

# DL-502 / 503

Electronic Digital Level



- One Button Triggers Measurement and Data Storage
- 0.6mm/0.8mm Height Accuracy
- “Wave-and-Read” Technology Guarantees Easy and Accurate Measurement
- Pre-installed Measurement Programs
- Height Difference Measurement
- Inverse Staff Reading for Ceiling Height
- Internal Memory

# DL-502/503 Electronic Digital Level

Quick. Easy. Reliable. Digital Technology Speed

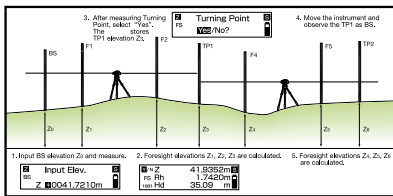
## World's First "Wave-and-Read" Technology

Topcon DL-500 series digital levels maximize work efficiency and minimize human error, providing consistent measurement precision and speed, regardless of operator skill.

Incorporating cutting-edge Random-Bidirectional (RAB) coding technology, an optimized digital processing algorithm, the DL-500 provides exceptional measurement accuracy, stability and speed, under a variety of environmental conditions. Even when the staff surface is partially shaded, or in dim lighting conditions as low as 20 lux, a single button triggers measurement and the DL-500 instantly provides reliable results.

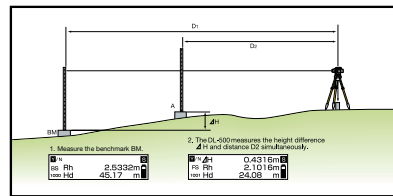
The world's first "Wave-and-Read" technology provides an additional survey style option that allows a rod operator to wave the staff forward and back, instead of keeping the staff plumb. This simpler method is faster, easier, minimizes the fatigue and is just as accurate.

Pre-installed measurement programs assist various leveling tasks and accompanied calculations. Internal memory stores field data, and can be directly transferred to your computer via serial cable, eliminating human error.



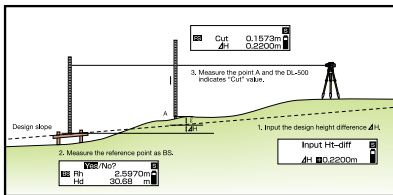
### Elevation

Calculates elevation of foresight (FS) with reference to backsight (BS) elevation. Elevation of the turning point (TP) is used for a new backsight, allowing for consecutive leveling.



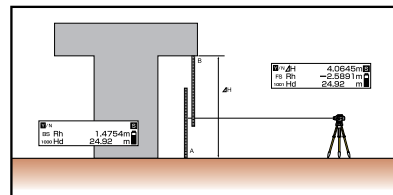
### Cut and Fill

Cut and fill stakeout routines facilitate slope work. Measurement can be taken with 0.1mm or 1mm (0.001ft. or 0.01ft.) resolutions.



### Height Difference

Automatically displays the height difference between backsight (BS) and foresight (FS) in 0.001/0.01ft. (0.1/1mm) unit.



### Ceiling Height

Two measurements provide a ceiling height; one with a staff placed on the ground, the other with an inverted staff put onto the ceiling. Ceiling elevation can also be calculated with reference to the benchmark elevation.

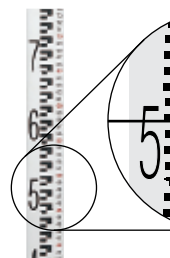


LCD display

Removable Li-ion battery

7 keys

Internal memory



### Single Button Operation!

After focusing on the staff, just press one button. The DL-500 Auto levels require you to read the graduations on the staff, which eliminates misreading and reduces operator's eye fatigue.

# No Error. Less Fatigue. Takes Up All Leveling Tasks!

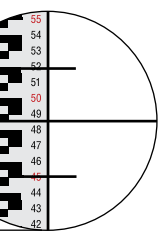


32x telescope (DL-502)  
28x telescope (DL-503)

Focusing knob

Measurement key

RS-232C port



DL-500 reads height and distance, and stores data.  
Reads leveling staff with your own eye, but digital technology  
eliminates human error.



## High Accuracy! 0.6mm/0.8mm

Two models are available for different accuracy requirements.  
DL-502: 0.6mm (Invar staff), 1.0mm (fiberglass staff)  
DL-503: 0.8mm (Invar staff), 1.5mm (fiberglass staff)

## Maximum Reliability! Field-proven Compensator

Incorporating a field-proven pendulum compensator with magnetic damping system, the DL-500 provides the stability you need when working on busy roads or bridges subject to vibrations.



## Measures Ceiling Height! Inverse Staff Reading

The DL-500 can read the RAB-code staff in the inverted position. This feature dramatically facilitates height measurement of ceilings, tree branches, road signs, bridges, tunnel crowns, and other structures.

## The World's First "Wave-and-Read" Technology

The DL-500 tracks the RAB-code staff when waved forward and back, and automatically reads the correct height. The reading is at the minimum when the staff stands vertically, and the DL-500 automatically finds the least value of staff readings. This technology eliminates the need for keeping a staff plumb, further enhancing work efficiency and measurement accuracy.



## Practical Measurement Programs! No Need for Calculators

Onboard programs support various measurement routines such as elevation, height difference, ceiling height, as well as cut/fill and stakeout in horizontal distance.

## Internal Memory and Easy Data Transfer!

DL-500 stores the data for up to 2,000 measurements. DL TOOL software transfers data to your computer in CSV format, via serial cable.

\* DL TOOL is available at [topconpositioning.com](http://topconpositioning.com)



## Standard Configuration

- DL-502/503 Digital Level unit
- BDC46B Li-ion battery
- CDC68 charger
- EDC113AC power cable
- Hex wrench
- Vinyl cover
- User manual
- Carrying case

## Optional Accessories

- BIS30 Invar RAB-code staff
- BGS40A Fiberglass RAB-code staff
- BAS55 Aluminum RAB-code staff
- F-4/F-24 Interface cable

## DL-502/503 SPECIFICATIONS

TELESCOPE	DL-502	DL-503
Magnification	32X	28X
Objective aperture	45mm (1.78in.)	36mm (1.42in.)
Resolving power	3"	3.5"
Field of view	1°20"	1°20"
Minimum focus	5.0ft. (1.5m)	5.0ft. (1.5m)
Image	Erect	Erect
Stadia ratio	100	100
<b>COMPENSATOR</b>		
Type	Pendulum compensator with magnetic damping system	
Working range	±15'	±15'
<b>HEIGHT MEASUREMENT</b>		
Accuracy	(standard deviation for 1 km double run leveling)	
<b>Electronic reading</b>		
Invar staff	0.6mm	0.8mm
Fiberglass staff	1.0mm	1.5mm
Optional reading	1.0mm	2.0mm
Measuring range	5.3 to 328ft. (1.6 to 100m)	
<b>Measuring time</b>		
Fine	3 sec. (single/continuous/average)	
Tracking	1 sec.	1 sec.
Least count	0.0001/0.001m, 0.001/0.01ft., 1/8in.	
Minimum brightness condition	20lx. at the staff surface	
<b>DISTANCE MEASUREMENT (D=measuring distance)</b>		
<b>Accuracy</b>		
D≤10m	±0.4in. (±10mm)	±0.4in. (±10mm)
10m<D≤50m	±0.1%×D	±0.1%×D
50m<D	±0.2%×D	±0.2%×D
Least count	0.01/0.1m, 0.1/1ft., 1in.	0.01/0.1m, 0.1/1ft., 1in.
<b>USER INTERFACE</b>		
Display	128×32 dot matrix LCD with backlight	
Keyboard	8 keys (7 on front panel, 1 on side panel)	
Circular level sensitivity	10'/2mm	10'/2mm
<b>MESUREMENT PROGRAM</b>		
	Single / Continuous / Average / Elevation / Height difference / Cut & Fill / Stakeout distance	
<b>DATA STORAGE</b>		
Internal memory	2,000 points	2,000 points
Job	Max. 20 jobs	Max. 20 jobs
Data output format	CSV	CSV
Interface	RS-232C	RS-232C
<b>ENVIRONMENTAL</b>		
Water resistance	IPX4 (IEC 60529:2001)	
Operating temperature	-4°F to 122°F (-20°C to 50°C)	
Storage temperature	-40°F to 158°F (-40°C to 70°C)	
<b>OTHERS</b>		
Power supply	BDC46B (Li-ion battery, 7.2V)	
Operating time	Approx. 16 hours	Approx. 16 hours
Weight (including battery)	5.3lb. (2.4kg)	
Size (D x W x H)	10.1×6.2×7.2in. (257×158×182mm)	



topconpositioning.com

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