

# LiteMapper<sup>®</sup> 6800

Airborne Lidar Terrain Mapping System

## Range Measurement Performance LM 6800-400

System Parameter	Conditions	LiteMapper 6800-400	
Maximum measurement range	@ laser PRR	natural target, $\rho \geq 20\%$	natural target, $\rho \geq 60\%$
	80 kHz	2000 m	3000 m
	200 kHz	1350 m	2200 m
	300 kHz	1150 m	1850 m
	400 kHz	1000 m	1650 m
Typical operating flight altitude AGL @ 60°, 30% reflectivity	PRR = 80 kHz	2060 m (6760 ft)	
	PRR = 200 kHz	1400 m (4575 ft)	
	PRR = 300 kHz	1180 m (3280 ft)	
	PRR = 400 kHz	950 m (3100 ft)	
Accuracy	flat surface, normal to beam	20 mm	
Precision		20 mm	
Pulse repetition rate (PRR)		up to 400,000 Hz	
Maximum number of recorded echoes		unlimited	
Effective measurement rate		266,000 Hz @ 60° scan angle	
Laser beam divergence		$\leq 0.3$ mrad	

## Range Measurement Performance LM 6800-240

System Parameter	Conditions	LiteMapper 6800-240	
Maximum measurement range	@ laser PRR	natural target, $\rho \geq 20\%$	natural target, $\rho \geq 60\%$
	80 kHz	2000 m	3000 m
	120 kHz	1700 m	2650 m
	180 kHz	1450 m	2250 m
	240 kHz	1250 m	2000 m
Typical operating flight altitude AGL @ 60°, 30% reflectivity	PRR = 80 kHz	2060 m (6760 ft)	
	PRR = 120 kHz	1800 m (5930 ft)	
	PRR = 180 kHz	1500 m (4930 ft)	
	PRR = 240 kHz	1270 m (4160 ft)	
Accuracy	flat surface, normal to beam	20 mm	
Precision		20 mm	
Pulse repetition rate (PRR)		up to 240,000 Hz	
Maximum number of recorded echoes		unlimited	
Effective measurement rate		160,000 Hz @ 60° scan angle	
Laser beam divergence		$\leq 0.3$ mrad	

## Operational Parameters LM 6800

Ground sample spot diameter	0.24 m (@ 800 m AGL)
Surface point accuracy (horizontal/vertical) excluding GPS errors	0.08 m / 0.04 m (1 sigma) (@ 800 m AGL)
Intensity (return amplitude) detection	16 bit per return
Special features	full waveform digitization: unlimited number of returns, multiple-time-around processing, 16 bit dynamic range
Eye-safety	class 3R safe for the naked eye > 1.5 m (NOHD) safe for the naked eye > 10 m (ENOHD)
Power supply (polarity safe)	18 - 32 VDC
Temperature range	0 ... +40°C (operation) -10 ... +50°C (storage)
Humidity	0% - 90% non-condensing
Protection class	IP54

## Computer Systems LM 6800

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-Ile 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 6800

	Dimensions	Weight
Laser scanner	480 x 212 x 230 mm	17.5 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-Ile	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: ~41 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