



“DiNIS”™

Diver Navigation and Imaging System



DETAILED PRODUCT SPECIFICATIONS

DESCRIPTION

DiNIS™ is a unique and specialized, fully integrated, high-accuracy diver navigation system based on the world's most capable subsea sensors. All sensors are fully integrated inside a single housing with no external parts or cables and are interoperable under a single software environment. DiNIS™ allows user configuration, including changes in sonar type and frequency, camera type, and may be operated as a navigation only system by removal of all imaging hardware with no change to the user interface.

The system operates with SeeByte “SeeTrack Military v4” Top-Side software for mission planning and post-mission analysis. SeeTrack is the world's leading tactical analysis and situational awareness software used by 20 NATO countries. All mission data is imported and exported to/from DiNIS™ and SeeTrack. Data from all sensors is geo-reference and time stamped in real-time and stored in native SeeTrack format on a removable Solid State disc for immediate analysis on the top-side PC with no post-processing required.

Specifications herein are typical values based on use of all sensors

Hardware

- *DiNIS™ is user configurable*
- *Single integrated non-metallic and non-magnetic housing, compliant to NATO STANAG 2897 Class B. Materials compliant to NAVSEA SS800-AG-MAN-010/P-9290 off-gassing specifications*

System

Depth Rating: 100 m

Weight, buoyancy, and dimensions may vary according to configuration.

Weight:

*Variable by configuration
(not incl. batteries)*

Typical Configurations:

In Air: 20.4-27.4 lbs/9.3-12.5 kg

In Water: 0.2-0.4 lb/.09-.2 kg

User Configurable Buoyancy

Typical Dimension (cm): 51.6x41.8x16.3

L x W x H

Environmental

Operating Temp. (°C): 0 to +45

Storage Temp. (°C): -20 to +60

(-20 to +50 with battery)

DiNIST™ Detailed Specifications:

Navigation Components:

DiNIST™ Utilizes multi-variable, stochastic, variable weighting Kalman navigation filters.

Doppler Velocity Log : Teledyne RDI

“Explorer” Phased Array DVL

- Frequency: 607.2 kHz;
- Range: 80m typical in ideal conditions
- 4-beam, 30-degree beam angle
- Beamwidth: 2.2-degree single direction; 1.8-degree bi-directional beamwidth

Motion Sensor:

- AHRS, 200 °/s roll, with 0.7 ° heading
- Pitch-roll sensor range:
 With 2-D cal: up to +/- 20 degrees
 With 3-D cal: up to +/- 180 degrees

Depth sensor :

Precision: +/-0.1m; Accuracy: +/- 0.5 m

GPS: Commercial Grade OEM with optional deployable antenna or dual frequency L1/L2 SAASM

Navigation accuracy (typical):

DVL only: ideal: 0.3% CEP vs. dist +/- 1m*; 0.5% std.

DVL aided inertial (best case):

0.25% CEP vs. distance +/- 1m* + heading error

*Assumptions (ideal) :

- ✓ Calibrated heading at start
- ✓ initial position fix accuracy; 10 cm.
- ✓ Circular or out-and-back swim path
- ✓ Ideal conditions (no drift, no stray magnetic fields; constant pitch/roll attitude)
- ✓ Constant DVL Bottom Lock

Specialized Operational Software Features:

- ✓ Emergency “Kill” function
- ✓ Screen Blackout
- ✓ All sensor data (video, sonar, navigation) is geo-referenced and time-stamped and stored in common data format on removable media

CONTACT

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Imaging Sensors

Forward looking sonar:

- Blueview DF900-2250, dual Frequency, 900 kHz/2250 kHz;
- Optional 450 kHz
- Typical Detection Range for 1 m object
 - 900 kHz: Max 90-100m
 - 2250 kHz: 25-30 m
- Optimal Classification Range
 - 900 kHz: Max 0-30m
 - 2250 kHz: 0.2-5m
- View Angle: 130-deg (H) x 20 deg (V)
(Option horizontal 90-deg or 45-deg)

Low-light video camera:

- Options:
 - Low-Light Color or Wide Dynamic Range Color
 - Black & White/IR
- Resolution : Adjustable to 720p
- Field of View: *Conical*; Angle is *Camera dependent*
 - In Air: 90 deg.
 - In Water: 70-83 deg.
- LED Camera Lights

Battery

- Type: Lithium Ion (standard)
- Underwater hot-swappable, in housing during operation (no external cables)
- UN 38.3 Certified for air transportation
- Battery Capacity: 328 Watt-Hours/battery; 5-6 hours typical operation/battery; 10-12 hours typical operation/set of 2; Underwater; underwater hot-swappable
- Re-charge time:
 - Std.: 3.2 hrs to full capacity. at 6.5 Amps rate;
- Weight: 5.02 lbs/batt

Data storage capacity

USB; 100 Gbyte*

Solid-State Disc * Drive: Removable

512 GB (Std); 1 TB (optional)

* USB and solid state disc size subject to change

Display

Backlit Samsung 10.1” TFT LCD, 720p, adjustable brightness and blackout;

HUD – Output to HUD at up to 720p resolution