

DL-501
ELECTRONIC DIGITAL LEVEL

 **TOPCON**

DL-501

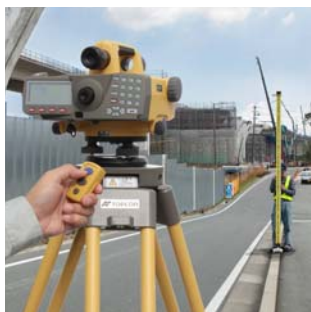
ELECTRONIC DIGITAL LEVEL



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).



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, aFBBF
- 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
Invar	BIS20	2m	1ppm/°C
	BIS30	3m	1ppm/°C

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

DL-501 SPECIFICATIONS

		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, aFBBF; 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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