SOKKIA

LDT520

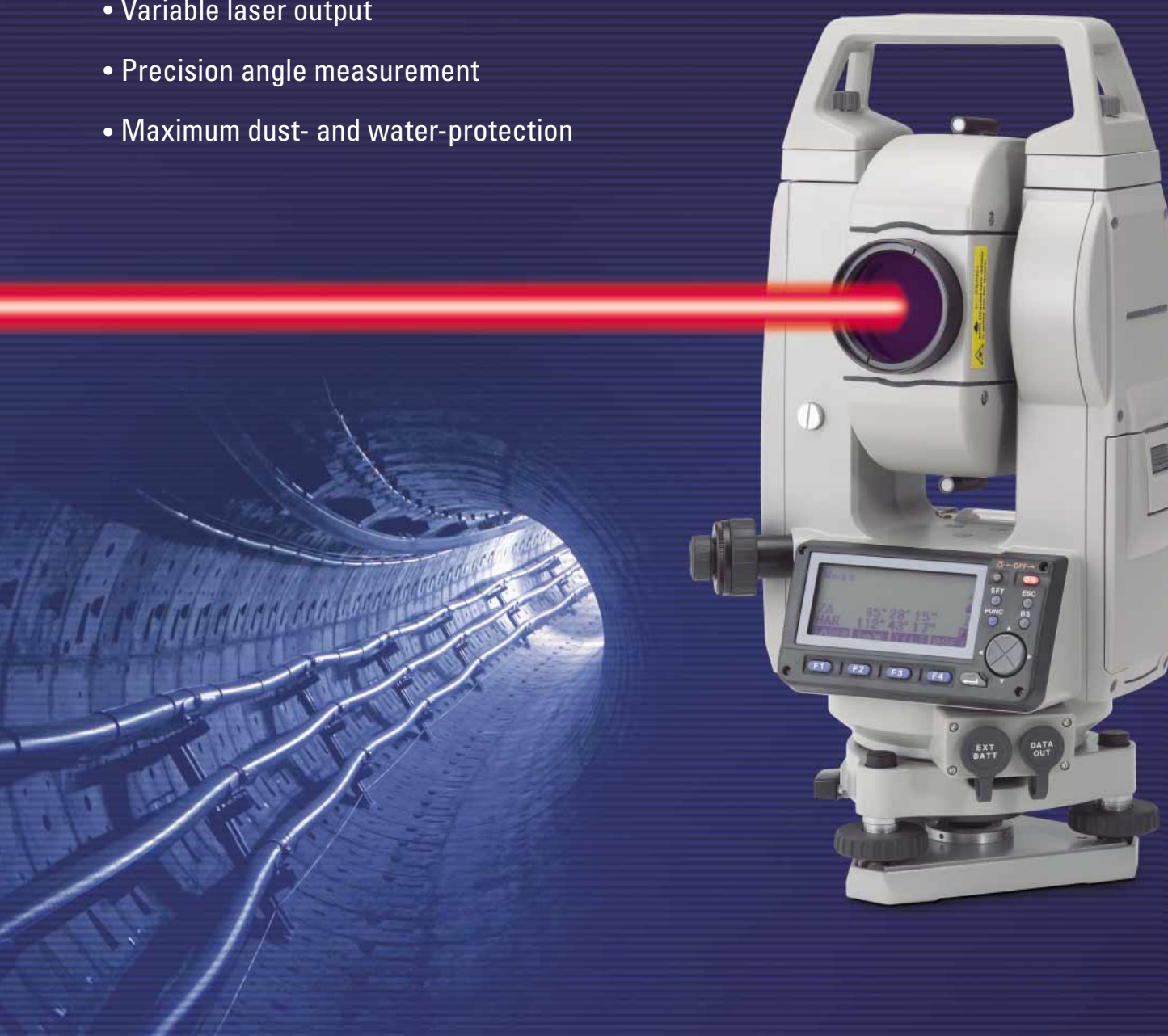
Laser Digital Theodolite

The World's Longest Laser Range* - 600 m (2,000 ft.).

For Directional Controls in Tunnel Excavation, Precise Marking and Alignment in Construction and Engineering Applications.

* Compared to existing laser theodolites, as of October 1, 2008.

- Emits both a focused beam and a parallel beam
- Variable laser output
- Precision angle measurement
- Maximum dust- and water-protection



LDT520

Laser Digital Theodolite

The LDT520 drastically enhances productivity thanks to the high-brightness, high-precision laser beam as well as the versatility to emit both focused and parallel beams.

World's longest laser beam range for a digital theodolite*

- Offers 600 m (2,000 ft.) of laser beam range in tunnels or other underground sites**.
- The parallel beam reaches 200 m (660 ft.).

*As of October 1, 2008. ** Brightness of surrounding environment 100 lx with focused beam at beam output of 4.5 mW.

One instrument for the focused beam and parallel beam

- Focused beam: Beam spot becomes the smallest at the focused distance of a telescope.
- Parallel beam: The beam diameter is constant in any distance, ideal for directional controls in tunnel construction.
- Parallel beam can be emitted by adjusting focusing ring to the ▼ mark, without the need for any accessory.

Variable laser output

- Easy adjustment of laser output power between 1 mW to 4.5 mW.

An advanced angle measurement system for optimum reliability

- Original absolute encoders employ advanced coding technology and the latest in digital processing technology.
- Provides exceptional precision and reliability under harsh construction environment.

Dual-axis compensation for maximum angle precision

- Automatically detects the instrument tilt in two directions.
- Compensates for both horizontal and vertical angles to ensure highly accurate angle measurement.

Slope display in % and ‰

- Vertical angle display can be switched to slope in per-cent (%) or per-mil (‰).

Highest in its class dust- and water-protection

- Conforms to the IP66 dust- and water-protection standard.
- Withstands the harshest conditions in the dusty or moist underground construction sites.

Operable in tight spaces

- Minimum focus of the optical plummet is as short as 15 cm (5.9 in.) from the tribrach bottom.
- This means the LDT520 can be precisely set at 15 cm above the reference point.

LDT520 Specifications

Laser			
Light source / Wavelength		Laser diode / 635 nm	
Output power		1 to 4.5 mW, variable. Adjusted with softkey.	
Laser class*1		Class 3R	
Laser focusing		Simultaneous with telescope focusing. Parallel beam is generated when the focusing ring is adjusted to the ▼ mark	
Measuring range*2		Over 200 m (656 ft.) / 1 mW laser output, Over 600 m (1,960 ft.) / 4.5 mW laser output	
Beam Spot diameter		Distance	focused Beam Diameter*3 / Parallel Beam Diameter
		5 m (16 ft.)	ϕ0.5 mm (0.02 in.) / ϕ15.0 mm (0.59 in.)
		20 m (66 ft.)	ϕ2.1 mm (0.08 in.) / ϕ15.1 mm (0.59 in.)
		50 m (164 ft.)	ϕ5.2 mm (0.20 in.) / ϕ15.2 mm (0.59 in.)
		100 m (328 ft.)	ϕ10.3 mm (0.41 in.) / ϕ15.3 mm (0.60 in.)
		150 m (492 ft.)	ϕ15.5 mm (0.61 in.) / ϕ15.5 mm (0.61 in.)
		200 m (656 ft.)	ϕ20.7 mm (0.81 in.) / ϕ25.7 mm (1.01 in.)
		300 m (984 ft.)	ϕ31.0 mm (1.22 in.)
		400 m (1,312 ft.)	ϕ41.3 mm (1.63 in.)
		500 m (1,640 ft.)	ϕ51.6 mm (2.03 in.)
		600 m (1,960 ft.)	ϕ62.0 mm (2.44 in.)
Beam angle adjustment function		Built-in	
Laser ON / OFF		Switched with softkey	
Telescope			
Telescope		Length: 160 mm (6.3 in.), Objective aperture: 42 mm (1.7 in.), Magnification: 30x, Resolving power: 3", Field of view: 1°30' (26 m@1,000 m), Minimum focus: 1.3 m (4.3 ft.)	
Reticle illumination		Built-in (bright or dim, selectable)	
Angle measurement			
Type		Absolute rotary encoder scanning, Both circles adopt diametrical detection	
Unit		Degree/Gon/Mil, selectable	
Display resolutions		1" / 5", 0.0002 gon / 0.001 gon, 0.005 mil / 0.02 mil, selectable	
Accuracy (ISO17123-3:2001)		5" (1.5 mgon) (0.025 mil)	
Measuring time		0.5 s or less, continuous	
Measuring mode	H	Clockwise / Counterclockwise, selectable. 0 set, Hold, Angle input, Repetition, available	
	V	Zenith 0, Horizontal 0, Horizontal 0±, Slope in % / ‰, selectable	
Automatic dual-axis compensator		Dual-axis liquid tilt sensor, working range: ±3', "Out-of-range" warning display and audible tone	
Collimation compensation		ON / OFF, selectable	
General			
Display		LCD graphic display, 192 x 80 dots, screen size: 71.5 x 31mm, with backlight and 16 contrast levels	
Keyboard		4 softkeys and 11 keys (total 15 keys)	
Control panel layout		On both faces	
Interface		Asynchronous serial, RS-232C compatible, baud rate: 1,200 to 38,400 bps	
Sensitivity of levels		Plate level: 40" / 2 mm, Circular level: 10' / 2 mm	
Optical plummet		Image: Erect, Magnification: 3x, Minimum focus: 0.15 m (5.9 in.) from tribrach bottom	
Tribrach		Detachable	
Dust and water protection		IP66 (IEC60529:2001) (EDC119A external power cable connection maintains IP66)	
Operation temperature		-20 to +50°C (-4 to +122°F)	
Storage temperature		-30 to +70°C (-22 to +158°F)	
Instrument hight		236 mm (9.3 in.) from tribrach bottom	
Size (with handle and battery)		W 165 x D 165 x H 355 mm (W 6.5 x D 6.5 x H 14 in.)	
Weight (with handle and battery)		5.8 kg (12.8 lb.)	
Power supply			
Battery	BDC46B	Li-ion rechargeable battery, 7.2 V, 2.45 Ah, 103 g (3.6 oz.). 2 pcs. included.	
	Continuous use at 25°C (77°F)	Approx. 12.5 hours/ Laser output 4.5 mW and angle measurement	
		Approx. 13.5 hours/ Laser output 1 mW and angle measurement	
		Approx. 20 hours/ Angle measurement only	
Remaining battery level display		4 levels + Low level message	
Automatic power cut-off		5 / 10 / 15 / 30 minutes after operation / Off, selectable	

*1 IEC60825-1 Ed. 2.0: 2007 / FDA CDRH 21 CFR Part 1040.10 and 1040.11 (Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007.
*2 Brightness: 100 lx or less. Range may vary depending on atomospheric conditions.
*3 Theoretical diameter values for 0-order diffraction beams.

■ Standard Accessories
● BDC46B rechargeable battery : 2 pcs. ● CDC68 quick charger with EDC113A/113B/113C power cable ● CP7 tubular compass ● Lens hood ● Lens cap ● Plumb bob ● Tool kit ● Operator's manual ● Laser caution sign ● Carrying case and shoulder strap

■ Optional accessories
● BDC60 / 61 external battery ● EDC119A waterproof cable for BDC60 / 61 ● EDC119 cable for BDC60 / 61 ● EDC14 external battery adapter, EDC5 car battery cable for EDC14, EDC4 car cigarette lighter cable for EDC14 ● DE25 diagonal eyepiece ● LAP1 laser plummet ● DOC25 (25-pins, male), DOC26 (25- pins, female), DOC 27 (9-pins, female), DOC1 (w/o connector) interface cables
* For more details, please consult your local sales representative.

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