FUSION POSITIONING SYSTEM

PolyNav 4000

PolyNav 4000 is a state-of-the-art multi-source fusion positioning system developed by PolyExplore, designed to deliver high precision, high accuracy, and outstanding cost efficiency.

Powered by PolyExplore's next-generation multi-sensor fusion algorithm engine, PolyNav 4000 offers millisecond-level positioning response, ensuring ultra-fast and reliable performance. Its redundant multi-source architecture guarantees uninterrupted positioning—when a single signal is interfered with or lost (for instance, in tunnels or urban canyons), other data sources seamlessly compensate to maintain continuous stability and accuracy.

By integrating GNSS, IMU, LiDAR, and vision data, the PolyNav 4000 overcomes traditional environmental constraints and achieves centimeter-level or even higher positioning precision. It performs reliably even in harsh weather, obstructed environments, or weak-signal areas, effectively eliminating the limitations of single-technology positioning systems.

FEATURES

- Highly accurate position, velocity, acceleration, attitude (Roll, pitch, heading), angular rate
- Intelligent Perception Function
- Real-Time Data Processing and Upload
- High-Precision and High-Frequency Positioning
- Strong Adaptability in Complex Environments
- Rich Hardware and Interface Design
- Wide Application Range and High Intelligence

POLYEXPLORE

Visit polyexplore.com For More Information.

High End, Cost-Effective Navigation Solutions.

Polynesian Exploration Inc.

2210 O'Toole Ave, Suite 240, San Jose, CA 95131
contact@polyexplore.com

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TECHNICAL DATA

FUSION POSITIONING SYSTEM
PolyNav 4000

LIDAR SPECIFICATIONS

Range	0.5 – 260 m
Distance Accuracy: ±5 cm (typical)	±5
Field of View (Horizontal)	120°
Field of View (Vertical)	25.4° (range: –12.5° to +12.9°)
Detection Range	1 – 210 m (at 10% reflectivity)
Distance Precision	3 cm (1σ)
Angular Resolution (Horizontal)	
Long range (> 7.2 m)	0.1° @10 Hz, 0.2° @20 Hz
Short range (0.5 – 7.2 m)	0.2° @10 Hz, 0.4° @20 Hz
Angular Resolution (Vertical):	
Long range (> 7.2 m): 0.2°	0.2°
Short range (0.5 – 7.2 m): 0.8°	0.8°
Scan Frequency: 10 Hz / 20 Hz	10 Hz / 20 Hz
Echo Mode:	
Single Echo:	Last, Strongest, or First
Dual Echo:	Last & Strongest, or Strongest & First

GNSS / INSS

Constellation	GPS/GLONASS/Beidou/Galileo
Satellite signals	L1 & L2 & L5
Accuracy	
Position	1.5 m CEP (SPS), 0.02 m (RTK)
Velocity (RTK)	0.03 m/s
Roll/Pitch (RTK)	0.005°
Heading	0.03°
Measurement rate	100 Hz

FRONT-FACING CAMERA

Type	Global Shutter
Resolution	3840 × 2160
Frame Rate	Up to 60 fps

IMU SPECIFICATIONS

Ingress Protection	IP67 (waterproof and dustproof)
Weight	3.2 kg
Dimensions	250 mm × 176 mm × 134 mm
Temperature	-20°C to +40°C (operating) / -20°C to +50°C (storage)
Power Input	12 V DC

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