



# Directional Waverider MkIII

Datawell - Oceanographic Instruments

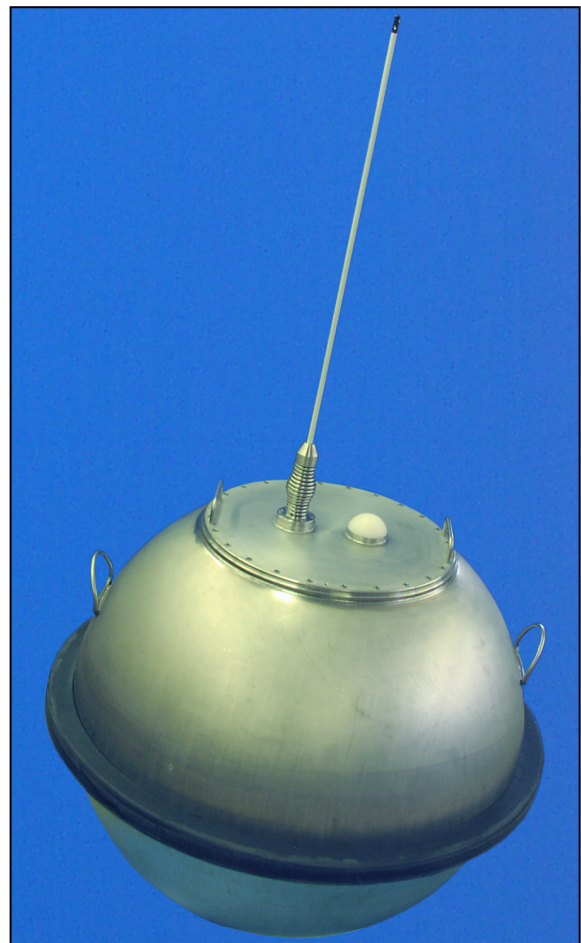
## The Directional Waverider DWR-MkIII: Three years of continuous operation

The Directional Waverider hardly needs an introduction: it is the world's standard for measuring wave height and wave direction. Its success is due to the accurate and well-proven stabilized platform sensor, enabling wave height measurements by a single accelerometer. For the wave direction, direct pitch and roll measurements are performed needing no integration. In the DWR-MkIII, this sensor is still the heart of the instrument. The redesign comprises updated peripheral electronics, new battery technology, a more robust flash light and modular mechanics.

- The most striking feature of the new mark is its **LED flash light** that makes the glass housing obsolete. Mounted at the top of the antenna, it increases the buoy's visibility to passing ships. To increase visibility even further, an optional radar reflector for the 90 cm version will be available soon.
- A **GPS receiver** for buoy positioning has now become a standard feature of the DWR-MkIII, and facilitates its retrieval.
- Standard integrated **data logger** based on the latest flash card technology.
- Ongoing developments in **battery** technology have produced a non-magnetic alkaline R40-cell containing 100% more energy than its Zinc-Carbon predecessor. These new cells keep the DWR-MkIII operating under all wave conditions and weather circumstances for three years without replacement.
- An accurate onboard **energy meter** monitors the actual energy consumption of the buoy, and reports a reliable estimate of the remaining operating life.

- The DWR-MkIII is equipped with a water temperature sensor and is prepared for **future** meteorological **sensors** such as air temperature, wind direction and wind speed.

The DWR-MkIII comes standard with Datawell's unique HF link for ranges up to 50 Km. For larger ranges the HF link can be combined or replaced with Argos or Orbcomm satellite communication. A GSM communication option will be available soon. The MkIII is also available in a 70 cm hull offering easier handling and 1 year of continuous operation.






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## Specifications

<b>Heave</b>	Range	-20 m - +20 m
	Resolution	1 cm
	Scale accuracy (gain error)	< 0.5% of measured value after calibration < 1.0% of measured value after 3 year
	Period time	1.6 s - 30 s
<b>Direction</b>	Range	0° - 360°
	Resolution	1.5°
	Buoy heading error	0.4° - 2° (depending on latitude) typical 0.5°
	Reference	magnetic north
	Period time (free floating)	1.6 s - 30 s
<b>Standard features</b> 	HF transmitter	frequency range 27 MHz - 40 MHz transmission range 50 Km (RX-D receiver)
	Data logger	type 1 Compact Flash Module, size 64 MB - 2 GB
	Flash light	4 LEDs, colour yellow (590 nm), pattern 5 flashes every 20 s
	GPS position	every 30 min, precision 10 m
	Water temperature	range -5 °C - +46 °C, resolution 0.05 °C, accuracy 0.2 °C
	<b>Options</b>	Argos/Orbcomm
	GSM	mobile communication (available soon)
<b>General</b>	Hull diameter	0.9 m (0.7 m) (excluding fender)
	Material	stainless steel AISI316/Cunifer10
	Weight	approx. 225 Kg (105 Kg)
	Batteries	operational life 3 years (1 year), 5 (1) sections of 13 (20) batteries, type Leclanché 4931670.0 (black)
	Processing	32 bits
	Temperature range	operating -5 °C - +35 °C storage -5 °C - +40 °C (+ 55 °C short term, weeks only)
	Receiver	RX-D or Warec (older Warecs may need modification)
	Upgrading	from MkII to MkIII simply by replacing hatchcover