


# LiteMapper<sup>®</sup> 5600 specifications:

SYSTEM PARAMETER	CONDITIONS	LiteMapper 5600	
<b>Range Measurement Performance</b>			
	@ laser PRR	natural target, $\rho \geq 20\%$	natural targets, $\rho \geq 60\%$
Max. measurement range	70 kHz	1200 m	1800 m
	100 kHz	1000 m	1200 m
	180 kHz	780 m	800 m
	200 kHz	700 m	700 m
	240 kHz	580 m	580 m
Typ. operating flight altitude AGL @ 45 deg	PRR = 70 kHz	1400 m (4590 ft)	
	PRR = 100 kHz	1000 m (3280 ft)	
	PRR = 180 kHz	600 m (1970 ft)	
	PRR = 200 kHz	550 m (1800 ft)	
	PRR = 240 kHz	450 m (1480 ft)	
Accuracy	flat surface, normal to beam	20 mm	
Precision		10 mm	
Pulse repetition rate (PRR)		up to 240 000 Hz	
Max. # of recorded echoes		unlimited	
Multiple target separation w ithin single shot		0.6 m	
Return pulse width resolution		0.15 m	
Laser wavelength		1550 nm	
Pulse length		3.5 ns	
Effective measurement rate		120 000 Hz @ 45 deg scan angle	
Laser beam divergence		160 000 Hz @ 60 deg scan angle	
		$\leq 0.5$ mrad	
<b>Scanner Performance</b>			
Scanning mechanism		rotating polygon mirror	
Scan pattern		parallel scanning lines	
Scan angle range (user selectable)		$\pm 22.5$ deg = 45 deg total, $\pm 30$ deg = 60 deg total	
Angle readout resolution		0.001 deg	
Angle step width		0.004 deg @ PRR 100 000 Hz	
Scan speed		10 - 160 scans/s	
Swath width		0.83 x altitude @ 45 deg total 1.15 x altitude @ 60 deg total	
<b>Operational Parameters</b>			
Ground sample spot diameter		0.4 m (@ 800 m AGL)	
Surface point accuracy (horizontal / vertical), excluding GPS errors		0.1 m / 0.03 m (1sigma) (@ 800 m AGL)	
Intensity (return amplitude) detection		16 bit per return	
Special features		full waveform digitization: unlimited number of returns, 1 GHz, 16 bit dynamic range	
Eye-safety class		Class 1 (eye-safe)	
Power supply (polarity safe)		18 - 32 VDC	
Temperature range		0°C to +40°C (operation) / -10°C to +50°C (storage)	
Humidity		0% - 90% non-condensing	
<b>Data Recorder Performance</b>			
Model		Riegl DR560 / DR560RD	
Storage capacity		2x 500 GByte single hard disk RAID 0 or RAID 1	

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<b>Computer Systems</b>		
Flight Management System		CCNS4 + IGiplan mission planning software
Precise Positioning System		AEROcontrol + AEROoffice post-processing software
Inertial Measurement Unit (IMU)		IMU IId
IMU sampling rate		256 Hz
IMU accuracy (roll/pitch/heading)		0.004 deg / 0.004 deg / 0.01 deg
GPS		dual frequency, 2 Hz
Sensor Control System		LMcontrol + Riegl post-processing software
<b>Digital Camera System (option)</b>		
Model		DigiCAM
Sensor size		39 Megapixel, 7216 x 5412 pixel
Sensor dimensions		36.80 x 49.07 mm
Pixel size		6.8 µm
Analog to digital conversion		16 bits
Max. operating altitude		3000 m; no limit using solid state storage units
Data storage with HDD		External storage units for 6400 images (2 x 3200)
Data storage with SSD		External storage units for 2000 images (2 x 1000)
Max. exposure rate		1.9 sec
Shutter		electronically controlled leaf shutter
Shutter speed options		1/800 to 1/125 sec
Lenses		28, 35, 50, 80, 100, 150, 210, 300 mm
Filter array		Color (RGB) or Color-Infrared (CIR)
Image data formats		TIFF, JPEG, DNG (optionally 8 or 16 bit)
Modular replaceability		shutter integrated in lens for easy change; interchangeable digital back
Calibration		calibration with full report
<b>Weight and dimension</b>		<b>Dimensions</b> <b>Weight</b>
Laser scanner		420 x 212 x 228 mm      16,0 kg
Data recorder DR 560		337 x 178 x 197 mm      7,0 kg
LMcontrol unit		270 x 162 x 62 mm      2,2 kg
CCNS4 computer		250 x 209 x 132 mm      4,9 kg
AEROcontrol computer		250 x 209 x 132 mm      4,4 kg
IMU		133 x 138 x 185 mm      3,3 kg
8" TFT monitor		212 x 162 x 36 mm      0,9 kg
5" TFT display		159 x 105 x 35 mm      0,6 kg
Aircraft Connector Box		208 x 85 x 94 mm      0,8 kg
Mounting, cables, antenna		3,7 kg
		<b>total: ~ 44 kg</b>
Optional uninterruptable power supply		210 x 162 x 190 mm      8,5 kg

