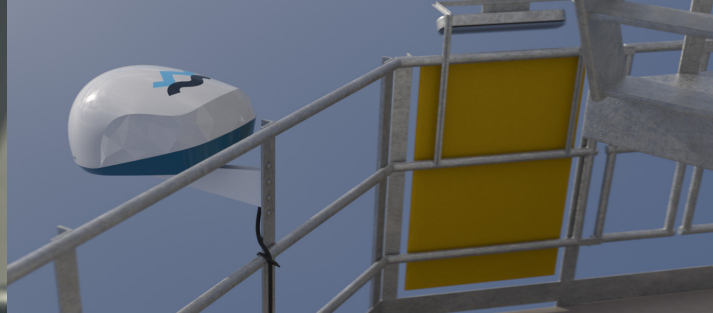
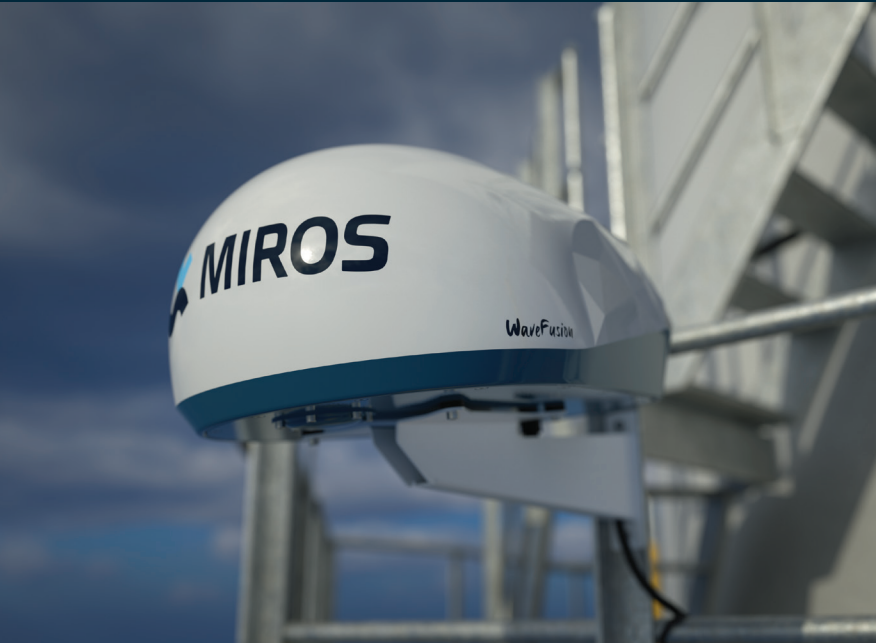


# MIROS WAVEFUSION

## THE UNIQUE DUAL SENSOR

### FOR MEASURING DIRECTIONAL WAVE SPECTRA



WaveFusion® is the first of the new next-generation wave radar series by MiroS. The directional wave radar provides more visibility and insights over the sea state in all-weather critical maritime operations including shallow waters. The sensor accurately measures data in real-time by utilizing up to 13 sample areas which are at different distances from the turbine.

Combining the footprints, complemented by smart processing algorithms enables new levels of data performance, reliability and redundancy providing a better understanding of the sea state not impacted by the shadowing effect created by the structure.

#### **Real-time wave measurements for end-to-end visibility.**

Improve performance and drive operational efficiency with real-time knowledge of the sea state. IoT-enabled WaveFusion can be complemented with MiroS Cloud for easy and secure access to the data as well as extra services such as data feed connections or device management.

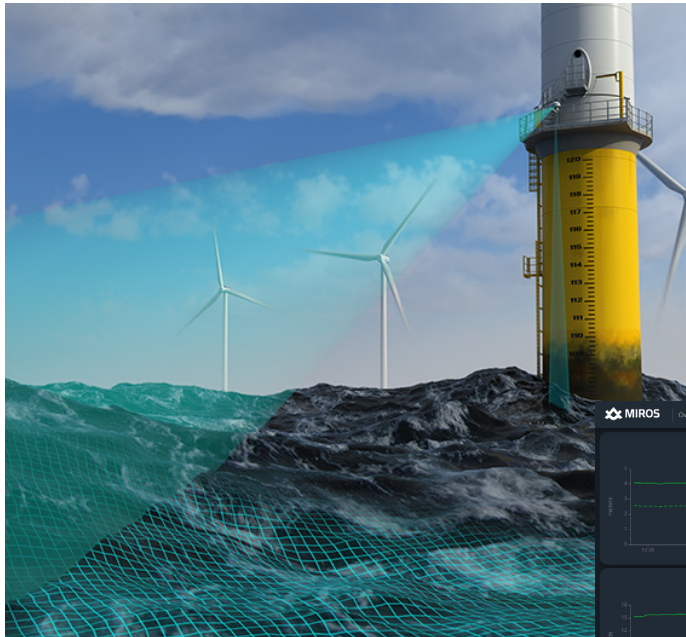
Together with MiroS Cloud users get access to data simultaneously, allowing for a shared situational awareness supporting decision-making in real-time as conditions develop.

#### **KEY FEATURES**

- Easy data access, locally or remotely.
- Directional wave spectra & water level.
- Combined footprint measurement.
- Not impacted by fog, rain, or mist.
- No parts submerged in water.
- Embedded data processing.

#### **KEY BENEFITS**

- Real-time directional wave measurement in all water depths.
- Enhance the directional wave radar with the water level.
- Widens weather windows access.
- Decrease operational costs.
- Ease installation with light & compact sensor.
- Remote upgrades and configuration.



The Miros WaveFusion observes the ocean surface in a semi-circle at a distance of 180 - 250 m depending on the installation height, typically 15 - 35 m together with the down-looking sensor measuring at mm accuracy next to the structure.

WaveFusion real-time measurements enhanced by Miros Cloud enables faster time-to-value decisions and gives further flexibility with add-on solutions tailored to fit the market need.



WaveFusion data dashboard.

## SPECIFICATIONS

Data	Range	Resolution	Accuracy
Directional spectra:	1-360°	1°	+/- 7°
Wave height:	0-1 m	1 cm	< 5 cm
	1-30 m	1 cm	+/- 5%
Wave period:	1 - 32 s	0.01 s	+/- 5%
Range:	1-35 m	1 mm	< 5 mm

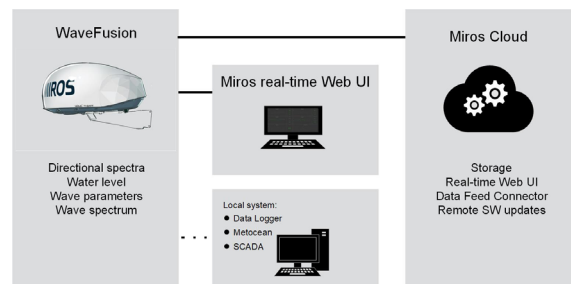
**Physical interface**  
Standard interface: CAT5e STP

**Displays/GUIs**  
Data, status, configuration: Web GUI

**Integration options**  
Local: NMEA (proprietary formats)  
Remote: JSON & CSV formats from Miros Cloud

**Electrical Data**  
Frequency of operation: Dual: 5.8 Ghz pulse & 60-64 GHz (sweep)  
Bandwidth: 20 MHz (pulse)  
Transmitted power: 275 mW average /10 W peak  
Supply Voltage: 100-264 VAC, 50/60Hz  
Power consumption: < 80 W  
EMC/RED in progress

**Environmental Specifications**  
Temperature: -10 ° to + 50 °  
Humidity: 0-95 % RH  
Ingress Protection: IP 66



**Physical Specifications**  
Type: WaveFusion/fixed installation  
Installation height: 15-35 m  
Dimensions (H x W x D): 300 x 657 x 490 mm  
Weight (kg): < 20 kg

**Accessories**  
ID1: Mounting bracket  
ID2: Junction box  
Cloud services: Contact Miros for details

**Notes:**  
1) Specifications are preliminary and based on theoretical values.  
2) Water level parameter and motion compensated version are currently under development.

Specifications are subject to change without prior notice.