We are a Dutch company, based in Delft. Since 1996, we develop, manufacture and market the WaveGuide. 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.

The new WaveGuide is the latest and most technically advanced radar from Radac. This accurate wave monitoring system is an easy to use, reliable and robust device to measure tide, wave direction, wave height and wave period. The new radar is capable of maintaining a high level of precision and accuracy in harsh environmental conditions and is particularly suited to marine and offshore installations.

**KEY FEATURES**

- 0 - 360º wave direction
- 0 - 60 m wave height
- Highly accurate
- Maintenance free
- Optional ATEX / IECEx

**NEW FEATURES**

- Measuring at 10 Hz
- 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.

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## WAVEGUIDE DIRECTION

### WG5 SERIES

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Heave Range</th>
<th>Water level</th>
<th>Wave height</th>
<th>Wave period</th>
<th>Wave direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>2 - 75 m to surface</td>
<td>Accuracy: ± 1 cm</td>
<td>Accuracy: ± 1 cm</td>
<td>Accuracy: ± 50 ms</td>
<td>Accuracy: ± 2º</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 3 mm ¹)</td>
<td>Frequency: 10 Hz</td>
<td>Processing: SWAP ² (per 20 min data block)</td>
<td>Processing: SWAP ³ (per 20 min data block)</td>
<td>Processing: SWAP ³ (per 20 min data block)</td>
</tr>
<tr>
<td>Frequency</td>
<td></td>
<td></td>
<td></td>
<td>Interval: 1 min</td>
<td>Interval: 1 min</td>
</tr>
<tr>
<td>Processing</td>
<td>10 sec, 1 min, 5 min or 10 min</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interval</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wave height</td>
<td>0 - 60 m</td>
<td></td>
<td>Range: 0 - 60 m</td>
<td>Range: 1 - 100 s</td>
<td>Range: 0 - 360º</td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 1 cm ²)</td>
<td></td>
<td>Accuracy: ± 1 cm</td>
<td>Accuracy: ± 50 ms</td>
<td>Accuracy: ± 2º</td>
</tr>
<tr>
<td>Processing</td>
<td>SWAP ³ (per 20 min data block)</td>
<td></td>
<td>Processing: SWAP ³ (per 20 min data block)</td>
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<td>Processing: SWAP ³ (per 20 min data block)</td>
</tr>
<tr>
<td>Interval</td>
<td>1 min</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wave period</td>
<td>1 - 100 s</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 50 ms ²)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Processing</td>
<td>SWAP ³ (per 20 min data block)</td>
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<tr>
<td>Interval</td>
<td>1 min</td>
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<td></td>
</tr>
<tr>
<td>Wave direction</td>
<td>0 - 360º</td>
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<td></td>
</tr>
<tr>
<td>Accuracy</td>
<td>± 2º ³)</td>
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<td></td>
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<tr>
<td>Processing</td>
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<tr>
<td>Interval</td>
<td>1 min</td>
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</tbody>
</table>

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

**Specifications per radar**

**Mechanical**
- Dimensions: Ø 265 x 245 mm
- Weight: 12.5 kg
- Material: Stainless steel, AISI 316L

**Electrical**
- Power: 24 - 64 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)

**Environmental**
- Temperature: -40 ºC to 65 ºC
- Humidity: 0 - 100%
- Ingress Protection: IP67

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

**Specifications per radar**

**Mechanical**
- Dimensions: 217 x 319 x 379 mm (d x w x h)
- Weight: 14.4 kg (excl. antenna 2.8 kg)
- Material: Chromatized aluminum

**Electrical**
- 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)

**Environmental**
- Temperature: -40 ºC to 65 ºC
- Humidity: 0 - 100%
- Ingress Protection: IP67
- Safety: ATEX, II 1/2 G Ex d [ia Ga] IIIB T6 Ga/Gb

**Processing unit**
- 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 ºC to 65 ºC
- 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.