

NavPulseIR

SmartVisionPlatform

Ruggedized and Waterproof GNSS Module and Infra-Red Pulsed Illuminator

The NavPulseIR is a ruggedized and waterproof GNSS module and Infra-Red pulsed illuminator, designed to complement the DiveVisionTracker as an integral part of the **DAVDflex** Augmented Reality System for divers. The IR illuminator's LED arrays are optimally aligned to direct energy at angles designed to optimise surface features on illuminating objects of interest while minimising direct reflections from nearfield suspended sediment, mitigating the 'snowstorm effect'. IR energy only is emitted from the LEDs: no visible light escapes that might give away the user's location. The GNSS module provides precision geolocation data, and in combination with the DiveVisionTracker's motion sensor it gives full position and attitude data for the diver. The NavPulseIR also features a blackout button that can be used in emergencies if the diver needs instantly to cut the feed to the HUD and revert to natural vision.

The NAVPulseIR is a part of the wider, highly configurable **DAVDflex** solution, and is designed to be integrated with industry-leading solutions without sacrificing performance, reliability or ease of use. The **DAVDflex** integrates topside control, a Head-Up Display (HUD), and digital communications for divers, facilitating seamless real-time information exchange between divers and supervisors via augmented reality displays in the diver's helmet. Divers access critical technical data and support from surface teams to optimize mission outcomes and enhance underwater safety.



Some of the innovative NAVPulseIR features available are:



Ruggedized and Waterproof

The NAVPulseIR's ruggedized housing protects against impacts and extreme environments. Its waterproof construction ensures reliable performance even when exposed to demanding use cases



Enhances Night Vision without Compromising Stealth

Night Vision capability is supported, allowing effective operation in low-light or zero-visibility conditions. This enhances situational awareness by enabling operators to clearly observe their surroundings at night or in dark environments, ensuring safe and efficient performance during operations



100 m (328 ft) Depth Rated

Engineered for reliable performance underwater, NAVPulseIR is rated for depths of up to 100 metres. Its robust sealing and pressure-resistant design ensure durability and functionality during prolonged submersion, making it ideal for marine environments.



Integrated AHRS to provide Diver Heading Measurement

An integrated Attitude and Heading Reference System (AHRS) is incorporated to provide accurate diver heading measurements. The NAVPulseIR combines sensor data to determine orientation and direction, enabling reliable tracking of the diver's heading during underwater operations

Power Consumption

5 V DC Input

LED Count

20 (4 differentially angled arrays of 5 LEDs)

Wavelength

850 nm

GNSS Interface

USB

GNSS Channel Count

72

Output

NMEA 0183

Dimensions (h x w x d)

50 mm x 50 mm x 94 mm Approx.
(1.97" x 1.97" x 3.7" Approx)

Weight in Air

197 g (0.43 lbs)

Weight in Water

83 g (0.018 lbs)

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