SOKKIA

SDL1X
High-End Digital Level
0.2mm Standard Deviation for 1km Double-run Leveling

Ultimate Benchmark

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

Auto Focus

0.2mm Precision

■ Saving Measurement Time by up to 40%

- The combination of advanced "Auto Focus" and "View Finder" dramatically increases measurement speed.
- Measuring time – from sighting staff to completion of data storage – can be reduced by up to 40% compared to manual focus digital levels.

■ Seamless Switching Between Auto Focus and Manual

- No need to switch the focusing mode.
- Trigger key operation automatically starts Auto Focus.
- Manual focusing is possible at any time by rotating the focusing knob that supersedes the Auto Focus.

■ View Finder for Quick Sighting

- Innovative View Finder provides fast, easy and accurate sighting to the staff.
- In combination with Auto Focus, the SDL1X drastically reduces eye fatigue.

Eight innovative features never before available in the industry:*

1. 0.2mm precision (ISO17123-2)
2. Auto Focus for high-end digital level
3. View Finder for quick sighting
4. Remote Trigger for wireless operation
5. Dual-axis Tilt Sensor that ensures precision
6. SD card slot for data storage
7. 100m (320ft.) *Bluetooth*® wireless communication
8. BIS30A staff with ±0.1ppm/°C linear expansion coefficient

* As of September 1, 2011

When Precision Has Top Priority, and Measurement Speed Also Matters, SDL1X is the Ideal Digital Level that Fully Satisfies Both Demands

SDL1X Advanced

■ Intelligent Auto Focus

· The SDL1X automatically focuses exclusively on the RAB-Code staff.
· This technology completely eliminates false focusing on undesirable objects, enhancing measurement efficiency and reliability.
· Furthermore, Auto Focus eliminates the incomplete focusing that often causes inaccurate measurement with digital levels.

■ Remote Trigger

· The wireless Remote Trigger DLC1 prevents accidental jolts from touching the instrument.

DLC1

■ Dual-axis Tilt Sensor

· The liquid dual-axis tilt sensor alerts the users by LCD display and beeps when instrument tilt exceeds ±8.5', disabling measurement to avoid misreading.
· The LCD graphic circular level facilitates instrument setup.

■ Measurement and Recording Programs

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

■ Up-to-date Data Memory and Interface

· 10,000-point internal memory.
· USB port and SD card slot for improved usability.

■ 100m (320ft.) Bluetooth Wireless Modem (Optional)

· License-free *Bluetooth* technology enables wireless operation via various devices such as a data collector.

■ New Super-Invar Staff for 0.2mm Precision

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

BIS30A

SDL1X Standard

A simple function model SDL1X Standard is also available. For details, please see the specifications.

SDL1X Standard

RAB-Code Staff

Material	Model	Length	Linear expansion coefficient
New Super-Invar	BIS30A	3m (9.84 ft.)	±0.1ppm/°C
Invar	BIS20	2m (6.56 ft.)	1ppm/°C
	BIS30	3m (9.84 ft.)	1ppm/°C

Material	Model	Length	Reverse side graduation
Fiberglass	BGS40	4m (13.12 ft.)	Metric
	BGS50	5m (16.40 ft.)	Metric
	BGS50G3	5m (16.40 ft.)	feet / 10th / 100th

SDL1X Specifications

Model		Advanced	Standard
Height accuracy (ISO 17123-2)*1	Electronic	0.2mm (0.008in.)*2 with BIS30A staff 0.3mm (0.012in.) with BIS20/30 staffs 1.0mm (0.04in.) with BGS staffs	0.3mm (0.012in.) with BIS20/30(A) staffs 1.0mm (0.04in.) with BGS staffs
	Visual	1.0mm (0.04in.)	
Distance accuracy (D:measuring distance)	Electronic	<±10mm (<±0.4in.): up to 10m (33ft.) <±0.1% x D: to 50m (to 164ft.) <±0.2% x D: to 100m (to 328ft.)	
C & R correction		K=0.142 / 0.20 / none, selectable	
Measuring range	Electronic	1.6 to 100m (5.3 to 328ft.)	
	Visual	from 1.5m (5.0ft.)	
Measuring mode		Single / Repeat / Average / Rapid-repeat	
Display resolution (selectable in all modes)	Height	0.00001 / 0.0001 / 0.001m (0.0001 / 0.001 / 0.01ft.)	
	Distance	0.001 / 0.01 / 0.1m (0.01 / 0.1 / 1ft.)	
Measuring time	Single/Repeat	<2.5s	
	Average	<2.5s x [number of measurements]	
	Rapid-repeat	<1s	
Auto Focus	Method	Distance and Contrast measurement (Passive)	-
	Range	1.6 to 100m (5.3 to 328ft.)	-
	AF/MF modes	Automatic conversion	-
Telescope		Objective aperture: 45mm (1.8in.) Magnification: 32x, Resolving power: 3" Minimum focus: 1.5m (5ft.), Field of view: 1°20'	
View Finder		Magnification: 4.5x, Field of view: 3°	-
Compensator	Type	Pendulum compensator with magnetic damping system	
	Working range	±12'	
	Setting accuracy	±0.3"	
Tilt warning	Sensor	Dual-axis liquid tilt sensor	
	Functions	Graphic display, Beep tones, Disabling measurement at ±8.5' tilt (On/Off selectable)	
Display		LCD graphic display with LED backlight	
Keyboard		Alphanumeric, 27 keys with backlight	
DLC1 remote trigger (Standard model : optional)		Infrared, 3 keys (Trigger, ESC, Enter)	
Data storage	Internal memory	10,000 points	
	External memory	SD card (max.2GB), USB flash memory (max.4GB)	
Interface	RS-232C	Baud rate 1,200 to 57,600bps	
	USB	USB 1.1 Host Type A	
Bluetooth wireless modem (optional)		Ver. 2.0, Class 1, Range: 100m (328ft.)	
Sensitivity of levels	Circular level	8'/2mm	
	LCD graphic level	±12'/inner circle, ±24'/outer circle	
Horizontal circle Graduation		1° (1gon) Estimation: 0.1° (0.1gon)	
Dust and water protection		IP54 (IEC60529:2001)	
Operating temperature		-20 to +50°C (-4 to 122°F)	
Size		W226 x D260 x H200mm (W8.9 x D10.2 x H7.9in.)	
Weight with battery		3.5kg (7.7 lb.)	3.4kg (7.5 lb.)
Power supply	Input voltage	7.2V DC (nominal)	
	Standard battery	BDC58 (Rechargeable Li-ion, 4.3Ah)	
	Operating time (at 20°C (68°F))	Approx. 12 hours w/o Auto Focus Approx. 9 hours w/Auto Focus	Approx. 14 hours
Battery level display		4 levels and low level message	
Auto power cut-off		30 minutes after operation / none, selectable	

*1 Standard deviation for 1km double-run leveling.
*2 Conditions for the highest accuracy: Low level of atmospheric turbulence, stable ambient temperature, no direct sunlight on instrument and staff.

Standard Accessories

●BDC58 rechargeable battery ●CDC68 quick charger with EDC113A/113B/113C power cable ●DLC1 Remote Trigger* ●Tool kit ●Operator's manual ●Carrying case
*Optional Accessory for standard model

Optional Accessories

●DE28 diagonal eyepiece (32x) ●DE29 diagonal eyepiece (44x) ●DOC129 inteface cable

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