

DL-501
ELECTRONIC DIGITAL LEVEL

TOPCON

DL-501

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**World's Highest Precision
Digital Level**



- 0.2MM PRECISION* PATTERN APPROVAL NO.2011-L211
- AUTO FOCUS*
- 2.5 SEC HIGH-SPEED MEASUREMENT
- 20LX. MINIMUM BRIGHTNESS
- DUAL-AXIS TILT SENSOR
- REMOTE TRIGGER FOR WIRELESS OPERATION
- LINE LEVELING PROGRAM
- 10,000 POINTS INTERNAL MEMORY
- SD/SDHC CARD / USB PORT

*DL-501 Advanced model features Auto Focus and View Finder for fast and accurate collimation. It also includes Remote Trigger as standard accessory (optional for Standard model).



DL-501 SPECIFICATIONS

Technologies for Precision

The DL-501 series incorporates an array of advanced technologies to achieve the highest leveling accuracy in the industry.

- RAB-Code technology, superior optics, market-proven compensator and magnetic damping system ensure precise staff readings.
- Dual-axis compensator notifies instrument tilt, Remote Trigger prevents accidental jolts, and Auto Focus (DL-501 Advanced model) eliminates incomplete focusing. These unique technologies remove major error factors.
- Even in the dim light conditions, if the staff surface brightness is 20lx or more, the DL-501 series can read the staffs without compromising accuracy.

Technologies for Speed

Both models feature the measurement time of 2.5 seconds - the fastest in its class. The DL-501 Advanced model, equipped with Auto Focus and View Finder for quick sighting, saves measurement time by up to 40% compared to manual focus digital levels.

Measurement Programs

Onboard program supports line leveling and data recording.

- Methods: BF, BFFB, BBFF, BFBF, aBF, aBFFB, aFBFF
- Up to two intermediate sights can be measured in each set.
- Adjustable tolerances and error calculation functions allow for on-site accuracy checks.

RAB-Code Staff

Material	Model	Length	Linear Expansion
New Super-Invar	BIS30A	3m	±0.1ppm/°C
	BIS20	2m	1ppm/°C
Invar	BIS30	3m	1ppm/°C

Material	Model	Length	Rear Graduation
Fiberglass	BGS40	4m	Metric
	BGS50	5m	Metric

		DL-501 Advanced	DL-501 Standard
Collimation			
Telescope		Objective aperture: 45mm, Magnification: 32x Resolving power: 3", Minimum focus: 1.5m, Field of view: 1°20'	
Auto Focus	Method	Distance/contrast measurement	-
	Focusing object	Exclusive focus on RAB-Code staff	-
	Range	1.6 to 100m	-
	Focusing time	0.8 to 4.0s	-
	AF/MF modes	Automatic switch (MF dominant)	-
View Finder		Magnification: 4.5x	-
Compensator			
Type		Pendulum compensator with magnetic damping system	
Working Range		≥ ±12'	
Setting Accuracy		±0.3"	
Tilt Warning	Sensor	Dual-axis liquid tilt sensor	
	Functions	Message display, Beep tones, Disabling measurement at ±8.5' tilt (On/Off selectable)	
Height and Distance Measurement			
Height Accuracy ^{*1}	BIS30A Staff	0.2mm (Pattern Approval no.2011-L211)	-
	BIS20/30 Staff	0.3mm	
	BGS Staff	1.0mm	
	Visual	1.0mm with BGS Staffs	
Distance Accuracy (D: measuring distance)	D ≤ 10m	≤ ±10mm	
	10m < D ≤ 50m	≤ ±0.1% x D	
	50m < D ≤ 100m	≤ ±0.2% x D	
Earth Curvature and Refraction Correction		K=0.142/0.20/none, selectable	
Measuring Range	Electronic	1.6 to 100m	
	Visual	from 1.5m	
Least Count	Height	0.00001/0.0001/0.001m	
	Distance	0.001/0.01/0.1m	
Measuring Time	Single/Repeat	< 2.5s	
	Average	< 2.5s x [number of measurements]	
	Rapid (repeat)	< 1s	
Minimum Brightness Condition		20lx. (at the staff surface)	
User Interface			
Display		LCD graphic display with LED backlight	
Keyboard		Alphanumeric, 27 keys with backlight	
DLC1 remote Trigger		Infrared, 3 keys	Optional
Leveling Programs ^{*2}		BF, BFFB, BBFF, BFBF, aBF, aBFFB, aFBFF; IS x 2 for each set	
Sensitivity of Levels	Circular Level	8'/2mm	
	LCD Graphic Level	±12'/inner circle, ±24'/outer circle	
Horizontal Circle		Diameter: 103mm, Graduation: 1° (1gon)	
Data Management			
Data storage	Internal Memory	10,000 points	
	Removable Memory	SD/SDHC card (max. 4GB), USB flash memory (max. 4GB)	
Interface	RS-232C	Baud rate 1,200 to 57,600bps	
	USB	USB 1.1 Host Type A	
Environmental			
Dust and Water Protection		IP54 (IEC60529:2001)	
Operating Temperature		-20°C to +50°C	
Physical			
Size		D260 x W226 x H200mm	
Weight with Battery (BDC70)		3.5kg	3.4kg
Power Supply			
Standard Battery		BDC70 (Rechargeable Li-ion, 7.2V, 5.2Ah)	
Operating Time (at 20°C)	w/ Auto Focus	Approx. 9 hours	-
	w/o Auto Focus	Approx. 12 hours	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, ISO 17123-2 compatible.

*2 B: Backsight, F: Foresight, a: alternating, IS: Intermediate Sight



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