



Sentry IMS

Integrity Monitoring Sonar

Wavefront apply engineering excellence to the problems of underwater detection, imaging and navigation. Our operationally proven market-leading sonar systems are reliable, easy to use and designed to provide real-world solutions.

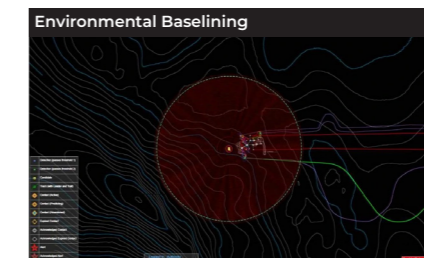
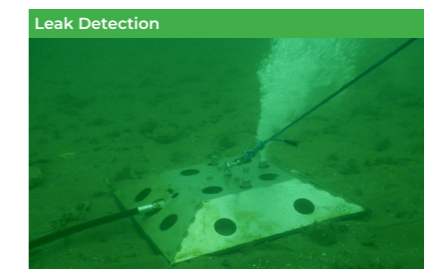
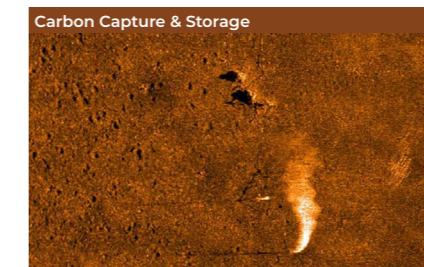
Our sonar technology allows us to make the underwater world visible.

Sentry IMS

Over one billion cubic feet of seawater monitored continuously.

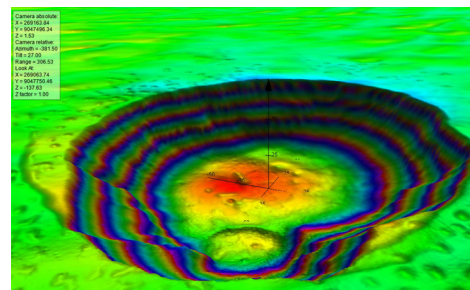
When deployed around your crucial seabed assets, Wavefront's field-proven hydrocarbon and CCS Integrity Monitoring Sonar – Sentry IMS – is designed to continuously check billions of cubic feet of seawater around the sensor for signs of containment issues.

Sentry IMS automatically warns of integrity breaches connected to subsea oil and gas installations and equipment. Sentry IMS can monitor over a billion cubic feet of seawater in a 360° envelope from a single monitored location.



Sentry IMS Automatic

Each system is fully automated, so if a hydrocarbon discharge is detected, the alarm is raised. Data on the leak position is displayed and transmitted automatically to your remote sonar monitoring stations.



Sentry's 360° field of view provides a detection coverage radius of up to 1200 m, detecting leaks of monophasic gas down to flow rates of 0.1 litre per minute, which is the equivalent of around one barrel of oil per day. For monophasic oil, it detects up to one litre per minute, the equivalent of ten barrels of oil per day.

Following installation, Sentry IMS is capable of monitoring over one billion cubic feet of seawater around your underwater assets.

There are two configurations of Sentry monitoring available. When mounted on a lander, Sentry-W connects to your asset's existing communication seafloor infrastructure and power source. It runs autonomously, providing alerts only when the onboard processing picks up a positive detection and classification of a leak. With remote onshore access, Sentry is configurable for multiple users.

Should no infrastructure be available, Sentry-B (a standalone battery-operated system) can be lander-

deployed and comes complete with subsea data processing. With flexible preset intervals, or whenever a leak event is detected, an acoustic modem is used to transmit summary data. Satellite communications systems and surface transceivers can be integrated into an Uncrewed Surface Vehicle (USV), positioned over the side of a vessel, rig or floating production system or mounted on a moored buoy.

Mobile Leak Detection

Integration with our Solstice MAS side scan-sonar allows for the inspection of greater lengths of subsea assets, such as trunk pipelines. Solstice MAS is compact yet high-performing and contains patented automatic target recognition (ATR) algorithms, which can be integrated into an AUV to provide detection and location of any losses of gas or oil.

CCS Site Monitoring

A significant concern to regulatory bodies, operators and environmental groups, while viewed as highly unlikely, is containment failure at an

offshore Carbon Capture and Storage (CCS) site. To counteract this, we've developed the capability to detect and monitor any leakage at high-risk locations. Using a combined Sentry sonar and chemical sensing landers, our products deliver sensitive and reliable automated sonar leak detection capability across wide areas. Contact us to discuss your CCS monitoring requirements.

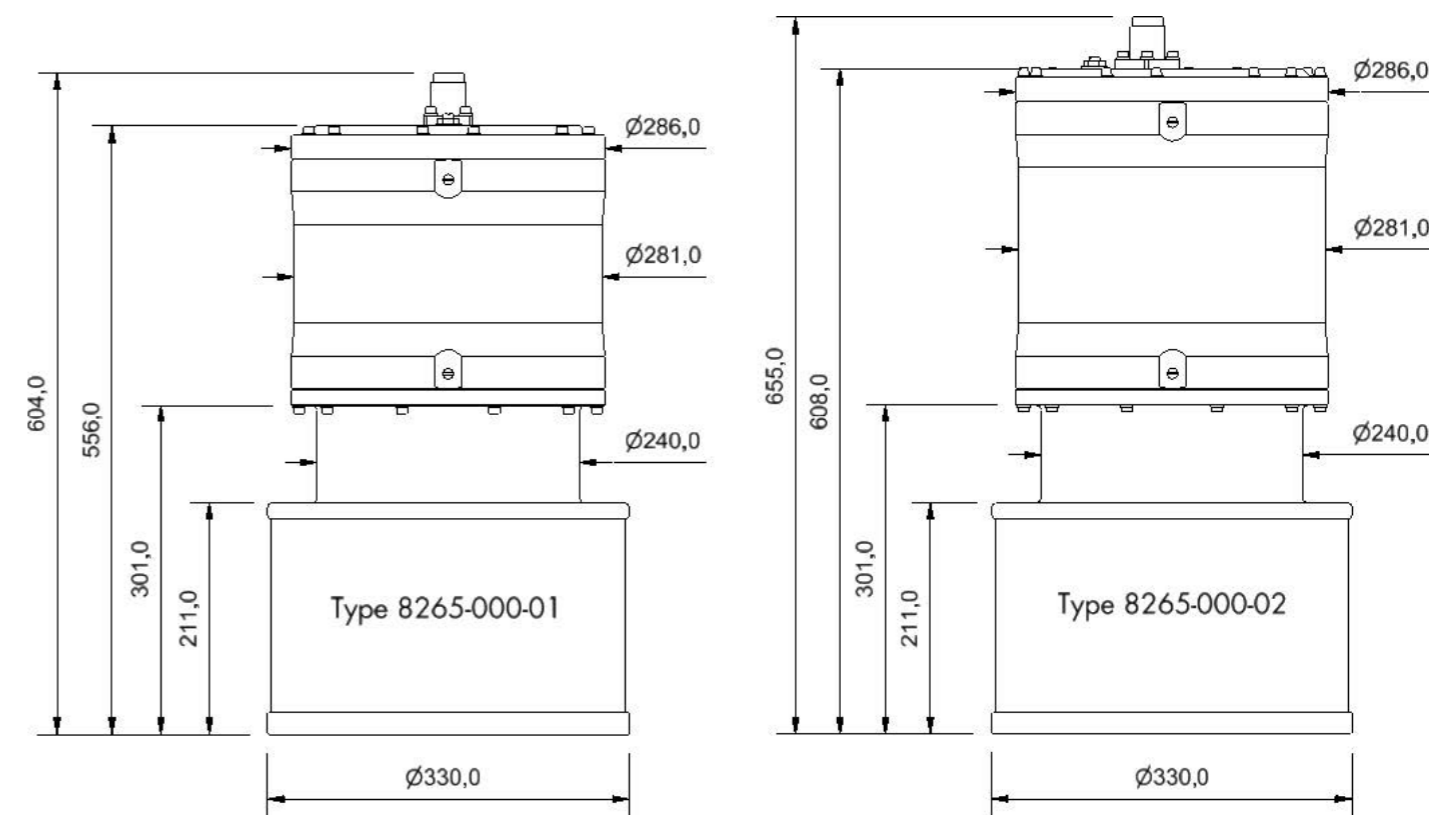
With 360° coverage and high volumetric monitoring capabilities from a single location, Sentry can detect the smallest of leaks at ranges in excess of 500 meters

Automated operation with a low false alarm rate means there's no need for constant oversight

Integrity breaches are localised to a few metres the moment they are detected

Easy to deploy and recover via ROV, Sentry IMS is perfect for short monitoring projects

Sentry IMS Facts and figures



Feature	Type 8265-000-01	Type 8265-000-02
Operational Frequency	70kHz	70kHz
Bandwidth	20kHz	20kHz
Source Level (dB re 1 µPa @ 1 m)	206 dB	206 dB
Pulse length	40 ms	40 ms
3dB Vertical Beamwidth	11°	11°
3dB Azimuthal Beamwidth	3.5°	3.5°
Receive Beams	256	256
Detection Area	360° up to 1500m*	360° up to 1500m*
Detection Bearing Resolution	<0.14°	<0.14°
Detection Range Accuracy	<1m @ 150m range	<1m @ 150m range
Electrical	230V AC (±10%), Typical 85W	18 to 36V DC (±10%), Typical 105W
Communication	Ethernet	Ethernet / Acoustic
Operating Temperature	-10 to +40°C	-10 to +40°C
Storage Temperature	+10 to +55°C	+10 to +55°C
Mechanical Construction	Titanium Grade 5	Titanium Grade 5
Operational Depth Rating	4,000m	4,000m
Dimensions; Length x Diameter	556mm x 330 mm dia.	608mm x 330 mm dia.
Weight in Air (Water)**	86kg (48.5kg)	86kg (48.5kg)



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Contact Us

Camway, West 303, High Street
Sparkford, Yeovil, Somerset
BA22 7JQ, UK

www.wavefront.systems

Sales: enquiries@wavefront.systems

Support: support@wavefront.systems

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