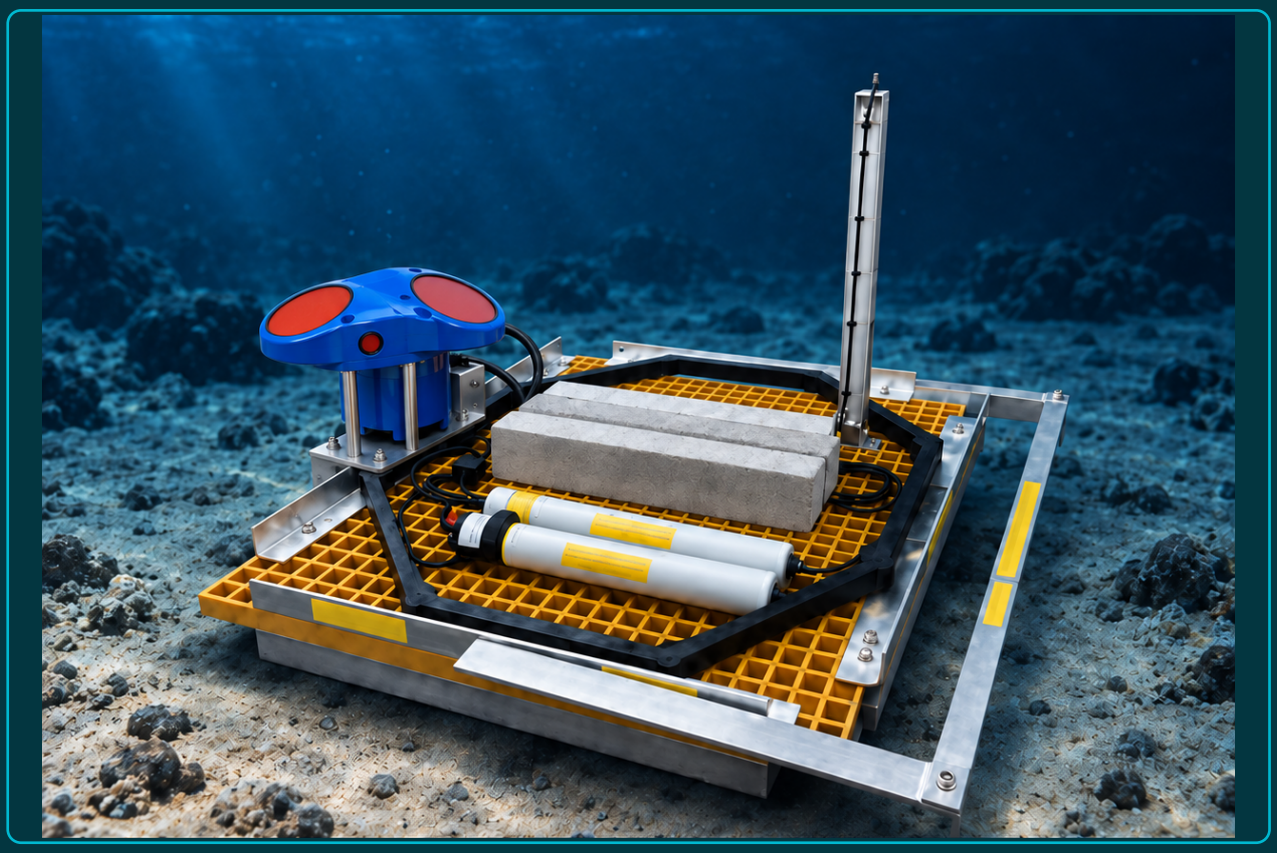
LATTICE EMS

Environmental, metocean and security monitoring

Long-term monitoring. Wireless access. Configured for your site.

Lattice EMS incorporates environmental sensors, with edge processing, storage, and wireless information recovery.

Installed on the seabed, Lattice EMS provides persistent and resilient monitoring to provide insight into water conditions, currents, and acoustic activity for the sensor package selected for the monitoring task.



Illustrative Lattice EMS configuration with integrated ADCP.

CONFIGURED FOR THE MONITORING TASK

- ADCP for current profiling; pressure for water depth and wave-height indication.
- pH, conductivity, turbidity and dissolved oxygen instruments for water quality.
- Passive acoustic monitoring for biodiversity and security applications.
- Optional fishing protection enclosure.

LATTICE EMS ENGINEERING SPECIFICATIONS

Sensor performance and platform configuration

Sensor / parameter	Range / rating	Accuracy / resolution
ADCP • current profiling	Up to 200 m profile	Velocity: 1% of measured value ±0.005 m/s; resolution 0.001 m/s
ADCP • waves (option)	Measurement depth ≤150 m; period 2-50 s	Significant height: <1%; 0.02 m resolution. Direction: 2°; 0.1° resolution
Electromagnetic current meter	Speed 0-5 m/s; direction 0-360°	Speed: ±(1% reading + 0.005 m/s); resolution 0.001 m/s. Direction: <1°; 0.001° resolution
Conductivity • ECM option	0-8 S/m	±0.001 S/m; resolution 0.0002 S/m
pH	2-10 (dimensionless); sensor depth 50 m	±0.05; resolution 0.01
Passive acoustic sensor	20 Hz to 200 kHz; sensor depth 350 m	Receive sensitivity: -207 dB re 1 V/µPa (approximately 44.7 µV/Pa). Omnidirectional ±2 dB up to 160 kHz
Turbidity / dissolved oxygen	TBC • instrument models	TBC • range, accuracy and resolution
Pressure / temperature	TBC • instrument models	TBC • range, accuracy and resolution

PLATFORM, BATTERY AND POWER

Parameter	Specification
Standard dimensions (L × W × H)	1.00 × 1.00 × 0.65 m
Mass in air / submerged equivalent	35-90 kg / 20-45 kg, configuration-dependent
Platform depth configurations	50 / 1,500 / 3,000 m; system limited by lowest-rated fitted component
Battery chemistry	Primary lithium-thionyl chloride (Li-$SOCl_2$), Saft LSH20 cells
Battery energy / capacity	Configured for the selected sensors and duty cycle
Platform power consumption	Sleep: 1 mW • Receive: 6 mW • Transmit: 16 W
Battery endurance	Battery capacity is adjusted to provide a minimum of 5 years for the selected sensor package and operating duty cycle.
Fishing protection enclosure	Optional. Dimensions (m), mass (kg) and ballast (kg): TBC