

# CHCNAV LiDAR Comparison Chart

	AA450	AA10	AU20
Absolute Accuracy	< 0.10 m Hz @ 50 m range < 0.05 m V @ 50 m range	0.02 m ~ 0.05 m RMS @ 150 m range	< 0.025 m RMS @ 30 m range < 0.050 m RMS @ 150 m range
SLAM	N/A	N/A	AlphaPano Vehicle Installation Platform, which includes a panoramic camera and SLAM scanner integration for optimized positioning in challenging environments for trajectory tracking.
Mounting	CHCNAV AlphaPort, DJI Skyport, Customizable	CHCNAV AlphaPort, DJI Skyport, Customizable	Multi-platform, quick-install-and-release design that allows easy switching between airborne, vehicle, and backpack modes.
Weight	0.95 kg	1.55 kg	2.82 kg / 3.12 kg (with C5 camera) 10.97 kg AlphaPano vehicle platform
Dimensions	128 × 128 × 675 mm	210 mm x 112 mm x 131 mm	262.3 × 141.5 × 161 mm
Data storage	512 GB	512 GB	512 GB (Optional 1 TB)
GNSS system	Dual-frequency GNSS GPS, GLONASS, BeiDou, Galileo	Tripple-frequency GNSS GPS, GLONASS, BeiDou, Galileo	Multiple GPS, GLONASS, Galileo, BeiDou, SBAS and QZSS constellation, L-Band
IMU update rate	500 Hz	500 Hz	600 Hz
Attitude accuracy after post-processing	0.010° RMS pitch/roll 0.040° RMS heading	0.006° RMS pitch/roll 0.019° RMS heading	0.005° RMS pitch/roll 0.010° RMS heading
Position accuracy after post-processing	0.010 m RMS horizontal 0.020 m RMS vertical	0.010 m RMS horizontal 0.020 m RMS vertical	0.010 m RMS horizontal 0.020 m RMS vertical
Camera type	Built-in	Built-in	Attachable CHCNAV C5 or C30 oblique camera, or other customizable options
Resolution	26 MP	45 MP Full Frame	45 MP Full Frame (C5)
Operating temperature	-20°C to +50°C	-20°C to +50°C	-20°C to +50°C
Storage temperature	-20°C to +65°C	-20°C to +60°C	-20°C to +65°C
IP rating	IP64	IP64	IP64
Power consumption	32 W	40 W	60 W
Power source	UAV battery using Skyport (DJI M300/M350) or AlphaPort	UAV battery using Skyport (DJI M300/M350) or AlphaPort.	UAV battery, external battery. For car and backpack setup external battery. Supports direct vehicle power source.
Laser Scanner	Class 1 (in accordance with IEC 60825-1:2014)	Class 1 (in accordance with IEC 60825-1:2014)	Class 1 (in accordance with IEC 60825-1:2014)
Laser pulse repetition rate	240 kHz	100 kHz 300 kHz 500 kHz	100 kHz 200 kHz 300 kHz 400 kHz 500 kHz 800 kHz 1 Mhz 2 Mhz
Max range @p> 20%	260 m	400 m 275 m 215 m	1450 m 1320 m 1220 m 1120 m 1000 m 790 m 706 m 6 500 m
Max range @p> 80%	450 m	800 m 480 m 280 m	750 m 660 m 610 m 560 m 500 m 395 m 353 m 8 250 m
Max Operating Flight Altitude AGL @p>20%	-	317 m 218 m 170 m	530 m 467 m 431 m 396 m 354 m 354 m 279 m 4 177 m
Laser divergence angle	0.28° (V) × 0.03° (H)	0.032°	0.032°
Accuracy	20 mm @20m 30 mm @100m	15 mm (1σ,@150m) 10 mm (1σ,@100m)	15 mm (1σ,@150m) 5 mm (1σ,@30m)
Precision	15 mm	5 mm (1σ,@150m)	5 mm (1σ,@ 150 m)
Field of View	70.4°	75°	360°
Max Effective measurement rate	240 000 meas / sec 720 000 meas / sec (triple return)	500 000 meas / sec	2 000 000 meas/sec
Scan speed	-	50 ~ 250 scans/sec	10 - 200 scans/sec
Max Number of return pulses	Up to 3	Up to 8	Up to 16
Angular resolution	< 0.05°	0.001°	0.001°