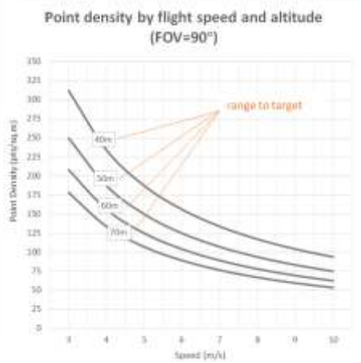
Specification

LiDAR SYSTEM	
Model	SZT-V100
Laser Channels	16 channels
Laser Measurement Range	100 m
Field of View (Vertical)	+15.0° to -15.0° (30°)
Angle Resolution (Vertical)	2.0°
Field of View (Horizontal)	360°
Angle Resolution (Horizontal/Azimuth)	0.1° to 0.4°
Max. Means Rate	Single Return Mode: ~300,000 points per second
	Dual Return Mode: ~600,000 points per second
Accuracy	Relative Accuracy: 5 cm; Absolute Accuracy: 10 cm
Camera Effective Pixels	24.3 MP, RGB
Recommended scanning height AGL	10-80 m
Net Weight	1.5 kg (w/o camera)
Dimensions	116.5*112*123
Input Voltage	11-30 V DC
Power Consumption	20 W
Data Storage	250 GB SSD
Part I: Laser Scanner	
Type	Velodyne LiDAR PUCK VLP-16
Wavelength	903 nm
Laser Product Classification	Class 1 Eye-safe-per IEC 60825-1:2007 & 2014
Range Accuracy	up to ±3 cm (typical)
Rotation Rate	5 Hz ~ 20 Hz
Environment Protection	IP67
Temperature	operating: -10℃~60℃; storage: -40℃~105℃
Part II: POS System	
Type	Inertial Labs INS-D-OEM
Gyroscopes Bias in-run Stability	1 deg/hr (RMS, Allan Variance)
Gyroscopes Measurement Range	±450 deg/sec
Accelerometers Measurement Range	±8 g
Post Processing Roll/Pitch Accuracy	0.006 deg RMS
Post Processing Heading Accuracy	0.03 deg RMS
Post Processing Position H/V Accuracy	0.005/0.01 meters, RMS
Post Processing Velocity H/V Accuracy	0.02/0.01 meters/sec, RMS
Data Sampling Rate	IMU: 200 Hz, GNSS positions: 50 Hz

Package

Item	Recommended Configuration	
	UAV-based	SUV-based
hardware		
LiDAR Sensor	SZT-V100	SZT-V100
Imaging Sensor	Sony ILCE-a6000	FLIR LadyBug5+
Carrier Platform	DJI Matrice600 Pro	(conventional SUV models)

Point density by flight speed and altitude



KOLIDA Professional's Choice
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Email: export@kolidainstrument.com market@kolidainstrument. com
http://www.kolidainstrument.com

KOLIDA Professional's Choice

FLY OR DRIVE ?
MAP 3D MAP ..

Z-Lab LiDAR

Z-Lab LiDAR
Mini LiDAR System SZT-V100

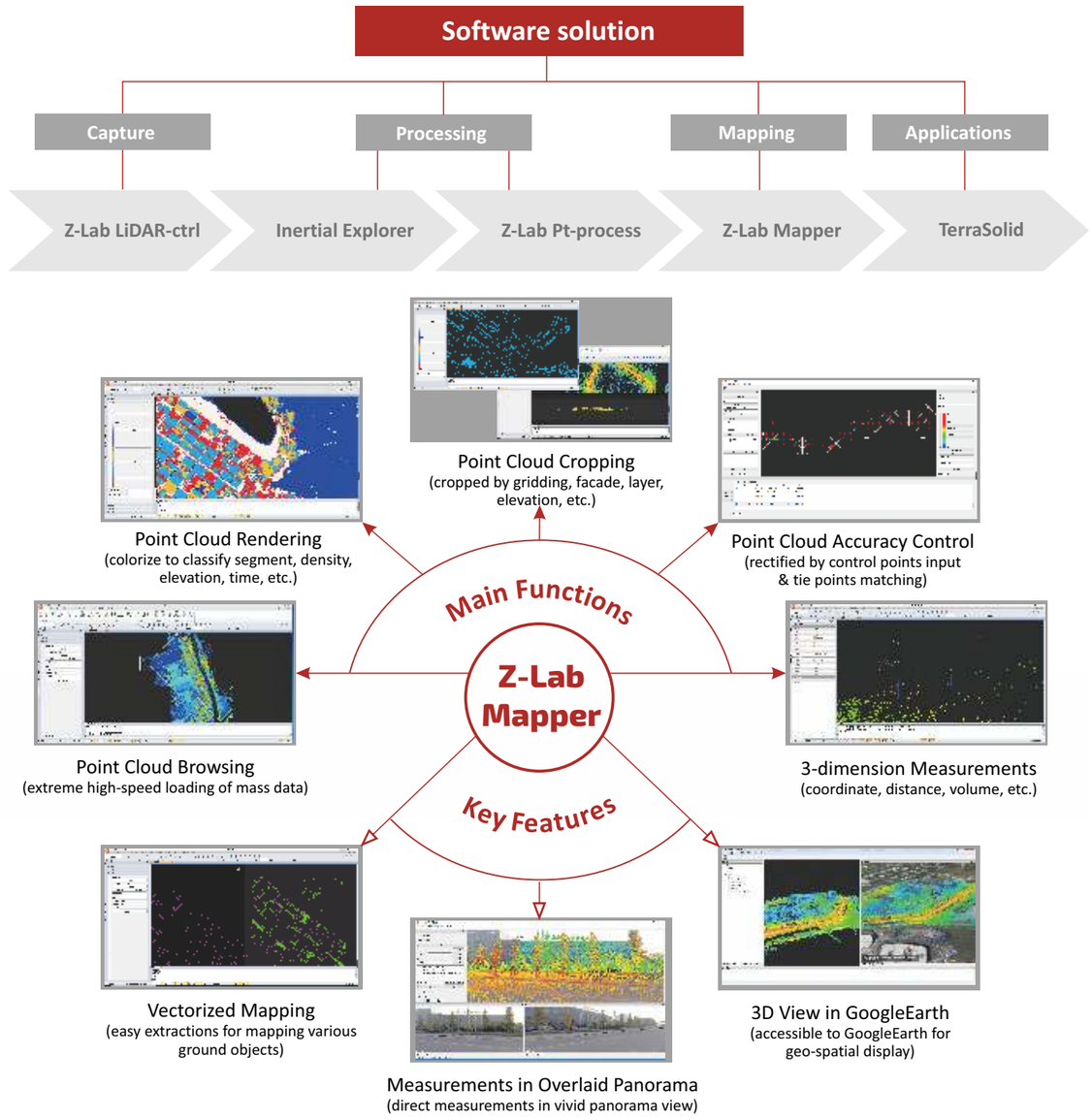
Several days or just a single day?
LiDAR chooses for you!

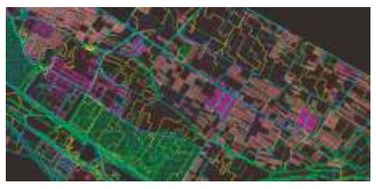
flight altitude	point density	estimated coverage	
		per flight	per day
40m	165~231 pts/sq.m	0.13 sq.km	1.3 sq.km
55m	120~168 pts/sq.m	0.20 sq.km	2.0 sq.km
70m	94~132 pts/sq.m	0.35 sq.km	3.5 sq.km

Note: the data shown above is based on flat terrain conditions for job reference only, and the estimated coverage per day is computed with 6m/s flight speed, horizontal FOV 80° and 10 flights in total. Complex terrain of elevated areas or vegetated zones might reduce the work efficiency somehow. With the same laser emitting power, the point density varies greatly from reflective distance and reflective ratio of the target, moving speed of the carrier and air permeability. Theoretically, higher point density is possible with customized flight plans while bigger coverage figures are expectable with increased flight numbers.

scanning speed	roadway to scan per day	
	1-3 lanes	4-6 lanes
18 km/h	108 km	54 km
36 km/h	216 km	108 km
54 km/h	324 km	162 km

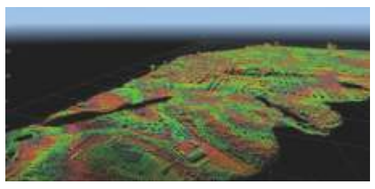
Note: the line spacing figures were computed by driving speeds and mileage efficiency was generated from 6-hour effective mobile scanning accordingly. The ground base station is recommended to shift to the next location ahead when the radio datalink radius exceeds 25 km. In case of roads with dense traffic conditions or with green belts/isolation guardrails in the middle of 2-way, it's required to conduct multiple drives for filling the data gaps due to earlier occlusions.





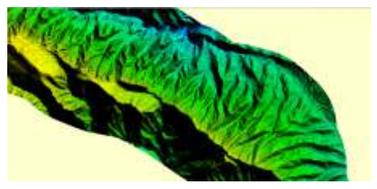
Topographic Survey Jobs
- highly efficient aerial data capture for topographic or cadastral survey
- excellent elevation accuracy control within centimeter level
- ideal for highly vegetated areas due to canopy penetrations
- ready for aerial lasergrammetry in places hard to reach or hard to track GPS signals

Traffic Network Development
- highly efficient terrestrial data capture by linear mobile laser scanning
- designed for topographic survey of road/railway system development or expansion
- tailored to asset inventory survey of road/railway system against maintenance and evaluation
- an ideal alternative of total station or RTK survey due to a variety of satisfactory outputs

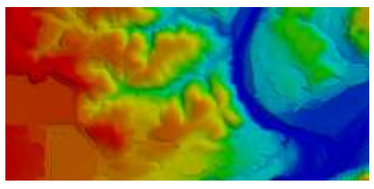


Forestry Investigation & Planning
- highly efficient aerial data capture for topographic survey in jungles or forests
- to obtain abundant indicative information such as tree height, stem diameter, canopy shape, etc. in short time
- ideal for species identification, deforestation planning & investigation

Applications in Power Transmission Industry
- fast and contactless 3D data capture of power lines and ground surface attachments
- to provide visualized and analytical management for existing power lines network
- to identify defects on transmission lines through geo-referenced point cloud
- ideal for digital transfer of survey, design and engineering accomplishments



Disaster Monitoring & Emergency Response
- laser scanning is unaffected by light conditions while airborne mode won't suffer from traffic chaos
- to obtain topographic data and terrain features in disaster areas for realtime analysis
- quick reference for disaster relief and post-disaster reconstruction arrangements



Irrigation System Development
- to conduct topographic survey with data capture of vegetations and ground objects
- to obtain high-precision digital terrain model and orthophoto map for irrigation works planning
- ideal for location optimization, engineering control, landslide monitoring, flow direction analysis, etc.