

Rugged Wideband DF Antenna

1 – 9000 MHz

Product Code: DF-A0147

VERSION: 1.3



PRODUCT DESCRIPTION:

The DF-A0147 is a wideband DF antenna suitable for rugged applications. Based on the more portable DF-A0095 product, the rugged version features an upgraded mechanical and environmental design for marine use.

The antenna has a loop array for good DF performance at low frequencies where the phase size of the array is small and three pentagonal arrays for the higher frequency ranges. A secondary pentagonal array of dipoles are combined by an internal 5-way low-loss combiner to provide a good omni from 1 to 500 MHz and an integrated bi-conical antenna provides a second omni from 500 to 9000 MHz.

A decagonal cylindrical cavity inside the antenna, approximately 350 mm wide by 370 mm high, allows switching, amplification and RF processing to be integrated into the antenna, reducing cable loss and weight. The cavity slides open giving access to the RF unit.

SPECIFICATIONS:

Electrical:	
Frequency range	1 – 9000 MHz
Feed power handling	0.25 W (receive only)
Polarisation	Vertical
DF:	
DF type	Correlative interferometer
Frequency bands	A: 1 – 90 MHz ^{*1} B: 30 – 1000 MHz ^{*1} C: 1000 – 3600 MHz D: 3000 – 9000 MHz
DF accuracy in azimuth	A: 3° RMS ^{*2} B: 2° RMS ^{*2} C: 2° RMS ^{*2} D: 3° RMS ^{*2}
Elevation coverage	-7° to +7° (full accuracy) -15° to +15° (reduced accuracy)
Monitoring:	
Frequency bands	A: 1 – 100 MHz ^{*3} B: 50 – 500 MHz C: 500 – 9000 MHz
Monitoring antenna types	A: Connector at top of antenna B: Combined 5 dipoles C: Bi-conical antenna
Other internal features:	
GPS antenna	Active L1 patch antenna
Compass bracket	KVH C100 compass (optional)
Lightning protection	On all RF and control cables
Mechanical:	
Dimensions (h x d)	2264 mm x 1100 mm
Mass	85 kg
Colour	Grey, others on request

Notes:

- 1) Optimum A-B change-over is above 30 MHz, to be determined by user.
- 2) DF accuracy when calibrated, on a test range. Operational accuracy will be lower, depending on platform and range effects.
- 3) Can be replaced by MONO-A0059 product for increased bandwidth

PRODUCT FEATURES:

- Full-band correlative interferometer
- HF capability
- Wideband dedicated omni capability
- Rugged construction
- GPS Antenna

APPLICATIONS:

- Marine DF
- Wideband monitoring

RELATED PRODUCTS:

- DF-A0037: Marine DF antenna, 1 to 3600 MHz
- DF-A0088: Portable DF antenna, 1 to 6000 MHz
- DF-A0054: 4-band, 5-channel RF switch
- MONO-A0059: 1 – 700 MHz whip attachment
- MISC-A0063: Isolating mounting mast for DF-A0147

Rugged Wideband DF Antenna

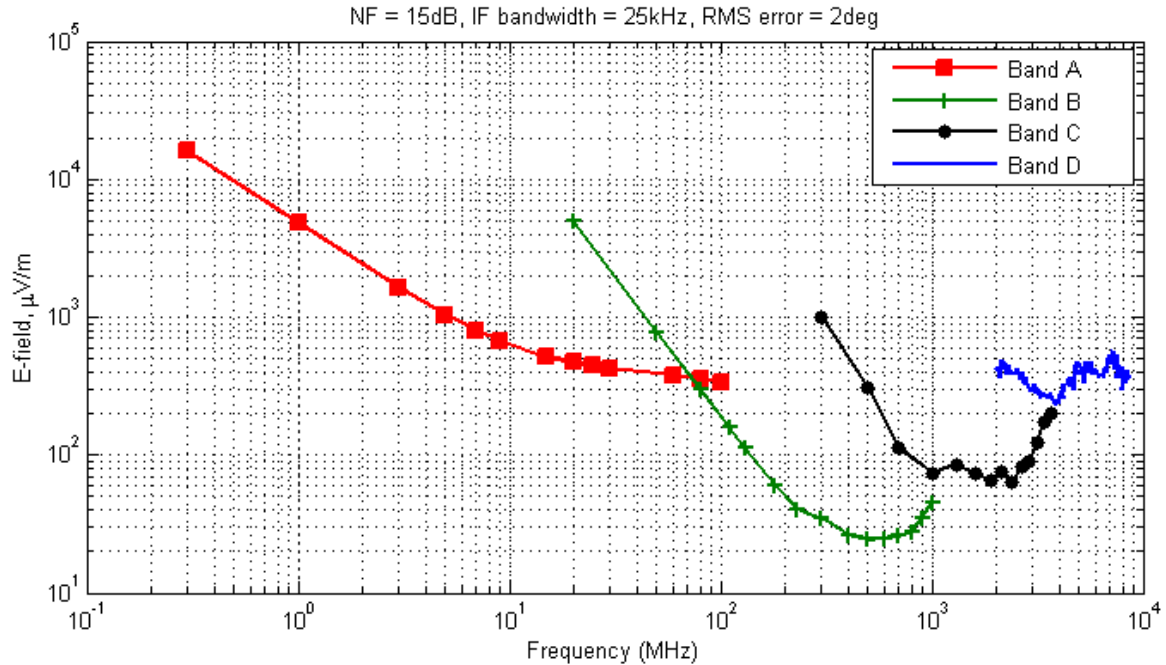
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DF SENSITIVITY:

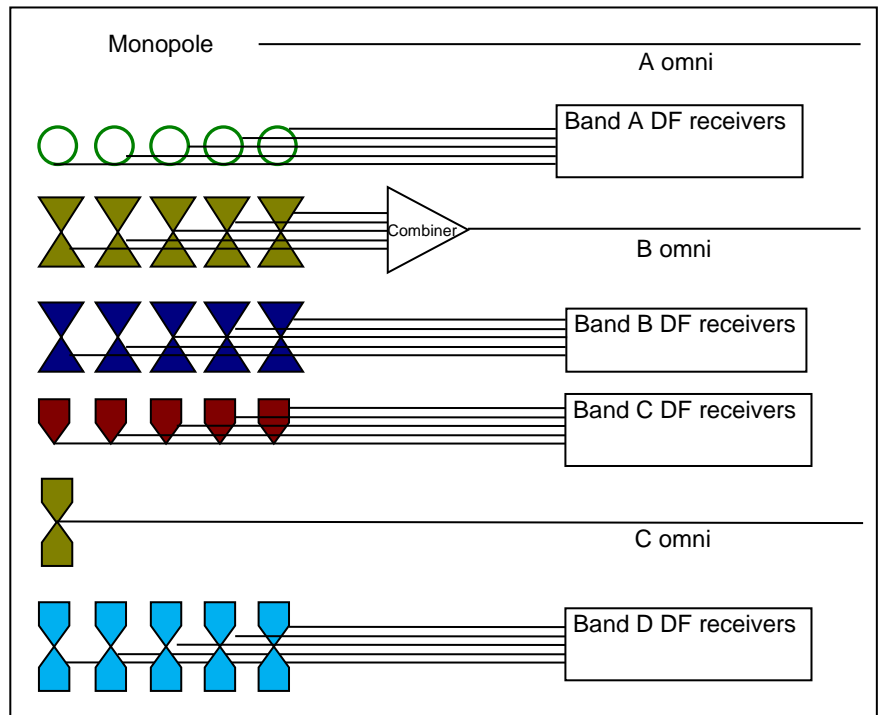
The following graph shows the predicted DF sensitivity of the antenna over frequency.



LIST OF RF OUTPUTS FROM ANTENNA:

The antenna has 23 elements with connectors ending in the antenna cavity.

- 5 Band A loops
- 5 Band B DF elements
- 5 Band C DF elements
- 5 Band D DF elements
- Band A connector
- Band B combiner output
- Band C output



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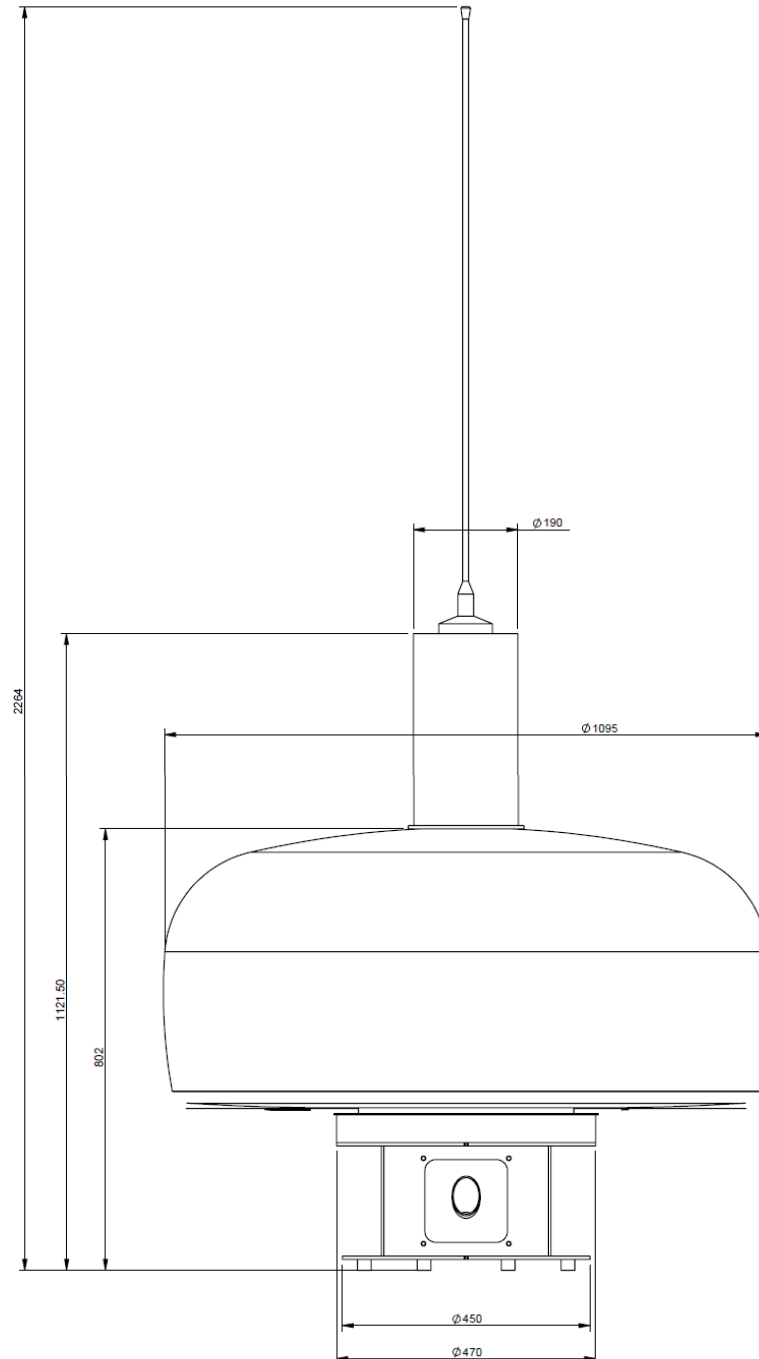
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OUTER DIMENSIONS:

The outer dimensions of the antenna are as shown.



HANDLING:

The product is shipped with a lifting harness which will enable hoisting of the product as needed.