

LiteMapper 2400



SYSTEM PARAMETER	CONDITIONS	LiteMapper 2400 -60	LiteMapper 2400 -80
Range Unit			
Maximum range	flat surface, $\rho = 80\%$	650 m	
	flat surface, $\rho = 20\%$	320 m	
Minimum range		2 m	
Range resolution		5 mm	
Range accuracy	flat surface, normal to beam	$\leq 20 \text{ mm (1s)} \pm 20 \text{ ppm}$	
Target detection modes		first return or last return or alternating	
Laser wavelength		905 nm	
Maximum Pulse Repetition Frequency (PRF)		30 kHz	
Beam divergence		2.7 mrad	
Scanner Unit			
Scanner		cylindrical polygon mirror	
Number of facets		4	3
Scan pattern		parallel scan lines	
Scan angle		$\pm 30^\circ$ (60° total)	$\pm 40^\circ$ (80° total)
Angular resolution		0.005°	
Scan frequency		6 - 80 scans/s	5 - 60 scans/s
Scanner duty factor		33%	
Max. effective measurement rate		10000 meas/s	



Riegl LMS-Q240 laser scanner.





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Operational Parameters			
Altitude of operation	flat surface, r = 20%	10 - 200 m AGL	10 - 180 m AGL
Ground point spacing / point density	@ 50 m AGL / 40 kts	0.34 x 0.34 m / 8.7 pts p. sqm	0.41 x 0.41 m / 6.0 pts p. sqm
	@ 100 m AGL / 40 kts	0.48 x 0.48 m / 4.3 pts p. sqm	0.58 x 0.58 m / 3.0 pts p. sqm
	@ 180 m AGL / 40 kts		0.78 x 0.78 m / 1.7 pts p. sqm
	@ 200 m AGL / 40 kts	0.68 x 0.68 m / 2.2 pts p. sqm	
Ground sample spot diameter		0.6 m (@ 200 m AGL)	0.5 m (@ 180 m AGL)
Surface point accuracy (horizontal / vertical) excluding GPS errors		0.04 m / 0.02 m (1s) (@ 200 m AGL)	0.05 m / 0.02 m (1s) (@ 180 m AGL)
Swath width		1.15 x altitude	1.68 x altitude
NIR intensity (return amplitude) detection		8 bit per return	
Supply Voltage		28 VDC	
Laser/Eye-safety scanning operation		class 1 (eye-safe)	
Inertial Measurement Unit			
IMU accuracy (roll/pitch/heading)		0.004° / 0.004° / 0.01° (1sigma)	
IMU sampling rate		256 Hz	
Computer Systems			
Flight Management System		CCNS + WinMP mission planning software	
Precise Positioning System		AEROcontrol + AEROoffice post-processing software	
Scanner Control System		LMcontrol + TerraSolid post-processing software	
Digital Camera System (option)			
Array size / Image size		39 Megapixel, 7216 x 5412 pixel / 36.80 x 49.07 mm	
Pixel size		0.0068 mm	
Filter array		Color (VIS) or ColorIR (CIR)	
Exposure rate		1.9 sec	
Calibration		calibration with full report	

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COMPONENTS	DIMENSIONS	WEIGHT
Laser scanner	374 x 180 mm diameter	7,0 kg
LMcontrol unit	270 x 162 x 62 mm	2,2 kg
CCNS 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
		~28 kg
OPTIONAL		
Uninterruptable power supply	210 x 162 x 190 mm	8,5 kg
Shock-absorbing platform	customized	
DigiCAM-H/39 system		6,6 kg

Image showing the modular LiteMapper 2400 system (from left to right):
 5" TFT display, 8" TFT touch-screen, CCNS, AEROcontrol, Inertial Measurement Unit, laser scanner Riegl LMS-Q240 (older version), LMcontrol unit and shock-absorbing platform.

