



## WaveGuide 5 Direction

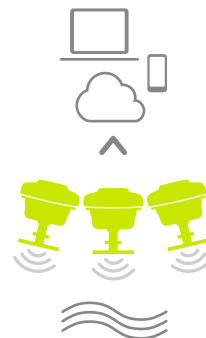
Our flag ship wave radar. A truly unique system, as Radac is the only company who brings this technology to the market. It accurately measures wave direction, wave height, wave period and tide. No water contact, no maintenance and no (re-) calibration. So no hassle.

The WaveGuide 5 Direction is an easy to use, reliable and robust device to measure tide, wave direction, wave height and wave period. The sensor is capable

of maintaining high level of precision and accuracy in harsh environmental conditions and is particularly suited to marine and offshore installations.

### Features and benefits

- Highly accurate
- Maintenance free
- Plug and play
- Severe conditions proof
- Optional ATEX / IECEx
- Measuring at 10 Hz
- 0 - 360° wave direction
- 0 - 60 m wave height
- Network connected



With an array of three radars, the elevation of the sea surface is measured at three positions. These positions form a virtual triangle at the water surface by pointing one radar perpendicularly downwards and tilt the other two. Knowing the slope of the water surface and the phase relations between the three positions, the wave direction can be calculated.

The radars measure the distance to the water surface 10 times per second. In all wind and wave conditions

the accuracy for water level is proven to be below 1 cm. The wave data are sent to the processing unit via a network link. The processing unit facilitates data acquisition, data processing, data presentation and remote service. Data can be locally stored on an external USB drive, or distributed through two serial ports as well as over the network. Any device connected to the (private) network can access the web-based user interface.

**We are Radac**  
Technology leader in measuring waves by radar



Since 1996, our Dutch company develops unique sensors to monitor the ocean surface. Without water contact, moving parts or need for calibration, the wave radar is a maintenance free device. This makes us, truly an Opex free, high value

system provider. We are proud that our professional systems are trusted across the industry. Our main clients include oil companies, offshore wind farm operators, port operators and shipping companies.

# WaveGuide 5 Direction

## WG5 series

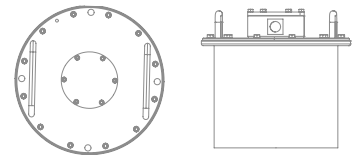
### Specifications

<b>Heave</b>	Range: 2 - 75 m to surface Accuracy: $\pm 3$ mm <sup>1)</sup> Frequency: 10 Hz
<b>Water level</b>	Accuracy: $\pm 1$ cm <sup>2)3)</sup> Processing: 10 min average (optional 1 min and 5 min) Interval: 1 min
<b>Wave height</b>	Range: 0 - 60 m Accuracy: $\pm 1$ cm <sup>3)</sup> Processing: SWAP <sup>4)</sup> (per 20 min data block) Interval: 1 min
<b>Wave period</b>	Range: 1 - 100 s Accuracy: $\pm 50$ ms <sup>3)</sup> Processing: SWAP <sup>4)</sup> (per 20 min data block) Interval: 1 min
<b>Wave direction</b>	Range: 0 - 360° Accuracy: $\pm 2^\circ$ <sup>3)</sup> Processing: SWAP <sup>4)</sup> (per 20 min data block) Interval: 1 min

#### COMPACT VERSION: WG5-DR-CP (includes 3 radars + 1 processing unit)

Specifications per radar

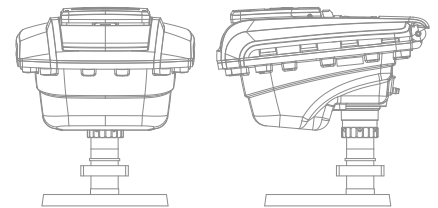
<b>Mechanical</b>	Dimensions: $\varnothing$ 265 x 245 mm Weight: 12.5 kg Material: Stainless steel, AISI 316L
<b>Electrical</b>	Power: 24 - 64 VDC, 65 - 240 Vac, 8 W Frequency: 10 GHz (X-band) Modulation: Triangular FMCW Emission: 0.1 mW max. (Far below acceptable limits for exposure to the human body)
<b>Environmental</b>	Temperature: -40 °C to 65 °C Humidity: 0 - 100 % Ingress Protection: IP67



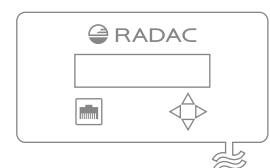
#### EXPLOSION PROOF VERSION: WG5-DR-EX (includes 3 radars + 1 processing unit)

Specifications per radar

<b>Mechanical</b>	Dimensions: 217 x 319 x 379 mm (d x w x h) Weight: 14.4 kg (excl. antenna 2.8 kg) Material: Chromatized aluminum
<b>Electrical</b>	Power: 24 - 65 VDC, 65 - 240 Vac, 8 W Frequency: 10 GHz (X-band) Modulation: Triangular FMCW Emission: 0.1 mWatt max. (Far below acceptable limits for exposure of the human body)
<b>Environmental</b>	Temperature: -40 °C to 65 °C Humidity: 0 - 100 % Ingress Protection: IP67 Safety: ATEX, II 1/2 G Ex d [ja Ga] IIB T6 Ga/Gb



<b>Processing unit</b>	Dimensions: 170 x 172 x 85 mm (d x w x h) (19" rack mounting available) Com ports: 2x RS232 Network: 3x Ethernet USB: 2x USB 2.0 Power: 24 - 48 VDC, 4.8 W Temperature: -20 °C to 65 °C Cooling: No fan required
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**1)** Valid for a still water surface.

**2)** For a water surface with waves.

**3)** The accuracy of the wave parameters is not limited by the radar sensor, yet it is defined by the stochastic nature of sea-surface measurements.

**4)** SWAP is the Standard Wave Analysis Program, in accordance with the applied standards of the Dutch Ministry of Infrastructure and Environment and of the International Association of Oil and Gas producers.