A New Epic to a Legacy of Breakthrough Technology

Far from home, in the most demanding worksites, you need to rely on toughness and accuracy to pull you through. In the middle of the desert, deep in the heart of the jungle, or on a windswept mountain top, new discoveries are made and new trails are blazed. This is what surveying is all about.

Nobody knows this like SOKKIA, which is why we made the SOKKIA CLASSIC SET X total station, a rugged partner in a journey into undiscovered territory.
■ RED-tech EX - Superior Distance Accuracy in any Situation

RED-tech reflectorless EDMs are acclaimed for high-precision pinpoint accuracy and the flexibility to measure from distances as close as 30cm (1ft.). SET X features RED-tech EX, the latest in SOKKIA’s innovative reflectorless measurement technology. RED-tech EX is the result of evolving RED-tech technology, and the reflectorless measurement range has been further extended to 500m (1,640ft.) while maintaining the same high level of accuracy. Of course, the ability to measure from 30cm (1ft.) remains unchanged. This high precision measurement technology has more intelligent signal processing, offering distance measurement with greater stability and fewer constraints. RED-tech EX performs fast, highly accurate measurement of building corners, through fences, and to prisms and reflective sheets.

■ Single Optimized Beam

RED-tech EX uses only one visible red laser beam for measuring and pointing, allowing you to visually confirm the exact measurement point.

■ Enhanced Encoder

SET X features SOKKIA’s original absolute encoders based on SOKKIA’s digital level RAB (Random Bi-directional) Code technology. Highly stable, dependable encoders have been further refined making superior high accuracy angle measurement possible. SET1X and SET2X feature groundbreaking IACS (Independent Angle Calibration System) technology for extremely reliable angle measurement.

■ IP65 Environmental Protection

SET X offers the highest in environmental protection for Windows CE total stations. SET X has an IP65 rating, meaning it is able to withstand the harshest conditions in the most demanding jobites. SET X maintains its IP65 rating even with the external battery connected.

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.
User-friendly Design

■ Ergonomic Handle
SET X features a redesigned ergonomic handle and new attachment mechanism. The handle facilitates a tight grip for use in severe conditions. The handle can be easily and quickly removed for vertical and near vertical measurements and securely reattached in a flash.

■ Bluetooth® Wireless Technology
SET X features Class 1 Bluetooth wireless technology for license-free long range data communication. Enjoy a wireless connection with your data collector or tablet PC for expanded data collection possibilities and seamless data handling.

■ Guide Light Unit
SET X comes standard with a guide light unit to assist in setting out measurements. The guide light unit consists of two different color LED’s emitted from a single aperture and can be easily determined at both long and short ranges. A special flashing pattern is also included to assist users with color weakness.

■ Color Display/Illuminated Keyboard
SET X has a color LCD touch screen display. The display has high angle visibility and subtle contrast for maximum visibility even in direct sunlight. The full alphanumeric keyboard has concave keys that can be easily pressed by hand or with the stylus and is illuminated to let you see what you are doing under any environmental condition.

An additional control panel on face 2 is available as an option.
**Trigger Key**

SET X features an ergonomically placed trigger key that greatly facilitates taking measurement while looking through the telescope and even while turning the fine motion screws. Measurement can be taken at any time with just the push of a button.

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**Rechargeable Li-ion Battery**

SET X offers a flexible power system to support long hours in the field. SET X comes standard with 2 BDC58 rechargeable Li-ion batteries. Each standard accessory battery provides 12 hours of operational time for a total of 24 hours of battery life. The optionally available BDC61 external battery offers an astounding 35 hours of operation. The combination of the two provides enough power to work for a week without having to stop and recharge. SET X has no problem measuring long hours on remote jobsites.

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**Multiple Data Interfaces**

Multiple data interfaces provide seamless data handling and transmission.

- **CompactFlash Card Slot**
- **USB Type A Port**
- **USB Type miniB Port**

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**CompactFlash Card Slot**

Support for Type II cards up to 1GB. SD cards can be used with an adapter.

**USB Port**

1GB FAT32 USB format is supported. A USB card reader can be used to further broaden useable media possibilities.

**SFX**

SET X includes SOKKIA’s original SFX technology for convenient data transfer to anywhere in the world using an internet-capable mobile phone.

**Waterproof Multi Port**

Data transmission and external power connection are available in a single waterproof port. The port boasts an environmental rating of IP65 with data and battery cables connected.

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**Standard Accessories**

- BDC58 rechargeable Li-ion batteries (2 pcs.)
- CDC68 charger with EDC113A/113B/113C AC power cable
- SB178 battery adapter for BDC46B batteries
- Stylus (2 pcs.)
- CP9 tubular compass
- Lens hood
- Lens cap
- Plumb bob
- Tool kit
- Wiping cloth
- Vinyl cover
- Operator’s manual
- Carrying case
- Shoulder strap
- Laser caution sign board

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**Optional Accessories**

For more information, please consult your local sales representative.
SDR Onboard Software adds a New Dimension

- **SDR Program**
  Built on knowledge from surveyors and previous generations of SDR electronic fieldbooks, the SET X SDR program is Windows CE-based data collection software that increases functionality by providing powerful surveying programs with an easy-to-follow workflow, customizable settings and a graphic interface. SDR program offers a full range of job file handling capacity, customizable feature code lists with point-sorting capabilities and the ability to export data to industry standard formats.

- **Status Bar**
  The status bar constantly displays the status of the instrument. Select and configure instrument settings at any time with just a touch of your finger or using the stylus. Battery life, target type, measurement mode and tilt are just a few of the many options that can be seen at a glance.

- **BASIC**
  In Basic mode, SET X has the functionality to take basic measurements.
  - Coordinate Measurement
  - Setting Out
  - Offset Measurement
  - Remote Elevation Measurement
  - Missing Line Measurement
  - Surface Area Calculation
  - Resection

- **FUNC**
  The Functions menu option is used to set up and start a survey job and controls SDR program settings.

- **Resection**
  Resection uses least squares adjustment techniques to determine the coordinates of an unknown point.

- **Tolerances**
  Specify the required tolerances. SET X checks observations for consistency and notifies you of measurements that exceed the set tolerances.
on to Traditional Wisdom

**SURV**
The Survey menu provides the programs frequently used in the field for data collection.
- Topography
- Traverse Adjustment
- Resection
- Set Collection
- Set Review
- Building Face Survey
- Collimation
- Remote Elevation
- Keyboard Input

**Traverse Adjustment**
Traverse adjustment allows you to specify a sequence of stations through which a traverse can be calculated and adjusted. Observations do not need to be in order of the traverse route.

**COGO**
COGO performs coordinate geometry calculations and setting out field work, dramatically increasing productivity for construction and civil engineering applications.
- Set Out Coords
- Set Out Line
- Set Out Arc
- Resection
- Inverse
- Areas
- Intersections
- Point Projection
- Taping from Baseline
- Transformation
- Keyboard Input

**Set Out Arc**
Set Out Arc provides an arc calculator to define curves from almost any combination of parameters. Points along the arc can be coordinated and directly set out.

**ROAD**
Roading is a comprehensive solution that provides powerful programs for road construction.
- Select Road
- Set Out Road
- Set Out Road Surface
- Road Topo
- Cross-Section Survey
- Define Road
- Review Road
- Define Template
- Review Template

**Road Topo**
Perform a topographical survey relative to a defined road.
**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Model</th>
<th>SET1X</th>
<th>SET2X</th>
<th>SET3X</th>
<th>SET5X</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Telescope</strong></td>
<td>Fully transiting, objective sighting and distance measuring optics.</td>
<td>Length: 173mm (6.8in.). Objective aperture: 45mm (1.8in.). Magnification: 30x. Resolving power: 2.5&quot;, Image: Erect. Field of view: 1.30° (260m/1,000m). Minimum focus: 1.3mm (4.3ft.). Reticle glass: --</td>
<td>Lenses are highly corrected monochromatic.</td>
<td>Lenses are highly corrected monochromatic.</td>
</tr>
<tr>
<td><strong>Angle measurement</strong></td>
<td>Absolute encoder scanning. Both circles adopt demarcation detection.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DIN</strong></td>
<td>° / ° / °/°/°/°, selectable.</td>
<td>1° / 1.5° / 2° / 2° / 3° / 3°</td>
<td>1° / 1.5° / 2° / 2° / 3° / 3°</td>
<td>1° / 1.5° / 2° / 2° / 3° / 3°</td>
</tr>
<tr>
<td><strong>Display resolutions (selectable)</strong></td>
<td>0.3 / 0.5 / 0.8 / 1.0 / 1.5 / 2.0 / 3.0 / 5.0 / 10.0 / 20.0 / 50.0</td>
<td>0.3 / 0.5 / 0.8 / 1.0 / 1.5 / 2.0 / 3.0 / 5.0 / 10.0 / 20.0 / 50.0</td>
<td>0.3 / 0.5 / 0.8 / 1.0 / 1.5 / 2.0 / 3.0 / 5.0 / 10.0 / 20.0 / 50.0</td>
<td>0.3 / 0.5 / 0.8 / 1.0 / 1.5 / 2.0 / 3.0 / 5.0 / 10.0 / 20.0 / 50.0</td>
</tr>
<tr>
<td><strong>Accuracy (ISO 17123-3)</strong></td>
<td>±1° / ±1.5° / ±2° / ±3° / ±5° / ±10° / ±20° / ±50°</td>
<td>±1° / ±1.5° / ±2° / ±3° / ±5° / ±10° / ±20° / ±50°</td>
<td>±1° / ±1.5° / ±2° / ±3° / ±5° / ±10° / ±20° / ±50°</td>
<td>±1° / ±1.5° / ±2° / ±3° / ±5° / ±10° / ±20° / ±50°</td>
</tr>
<tr>
<td><strong>ACS (Independent Angle Calibration System)</strong></td>
<td>Provided</td>
<td>Provided</td>
<td>Provided</td>
<td>Provided</td>
</tr>
<tr>
<td><strong>Auto-calibration comparator</strong></td>
<td>Dual-axis liquid tilt sensor, Working range: ±4° (±14 mg)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Calibration compensation</strong></td>
<td>Yes / No, selectable</td>
<td>Yes / No, selectable</td>
<td>Yes / No, selectable</td>
<td>Yes / No, selectable</td>
</tr>
<tr>
<td><strong>Free motion screws</strong></td>
<td>Fine / Coarse / 2-speed motion</td>
<td>Fine / Coarse / 2-speed motion</td>
<td>Fine / Coarse / 2-speed motion</td>
<td>Fine / Coarse / 2-speed motion</td>
</tr>
<tr>
<td><strong>Distance measurement</strong></td>
<td>Modulated laser, phase comparison method with red laser diode.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Laser output</strong></td>
<td>Reflectometry mode: Class 3R (max. 3W), Prism/shell mode: Class 1 equivalent (max. 0.22W)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Measurement range</strong></td>
<td>(slope distance)</td>
<td>Reflectometry: ±1° (White side, 90% reflective)</td>
<td>Reflectometry: ±1° (White side, 90% reflective)</td>
<td>Reflectometry: ±1° (White side, 90% reflective)</td>
</tr>
<tr>
<td><strong>Operating system / Application</strong></td>
<td>Support up to UGC, CF Type I (Ver. 3.3), SD card is available with CF type adapter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Battery</strong></td>
<td>Approx. 6 hours</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
<td>7.2V DC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight with handle and battery</strong></td>
<td>2.0kg</td>
<td>2.0kg</td>
<td>2.0kg</td>
<td>2.0kg</td>
</tr>
<tr>
<td><strong>Instrument height / Size with handle and battery</strong></td>
<td>173mm, Objective aperture: 45mm (1.8in.), Rebounding time: 4.0s (from 10s), Field of view: 1.30° (260m/1,000m)</td>
<td>173mm, Objective aperture: 45mm (1.8in.), Rebounding time: 4.0s (from 10s), Field of view: 1.30° (260m/1,000m)</td>
<td>173mm, Objective aperture: 45mm (1.8in.), Rebounding time: 4.0s (from 10s), Field of view: 1.30° (260m/1,000m)</td>
<td>173mm, Objective aperture: 45mm (1.8in.), Rebounding time: 4.0s (from 10s), Field of view: 1.30° (260m/1,000m)</td>
</tr>
<tr>
<td><strong>Lens diameter</strong></td>
<td>45mm (1.8in.)</td>
<td>45mm (1.8in.)</td>
<td>45mm (1.8in.)</td>
<td>45mm (1.8in.)</td>
</tr>
<tr>
<td><strong>Telescope magnification</strong></td>
<td>30x</td>
<td>30x</td>
<td>30x</td>
<td>30x</td>
</tr>
<tr>
<td><strong>Reticle types</strong></td>
<td>Circular / Graphic</td>
<td>Circular / Graphic</td>
<td>Circular / Graphic</td>
<td>Circular / Graphic</td>
</tr>
<tr>
<td><strong>Circular level</strong></td>
<td>10' / 2mm / Graphic LCD level: 4' / outer circle</td>
<td>10' / 2mm / Graphic LCD level: 4' / outer circle</td>
<td>10' / 2mm / Graphic LCD level: 4' / outer circle</td>
<td>10' / 2mm / Graphic LCD level: 4' / outer circle</td>
</tr>
<tr>
<td><strong>Plate level</strong></td>
<td>20° / 4mm</td>
<td>20° / 4mm</td>
<td>20° / 4mm</td>
<td>20° / 4mm</td>
</tr>
<tr>
<td><strong>Plumber's level</strong></td>
<td>Magnetic</td>
<td>Magnetic</td>
<td>Magnetic</td>
<td>Magnetic</td>
</tr>
<tr>
<td><strong>Trench design</strong></td>
<td>Detachable</td>
<td>Detachable</td>
<td>Detachable</td>
<td>Detachable</td>
</tr>
<tr>
<td><strong>Cost and water protection / Operating temperature</strong></td>
<td>Cents (max. 3°C), TINT Vision lineof 45mm (1.8in.)</td>
<td>Cents (max. 3°C), TINT Vision lineof 45mm (1.8in.)</td>
<td>Cents (max. 3°C), TINT Vision lineof 45mm (1.8in.)</td>
<td>Cents (max. 3°C), TINT Vision lineof 45mm (1.8in.)</td>
</tr>
<tr>
<td><strong>Weight with handle and battery</strong></td>
<td>Approx. 6.3kg (14.2lb)</td>
<td>Approx. 6.3kg (14.2lb)</td>
<td>Approx. 6.3kg (14.2lb)</td>
<td>Approx. 6.3kg (14.2lb)</td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
<td>12V / DC</td>
<td>12V / DC</td>
<td>12V / DC</td>
<td>12V / DC</td>
</tr>
<tr>
<td><strong>Battery</strong></td>
<td>CR123 (standard)</td>
<td>CR123 (standard)</td>
<td>CR123 (standard)</td>
<td>CR123 (standard)</td>
</tr>
<tr>
<td><strong>External batteries (optional)</strong></td>
<td>L-long rechargeable battery (2.4Ah, 2pcs. included)</td>
<td>L-long rechargeable battery (2.4Ah, 2pcs. included)</td>
<td>L-long rechargeable battery (2.4Ah, 2pcs. included)</td>
<td>L-long rechargeable battery (2.4Ah, 2pcs. included)</td>
</tr>
<tr>
<td><strong>Continuous use at 20˚C (68˚F)</strong></td>
<td>30, 15, 10, 5 minutes after operation / Off, selectable</td>
<td>30, 15, 10, 5 minutes after operation / Off, selectable</td>
<td>30, 15, 10, 5 minutes after operation / Off, selectable</td>
<td>30, 15, 10, 5 minutes after operation / Off, selectable</td>
</tr>
</tbody>
</table>

**Laser Class 3R conforms to: IEC 60825-1 Amd.2: 2001 / FDA CDRH 21 CFR Part1040.10 and 1040.11**

**Laser Radiation Warning**

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