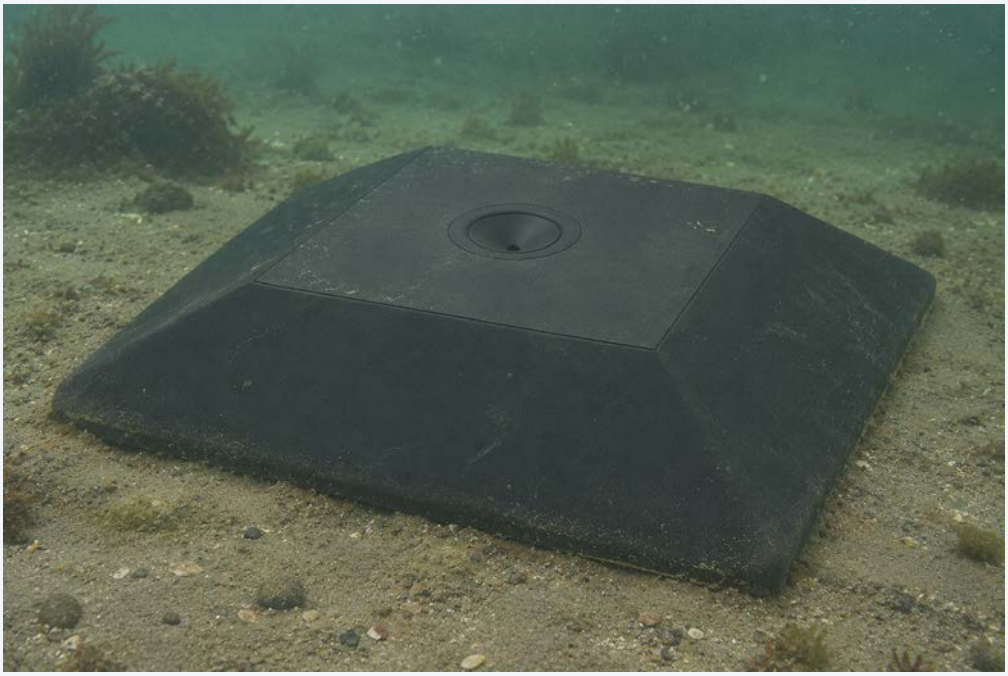
Lattice EMS

Environmental Monitoring System



Long-term monitoring for environmental applications

Lattice EMS provides long-term monitoring of currents, water quality and underwater sound. Select instruments for environmental assessment, metocean monitoring, biodiversity research or acoustic monitoring for security applications.

Long-term measurement | Local processing | Wireless recovery

Long-life monitoring, protected on the seabed

Long-life power, local processing, storage and wireless recovery retain useful information over time. The low-profile enclosure shown has sloping sides designed to reduce snagging by fishing gear. Instrument access, battery capacity and the recovery route are configured for the deployment.

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Specifications and integration

Instrument options | Ratings apply to the fitted package

Parameter	Specification
ADCP currents	Profile up to 200 m. Velocity accuracy: 1% of measured value ±0.005 m/s. Resolution: 0.001 m/s.
ADCP waves option	Depth ≤150 m. Period 2-50 s. Significant-height accuracy <1%, resolution 0.02 m. Direction accuracy 2°, resolution 0.1°.
Current meter	Speed 0-5 m/s, accuracy ±(1% reading + 0.005 m/s), resolution 0.001 m/s. Direction 0-360°, accuracy <1°, resolution 0.001°.
Conductivity option	0-8 S/m. Accuracy ±0.001 S/m. Resolution 0.0002 S/m.
pH option	Range 2-10. Accuracy ±0.05, resolution 0.01. Instrument depth rating: 50 m.
Passive acoustics	20 Hz-200 kHz. Sensitivity -207 dB re 1 V/µPa (approximately 44.7 µV/Pa). Omnidirectional ±2 dB to 160 kHz. Instrument depth: 350 m.
Other instruments	Turbidity, dissolved oxygen, pressure and temperature: instrument models and performance selected for the project.
Reference skid size	1.00 × 1.00 × 0.65 m (L × W × H). Earlier skid configuration; not the illustrated enclosure.
Reference skid mass	35-90 kg in air; submerged equivalent 20-45 kg, configuration-dependent. Earlier skid values.
Platform depth	50 / 1,500 / 3,000 m configurations. Limited by the lowest-rated fitted component.
Battery	Primary lithium-thionyl chloride (Li-$SOCl_2$), Saft LSH20 cells. Capacity selected for instruments and duty cycle.
Platform power	Sleep 1 mW. Receive 6 mW. Wireless transmit 16 W. Fitted instrument loads are additional.
Design endurance	Five-year design basis. Battery capacity is selected against the instruments, duty cycle and project energy budget.

Equipment and configuration options

Select instruments, frame, ballast, battery capacity, wireless recovery and fishing protection for the application. The reference skid values above do not specify the illustrated black enclosure. Final dimensions and installed mass depend on the selected package. Profiling range depends on conditions; confirm the energy budget and lowest component depth rating.

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