

# SDL30/SDL50

DIGITAL LEVELS

## Save Time with Innovative, Industry-Leading Technologies

**2.5-second High-speed Measurement, 20 lux Minimum Brightness, Inverted Staff Recognition, Wave-and-Read, and the Highest Accuracy in its Class**

### ■ 2.5 seconds – High-speed Measurement

Aim, focus, and press a key. Height and distance are simultaneously measured in 2.5 seconds, 20 percent faster than ordinary digital levels.



### ■ Consistent Performance in Diverse Environments

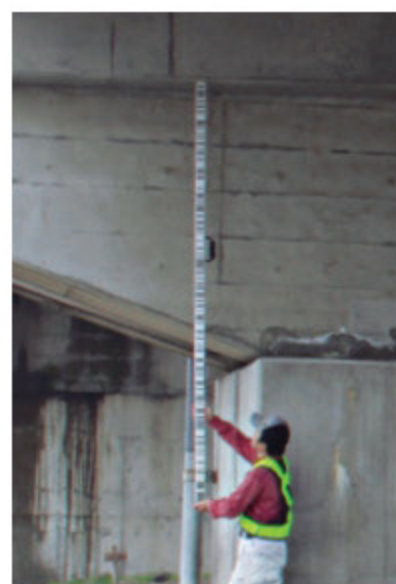
The SDL30/50 provides the superior measurement capability under a variety of environmental conditions. Even when the staff surface is partially shaded, or in dim lighting conditions where the brightness at staff surface is as low as 20 lux\*, the SDL30/50 consistently provides reliable measurement results without downtime. A small flashlight is enough to illuminate the staff in the dark.

\*20 lux is defined as the minimum brightness with which human face can be recognized.



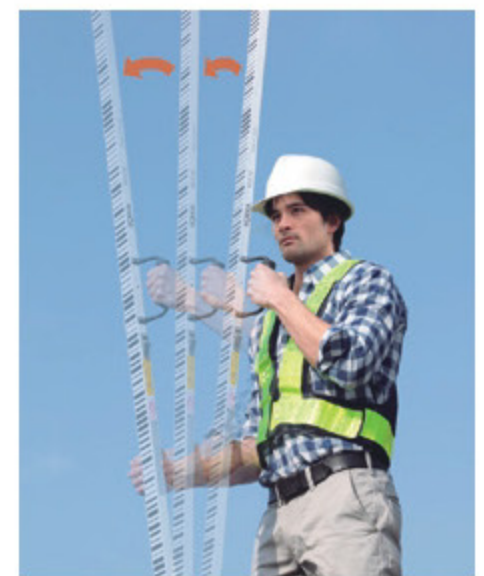
### ■ Automatic Recognition of Inverted Staff

The SDL30/50 automatically recognizes directions of RAB-Code staffs and displays the results with a minus sign (-) when the staff is inverted. Height of ceiling, overpass, bridge, road sign, tree branch, tunnel crown, and other objects can be easily measured without a calculator.



### ■ Wave-and-Read Technology

The innovative "Wave-and-Read" technology provides an additional survey style option. The SDL30/50 tracks the RAB-Code staff waved back and forth to read the correct height. The staff reading becomes the minimum when it is in vertical position. The SDL30/50 automatically detects the least value of staff readings.



### ■ Choice of Accuracy

**SDL30:** 0.4mm (New Super-Invar Staff) / 0.6mm (Invar) / 1.0mm (Fiberglass)  
**SDL50:** 0.6mm (New Super-Invar Staff) / 0.8mm (Invar) / 1.5mm (Fiberglass)

Choose the digital level and staffs according to the accuracy\* you need. Sokkia offers the top-of-the-line SDLIX model for higher accuracy of up to 0.2mm.

\* 1 km double-run leveling

### ■ Internal Memory

Up to 2,000 measurement data of elevation or height difference can be recorded in the internal memory. Auto mode records data as soon as the measurement is taken, while manual mode allows you to check the measurement results before recording. Stored data can be exported using the "Spectrum Link" software.

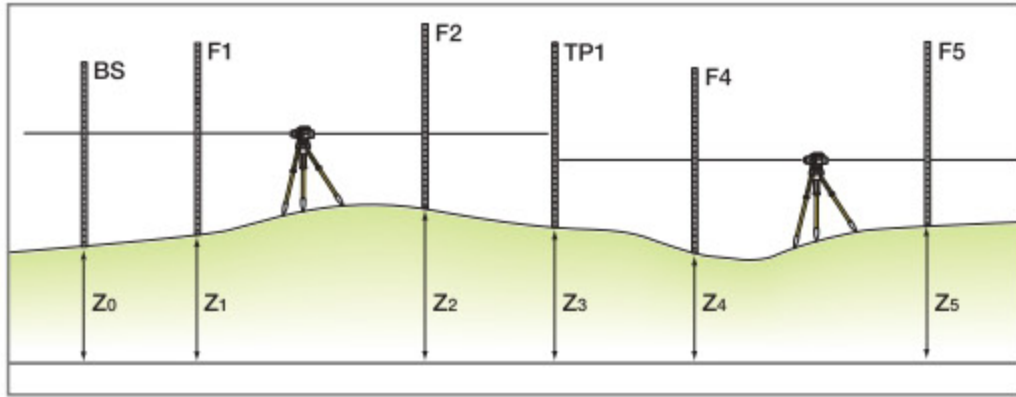


### Convenient Onboard Programs

The onboard measurement programs of SDL30/50 facilitate leveling and setting-out tasks. Programs include:

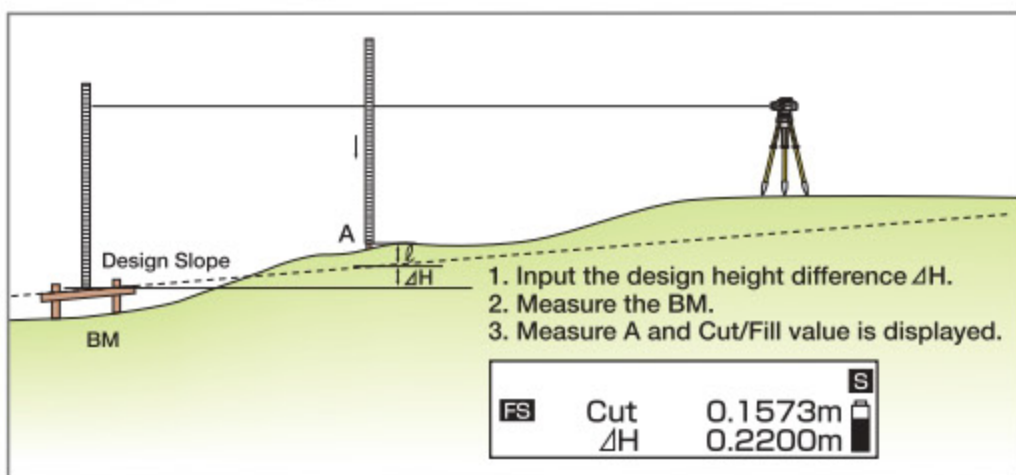
- Elevation ● Height Difference
- Cut and Fill Setting-out ● Setting-out in Distance

### Elevation / Height Difference



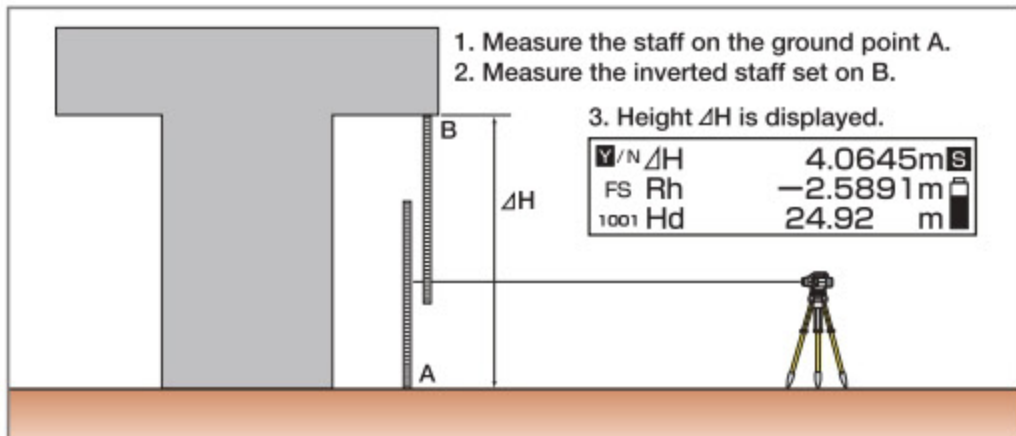
- The SDL30/50 calculates height difference between backsight (BS) and foresight (FS).
- Elevation of foresight can be calculated by inputting BS elevation.

### Cut and Fill Setting-out



- Slope can be set using Cut and Fill Setting-out program.
- Leveling is possible by inputting the height difference zero (0).

### Height Measurement



- Two measurements provide the height of point B.
- Elevation can be calculated by inputting BS elevation.

### RAB-Code Staff

Material	Model	Length	Linear expansion	Sections	Weight
New Super-Invar	BIS30A	3m (9.9ft.)	$\pm 0.1 \text{ ppm}/^\circ\text{C}$	1	5.5kg (12.2 lb.)
Invar	BIS20	2m (6.6ft.)	$1 \text{ ppm}/^\circ\text{C}$	1	4.3kg (9.5 lb.)
	BIS30	3m (9.9ft.)	$1 \text{ ppm}/^\circ\text{C}$	1	5.5kg (12.2 lb.)

### SDL30 / SDL50 Specifications

Model	SDL30	SDL50	
Height accuracy (ISO 17123-2)*	Electronic BIS30A staff	0.4mm (0.016in.)	0.6mm (0.024in.)
	BIS20/30 staffs	0.6mm (0.024in.)	0.8mm (0.03in.)
	BGS staffs	1.0mm (0.04in.)	1.5mm (0.06in.)
	Visual BGS staffs	1.0mm (0.04in.)	2.0mm (0.08in.)
Distance accuracy (D: measuring distance)	Electronic	$< \pm 10 \text{mm} (\pm 0.4 \text{in.}) [D \leq 10 \text{m} (D \leq 33 \text{ft.})]$ $< \pm 0.1\% \times D [10 < D \leq 50 \text{m} (33 < D \leq 164 \text{ft.})]$ $< \pm 0.2\% \times D [50 < D \leq 100 \text{m} (164 < D \leq 328 \text{ft.})]$	
	Electronic	1.6 to 100m (5.3 to 328ft.)	
	Visual	from 1.5m (5.0ft.)	
Measuring range	Electronic	1.6 to 100m (5.3 to 328ft.)	
	Visual	from 1.5m (5.0ft.)	
Measuring mode		Single / Repeat / Average / Tracking / Wave-and-Read	
Display resolution	Height	0.0001/0.001/0.01m (0.001/0.01/1ft., 1/8in.)	
	Distance	0.01/0.1m (0.1/1ft., 1in.)	
Measuring time	Single/Repeat	$< 2.5 \text{s}$	
	Average	$< 2.5 \text{s} \times [\text{number of measurements}]$	
	Tracking	$< 1 \text{s}$	
Minimum brightness condition		20 lux at the surface of staff (with natural light)	
Telescope	Objective aperture	45mm (1.8in.)	36mm (1.4in.)
	Magnification / Resolving power	32x / 3"	28x / 3.5"
	Minimum focus / Field of view	1.5m (5ft.) / $1^\circ 20'$	
Compensator	Type	Pendulum compensator with magnetic damping system	
	Working range	$\pm 15'$	
Sensitivity of circular level		10'/2mm	
Horizontal circle		Diameter: 103mm (4in.), Graduation: $1^\circ (1 \text{gon})$	
Display		Dot matrix LCD (128 x 32 dot) with illuminator	
Keyboard		8 keys (7 keys on front panel, 1 key on side panel)	
Data storage		2,000 points internal memory	
Interface		RS-232C, baud rate 1,200 to 38,400bps	
Onboard programs		Elevation / Height difference / Cut & Fill setting-out / Setting-out distance / Height measurement	
Water resistance		IPX4 (IEC60529:2001)	
Operating temperature		$-20 \text{ to } +50^\circ\text{C} (-4 \text{ to } 122^\circ\text{F})$	
Size		W158 x D257 x H182mm (W6.2 x D10.1 x H7.2in.)	
Weight with battery		2.4kg (5.3 lb.)	
Standard battery		BDC71 (Rechargeable Li-ion, 7.2V)	
Operating time		Approx. 16 hours at $25^\circ\text{C} (77^\circ\text{F})$	

\* Standard deviation for 1km double-run leveling

### Standard Configuration

SDL30/SDL50 digital level, BDC71 battery, CDC77 charger, EDC113A/B/C power cable, tool kit, dust cover, cleaning cloth, operator's manual, carrying case

### Optional Accessories

- DE23 Diagonal eyepiece
- GS60L Circular level for staff



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