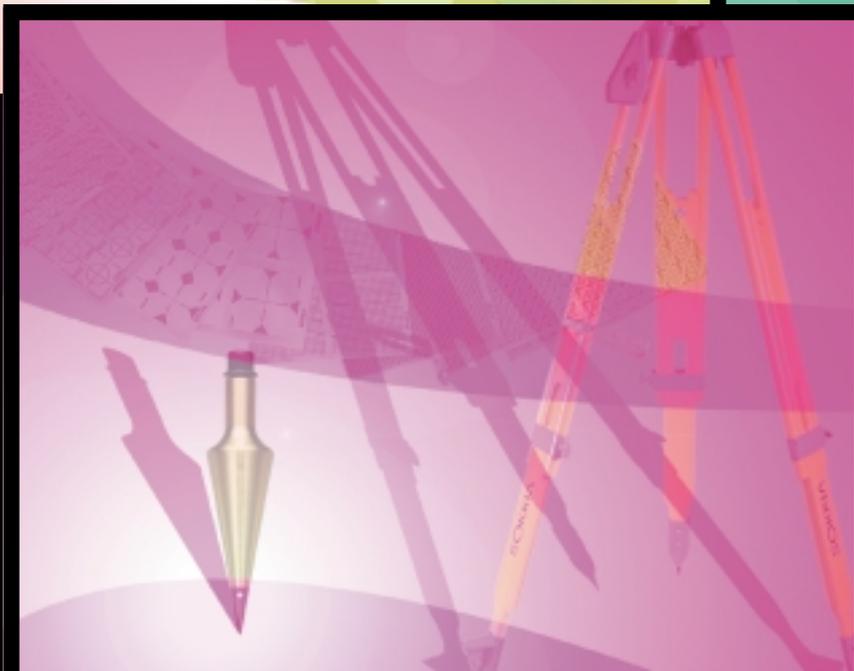


so k k i a

# Measuring Systems and Supplies



# Introduction

## sokkia

*For 80 years, Sokkia has been providing solutions to the surveying, construction, mapping, and engineering industry. From high-accuracy control and boundary work applications to detailed design topography, Sokkia's line of instruments are designed to maximize ease-of-use and productivity.*

**Our history.** The origin of Sokkia Corporation dates back to 1882, when Adolph Lietz founded a surveying, nautical, and mining instrument company in San Francisco. After 65 years of continuous operation, The Lietz Co. stopped manufacturing instruments and became a distributor of product for other manufacturers.



One of the manufacturers whose products The Lietz Co. distributed was Sökkisha Co., Ltd. Sökkisha was founded in 1920 and quickly grew to become a Japanese pioneer of innovative surveying and measuring products.

In 1978, The Lietz Co. moved the company headquarters to the Kansas City area in order to establish a central proximity to their vast dealer network. Sökkisha acquired The Lietz Co. in 1984.

During the early 1990's, Sökkisha embarked on a corporate identity project designed to enhance and broaden the company's global marketing. The result of this project was a new brand name: "Sokkia".

On January 1, 1992, The Lietz Co. formally changed its company name to Sokkia Corporation. Sökkisha Co., Ltd. and all international Sökkisha subsidiaries also changed their names to Sokkia to present a unified global image.

## Product Support Services

### Customer Support

Authorized Sokkia dealer referrals may be obtained by the following:

TEL: 1-800-4-SOKKIA or  
913-492-4900, ext. 1  
FAX: 913-492-0188  
E-MAIL: sales@sokkia.com

### Service Support

TEL: 1-800-255-3913 or  
913-492-4900, ext. 4  
FAX: 913-492-8562  
E-MAIL: service@sokkia.com

Sokkia Service offers:

- The largest and most experienced service staff in the industry.
- Service and repair on all major brands of instruments and accessories.
- Certified instrument calibrations to factory specifications.
- American National Standards Institute (ANSI) Z540 compliant.
- National Institute of Standard and Technology (N.I.S.T.) certification available upon request.
- Factory certified warranty repairs.
- Firm estimates on all repairs.

### Technical Support

TEL: 1-800-257-2552 or  
913-492-4900, ext. 3  
FAX: 913-492-7495  
E-MAIL: support@sokkia.com  
WEBSITE: www.sokkia.com/support

Sokkia's primary goal is to promptly and efficiently provide our customers with the most accurate technical information on all Sokkia brand products. Our well-trained, expert technical support specialists provide the highest level of customer satisfaction and play an integral role in defining and enhancing the high quality products customers have come to know and trust from Sokkia.

Frequently Asked Questions (FAQs) and software upgrades are also available 24 hours a day from our web site at: [www.sokkia.com/support](http://www.sokkia.com/support)

### Training Support

Sokkia provides a variety of training programs for our customers. The programs allow customers to take advantage of our expert, in-house knowledge base, increase their product knowledge, and enhance job productivity in the field. Sokkia can also customize a training class to fit specific needs.

- **Multi-day product training courses.**
- **Weekly industry related seminars.**
- **Customized training programs.**
- **Sokkia Factory Service training courses.**
- **Product demonstrations.**

Call 1-800-4-SOKKIA

or

Visit our website at

[www.sokkia.com/support/training](http://www.sokkia.com/support/training)

for a current schedule with training course descriptions.

### Rental Programs

Sokkia offers the widest variety of rental equipment available for short-term rental with daily, weekly, and monthly rental rates. We also provide Rent-To-Own leasing programs through Sokkia Credit Corporation, our in-house leasing and financing company.

### Financing and Leasing

Sokkia Credit Corporation has the most flexible, customizable Leasing and Financing programs in the industry. Call to find out more about our variety of options:

TEL: 1-800-956-1501 or 913-438-2910  
FAX: 913-438-2988

For GPS/GIS instruments and accessories ask for our "GPS/GIS Product Catalog 4G"



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# Total Stations

**New this fall!**

## SET4110R

### High Accuracy Without Prisms

Simplify your work with Sokkia's SET4110R Total Station. The SET4110R features reflectorless EDM technology, which allows high accuracy distance measurements with or without prisms in addition to reflective sheet targets. The SET4110R provides 5" angle accuracy and incorporates dual axis compensation. With a reflectorless range up to 320 feet, the SET4110R will make any survey fast and easy.

The SET4110R's internal memory stores up to 3,000 points of both angles and distance data or coordinate data. Store up to 24 job files and alphanumerically input point numbers. Feature codes can be stored on-board. Stored data is output in SDR33 format to a computer or directly to a printer.

Sokkia's renowned high performance and full functionality have been combined with leading edge reflectorless technology in the SET4110R. Providing quick and accurate measurements directly without any prism or targeting system, but provides the flexibility to offer the option of either reflectorless, reflective sheet targets or conventional prisms.

*Asynchronous  
serial communications  
up to 38400 bps.*

Internal software allows for multiple job functions including Azimuth Angle Setting, Resection, 3-D Coordinate Measurement, Setting-out, Offset Measurements (Distance/Angle/Two-Point target), Remote Elevation Measurement, Missing Line Measurement.

Because the SET4110R has the ability to measure with or without prisms or reflective target sheets, the 4110R can be used for virtually every job that can be imagined.

*The SET4110R  
Total Station makes  
any survey fast  
and easy*



### QUICK SPECS

<b>Angle Measurement</b>	
Accuracy (standard deviation of mean of a measurement taken in position I and II, according to ISO 12857-2 1997)	5" (1.5mgon)
Display Resolution (selectable)	1" / 0.2mgon / 0.005mil 5" /1mgon / 0.02mil
Unit	360° / 400gon / mil, selectable
Automatic dual-axis level compensator	Graphic or Digital, selectable., display ON (V&H/only V) / OFF
Type	Dual-axis liquid tilt sensor
Level range	± 3' (±55mgon), out-of-range warning displayed
<b>Distance Measurement</b>	
EDM Accuracy (D=measuring distance, unit:mm)	
Fine meas. w/glass prism	+/- (5 + 3ppm X D)mm
Fine meas. w/reflective sheet target RS90N	+/- (3 + 3ppm X D)mm
Fine meas. w/Kodak Gray Card (8" x 10", white side, Reflectivity)	+/- (5 + 3ppm X D)mm
Measuring Range (slope distance):	
Reflectorless	320 ft. (100m)
Reflective Sheet Target RS90N (90 x90mm)	1,600 ft. (500m)
Single AP01 Prism	13,000 ft. (4,000m)
Triple AP01 Prism	15,090 ft. (4,600m)
Nine AP01 Prisms	19,680 ft. (6,000m)
<b>Laser:</b>	
Source	Laser diode
Wavelength	830nm
Class	Class 1 (IEC 60825-1) /Class 1 (CFR21)
<b>Measuring Time:</b>	
Fine Mode	3.6 s
Rapid Mode	3.0 s
<b>Telescope</b>	
Magnification	30X
Objective Aperture	1.8 in. (45mm) (EDM: 2.0 in. (50mm)
Resolving Power	3"
Field of view	1°30' (26m/1,000m)
Minimum Focus	3.3 ft. (1.0m)
<b>General</b>	
Display unit: Alphanumeric / graphic dot matrix LCD (120x64 dots, 20 characters x 8 lines) on each face, backlight, non-reflective glass, provided.	
Battery life = 5.5 hrs. per BDC35 battery	

# Reflectorless Electronic Total Station

## ORDERING INFORMATION

6400-44 SET4110R  
Electronic Total Station complete with dual keypads, 2 BDC35 NiMH Batteries, CDC39 Charger, SC141 Carrying case, WA1 Tribrach, CP7 Compass, tool kit, rain cover, and operation manual.

### Accessories

6361-35	BDC35 Ni-Mh Battery
6361-40	BDC40 NiCd Battery
6360-39	CDC39 Charger (1hr. 120v AC)
6360-41	CDC41 Charger (1 hr. 12 v DC)
6350-32	Cable from SET/NET2 to 25-pin serial port
6350-33	Cable from SET/NET2 to 9- pin serial port
6362-46	Cable from SET/NET2 to parallel printer
7329-51	OF3A Solar filter for SET100 Series

For batteries and other accessories, see pages 84-88.

For prisms and reflective targets see pages 35-42.

For tripods, see page 44.

For communication software, see pages 16-17.



## TECH TIPS

The unique abilities of reflectorless measurement can greatly improve productivity if used correctly. Due to the nature of reflectorless measurement, there are procedures and conditions that should be considered whenever using this technology.

- When measuring without a target, light is not only reflected from a point at the center of the crosshair, but also from a small region surrounding that point.
- The maximum range of reflectorless measurement can vary based upon the type of material being measured.
- Measurement of a curved surface, such as a light pole, may actually be a measurement of the average distance to the curved surface.

- When using targets placed on a road or similar surface, light can be reflected from the surface in front of and behind the target.
- Surface irregularity, such as cavities in walls, may give spurious measurements.

## APPLICATIONS

- Shooting topography in high traffic areas.
- Taking measurements to inaccessible locations.
- Surveying management for strip mining.
- Structural measurements of bridges and towers.

# Total Stations

## Series 100



### The Ultimate Tool for Surveying

Sokkia's advanced mechanical, optical and electronic technologies available in the Series 100 total stations makes them the ultimate tools for surveying efficiency, ease and durability. Two large displays allow at-a-glance confirmation of measurement data. Alphanumeric keys and user-defined softkeys enable simple and efficient operation. Some of the on-board programs include:

- Job and feature code management
- Setting-out
- Resection
- Offset measurement
- 3-D coordinate measurement
- Angle and azimuth input
- Missing line measurement
- Remote elevation measurement

The Series 100 has a large internal memory capable of holding a full

3,000 data points. Multiple job files allow a maximum of 24 different files for different jobs. Point numbers can be input alphanumerically.

Stores up to 40 feature codes (max. 16 characters each) in memory for easy recall for recording. Measurement and recording are performed simultaneously with a single touch of the "AUTO" key. Known point coordinates can be input directly from the keyboard or uploaded with ProLINK Software. Stored data is output in SDR33 format.

Our latest telescope design provides fast and accurate measurements required by your applications. Read directly to a standard glass prism or use reflective sheet targets when using a prism is not convenient.

Sokkia has now boosted the performance of the new Series 100 instruments by:

- Improving the distance measurement speed.
- Streamlining the internal components thereby improving its serviceability.
- Removing the lower motion to prevent field blunders.
- Reduced weight—the Series 100 total stations weigh a mere 11.7 lbs. (5.3kg), including tribrach, handle and battery.
- Interfaces easily with Sokkia's SDR33 Electronic Field Book® with two-way communication functions.

Series 100 total stations are supplied with two batteries. When fully charged, battery life is about 5.5 hours per battery, or approximately 660 measurements.\* Recharging takes only 70 minutes or less.

The Series 100 total stations come standard with a full 3 year warranty.

\* In the Fine and Single measurement modes at measurement intervals of 30 seconds.

### QUICK SPECS

	SET2110	SET3110	SET4110
Angle Measurement Accuracy (DIN 18723)	2" (0.6mgon)	3" (1mgon)	5" (1.5mgon)
Display Resolution (selectable)	0.5"/0.1mgon/0.002mil 1"/0.2mgon/0.005mil	1"/0.2mgon/0.005mil 5"/1mgon/0.02mil	1"/0.2mgon/0.005mil 5"/1mgon/0.02mil
Distance Measurement (Slope distance, good conditions: no haze, visibility 25 miles (40km), overcast, no heat shimmer)			
Reflective Sheet Target RS90N	390 ft. (120m)	320 ft. (100m)	260 ft. (80m)
Single AP01 Prism	8,800 ft. (2,700m)	8,200 ft. (2,500m)	5,900 ft. (1,800m)
Triple AP01 Prism	11,400 ft. (3,500m)	10,800 ft. (3,300m)	7,800 ft. (2,400m)
Nine AP01 Prisms	13,700 ft. (4,200m)	13,000 ft. (4,000m)	9,500 ft. (2,900m)
Distance Measuring Time (initial)			
Fine Mode	2.0s (3.7s)	2.0s (3.7s)	2.0s (3.7s)
Rapid Mode	0.9s (2.1s)	0.9s (2.1s)	0.9s (2.1s)
Tracking Mode	0.4s (1.9s)	0.4s (1.9s)	0.4s (1.9s)
Telescope Magnification	30x	30x	30x
Objective aperture (EDM:50mm (2.0 in.))	45mm (1.8 in.)	45mm (1.8 in.)	45mm (1.8 in.)
Resolving Power	3"	3"	3"
Minimum Focus	3.3 ft. (1.0m)	3.3 ft. (1.0m)	3.3 ft. (1.0m)

# SET 2110, 3110 & 4110 Electronic Total Stations

## ORDERING INFORMATION

### 6400-32 SET2110

Electronic Total Station complete with dual keypads, two BDC35 NiMH Batteries, CDC39 Charger, SC141 Carrying case, WA1 Tribrach, CP7 Compass, tool kit, rain cover, and operation manual.

### 6400-33 SET3110

Electronic Total Station, complete with same equipment as above.

### 6400-34 SET4110

Electronic Total Station, complete with same equipment as above.

### Accessories

6361-35	BDC35 NiMH Battery
6361-40	BDC40 NiCd Battery
6360-39	CDC39 Charger, 110V AC
6360-41	CDC41 Charger, 12VDC, cigarette lighter
6350-32	Cable from SET to 25-pin serial port
6350-33	Cable from SET to 9-pin serial port
6362-46	Cable from SET to parallel printer
7311-45	DE17A Zenith eyepiece for SET100 series
7329-51	OF3A Solar filter for SET100 Series

For batteries and other accessories, see pages 84-88.

For prisms and reflective targets, see pages 35-42.

For tripods, see page 44.

For communication software, see pages 16-17.



## TECH TIPS

The Series 100 has the unique ability to measure not only to standard prisms, but also to reflective target sheets. Adhesive sheet targets can be attached to reference marks, anchor points, or other hard to reach locations to allow for continuous monitoring of work in progress, or to provide points of reference for jobs requiring repeated measurements.

- ➔ Reflective sheet targets provide an additional reflective surface for low-order surveys in rough or obstructed terrain.
- ➔ The Series 100 has a number of Set-out and offset measurement options, allowing users to make several types of indirect measurements to previously hard-to-locate objects.
- ➔ The Series 100 can record measurements in the field without the use of an external data collector. Data can be recorded as angles and distances, or coordinates.

## APPLICATIONS

- Boundary Surveying
  - Topographic and As-built surveys
  - Control surveys
  - Construction Staking and Layout
  - Road Staking and Construction
- Specialized Mapping applications:
- Law Enforcement/Accident Investigation
  - Mining

## POWERSET



### The All-In-One Surveying Tool

The POWERSET Series Total Stations set a new standard for surveying efficiency with an extensive range of on-board surveying software such as topography, set collection, traverse adjustment, stake-out and roading. The full alphanumeric keys and SDR-based software make entering job names, point numbers, coordinate values and processing survey data as fast and easy as using Sokkia's SDR Electronic Field Book.

The miniaturized telescope offers high-speed, high-accuracy distance measurements to both standard glass prisms and reflective sheet targets. Use the optional rugged non-contact memory cards on your largest projects for fast, reliable back-up, file transfer and data storage.

The ultra-light body and case combined with a durable design have provided users with the freedom to take the PowerSet anywhere.

Sokkia boosted the performance of the POWERSET by:

- Increasing the on-board memory to 4800 points (512KB)
- Streamlining the internal components thereby improving its serviceability
- Improving the distance measurement speed
- Removal of the lower motion to prevent field blunders
- Reduced weight
- Two additional software packages:
  - Preloaded POWERSET SDR Version 4.2x- Expert software.
  - ProLINK COMMS Software CD

The POWERSET comes standard with a full 3 Year Warranty.

### QUICK SPECS

	SET1010	SET2010	SET3010	SET4010
Angle Measurement Accuracy (DIN 18723)	1" (0.3mgon)	2" (0.6mgon)	3" (1mgon)	5" (1.5mgon)
Display Resolution (selectable)	0.5"/0.1mgon/0.002mil 1"/0.2mgon/0.005mil	0.5"/0.1mgon/0.002mil 1"/0.2mgon/0.005mil	1"/0.2mgon/0.005mil 5"/1mgon/0.02mil	5"/0.1mgon/0.02mil 10"/2mgon/0.05mil
Distance Measurement (Slope distance, good conditions: no haze, visibility 25 miles (40km), overcast, no heat shimmer)				
Reflective Sheet Target RS90N	390 ft. (120m)	390 ft. (120m)	320 ft. (100m)	260 ft. (80m)
Single AP01 Prism	8,800 ft. (2,700m)	8,800 ft. (2,700m)	8,200 ft. (2,500m)	5,900 ft. (1,800m)
Triple AP01 Prism	11,400 ft. (3,500m)	11,400 ft. (3,500m)	10,800 ft. (3,300m)	7,800 ft. (2,400m)
Nine AP01 Prisms	13,700 ft. (4,200m)	13,700 ft. (4,200m)	13,000 ft. (4,000m)	9,500 ft. (2,900m)
Distance Measuring Time (initial/subsequent)				
Fine Mode	2.0s (4.1s)	2.0 s (4.1s)	2.0 s (4.1s)	2.0 s (4.1s)
Rapid Mode	0.9s (2.7s)	0.9s (2.7s)	0.9s (2.7s)	0.9s (2.7s)
Tracking Mode	0.4s (2.5s)	0.4s (2.5s)	0.4s (2.5s)	0.4s (2.5s)
Telescope				
Magnification	30x	30x	30x	30x
Resolving Power	3"	3"	3"	3"
Minimum Focus	3.3 ft. (1.0m)	3.3 ft. (1.0m)	3.3 ft. (1.0m)	3.3 ft. (1.0m)

# SET 1010, 2010, 3010 & 4010 Electronic Total Stations

## ORDERING INFORMATION

6300-11 SET1010 POWERSET  
Electronic Total Station complete with dual keypads, Expert software, SDC5 128K Data Card, two BDC35 NiMH Batteries, CDC39 Charger, SC141 Carrying case, WA1 Tribrach, CP7 Compass, tool kit, rain cover, and operation manual.

6300-21 SET2010 POWERSET  
Electronic Total Station, complete with same equipment as above.

6300-31 SET3010 POWERSET  
Electronic Total Station, complete with same equipment as above.

6300-41 SET4010 POWERSET  
Electronic Total Station, complete with same equipment as above.

### Accessories

6350-06	SCR2 Card Reader/Writer Assembly
6350-23	SDC5 128k data card
6350-24	SDC6 256K data card
6350-25	SDC8 512K data card
6350-32	Cable from POWERSET to 25-pin serial port
6350-33	Cable from POWERSET to 9-pin serial port
6360-41	CDC41 Charger 12VDC cigarette lighter plug
6362-46	Cable from POWERSET to parallel printer
7311-45	DE17A Zenith eyepiece for POWERSET
7329-51	OF3A Solar filter for POWERSET

For batteries and other accessories, see pages 84-88.

For prisms and reflective targets see pages 35-42.

For tripods, see page 44.

For communication software, see pages 16-17.



## TECH TIPS

- ➔ With the addition of on-board data collection, control jobs may be uploaded to the unit and tagged with the <CTRL> softkey by pressing F4-Read from main menu and then <Func> and <JOB>. Press F3 (CTRL) to "tag" the job as control and a star should appear next to the job. From there, then you may create a working job or enter into a pre-existing job.
- ➔ By using the <Options> function under the <FUNC> + <Communications> menu, you may choose what records to download to your computer from each job. If you set the "Current View" to Yes, then only station and observation data will be sent. If you select "Send all as POS" to Yes, then only coordinate positions will be sent out of the instrument. If you set both options to Yes, then you will get observations and positions in the same file.
- ➔ For best vertical and horizontal accuracy, an onboard Collimation may be done. Once this Collimation record has been stored in the Job, then all "shots" will reflect the correction placed by this procedure. Going into <Survey> and then <Collimation>.

From there, you define a station point and take face1 and face2 readings on a prism target in the distance. Once these readings have been taken, then

an error factor appears (the value to be taken out of each reading caused by misalignment or instrument out of adjustment). If this error is within an acceptable tolerance, then you may hit OK and proceed with your work.

NOTE: If jobs are changed, the collimation will not carry over. You need to do a collimation for every job if you wish to use a correction factor.

- ➔ Since this instrument offers powerful on-board data collection, one may wish to do a transformation on a particular job. This may be done by selecting <Transformations> from the <COGO> menu. It would be used for making coordinate shifts if you desire, but you must provide the known parameters. One of the most common transformations is called a "Helmert Transformation". For this procedure, you need to create a new job that contains the same Point ID's as that of the job you want to transform. Using the <Keyboard Input> function, you need to enter the new KNOWN coordinate values for these points (i.e. the coordinates that you want to use as the anchors for the transformation). You need to be in this newly created job, then select "Helmert transform with" and the program will ask you to select a job to transform. You will want to select the job that contains all the incorrect (uncalibrated) data. When this is complete, the software will bring the coordinates "over" and paste them into the new system.

### QUICK SPECS

## A High-Precision, Multi-function 3-D Station

The NET2100 electronic total station, the successor to the NET2B, is suitable for applications requiring high accuracy. This includes deformation and displacement surveys, dimensional measurements of large parts in production and repair, and industrial applications that require high accuracy.

The NET2100 incorporates features of the NET2B in a new design based on the popular PowerSET and 100 Series total stations. It offers more internal data storage and increased battery life as well as two-way communication with external devices. The NET2100's lightweight and compact design as well as full screen displays and large, dual keyboards provides an increase in productivity and job accuracy.

The NET2100 uses reflective sheet targets to provide accurate measurements when use of a conventional prism would be difficult or impossible. A three-dimensional coordinate system can be set up using just one instrument baseline, datum points are not required.



The NET2100 has a large internal memory (448KB) capable of holding a full 3,000 data points. Multiple job files allow a maximum of 24 different jobs. Point numbers can be input alphanumerically. Store 40 feature codes (max. 16 characters each) in memory for easy recall for recording. Measurement and recording are performed simultaneously with a single touch of the "AUTO" key.

<b>Angle Measurement</b>	
Accuracy (DIN 18723)	2" Standard deviation
Minimum resolution (selectable)	0.5"/0.1mgon/0.002 mil 1"/0.2mgon/0.005 mil
<b>Compensator</b>	
Type	Automatic dual axis liquid electro-optical tilt sensor,
Range	± 3', (± 55mgon), out of range warning display mess.
<b>Distance Measurement</b>	
(Slope distance, good conditions, no haze, visibility 25 miles (40km), overcast, no heat shimmer)	
Accuracy	± (0.8mm + 1ppm x D)mm, reflective sheet target; ± (2.0 + 2ppm x D)mm (using CPS12 high precision reflective prism.
Ranges	2.6 ft.-328 ft. (2-100m) reflective sheet targets 164 ft.-328ft. (50-1000m) CPS12 prism
<b>Time</b>	
Fine	Every 4.7s (initial meas. 6.5s)
High-speed	Every 3.3s (initial meas. 5.0s)
<b>Communication</b>	
Communication	Two way RS232 compatible
<b>Telescope</b>	
Magnification	30x
Resolving power	3"
Field of view	1°30' (26m/1000m)
Minimum focus	6.6ft. (2m)
<b>General</b>	
<b>Sensitivity Levels</b>	
Plate level	20"/2mm
Circular level	10'/2mm
Internal memory	3,000 points
Interface	Asynchronous serial, RS-232C compatible, Centronics compatible
Operating Time	Up to two hours with BDC35 NiMH battery
Operating Temp	14°F to 104°F (-10°C to +40°C)
Water resistance	IPX2 (Based on IEC 529/1989)
Weight	6.1 kg

# 3-D Total Station

## ORDERING INFORMATION

6340-12 NET2100 3-D Total Station  
Includes two BDC35 Batteries, CDC39  
Charger, CP7 Compass, lens cap and  
hood, tool kit, rain cover, SC180 case and  
operation manual.

### Accessories

- 6361-35 BDC35 NiMH Battery
- 6361-40 BDC40 NiCD Battery
- 6360-39 CDC39 Charger 110VAC
- 6360-41 CDC41 Charger 12VDC  
cigarette lighter plug
- 6350-33 Cable from NET to 9-pin  
serial port

For batteries and other accessories, see  
pages 84-88.

For prisms and reflective targets see  
pages 35-42.

For tripods, see page 44.

For communication software, see  
pages 16-17.



## APPLICATIONS

- Deformation and displacement measurement of all types of structures: tunnels, buildings, etc.
- Construction supervision and shape measurement of odd-shaped structures such as domes.
- Dimensional and shape measurement of large-scale parts used in plants and other facilities.
- Installation and construction supervision for determining plant siting, etc.
- Dimensional and shape measurements for construction and repair of ships and aircraft.



# Total Stations

## SET500 and SET600

### Rugged Enough for Extreme Conditions

The new Sokkia SET500 and SET600 combine the latest electronic technology and software enhancements in a rugged, lightweight design. Distance measurements through the miniaturized EDM take less than three seconds and can measure more than a mile to a single prism. The SET500 and SET600 can also measure to reflective sheet targets when it is not convenient to use a prism. Complete your job quickly and easily with software enhancements that include functions such as job management, feature code listing, offset observation, area calculation and a bull's-eye leveling indicator. The SET500 comes standard with 4,000 point internal memory and compact flash reader. Compact flash memory cards (up to 64MB) compatible with PCMCIA Type 2 hardware are

commercially available. The SET600 offers a 2000 point internal memory.

### Featuring improved efficiency and a shorter learning curve

You will find an improvement in efficiency and a shorter learning curve with the enhanced 12-button keyboard included on the SET500 and SET600. First, the user can simplify the operating procedures for an application by assigning frequently used functions to the softkeys. Second, the arrow-key rocker panel allows the user to quickly move

SET500



around the display and make selections. Last, the SET500 and SET600 includes several designated keys for the most common functions. The SET500 offers improved visibility on the new high-density graphic display on both sides of the instrument.

Complete your work in extreme conditions without the worry of damaging the instrument from water and dust. The Sokkia SET500 and SET600 instruments have set the standards of quality and durability even higher with a dust and water protection rating of IP66.

### QUICK SPECS

	SET500	SET600
Angle Measurement Accuracy (DIN 18723)	5" (1.5mgon)	6" (1.9mgon)
Display Resolution (selectable)	1"/0.2mgon 5"/1mgon	1"/0.2mgon 5"/1mgon
Distance Measuring Range (Slope distance, good conditions: no haze, visibility 25 miles (40km), overcast, no heat shimmer)		
Single AP01 Prism	6,500 ft. (2,000m)	5,280 ft. (1,600m)
Distance Measuring Time (initial)		
Fine	1.6s (2.8s)	1.6s (2.8s)
Rapid	0.8s (2.3s)	0.8s (2.3s)
Tracking	0.3s (1.8s)	0.3s (1.8s)
Distance Accuracy With glass prism	$\pm(3+2\text{ppm} \times D)\text{m}$	$\pm(3+2\text{ppm} \times D)\text{m}$
Memory		
Standard Internal Memory	4,000 point	2,000 point
Optional Memory Configurations (Commercially available)		
Card Type	Compact flash (PCMCIA Type II compatibility with adapter)	
Maximum Memory	64MB (512,000 points)	
Telescope		
Magnification	30x	26x
Resolving Power	3"	3.5"
Minimum Focus	4.3 ft. (1.3m)	4.3 ft. (1.3m)

# Electronic Total Stations

## ORDERING INFORMATION

6440-05 SET500  
Electronic Total Station, complete with dual keyboards, 2 BDC46 batteries, CDC62 charger, carrying case, WA1 tribrach, CP7 compass, tool kit, rain cover and operation manual.

6440-06 SET600  
Electronic Total Station, complete with keyboard, BDC46 battery, CDC62 charger, carrying case, WA2 tribrach, CP7 compass, tool kit, rain cover and operation manual.

### Accessories

7380-46 BDC46 Lithium Ion battery  
7380-82 CDC62 Charger for BDC46  
6350-32 Cable from SET to 25-pin serial port  
6350-33 Cable from SET to 9-pin serial port  
7311-23 DE25 Zenith eyepiece 30x  
7329-51 OF3A Solar filter  
7329-32 EL6 eyepiece 30x for SET600

For batteries and other accessories, see pages 84-88.

For prisms and reflective targets, see pages 35-42.

For tripods, see page 44.

For communication software, see pages 16-17.



SET600



## TECH TIPS

- Notice that as you tilt the telescope up and down, the horizontal angle changes. Because it is close to impossible to level your total station perfectly, the SET500 or SET600 uses its dual axis compensator to compensate for the horizontal tilt. As you tilt the telescope up or down, your horizontal angle changes unless you have leveled your instrument perfectly.
- It is good practice to point the telescope down when any total station is not in use. If you have your telescope pointed in the general direction of the sun, internal components can be damaged.
- It is good practice to use your collimation routine daily.
- When taking a long shot with your SET500 or SET600, use the on-board tracking device, also called "target acquisition". This will enable you to find a target in which you have a straight line of sight but is so far away that you can't see it. You will also be able to use a single prism where you would otherwise have to use multiple prisms. The audio function can be turned on or off.
- When setting your total station over a point using the optical plummet, turn the instrument 180 degrees to insure that you are still over the point, if not, your plummet needs calibration. You can temporarily fix the problem in the field by dividing the difference that your plummet is off so that as you turn the total station around, the dot circles the point on the ground.
- Insure accuracy by downloading collected data at a relatively slow baud rate of 4,800 bps and *never* store data in your total station or data collector that you do not have backed up on a personal computer.
- Water and dust resistant - with advanced protection against water and dust infiltration, the SET500/600 operates dependably in sudden showers or drizzling rain, or in humid or dusty construction environments (IP66)

*IP66  
protection rates  
the SET500/SET600  
water and  
dust resistant*

# Total Stations

## SET300

New

### SET300 Gets the Job done Fast

With the new Sokkia SET300 distance measurements through the miniaturized EDM take less than three seconds and can measure more than a mile to a single prism. The SET300 can also measure to reflective sheet targets when it is not convenient to use a prism. Complete your job quickly and easily with software enhancements that include functions such as job management, feature code listing, offset observation, area calculation and a bull's-eye leveling indicator. The SET300 comes standard with 4,000 point internal memory.



### ORDERING INFORMATION

6440-03 SET300  
Electronic Total Station, complete with dual keyboards, 2 BDC46 batteries, CDC62 charger, carrying case, WA1 tribrach, CP7 compass, tool kit, rain cover and operation manual.

#### Accessories

7380-46	BDC46 lithium ion battery
7380-82	CDC62 Charger for BDC46
6350-32	Cable from SET to 25-pin serial port
6350-33	Cable from SET to 9-pin serial port
7311-23	DE25 Zenith eyepiece 30x
7329-51	OF3A Solar filter

For batteries and other accessories, see pages 84-88.

For prisms and reflective targets see pages 35-42.

For tripods, see page 44.

For communication software, see pages 16-17.

You will find an improvement in efficiency and a shorter learning curve with the enhanced 12-button keyboard included on the SET300. First, the user can simplify the operating procedures for their application by assigning frequently used functions to the softkeys. Second, the arrow-key rocker panel allows the user to quickly move around the display and make selections. Last, the SET300 includes several designated keys for the most common functions. The SET300 offers improved visibility on the new high-density graphic display on both sides of the instrument.

Complete your work in extreme conditions without the worry of damaging the instrument from water and dust. The Sokkia SET300 instruments have set the standards of quality and durability even higher with a dust and water protection rating of IP66.

## Electronic Total Station

### QUICK SPECS

Angle Measurement	
Accuracy (DIN 18723)	3" (1.0mgon)
Display Resolution (selectable)	1"/0.2mgon 5"/1mgon
Distance Measuring Range <i>(Slope distance, good conditions: no haze, visibility 25 miles (40km), overcast, no heat shimmer)</i>	
Single AP01 Prism	6,500 ft. (2,000m)
Distance Measuring Time (initial)	
Fine	1.6s (2.8s)
Rapid	0.8s (2.3s)
Distance Accuracy	
With glass prism	±(3+2ppmxD)mm
Memory	
Standard Internal Memory	4,000 point
Optional Memory	Compact flash 64MB (512,000 points)
Telescope	
Magnification	30x
Resolving Power	3"
Minimum Focus	3.3 ft. (1.0m)

*Durable—  
dust and water  
rating of IP66*

# GP1-2A

## Gyro Station

### *Determines True North and True Azimuth*

The GP1-2A Gyro Station can locate true north at any time, day or night, regardless of visibility or weather conditions, even when working underground, without the need of a known station. The GP1-2A lets you determine true north with 20" accuracy in approximately twenty minutes.

A GP1-2A Gyroscope is combined with a SET3110 electronic total station, making the system fully automatic. An internal clock, CPU with memory and special on-board software eliminate the need for manual calculations. And because all gyro functions are controlled by the external keyboard, the SET3110 remains fully functional. It's like getting two instruments in one!

The GP1-2A offers two methods for seeking true north. Use the follow-up method for precision and accuracy or the line method for a provisional determination.

#### APPLICATIONS

- Obtain azimuth reading within tunnels, underground spaces and other enclosed environments where conventional methods can't be used.
- Determine direction for roads, powerlines and similar long, narrow construction projects.
- Check navigational devices.
- Measure anomalies in geomagnetic surveys.
- Orient radio communication antennae.



#### ORDERING INFORMATION

7305-03 GP1-2A  
Gyro station (with SET3110 Electronic Total Station), inverter, BDC7 battery, CDC 7 charger, 2 BDC35 NiMH batteries, CDC39 charger, SF10 external keypad, SC141 carrying case, WA1 tribrach, CP7 compass, tool kit, rain cover and operational manual.

#### Accessories

7305-52 EDC20 AC/DC Converter (92-132V AC) for GP1 module)  
7311-45 DE17A Zenith Eyepiece  
7329-51 OF3A Solar Filter

For batteries and other accessories, see pages 84-88.

For prisms and reflective targets see pages 35-42.

For tripods, see page 44.

For communication software, see pages 16-17.

#### QUICK SPECS

Standard deviation of measurements	± 20" (6mgon/0.10mil)
Running up time	60 sec.
Half period (at middle latitudes)	3 minutes
Minimal interval between divisions	10' / div.
Operating Temperature	-4° F to 122°F (-20°C to 50°C)
Weight	
Gyro	8.4 lb. (3.8 kg.)
Total Station	13.2 lb. (6.0kg)

## SDR33 and SDR31

### Rugged Reliability

An industry standard, the SDR Electronic Field Book® has gained recognition around the world for its rugged reliability. A new version of SDR33 software has created an even more efficient and comprehensive solution to collecting, storing, computing and transferring survey data.

### Loaded with program memory and functionality

With additional program memory and more functionality than ever, the SDR33 and SDR31 can be configured to work with electronic total stations (ETS), lasers, digital levels and GPS receivers.

SDR software features include:

- Load the coordinate system of your choice. All are applicable to both total station and GPS data.
- SDR uses common data format for both ETS and RTK. COGO functions-inverse, area, and intersections work with both total station and GPS systems.
- GPS measurement data storage is compatible with existing SDR measurement records. GPS and total station data can exist in a single file. Any software that can read SDR files can also read files with both total station and GPS/RTK data.
- Transfer data directly from SDR to your computer or printer.

The SDR33 which can be sold as a stand-alone data collection package, is now an integral part of the Radian GPS system.

The SDR33 is packaged in two configurations:

- SDR33 (ETS functionality)
- SDR33 RTK (ETS/RTK functionality)

See the Sokkia GPS Product Catalog for more information about SDR33 RTK.



SDR33



SDR31

### QUICK SPECS

#### Hardware Specifications

NVM	1MB
RAM	
SDR33	1MB (expandable) 640K up to 4MB
SDR31	1MB only
Length	
SDR33	7.8in. (19.8cm)
SDR31	7.4in. (18.8cm)
Width	
SDR33	3.5in. (8.9cm)
SDR31	3.1in. (7.9cm)(head) 2.5in. (6.3cm)(neck)
Height	
SDR33	1.625in. (4.5cm)
SDR31	1.75in. (4.4cm)
Weight	
SDR33	1.62lbs. (0.74kg)
SDR31	15 oz (0.43 kg)
Environment	
SDR33	Wind-driven rain and dust, 5ft. (1.5m) drop to concrete, MilSpec 810D and IP54. Non-condensing humidity
SDR31	Non-condensing humidity
Operating Temp	
SDR33	-4°F to 122°F (-20°C to 50°C)
SDR31	+32°F to 104°F (0°C to +40°C)
Humidity	Operates at 95% Non-condensing
Power Source	
SDR33	2 standard 9V batteries
SDR31	1 standard 9V battery
Length of Operation	
SDR33	50hrs continuous
SDR31	20hrs. continuous
Battery backup	
SDR33	Lithium 400hrs
SDR31	Super Capacitor 5min.

# Electronic Field Books

## ORDERING INFORMATION

5800-05 SDR33 (640K)  
with ETS functionality\*  
1MB NVM - 640K SDR33 fitted with top  
port instrument cable, Hirose to DB9  
Cable, Tripod Hook, Device Softcase,  
Batteries, SDR/ProLINK/ Planning  
Software CD-ROM, and SDR ProLINK/  
Planning Documentation.

5800-06 SDR33 (1MB)  
with ETS functionality\*  
See above, with a 1MB NVM -1MB RAM  
SDR33.

5800-07 SDR33 (2MB)  
with ETS functionality\*  
See above, with a 1MB NVM - 2MB RAM  
SDR33.

5800-08 SDR33 (4MB)  
with ETS functionality\*  
See above, with a 1MB NVM - 4MB RAM  
SDR33.

See the Sokkia GPS Product Catalog for  
more information about the SDR33 RTK  
controller, or, ask your Sokkia represen-  
tative.

5830-06 SDR31 (1MB)  
with ETS functionality\*  
Includes 9V battery, instrument cable,  
DE9 PC cable, Cordura case, reference  
manual and current software options.

\*These kits do not include the SK Option  
Kit.

### Accessories

5810-01	SDR33 Instrument cable for Sokkia products
5831-10	SDR31 Instrument cable for Sokkia products
5802-75	780 mAH NICD Battery for SDR33
5831-20	350 mAH NICD Battery for SDR31
5803-12	Charger/Adapter for SDR33 115 VAC
5831-21	Charger/Adapter for SDR31 115 VAC
5802-13	Lithium pack batteries for SDR33 1pr.
5300-04	Hirose to DB9 (download cable)
5300-10	SDR Tripod bracket, fits most flat head 5/8" x 11" tripods



## TECH TIPS

- Use the SDR to operate electronic total stations for control points and topo when in the clear. The ground measurements will match your GPS measurements.
- Calibrate to a minimum of three horizontal and four vertical points. Check overall results and individual point residuals to make sure that the control agrees.
- Inverse calculation between points yields ground distances when using a projection.
- Latitude and longitude can be utilized by keyboard input to set out plane coordinates in any situation.
- ETS observations can exist in the same job with RTK observations.
- Keyboard input of the calibration on a project will allow multiple modes to operate on the same project without the need for each to calibrate.
- The SDR33 will support other manufacturers' electronic total stations and GPS receivers.

Ask your Sokkia representative for more information about instruments currently supported.

## APPLICATIONS

- With the SDR you can record data that is collected for DTM and mapping topography, cross section measurements, road topography and traverse routines.
- COGO routines allow the user to calculate and set out points, lines and curves as well as complete road design elements with horizontal and vertical definitions and complex templates with side slope definition.

## Your Link between Field and Office

ProLINK software is your link between the field and office; facilitating the exchange of data between data collectors and various software packages. ProLINK provides the necessary tools to import, convert, reduce and export a variety of raw data formats.

ProLINK's functionality as an intelligent raw data editor for GPS/RTK and Total Station survey data is enhanced by its capability to transform into a wide range of file formats. ProLINK software requires a properly activated hardware security device for full functionality. ProLINK edits, reduces and manages survey project data. ProLINK can be customized to define a variety of file formats for importing and exporting by using ProLINK's powerful Conversion Definition Manager.

Survey Data Management—ProLINK contends with data from Total Station surveys, GPS/RTK surveys or both. The data can be manually input, imported from a wide variety of file formats (SDR, MOSS, SDMS, ASCII) or

received directly from an Electronic Total Station or from a data collector such as the SDR Electronic Field Book.

Data Editing—ProLINK incorporates intelligent data editing, which maintains the integrity of your data. You can insert, modify or delete records and the software will automatically update the reduced data view.

Reduction—ProLINK will reduce your raw data to coordinates. Reduction parameters are applied to individual field books. The results display in list format and can be easily exported.

Transformation—As a part of the reduction process, a coordinate transformation can be applied to field books independently. The transformation parameters can be directly input or calculated based on manually input coordinates or selected project coordinates. The same transformation tool can be used to determine horizontal and vertical calibration values for GPS/RTK projects.

Coordinate Systems—You can simply select a local coordinate system to transform your ETS and RTK data. Choose from several pre-defined local coordinate systems or define your own. These coordinate systems can even be sent to your SDR data collector and selected directly in the field.

Data Output and Communications—The importing and exporting of data is greatly enhanced with the capability to communicate with a variety of external devices. You can receive and store data files to local drives and choose whether to import the data directly into your current project. Additionally, you can export raw data or results. The output can meet a variety of specifications by employing conversion files during export. ProLINK not only offers several import (SDR, MOSS, SDMS, ASCII) and export (SDR, DXF, MOSS, ICS, SDMS, ASCII) conversion formats, it allows you to define your own.

Conversion Definition Manager—ProLINK's Conversion Definition Manager is a comprehensive tool for creating conversion files which can be used to import data to or from ProLINK. You can map records and fields from the external format to ProLINK records and fields, as well as from ProLINK's format to an external format.

### QUICK SPECS

Software Requirements	<i>Minimum</i>	<i>Recommended</i>
Computer	Intel Pentium® Class Processor	Intel Pentium® Class Processor
Memory	16 MB of RAM	32 MB of RAM
Operating System	Microsoft Windows 95 or higher; Windows NT Service Pack 4	Microsoft Windows 95 or higher; Windows NT 4.0 Service Pack 4
Hard Disk	One hard drive with 64MB available	One hard drive with 124 MB available
Display	A VGA monitor and VGA adapter card	A VGA monitor and VGA adapter card
Ports	One serial port, one parallel port	One serial port, one parallel port
Security Device	One Sokkia security device with appropriate activation code	One Sokkia security device with appropriate activation code.

# Communication and Reduction Software

## ORDERING INFORMATION

5142-00 ProLINK Complete  
Includes ProLINK CD (ProLINK / Planning)  
hardware security device, ProLINK  
reference manual, ProLINK COMMS quick  
reference, ProLINK conversions, Planning  
reference manual.

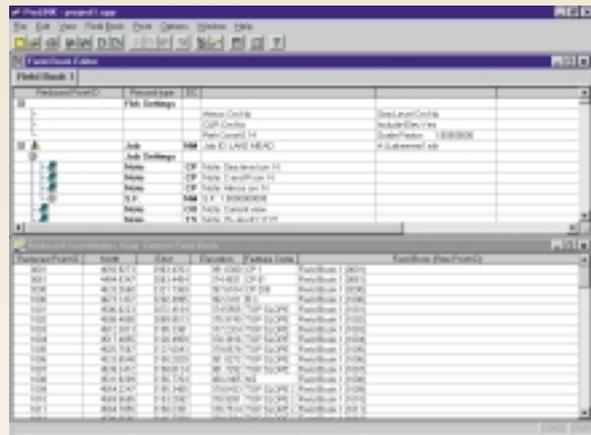
Accessories:

- 750-1-0006 ProLINK Reference Manual
- 750-1-0041 ProLINK Reference Manual Addendum
- 750-1-0028 Planning Reference Manual
- 750-0-0040 ProLINK COMMS Quick Reference
- 750-0-0008 ProLINK Conversions
- 5142-15 ProLINK / ProLINK COMMS / Planning CD
- 5142-71 ProLINK / ProLINK COMMS diskettes

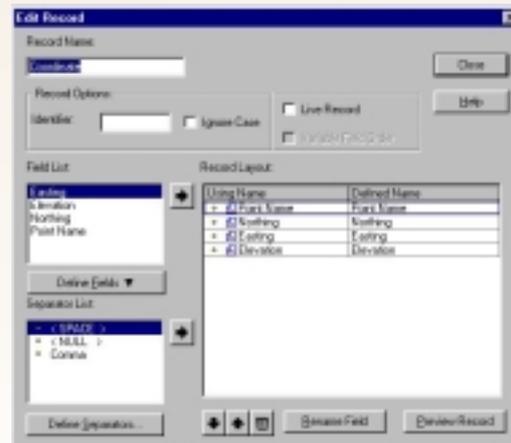


## FEATURES

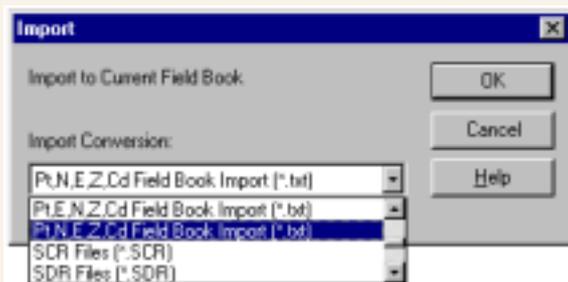
Field Book and Reduced Coordinate View



Conversion Definition Manager



## Sample Import / Export Formats:



Pt,N,E,Z,Cd Field Book (\*.txt) File format  
PT# Northing Easting Elev. Code  
0099,10019.4547,4926.0757,125.3540,SOKKIA BLD3  
1004,9900.2452,4892.9922,,  
1006,9955.8361,5035.1239,<Null>,KCPL  
1007,9858.8223,5130.4117,<Null>.,PK

# Theodolites

## DT500, DT500A and DT600

### The Most Versatile Electronic Theodolites

Sokkia's DT500, DT500A and DT600 are the most versatile electronic theodolites you can buy. With an IP66 dust and water resistance rating the DT500, DT500A and DT600 operate dependably even where conventional theodolites do not, such as in sudden showers, continuous drizzling rain, high humidity or dry, dusty construction sites.

*Operates dependably even when other theodolites do not*

The vertical and horizontal angles are electronically read and displayed on a large, easy to read, two-line LCD display. The automatic vertical circle indexing means you can achieve a level of accuracy not possible with other instruments in this price range. Two regular C-cell batteries are all that is needed to run the DTs, doubling the operating time.

All job functions are operated using only four keys: Illumination on/off key, "0" set key, Angle measurement mode selection key and Hold/Release key.

*IP66 protection rates the SET500 and SET600 water and dust resistant*

Additional features include:

- Optical plummet which eliminates the need for a plumb bob to set up over a point.
- Percentage of slope or vertical angle display with the touch of a button.
- Angle readings monitored by a self-checking microprocessor and displayed in less than .5 second.



DT500  
7300-05

- Ability to read horizontal angles clockwise or counterclockwise; then lock with the hold/release key to hold angles.

The DT500 features displays on both sides of the instrument. The DT500A and DT600 have one display. All three instruments have selectable 5" or 10" readouts. Both the DT500 and DT500A have RS232 output. The DT500 has a dual axis liquid tilt sensor.

*Versatility and dependability let you finish your job quickly and accurately*

#### QUICK SPECS

	DT500	DT500A	DT600
Angle Measurement Accuracy	5"	5"	7"
Display Resolution	5"/10"	5"/10"	5"/10"
Level Sensitivity			
Plate Level	40" / 2mm	40" / 2mm	60" / 2mm
Circular Level	10' / 2mm	10' / 2mm	10' / 2mm
Telescope Magnification	30x	30x	26x
Resolving Power	3"	3"	3.5"
Minimum Focus	3 ft. (0.9m)	3 ft. (0.9m)	3 ft. (0.9m)

# Electronic Theodolites

## ORDERING INFORMATION

7300-05 DT500 - dual display  
Electronic Theodolite, complete with SC181 carrying case, two "C" batteries, tribrach, sunshade, plumb bob, tool kit and operation manual.

7300-10 DT500A - single display  
Electronic Theodolite, complete with same equipment as above.

7300-12 DT600 - single display  
Electronic Theodolite, complete with same equipment as above, except supplied on fixed base.

### Accessories

7311-23 DE25 Zenith eyepiece  
7329-32 EL6 30x eyepiece for DT600

For batteries and other accessories, see pages 84-88.

For prisms and reflective targets, see pages 35-42.

For tripods, see page 44.

For communication software, see pages 16-17.



DT500A  
7300-10



## APPLICATIONS

- Civil engineering projects.
- Construction staking.
- Topographic surveys.
- Geophysical and exploration.
- Building site and as built surveys.



DT600  
7300-12

*Runs on Conventional  
C-cell batteries!*

# Theodolites

## DT4F

## Electronic Theodolite

### *Dual Axis Compensator for Improved Accuracy*

Sokkia's DT4F Electronic Digital Theodolite has advanced mechanical features for greater speed, accuracy and convenience. A dual-axis compensator improves accuracy in angle measurement, and a simplified keyboard with multiple-function keys provides access to an extensive range of measurement and calculation functions. Wing clamp and fine motion assemblies for horizontal and vertical motions are helpful for optimum control.

Softkey operation system—The four "softkey" function keys simplify operation while reducing menu clutter and error. Just assign any of the numerous functions provided to whichever key you like. You can change functions at any time, or even set up two separate function menus for different jobs.

The large dot-matrix LCD on each face displays four lines of 20 characters. The antiglare glass display allows you easy reading.

*Improved  
accuracy in angle  
reading thanks to  
the dual-axis  
compensator*

The dual-axis tilt sensor detects deviation of the standing axis from perpendicular in both X and Y directions. Correction values for horizontal and vertical circle readings are automatically computed and applied. If you don't need the correction values for both angles, the sensor can be turned off, or configured for the vertical angle only. The DT4F's inclination can be

checked on the screen, so you don't have to rotate the instrument during leveling.

*Automatic  
zero-indexing—  
horizontal and  
vertical circles*

Simply rotate the alidade to index the horizontal circle and transit the telescope module to index the vertical circle, and then implement your desired measurement function.

The horizontal index value is stored in a short-term (one week) memory, allowing easy recovery in the event of accidental power loss.

Interface port and external power plug—The interface port permits connection of an SDR Electronic Field Book for automatic data collection. A Sokkia external power supply system can be used via the external power plug. The port and the plug are in the base, allowing the alidade to rotate freely without cable interference.



### QUICK SPECS

#### Telescope

Magnification	30x
Resolving Power	3"
Minimum Focus	3 ft. (0.9m)

#### Angle Measurement

Display Resolution	5" / 1mgon
Accuracy	5"

#### Level Sensitivity

Plate Level	30" / 2mm
Circular Level	10' / 2mm

### ORDERING INFORMATION

7310-14 DT4F Electronic Theodolite complete with dual keyboards, BDC25A Battery, CDC11 Charger, EDC19 Adaptor, CP7 Tubular Compass, sunshade, plumb bob, tool kit, and operation manual.

#### Accessories

6460-02	BDC25 NiCd Battery
6460-03	EDC19 Charging Adaptor
6460-04	CDC27 Quick Charger
6350-32	Cable from DT4F to 25-pin serial port
6350-33	Cable from DT4F to 9-pin serial port

For batteries and other accessories, see pages 84-88.

For tripods, see page 44.

# DT2E

## Electronic Theodolite

### Advanced Features for Greater Speed and Accuracy

Sokkia's DT2E Electronic Digital Theodolite has advanced mechanical features for greater speed, accuracy, and convenience. Mechanical features include a dual-axis compensator for improved accuracy in angle measurement, and a simplified keyboard with multiple-function keys which provide access to an extensive range of measurement and calculation functions.

**User-Definable Softkey Operation—**The four "Soft-Function-Keys" simplify operation and enhance work efficiency and the user-definable feature allows you to allocate any function to any key of any page. For example, the functions most frequently used can be allocated to the first display page and functions seldom used can be temporarily deleted. The large dot-matrix LCD displays four lines of 20 characters to provide full information. The control panels are conveniently located on both faces for ease of use.

**Ultimate Accuracy Ensured by the Dual-Axis Compensator—**Horizontal angle measurement errors caused by instrument tilt cannot be corrected by observational methods. The only way to avoid these errors is to level the instrument perfectly, or to employ an electronic dual-axis compensator. The dual-axis tilt sensor detects deviation of the standing axis in both X and Y directions. Correction values for both horizontal and vertical circle readings are computed and applied automatically. No other current method can achieve greater angle measurement performance.

**Convenient Angle Measurement Modes—**Selectable angle units are

"degree", "gon" and "mil". Horizontal angle measurements can be taken in "clockwise" or "counterclockwise" directions. In the "repetition" mode, the averaged horizontal angle of multiple observations is automatically calculated for maximum accuracy. The 0 setting and horizontal angle hold can be performed with a double key touch. Vertical angles can be selected from "Zenith 0", "Horizontal 0" and "Horizontal 0 +/-". The slope can be displayed as a percentage by a single key operation.

**Total Station Capability with Add-on EDM's—**The DT2E is capable of total station performance when combined with Sokkia's add-on EDM's which can be operated via the softkeys of the theodolite. Slope horizontal and vertical distances are calculated and indicated on the theodolite's displays.

**Onboard Software for Total Station Functionality Missing Line Measurement (MLM)—**A DT2E, in combination with EDM, enables the measurement of horizontal distances, slope distances, height differences, and slopes in percent (%) between two prisms.

**Remote Elevation Measurement (REM)—**The height of a point inaccessible for prism placement can be easily determined by simply sighting a prism placed above or below the point and then sighting the point itself.

**Interface Port and External Power Plug—**The interface port permits connection to the SDR33/31 Electronic Field Books for automatic data collection. Sokkia's variety of external

#### QUICK SPECS

##### Telescope

Magnification	30x
Resolving Power	3"
Minimum Focus	3 ft. (0.9m)

##### Angle Measurement

Display Resolution	5" / 1mgon
Accuracy	2"

##### Level Sensitivity

Plate Level	30" / 2mm
Circular Level	10' / 2mm

#### ORDERING INFORMATION

7310-02 DT2E Electronic Theodolite complete with dual keyboards, BDC25A Battery, CDC11 Charger, EDC19 Adaptor, CP7 Tubular Compass, sunshade, plumb bob, tool kit, and operation manual.

##### Accessories

6460-02	BDC25 NiCd Battery
6460-03	EDC19 Charging Adaptor
6460-04	CDC27 Quick Charger
6350-32	Cable from DT2E to 25-pin serial port
6350-33	Cable from DT2E to 9-pin serial port

For batteries and other accessories, see pages 84-88.

For tripods, see page 44.

power supply systems can be used via the external power plug. The port and plug are incorporated in the base, allowing the alidade to rotate freely without cable interference.

# Theodolites

## LDT50

## Electronic Digital Laser Theodolite

### ORDERING INFORMATION

## Two-Mode Laser Versatility in One Instrument

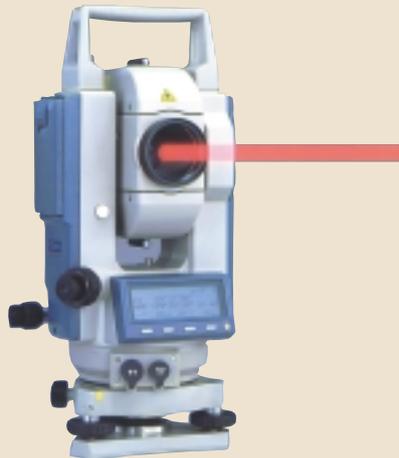
The compact LDT50 Electronic Laser Digital Theodolite combines a 5 second electronic digital theodolite with a laser module for easy set-up in restricted space.

The visible laser beam makes targeting fast and accurate, making the LDT50 ideal for applications requiring precise setting out and efficient positioning. And the water-resistant body means you can use this instrument under even the most challenging conditions.

Coaxial telescope and laser optics provide a single line of sight for easiest observation and measurement. It's like two instruments in one! The LDT50 enables you to perform both parallel beam and focused beam applications. The parallel beam is used for directional control during excavation. Parallel beam can be emitted without the need of accessories. The focused beam is intended for precise aligning and positioning.

The illuminated, two-line LCD display indicates vertical and horizontal angles to 5". The innovative, patent-pending optical system delivers especially clear, bright resolution.

Use LDT50 to determine tunneling direction and gradient, pipe laying direction and gradient, or to check vertical alignments.



#### 7304-06 LDT50

Electronic Laser Digital Theodolite, complete with two BDC25A batteries, CDC27 quick charger, EDC19 battery charging adapter, CP7 compass, plumb bob, lens cap, lens hood, tool kit, vinyl cover, silicon cloth, laser caution sign, operator's manual and SC178 carrying case.

#### Accessories

- 7311-45 DE17A Diagonal eyepiece
- 7311-48 DE24 Diagonal eyepiece (waterproof)
- 7311-02 LCA2 Laser crosshair adapter
- 6460-02 BDC25A Battery
- 6460-04 CDC27 Quick charger (AC)
- 6855-20 CDC32 Car cigarette lighter charger (DC)

For batteries and other accessories, see pages 84-88.

For tripods, see page 44.

### QUICK SPECS

Angle Measurement Accuracy (DIN18723)	5"
Display Resolution	1" / 5" (0.2 mgon / 1 mgon), selectable
Laser Range	Over 656 ft. (200m)
Output power 1mW	Over 1,312 ft. (400m)
Output power 2.5mW	
Light source / wavelength	Laser diode / 635 nm
Laser beam focusing	Coincides with telescope focusing. Parallel beam when the focusing ring is adjusted to the mark.
Telescope Image	Erect
Magnification	30x
Resolving Power	3"
Minimum Focus	4.3 ft. (1.3m)

# TM1A and TM6

## Dependable and Reliable

Sokkia Digital / Micrometer Theodolites share these convenient features:

- The automatic vertical circle indexing ensures speed and accuracy on the job.
- Circle readings are projected from opposite sides of the circle to eliminate eccentricity errors.
- A circle positioning ring allows fast pre-setting of any horizontal circle reading (TM6).
- Separate horizontal and vertical windows make readings easy and accurate to reduce confusion.
- A self-checking optical plummet in the alidade makes set-up fast and easy.
- Dual collimator finders make aiming faster than ever.

### TM1A

The Sokkia TM1A is so well-made and rugged, you can use it every day on

your toughest jobs. It's our finest optical theodolite—capable of second-order precision work.

The TM1A reads direct to 1" on both horizontal and vertical circles. Its ultra-fine graduations on glass are carried optically to the reading microscope adjacent to the telescope eyepiece for utmost definition and precision in reading. Plus, horizontal and vertical readings are in different colors to avoid confusion.

### TM6

If you don't need one-second accuracy, but still prefer a micrometer/digital readout, choose the Sokkia TM6 Digital Theodolite. It gives you bright, clear optics, and offers the most important precision and convenient features you want, just like the TM1A. In fact, the TM6 offers all the features of the TM1A, but with different accuracies.



7316-06

## Digital / Micrometer Theodolites

### ORDERING INFORMATION

#### 7312-00 TM1A

One second theodolite, complete with main unit with WA tribrach, LA1 illumination unit, sunshade, lens cap, plumb bob, vinyl cover, tool kit, operator's manual and carrying case.

#### 7316-06 TM6

Six-second digital theodolite, complete with main unit with WA tribrach, LA1 illumination unit, tubular compass, sunshade, lens cap, plumb bob, vinyl cover, tool kit, operator's manual and carrying case.

For accessories, see pages 84-88.  
For tripods, see page 44.



7312-00

### QUICK SPECS

	TM1A	TM6
Telescope		
Horizontal/Vertical Circle Graduation	20'	1°
Micrometer Reading	1"	6"
Estimation	0.1"	3"
Stadia Ratio	1:100	1:100
Magnification	30x	30x
Resolving Power	2.5"	3"
Minimum Focus	4.3 ft. (1.3m)	4.3 ft. (1.3m)
Level Vial Sensitivity		
Plate	20" / 2mm	30" / 2mm
Circular	10" / 2mm	10" / 2mm

## 115/116

## Transits

### *Dependable and Reliable*

Model 115/116 One Minute Transits

“Dependable” and “reliable” are the two descriptions we hear most often about the Model 115 and 116 Transits. These instruments hold adjustment, even under the most challenging conditions.

- Direct angle reading to 1'
- 23x telescope rotates a full 360°
- Upper and lower motions allow pre-setting of any horizontal circle position



7327-60

#### ORDERING INFORMATION

7327-60 Model 115  
One Minute Transit (4-screw leveling base), complete with high-visibility SE16 carrying case with carrying strap, sunshade, lens cap, plumb bob, magnifier, adjusting pins, screwdriver, rain cover and operation manual.

7328-60 Model 116  
One Minute Transit (3-screw leveling base) (not shown), complete with SE17 carrying case and same equipment as Model 115.

For accessories, see pages 84-88.  
For tripods, see page 44.

#### APPLICATIONS

- Horizontal and vertical angle setting out and measuring.
- Sewer alignment.
- Rural surveys.

#### QUICK SPECS

	115	116
Horizontal Circle		
Vernier Reading	1'	1'
Graduation	30'	30'
Vertical Circle		
Vernier Reading	1'	1'
Graduation	30'	30'
Telescope		
Magnification	23x	23x
Resolving Power	4"	4"
Minimum Focus	7.6 ft. (2.3m)	7.6 ft. (2.3m)
Stadia Ratio	1:100	1:100
Level Vial Sensitivity		
Telescope	60" / 2mm	60" / 2mm
Plate	137" / 2mm	137" / 2mm

# 300/301

## Transit Levels

### Model 300/301 Transit Levels

Both of these versatile Sokkia performers act like two instruments in one. First, the Model 300 and 301 function as very competent transits for double centering, extending lines and checking angles. Next, you can convert your transit level into an accurate level with the simple, positive magnetic mechanism that locks the telescope into the horizontal position.

These instruments are perfect for line and grade work and light construction tasks. They're built for years of hard field work.

- 23x telescope transits a full 360°
- Extra-strong, specially hardened alloy standards assure a long working life
- Accurate horizontal circle reads to 5'



7368-00  
Accuracy 3/16"  
at 150 ft.

### ORDERING INFORMATION

7368-00 Model 300  
Transit Level (4-screw leveling base)  
complete with SE38 carrying case and same  
equipment as Model 115.

7369-00 Model 301  
Transit Level (3-screw leveling base)  
complete with same equipment as Model  
300.

For accessories, see pages 84-88.  
For tripods, see page 44.

### APPLICATIONS

- Light construction surveying work.
- Layout straight lines.
- Highway and road construction.
- Utility work.
- Landscape applications.



7369-00  
Accuracy 3/16"  
at 150 ft.

### QUICK SPECS

	300	301
Horizontal Circle		
Vernier Reading	5'	5'
Graduation	30'	30'
Vertical Circle		
Vernier Reading	5'	5'
Graduation	30'	30'
Telescope		
Magnification	23x	23x
Resolving Power	4"	4"
Minimum Focus	7.6 ft. (2.3m)	7.6 ft. (2.3m)
Stadia Ratio	1:100	1:100
Level Vial Sensitivity		
Telescope	90" / 2mm	90" / 2mm
Plate	137" / 2mm	137" / 2mm

# Levels

**New this fall!**

## C3 Series

### Fast, Accurate and Easy to Use



C300

Sokkia's C300, C310, C320 and C330 are designed for both indoor and outdoor use. You'll find the following features of particular value:

- Achieve an accuracy of  $\pm 0.008$  feet in one mile of double-run leveling.
- Crisp, bright optics are easy to read.
- Using a domed-head tripod, setting up the level is fast and easy—even on angled, uneven surfaces. Simply set the level onto the tripod head and center the circular bubble. It also fits flat-head tripods.
- Four suspension wires and magnetic damping action ensure stability, even under rapidly changing atmospheric conditions, vibration and shock. Extended compensator range of  $\pm 15$  minutes
- Incorporates an endless horizontal motion drive with two knobs for fast and easy aiming. Operable with the right or left hand. Simply turn the instrument, then use the fine motion feature to precisely aim the level at the target.
- Telescope optics are bright and clear. The 1 foot (.3m) minimum focus distance makes it easy to use in confined locations.
- The stadia lines on the reticle allow easy calculations of distance. Simply multiply the distance on the rod between the top and bottom stadia lines by 100.
- C3 series levels are equipped with an easy-to-use horizontal circle for measuring angles (direct reading to  $1^\circ$  or 1 gon). The display window is conveniently located on the instrument base directly below the eyepiece.
- Reticle adjustment can be made by simply adjusting one screw. The circular level vial is adjusted with two screws. Both adjustments are simple and fast with tools provided.
- The C3 series levels are rated IPX4 making them fully resistant to rain and accidental submergence in water.



C320

### QUICK SPECS

	C300	C310	C320	C330
Telescope Image	Erect	Erect	Erect	Erect
Magnification	28x	26x	24x	22x
Field of View	$1^\circ 25'$ (2.5m) (2.5ft. @100 ft.)			
Minimum Focus	1 ft. (0.3m)	1 ft. (0.3m)	1 ft. (0.3m)	1 ft. (0.3m)
Stadia Ratio	1:100	1:100	1:100	1:100
Leveling Accuracy (all models)—in 1.0 km (1 mile) of double-run leveling				
Standard Deviation	$\pm 0.008$ ft. / 2.0mm			
Compensator Setting Accuracy	0.5"	0.5"	0.5"	0.5"
Range	$\pm 15'$	$\pm 15'$	$\pm 15'$	$\pm 15'$
Level Vial (all models)—circular				
Sensitivity	10' / 2mm	10' / 2mm	10' / 2mm	10' / 2mm

# C300/C310/C320/C330 Automatic Levels

## ORDERING INFORMATION

7384-70 C300

Automatic Level, complete with high-visibility fitted SE35 carrying case with shoulder strap, plumb bob, tool kit, lens cap, rain cover and operation manual.

7384-75 C310

Automatic Level, with same equipment as above.

7385-70 C320

Automatic Level, with same equipment as above.

7385-75 C330

Automatic Level, with same equipment as above.

Accessories

7311-47 DE22 Diagonal eyepiece.

For other accessories, see pages 84-88.

For levels rods, see pages 45-48.

For tripods, see page 44.



C330

## APPLICATIONS

The C3 series of levels is a versatile group of levels allowing the user to choose the magnification required for an individual project.

Applications include :

- Aligning fences.
- Setting forms for concrete foundations, pads and sidewalks.
- Setting forms for grading and other work that is required during a construction project.



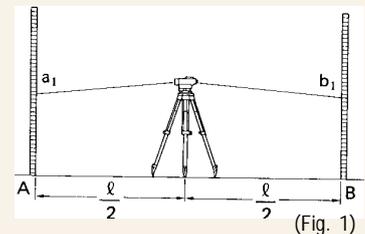
C310

## TECH TIPS

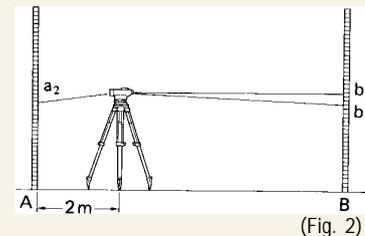
### Peg Level Test

Automatic levels are affordable and easy to use, but they still are precision instruments. One of the most useful tools for the user in the field is to know how to check their level by performing a "Peg Test". This test checks the line of sight and confirms that the level is reading true.

- 1) Set the instrument at a point halfway between points A and B. Take readings  $a_1$  and  $b_1$ . (Fig. 1)



- 2) Set the instrument at a point 2m from point A. Take readings  $a_2$  and  $b_2$ . (Fig. 2)



### Calculate

$$b_2 = a_2 - (a_1 - b_1)$$

If  $b_2 = b_1$ , the horizontal cross-line is normal and no adjustment is necessary.

If the instrument does not read true, consult the manual for instructions on adjusting the instrument, or see your local Sokkia dealer or Sokkia sales representative.

# Levels

## PL1, B1/B1C, B20/B21

## Automatic Levels

### Surveyor's levels



7375-51

#### PL1 tilting level

- Meets first-order specifications for repeatability of line of sight.
- Accuracy is ensured by the tubular vial, sensitive to 10 seconds / 2mm.
- A "coincidence system" makes it easy to center the bubble.
- The optical parallel plate micrometer reads to .001 in. (0.1mm).
- Choose either inch-reading or metric.

#### B1/B1C automatic levels

- Achieve an accuracy of  $\pm .003$  ft. in 1 mile of double-run leveling ( $\pm .002$  ft. with the optional OM1F parallel plate micrometer).
- Two-speed focusing lets you sight faster than other levels.
- A collimator-type peepsight ensures quick, accurate pointing.
- The B1C's horizontal glass circle is read optically through the microscope—direct to 10', and by estimation to 1'. Circle is graduated in degrees to 360°.



7382-60

#### B20/B21 automatic levels

- Achieve an accuracy of  $\pm .004$  ft. in one mile of double-run leveling with the B20; the B21 provides an accuracy of  $\pm .006$  ft. You can even improve on those numbers with an optional micrometer!
- The endless tangent horizontal drive allows fast, precise operation.
- A collimator-type sight lets you quickly and accurately point the instrument.
- Horizontal circles are graduated in degrees to 360°.



7372-55

### ORDERING INFORMATION

- 7375-50 PL1 Precise Level (metric reading), complete with SE14A carrying case, screwdriver, adjusting pins, lens brush, lens cap, dust cover, and operation manual.
- 7375-51 PL1E Precise Level (inch reading), complete with same equipment as above.
- 7372-50 B1 Precision Automatic Level, 1:100 stadia, complete with hermetically sealed SE8 case, adjusting pin, screwdriver, lens cap, rain cover, and operation manual.
- 7372-00 B1 Precision Automatic Level, 0.3:100 stadia, with same equipment as 7372-50.
- 7372-55 B1C Precision Automatic Level, 1:100 stadia with horizontal circle, plumb bob and same equipment as 7372-50.
- 7372-05 B1C Precision Automatic Level, 0.3:100 stadia with horizontal circle, plumb bob and same equipment as 7372-50.
- 7382-60 B20 Automatic Level, complete with high-visibility fitted SE35 carrying case with shoulder strap, plumb bob, tool kit, lens cap, rain cover, and operation manual.
- 7381-60 B21 Automatic Level, with same equipment as 7382-60.

#### Accessories

- 7311-06 LA8 Illumination Unit - B20, B21
- 7311-11 LA4 Illumination Unit - B1, B1C
- 7372-14 OM1F Optical Micrometer - B1, B1C (feet)
- 7372-15 OM1 Optical Micrometer - B1, B1C (metric)
- 7372-20 OM5F Optical Micrometer - B20, B21 (feet)
- 7372-21 OM5 Optical Micrometer - B20, B21 (metric)
- 7311-06 LA8 Illumination Unit - B20, B21
- 7329-46 EL5 40x eyepiece - B20

For other accessories, see pages 84-88.

For level rods, see pages 45-48.

For tripods, see page 44.

### QUICK SPECS

	PL1	B1/B1C	B20	B21
Telescope	PL1	B1/B1C	B20	B21
Image	Erect	Erect	Erect	Erect
Magnification	42x	32x	32x or 40x (opt.)	30x
Resolving Power	2" of arc	3"	n/a	n/a
Field of View	1° 10'	1° 20'	1° 20'	1° 20'
	(2.0 ft. @ 100 ft.)	(2.3 ft. @ 100 ft.)	(2.3 ft. @ 100 ft.)	(2.3 ft. @ 100 ft.)
Minimum Focus	6.6 ft. (2m)	7.5 ft. (2.3m)	1 ft. (0.3m)	1 ft. (0.3m)
Stadia Ratio	1:100	0.3:100 or 1:100	1:100	1:100
Compensator — PL1 (split-image tubular vial); all others (wire-hung; magnetically damped)				
Setting Accuracy	n/a	0.3"	0.3"	0.5"
Range	n/a	$\pm 10'$	$\pm 15'$	$\pm 15'$
Leveling Accuracy (all models)—in 1.0 km (1 mile) of double-run leveling				
Standard Deviation	$\pm 0.2$ mm / .001 ft.	$\pm 0.8$ mm / .003 ft.	$\pm 1.0$ mm / .004 ft.	$\pm 1.5$ mm / .006 ft.
w/ micrometer	.001 in (0.1mm)	$\pm 0.5$ mm / .002 ft.	$\pm 0.8$ mm / .003 ft.	$\pm 1.2$ mm / .005 ft.
Level Vial (all models) — circular				
Sensitivity	3.5' / 2mm	10' / 2mm	10' / 2mm	10' / 2mm

# PL1S and PD3

## Automatic Levels



7375-52

### Precise Measuring

**PL1S Precise Tilting Level**  
Choose the PL1S for applications that require precise measurement of differences in elevation, or when direct measurement is impossible. Accurate to hundredths or even thousandths of an inch, the PL1S has many special applications:

- Use it during industrial construction to set and check the pads that machines, turbines, etc. are placed upon
- Confirm design specifications
- Check alignment of components or tools for aircraft construction, repair and maintenance
- Confirm that paper mill rollers are level and in proper alignment with other rollers
- Precise laboratory measurements
- Collimated base line of sight references
- Precise leveling of equipment
- Measuring flatness of machine ways or beds

The PL1S's combination of a tilting mechanism sensitive to 10' / 2mm, a coincidence-type vial observation system accurate to 0.5" or better, and an integral optical micrometer direct-reading to 0.001 in. guarantee precise leveling and accurate measurements.

And it's easy to adjust the optical to the mechanical axis—just rotate the optical wedge until the line of sight is horizontal. You won't find an easier-to-use, more accurate level anywhere.

**PD3 Perpendicular Detector**  
If you need to achieve absolute vertical alignment in critical situations, the PD3 is for you. With telescopes for upward and downward plummeting, the PD3 is especially important for:

- Plummeting transfer of base point to the upper story of the framework of a building
- Determination of plummeting alignment in underground surveying
- Setting up a signal target from a triangulation point
- Determining and checking perpendicularity in multi-story buildings, iron towers, elevator shafts, chimneys, and ship building

### ORDERING INFORMATION

7375-52 PL1S Precise Level, complete with SE14A carrying case, screwdriver, adjusting pins, lens brush, lens cap, dust cover, and operation manual.

7900-0 PD3 Perpendicular Detector, complete with SE37 carrying case, lens cap, and operation manual.

#### Accessories

7536-75 PFA2 Aluminum Tripod for PD3 (Tripod for use with the PD3 only.)

For other accessories, see pages 84-88.

For level rods, see pages 45-48.

For tripods, see page 44.

Two telescopes are conveniently positioned one above the other for upward and downward plummeting. The vertical axis of the PD3 and the axes of the telescopes correspond in order to eliminate plummeting errors when rotating the instrument during observation.

The precision plate levels (20" / 2mm) ensure perpendicularity of the vertical axis. A pair of plate levels positioned at a right angle let you quickly level the PD3 with any two of the three leveling screws.



7900-00

### QUICK SPECS

Telescope	PL1S	PD3
Image	Erect	Inverted
Magnification	42x	20x
Resolving Power	2" of arc	Upper 3", Lower 3.5"
Field of View	1° 10' (2.0 ft. @ 100 ft.)	1° 10' (2.0 ft. @ 100ft.)
Minimum Focus	1 ft. (0.1m)	Upper 4.3 ft. (1.3m), Lower 3.3 ft. (1m)
Stadia Ratio	1:100	n/a
Parallel Plate Micrometer		
Range	±0.125 in.	n/a
Division	.001 in.	n/a
Level Sensitivity		
Circular Level	3.5' / 2mm	n/a
Plate Level	n/a	20" / 2mm

### *NEW! Now with On-board Memory*

This low cost, user-friendly digital level is ideal for construction. Use it instead of a traditional automatic level when doing site preparation work, road cross-sections, or any leveling task requiring data storage for further processing.

The SDL30M is now loaded with internal memory. Measured data can be recorded either automatically or manually. Data storage capacity is 2000 points with up to 20 storable job files. The level easily displays remaining memory and allows the user to review stored data.

*Easily displays remaining memory and reviews stored data*

Other advantages include:

- $\pm 1.0\text{mm}$  standard deviation for 1km double-run leveling.
- Ability to obtain height and distance with the touch of one key.
- Height range 0 to 4.05m, distance range 1.6m to 100m / 333 ft.
- Minimum display resolution 0.1 mm.
- Magnetically damped compensator system.
- RS-232C output for data storage and processing.

- Water-resistance complies with IPX4 specifications making it suitable for working in harsh conditions.
- Lithium-Ion rechargeable battery.
- Low-cost fiberglass bar code staff.
- Ability to use as conventional automatic level with traditional graduated leveling rod.
- Large carrying handle for easy transportation.



*A level featuring low cost and user friendliness*

#### QUICK SPECS

Telescope	
Image	Erect
Magnification	32x
Resolving Power	3" of arc
Field of View	1°20'
Minimum Focus	4.9 ft. (1.5m)
Stadia Ratio	1:100
Compensator	
Setting Accuracy	$\pm 0.3''$
Range	$\pm 15'$
Leveling Accuracy (in 1.0 km (1 mile) of double-run leveling)	
Standard Deviation	$\pm 0.8\text{mm} / 1.0\text{mm}$
Level Vial (circular)	
Sensitivity	10' / 2mm
Internal Data Storage	
Storage Capacity	2000 points



# Digital Level

## ORDERING INFORMATION

7380-30 SDL30M Digital Level  
Complete with BDC46 battery, CDC62  
charger, carrying case, tool kit, rain cover and  
operation manual.

### Accessories

- 7380-40 BGS27 2m fiberglass bar code staff  
for SDL30
- 7380-41 BGS40 4m fiberglass bar code staff  
for SDL30
- 7380-42 BGS50 5m fiberglass bar code staff  
for SDL30

Note: Leveling rods are graduated on both  
faces. One face is bar code, the other metric.

- 6350-32 Cable from SDL30M to 25-pin  
serial port
- 6350-33 Cable from SDL30M to 9-pin  
serial port
- 7380-46 BDC46 lithium ion battery for  
SDL30
- 7380-82 CDC62 charger for BDC 46  
(100-240VAC)
- 7380-83 DE23 diagonal eyepiece for SDL30
- 7380-95 GS20L circular level for BGS rod  
(20' / 2mm)
- 7380-96 GS60L circular level for BGS rod  
(60' / 2mm)

For other accessories, see pages 84-88.  
For tripods, see page 44.



### TECH TIPS

- Provides the ability to collect data in  
either meters or feet.
- Ability to turn autopower ON (shuts  
off automatically in 30 minutes of  
non-use) or OFF (disabled).
- The convenient vial viewing mirror,  
located on the top of the instrument,  
provides easy leveling at normal  
instrument heights at eye level.
- Choose from three different measur-  
ing modes: Single, Repeat or Tracking.
- Easy connectivity with the SDR33/31  
data collector with versions 4.25 or  
greater. The SDL30 uses a Hirose  
port that is standard for all Sokkia  
instruments. With the use of the  
SDR33 with the SDL30, users can  
execute level loops and adjust them  
from within the data collector.

### APPLICATIONS

- Applications for the SDL30 include  
high precise level loops that require a  
large amount of data and long lengths of  
the loop. Because the SDL30 can elec-  
tronically record measurement data,  
it is no longer necessary to manually  
record information used for reducing to  
elevations.
- Slope Staking
- Drainage installations and revisions
- Bridge Deck and Roadbed leveling
- HVAC installation
- Cross-Section Surveys

# Level Planers / Meters

## LP30 and LP31

### Level Planers

## Ideal For All Leveling Jobs

### LP30

The LP30 offers a range to 2,000 feet in diameter, with a horizontal accuracy of  $\pm 10''$ , making it ideal for leveling jobs at general civil engineering and construction sites. The LP30's reference beam can be simultaneously picked up by one or more detectors, increasing its flexibility on large projects. It is especially well-suited for setting and adjusting elevations, controlling excavation depths and establishing sub-base levels.

The LP30 beam rotates at 600 rpm, creating a stable horizontal plane which allows rapid readings to be taken over long distances.

The self-leveling compensator ensures accuracy and ease of operation. Just rough-level the unit, and the built-in compensator will automatically set the horizontal plane and start the laser beam operation. A flashing lamp provides an out-of-level warning.

Both the LP30 unit and the LR100 Beam Detector are highly water resistant, providing IPX4 protection

against splashing water. If they are caught in a sudden shower, just wipe off the water. The integrated handle provides a positive grip, even when you're wearing gloves. The LP30 weighs 5.5 lbs (2.5 kg) with the BDC38 battery cassette, and the compact carrying case provides space for two Beam Detectors with rod brackets.

### LP31

The LP31 matches the LP30 feature for feature, differing only in the horizontal accuracy and detectable range. The LP31's range is up to 800 feet in diameter and has a horizontal accuracy of  $\pm 15''$ .

All of this combines to make the LP31 a great all-purpose level planer for both indoor and outdoor work.

### ORDERING INFORMATION

7400-30 LP30 Laser Level, complete with LR100 detector, LPC4 rod bracket, BDC38 battery case, high-visibility fitted SC143 carrying case, tool kit and operation manual.

7400-31 LP31 Laser Level, complete with LR100 detector, LPC4 rod bracket, BDC38 battery case, high-visibility fitted SC143 carrying case, tool kit and operation manual.

#### Accessories

7401-03 LR100 Detector - LP30, LP31

7401-38 BDC38 Alkaline Battery Cassette - LP30, LP31 (requires 4 D-cells)

7401-39 BDC39 NiCd Battery Cassette - LP30, LP31

7401-49 CDC49A Charger for BDC39 (110VAC -7.5Hr)

7451-04 LPC4 Rod Bracket for LR100

For other accessories, see pages 84-88.

For level rods, see pages 45-48.

For tripods, see page 44.



7400-31



7401-03

### QUICK SPECS

Beam Emitting Range (diameter)	LP30 2,000 ft. (300m)	LP31 800 ft. (120m)
Rotation Speed	600 rpm	600 rpm
Compensator Range	$\pm 10'$	$\pm 10'$
Leveling Accuracy		
Horizontal Accuracy	$\pm 10''$ ( $\pm 1/16$ in. at 100 ft.)	$\pm 15''$ ( $\pm 3/32$ in. at 100 ft.)
Level Vial Sensitivity		
Circular	10' / 2mm	10' / 2mm

# MiNi Meter

## MM30/MM30R Laser Distance Meters

### Get the Job Done Quickly and Accurately

Simple, instantaneous, unassisted distance measurement by laser beam. Just aim the *MiNi Meter* MM30/MM30R at a wall or ceiling, press the button, and the distance is automatically measured to the nearest 0.01 ft. or millimeter.

A red laser beam enables quick visual confirmation of the exact measuring position. The *MiNi Meter* MM30/MM30R allows you to measure distances up to 100 ft./30m without a target.

The *MiNi Meter* MM30/MM30R uses the new MRT1 Reflective Target, designed specifically for this instrument. This target should be used to obtain accuracy specifications instead of the RS\*N series reflective targets that were designed for the NET2B, POWERSET and Series 100 Total Stations. With the MRT1 target, you can measure distances up to 330 ft. / 100m.

The *MiNi Meter* MM30/MM30R emits a laser beam which, when aimed at a measuring point, reflects off the measuring point and returns to the instrument for automatic distance measure-

ment in as little as 1 second. Precision is outstanding:  $\pm 1/9$  in. (3mm).

The *MiNi Meter* MM30/MM30R was designed and engineered to permit unassisted distance measurement by one operator. Waterproof construction meets IPX7 design specifications. Use it with confidence in both indoor and outdoor settings.

#### APPLICATIONS

- Room floor—area and volume
- Setting-out point selection
- Line marking in sports stadiums

Depending on the measuring environment, choose from three point-of-origin settings: at the front, center or rear of the unit. A circular level vial is provided for easy horizontal reference. The *MiNi Meter* MM30/MM30R can be easily mounted on a standard still or video camera tripod for stability.



6600-30

#### ORDERING INFORMATION

6600-30 MM30 Laser Distance Meter, complete with internal NiCd battery, carrying case, tool kit, rain cover and operation manual.

6600-35 MM30R Laser Distance Meter

Accessories (For MM30 and MM30R)

6601-50 CDC60 Charger for MM30 internal NiCd battery.

6601-51 EDE84 Car cigarette lighter power cable for MM30.

6601-52 RP1 Protector for MM30.

6601-53 DA1 Diagonal attachment for MM30.

6601-54 SS1 Sighting Telescope for MM30.

For other accessories, see pages 84-88.  
For level rods, see pages 45-48.  
For tripods, see page 44.

#### QUICK SPECS

##### Beam Emitting

Light Source Laser Diode, 650nm, output power less than 1mW

##### Distance Measuring Range

Without Reflective Target 0.6 ft. to 100 ft. (0.2m to 30m)

With Reflective Target (MRT 1 Target) 66 ft. to 330 ft. (20m to 100m)

##### Accuracy

Fine Mode  $\pm (3\text{mm} + 50\text{ppm})$

##### Distance Measuring Time

General Measuring 1 sec.

## *Reflective Sheet Targets and Prisms*

### Sokkia Reflective Sheet Targets

The NET2100, POWERSET, Series 100 and SET500/600 Electronic Total Stations incorporate a new innovative optical system. The central portion of the objective lens acts as the light emitter and the surrounding portion acts as the light receiver. This design allows these instruments to meet EDM accuracy specifications using traditional glass prisms or our reflective sheet targets. While other Sokkia instruments may get a return signal from reflective targets, the EDM accuracy can be guaranteed only when measuring to glass advanced prism systems.

The reflective sheet targets allow for a wide variety of measurement possibilities since they can be directly attached to most surfaces. This allows measurement of the shape and position of objects in situations where the use of traditional glass prisms would not be practical.

### Sokkia Advanced Prism System

For the user that wants maximum distance and accuracy when using Sokkia Electronic Total Stations and add on EDM. The Advanced Prism System was designed by the same engineers that designed Sokkia Electronic Total Stations. All distance specifications for Sokkia products are referenced to Advanced Prism System components. The Advanced Prism System includes prisms, adaptors, mounts, targets and tribrach adaptors.

- Manufactured to the highest standards and specifications.
- -40mm offset reduces aiming and distance errors.
- Threaded mounting system securely attaches prism to mount.
- Complete prism and target system including tribrach adaptors.
- Hermetically sealed prism cannisters.
- Stainless steel fittings.
- -30mm offset adapter available.

### Sokkia 0mm/-30mm Polycarbonate Prism System

Designed for optimum performance with Sokkia products, the Polycarbonate Prisms are an excellent choice for use with any brand of electronic distance measuring equipment. 0mm/-30mm prisms offer the same distance performance with Sokkia products as Advanced Prism, but at a lower cost. Prisms are available in single and triple mounts, and assemblies.

- User selectable 0mm or -30mm offset in the same mount.
- Hermetically sealed prism cannister.
- Lightweight, yet durable.
- Stainless-steel fittings.
- Variety of mounts and targets available.

### Sokkia Aluminum and Lexan™ Prisms and Mounts

Offered in the traditional slide in style of mount, aluminum and Lexan™ Prisms and mounts can be used with all types of total stations and electronic distance meters. They are suitable as replacement prisms for mounts already in use. Single and triple assemblies and mounts are offered as well as prisms in cannisters only.

- Aluminum mounts are sturdy, yet lightweight and suitable for the most demanding customer.
- Lexan™ mounts offer a considerable savings in weight without a reduction in durability.
- Slide-in cannisters are secured with a threaded locking knob.
- Mounts will attach to any prism pole with a 5/8" x 11" thread.
- The tops of mounts are threaded to accept target poles.

# Reflective Sheet Targets

## Reflective Sheet Targets

Easy-to-use reflective targets, supplied on convenient adhesive-backed sheets, can be directly fixed to measuring points. For alternate needs, rotary targets and a 2-point target are also available.

RS series Reflective Sheets  
6345-06 through 6345-90 RS\* N/T 0.4 mm thick, self-adhesive sheets that adhere at a touch to almost any dry surface. RS\*\*N has normal (0.5mm) reticle lines; RS\*\*T has bold (0.3mm) reticle lines.



Detachable Rotary Target  
6365-90 RT90C 360° rotating sheet target. The RT90C can be mounted on a tribrach with the AP41 Adapter, or mounted directly to prism pole AP61.



6365-90

Pin-Pole Target  
6365-50 RT50P (30 x 30mm) 360° degree rotating sheet target. The RT50P can be connected to narrow pin poles.



6365-50

Magnetic Rotary Targets  
6344-05 RT50M (50 x 50mm)  
6344-12 RT90M (90 x 90mm)  
Incorporating a powerful magnet base, these can be mounted on a steel surface in seconds. Full 360° rotation.



Grip Anchor Targets  
6344-13 RT30G10 (30 x 30mm)  
6344-14 RT50G10 (50 x 50mm)  
6344-15 RT90G10 (90 x 90mm)  
Fully rotatable targets with 10mm dia. male screws. They can be mounted in M10 (metric) female bolt holes.



6344-13/6344-14/6344-15

Two-Point Target  
6365-52 2RT500  
For the measurement of hidden points. The distance between the two targets is 500mm, and the total length can be extended by adding poles. The measuring range is the same as for a 50 x 50mm sheet target.



6365-52

Reflective Staff  
6365-53 RF3  
A leveling staff with a special reflective surface. Very quick to sight, for horizontal angle and horizontal distance applications. It can also be used as a normal leveling staff for reading heights.



6365-53

## ORDERING INFORMATION

- 6344-02 [RT1A Precise Target](#)  
(Not Shown)
- 6344-03 [2RT310 Offset Target](#)  
(Not Shown)
- 6344-04 [CPS12 Precision Prism](#)  
(Not Shown)
- 6344-05 [RT50M Magnetic NET2B Target](#)
- 6344-12 [RT90M Rotary Target](#)
- 6344-13 [RT30G10 Rotary Target](#)
- 6344-14 [RT50G10 Rotary Target](#)
- 6344-15 [RT90G10 Rotary Target](#)
- 6345-00 [RS00 Target 230 x 230mm](#) (1ea.)  
(Not Shown)
- 6345-06 [RS05T Targets 5 x 5mm](#) (400 ea.)
- 6345-10 [RS10N Targets 10 x 10mm](#) (400 ea.)
- 6345-11 [RS10T Targets 10 x 10mm](#) (400 ea.)
- 6345-15 [RS15N Targets 15 x 15mm](#) (196 ea.)
- 6345-16 [RS15T Targets 15 x 15mm](#) (196 ea.)
- 6345-20 [RS20N Targets 20 x 20 mm](#) (100 ea.)
- 6345-21 [RS20T Targets 20 x 20 mm](#) (100 ea.)
- 6345-30 [RS30N Targets 30 x 30mm](#) (49 ea.)
- 6345-31 [RS30T Targets 30 x 30mm](#) (49 ea.)
- 6345-50 [RS50N Targets 50 x 50mm](#) (16 ea.)
- 6345-70 [RS70N Targets 70 x 70mm](#) (9 ea.)
- 6345-90 [RS90N Targets 90 x 90mm](#) (4 ea.)
- 6346-05 [RC50 Reflective Target](#)  
(73mm x 73mm) (Not Shown)
- 6346-10 [RC100 Reflective Target](#)  
(100mm x 100mm) (Not Shown)
- 6365-50 [RT50P Reflective Target Set](#)
- 6365-52 [2RT500 Reflective Target Set](#)
- 6365-53 [RF3 Reflective Staff](#)
- 6365-90 [RT90C Reflective Target](#)  
(fits AP41/44)

## *A High-precision Prism and Target System*

Improved angle reading with the 40mm offset.

This relocates the prism pivot point and minimizes the angular error caused when the prism is not pointed perfectly at the instrument; the errors are particularly present in close-range sighting. Both horizontal and vertical angle accuracy are improved.

Longer, more accurate distances. New design and improved coatings eliminate polarization and back scattering. The return beam converges to maintain signal strength at long distances.

Faster sighting, more accurate aiming. New, non-tilting metal targets remain fixed in the vertical plane and provide optimum accuracy of alignment between prism center, prism mount and target center; targets are high-visibility black and fluorescent yellow.

*Create a nine prism assembly from three triples (with an adaptor) to achieve longer distances.*

Improved durability. Patented O-ring prism sealing plus tough coatings assure high reflectivity.

Recommended prism systems for total station instruments and azimuth base-mounted EDM's.

Order Each Item Separately

System A  
Single Prism, tilting

7261-34 [AP11 Single Tilting Mount](#) - 1 each.

7261-35 [AP01-40mm Prism\\*](#) - 1 each.  
*(Single Tilting Mount and 1 Prism also available together as 7261-32.)*

7261-42 [AP11T Target](#) - 1 each.

7261-50 [AP41 Optical Plummet Adaptor w/ 60" vial](#) - 1 each.

7311-34 [WA1 Tribrach](#) - 1 each.



System B

System B  
Triple Prism, Stationary

7260-33 [AP31 Triple Stationary Mount](#)- 1 each.

7261-35 [AP01 -40mm Prism\\*](#) - 3 each. *(Triple Stationary Mount and 3 Prisms also available together as 7260-31.)*

7260-41 [AP31T Target](#) - 1 each.

7261-50 [AP41 Optical Plummet Adaptor w/ 60" vial](#) - 1 each.

7311-34 [WA1 Tribrach](#) - 1 each.



System A

# Advanced Prism System

*Improved accuracy.  
Faster sighting.  
Increased range.*

SYSTEM C  
Triple Prism, Tilting

7261-33 AP32 Triple Tilting Mount - 1 each.

7261-35 AP01 -40mm Prism\* - 3 each.  
(Triple Tilting Mount and 3 Prisms also available together as 7261-31.)

7261-42 AP32T Target - 1 each.

7261-50 AP41 Optical Plummet Adaptor w/ 60" vial - 1 each.

7311-34 WA1 Tribrach - 1 each.



SYSTEM C



SYSTEM D

SYSTEM D  
Nine Prism, Stationary

7260-33 AP31 Triple Stationary Mount - 3 each.

7261-35 AP01-40mm Prism\* - 9 each.  
(Triple Stationary Mount and 3 Prisms also available together as 7260-31, 3 sets required.)

7260-46 AP43 Manifold - 1 each.

7261-50 AP41 Optical Plummet Adaptor w/ 60" vial - 1 each.

## ORDERING INFORMATION

Complete Assemblies  
Complete with mount, prisms, lens cap

- 7260-31 AP31A Triple Non-Tilting Prism Assembly.
- 7261-31 AP32A Triple Tilting Prism Assembly.
- 7261-32 AP11A Single Tilting Prism Assembly.

Targets

- 7260-41 AP31T Target for 7260-33 AP31; attaches to top of mount with clamp screw.
- 7261-39 AP51 Target for Yoke-Mounted EDM; adjustable to match distance between optical axis of theodolite and EDM; accepts single-, triple- and nine-prism assemblies; target extensions (7261-43 AP51ET) available for long distance shots.
- 7261-41 AP32T Target for AP32; attaches to yoke in slide-in slot; clamp screws secure and center target.
- 7261-42 AP11T Target for AP11; attaches to yoke in slide-in slot; clamp screws secure and center target.
- 7261-43 AP51ET Oversize Target (Requires 7261-39 AP51).

Mounts and Prisms

- 7260-33 AP31 Triple Stationary Mount with fourth mounting hole to properly position a single prism; also has peep sight for aiming.
- 7261-33 AP32 Triple Tilting Mount with fourth mounting hole to properly position a single prism; also has peep sight for aiming.
- 7261-34 AP11 Single Tilting Mount; has collimator-type sight for fast aiming.
- 7261-35 AP01 -40mm Prism
- 7261-37 AP12 Double Yoke Mount with Vial; tilting portion completely surrounded by yoke for versatility; bayonet mount on top and bottom; level vial on mount eliminates need for vial on prism pole.
- 7261-40 AP13 Target and Mount; for telescope-mounted EDM.

\* -30mm Prism 7266-35 can be used.  
Do not mix offsets in mounts.

# Advanced Prism System

## Recommended prism systems for yoke-mounted EDM's.

Order each item separately

SYSTEM E:  
Single Prism, Tilting



7261-34 AP11 Single Tilting Mount - 1 ea.

7261-35 AP01 -40mm Prism\* - 1 ea.  
(Single Tilting Mount and 1 Prism also available together as No. 7261-32.)

7261-39 AP51 Target - 1 ea.

7261-50 AP41 Optical Plummet Adaptor w/ 60" vial - 1 ea.

7311-34 WA1 Tribrach - 1 ea.

SYSTEM F:  
Triple Prism, Stationary



7260-33 AP31 Triple Stationary Mount - 1 ea.

7261-35 AP01 -40mm Prism\* - 3 ea.  
(Triple Stationary Mount and 3 Prisms also available together as 7260-31)

7261-39 AP51 Target - 1 ea.

7261-50 AP41 Optical Plummet Adaptor - 1 ea.

7311-34 WA1 Tribrach

SYSTEM G:  
Triple Prism, Tilting



7261-33 AP32 Triple Tilting Mount - 1 ea.

7261-35 AP01 -40mm Prism\* - 3 ea.  
(Triple Tilting Mount and 3 Prisms also available together as 7261-31)

7261-39 AP51 Target - 1 ea.

7261-50 AP41 Optical Plummet Adaptor w/ 60" vial - 1 ea

7311-34 WA1 Tribrach - 1 ea.

Nine Prism, Stationary  
(Not Illustrated)

7260-33 AP31 Triple Stationary Mount - 3 each

7261-35 AP01 -40mm Prism\* - 9 ea.  
(Triple Stationary Mount and 3 Prisms also available together as 7260-31 3 sets required)

Also available for Nine Prism Stationary System:

7260-46 AP43 Manifold - 1 ea.

7261-39 AP51 Target - 1 ea.

7261-43 AP51ET Target Extension - 1 ea.

7261-50 AP41 Optical Plummet Adaptor w/ 60" vial - 1 ea.

7311-34 WA1 Tribrach - 1 ea.

### ORDERING INFORMATION

#### Accessories

7260-36 Replacement Bayonet Adaptor for AP31.

7260-46 AP43 Nine Prism Adaptor — requires three 7260-33 triple mounts.

7261-36 AP01S -30mm Adaptor adapts AP Prisms to -30mm offset.

7261-44 AP30P Sighting Pole for AP31, AP32, AP11, AP12.

7261-48 Graduated Precise Prism Pole.

7261-50 AP41 Optical Plummet Tribrach Adaptor; accepts all mount and target assemblies; has 60" level vial for accurate leveling and centering; adjustable to match height of optical axis above tribrach; use with 7311-34.

7261-51 AP44 Tribrach Adaptor; like 7261-50 but no optical plummet; use with 7311-35.

7266-36 Lens Cap.

7311-34 WA1 Tribrach.

7311-35 WOA Optical Plummet Tribrach.

8078-96 Prism Pole Tripod.

8078-50 Prism Pole Point.

8078-51 Topo Shoe for Prism Pole.

Recommended prism system for telescope-mounted EDM system

#### SYSTEM H

7261-40 AP13 Target and Mount - 1 ea.

7261-35 AP01 -40mm Prism\* - 1 ea.

7261-50 AP41 Optical Plummet Adaptor w/ 60" vial - 1 ea.

7311-34 WA Tribrach - 1 ea.; use Yoke-

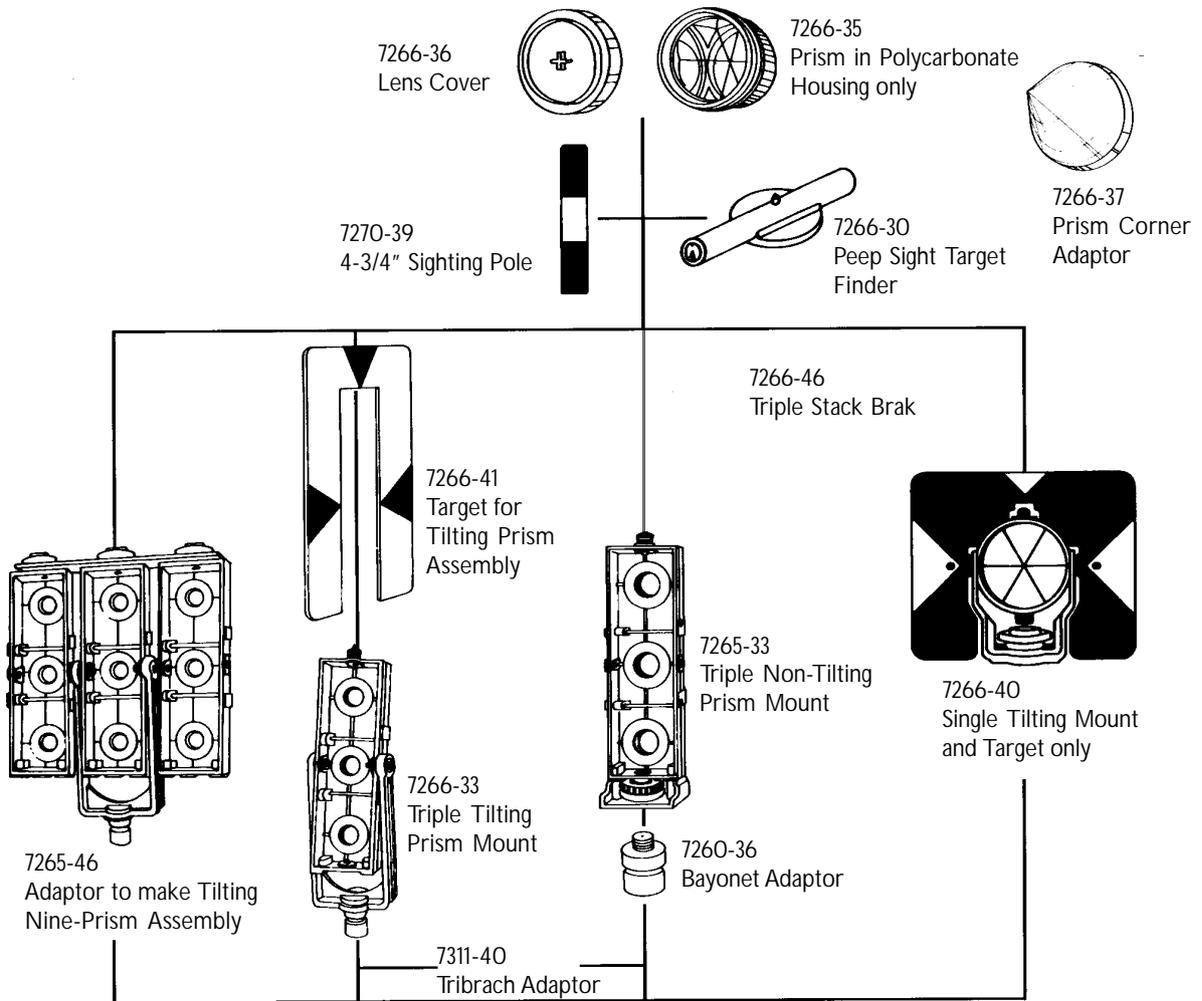
Mounted System for Multiple Prisms. When using optical plummet tribrachs, substitute the following components: 7261-51 (AP44) for 7261-50 (AP41), 7311-35 (WOA1) for 7311-34 (WA1).

\* -30mm Prism 7266-35 can be used. Do not mix offsets in mounts.

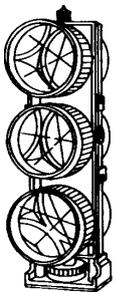


# Polycarbonate Prisms

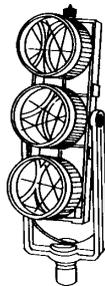
## Prism Schematic



## Recommended systems sold complete



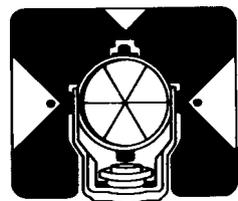
7265-31  
Triple Non-Tilting Prism  
Assembly with lens cover



7266-31  
Triple Tilting Prism  
Assembly with lens cover



7266-32  
Single Tilting Prism  
Assembly with lens cover



7266-38  
Single Tilting Prism with  
permanent target and mount

# Polycarbonate Prisms



Complete your measuring system with these versatile polycarbonate prisms that withstand shock better and weigh less than prisms in metal cans:

- Precision-ground from one solid piece of optical glass.
- Stainless steel fittings for long wear.
- Can be mounted for either 0 or -30mm offset.
- Rubber O-ring completely seals prism against moisture and contamination.
- Face diameter 2-5/16 in.
- Target and prism configuration ideal for total station instruments with coaxial telescope and EDM optical systems.

Triple tilting prisms rotate 360°; the desired position is held by a friction clamp. Triple tilting and non-tilting prisms are stacked vertically to help prevent parallax when pointing.

Single tilting prisms rotate 240°, with a friction clamp to hold the prism in the desired position. Two holes drilled in the yoke facilitate plumbing alignment of the single prism.

A target is available for the triple tilting assembly; a lens cap is included with all prisms in cans and complete assemblies.



7265-31



7266-31



7266-35



7265-46  
(Shown with 7266-33, 7265-33, 7311-38 and 7311-35)



7266-32



7266-36



7266-78



7266-48



7266-58



7266-38

## ORDERING INFORMATION

- 7265-31 Triple Non-Tilting Prism Assembly.
- 7265-33 Triple Non-Tilting Prism Mount only.
- 7266-31 Triple Tilting Prism Assembly.
- 7266-32 Single Tilting Prism Assembly.
- 7266-33 Triple Tilting Prism Mount only.
- 7266-34 Single Tilting Prism Mount only.
- 7266-35 Prism in Polycarbonate Housing only.
- 7266-38 Single Tilting Prism Assembly with attached target.
- 7266-40 Single Tilting Prism Mount only with attached target.
- 7266-48 Economy Prism Assembly w/ target and bayonet base.
- 7266-58 Easy View Prism Assembly w/target.
- 7266-78 Night View Strobe Prism Assembly w/target.

### Accessories

- 7266-30 Peep Sight Target Finder for triple and single prism assemblies; used for aiming prism at instrument.
- 7265-46 Adaptor To Make Tilting Nine-Prism Assembly; joins one triple tilting assembly and two non-tilting assemblies (*not included*).
- 7260-36 Bayonet Adaptor (*not shown*) for triple non-tilting prism assemblies.
- 7266-36 Lens Cover (*shown with 7266-35*) for triple and single prism assemblies; fits on back of prism assembly when not in use.
- 7266-37 Prism Corner Adaptor; fits No. 7266-35 prism, 0 offset.
- 7270-39 4-3/4 inch Sighting Pole (*not shown*).
- 7266-41 Target (*not shown*) for triple tilting prism assembly.
- 7266-60 Easy View Assembly only with target (*not shown*).

# Aluminum & Lexan Prisms

## Aluminum Prisms

- Durable and lightweight — single unit weighs only 2 lbs.; triple unit weighs 4.5 lbs.
- Precision-ground to  $\pm 2$  arc seconds from one solid piece of optical glass.
- Detachable mounting frames in International Orange for high visibility.
- Offset is -30mm; face diameter 2-7/8 in. (73mm).
- Triple prism mount sides are threaded for multiple prisms; base and sides drilled with 5/8 x 11 thread; top has 5/8 x 11 stud and lock nut for additional units.
- 4-3/4 in. sighting pole included with each assembly.

7270-31 [Triple Prism Assembly](#) with lens covers.



7270-31

7270-32 [Single Prism Assembly](#) with lens cover.



7270-32

7270-33 [Triple Prism Mount Only](#).  
7270-34 [Single Prism Mount Only](#).  
7270-35 [Round Prism in Can Only](#); can diameter 3 in.  
7270-36 [Plastic Lens Cover](#).  
7270-37 [Retainer Screw](#).

## LEXAN® Retroprisms

- Extremely lightweight; single unit weighs 1 lb. 3 ozs.; triple unit weighs 3 lbs.
- Same features as aluminum prisms.

**Important!**  
To avoid distance errors, use prisms in Lexan cans with Lexan frames only.



7267-31

7267-31 [Triple Prism Assembly](#) with mount and sighting pole.



7267-32

7267-32 [Single Prism Assembly](#) with mount and sighting pole.

7267-33 [Triple Mount Only](#).  
7267-34 [Single Mount Only](#).



7267-35

7267-35 [Retroprism Only in Lexan can](#); diameter 3 in. with lens cover.

## Retroprism Carrying Cases

Cordura case with full zipper for easy access and storage of prisms; padded inside to protect against shock. Exterior is International Orange. Complete with sturdy carrying strap.

7270-50 [Case for Polycarbonate Prisms](#); 18-1/2 (L) x 6-1/2 (W) x 4-1/2 (D) in.

7270-51 [Case for Triple Prism](#); 12 (L) x 7 (W) x 4 (D) in.



7270-51

7270-52 [Case for Single Prism](#); 7 (L) x 7 (W) x 4 (D) in.

Peanut™ Retroprism  
7268-32

- 1 in. diameter; weighs less than 5 oz.
- -30mm or 0 offset.
- 5/8 x 11 female thread.
- Complete with carrying pouch and accessories.
- Target and level vial included.



7268-32

# Prism and Range Poles



All Sokkia Aluminum Prism Poles include:

- All metal construction.
- Graduated feet and metric.
- Adjustable level vial.
- Replaceable point.
- Telescoping sections.
- Adjustable to match instrument H.I.
- Locking disk to secure prism.

Graduated Precise Prism Pole  
7261-48 4.3 ft./2.5m to 8 ft./2.6m, 2 section.  
7270-12 3 ft./2.5m to 12ft./3.7m, 3 section.

Also includes: European style locking system.

Heavy-duty Telescoping Prism Pole (Not Shown)  
7270-44 4.3ft./2.5m to 8 ft./2.6m.

Also includes: Collet style locking system.

New Compositelite Prism Pole  
8078-41

- Lightweight.
- Large bubble for easy accurate leveling.
- Self storing Topo shoe.
- 8.4 ft. when extended.

Prism Pole Extension  
7270-45

Allows a prism to be mounted about a foot from the ground. (prism not included)



8078-96

3M Duraline Range Pole (Not Shown)  
8078-42 with three-pocket nylon case. Same construction as 8-ft. Duraline Pole; two 1.5m sections.  
8078-43 [1.5m Section](#) for above

8078-50 [Replacement Point](#)  
8078-51 [Topo shoe](#)  
Replacement point and Topo shoe fit all poles with 5/8 x 11 male thread.

Prism pole Tripod and Bipod  
8078-96 [Tripod](#)  
8078-97 [Bipod](#)  
Easy-to-use, fully adjustable tripod or bipod for 7270-44 and other Prism Poles.



Head of 8078-97

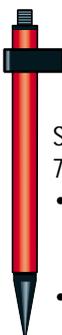
Nylon Case (Not Shown)  
8078-46  
Three-pocket case fits Range Poles 8078-48, 8078-42, 8079-48.

Range Pole Tripod  
8078-95  
• Heavy-duty; made with metal center castings and shoes with spurs.  
• Adjustable rustproof steel legs for uneven ground.

8-foot Duraline Range Pole  
8078-48 with three-pocket nylon case.

Alternating 12-in. color sections bonded onto aircraft aluminum tubing resist marring and chipping.

8078-49 [4 ft. Section](#) for above.  
8078-50 [Replacement point](#)



Stake-out Pole  
7270-42  
• Ideal for use with SDR Electronic Field Book stake-out program. (See pages 14-15)  
• 15 inches in length.



8078-95 (pole not included)

# Traverse Sets and Tribrachs

WOA Tribrach Leveling Base with Optical Plummet  
7311-35

For precise plumbing of Sokkia instruments and accessories.

Tribrachs accept Sokkia EDM systems, electronic and optical theodolites, as well as equipment and accessories. Base plate has standard 5/8 x 11 threads and circular level vial with a sensitivity of 10"/2 mm. Range of optical plummet: 1.5 to 50 ft. (0.5 to 15 m). Push-pull slide focus.



WA1 Tribrach Leveling Base  
7311-34

Same as 7311-35, except without optical plummet.



Tribrach Adaptor  
7311-37

Adapts from 5/8 x 11 thread to Sokkia or other brand tribrach. Allows installation of Sokkia prisms or other 5/8 x 11 female-thread accessories into tribrach.



Tribrach Adaptor With Rotatable Center  
7311-38

Allows easy installation of instruments and accessories.

7311-39 Replacement Center only, 34 mm O.D. (not shown)



Tribrach Adaptor  
7311-40

Accepts prisms with 24.8 mm bayonet-type base.



Rotatable Tribrach Adaptor  
7311-42

5/8 x 11 male thread for attaching prisms and targets. Threaded portion attached to rotating plate for easy aiming. Plate has knurled edge and friction-stop.



## Traverse Equipment



TGLP Large Target  
7312-42

8-1/4 x 11-3/4 in. Attaches to a regular target (7312-40 or 7312-41) to provide increased sighting range. For precise triangulation surveys, day or night.

TG1 Traverse Set  
7312-46

Optical plummet rotates with target for accurate centering over point.

Includes 2 each:

- 7311-34 [WA1 Tribrach](#)
- 7312-39 [LA2 Illumination Units](#) (not shown)
- 7312-41 [TG1SP Rotatable Target](#) with Optical Plummet.



Includes carrying case; components also available separately.

TG2 Traverse Set  
7312-45

Includes 2 each:

- 7311-35 [WOA Optical Plummet Tribrach](#)
- 7311-37 [Tribrach Adaptor](#)
- 7312-39 [LA2 Illumination Unit](#) (not shown)
- 7312-40 [TG2SP Rotatable Sighting](#)



Target mounted on a 7311-37.

Includes carrying case; components also available separately.

# Tripods



7512-50



7512-52

## Sokkia Wide-Frame Wood Tripods

- Our best tripod — all North American maple with metal hardware; no plastic.
- Self-adjusting hinges — no loosening or tightening.
- Durable nylon bushings for smooth operation.
- Tripod shoes with large spurs; hardened steel replaceable tips.
- Durable bright yellow or Sokkia green finish.
- Carrying handle.

	Height Open	Height Closed	Type of Head	Weight
7512-50 (green)	72in.	45-3/4in.	5/8 x 11 Flat	14.5 lbs.
7512-52 (yellow)	72in.	45-3/4in.	5/8 x 11 Flat	14.5 lbs.

## Sokkia Wide-Frame Aluminum Tripods

- Anodized finish in high-visibility International Orange and silver.
- Sling strap for easy hand- or shoulder-carrying.
- Extra-long shoes with large spurs for greater anchoring power.
- Hardened steel, replaceable tripod shoe tips.
- Convenient screw-style leg or quick release clamp assembly.



7536-75

	Height Open	Height Closed	Type of Head	Weight
7533-75	66-1/2in.	40in.	3-1/2 x 8 Flat	11.5 lbs.
7534-45*	67in.	41 in.	5/8 x 11 Domed	11.5 lbs.
7534-75	67in.	41in.	5/8 x 11 Domed	11.5 lbs.
7536-45*	67in.	41in.	5/8 x 11 Flat	11.5 lbs.
7536-75	67in.	41in.	5/8 x 11 Flat	11.5 lbs.
7536-76	66-1/2 in.	40in.	1-3/8 x 13 Flat	11.5 lbs.

\* *Quick Release Clamps*

## Contractor's Wide-Frame Aluminum Tripods

- All hardware is high-visibility International Orange.
- Cloth sling-strap for comfort.
- Hardened steel, replaceable tripod shoe tips.
- Convenient screw-style leg clamp assembly.



7534-05



7534-45

	Height Open	Height Closed	Type of Head	Weight
7534-05	65in.	38in.	5/8 x 11 Domed	11.5 lbs.
7536-05	65in.	38in.	5/8 x 11 Flat	11.5 lbs.



*Close-up of  
Quick Release Clamps*

# SK Leveling Rods

Read heights quickly from the back of the rod with the new height-measuring graduations.

Our 25 ft. SK Leveling Rods, the original oval fiberglass rods, have features you'll appreciate for their durability and ease of use. In addition to added face protection and a height-measuring gauge, we changed the top of the rod for easier attachment of a mini-prism.

Our face protection system means that you don't have to worry about face wear under the most difficult conditions. And the sections slide more easily, too.

The back sides of the 14-1/2, 25 ft. and 7m SK Leveling Rods have an easy-to-use height-measuring gauge. Simply pull sections out starting with the innermost section, until the top of the rod touches the surface you want to measure to. Then, read the height on the back side of the rod. Height measuring graduations match the graduations on the front side of the rod. Use this feature to measure the height of tunnels, underpasses, ceilings, etc. Attach a laser detector and you have an easy-to-use elevation rod. We've kept the alternating red and white stadia markings for clear visibility.

On the top section is a 5/8 x 11 female threaded hole suitable for attaching a mini-prism. Use the height-measuring gauge as a fast way to determine H.I. The 25 ft. length of the SK Rod gets you above obstacles, making those difficult shots easy (not available on 11 ft. rods).

Forget about adaptor kits to make the rod sections easy to pull out. Our sections protrude for easy use without additional parts.

Sokkia SK Rods are supplied with a carrying case and have easy-to-replace sections.

## Quality You Can Count On

- Unique patented oval shape permits equal size graduations full-length, prevents rod from rolling, and is easier to hold.
- Numerals and graduations are epoxy-protected for maximum wear-resistance and sized for maximum readability.
- Lower sections cushioned with glides to prevent wear (25 ft. only).
- Linear accuracy exceeds 1 in 4,000.
- Made from strong, corrosion-proof fiberglass that's lightweight and easy to carry; won't warp or swell.
- 25 ft. rod retracts to 5-1/2 ft. for easy storage.
- 14-1/2, 25 ft. and 7m rods have new height measuring gauge on back side (except 8073-67).
- 5/8 x 11 female threaded hole on top for mini-prism (14-1/2, 25 ft. and 7m rods).

Our patented SK Rods are famous for their accuracy and dependability. Their unique oval shape offers better stability than other rods, and all graduations are sized for maximum readability. You can count on the

## ORDERING INFORMATION

	Number of Sections	Length	Graduations
8073-33	3	11 ft.	ft./in./8ths
8073-35	4	14-1/2 ft.	ft./in./8ths
8073-37	7	25 ft.	ft./in./8ths
8073-43	3	11 ft.	ft./10ths/100ths
8073-45	4	14-1/2 ft.	ft./10ths/100ths
8073-47	7	25 ft.	ft./10ths/100ths
8073-49	9	32 ft.	ft./10ths/100ths; with attached footplate
8073-57	7	7m	Meters/decimeters/1/2 centimeters
8073-67	7	25 ft./7m	ft./10ths/100ths/metric

7270-43 Double Male Adaptor for attaching mini-prism to top of 14 1/2, 25 ft. and 7m rods.

All Sokkia/SK Leveling Rods supplied with case.

Weight: 11 ft. rods approximately 2.2 lbs.  
14-1/2 ft. rods approx. 2-1/2 lbs.  
25 ft. or 7m rods approx. 5 lbs. each;  
32 ft. rods approx. 9 lbs.

U.S. Patent No. 4,318,228.

quality of the "original oval leveling rods" - Sokkia/SK's are simply the best value available today!

Mount an LR100 Beam Detector on an SK Rod  
(See page 32 for information about electronic [laser] levels.)



Easy-slide sections are protected from wear.

## REPLACEMENT SECTIONS\*, BUTTON SETS AND CASES

Section	8073-33	8073-35	8073-37	8073-43	8073-45	8073-47	8073-49	8073-57	8073-67
0 - 4 ft. Bottom	8073-351	8073-351	8073-371	8073-431	8073-451	8073-471	8073-491	8073-571	8073-671
4 - 7-1/2 ft. Second	8073-352	8073-352	8073-372	8073-432	8073-452	8073-472	8073-492	8073-572	8073-672
7-1/2 - 11 ft. Third	8073-333	8073-353	8073-373	8073-433	8073-453	8073-473	8073-493	8073-573	8073-673
11 - 14-1/2 ft. Fourth	—	8073-354	8073-374	—	8073-454	8073-474	8073-494	8073-574	8073-674
14-1/2 - 18 ft. Fifth	—	—	8073-375	—	—	8073-475	8073-495	8073-575	8073-675
18 - 21-1/2 ft. Sixth	—	—	8073-376	—	—	8073-476	8073-496	8073-576	8073-676
21-1/2 - 25 ft. Seventh	—	—	8073-377	—	—	8073-477	8073-497	8073-577	8073-677
25 - 28-1/2 ft. Eighth	—	—	—	—	—	—	8073-498	—	—
28-1/2 - 32 ft. Ninth	—	—	—	—	—	—	8073-499	—	—
Button Set	8073-26	8073-46	8073-69	8073-26	8073-46	8073-69	8073-70	8073-69	8073-69
Case	8073-29	8073-59	8073-68	8073-29	8073-59	8073-68	8073-71	8073-68	8073-68

\*Rod sections come complete with button.

# Leveling Rods



Standard Series  
Philadelphia Rod  
8071-23 7 ft. Rod; extends to 13 ft.  
(Rod only); weight 6-1/2 lbs.

- Accurate and built for long life.
- Face is steel, with graduations and numbers bonded to surface.
- No corrosion or chipping.
- Graduated in feet/tenths/hundredths; with vernier readings to thousandths of a foot.

8071-25 Set of Replacement Faces for 8071-23.

Targets for Philadelphia Rod



8061-28

8061-28 Micrometer Target with vernier; fits all Philadelphia Rods; reads  $\pm 0.001$  ft.

8061-38 Micrometer Target (metric) with vernier; fits all Philadelphia Rods; reads to 1mm.

Direct Elevation Rod  
8076-00 Direct Elevation Rod;  
weight 5-1/2 lbs.

- Simplified computations; greatly reduced possibility of error.
- Non-glare white ribbon face can be locked in any position.
- Two 5-ft. sections of hardwood.
- Face section carries a 10-ft. endless metal ribbon graduated in feet/tenths/hundredths.

8076-05 Replacement Ribbon.  
8076-06 Rod Carrying Case .

Standard Series San Francisco Rods  
8071-53 4-1/2 ft. Rod, extending to 12 ft.;  
weight 6-1/2 lbs.

8071-63 5-1/2 ft. Rod, extending to 15 ft.;  
weight 7 lbs.

- Lightweight and easy to handle; 3 sections.
- Positive-action snap locks and clamps for dependable accuracy.
- Graduations and numbers bonded to steel faces resist corrosion or chipping; divisions to feet/tenths/hundredths.

8071-55 Replacement Face for 8071-53.  
8071-65 Replacement Face for 8071-63.



8071-53



8071-23

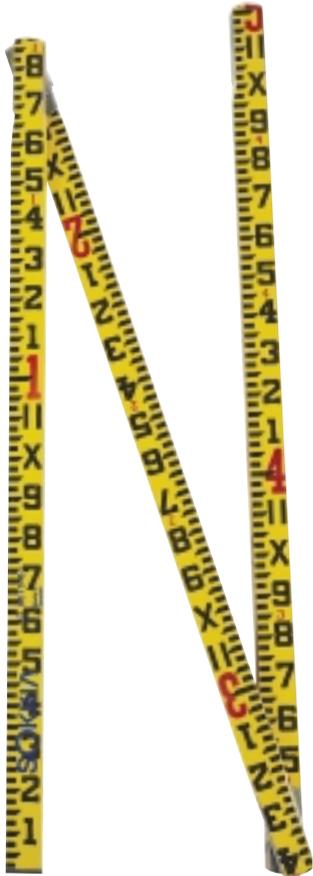


8076-00

# Leveling Rods

## Builders' Mini Rod

8075-47 **6-1/2 ft. Mini Rod** in ft./in./8ths.  
 8075-48 **6-1/2 ft. Mini Rod** in ft./10ths/100ths.



8075-50

8075-50 **9-1/2 ft. Mini Rod** in ft./in./8ths  
 8075-51 **9-1/2 ft. Mini Rod** in ft./10ths/100ths

- Unfolds to 6-1/2 or 9-1/2 ft. leveling rod.
- Printed graduations on both sides are embedded below surface and sealed with reflective yellow finish.
- Lightweight and economical.
- Graduated in feet/tenths/hundredths or feet/inches/eighths.

## Flexible Level Rod Face

8075-40 **12-1/2 ft. long**, 1-1/2 in. wide; graduated in ft./in./8ths.

## Rod Level

8071-90



- Determines quickly and accurately if level rod is perpendicular.
- Head is adjustable so that a true level can be maintained at all times.

## 8071-91 Replacement Vial



8071-26

## Carrying Cases For Level Rods

8071-26 Fits 8051-23, 8051-33, 8061-12, 8061-23 and 8071-23 Philadelphia Rods.

8071-56 Fits 8061-53, 8061-57 and 8071-53 San Francisco Rods.

8071-66 Fits 8061-63 and 8071-63 San Francisco Rods.

- Greatly prolong life and assure greater accuracy through unmarred faces.
- Heavy-duty nylon.

# Leveling Rods and Measuring Poles



## Invar Rods

8072-52 [2m Invar Leveling Staff](#)

8072-53 [3m Invar Leveling Staff](#)

- Highly accurate leveling rods for use with Sokkia PL1 Precise Level (metric), B1 or B20 (with metric micrometer).
- Graduated to 1cm on Invar steel
- Yellow face and black figures, protected by clear polyester for long life and clarity.
- Wood carrying case and turning plate are recommended to ensure long rod life and optimum accuracy.

8072-62 [Wood Carrying Case](#) for 2m staff.

8072-63 [Wood Carrying Case](#) for 3m staff.

8072-65 [Struts](#) for 3m rod.

8072-66 [Turning Plate](#)

## Sokkia/SK Digital Measuring Poles

8073-76 Graduated in ft./in./8ths

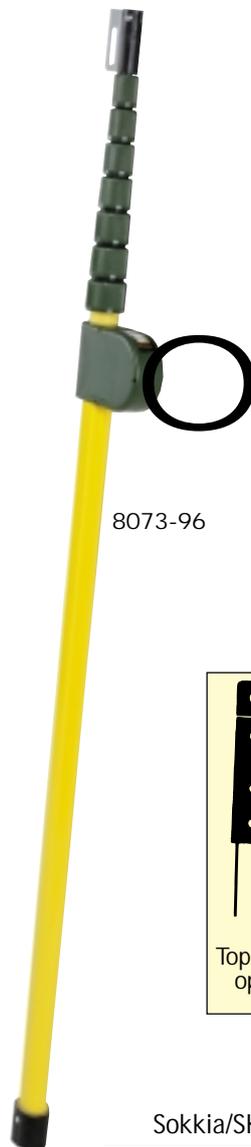
8073-86 Graduated in ft./10ths/ 100ths

8073-96 Graduated in m/dm/cm

- Exact measurements of up to 26 ft. or 8m are conveniently read on the enclosed, sealed digital readout.
- Rugged fiberglass construction with excellent tensile strength.
- Compact (only 4 ft. 8 in. closed) and lightweight (less than 5 lbs.) for easy carrying.
- Smooth telescoping movement with friction clamps for no-slip extension.



8072-53



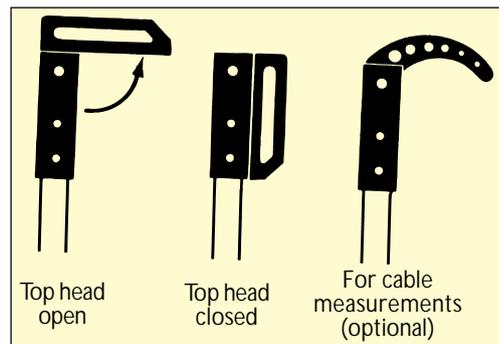
8073-96



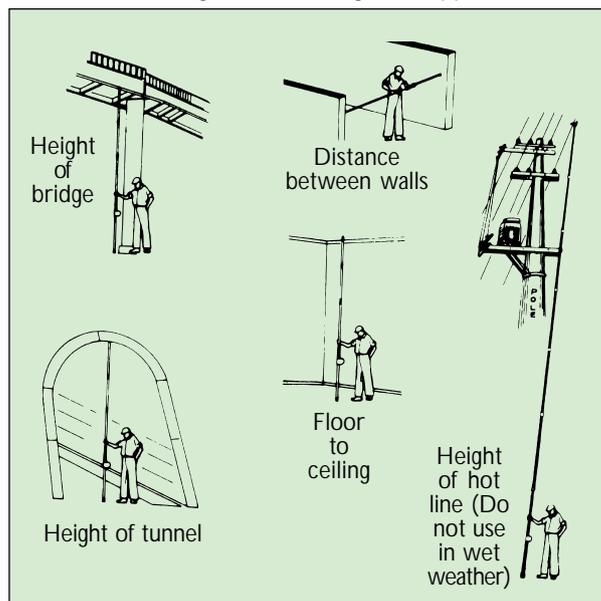
### How to Use

Extend the pole until the black line appears above the green joint section, then read the graduations and numbers.

### Sokkia/SK Digital Measuring Poles



### Sokkia/SK Digital Measuring Pole Applications



### DIGITAL MEASURING POLE SPECS

Accuracy:	Linear accuracy exceeds 1 in 2,000
Stored Length:	4 ft. 8 in.
Maximum Measuring Range:	26 ft. or 8m
Weight:	4 lbs. 12 oz.

# Barometers and Altimeters

## Electrical Digital Barometer/Altimeter 8001-75

- Durable — no mechanical drive train to be damaged.
- Quick and easy to use — no dials to move or needle to set.
- Large, clear LCD with no interpolation required.
- Barometer and altimeter with English/metric readouts in one unit.
- Temperature compensated.
- Measures atmospheric pressure to within .015 in. Hg.
- Extremely low sensitivity to shock, vibration, acceleration, and changes in orientation or temperature.
- Complete with operation manual and carrying case.

### Operating Modes

- Barometer: Pressure in mb, inches Hg, mm Hg (torr), psia, kPa, inches H<sub>2</sub>O.
- Differential Barometer: Pressure change in mb, inches Hg, mm Hg (torr), psia, kPa, inches H<sub>2</sub>O.
- Altitude and Altimeter Setting: Altitude in feet or meters computed from known altimeter setting; altimeter setting in inches Hg or mb computed from known altitude.
- Temperature-Compensated Altitude: Altitude in feet or meters computed from entered ambient air temperature.
- Differential Altitude: Altitude change in feet or meters using an entered ambient air temperature.
- Calibration: Enter a permanently stored offset correction to the calibrated pressure reading.

## English Model Barometer/Altimeter 8001-70

- Reads 0 to 15,000 ft. of altitude in 100-foot divisions.
- Reads barometric pressure in inches of mercury (to 0.1 in.).
- Reads barometric pressure in millibars (to 5 mb) on inner scale.
- Carrying case.

## Metric Model (Not Shown) 8001-72

- Reads 0 to 4,500m of altitude in 20-meter divisions.
- Reads barometric pressure in millibars (to 2mb).
- Reads barometric pressure in millimeters of mercury (to 2mm) on inner scale.
- Carrying case.

## ALTIplus Barometer/Altimeters

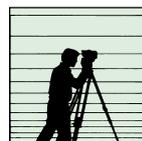
8001-90 ALTIplus A2 Altimeter/Barometer.  
8001-95 ALTIplus K2 Altimeter/Barometer.

### ALTIplus A2/K2

- Altitude in feet or meters.
- Pressure in hPa or inches of mercury.
- Absolute pressure.
- Sturdy shockproof case.
- Two easy-to-use function keys.
- Lightweight and compact.
- Supplied with carrying case and neck lanyard.

### Additional Features ALTIplus K2

- Barometric pressure trend.
- Speed of climb.
- Chronograph.



Surveying  
EDM Barometric  
Data  
Reconnaissance  
Mapping  
Elevation  
Forestry



Geosciences  
Mining  
Geology  
Hydrology  
Speleology  
Seismology



Recreation  
Mountaineering  
Hunting  
Fishing  
Exploration



8001-75



8001-90



8001-70

### QUICK SPECS

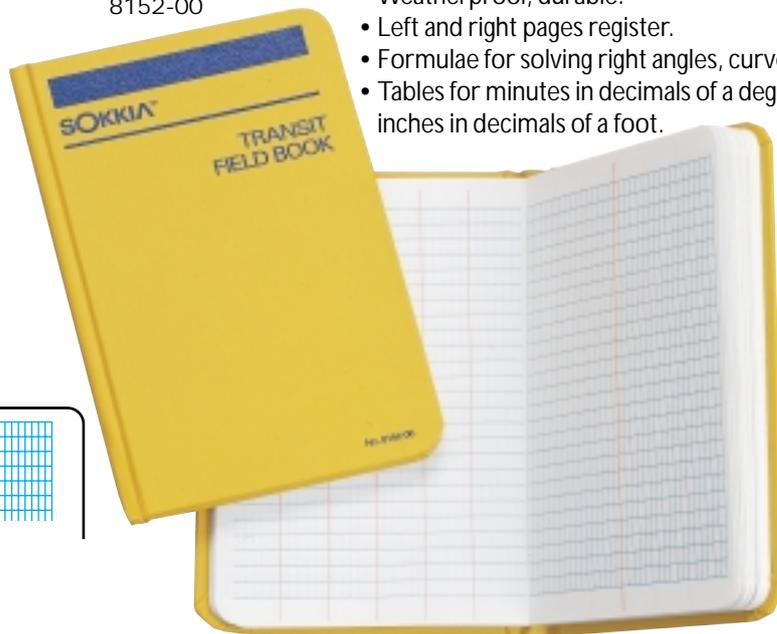
	Model A2	Model K2
Altitude Resolution	10 ft. / 5m	3 ft. / 1m
Pressure	0.01 inHg / 1 hPa	0.01 inHg / 1 hPa
Altitude Range	-1,000 ft. to +19,600 ft. -305m to +6000m	-1,000 ft. to +30,000 ft. -305m to +10,000m
Weight w/o Battery	3.2 oz	3.2 oz
Operating Temperature	-14° to +122°F (-30° to +50°C)	-14° to +122°F (-30° to +50°C)

# Engineer's Field Books



8152-00

- 80 pages — 50% cotton rag content paper
- Weatherproof, durable.
- Left and right pages register.
- Formulae for solving right angles, curves.
- Tables for minutes in decimals of a degree, inches in decimals of a foot.



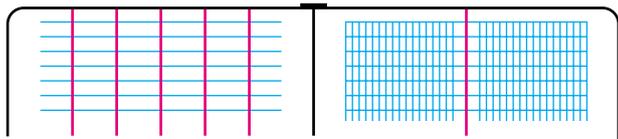
## TRANSIT AND ECONOMY FIELD BOOKS

8152-00 [Transit Field Book](#)

8152-05 [Economy Field Book](#); heavy paper cover, spiral bound, 36 pages

8152-10 [Economy Field Book](#); heavy paper cover, saddle stitched (stapled), 32 pages

8152-80 [Duplicating Transit Book](#)



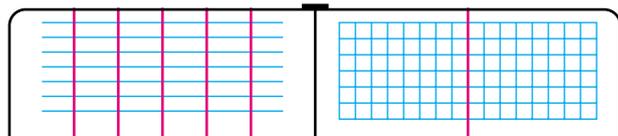
Left page: blue horizontal lines, red vertical lines.

Right page: 8 vertical and 4 horizontal blue lines, red vertical center line.

Size: 4-1/2 x 7-1/4 in.

## MINING TRANSIT BOOK

8152-20



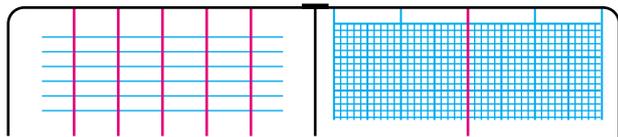
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Right page: 8 x 8 blue lines, red vertical center line.

Size: 4-1/2 x 7-1/4 in.

## ENGINEER'S FIELD BOOK

8152-30



Left page: blue horizontal lines, red vertical lines.

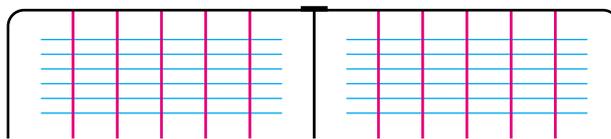
Right page: 10 x 10 blue lines; red vertical center line; inch lines heavy.

Size: 4-1/2 x 7-1/4 in.

## LEVEL BOOK

8152-50 4 x 6-1/2 in.

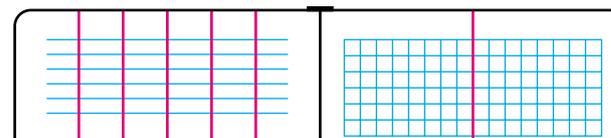
8152-55 4-1/2 x 7-1/4 in



Both pages: blue horizontal lines, red vertical lines.  
6 vertical columns.

## FIELD BOOK

8152-60



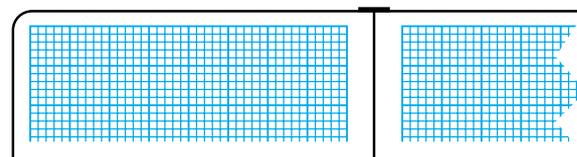
Left page: blue horizontal lines, red vertical lines.

Right page: 4 x 4 blue lines, red vertical center line.

Size: 4-1/2 x 7-1/4 in.

## CROSS-SECTION BOOK

8152-75



Both pages: 10 x 10 blue lines with inch lines slightly heavier.  
Size: 6-1/2 x 8-1/2 in.

# Engineer's Field Books

## LOOSE-LEAF FIELD BOOK SHEETS

Printed with waterproof blue and red inks on fine-quality 50% rag ledger paper specially treated to give "high wet strength." This paper retains its strength and working surface when dried after having been subjected to extreme weather conditions. All sheets are universally punched to fit all standard six- and three-ring binders.

### Single sheets:

4-1/2 x 7-1/4 in.; ruled on both sides and used consecutively; banded 50 singles per pack, 12 pkgs. per carton, sold by package.

### Double sheets:

4-1/2 x 7-1/4 in.; left- and right-hand pages of each record are joined; banded 50 per pack, 12 pkgs. per carton, sold by package.

	Type	Style	Ruled Like Field Book
8153-00	Transit Field	Single	8152-00
8153-02	Transit Field	Double	8152-00
8153-20	Mining Transit	Single	8152-20
8153-30	Engineer's Field	Single	8152-30
8153-32	Engineer's Field	Double	8152-30
8153-50	Level	Single	8152-55
8153-52	Level	Double	8152-55
8153-60	GPS	Single	N/A

## HIGH-VISIBILITY

### BUCKRAM BINDERS

8153-70 50-page capacity. Size: 5-3/8 x 7-3/4 in. with 1/2-in. rings.

8153-75 100-page capacity. Size: 5-3/8 x 7-3/4 in. with 3/4-in. rings.

Buckram-covered stiff board construction, lined with black paper. Six-ring style— spacing 3/4, 3/4, 2, 3/4, 3/4 in. Designed to hold loose-leaf sheets. Sturdy sheet lifter.



8153-70

## HIGH-VISIBILITY POLYETHYLENE BINDERS

8153-78 50-page capacity. Size: 5-3/4 x 7-3/4 in. with 1/2-in. rings.

8153-79 100-page capacity. Size: 5-1/2 x 7-3/4 in. with 3/4-in. rings.

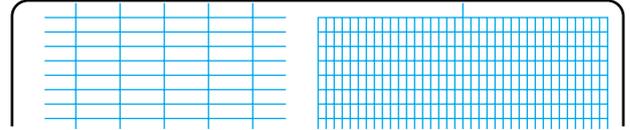
55-gauge, one-piece cover; resists dirt, grease and mud, and withstands heat, cold, snow, etc. Durable one-piece hinges; sturdy sheet lifter.



8153-79

## RITE-IN-THE-RAIN® WEATHERPROOF FIELD BOOKS AND SHEETS

Made with an amazing paper created especially for writing field notes in wet weather. It's actually possible to write clear, readable notes during the heaviest downpour.

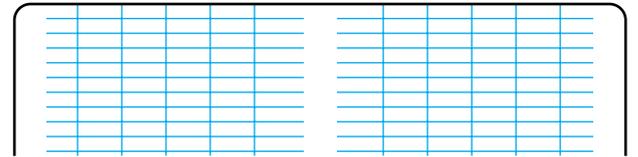


8154-00 Mfrs. No. 300.

80 leaves ruled 8 vertical lines to the inch; page size: 4-5/8 x 7 in.; bound in vivid yellow polyethylene cover.

8154-10 Mfrs. No. 302.

Same as No. 8154-00, except 100 loose-leaf sheet pack\*.



8154-05 Mfrs. No. 310.

80 leaves ruled with 6 vertical columns each page; page size: 4-5/8 x 7 in.; bound in vivid yellow polyethylene cover.

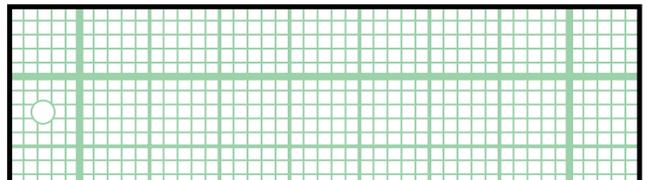
8154-15 Mfrs. No. 312.

Same as 8154-05, except 100 loose-leaf sheet pack\*.

\* Standard 6-hole punching: 3/4, 3/4, 2, 3/4, 3/4 in.; sheet size: 4-5/8 x 7 in.

## ENGINEER'S COMPUTATION PADS

1616-60



Green-tint 16 sub. writing paper with margin lines, three-hole punched. Cross-section grid on reverse side. Five squares per inch with inch lines in blue. 50 sheets per pad; individually wrapped. Size: 8-1/2 x 11 in.

# Hand Levels



**Bulz-1™ Hand Levels — 1x**  
 8040-00 5-in. length; extends to 7 in.  
 8040-05 Same as above, but with stadia lines — ratio 1:20  
 8040-20 7-in. length; extends to 10 in.  
 8040-25 Same as 8040-20, but with stadia lines — ratio 1:20

- Each part can be easily replaced in the field, including bubble housing.
- Draw-out eyepiece extends overall length for greater accuracy.
- Brass construction.
- Bubble reflected by first surface mirror for maximum illumination.
- No springs; adjustable with positive two-screw motion.
- Inner works mounted on removable slide for easy cleaning and maintenance.
- Padded belt-loop case.

**Hand Level — 1x**  
 8043-50

- Fixed eyepiece; internally mounted bubble assembly and adjustable reflector.
- Hexagonal objective cap prevents rolling.
- 6-in. length with durable finish.
- Padded belt-loop case.

**Magnifying Hand Level — 2x**  
 8043-70

- Similar to 8043-50 above .
- 1 in. diameter tube is 6 inches in length; extends to 7-3/4 in.
- Padded belt-loop case.

**Square-Type Hand Level — 1x**  
 8045-20

- May be used as a bench level.
- 5-1/4 in. length with fixed eyepiece.
- Case.

**Magnifying Hand Level — 5x**  
 8042-60

- Provides accuracy at greater distances than regular-type hand levels.
- Objective lens and eyepiece slide for easy focusing.
- Stadia lines with 1:100 ratio.
- Metal construction with durable finish.
- 7-1/2 in. length.
- Padded belt-loop case.

**Heavy-Duty Hand Level — 2x**  
 8041-10

- All-brass construction with yellow enamel finish.
- Bubble enclosed in level tube for maximum durability.
- 5-5/8 in.; extends to 6-3/4 in.
- Resists dirt and moisture.
- Padded belt-loop case.



# Abney Levels/Right-Angle Prisms

## Abney Level with Clinometer Level 8047-10

- Tube is 5-1/8 in. long.
- 1-1/8 in. radius arc graduated in degrees (0-90°) in both directions; vernier reading to 10'.
- Slope scale 1:1 to 1:10.
- Padded belt-loop case.

8047-15 Same as 8047-10; but with percent-of-grade scale from 0-100%

## Topographic Abney Level 8047-45

- Two interchangeable arcs which offer:
  - Chainage correction.
  - Degrees (0-60°) in both directions.
  - Percent of grade.
- Index has friction movement for fine adjustment.
- 6-3/8 in. aluminum level tube extends to 7-3/8 in.
- Non-glare finish.
- Padded belt-loop case.

## 5x Magnifying Level with Stadia 8047-55

- 1:100 stadia.
- 7-3/4 in. barrel extends to 8-5/8 in.
- 1-11/16 in. radius arc graduated in degrees (0-90°) in both directions; vernier reading to 10'.
- Percent scale (0-100%) in both directions.
- Easy-slide focusing motions for objective and eyepiece.
- 1 x 3-3/4 in. flat base for measuring existing grades.
- Durable enamel finish.
- Padded belt-loop case.

## Right-Angle Prism 8047-81

- Small and lightweight.
- Single 90° prism for conveniently and quickly setting-off right angles.
- Leather case.

## Pentaprism 8047-85

- Two prisms for line of sight to the right and left.
- Clear optical glass between prisms for viewing straight ahead.
- Fully enclosed; self-storing.
- Compact, self-contained plumb bob with cord.
- Metal construction.
- Leather belt-loop case.

## Double Right-Angle Prism 8047-80

- Compact and precise — easy determination of right-angle points or rectilinear points between two targets.
- Two large, precision-made pentagonal prisms firmly secured for proper alignment.
- Protective metal cover rotates to expose prism.
- Leather belt-loop case.



8047-10



8047-45



8047-55



8047-81



8047-85



8047-80

# Compasses



## Compasses With Transmitting

8026-30 Compass in quadrants 0-90°

8026-35 Compass graduated 0-360°

- Fills the need for a small, light weight transit.
- 12x telescope with erect image; length 4-3/4 in.; minimum focus 4 ft.; stadia ratio 1:100.
- Vertical circle graduated in degrees; 50° - 0° - 50° (top and bottom).
- Horizontal circle graduated in degrees, with vernier reading to 5'.
- Compass graduated to degrees in quadrants 0-90°, or 0-360°; declination adjustment.
- Complete with case, shoulder strap; weight 3.5 lbs.

Tripod (Not Shown)  
8026-33

- Suitable for use with 8026-30 and 8026-35 surveying compasses.
- Tubular aluminum extension legs—21 in. closed; extends to 53 in.
- Tripod head threaded for compass base; converts to 1/4 x 20 thread.
- Case and sling strap.
- Protective cap is used as a plummet for pocket transits, rangefinders and cameras.
- Weighs 2 lbs.

Geological Compasses  
8022-05

- Aluminum case 4-1/2 in. square with folding sights.
- Raised compass ring graduated to degrees, with adjustment for setting declination.
- Three-inch needle has jeweled center.
- Beveled ring on compass box graduated to degrees and numbered in quadrants; with knurled edge.
- Pendulum clinometer graduated to degrees; 90° in each direction.

- Edges of base graduated as protractor; inches and eighths; inches and tenths.
- Circular level.
- Carrying case with shoulder strap.

Forestry Compass  
8022-55

- Similar to 8022-05, but without square base and revolving beveled ring on compass box.
- Ball and socket joint in leather carrying case with shoulder strap.

Accessories for Compasses

8022-01 [Leather Case](#) with shoulder strap for 8022-05 and 8022-55

8022-52 [Ball and Socket Joint](#) for 8022-05 or 8022-55



8026-35



8022-05



8022-55

# Compasses and Clinometers

## Compasses

### 8024-30 Round Lens with Four-Fold Magnification



Triangular and round holes for control marking; arrows indicate direction of travel; four-second damping.

### 8024-42 Gear-Operated Declination Adjustment System



Graduated 0-360° with two-degree intervals; parallax error can be eliminated by means of arrangement of luminous points and color lines; five-second damping.

8024-43 Same as 8024-42, except dial graduated in quadrants

- Quality, professional compasses.
- Accuracy of 10' (1/6 °).
- Temperature-resistant liquid.
- Shockproof housing for durability.
- Needle pivoted on polished sapphire with non-wear bearing assembly.
- Factory balanced against magnetic inclination.

- No projecting or adjustable parts for one-handed, easy operation.
- Available in standard, reverse and quadrant scales of graduation.

## Sighting

8025-10



0-360° in plastic housing

8025-30



0-360° with reciprocal scale in metal housing with case.

- 8025-31 same as 8025-30, except includes built-in illumination
- 8025-35 same as 8025-30, except includes adjustable declination
- 8025-40 quad 0-90° in metal housing with case
- 8025-45 same as 8025-40, except includes adjustable declination

- Absolutely watertight.
- ABS plastic screen for improved clarity.

## Twin Precision Compass/Clinometers



8025-00 Twin 360R/90L Compass/Clinometer (degrees)

8025-05 Twin 360R/PCL Compass/Clinometer (degrees/percentages)

- Two instruments in one— precision compass and clinometer combination.
- Built-in prismatic sighting for fast field use.
- Resists corrosion, water and impact.
- Use for directional indications and slope/height measurements with an accuracy of  $\pm 0.25^\circ$ .
- Compass graduations 0-360°.
- Choose clinometer scale in either degrees or degrees/percentages.

## Clinometers



8025-75 0  $\pm$  90° scale on the left, 0  $\pm$  150% scale on right; reads directly to 1/6 of one degree or 1/5 of one percent; skylon case.  
8025-90 Similar to 8025-75 except 0  $\pm$  90° scale on the left and scale for direct reading of height of objects on the right; right scale reads directly to  $\pm 200'$  at 66 ft.; skylon case.

- Perform a number of leveling and measuring jobs.
- Use as a hand level, builder's level, optical plummet and slope indicator.
- Measures vertical angles, computes height, determines slope angles and levels for rough surveying.
- Damping liquid immerses all moving parts inside a sturdy, hermetically-sealed container for shock-free, smooth movement.
- Liquid will not freeze or evaporate, even under extreme conditions.
- Scale card supported by jewel-bearing assembly.
- Nothing to adjust for easy, one-hand operation.

8025-03 Rubber compass cover fits 8025-30, -40, -75, -90

# Pocket Transits and Accessories



## POCKET TRANSITS

- 8026-51 Instrument with circle 0-360° with case; damped
- 8026-56 Instrument with circle in quadrants with case; damped

Precision combination instruments that will perform practically all surveying functions and are widely used for preliminary surveys. 2-1/8-in. damped needle with a jeweled pivot. Vertical circle graduated 0-90° both directions, with a vernier arm reading to 10'. Velvet-lined belt-loop leather case included.



8026-56

## Leather Cases

- 8026-60 With belt loop
- 8026-61 With sling strap and belt loop

Pocket Transit



Ball & Socket Head

8026-22

## Ball and Socket Head

- 8026-22 Complete with belt-loop carrying case.
- 8026-23 Ball and Socket Head Only

Includes removable thimble. Head can be used with either 8022-54 Jacob Staff or 8026-33 tripod (pg. 56).

## Jacob Staff Thimble

8026-25



Telescoping Jacob Staff  
8022-56

Tubular aluminum adjusts in four steps from 21 to 64 in. Upper end is tapered with 1/4 x 20 thread for attachment directly to ball and socket head. Also fits Rangefinders and most cameras. In canvas carrying case.



8022-56

- Sokkia Celestial Observation Handbook and Ephemeris
- 1111-00 Year 2000
- 1111-01 Year 2001 (available late fall)



Used with accurate timepieces and hand-held calculators, this handbook can be used to yield highly accurate azimuths with relative ease.

- Modern method of calculation.
- HP-41, HP-42 and HP-48 programs included with user instructions.
- Accuracy unsurpassed.
- Complete Ephemeris tables..
- Full explanation through examples.
- Uniform calculation procedures for all observations.
- GHA and declination tabulation to one-tenth arc-second.

# Magnifiers and Thermometers

## Magnifiers

8170-00 **Bausch & Lomb Pocket-Size Magnifier**



With swing leather case; two-inch double convex lens; 2x; accurately ground and polished

Folding Magnifiers with durable plastic case/ frame

8170-20 **Single lens, 1 in.; 5x**

8170-24 **Single lens, 1-1/2 in.; 4x**



8170-28 **Double lens, 1-1/4 in.; 4x and 8x**



**Bausch & Lomb Highly Corrected Pocket Magnifiers**

Plastic mount with polished metal swing case

Coddington — wide field; single lens construction

8172-10 **1 in. focus; 10x**

8172-14 **1-3/4 in. focus; 14x**

8172-20 **1/2 in. focus; 20x**

Hastings Triplet — highly corrected for spherical and chromatic aberration

8173-07 **1-1/2 in. focus; 7x**



8173-10 **1 in. focus; 10x**

8173-14 **1-3/4 in. focus; 14x**

8173-20 **1/2 in. focus; 20x**

## Bi-Therm Thermometers

8006-50 **1" dial; -40° to 160°F**



8006-51 **1" dial; -40° to 50°C**

8006-60 **1" dial; 0° to 220°F**

8006-72 **2" dial; 50° to 550°F**



As accurate as mercury thermometers, but without the need for safety precautions to avoid potential toxicity; measures temperature via a bi-metallic coil attached to an indicator needle.

## Thermometers

8006-00 **Max.-Min. Thermometer**



Tenite case; magnet reset; mercury filled; range -40° to +120°F in 2° increments; nonrefillable

8006-90 **Pocket Digital Max.-Min. Thermometer**; Super Wide Range-58° to 500° F/-50° to 260°C; Fahrenheit and Celsius; Stainless Steel Stem; 0-1° F



8006-10 **Pocket Thermometer**; plastic case; 5-1/2 in. long; mercury filled; range -40° to +120°F in 2° increments; nonrefillable



8006-10

8006-12 Same as 8006-10, except refillable metal case

8006-12

8006-13

8006-13 **Open Face Armor Case Thermometer**; refillable metal case; 5-1/2 in. long; mercury filled; range: -40° to +120°F in 2° increments



8006-15 **Glass Refill** for 8006-12 metal case-style pocket thermometer and No. 8006-13 open face armor case thermometer

8006-15

8006-11 **Pocket Thermometer**; plastic case; 5-1/2 in. long; mercury filled; range -40° to +50°C in 1° increments; nonrefillable

8006-14 **Pocket Thermometer**; Same as 8006-11, except refillable metal case

8006-16 **Glass refill** for 8006-14

8006-20 Same as 8006-10 except range: 0° to +220°F; nonrefillable

8006-31 **Sling Psychrometer** (not shown); 6-7/8 in. mercury-filled thermometer, recessed and protected by black plastic tube-type case; outside of case acts as handle while operating; white-on-black scale markings; range +20 to +120°F in 1° increments

8006-36 **Replacement Thermometer** for sling psychrometer

# Field Accessories



## Plumb Bobs

- 8122-10 10 oz.
- 8122-12 12 oz.
- 8122-14 14 oz.
- 8122-16 16 oz.
- 8122-18 18 oz.
- 8122-24 24 oz.
- 8122-32 32 oz.



8122-10

- Screw caps and hardened steel points with standard threads.
- Storage space for extra point inside cap.
- Made to U.S. Government specifications.

8122-90 **Extra Point** (fits all plumb bobs listed above)

8122-93 **Extra Cap** (fits all plumb bobs listed above)

## Plumb Bob Cord

- 8124-13 **White linen**; 25 yd. hank
  - 8124-23 **Orange Linen**; 25 yd. hank
- Made with the finest quality braided cord

8124-37 **Fluorescent Red nylon**; 50 yd. spool

8124-38 **Fluorescent Yellow Nylon**; 50 yd. spool

## Leather Scabbard for Pocket Tape and Plumb Bob

8123-65

- Rugged leather with stitched and riveted pockets
- Holds tape or Gammon Reel and 16- or 18-oz. plumb bob

## Leather Scabbards

8123-15 **For bobs 10-14 oz.**

8123-25 **For bobs 16-18 oz.**

8123-35 **For bobs 24-32 oz.**

- Extra-heavy stitched and riveted pocket
- Accommodates Web Belt 8123-50, pictured on page 61

## Targets

### "Quik-Stik"

8126-40 Paper back peels off instantly; sticks to any surface; 2 x 3-1/2 in. package of 25

8126-45 5-1/4 x 12 7/8 in. fits exactly around one qt. oil can; pkg. of 10

### Plastic

8126-20 Notched for attaching to line; 2-1/2 x 4 in.

### Translucent Plastic

8126-25 Laminated with special "see-through" design for brilliant illumination; 2-1/4 x 4 in.; notched for attaching to line

### Paper

8126-30 2 x 3-1/2 in. size; pkg. of 100

### Gammon Reels

8124-48 **12-ft. Gammon Reel** Black & Orange

8124-49 **12-ft. Gammon Reel**

8124-50 **7-ft. Gammon Reel**

8124-51 **24-yd. Nylon Refill**, Red-Orange

8124-52 **24-yd. Nylon Refill**, Glo Yellow

8124-53 **24-yd. Nylon Refill**, White

8124-54 **24-yd. Nylon Refill**, Glo Red

- Handy, retracting plumb bob cord reel means no more winding and no more broken or muddy string
- With 72 lb.-test nylon string; weighs 1-1/2 oz.

### Tally Register

8792-00



Four-digit capacity with quick return to zero.



8126-45



8124-38



8123-65  
(Plumb bob & gammon reel not included)



8123-15  
(Plumb bob not included)



8126-25



8126-20



8126-40



8126-30



8124-48



8124-50



**HAMMERHEAD**  
**Flagging Tape**  
 Surveying and Construction Supplies  
 Made in the U.S.A. **ULTRA**

## HAMMERHEAD Flagging

- 8120-20 Glo Orange 150 ft.
- 8120-21 Glo Pink 150 ft.
- 8120-22 Glo Red 150 ft.
- 8120-23 Glo Lime 150 ft.
- 8120-24 Glo Yellow 150 ft.
- 8120-25 Glo Blue 150 ft.
- 8120-00 Blue 300 ft.
- 8120-01 White 300 ft.
- 8120-02 Red 300 ft.
- 8120-03 Orange 300 ft.
- 8120-04 Yellow 300 ft.

- Packed 1 dozen to a box.

## Texas Brand Flagging



8110-XX Solid; 300 ft. roll  
 Specify color: -00 Red, -01 Orange, -02 Blue, -03 Yellow, -04 White

8112-XX Fluorescent; 150 ft. roll  
 Specify color: -00 Glo Red, -01 Glo Orange, -03 Glo Yellow, -04 Glo Pink

- Colorfast and rainproof.
- Contains no toxic lead.
- Rolls are 13/16 in. wide.
- Packed 1 dozen to a box.

## STAKE FLAGS

	Length	Flag Size
8108-XX	21 in.	2-1/2 x 3-1/2 in.
8109-XX	30 in.	2-1/2 x 3-1/2 in.
8113-XX	36 in.	4 x 5 in.

Specify color: -00 Pink Glo, -01 Orange Glo, -02 Blue, -03 Yellow

- Bright vinyl flags securely attached to stiff steel wire stakes.
- Packed 100 to bundle; 10 bundles per box. Sold by the box.

## Flagging Tape Dispenser 8110-10



- The convenient way to cut flagging tape strips of any length.
- Lightweight, rustproof; fits on belt or waistband.

## Small Angle Magnetic Protractor 8129-11



- Full view MONO-VIAL®
- Dial graduated to 5°.
- Magnetic base.
- Durable Polycast® construction.

## Magnetic Polycast® Protractor 8129-12

- Magnetic base and back.
- Easy reading dial.
- Durable Polycast® construction.
- Transfer angles to within 1°.

## Unitek™ Carpenter's Level 8129-05



- Replaceable level vials.
- Center vial is viewable from top side of level.
- 24 in. long.

## Line Level 8129-10

- Hooks hold level to line and allow it to be moved along the line easily.
- 3 in. long.

## Bull's Eye Circular Leveling Vial 8130-52



- Plastic housing mounted on metal base.

## Surveyor's Umbrella 8136-40

- Blue and yellow heavy-drill fabric; 63 in. spread.
- 8 ft., 2-section pole with baked aluminum enamel finish.



8136-41 Same as above, but made of water-resistant vinyl; solid color

## Vari-Pitch™ Line Level 8129-13



- Multi view.
- Lightweight.
- V-groove for pipe or conduit work
- Pocket clip.

# Field Accessories



## Aervoe® Spray Marking Paint/Chalk

- The ideal marking paint for pavement, grass, gravel, and soil.
- Non-clogging; sprays upside down.
- Environmentally safe; no lead or fluorocarbon propellant.
- 17-oz. can contains paint/chalk for over 1,500-ft. line coverage.

## A.P.W.A. Utility Paint Colors

- 8134-47 **201 Red** (street lighting, electrical)
- 8134-48 **203 Blue** (water)
- 8134-49 **204 Green** (drain and sewer)
- 8134-50 **205 Orange** (communication)
- 8134-51 **202 Yellow** (gas and oil)
- 8134-52 **207 White** (regular)
- 8134-57 **206 Black Spray Chalk**
- 8134-46 **200 Clear Spray**
- 8134-32 **214 Blue Spray Chalk**
- 8134-33 **215 White Spray Chalk**
- 8134-34 **216 Red Spray Chalk**
- 8134-35 **218 Yellow Spray Chalk**

## Fluorescent Paint Colors

- 8134-53 **220 Fluorescent Red**
- 8134-54 **222 Fluorescent Orange**
- 8134-56 **224 Fluorescent Green**
- 8134-60 **229 Fluorescent Pink**

## Stripe Paint Colors

- 8134-36 **710 White**
- 8134-37 **720 Yellow**
- 8134-38 **730 Red**

## Glo Paint Colors (not inverted)

- 8134-39 **180 Glo Red**
- 8134-40 **182 Glo Orange**
- 8134-41 **184 Glo Green**
- 8134-55 **117 Clear Acrylic Coating**

12 cans per case, sold by can.

## Spray Paint Applicator

8134-59

- Durable plastic construction.
- No mess, clean-up or storage problems.

## 8134-58 32-In. Spray Paint Applicator

- Easy, one-hand operation with finger-trigger actuator.
- Handy belt clip.

## HAMMERHEAD Paint

- Inverted marking paint.
- Solvent base.
- Lead free
- VOC compliant
- Spray-Thru cap.
- 20 oz. Can/ 17oz. fill.



- 8000-01 **Flourescent Orange**
- 8000-02 **Flourescent Pink**
- 8000-03 **Flourescent Green**
- 8000-04 **Flourescent Blue**
- 8000-05 **White**
- 8000-06 **Clear**

12 cans per case, sold by can.

## Dixon Redimark® Marker

- 8134-71 **Black**, box of 12
- 8134-72 **Red**, box of 12
- Tight-seal, no-roll cap makes marker last longer; stores on base when not in use; supplied with pocket clip.
- Chisel point is ideal for marking on wood, metal, glass, plastic or paper.
- Aluminum body gives 30% more volume.

## Ideal® Mark marking pen

- 8135-01 **Ideal Mark w/Replaceable Bullet Tip**, box of 12, black ink
- Industrial-grade marker for surveying and construction layout.
- Valve action with indelible black ink.
- Replaceable tip.
- Metal cap with pocket clip.
- 8135-03 **Replacement Tip**, Bullet Style.
- 8135-04 **Replacement Tip**, Chisel Style.

## Ideal Mark 2® marking pen

- 8135-05 **Ideal Mark 2®**, box of 12
- Heavy marker for surveying and construction layout.
- Tough acrylic tip.
- Indelible black ink.

## Lumber Crayons

- 8134-61 **Carbon Black**
- 8134-62 **Yellow**
- 8134-63 **Red**
- 8134-64 **Fluorescent Pink**
- 8134-65 **Blue**
- For marking steel, concrete, stone, lumber — almost any surface.
- 4-1/2 in. long, 1/2 in. diameter.
- Packed 12 per box.

## Wood Crayon Holder

- 8134-68
- Select hardwood; duralumin thread prevents slipping.
- Protects hands and saves crayons; 4-7/8 in. long.

## Aluminum Crayon Holder

- 8134-69
- All-metal construction.
- Crayon held securely by positive locking system.
- Fits pocket or tool pouch.

## Carbide Point Scriber and Heavy Duty Scribers

- 8130-50 **Carbide Point Scriber**
- 8130-53 **Premium Scribe**
- 8130-54 **Giant Scribe**
- Replaceable carbide steel tip for precise, permanent markings on concrete, rock and steel—or any hard surface.
- Durable all-metal construction.
- Includes pocket clip and plastic cap.



# Field Accessories

## Nail Markers

8115-01 with 1/4-in. hole

8115-02 with 1/8-in. hole



One-inch squares made of plastic-impregnated nylon; you can't rip or tear them. Fluorescent orange color makes spotting stake tacks or P-K nails quick and easy. Approximately 70 count per package.

## Surveyor's Flat Shiners

8134-30

Tin; 2-1/4 in. diameter with center punch and crimped edges. Especially valuable for indicating semi-permanent points with spikes or nails. Three-pound carton (approximately 250 count).

## Surveyor's Raised Shiners

8134-31

Same as above, except 1-5/16 in. diameter with raised, 1-1/8 in. center. One-pound carton (approximately 260 count).

## Lead Wire

8132-20

3/8 in. diameter; 15 in. long. For lead and tack reference points. Fits hole cut by No. 8130-89 Concrete Drill.

## Stake Tacks

8132-70

Steel; 3/4 in. long; bright finish. With indentation in head to guide plumb bob point. Approximately 725.

## Mag Nails®

8133-45 3/4 x 1/8 in.

8133-46 1 x 5/32 in.

8133-47 1-1/4 x 3/16 in.

8133-48 1-1/2 x 1/4 in.

8133-49 2 x 1/4 in.

8133-50 2-1/2 x 1/4 in.

An induced magnetic field doubles or quadruples Mag Nail's detection with a metal locator and the revolutionary new metal formula retains magnetism to make finding Mag Nails easier. Increased toughness virtually eliminates breakage even when straightening a nail that is partly driven. Larger center point for easier driving and coated with a zinc and clear chromate to resist corrosion. Packaged in boxes of 100.

## "P-K" Masonry Nails

8132-51 3/4 x 1/8 in.

8132-52 1 x 5/32 in.

8132-53 1-1/4 x 3/16 in.

8132-54 1-1/2 x 1/4 in.

8132-55 2 x 1/4 in.

8132-56 2-1/2 x 1/4 in.



Parker-Kalon ("P-K") hardened masonry nails, zinc-plated to resist rust and increase visibility. Packaged in boxes of 100.

## Monument Spikes

8132-62 6 in. long

8132-64 8 in. long

Large monument spike, 3/8 in. square shank, galvanized with chisel point and button head. Makes ideal bench mark or turning point.

## Domed Survey Markers

8134-10 1-3/8 in. top diameter

8134-13 2 in. top diameter

8134-16 2-1/2 in. top diameter

8134-18 3 in. top diameter

Solid brass with curved heads. Ribbed shank prevents turning or loosening.

Shank area 0.4 square in.; shank length 2 in. Packed 96 per carton. 8134 Series markers can be furnished with linear or circular letters, numerals or characters on special order. Minimum order: 500 markers. Call for details.

## Flat Survey Markers

8134-00 1-3/8 in. top diameter

8134-03 2 in. top diameter

8134-06 2-1/2 in. top diameter

8134-08 3 in. top diameter

Cast from solid brass. Ribbed shank prevents turning or loosening. The 1/8 in. thick top has a non-glare matte finish. Shank area 0.4 in.; shank length 2 in. Packed 96 per carton.

## Crown Survey Markers

8134-80 18 in. long

8134-81 24 in. long

8134-82 30 in. long

8134-83 36 in. long

Steel core with thick copper covering in a permanent weld. Shanks have 5/8 in. diameters; bronze heads have 1-1/2 in. diameters. Excellent visibility; strong and easy to drive. Large bronze head is ideal for center-punching the exact point of reference with additional space for stamping legend. Markers respond to magnetic locators. Sold individually, Packed 10 per carton.



## Adaptor for Crown Survey Markers

8134-88

Provides extra-large, 4 in. bronze surface for stamping identification. Fits flush with the marker. Four triangular points prevent turning.

# Field Accessories and Hand Tools



## Stake Bags

8181-30 [White canvas](#); 16 x 12 x 6 in.

8181-35 [Orange cordura](#); 18 x 12 x 6 in.



8181-35

- 1-1/2 in. web shoulder strap.
- Three pockets 8 in. deep across front; pockets across each end measure 6 x 7 in.

## Leather Tool Pouch

8181-15



8181-15  
w/ 8123-50

- Features 8 x 7 in. pouch for field books, etc., plus 6 x 4 in. pouch for spikes, nails, etc.
- Storage slots for crayons, markers, concrete drill or other tools plus leather loop for hammer, axe or steel tape.
- A 12-foot pocket tape may also be clipped over leather loop.

## Web Belt

8123-50

- Adjusts to fit waist 29-46 in.
- Strong, snap-on buckle assembly; can be used for carrying scabbards or tool pouch.

## Surveyor's 7-Pocket Tool Pouch

8181-16



- Specially designed, all-leather pouch for the working surveyor.
- Seven stitched-and-riveted, formed pockets hold everything from plumb bob, folding rule and stake tacks to full-size field book 6 (W) x 8 (L) in.; slides onto the No. 8123-50 Web Belt (above).

## HAMMERHEAD Bag Goods

All HAMMERHEAD Bag Goods Are Made OF Dupont Cordura®



### Prism Bags

8000-70 [Single Prism Bag](#)

8000-71 [Triple Prism Bag](#)

8000-72 ["Jumbo" Triple Prism Bag](#)

8000-73 [Extra Tall Prism Bag](#)

- 2 inch foam padding.
- A sturdy YKK® coil zipper

8000-50 [Prism/laser Rod Bag](#)

- Designed to carry and protect poles and laser rods.
- Adjustable shoulder strap.
- Fold-over with tie-down flap
- Leather bottom.

### Stake and Lathe Bags

8000-55 [19" Stake Bag](#) with pockets.

Designed to carry a bundle of 16 or 18-inch wooden stakes or rebar.

8000-56 [28" Stake Bag](#) with pockets.

Designed to carry a bundle of 24-inch wooden stakes or rebar.

8000-65 [33" Lath Bag](#) is designed to hold 36-inch wood lath.

8000-66 [46" Lath Bag](#) is designed to hold 46-inch wood lath.

- Adjustable shoulder strap.
- Outside pockets
- Drain holes to eliminate water weight.

### Tripod Bag

8000-80

- Designed to hold instrument tripods.
- Adjustable shoulder strap.
- Pull string closure.
- Leather bottom

### Tool Pouch

8000-90

- 11 inch (28cm) x 7 inch (18cm) main compartment.
- 6 inch (15cm) x 4 inch (10cm) pouch for spikes and nails.
- Slots for crayons and marker

## Machete



8130-00 [Machete](#)

8130-01 [Leather Sheath](#) with belt loop

8130-02 [Canvas Sheath](#)

- Plastic handle; 22 in. polished steel blade..

## Bush Hook



8130-10 [Bush Hook](#)

8130-11 [Replacement Handle](#)

- 3-pound, 11-in. red-painted steel blade with 36 in. hickory handle..

## Sandvik® Bush Axe



8130-15 [Bush Axe](#)

8130-16 [Replacement Handle](#)

8130-17 [Replacement Blade](#)

- Quickly slices through 3- or 4-in. brush and saplings; 28 in. hickory handle; 7-1/4 in. Swedish steel blade.

## Ditch Bank Blade



8130-08 [Ditch Bank Blade](#)

8130-09 [Replacement Handle](#)

- The ideal tool for clearing thick underbrush
- Tough 16 in. blade; ground, heat-treated and sharpened on both sides.

## Estwing® Hand Axe

8130-35



- Forged one-piece head/handle of finest tool steel.
- Nylon/vinyl cushion grip will never loosen; 13-1/2 in. length, 24 ounces.
- Complete with embossed leather sheath.

# Hand Tools

Axe With Leather Sheath  
8130-19



- Hardened steel blade holds a keen edge.
- Sturdy hickory handle.

Estwing® Broad Hatchet  
8130-45



- Forged one-piece head/handle of finest tool steel; full mirror polish.
- Nylon-vinyl cushion grip; 17-in. length, 28 ounces.

Estwing® Pick Hammer  
8130-22



- Forged one-piece head/handle of finest tool steel, perfectly tempered — won't become "chewed up" with long use..
- Nylon-vinyl deep cushion grip absorbs all shocks and will not wear out .
- 22 oz.
- 11 1/2 inch handle.

Long Handled Rock Pick  
8130-07

- Like 8130-22 but 16 1/4 inches long

Rock Pick with Leather Wrapped Handle  
8130-39

- Like 8130-22 but with leather wrapped handle instead of cushion grip.

8130-23 [Leather Sheath](#) (for above)

Estwing® Single Jack Sledge with Long Handle

- Forged one-piece doubleface head/handle of finest tool steel; 16-in. length.
- Exclusive, durable nylon-vinyl cushion grip.

8130-60 4 lbs.; 14 in. handle



8130-37 4 lbs.; 11 in. handle

8130-38 3 lbs.; 11 in. handle

Drill Hammer  
8130-18



- Hardened steel head for long, hard use.
- Strong hickory handle securely mounted; weight 4 lbs.

Estwing® Straight Claw Hammer  
8130-65



- Forged one-piece head/handle of finest tool steel; 1 pound.
- Exclusive nylon-vinyl deep cushion grip absorbs all shock; lasts indefinitely.

GAD  
8130-80



- Rectangular; tempered tool steel; 3/4 x 1-3/4 x 18 in.
- Use to start pilot holes in hard-packed dirt or asphalt.

*NOT SUITABLE FOR BREAKING CONCRETE PAVEMENT OR ROCK.*

Estwing® Rock/Concrete Chisel  
8130-85



- Unsurpassed temper; molded vinyl cushion grip; 1/2 x 12 in.

Concrete Drill  
8130-89



- Heat-treated, tempered carbon steel; 10 x 5/8 in.
- Heavy handle eliminates sting; fast-cutting "V" edge.

Estwing® Safety Goggles  
8130-98



- Soft, comfortable vinyl frame fits over eyeglasses.
- Ventilated to prevent fogging; full down ward vision.
- Meets all Federal Specifications.

*ALWAYS WEAR SAFETY GOGGLES WHEN USING STRIKING TOOLS BECAUSE THEY MAY CHIP AND CAUSE EYE INJURY.*

Crescent® T2Z ToolZall Pro  
8130-25



- Made from highest-quality stainless steel.
- Contains 12 commonly used tools— including screwdrivers, pliers and knife.
- Manufacturer's limited lifetime warranty.
- Replacement tools available.
- Belt pouch.

Estwing® Pry Bar  
8130-82

- Forged tool steel T-beam construction.
- Two polished hammer faces.
- 18 in. long; weight 1 pound.



# Magnetic Locators



## GA72Cd Locator

8026-90 [Schonstedt GA72Cd Locator](#) with carrying case

- Digital readout and expanding bar graph displays signal strength and polarity.
- Analog output for data logger entry.
- Environmentally friendly lithium batteries.
- Three-year manufacturer's warranty.

## GA-52Cx Heliflux Magnetic Locator

8026-82 [Schonstedt GA-52Cx Heliflux Magnetic Locator](#) with carrying case

- Most widely used professional locator.
- Unsurpassed detection range.
- Four individual sensitivity settings.
- Piezoelectric loudspeaker.
- Rugged no-roll cover.
- Five-year manufacturer's warranty.

## MAC-51Bx

8026-85 [Schonstedt MAC-51Bx Locator](#) with fitted carrying case

- Schonstedt's MAC-51Bx is a unique transmitter-receiver locator system with fingertip selection of cable and magnetic locator functions.
- In addition to the cable locator function, the dual-function receiver has all the capabilities of the field-proven GA-52Cx magnetic locator.
- Cable locator function locates underground telephone, utility and CATV cables using the transmitter-receiver; a trace signal, inductively coupled directly connected to the cable, is detected with the receiver; a sharp null in the receiver's audio output indicates the location of the cable.

- Designed for field use, the MAC-51Bx comes in a custom carrying case that also houses the transmitter.

- The solid-state electronics, rugged receiver and carrying case are engineered to give you years of trouble-free field service — no fragile meters to replace or calibrate.

8026-86 [Inductive Cable Clamp](#) for MAC-51Bx

8026-88 [MT2 Transmitter](#) for MAC-51Bx

8026-83 [Earphones](#) for GA-52Cx, GA72Cd and MAC51Bx



8026-90  
GA72Cd



8026-82  
GA52Cx



8026-85 with  
optional cable clamp

# Rangefinders

## Ranging® Rangefinders

- Easy to use coincidence type rangefinders for fast measurement over difficult terrain or to inaccessible points.
- Five models from 50 to 1000 yards or 46 to 1000m maximum range.
- Dual calibration to measure in both yards and meters.
- Quick, easy re-calibration.
- Lightweight, compact size.
- Rugged construction.

8031-61



8031-56



0992-50



8031-54

8031-53



## ORDERING INFORMATION

0992-50	Yardage Pro 600
8031-30	Ranging 1000
8031-52	Ranging Sure Shot 60
8031-53	Ranging TLR75
8031-54	Ranging 200
8031-55	Ranging 400
8031-56	Yardage Pro 500
8031-61	Yardage Pro 1000
8031-80	Yardage Pro Compact 800

### Accessories

8031-58	Case for Sure Shot 60 and TLR75
8031-59	Case for Ranging 200
8031-60	Case for Ranging 400 and 1000 Rangematic

## Bushnell® Yardage pro®

Bushnell's 2000 Yardage Pro family uses the most advanced laser technology available. The Bushnell Yardage Pro 500, 600 Compact, 800 Compact and 1000 models measure distances instantly and accurately to within one yard. The compact and lightweight design make the Yardage Pro Laser Rangefinders useful for preliminary surveying and mapping activities. All Yardage Pro Laser Rangefinders feature the popular SCAN mode for continuous target tracking. Dependable in even the harshest conditions, all models are water and shock resistant and come with a one year manufacturers limited warranty.

Sokkia Lens-Displacing Type Rangefinders  
 8026-15 Mfr. No. SD5F, 500mm (19.7 in.) base line reading to feet  
 8026-16 Mfr. No. SD5D, 500mm (19.7 in.) base line reading to meters

- Sokkia lens displacement system means greater accuracy and longer life.
- Use of pentagonal prism and annular support prevents vertical parallax and maintains accuracy, even under extremes of heat and vibration.
- Telescope provides a bright, wide viewing field with high magnification.
- Complementary colors of yellow and blue used in viewing field facilitate accurate measurement.
- Lightweight; threaded base for easy mounting on camera tripod
- Furnished with soft vinyl case.



8026-15

## QUICK SPECS

Description	0992-50 Yardage Pro® 600	8031-56 Yardage Pro® 500	8031-30 1000 Rangematic	8031-52 Sure Shot 60	8031-53 TLR75	8031-54 Ranging 200	8031-55 Ranging 400	8031-61 Yardage Pro® 1000	8031-80 Yardage Pro® Compact 800
Magnification	4x	6x	6x	1x	1x	3x	3x	6x	8x
Min. / Max. Distances	Up to 600 yds Non-reflective target	Up to 500 yds Non-reflective target	50-1000 yds., 46-1000m	10.5-60 yds., 10.5-60m	10-75 yds., 10-75m	16-200 yds, 15-180m	20-400 yds. 20-400m	Up to 1000 yards Non-reflective target	Up to 800 yards Non-reflective target
Accuracy	± 1 yds	± 1 yds	± 2 yds.@100 yds., ± 9m@300m	± 1 yds.@40 yds., ± 0.9m@45.7m	± 1 yd.@50 yds., ± 0.9m@45.7m	± 1.5 yds.@100 yds., ± 2m@100m	± 2 yds.@100 yds., ± 18m@400m	± 1 yds	± 1 yds

# Warning Signs



## High-Level Warning Scope

8136-00 [High-Level Warning Scope](#)  
8136-02 [Replacement Sign Only](#)

The finest portable telescoping stand for traffic safety use. Drawn aluminum tubing, die-cast aluminum and zinc parts, extruded plastics, die-cast plastics, stamped and machined parts, nylon and vinyl, baked enamels, chrome and zinc plating. Four legs for unequalled stability. Three 18 x 18 in. fluorescent red vinyl-coated flags with stiffeners. The warning sign is 24 x 24 in. and made of vinyl-coated fabric with metal braces; it rolls up for easy storage. Complete unit extends to an overall height of approximately 9 ft. 2 in. and consists of warning scope assembly, flag yoke with three flags, three flag staffs, and roll-up sign.

top. 24 x 24 in. sign finished in Federal Orange baked enamel; two 18 x 18 in. fluorescent red plastic flags on 24-in. long wood handles. Frame folds flat for storage.



8136-00

## Nylon Mesh Warning Sign

8136-70 36 x 36 in. [Mesh Warning Sign with base](#)  
8136-71 36 x 36 in. [Mesh Warning Sign only](#)  
8136-80 48 x 48 in. [Mesh Warning Sign with base](#)  
8136-81 48 x 48 in. [Mesh Warning Sign only](#)

Double layers of nylon mesh provide increased visibility with reduced wind resistance; won't stretch out of shape. Mounts easily in a storable "A" frame stand that's compact yet very stable. Steel clips grip sign securely; built-in holders for two warning flags. Six-inch letter height. Two sizes available.

Replacement parts for Safety Signs are available by special order.

## Jumbo Tri-Fold Tripod Warning Sign

8136-05 [Jumbo Tri-fold Tripod Warning Sign](#)  
8136-08 [Extra 18 x 18 in. sign](#)

Designed to withstand high winds, this device stands almost 5 ft. high at the flag tips; when folded up, it will fit under a car seat. Will accept two 18 x 18 in. signs so legend may be read from two directions. Signs are made of zinc-coated steel with Federal Orange baked enamel finish. Complete with two 18 x 18 in. fluorescent red plastic flags and one 18 x 18 in. sign.



8136-70



8136-05

## Swing-Type Warning Sign

8136-10 [Swing-type warning sign with frame](#)  
8136-11 [Replacement sign only](#)

Sturdy frame of structural angle iron 1 x 1 x 1/8 in.; equipped with two "S" hooks for hanging sign within frame. Two flag holders welded to frame



8136-10

Requirements for work area safety signs vary from state to state.

Please consult your local authorities for details.

# Safety Equipment

## Safety Vest



- 8136-20 **Small (32-36)**
- 8136-22 **Medium (36-40)**
- 8136-24 **Large (42-44)**
- 8136-26 **Extra Large**
- 8136-27 **XX-Large**

- Bright red-orange for high visibility; can be worn over coat or jacket.
- 13 handy compartments; durable 50/50 poly/cotton blend.

## Hi-Viz Safety Vest

8136-28



8136-29 **High-Viz Safety Vest** with vertical reflective stripes (*not shown*).

- Fade-resistant, strong, cool nylon mesh won't crack.
- Resistant to oils, gasoline, chemicals; fire retardant; reversible.
- Velcro closure; one size fits all.

## Hand Warning Flag

8136-07



- 18 x 18 in. fluorescent red vinyl flag.
- 24 in. wood handle with stiff stays.

## Safety Cap

8136-30 **Yellow**



- 8136-31 **White**
- 8136-32 **Hi Viz Orange**
- 8136-33 **Replacement Suspension**
- 8136-34 **Winter Liner**

- High-density polymer for excellent protection against severe impact.
- Molded in one piece with no metal; protects against corrosive materials.
- Meets ANSI Z89. 1-1969 (Class A) — Federal Spec. GGG-H-142g.
- Fits sizes 6-3/8 through 8; weight 11 ounces.

## Traffic Cones



- 8136-12 **12-in. size cone**
- 8136-18 **18-in. size cone**
- 8136-19 **28-in. size cone**

- High-intensity fluorescent red-orange.
- Polyvinyl chloride (PVC) for strength, durability.
- Weighted base for good stability.

## First Aid Kits



8130-95

- 8130-94 **Vehicle First Aid Kit**;  
8 (W) x 5 (H) x 2-3/4 (D) in.
- 8130-95 **Emergency First Aid Kit**;  
9-1/2 (W) x 9-1/2 (H) x 2-1/2 (D) in.
- 8130-96 **Vehicle First Aid Kit Refill**
- 8130-97 **Emergency First Aid Kit Refill**

- Purchase replacement items at your local store.
- Includes waterproof case, carrying handle, mounting bracket.

## Protective Eyewear

- Stylish eye protection that meets the requirements of ANSI Z87.1 and AS/NZS 1337.
- Polycarbonate lenses with 99% UV protection.

## Boas Protective Eyewear

8031-73 **Blue frame with blue mirror lens**



## Viper Protective Eyewear

Red, White and Blue Frames with a choice of lens colors. (Not shown)

8031-70 **Clear Lens**

8031-71 **Smoke Lens**

## Commando Protective Eyewear

8031-72 **Black frame with mirror lens**



## Spectacle Straps for Protective Eyewear

8031-76 **Black**

8031-77 **Red**

8031-78 **Bright Blue**

- Attaches to temples of Viper and Boas protective eyewear.

## Hearing Protection



8031-75 **MaxLite® Foam Ear Plugs (pr)**

- Low pressure foam ear plugs for maximum comfort.
- Sold as corded pair.
- NRR 30.

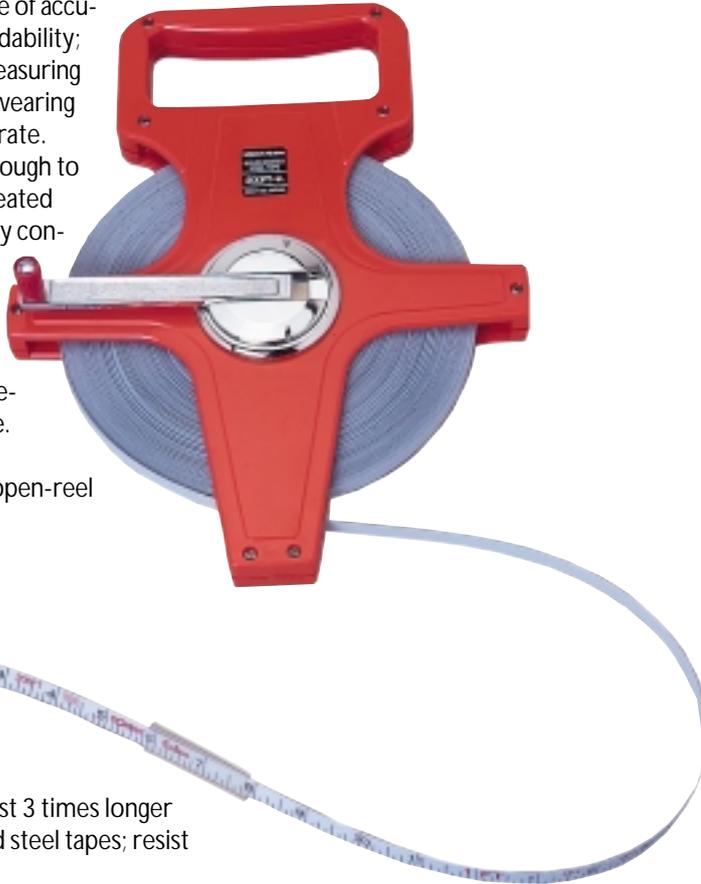
# Eslon Tapes



## Sokkia/Eslon™ Nylon-Coated Steel Tapes

The full measure of accuracy and dependability; Sokkia/Eslon measuring tapes are long-wearing and highly accurate. They're made tough to stand up to repeated use in wet or dry conditions. You can count on Sokkia/Eslon tapes for a reliable measurement every time.

Tapes come in open-reel frames.



### Features

- **Durability:** Last 3 times longer than uncoated steel tapes; resist corrosion.
- **Easy to read graduations:** markings permeate white nylon coating and are permanently protected with another wear-resistant nylon coating.
- **Strength:** Crack-resistant steel core for unusual flexibility.
- **Easy to clean:** wipe clean with a damp cloth.

#### WARRANTY

Sokkia/Eslon tapes are covered by a full one-year warranty. If your Sokkia/Eslon tape breaks, or if it is defective, Sokkia Corporation will replace it, at no charge, for up to one full year from the original date of purchase. This warranty also covers defective or broken tape reels and cases. Details supplied with tapes.

## ORDERING INFORMATION

### Nylon-Coated Steel Tapes

Tape No.	Length	Refill No.
8651-42	50 ft. case	8651-62
8651-44	100 ft. reel	8651-64
8651-45	165 ft. reel	8651-65
8651-46	200 ft. reel	8651-66
Ft./in./8ths; graduated from end of hook		
8652-14	100 ft. reel	8652-34
8652-16	200 ft. reel	8652-36
Ft./10ths/100ths; graduated from end of hook		
8652-22	50 ft. case	8652-62
8652-44	100 ft. reel	8652-64
8652-45	165 ft. reel	8652-65
8652-46	200 ft. reel	8652-66
Ft./10ths/100ths; zero offset from end of tape		
8652-72	50 ft. case	8652-82
8652-74	100 ft. reel	8652-84
8652-75	165 ft. reel	8652-85
8652-76	200 ft. reel	8652-86
Ft./10ths/100ths; graduated from end of tape		
8653-44	30m reel	8653-64
8653-46	60m reel	8653-66
M/cm/mm; zero offset from end of tape		
8653-74	30m reel	8653-84
8653-76	60m reel	8653-86
M/cm/mm; graduated from end of tape		

# Eslon Tapes

## Sokkia/Eslon™ Fiberglass Tapes

- Provide the highest strength and the lowest elongation.
- Polyvinyl chloride (PVC) coating and imprinting ensures long use.
- Made from nonconducting materials.
- Stains, dirt, dust and mildew wipe clean with soap and water.

## Fiberglass Utility Tapes (1/4 in. wide)

- Especially good for topographic surveys.
- Extremely light, yet totally slip- and tear-proof.
- Not supplied with reel.

1/4 in. wide	Length/Graduations
8450-10	100 ft. — In.
8450-20	200 ft. — In.
8450-30	300 ft. — In.
8450-11	100 ft. — 10th
8450-21	200 ft. — 10ths
8450-31	300 ft. — 10ths
8450-22	50 m — 5 cm
8450-32	100 m — 5 cm

## Fiberglass Open-Reel Tape

Lightweight case is virtually shatter-proof. The special handle design makes fast work of reeling. Width 1/2 in., with folding metal end hook.

Tape	Length	Refill No.
8451-42	50 ft.	8451-62
8451-44	100 ft.	8451-64
8451-45	165 ft.	8451-65
8451-46	200 ft.	8451-66
8451-48	300 ft.	8451-68

*Printed one side; graduated in ft./in./8ths*

8452-42	50 ft.	8452-62
8452-44	100 ft.	8452-64
8452-45	165 ft.	8452-65
8452-46	200 ft.	8452-66
8452-48	300 ft.	8452-68

*Printed one side; graduated in ft./10ths/100ths*

Tape	Length	Refill No.
8453-42	15 m	8453-62
8453-44	30 m	8453-64
8453-45	50 m	8453-65
8453-46	60 m	8453-66
8453-48	90 m	8453-68

*Printed one side; graduated in m/cm/2mm*

8454-42	50 ft./15m	8454-62
8454-44	100 ft./30m	8454-64
8454-45	165 ft./50m	8454-65
8454-46	200 ft./60m	8454-66
8454-48	300 ft./100m	8454-68

*Printed both sides; one side graduated in ft./in./8ths — other side m/cm/2mm*

8455-42	50 ft./15m	8455-62
8455-44	100 ft./30m	8455-64
8455-45	165 ft./50m	8455-65
8455-46	200 ft./60m	8455-66
8455-48	300 ft./30m	8455-68

*Printed both sides; one side graduated in ft./10ths/100ths — other side m/cm/2mm*

8456-42	50 ft.	8456-62
8456-44	100 ft.	8456-64
8456-45	165 ft.	8456-65
8456-46	200 ft.	8456-66
8456-48	300 ft.	8456-68

*Printed both sides; one side graduated in ft./in./8ths — other side ft./10ths/100ths*

## Fiberglass Appraiser's Tapes

- Long-lasting — even after daily abuse.
- Special hook-end helps assure accuracy.
- Inexpensive.
- Open reel.

Tape	Length	Refill No.
8451-74	100 ft.	8451-84

*Printed one side; graduated in ft./in./8ths*

8452-74	100 ft.	8452-84
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*Printed one side; graduated in ft./10ths/100ths*

8456-74	100 ft.	8456-84
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*Printed both sides; one side graduated in ft./in./8ths — other in ft./10ths/100ths*



# Eslon Tapes



## Replacement Reels for fiberglass tapes

Lightweight, shatterproof plastic reel with convenient, built-in carrying handle. For fiberglass tapes only.

Reel No.	Length	Reel Type
8457-42	50 ft. / 15m	open reel
8457-44	100 ft. / 30m	open reel
8457-45	165 ft. / 50m	open reel
8457-46	200 ft. / 60m	open reel
8457-48	300 ft. / 100m	open reel



8452-74  
Appraiser's Hook  
End Style



8453-44  
Zero point starts from  
the inside edge of  
hook-ring



8651-44  
English (ft. / in.)



8652-44  
Engineer's (ft. / 10ths)



8653-44  
Metric (decimal mark)

# Lufkin Power Tapes and Accessories

## Lufkin Mezurall® Tapes

1201-01 **10' Mezurall Tape**, ft./in./16ths (Lufkin No. W9210).

1201-02 **10' / 3m Mezurall Tape**, ft./in./16ths/metric (Lufkin No. W9210ME).

1201-03 **12' Mezurall Tape**, ft./in./16ths (Lufkin No. W9212).

1201-04 **12' Mezurall Tape**, Chrome-clad blade graduated to 10ths of in. (Lufkin No. C9212X).

1221-56 **12' Mezurall Tape**, ft, in, 16th/ft, 10ths, 100ths (Lufkin No. W9312D).

- Chrome plated case.
- Spring return yellow 1/2" blade.
- Belt Clip.

## EL Series Measuring Tapes

1201-61 **50' Measuring Tape in case**, ft./in./16ths (Lufkin No. EL50C).

1201-62 **50' (15m) Measuring Tape in case**, ft./in./16ths/metric (Lufkin No. EL15CME).

1201-63 **50' Measuring Tape in case**, ft./in./16ths, ft./10ths/100ths (Lufkin No. EL50D).

- Most compact 50' tape available.
- Widest blade of any 50' tape: one inch.
- Ribbed ABS case for better grip.
- Hi-Viz Colors.

## Lufkin Heavy-Duty Power Tapes

1201-30 **25' Heavy-Duty Power Tape**, ft, in, 16ths/ft, 10ths, 100ths (Lufkin No. 2525D).

1201-31 **25' Heavy-Duty Power Tape**, ft./in./16ths (Lufkin No. 2525).

1201-29 **26' (8m) Heavy-Duty Power Tape**, ft./in./16ths/metric (Lufkin No. 2548CME).

- New non-slip, Hi-Viz Case
- Blade is 17% thicker than regular power tape blades.
- Quad hook has four rivets.

## LufkinTape Accessories

### Leather Thongs

1204-83 (Lufkin No. 580T)

- Furnished with all Lufkin chain tapes and other long steel tapes.
- 36 in. (914mm) long and 1/4 in. (6mm) wide.
- Chrome tanned and sturdy.
- Sold in pairs.

### Tape Clamp Handle

1204-89 (Lufkin No. 584)

- Used for quickly and positively gripping a steel tape at any point.
- Applies light or heavy tension.
- Clamp is applied and removed by simply operating the handle.
- No damage to tape if used correctly.
- Made of chrome-plated zinc alloy.

### Tape Tension Handles

1204-93 **Tape Tension Handle 30 lbs.** (15kg.) (Lufkin No. 586)

1204-94 **Tape Tension Handle 50 lbs.** (25 kg.) (Lufkin No. 586D).

- Applies exact tension at which a steel tape is standard.

- Each has dual graduations: pounds to 1/2 pounds, kilograms to 250 grams.

### Tape Ring & Finger

1204-87 **Tape Ring** (Lufkin No. 580)

1204-82 **Tape Finger** (Lufkin No. 580F)

- Replacement tape ring or finger for 1/4 inch tapes only.
- Chrome-plated steel.

### Deluxe Tape Repair Kit

1204-60 **Deluxe Repair Kit** (Lufkin No. 576)

1204-62 **Punch Block Only** (Lufkin No. 576B)

1204-63 **Rivets only, long** (Lufkin No. 576D)

1204-64 **Rivet set** (Lufkin No. 576F)

A sturdy, practical kit for splicing steel tapes of all kinds, widths and weights. Contains punch and riveting block with piercing punch; cutting snips; riveting hammer; steel tape repair pieces of various kinds, widths, weights and markings (including Chrome Clad, Nubian, with and without rings); rivet set; tweezers; extra piercing punch; one lot of solid steel rivets. All in compact, roll up, heavy fabric case.

### Tape Repair Kit

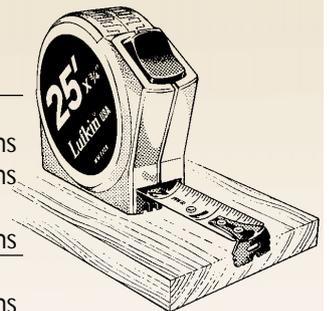
1204-70 **Tape Repair Kit** (Lufkin No. 578)

1204-73 **Extra eyelets, long** (Lufkin No. 577D)

Contains punch and eyeletting tool; supply of long and short eyelets; assortment of ungraduated steel tape pieces. In vinyl case.

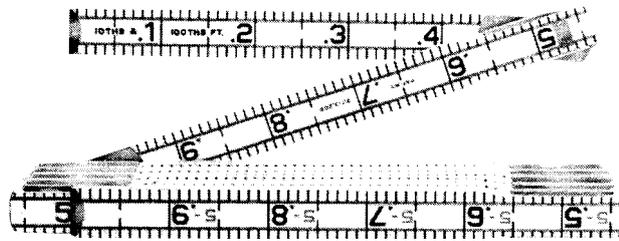
## Series 1000/2000 Power Return Tapes

Tape Sokkia No.	Tape Lufkin No.	Refill Sokkia No.	Refill Lufkin No.	Blade Width and Length	Graduations
<b>Series 2000 in Chrome Plated Case</b>					
1201-12	2312D	1203-55	RW312D	3/4" x 12'	ft./in./16ths, ft./10ths/100ths
1201-22	2325D	1203-63	RW325D	3/4" x 25'	ft./in./16ths, ft./10ths/100ths
1201-26	2338CME		RY38CME	3/4" x 26'/8m	ft./in./16ths/metric
1201-33	2133D	1201-14	RXL33D	1" x 33'	ft./in./16ths, ft./10ths/100ths
<b>Series 1000 Tapes in Black Case</b>					
1201-25	1425D	1203-59	RY425D	1" x 25'	ft./in./16ths, ft./10ths/100ths
1201-32	1312D	1203-55	RW312D	3/4" x 12'	ft./in./16ths, ft./10ths/100ths
<b>Series HV1000 Tapes in Blaze Orange Case</b>					
1201-13	HV1048DM	1201-27	RY48DM	1" x 25'/7.5m	ft./10ths/100ths/metric
1201-15	HV1048CM			25mm x 8m	metric
1201-21	HV1425ED			1" x 25'	ft./10ths/100ths
1201-28	HV1425D			1" x 25'	ft./in./16ths, ft./10ths/100ths
1219-15	HV1048CME			1" x 26'/8m	ft./in./8ths/metric
1219-16	HV1433DM			1" x 33'/10m	ft./10ths/100ths/metric



- Ergonomically designed case.
- Bright yellow blade.
- Convenient toggle lock.
- Cushioned blade return.
- Removable belt clip.

# Lufkin Tapes



## Folding Wood Rules - Red End® series

- Recognized as the finest, most accurate folding rules available.
- Boxwood finish wood sections are 25% thicker than regular wood rules; withstands daily usage.
- Bold red and black markings contrast sharply against white or natural finish backgrounds.
- Decimal points on engineer's scale prevent reading errors.
- Dual graduation styles, inch/decimal feet, inch/metric, decimal feet/metric.

Sokkia No.	Lufkin No.	Length	Graduations
1202-45	066D	6 ft.	ft./10ths/100ths and ft./in./16ths ft.
1202-46	066DM	6 ft. / 2m	ft./10ths/100ths and metric
1202-47	062CME	6 ft. / 2m	ft./in./16ths ft. and metric
1205-75	1066D	6 ft.	ft./10ths/100ths and ft./in./16ths ft., Heavy Duty
1205-76	1066DM	6 ft. / 2m	ft./10ths/100ths/metric, Heavy Duty

## Tape Reels

- Nickel-plated reels.
- Open design aids in drying and keeps dirt from building up.
- Long, easy-action folding handle locks in any position.
- Large center drums for fast winding.
- Easy tape attachment.

Sokkia No.	Lufkin No.	Length and Width	
1201-35	11-100	100 ft. / 30m x 1/4 inch	Four arm, for Peerless tapes
1201-36	11-200	200 ft. / 50m x 1/4 inch	Four arm, for Peerless tapes
1201-37	11-300	300 ft. / 100m x 1/4 inch	Four arm, for Peerless tapes
1201-40	12-150	100 ft. / 30m x 1/4 inch	Four arm, for Peerless tapes
1201-50	31-100	100 ft. / 30m x 1/4 or 5/16 inch	Figure 8, for Chain style tapes
1201-52	31-200	200 ft. / 50m x 1/4 or 5/16 inch	D-handle, point, for Chain style tapes
1201-53	31-300	300 ft. / 100m x 1/4 or 5/16 inch	D-handle, point, for Chain style tapes

## Lufkin Case Tapes- Lufkin Hi Line Tapes

- 5/8" wide woven Dacron fabric tape.
- Non-conductive when clean and dry.
- Easy-to-read bold black and red marking against white background.
- In sturdy metal case with folding winding handle.
- First 9" reinforced with long wearing plastic.

Tape No.	Lufkin No.	Refill Sokkia No.	Refill Lufkin No.	Length	Graduations
1204-15	403D	1204-16	O403D	50 ft.	ft./10ths/and 1/2 10ths
1204-25*	H403D	1204-26	OH403D	100 ft.	ft./10ths/and 1/2 10ths
1204-35	406D	1204-36	O406D	50 ft.	ft./10ths/and 1/2 10ths
1204-45*	H406D	1204-46	OH406D	100 ft.	ft./10ths/and 1/2 10ths
1204-10	403	1204-11	O403	50 ft.	ft./in./ and 1/2 inches
1204-20*	H403	1204-21	OH403	100 ft.	ft./in./ and 1/2 inches
1204-30	406	1204-31	O406	50 ft.	ft./in./ and 1/2 inches
1204-40*	H406	1204-41	OH406	100 ft.	ft./in./ and 1/2 inches
1204-55	H1430M			30m	Metric

\* These tapes are provided with a folding hook on ring end.

# Lufkin Tapes

## Lufkin Chain-Style Tapes

- Ideal for engineers and surveyors; precisely measure route surveys, highways and railways, mining and other survey work.
- Heavy-gauge thick steel blade.
- Raised markings against a hard chrome or black background.
- Protected by abrasion-resistant coating to provide long life under adverse conditions.
- Heavy-gauge riveted end clips attach to reel or tension device.
- Tapes include two leather thongs and a correction scale (Celsius for Metric tapes, Fahrenheit for English tapes).
- Order reels separately, if required.



1220-10 tape w/  
1201-50 reel

Tape only Sokkia No.	Tape only Lufkin No.	Reel (Specify if Required) Sokkia No.	Reel Lufkin No.	Length	Graduations*
<b>Pioneer Nubian® (Black) 1/4 inch</b>					
1220-10	O5100B	1201-50	31-100	100 ft.	Add, feet
1220-20	O5200B	1201-52	31-200	200 ft.	Add, feet
1220-30	O5300B	1201-53	31-300	300 ft.	Add, feet
<b>Pioneer Chrome Clad 8mm</b>					
1220-16	C5030MB	Included		30m	Add, metric
1220-17	C5050MB	Included		50m	Add, metric
1220-55	RC5050MB	1201-52	31-200	50m	Add, metric
<b>Super Hi Way Nubian® (Black) 5/16 inch or 8 mm</b>					
1221-02	O9020MB	1201-50	31-100	20m	Add, metric
1221-03	O9030MB	1201-50	31-100	30m	Add, metric
1221-05	O9050MB	1201-52	31-200	50m	Add, metric
1221-10	O9100B	1201-50	31-100	100 ft.	Add, feet
1221-20	O9200B	1201-52	31-200	200 ft.	Add, feet
1221-30	O9300B	1201-53	31-300	300 ft.	Add, feet
<b>Super Hi Way Chrome Clad 5/16 inch</b>					
1221-15	OC9100B	1201-50	31-100	100 ft.	Add, feet
1221-25	OC9200B	1201-52	31-200	200 ft.	Add, feet
1221-35	OC9300B	1201-53	31-300	300 ft.	Add, feet

\*Note on Graduation styles:

Add style feet: Tapes have blank space at each end. Extra foot before zero is graduated in 10ths and 100ths from right to left. Balance is marked every foot except last foot of each 100' length, which is in 100ths of feet.

Add style metric: Tapes have a blank space at each end. The decimeter before zero is graduated in millimeters from right to left. Balance is marked every decimeter and meter.

# Lufkin Tapes



## Anchor Chrome-Clad Tapes

- Rugged vinyl-covered steel case.
- Chrome-clad 3/8" wide blade.
- Ring end.

Tape Sockkia No.	Tape Lufkin No.	Refill Sockkia No.	Refill Lufkin No.	Length	Graduations
1203-15	C216D	1203-16	OC216D	100 ft.	ft./10ths/100ths
1203-17	C216MD	1203-18	OC216MD	100 ft. / 30m	ft./10ths/100ths/metric

## Architect's Pocket Scale

1203-64 [Architect's Pocket Scale](#), Automatic Return (Lufkin No. W393).

1205-00 [Architect's Pocket Scale](#), Manual Return (Lufkin No. W605A).

- Yellow-clad 1/4 in. x 6 ft. blade with jet black markings.
- 1/4 and 1/8 in. to foot scales.

## Executive® Tapes

1205-10 [1/4" x 6' Executive Pocket Tape](#), ft, in, 16ths (Lufkin no. W606).

1205-12 [1/4" x 6' / 2m Executive Pocket Tape](#), ft, in, 16ths/metric (Lufkin No. W606ME).

1205-20 [1/4" x 8' Executive Pocket Tape](#), ft, in, 16ths (Lufkin No. W608).

1205-32 [1/4" x 6' Executive Diameter Tape](#), ft, in, 16ths (Lufkin No. W606P).

- Polished chrome case.
- Yellow-clad 1/4 in. blade with black graduations.
- Spring return.

## Banner Tapes

- Professional quality
- Rugged vinyl clad steel case
- Yellow clad 3/8 in. wide steel blade
- Folding hook end

Tape Sockkia No.	Tape Lufkin No.	Refill Sockkia No.	Refill Lufkin No.	Length	Graduations
1203-30	HW223	1203-31	OHW223	50 ft.	ft./in./8ths
1203-34	HW223ME	1203-37	OHW223ME	50 ft / 15m	ft./in./8ths/metric
1203-35	HW223D	1203-36	OHW223D	50 ft.	ft./10ths/100ths
1203-40	HW226	1204-41	OHW226	100 ft.	ft./in./8ths
1203-45	HW226D	1203-46	OHW226D	100 ft.	ft./10ths/100ths
1203-47	HW226ME	1203-48	OHW226ME	100 ft. / 30m	ft./in./8ths/metric

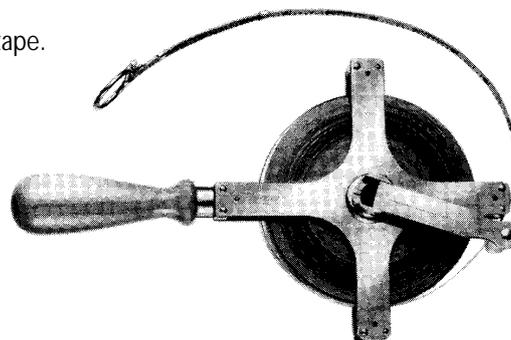
## Pee Wee® Tape

1205-11 [1/4" x 10' Pee Wee Tape](#), inches (Lufkin No. W6110).

- Like Executive tape but in matte black case.

## Lufkin Peerless Chrome-Clad® Long Steel Tapes

- For engineers and surveyors who prefer a fully graduated tape on a four-arm reel.
- 1/4 in. (6mm) wide and .016 in. thick
- A pair of 580 finger rings and a 579 engineer's conversion rule are furnished with tape or replacement refill.
- Graduations start at beginning of tape.



## Lufkin Steel Tapes In Case

1202-10 [50' Home Shop Tape](#), ft, in, 8ths (Lufkin No. HW50).

1202-60 [100' Home Shop Tape](#), inches (Lufkin No. HW100).

- Vinyl-covered steel case with yellow-clad 3/8" thick blade.
- Folding hook ring.

## Hi-Viz Universal Lightweight Tapes

1202-00 [50' Hi Viz Universal Tape](#), inches (Lufkin No. 50).

1202-50 [100' Hi Viz Universal Tape](#), ft, in, 8ths (Lufkin No. 100L)

- High-impact blaze orange polystyrene case.
- Yellow-clad 3/8" wide steel blade.
- Folding hook ring.

Tape Sockkia No	Tape Lufkin No.	Refill Sockkia No.	Refill Lufkin No.	Length	Graduations
1206-10	C1276	1206-11	OC1276	100 ft.	ft./in./8ths
1206-15	C1276D	1206-16	OC1276D	100 ft.	ft./10ths/100ths
1206-20	C1278	1206-21	OC1278	200 ft.	ft./in./8ths
1206-25	C1278D	1206-26	OC1278D	200 ft.	ft./10ths/100ths
1226-15	C2730MM	1226-16	OC2730MM	30m	metric
1226-25	C2750MM	1226-26	OC2750MM	50m	metric
1227-10	C2730MME	1227-11	C2730MME	100 ft. / 30m	ft./in./8ths/metric
1227-15	C2730DMM	1227-16	OC2730DMM	100 ft. / 30m	ft./10ths/100ths/metric
1227-20	C2750MME	1227-21	OC2750MME	164 ft. / 50m	ft./in./8ths/metric
1227-25	C2750DMM	1227-26	OC2750DMM	164 ft. / 50m	ft./10ths/100ths/metric

# Lufkin Tapes/ Walk Chain/ Babbitt Tapes

## Walk Chain



2020-00 [Walk Chain](#), complete with 4,500-ft. spool of line  
 2020-05 [Replacement Line](#) 9,000 ft.; orange  
 2020-06 [Replacement Line](#) 9,000 ft.; white

- Easy, one-person distance measurement.
- Just tie line to tree or other object and walk away.
- Distance traveled is continuously shown on meter.
- At end of measurement, simply clip the biodegradable line which is easily replaced.
- Meter records up to 99,999 feet; easily reset at the touch of a button.
- High-impact plastic housing; weight 1-1/4 pounds.
- Accuracy of measurement  $\pm 0.2\%$ .

## Vulcan Babbitt Chain Tapes

2852-64 [100 ft. long](#)  
 2852-66 [200 ft. long](#)  
 2852-68 [300 ft. long](#)

Heavy-duty babbitt chain tapes. Feet, graduations and figures stamped in babbitt metal bosses and bonded to the tape. Extra foot of graduation before zero is graduated to 10ths only. Nickel-plated. 5/16 x 0.016 in.



Babbitt Chain Tape

## Lufkin Peerless Yellow-Clad Steel Tapes

- Same features as Chrome-Clad® tapes shown on page 72, except blade is yellow finish.

Tape Sakkia No.	Tape Lufkin No.	Refill Sakkia No.	Refill Lufkin No.	Length	Graduations
1216-10	Y1276	1216-11	RY1276	100 ft.	ft./in./8ths
1216-15	Y1276D	1216-16	RY1276D	100 ft.	ft./10ths/100ths
1216-20	Y1278	1216-21	RY1278	200 ft.	ft./in./8ths
1216-25	Y1278D	1216-26	RY1278D	200 ft.	ft./10ths/100ths
1216-30	Y1279	1216-31	RY1279	300 ft.	ft./in./8ths
1216-35	Y1279D	1216-36	RY1279D	300 ft.	ft./10ths/100ths

## Lufkin Western® Chrome-Clad® Long Steel Tapes

- Fully graduated engineers'/surveyors' tape with blank space at both ends.
- 1/4 in. (6mm) wide and .019 in. thick blade.
- Riveted clips for holding thongs.
- A pair of 580T thongs and 579 engineer's conversion rule are furnished with each tape or replacement refill.

Tape No.	Lufkin No.	Length	Refill Sakkia No.	Refill Lufkin No.	Graduations
1206-55	C1676D	100 ft.	1206-56	OC1676D	ft./10ths/100ths

## Lufkin Western® Yellow-Clad Steel Tape

- Same features as Chrome-Clad® tapes shown above except blade is yellow finish.

Tape No.	Tape Lufkin No.	Refill Lufkin No.	Length	Graduations
1206-65	Y1676D	None	100 ft.	ft./10ths/100ths

## Lufkin Hi-Viz Atlas® Ny-Clad® Steel Tapes

- Nominal thickness .022 in. Nylon-Clad steel tape has wear resistant nylon.
- Easy-to-read 1/2 in. (13mm) wide yellow blade in blaze orange case.
- Lightweight open reel is easy to handle and rewind.

Tape Sakkia No.	Tape Lufkin No.	Refill Sakkia No.	Refill Lufkin No.	Length	Graduations
1218-10	1806	1218-11	O1806	100 ft.	ft./in./8ths
1218-15	1806D	1218-16	O1806D	100 ft.	ft./10ths/100ths
1218-20	1808	1218-21	O1808	200 ft.	ft./in./8ths
1218-25	1808D	1218-26	O1808D	200 ft.	ft./10ths/100ths
1218-40	1830MM	1218-41	O1830MM	30m	metric
1218-50	1850MM	1218-51	O1850MM	50m	metric
1218-55	1850MM	1218-56	O1850DMM	50m	ft./10ths/100ths/metric

# Rolatapes



Model 112T/112 Measure Meter™  
8310-10 112T calibrated in ft./10ths



8310-10

8310-11 112 calibrated in ft./in.

Precision counter records feet and inches, up to 10,000 feet without resetting; to subtract from total, simply back it up. 40 in. handle contracts to 24 in. Weight 3-1/2 pounds. Hard rubber calibrated dual wheels.

Model 400  
8310-40 400  
8310-41 Carrying case for Model 400, Model 415  
8310-42 400D same as Model 400, but with dual counters — one to record short runs, the other to accumulate totals  
8310-43 400M (metric) records up to 100,000m

For longer distances; precisely records up to 100,000 feet over uneven and irregular terrain without resetting. Wire spoke wheel. Counter records to feet with accurate estimation to inches. Wheel circumference 4 feet, diameter 15-1/2 in. Weight 9 pounds. Handle folds for storage. Automatic brake prevents backtracking. Orange color.

Model 415  
8310-20 415  
8310-22 415D same as Model 415, but with dual counters — one to record short runs, the other to accumulate totals

8310-24 415M (metric); records up to 100,000m  
8310-41 Carrying case for Model 400, Model 415

4-foot circumference solid-plated steel disc wheel calibrated to 1/2 in. on one side, 1/2 of one-tenth foot on the other. Automatically records up to 100,000 feet without resetting. Provides reliable outdoor measuring under most terrain conditions. Automatic brake prevents accidental backtracking. Handle folds for easy storage. Weight 6-1/2 pounds. Orange color.

Model 623  
8310-62 623  
8310-63 Carrying case for Model 623  
8310-64 623M (metric); records up to 100,000 m

Identical in construction to Model 400, except wheel circumference 6 feet, and diameter 23 in. Measure cross-country and acreage. Precision totalizer accurately records up to 100,000 feet without resetting over rough or uneven terrain.



8310-40



8310-20



8310-62

*Rolatape® Measuring Wheels are warranted for two full years against defects in materials or workmanship.*

# Measuring Wheels

## Model 12 Measure Master — Mark II™

Push-button counter records up to 1,000 feet and automatically resets to zero. 38 in. tubular handle contracts to 21 in. Counter mechanism is easy to read. Wheel circumference 1 foot; diameter 4 in. Weighs less than 2 pounds.

8310-14 **MM12M** calibrated in metric  
 8310-15 **MM12** calibrated in ft./in.  
 8310-16 **MM12-T** calibrated in ft./10ths

## Model 30/50 Measure Master™

Suitable for both indoor and outdoor work. Wheel circumference 3 feet; diameter 11-1/4 in. Weight 3-1/4 pounds. Orange color. Counter records feet and inches up to 1,000 feet without resetting.

8310-05 **MM-30** 38 in. handle retracts to 19 in.  
 8310-07 **MM-50** same as Model 30 except, circumference 5 ft., diameter 19 in., weight 5 lbs.; handle not retractable; recommended for outdoor work  
 8310-09 **MM30-M** same as Model 30, except circumference 1m, diameter 0.317m; records 1,000m in m and dm.

## Model 300M and 300 Rolatape

For heavy-duty, high-precision measuring over demanding terrain. Saves time and money in measuring for bidding, estimating and layout. 3-foot circumference, chrome-plated wheel is precision calibrated to capture measurements in feet—up to 100,000—without resetting. 28 in. enamel-finish handle is detachable for easy transport and storage.

8310-04 **300M** Meters  
 8310-06 **300** Feet  
 8310-03 **300Y** Yards

## Model MM12 Twin Measure Master™

Has precision counter with push-button for resetting to zero; records in feet and inches — up to 1,000 feet. Forward movement adds; reverse movement subtracts. Handle extends from 20 in. to 38 in. 4 in. wheel diameter; dual wheels. Weighs only 3 pounds.

8310-17 **MM-12 Twin** calibrated in ft. and in.  
 8310-18 **MM-12 Twin-T** calibrated in ft. and 10ths  
 8310-21 **MM-12 Twin-M** calibrated in metric

## Fieldmaster 6.6

Perfect for acreage and agricultural field measuring. Constructed of sturdy tubular steel, the wheel provides durable, accurate performance over rugged terrain and through all kinds of weather. The precision counter mechanism is protected by a fully sealed housing and automatically records up to 1,000 wheel revolutions without resetting.

8310-19 **Fieldmaster 6.6**



8310-06



8310-17



8310-19



8310-05

8310-15

*Measure as you walk, with the totals recorded automatically.*

# Planix Planimeters



*Planix Planimeters are warranted for one full year against defects in materials and workmanship.*



3651-61

Planix Planimeters —  
*Solutions to many measuring problems*

Planix Planimeters have many applications besides surveying and engineering. They're indispensable wherever you must determine the area of an irregular-shaped space:

## Planix 5 and Planix 6

- Quickly and accurately compute area of any shape.
- 8-digit, LCD readout.
- Cordless operation for ease of use.
- Rechargeable NiCd batteries for up to 30 hours of continuous measurement.
- Multiple measurement averaging.
- Electronic zero reset.
- No arm setting.
- One-year Sokkia Warranty.

Complete with A/C charger, battery and carrying case.

- Agricultural planning.
- Aircraft design.
- Architectural planning research.
- Biological research.
- Cartography.
- Civil engineering appraisal.
- Irrigation engineering.
- Forest management.
- Map making.
- Mechanical.
- Medical.
- Surveying.
- Physics.
- Real estate appraisal.
- Ship and yacht design.
- Tax appraisal.

## ORDERING INFORMATION

3651-51 Planix 5 Polar Planimeter  
14 in. or 356 mm diameter measuring range. Polar arm length 8-1/4 in.  
Accuracy better than  $\pm 0.2\%$ . Weight 2 pounds. Complete with A/C charger, battery and carrying case.

3651-61 Planix 6 Roller Planimeter  
11.8 in. or 300mm diameter measuring range with unlimited length. Accuracy better than  $\pm 0.2\%$ . Weight 2 pounds. Complete with charger, battery and carrying case.



3651-51

# Planix Planimeters

## Planix 7 and Planix 8

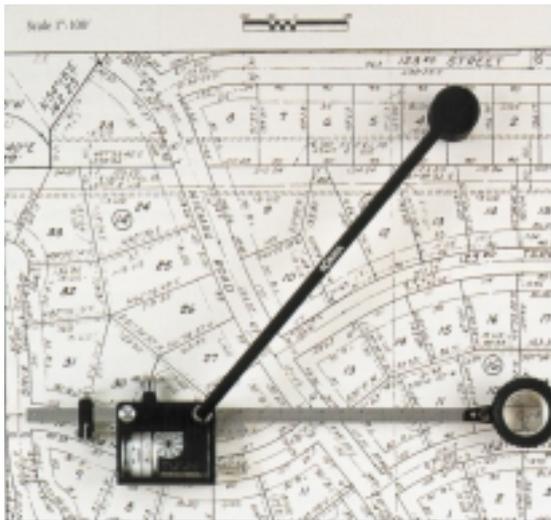
- Accuracy better than  $\pm 0.2\%$
- Enter scale from plan or drawing for measurement of area.
- Different X and Y scales can be entered.
- Quickly and accurately compute area of any shape.
- 8-digit, LCD readout.
- Cordless operation for ease of use
- Rechargeable NiCd batteries for up to 30 hours of continuous measurement.
- Multiple measurement averaging.
- Electronic zero reset.
- No arm setting.
- One-year Sokkia warranty.



3651-70



3651-80



3651-30

## ORDERING INFORMATION

3651-70 Planix 7 Roller Planimeter  
Accurately measures large areas (118 x 11.8 in. or 300 x 30cm). Weight 2 pounds. Complete with A/C charger, battery and carrying case.

3651-80 Planix 8 Polar Planimeter  
Provides highest accuracy for measurement of plane areas (14 in. or 356mm diameter). Length of polar arm 9 in. Weight 2 pounds. Complete with A/C charger, battery and carrying case.

## Compensating Polar Planimeter 3651-30

- Instant zero return on recording dial, measuring wheel and vernier by fingertip control.
- Measuring wheel and registering dial are protected from dust and read through a magnifying cover.
- Adjustable tracer arm allows this planimeter to be set in any scale, English or metric.
- Complete with case and instructions.

## QUICK SPECS

### Compensating Polar Planimeter

Measuring Ranges	Pole Outside	Pole Inside
Circle (Maximum Diameter):	9-7/8 in. or 25cm	23-5/8 in. or 60cm
Square (Maximum Diameter):	8 in. or 20cm	19 in. or 48cm

# Super Planix $\alpha$ Area/Line Meter

## Super PLANIX $\alpha$ Area/Line Meter

The Super Planix  $\alpha$  brings digitizer functionality to the Planix line of quality planimeters. Like our planimeters, the Super Planix  $\alpha$  lets you quickly and accurately measure areas; but it also lets you measure line length, coordinates, angles, arc and circle radii, and other shapes.



You'll appreciate the easy one-hand use of the Super PLANIX  $\alpha$ 's tracer arm and operation keys as you perform these and other measuring functions:

- Area by point plot and/or stream method.
- Lines by point plot or stream method.
- Coordinate measurement based on user-defined coordinates.
- Radii of arcs and circles.
- Angle measurement.

And because the tracer arm can be moved in either a clockwise or counter-clockwise direction, left-handed operators will find the Super PLANIX  $\alpha$  as easy to use as right-handed operators.

Measurements are displayed on a clear, 2-line LCD display. You can adjust instrument coordinates to drawing coordinates for accurate data, and you can even cancel the measurement point during operation. The tracer lens is bright enough to make measuring most materials easy. And because the Super PLANIX  $\alpha$  measures and displays in either metric or English, you've got the flexibility to collect data in the most convenient form. You don't need a computer to

use the advanced measuring features of the Super PLANIX  $\alpha$ . With the appropriate computer hardware configuration and cables, the Super PLANIX  $\alpha$ 's built-in RS232C interface sends any measured data to your supplied software. Simply push the ENTER key and the measurement is transferred to your computer.

Choose the model with the built-in thermal printer for an immediate hard copy of measured data. Or, if you don't need that feature, there's a model without a printer. Whichever model you choose, simple mathematical calculations can be performed directly on the keyboard.

## ORDERING INFORMATION

3651-95 Super PLANIX  $\alpha$  Area Line Meter with AC Charger/Adaptor, battery, fitted carrying case, and operation manual.

3651-96 Super PLANIX  $\alpha$  Area Line Meter with built-in thermal printer and same equipment as above.

### Accessories

3651-97 RS232C Serial Interface Cable; connects Super PLANIX  $\alpha$  to serial port of computer (requires user-supplied software).



## QUICK SPECS

Measuring Range	14 in. x 325 ft. (380 mm x 100m)
Measuring Accuracy	+ 0.1% (100 x 100 mm area measurement)
Display	LCD; 16 digits on 2 lines
Minimum Line Reading	0.05 mm
Power	Internal NiCd or AC adaptor
Battery Life	40 hrs. use
Charging Time	15 hrs. charging
Dimensions	13.5" (L) x 6.1" (W) x 1.7" (H)

# Super Planix β Area/Line Meter

## Super Planix β Area Line Meter

The Super Planix β can simultaneously measure length and area quickly and accurately. Unlike conventional planimeters, the Super Planix β uses two rotary encoders instead of an integrating wheel. It digitizes and measures using actual coordinates.



3651-92

The Super PLANIX β incorporates built-in functionality for intuitive operation:

- Measures area and length of lines on straight line figures without the need for tedious tracing.
- Two rotary encoders replace integrating wheel for greater accuracy and longer life.
- Optional RS-232 interface for computer compatibility with user-supplied software.
- Optional thermal printer.
- Different X and Y scales may be entered for area measurement.
- Point mode for measurement of straight lines without tracing.
- Stream mode for measurement of curved lines.
- Measuring range 14 in. x 325 ft.
- Accuracy  $\pm 0.1\%$  (100 x 100mm area measurement).

- Area and line measurement in one operation.
- Display hold and cumulative measurement.
- Metric and English units (selectable).
- Four-function calculator.
- Averaging of multiple measurements for greater accuracy.
- Operates up to 40 hours from internal NiCd battery or with supplied AC adapter/charger.
- Supplied with fitted carrying case.

## ORDERING INFORMATION

3651-92 Super PLANIX β Area Line meter with AC Charger/Adaptor, battery, fitted carrying case and operation manual.

### Accessories

3651-97 RS232C Serial Interface Cable connects Super PLANIX β to serial port of computer (requires user-supplied software).

3651-98 Super PLANIX β Thermal Printer



3651-92  
W/ 3651-98

## QUICK SPECS

Measuring Range	14 in. x 325 ft. (380mm x 100m)
Measuring Accuracy	$\pm 0.1\%$ (100 x 100mm area measurement)
Display	LCD; 16 digits on 2 lines
Minimum Line Reading	0.05mm
Power	Internal NiCd or AC adaptor
Battery Life	40 hrs. use
Charging Time	15 hrs. charging
Dimensions	13.5" (L) x 6.1" (W) x 1.7" (H)

# Stereoscopes



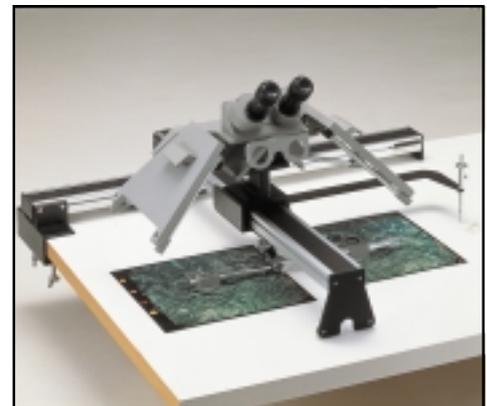
**MS27 Mirror Stereoscope**  
This fine Sokkia instrument is unmatched for precision and ease of use in viewing and interpreting aerial photographs. Elevations are seen with startling clarity in three dimensions; and the instrument can be used for long periods of time without eye strain.

The distance between centers of stereo pairs (optical path) is 27cm and the field of view is 18 x 24cm for viewing 24 x 24cm photographs. The 3x binoculars supplied as standard equipment provide a bright, distortion-free optical system. 8x eyepieces are also available.

A convenient feature of the Sokkia MS27 Mirror Stereoscope with the 3x binoculars is the ease of adjustment for varying inter-pupillary distances; there is no need to re-orient photographs. This is an important asset when a number of persons are viewing the same photographs.

Use the LA3 Illumination Unit/ Stereometer Parallax Measuring Bar to accurately measure heights of buildings, mountains and all other landmarks appearing on aerial photographs. Readings are easy and accurate with the dial indicator. Three color-coded targets on the glass plates make the MS27 easy to use.

The TRA2 Track Attachment permits work to be carried out over a much wider area and is particularly useful when working with multiple or continuous photographs, since the whole area of the photographs can be examined without interruption. In addition, the Track Attachment permits the instrument to be used to draw contours and to function as a sketchmaster for making maps from photographs by means of parallel translation.

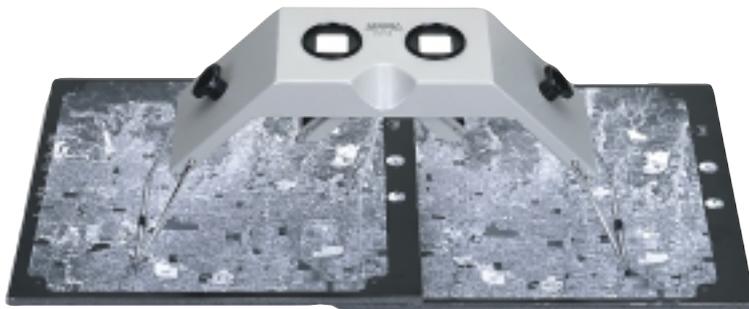


The Track Attachment allows the simultaneous displacement of stereoscope and stereometer parallax measuring bar both vertically and laterally. The Track Attachment cannot be used in combination with the LA3 Illumination Unit.

## QUICK SPECS

Swing-in Magnifier:	1.5x
Magnification of Binoculars:	3x
Field of view of Binoculars:	70mm
Field of view of Stereoscope:	18 x 24cm
Interpupillary Adjustment Range:	55-75mm
Stereometer Parallax-Measuring Bar minimum graduation:	.05mm
Estimation:	.01mm
Measuring Range:	50mm
Weight of equipment:	8.8 lbs. (4 kg)

# Stereoscopes



Small Mirror Stereoscope  
8187-00 [MS16](#)

- Fine-quality optical instrument with optical path extended 6-1/4 in. (16cm) by mirrors.
- Provides a wide field of view; ideally suited to stereo photos.
- Field of view: 100 x 100mm. Magnification: 1.5x.
- Legs fold for compact storage; complete with case.
- Instrument weight: 1.6 lbs.; case weight: 1.6 lbs.

Pocket Stereoscopes  
8179-50 [2x \(PS2A\)](#)  
8179-51 [4x \(PS4A\)](#)

- Interpupillary range from 55mm to 75mm.
- Field of view: 125 x 125mm; optical path: 50mm.
- Pocket case included.

**NOTE:**

The Illuminated Stereometer Parallax Measuring Bar supplied with the No. 8185-03 is not interchangeable with No. 8185-07. The No. 8185-07 will not be supplied nor charged for if the No. 8185-00 and No. 8185-03 are ordered together.

THE No. 8185-03 ILLUMINATION UNIT AND No. 8185-10 TRA2 TRACK ATTACHMENT ARE NOT DESIGNED TO BE ATTACHED SIMULTANEOUSLY TO THE MS27 MIRROR STEREOSCOPE.

Height Finder Attachment

8179-55 [PB2](#)  
8178-58 [Extra Glass Plate for above](#)

- A stereometer parallax measuring bar for use with pocket stereoscope to determine relative heights of objects of terrain.
- Bar 28cm long — maximum range 25mm, minimum graduation 0.02, estimation to 0.1mm.
- Bar comes with clips for attachment to pocket stereoscope.
- For use with 8179-50/51 Pocket Stereoscope (above).
- Case included; weight of unit in case 2-1/4 pounds.



8179-50  
w/ 8179-55

## ORDERING INFORMATION

8185-00 MS27

Mirror Stereoscope complete with Swing-in 1.5x Magnifier, 3x Binoculars, Stereometer Parallax Measuring Bar and Carrying Case.

8185-02 MS27WO

Mirror Stereoscope with Swing-in 1.5x Magnifier and Carrying Case.

8185-03 LA3

Illumination Unit complete with Stereometer Parallax Measuring Bar wired for illumination; fluorescent lamp and shade to illuminate work area and 110-120-volt power pack are provided.

8185-05 BN3

3x Binoculars provide distortion-free optical system with magnification; field of view is 70mm.

8185-07 PB1

Parallax Measuring Bar, length 39.5cm; range 50mm. Minimum graduation 0.05mm; estimation .01mm.

8185-08 GLSM

Replacement Glass Plate for Parallax Measuring Bars.

8185-10 TRA2

Track Attachment supplied in wood case.

8185-19 BN8A

8x Eyepiece Set converts 3x binoculars to 8x.

# Power Supplies

Instrument	On-Board Battery	Stock No.	Charging Adapter	Stock No.	Charger	Stock No.
POWERSSET, Series 100 SET4110R NET2100	<b>BDC35 NiMH</b> BDC40 NiCd	<b>6361-35</b> 6361-40	N/A		<b>CDC39 1 hr 120VAC</b> CDC41 1hr 12VDC	<b>6360-39</b> 6360-41
SET300, SET500, SET600, SDL30	<b>BDC46 Li-Ion</b>	<b>7380-46</b>	N/A		<b>CDC62 1.5 hr 120VAC</b>	<b>7380-62</b>
LP30, LP31, LV1	<b>BDC38 4 D-Cells</b> BDC39 NiCd	<b>7401-38</b> 7401-39	N/A		N/A CDC49A 7.5 hr 120vac	7401-49
SDR33	<b>Battery Tray 2 9 volt</b> 780mAh NiCd <b>1/3N Lithiums (pr)</b>	<b>5802-00</b> 5802-75 <b>5802-13</b>	N/A N/A N/A		N/A 115VAC Charger N/A	5803-12
SDR31	<b>9 Volt Alkaline</b> 750mAh NiCd	5831-20	N/A N/A		N/A 115VAC Charger	5831-21
DT500, DT500A, DT600	<b>2 C-Cells</b>	N/A	N/A			
SETXL, SET2B, SET3B, SET4B, NET2B, SET5F, SET6F, SET5W, SET3E, SET4E, SET5E, SET6E, DT2E, DT4F	<b>BDC25A NiCd</b>	<b>6460-02</b>	<b>EDC19</b>	<b>6460-03</b>	<b>CDC27 1 hr 120VAC</b> CDC11 12 hr 120VAC CDC32 1hr 12VDC	<b>6460-04</b> 6850-01 6855-20
DT5, DT5A, DT6	<b>BDC21 4 AA-Cells</b> BDC25A NiCd	<b>6850-21</b> 6460-02	<b>N/A</b> EDC19	6460-03	<b>CDC27 1 hr 120VAC</b> CDC11 12 hr 120VAC CDC32 1hr 12VDC	6460-04 6850-01 6855-20
RED2LV, RED2L, RED2A	<b>BDC11 NiCd</b>	<b>6850-01</b>	N/A		<b>CDC11 12 hr 120VAC</b> CDC32 1hr 12VDC	<b>6850-01</b> 6855-20

Bold Indicates Battery and Charger supplied with Instrument when purchased.

Battery and Chargers available for Older Sokkia Instruments not shown, check with your Sokkia representative for details.

# Batteries and Chargers

BATTERY NAME	STOCK NO.	TYPE	CHARGING ADAPTOR	CHARGER
BDC11	6850-01	NiCd	N/A	CDC11 (12 Hr.-120 VAC) CDC27 (1 Hr.-120 VAC) CDC32 (1 Hr. 12 VDC)
BDC12	6661-02	NiCd	N/A	CDC14A (12 Hr.-120 VAC)
BDC21-Battery Cassette	6850-21	Alkaline	N/A	N/A
BDC25	Replaced by BDC25A	NiCd	EDC19 6460-03	CDC11 (12 Hr.-120 VAC) CDC27 (1 Hr.-120 VAC) CDC32 (1 Hr. 12 VDC)
BDC25A	6460-02	NiCd	EDC19 6460-03	CDC11 (12 Hr.-120 VAC) CDC27 (1 Hr.-120 VAC) CDC32 (1 Hr. 12 VDC)
BDC35	6361-35	NiMH	N/A	CDC39 (1 Hr.-120 VAC) CDC41 (1 Hr. 12 VDC)
BDC38-Battery Cassette	7401-38	Alkaline	N/A	N/A
BDC39	7401-39	NiCd	N/A	CDC49A (7.5 Hr.-120 VAC)
BDC40	6361-40	NiCd	N/A	CDC39 (1 Hr.-120 VAC) CDC41 (1 Hr. 12 VDC)
BDC46	7380-46	Li Ion	N/A	CDC62 (2hr-120VAC)
CHARGER	STOCK NO.	BATTERY NAME	BATTERY TYPE	
CDC11 (12 Hr.-120 VAC)	6850-01	BDC11 BDC18 BDC25	NiCd NiCd NiCd	
CDC14A (12 Hr.-120 VAC)	6850-01	BDC12	NiCd	
CDC27 (1 Hr.-120 VAC)	6460-04	BDC11 BDC25 BDC25A	NiCd NiCd NiCd	
CDC32 (1 Hr. 12 VDC)	6855-20	BDC11 BDC25 BDC25A	NiCd NiCd NiCd	
CDC39 (1 Hr.-120 VAC)	6360-39	BDC35 BDC40	NiMH NiCd	
CDC41 (1 Hr. 12 VDC)	6360-41	BDC35 BDC40	NiMH NiCd	
CDC49A	7401-49	BDC39	NiCd	
CDC62	7380-82	BDC46	Li Ion	

# Cables

## Data Communications Cables

3651-97	Super PLANIX RS232 Interface Cable
5300-04	Female DE9 PC Cable with Hirose Adaptor
5306-12	SDR-Leica Data Cable-Short Cable to Leica Data Port
5306-13	SDR-Leica T1000 (early) Data Cable
5306-20	SDR-Pentax PTS-10 Cable
5306-50	SDR-Geodimeter 400/500-Series Interface Cable
5306-51	SDR-Geodimeter 600-Series Interface Cable
5306-66	SDR-Nikon DTM-A Cable
5810-01	SDR33 Instrument Cable
5831-10	SDR31 Instrument Cable
6350-12	DOC23 25-Pin Cable for SCR1/2
6350-32	DOC26 Cable from SET/NET2B to 25-pin serial port
6350-33	DOC27 Cable from SET/NET2B to 9-pin serial port
6362-46	DOC46 Cable, connects POWERSET, SET*100 Series to a parallel printer

## Battery and Power Cables

6460-01	Power Cable for SET/NET/DT 12-6V DC w/clip
6650-02	EDC3 Battery Cable for use with 6661-02 (BDC12 External Battery 6V NiCd)
6650-05	Battery Cable (use w/BDC11A)
6861-01	EDC2A Power Supply 120VAC to 6VDL for SET/NET/DT
6855-28	EDC34 Power Cable for CDC29
6860-03	EDC5 Cable for External Battery w/clips
6860-05	EDC4 External Power Cable w/cigarette lighter Adapter

## SCR2 Card Reader and Accessories

6350-06	SCR2 Card Reader/Writer Assembly- includes SCR2, DOC23, EDC21R ProLink CD-Rom, ProLink Manual
6350-09	SCR2 Card Reader/Writer (only)
6350-11	EDC21A Power Supply for SCR1/2
6350-12	DOC23 25-pin Cable for SCR1/2
6350-21	SDC3 32K Data Card
6350-22	SDC4 64K Data Card
6350-23	SDC5 128K Data Card
6350-24	SDC6 256K Data Card
6350-25	SDC8 512K Data Card
5142-15	ProLink CD-Rom
5142-01	ProLink Manual

# Optical Accessories



## OPTICAL, THEODOLITE, ACCESSORIES MATRIX

	TM1A	TM6
Illuminator	7311-12	7311-12
Zenith Eyepiece Prism	7311-26	7311-25
Zenith Eyepiece Darkener Cap	7311-30	7311-30
Eyepiece Prism Set	7329-35	7329-35
Eyepiece Darkener Cap	7329-43	7329-43
Circular Compass	—	7311-17
Eyepiece Filter Cap	7329-45	7329-45

## AUTO LEVEL ACCESSORIES MATRIX

	B1/B1C	B20	B21	C SERIES
Diagonal Eyepiece	—	7311-09	7311-47	7311-47
Optical Micrometer, feet	7372-14	7372-20	7372-20	—
Optical Micrometer, metric	7372-15	7372-21	7372-21	—
Reticle Illumination	7311-11	7311-06	7311-06	—
40x Eyepiece	—	7329-46	—	—
Auto Collimating Eyepiece	—	7311-32	—	—

## TOTAL STATION, ELECTRONIC THEODOLITE ASSESSORIES MATRIX

	SET2B/3BII	SET4BII	SET5F/6F/6E/DT4F	DT5/5A	DT6	PowerSET SET* 110 NET2100	SET300/ 500/ 600	DT500/ 500A/ 600
Solar Filter - OF1 (45mm)	—	7329-47	7329-47	—	—	—	—	—
Solar Filter - OF1A Flip-Up (45mm)	—	7329-49	7329-47	—	—	—	—	—
Solar Filter - OF2 (50mm)	7329-48	—	—	—	—	—	—	—
Solar Filter - OF2A Flip-Up (50mm)	7329-50	—	—	—	—	—	—	—
Solar Filter - OF3A	—	—	—	—	—	7329-51	7329-51	—
Zenith Eyepiece Prism - DE17A	—	—	—	7311-45	7311-45	7311-45	—	—
Zenith Eyepiece Prism - DE18	7311-18	7311-18	—	—	—	—	—	—
Zenith Eyepiece Prism - DE21	—	—	7311-46	—	7311-46	—	—	—
Zenith Eyepiece Prism - DE25	—	—	—	—	—	—	7311-23	7311-23
MA04 Solar Filter for Zenith Prism - MA04 Not for solar observation with Total Stations	—	—	—	7311-30	7311-30	7311-30	—	7311-30
Diagonal Eyepiece Prism EP3. Not for solar observation with total stations.	7329-41	7329-41	7329-41	7329-41	7329-41	7329-41	7329-41	7329-41
ACE1 Auto Collimating Eyepiece	—	—	—	7311-32	7311-32	7311-32	—	—
ACE3 Auto Collimating Eyepiece	7311-04	—	—	—	—	—	—	—
30x Eyepiece for SET600, DT600-EL6	—	—	—	—	—	—	7329-32	7329-32

**Sokkia Corporation**  
**16900 W. 118th Terrace**  
**P.O. Box 726**  
**Olathe, KS 66051-0726**  
**Tel: (913) 492-4900**  
**Fax: (913) 492-0188**

**www.sokkia.com**

**Sokkia Corporation - Canada**  
**1050 Stacey Court**  
**Mississauga, ON L4W2X8**  
**Tel: (905) 238-5810**  
**Fax: (905) 238-9383**

## **Sokkia U.S. and Canadian Distributors/Dealers**

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<http://www.sokkia.com/dealers/index.htm>



Your Local Sokkia Dealer: