.4\text{in.}$), 10 to 50m (33 to 160ft.) : Within $\pm 0.1\%$ x D (D=measuring distance) |
| Measuring range (with RAB-Code staffs) | 1.6 to 100m (5.3 to 328ft.) |
| Minimum display (with RAB-Code staffs) | Height : 0.00001 / 0.0001 / 0.001m (0.0001 / 0.001 / 0.01ft.) Distance: 0.001 / 0.01 / 0.1m (0.01 / 0.1 / 1ft.) |
| Measuring time | Single mode: < 2.5s, Rapid-repeat: < 1s |
| Auto Focus Range | 1.6 to 100m (5.3 to 328ft.) |
| Telescope magnification | 32x |
| Compensator | Type: Pendulum compensator with magnetic damping system, Working Range: $\pm 12'$ |
| Horizontal circle | Graduation: 1° (1gon) |
| Data storage | 10,000 points |
| Weight w/battery | 3.5kg (7.7 lb.) |

*1 ISO 17123-2 (Standard deviation for 1km double-run leveling.)

*2 Conditions for the highest accuracy: Low level of atmospheric turbulence, stable ambient temperature, no direct sunlight on instrument and staff.



RAB-Code Staffs

The RAB-Code is one of the Sokkia's breakthrough technologies. Since its first introduction in 1998, the RAB-Code technology has been providing exceptional reliability in a wide variety of environmental conditions. Whether it's sunny or rainy, hot or cold, you can take measurement with maximum confidence.

BIS30A New Super-Invar Staff

- The BIS30A boasts the industry's lowest linear expansion coefficient of $\pm 0.1\text{ppm}/^\circ\text{C}$.
- Its expansion/shrinkage value is less than 1/10 of ordinary invar staffs in the market today.
- The BIS30A ensures the world's highest leveling precision in combination with the SDL1X digital level.



BIS30A

BIS30/20 Invar Staffs

- 1ppm/ $^\circ\text{C}$ linear expansion.
- Provides 0.3mm precision with the SDL1X and 0.6mm with SDL30.

BGS Fiberglass Staffs

- Standard for the popular SDL30 and SDL50 models.

BAS/BRS Aluminum Staffs

- Affordable and lightweight staffs.



| Material | Model | Length | Section | Weight | Reverse side graduation |
|------------------------|---------|---------------|---------|-----------------|---------------------------|
| New Super-Invar | BIS30A | 3m (9.84ft.) | 1 | 5.5kg (12.1lb.) | - |
| Invar | BIS20 | 2m (6.56ft.) | 1 | 4.3kg (9.5lb.) | - |
| | BIS30 | 3m (9.84ft.) | 1 | 5.5kg (12.1lb.) | - |
| Fiberglass | BGS40 | 4m (13.12ft.) | 3 | 2.4kg (5.3lb.) | Metric |
| | BGS50 | 5m (16.40ft.) | 4 | 3.0kg (6.6lb.) | Metric |
| | BGS50G3 | 5m (16.40ft.) | 4 | 3.2kg (7.1lb.) | feet/10th/100th |
| Aluminum | BAS55 | 5m (16.40ft.) | 5 | 1.9kg (4.2lb.) | Metric |
| | BRS55 | 5m (16.40ft.) | 5 | 1.95kg (4.3lb.) | Metric:reflective surface |

Digital Levels

SDL30/SDL50 Digital Levels

Simply focus on the RAB-Code staff and press a button. The measurement results of both height and distance are displayed on the screen in 3 seconds. The SDL30 and SDL50 digital levels minimize human error and maximize the ease of leveling work, allowing an increased productivity.

- The SDL30/SDL50 automatically calculate height difference and elevation.
- Setting-out for cut/fill can be easily performed.
- Internal memory stores 2,000 points of data in 20 job files.
- Measured data can be exported in CSV format using "SDL TOOL" software.
- The innovative "Wave-and-Read" technology provides automatic detection of the least value of staff reading while the staff is waved back and forth.

SDL30

- A high performance digital level with 0.6mm precision using Invar RAB-Code staves.
- 1.0mm accuracy with using standard fiberglass RAB-Code staves.

SDL50

- A digital level with 1.5mm height precision.
- Provides convenience and functionality of digital technology at an affordable cost.



SDL30



Wave-and-Read



SDL50



| | SDL30 | SDL50 |
|--|--|--|
| Height accuracy* (with RAB-Code staves) | 0.4mm (0.016in.) (with Invar BIS30A), 0.6mm (0.03in.) (with Invar BIS20/30), 1.0mm (0.04in.) (with Fiberglass BGS40/50/50G3) | 0.6mm (0.024in.) (with Invar BIS30A), 1.5mm (0.06in.) (with Fiberglass BGS40/50/50G3) |
| Distance accuracy (with RAB-Code staves) | Up to 10m (33ft.) : Within $\pm 10\text{mm}$ ($\pm 0.4\text{in.}$), 10 to 50m (33 to 160ft.) : Within $\pm 0.1\%$ x D (D=measuring distance) | |
| Measuring range (with RAB-Code staves) | 1.6 to 100m (5.3 to 320ft.) | |
| Minimum display (Single, Repeat, Average) | Height : 0.0001m / 0.001m, 0.001ft. / 0.01ft. or 1/8in., Distance: 0.01m (0.1ft. or 1in.) | |
| Measuring time | Single mode: < 3s, Tracking: < 1s | |
| Telescope magnification | 32x | 28x |
| Compensator | Type: Pendulum compensator with magnetic damping system, Working Range: $\pm 15'$ | |
| Horizontal circle | Graduation: 1° (1gon) | |
| Data storage | 2,000 points in max. 20 job files, (Job name user-definable) | |
| Weight w/battery | 2.4kg (5.3lb.) | |

* ISO17123-2 (Standard deviation for 1km double-run leveling.)

Automatic Levels

B20/B30/B40 Automatic Levels

SOKKIA provides a wide range of automatic levels to suit your specific needs. All models incorporate exclusively designed precision compensators that employ a magnetic damping system for outstanding accuracy and dependability.

IPX6 compliant water resistant.



B20

B30

B40



| | | B20 | B30 | B40 |
|-------------------------------------|--------------------|---|-----------------|-----------------|
| Telescope | Objective aperture | 42mm (1.7in.) | 36mm (1.4in.) | 32mm (1.3in.) |
| | Magnification | 32x | 28x | 24x |
| | Minimum focus | 0.2m (7.9in.) from end of telescope, 0.3m (1.0ft.) from instrument center | | |
| Accuracy* | Without micrometer | 0.7mm (0.03in.) | 1.5mm (0.06in.) | 2.0mm (0.08in.) |
| | With micrometer | 0.5mm (0.02in.) | - | |
| Compensator | Type | 4 wire pendulum compensator with magnetic damping system | | |
| | Working range | $\pm 15'$ | | |
| Horizontal circle graduation | | 1° (1gon) | | |
| Water protection | | IPX6 (IEC60529) | | |
| Weight | | 1.85kg (4.1lb.) | 1.7kg (3.7lb.) | |

* Standard deviation for 1km double-run leveling.

Super Invar Staff

GS1 Super Invar Staff

The GS1 is specially designed for the most precise leveling tasks. GS1's thermal expansion is theoretically "zero".



Construction Laser Instruments

LP 41 0/LP 41 5/LP 41 5S Leveling Laser

A Compact and Rugged Self-leveling Laser Offering Superior Reliability at an Affordable Cost.

- Simply press the button and the LP410/415/415S quickly levels itself and start rotating.
- With a visible laser, a flashing red light in the laser-emission window makes laser projection clearly noticeable even at a distance.
- The LP410 provides a 500m (1,640ft.) working range in diameter with its one-instrument setup to enhance productivity in large-scale construction applications.
- The LP415 and LP415S provide a 300m (1,000ft.) working range in diameter, more than enough for most construction and interior/exterior work.
- The LP415S generates a single-grade laser plane with a range of $\pm 8.7\%$ ($\pm 5^\circ$).
- The LR200 advanced detector features Triple Guides for laser detection: LCD on both sides, 3-color LEDs, and a buzzer.
- The LCD provides 9 levels of grade display and out-of-range information.



| | LP410 | LP415 | LP415S |
|------------------------------------|-------------------------------------|----------------------|-------------------------------------|
| Horizontal accuracy | 10" (1.5mm/30m) (0.06in./100ft.) | | 15" (2.2mm/30m) (0.09in./100ft.) |
| Operating range in diameter | 500m (1,640ft.) | | 300m (1,000ft.) |
| Self-leveling range | $\pm 3^\circ$ | $\pm 3^\circ$ | $\pm 5^\circ$ (at 0% grade setting) |
| Grade range* | | | $\pm 8.7\%$ (Single grade) |
| Rotation speed | | 600rpm | |
| Weight w/battery | | Approx. 2kg (4.4lb.) | |

* Maximum grade range depends on the tilt of an instrument.

SDG 1 Dual-Grade Laser

The SDG1 creates the wide range of dual-grade laser plane for road construction, land preparation, etc.

- The laser plane can be sloped in X and Y perpendicular directions.
- Controls the tilt of rotating axis with a revolutionary encoding system.
- 800m (2,620ft.) working range.
- All operations can be performed with LRC6 standard wireless remote controller within a 300m (1,000ft.) range.
- Advanced laser detector LR200 has LCD on both faces, 3-color LEDs for easy recognition at a distance, HI alert and battery level detections.



| | |
|------------------------------------|---|
| Repeatability | $\pm 5''$ |
| Horizontal accuracy | 10" (1.5mm@30m) |
| Operating range in diameter | 800m (2,620ft.) |
| Grade range | X -10 to +10% (0.001% increments) Y -5 to +25% (0.001% increments) |
| Self-leveling range | $\pm 5^\circ$ |
| Rotation speed | 300 / 600 / 900 rpm, selectable |
| Weight w/battery | 3.6kg (7.9lb.) |

LV 1 Precision Laser Plummet

The LV1 offers a high level of plumb precision. The laser beams directed both up and down to easily locate points that are vertically above and directly below a given reference point.



| | |
|---|--|
| Beam accuracy | Upward: $\pm 5''$, Downward: $\pm 1''$ |
| Operating range | Upward: 100m (330ft.), Downward: 5m (16ft.) |
| Beam spot diameter (at emission) | Upward: 7mm (9/32in.), Downward: 2mm (1/12in.) |
| Weight w/battery | 2.5kg (5.5lb.) |

Construction Laser Instruments

SP1 Pipe Laser

The SP1 Pipe Laser boosts the pipe laying efficiency.

- Sloped red laser beam is emitted for pipe laying guidance.
- Grade setting is precisely controlled with an absolute rotary encoder.
- Tough cast aluminum housing withstands harsh environments.
- Completely waterproof body will survive an accidental submersion in water.
- Remote controller SPRC1 works in a range of 200m (660ft.).
- The detachable battery can be easily swapped without disturbing set-up.

IP
X7

SPRC1



SP1

| | |
|------------------------------------|---|
| Horizontal accuracy | 10" (1.5mm@30m) |
| Grade range | -15 to +40% (0.001% increments) |
| Self-leveling range | Beam axis: $\pm 10\%$ Cross axis: $\pm 4^\circ$ |
| Water protection | At a depth of 5m (16.4ft.) for a minimum of 24 hours (far exceeding IPX7 specification) |
| Weight w/handle and battery | 3.8kg (8.4lb.) |

LX 442 Full-Crossline Laser

Featuring Full-Crossline and Swift Self-Leveling, the LX442 ensures greater productivity in leveling, plumbing, alignment and layout, in both interior and exterior applications.

- Full-line capability minimizes the need for changes of instrument setup.
- Electronic self-leveling mechanism provides more stable lines than pendulum-or gimbal-type lasers, even in sites subject to vibration.
- Just turn off the self-leveling and set the LX442 to the desired angle to project slope lines.
- Standard wireless controller allows remote selection of horizontal and vertical lines, line-lock and detector mode.
- The LD601 detector is included as standard.

IP
54

LD601



LX442



| | |
|---|---|
| Laser projection angle | H: 360° / V: 120° x 4 lines |
| Line accuracy H&V | ± 1 mm@10 m (± 0.04 in.@33ft.) / ± 20 arc seconds |
| Self-leveling type/range | Electronic / $\pm 3^\circ$ |
| Operating range | 20 m (66ft.) with detector |
| Power supply | R6 (AA) alkaline batteries x 3 AC 100 to 240V (with the standard AC adapter) |
| Operating time with alkaline batteries | 1V + 4H Approx. 10 hours 4V + 4H Approx. 6 hours |

LX 32/LX 34 Multi-Crossline Lasers

Thanks to the remarkable leveling speed, wide operating area and certified SOKKIA quality, the LX32 and LX34 greatly increase work efficiency in leveling, plumbing, alignment and layout applications.

- High-intensity laser diodes and advanced optical technologies provide extremely bright laser lines from an easy-to-use Class 2 laser.
- Self-levels in 3 seconds. The magnetic damper ensures line stability.
- The standard detector LD601 expands the operating range up to 40m (130ft.) for exterior applications.
- Compact body weighs only 900g (2lb.).
- Fits into tight spaces by retracting the legs.

IP
54

LX32



LX34

| | LX32 | LX34 |
|---|---|---|
| Laser projection angle | H: 120° / V: 120° x 3 lines | |
| Line accuracy H&V | ± 1 mm@10m (± 0.04 in.@33ft.) / ± 20 arc seconds | ± 2 mm@10m (± 0.08 in.@33ft.) / ± 40 arc seconds |
| Self-leveling range | 2.5° \pm 0.5° | |
| Operating range | 40m (130ft.) with detector | |
| Power supply | R6 (AA) batteries x 3 | |
| Operating time with alkaline batteries | More than 5 hours | |

Survey Equipment

MS 27 Mirror Stereoscope

The MS27 offers unmatched precision and ease of use for viewing and interpreting aerial photographs.

- The distance between the stereo pairs is 27cm, and the field of view is a generous 18 x 23cm.
- TRA2 tracking device (option) allows for accurate stereoscopic observation over entire overlapped portions of photographs.
- Illumination unit LA3 is provided as an optional accessory.



MS27+ TRA2

| | |
|--|--|
| Main Unit | |
| Distance of optical path | 27cm |
| Magnification | Swing-in Magnifier: 1.8x, BN3 Binocular: 3x, BN8A Binocular: 8x |
| Field of view of stereoscope | 18 x 23cm |
| Field of view of binocular | BN3: 70mm, BN8A: 27mm |
| Range of eye-span | 55 to 75mm |
| Weight | 4.0kg (8.8lb.) |
| PB1 Parallax Measuring Bar | |
| Minimum graduation / Estimation | 0.05mm / 0.01mm |
| Measurement range | 0 to 50mm |
| Length / Weight | 39.5cm / 0.5kg (1.1lb.) |
| TRA2 Tracking Device (option)* | |
| Size of photographs | Up to 45 x 45cm |
| Range of displacement | Latitudinal: 550mm / Longitudinal: 450mm |

* The TRA2 cannot be used together with the LA3 Illumination Unit.

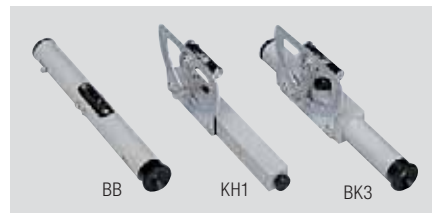
MS 16 Small Mirror Stereoscope

- Compact yet practical mirror stereoscope.
- 16cm optical path provides a wide field of view.



| | |
|---------------------------------|----------------|
| Distance of optical path | 16cm |
| Magnification | 1.5x |
| Field of view | 10 x 10cm |
| Weight | 0.7kg (1.5lb.) |

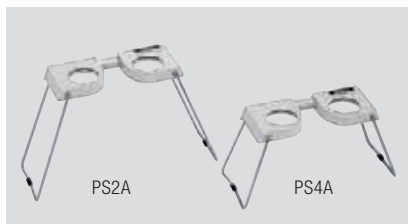
BB/KH1/BK3 Hand Levels



| | BB | KH1 | BK3 |
|---------------------------------------|-------|-------|-------|
| Length | 200mm | 170mm | 200mm |
| Magnification | 5x | — | 5x |
| Stadia multiplication constant | 100 | — | 100 |
| Vertical reading | — | 1° | — |
| Vernier reading | — | 10' | — |

PS 4A/PS 2A Pocket Stereoscopes

- Handy lens-type stereoscopes.
- Distance between lenses is adjustable from 56mm to 75mm.
- Two magnifications available, 4x (PS4A) and 2x (PS2A).



OS 1 Optical Square

- Two pentaprisms are precisely located on either side of a parallel plate.
- Three points can be located by sighting through the optical square.

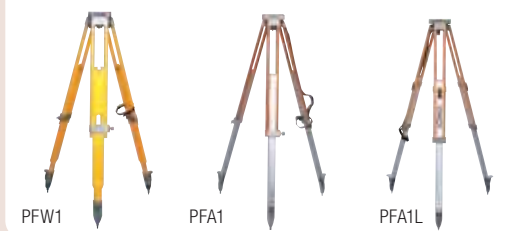


Tripods

An extensive range of tripods is available from SOKKIA to suit specific instrument types.

| Model | Material | Head | Head Screw | Clamp | Weight |
|--------------|----------|-------|------------|-------|-----------------|
| PFW1 | Hardwood | Flat | ø 5/8in. | Screw | 6.3kg (13.9lb.) |
| PFA1 | Aluminum | Flat | ø 5/8in. | Screw | 4.4kg (9.7lb.) |
| PFA1L | Aluminum | Flat | ø 5/8in. | Lever | 4.6kg (10.2lb.) |
| PSA1 | Aluminum | Domed | ø 5/8in. | Screw | 4.3kg (9.5lb.) |
| PSA1L | Aluminum | Domed | ø 5/8in. | Lever | 4.6kg (10.2lb.) |

For GNSS/GPS Antennas,
Total Stations and Theodolites



For Levels
and Leveling Lasers



Icons used in this catalog



Continuously tracks the prism, updating distance and angle values in real-time.



Automatically sights and measures the target.



Survey-grade reflectorless distance measurement.



Possible to perform measurements using reflective sheet targets.



Equipped with a high-visibility guide light to aid in setting-out operations.



Windows CE based operating system installed.



Supports a CompactFlash memory card for data storage and handling.



Supports an SD memory card and a large capacity SDHC card for data storage and handling.



USB port for data storage and/or connection with a PC.



Low Temperature models available.



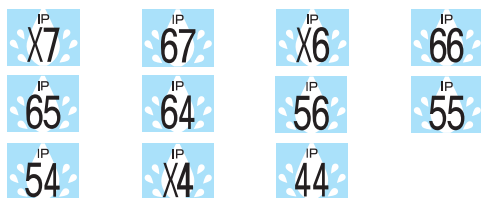
High Temperature models available.

The International Electrotechnical Commission standard IEC 60529 describes a system for classifying degrees of protection provided by enclosures of electrical equipment. The IP Code consists of the letters IP and two numerals. Larger numbers represent greater levels of protection.

Protection against ingress of solid foreign objects
Highest level: 6
7 levels: 0 to 6
X = no protection

IP 66

Protection against ingress of water
Highest level: 6
6 levels: 0 to 6
X = no protection



Laser Class:
IEC 60825-1 Amd.2:2001 / FDA CDRH 21 CFR Part 1040.10 and 1040.11 (Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No.50, dated July 26, 2001.)

All weights are approximate.

Due to printing processes, the colors of the products printed in this catalog may vary slightly from those of actual products. Certain products in this catalog may not be available in specific market areas. Please consult with your nearest SOKKIA representative for details.

Designs and specifications are subject to change without notice.

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