Exyn Nexys

A 3D Mapping Ecosystem & Modular Autonomy Payload

Portable, modular design

Gimballed LiDAR sensor for 360º coverage

Colorize point clouds in real-time

MODULAR FOR ANY ENVIRONMENT

Using Drone Link, Nexys can be mounted onto any integrated robotic platform to rapidly map with survey-grade accuracy

Exploration mission mode can autonomously map an entire area of interest, BVLOS

Modular Mapping Drives Unparalleled Efficiency

✔ Flexible deployment options including handheld, backpack, vehicle, or robotic platform

✔ 3D spatial mapping capable of capturing up to 1.9 million scan points per second

✔ Survey-grade accuracy up to ±2cm (dependant on the environment)

✔ View colorized point clouds in real-time via ruggedized tablet

✔ Smooth, downsample, and georeference point clouds on-site via ruggedized tablet

✔ Built to IP67 standards for hazardous environments

exyn

3D Mapping Ecosystem with Modular Robotic Autonomy

2024-07-10

Nexys™ (Velodyne) System Specifications

SYSTEM	
Durability	Built to IP-67 standards
Weight (incl. battery)	3.1kg
Weight (w/o battery)	2.4kg
Size (H x W x L)	104 mm x 180 mm x 361 mm
Operating Temperature	-20° to 45° C
Platform modularity	Drone/vehicle/ backpack-mount, handheld

CAPABILITIES	
GPS-Required	No (GPS-optional)
Low/No-Light Operation	✓
Drone Autonomy	License Purchased Separately
Ground Autonomy	License Purchased Separately

GIMBALLED LIDAR	
Laser Safety Class	1
Field Of View	360° horizontal
Rotation Frequency	10 Hz
Gimbal Rotation	~1Hz
Max Range	100 m @ 80% Surface Reflectance
Points Per Second	~600,000
Return Type	Dual with Intensity

OUTPUT	
Real-Time Data Visualization	✓
Data Collection Replay	✓
Point Cloud Colorization	✓
Point Cloud	XYZ, RGB, Intensity
Point Cloud Formats	LAS, PLY, XYZ
Other Outputs	Trajectory
Map Accuracy	±2 cm

RGB CAMERAS	
Model	FLIR Blackfly
Field of View	220º
# of Cameras	2
Megapixels	3.2MP

CONTROL UNIT	
CPU	Intel Core i7
RAM	64GB DDR4
Storage	512GB internal SSD
Interfaces	USB 3.0, WiFi

POWER	
DC Input	12-48 V
Power	75 W

BATTERY*	
Batteries Included	2
Nominal Voltage	14.8V
Battery Standard	V-Mount
Battery Capacity (each)	98 Wh
Battery Chemistry Type	Li-Ion
Typical Operating Time	~2 hours

TABLET	
Model	Dell Latitude 7230 12', IP-65
Interface	Capacitive Touchscreen
Operating System	Ubuntu 22.04
Software Interface	ExynView™, mission control & live data streams
Communication	2.4GHz & 5.8GHz WiFi WPA2 encryption
Weight	1.3kg

CASE	
External Size (H x W x L)	28 x 41 x 53.4 cm
Shipping Weight	20.5 kg

ACCESSORIES*	
Hand-carry Mount	✓
Industrial Vehicle Mount	✓
Drone Mount	Purchased Separately
BackPak Case + Mount	Purchased Separately
Protective Cage	Purchased Separately
GPS-receiver	Purchased Separately