

# LiteMapper<sup>®</sup> 5600

Airborne Lidar Terrain Mapping System

## Range Measurement Performance LM 5600-240

System Parameter	Conditions	LiteMapper 5600	
Maximum measurement range	@ laser PRR	natural target, $\rho \geq 20\%$	natural target, $\rho \geq 60\%$
	70 kHz	1200 m	1800 m
	100 kHz	1000 m	1200 m
	150 kHz	870 m	940 m
	200 kHz	700 m	700 m
	240 kHz	580 m	580 m
Typical operating flight altitude AGL @ 45°, 30% reflectivity	PRR = 70 kHz	1440 m (4720 ft)	
	PRR = 100 kHz	1100 m (3600 ft)	
	PRR = 150 kHz	870 m (2850 ft)	
	PRR = 200 kHz	650 m (2130 ft)	
	PRR = 240 kHz	540 m (1170 ft)	
Accuracy	flat surface, normal to beam	20 mm	
Precision		10 mm	
Pulse repetition rate (PRR)		up to 240,000 Hz	
Maximum number of recorded echoes		unlimited	
Multiple target separation within 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° scan angle	
		160,000 Hz @ 60° scan angle	
Laser beam divergence		$\leq 0.5$ mrad	

## Operational Parameters LM 5600-240

Ground sample spot diameter	0.4 m (@ 800 m AGL)
Surface point accuracy (horizontal/vertical) excluding GPS errors	0.08 m / 0.03 m (1 sigma) (@ 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 1 eye-safe
Power supply (polarity safe)	18 - 32 VDC
Temperature range	0 ... +40°C (operation) -15 ... +50°C (storage)
Humidity	0% - 90% non-condensing
Protection class	IP54

## Scanner Performance LM 5600-240

Scanning mechanism	rotating polygon mirror
Scan pattern	parallel scanning lines
Scan angle range (user selectable)	± 22.5° (45° total) ± 30° (60° total)
Angle readout resolution	0.001°
Angle step width	0.004° @ PRR 100,000 Hz
Scan speed	10 - 160 scans/s
Scan width	0.83 x altitude @ 45° total 1.15 x altitude @ 60° total

## Computer Systems LM 5600-240

Mission Planning Software	IGIplan
Flight Management System	CCNS4
Precise Positioning System Inertial Measurement Unit (IMU) IMU sampling rate IMU accuracy (roll/pitch/heading) GPS Post-processing software	AEROcontrol IMU-IIe up to 400 Hz 0.003 deg / 0.003 deg / 0.007 deg dual frequency, 2 Hz AEROoffice
Sensor Control System	LMcontrol + Riegl post-processing software

## Weight and Dimensions LM 5600-240

	Dimensions	Weight
Laser scanner	420 x 212 x 228 mm	16.0 kg
Data recorder DR560	307 x 276 x 113 mm	6.4 kg
LMcontrol	270 x 162 x 62 mm	2.2 kg
8" TFT touch-screen	212 x 162 x 36 mm	0.9 kg
CCNS4	250 x 209 x 132 mm	4.9 kg
CCNS4 5" TFT CDU	159 x 105 x 35 mm	0.6 kg
AEROcontrol	65 x 140 x 205 mm	1.8 kg
IMU-IIe	126 x 146 x 98 mm	2.2 kg
Aircraft Connector Box	208 x 85 x 94 mm	0.8 kg
Mounting, Cables, Antenna, etc.		3.7 kg
<b>total: ~40 kg</b>		
<b>Optional</b>		
Uninterruptable power supply	210 x 162 x 190 mm	8.5 kg
Shock Absorbing Platform	customized	
DigiCAM - Aerial Camera		5.5 kg
DigiTHERM - Aerial Thermal Camera		4.0 kg



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