

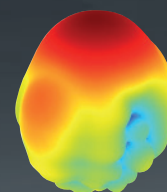


## MEASUREMENT PROBES AND FEEDS

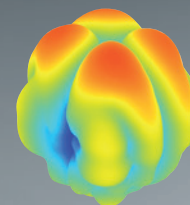
# Closed Boundary Quad-Ridge Horns



Typical 3D co-polarization radiation pattern



Typical 3D cross-polarization radiation pattern



### SOLUTION FOR

- Gain reference for medium/high gain antennas
- Wideband probes for far-field test ranges
- Illumination of reflector antennas
- Quasi-monostatic radar cross section (RCS) measurements

## MAIN FEATURES

### Technical performance

- Smooth gain with frequency
- Dual linear polarization with high polarization purity and isolation
- Low return loss / VSWR
- Wide bandwidth

### Design

- Well-defined smooth radiation pattern throughout the operational bandwidth
- Minimum number of coupled parts to maximize mechanical accuracy
- Lightweight for easy handling

### Surface treatment

- Surtec 650 according to MIL-C 5541E class 3
- Polyurethane paint

### Repeatability

- Stiff and robust mechanical design
- Standard MVG circular interface for precision centering
- Precision pins for accurate polarization alignment
- Precision machined
- High reliability coaxial connectors

### Delivered documents

- Typical performance data (TYMEDA™)
- Measured return loss data and port-to-port coupling

## PRODUCT CONFIGURATION

### Equipment

- Mounting flange
- Integrated coaxial transition with high precision connector
- Circular polarization available with external hybrid coupler

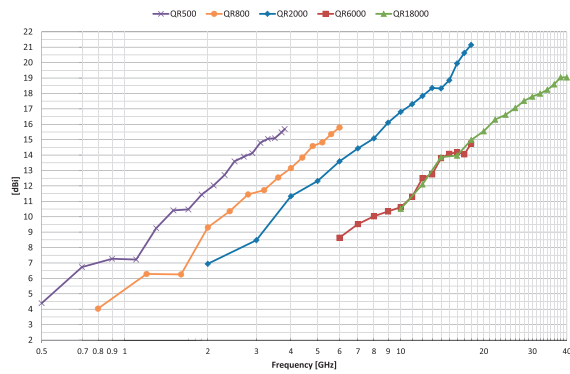
### Related services

- Calibration and maintenance
- Customization

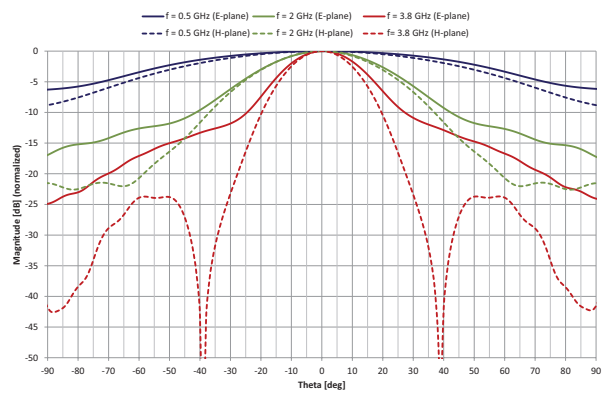
# Electrical characteristics

Part number	QR500	QR800	QR2000	QR6000	QR18000
Type of antenna	Closed boundary quad-ridge horn	Closed boundary quad-ridge horn	Closed boundary quad-ridge horn	Closed boundary quad-ridge horn	Closed boundary quad-ridge horn
Frequency range	0.5 – 3.8 GHz	0.8 – 6 GHz	2 – 18 GHz	6 – 18 GHz	10 – 40 GHz
Polarization	Dual linear	Dual linear	Dual linear	Dual linear	Dual linear
Gain	4 – 16 dBi	4 – 16 dBi	7 – 21 dBi	9 – 15 dBi	10 – 19 dBi
VSWR	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9
Return loss	< -10 dB	< -10 dB	< -10 dB	< -10 dB	< -10 dB
Port to port isolation	> 40 dB	> 40 dB	> 30 dB	> 40 dB	> 35 dB
Cross-polar discrimination	> 30 dB	> 30 dB	> 25 dB	> 30 dB	> 30 dB
Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms

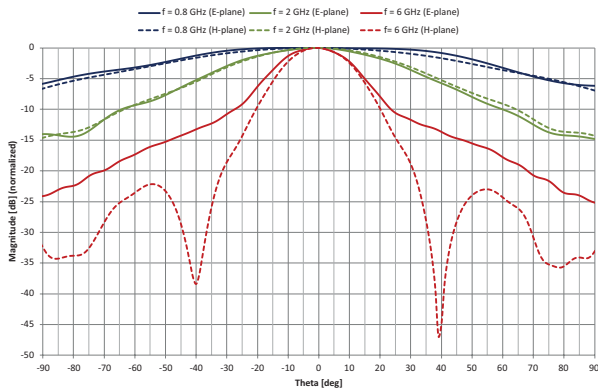
Boresight realized gain



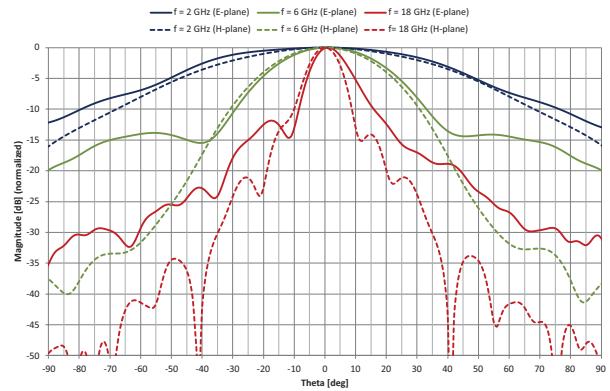
QR500 radiation pattern



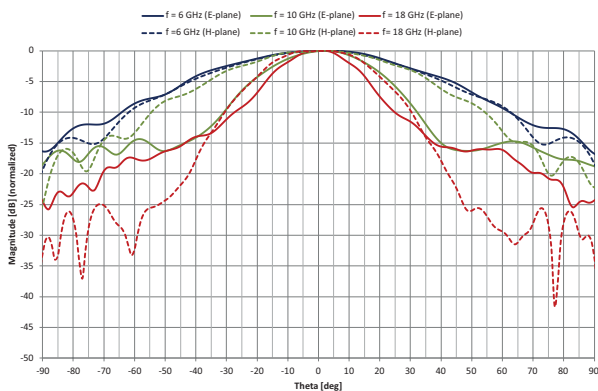
QR800 radiation pattern



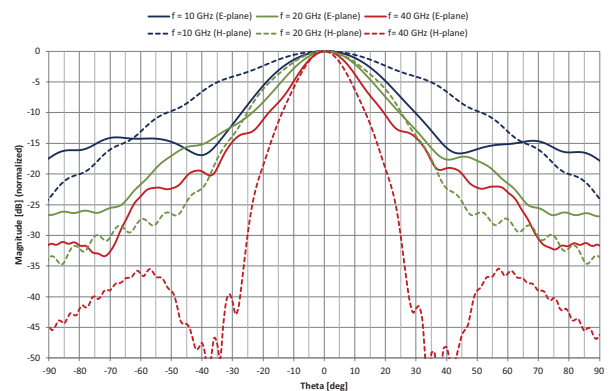
QR2000 radiation pattern



QR6000 radiation pattern



QR18000 radiation pattern



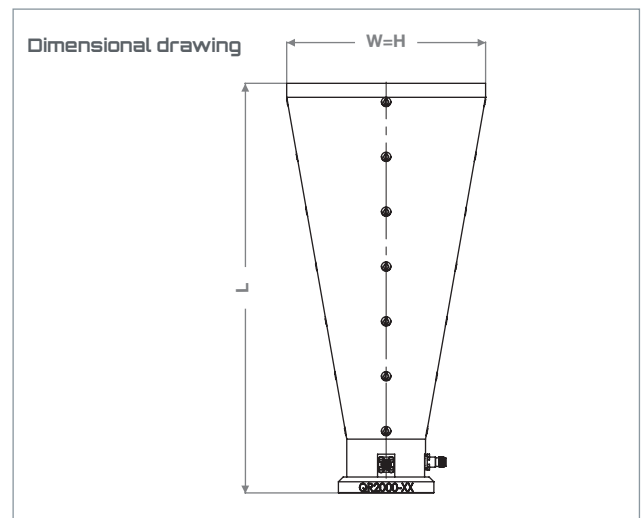
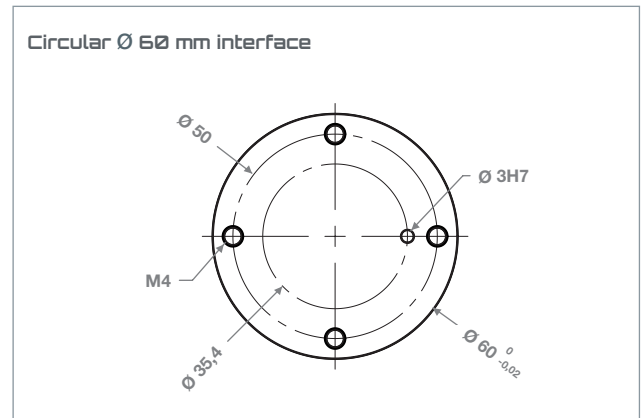
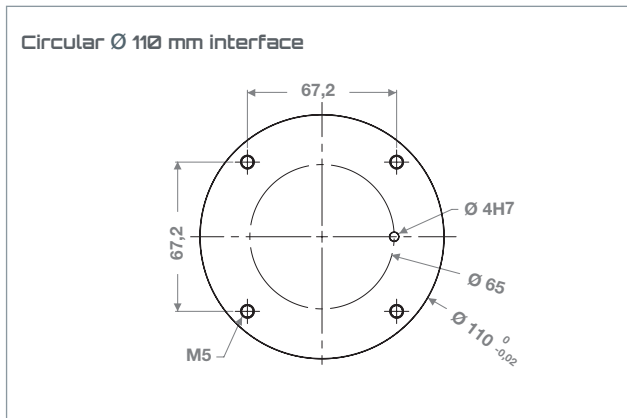
## Mechanical characteristics

Part number	QR500	QR800	QR2000	QR6000	QR18000
Dimensions [mm] (H x W x L)	311.1 x 311.1 x 476.7	194.5 x 194.5 x 302.4	125 x 125 x 257.4	47 x 47 x 151	48 x 48 x 134.7
Weight (approx.)	7 Kg	2.3 Kg	1.3 Kg	0.25 Kg	0.2 Kg
RF connector	3.5 mm Female <sup>(1)</sup>	3.5 mm Female <sup>(1)</sup>	3.5 mm Female <sup>(1)</sup>	2.92 mm Female <sup>(2)</sup>	2.92 mm Female <sup>(2)</sup>
Material	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
Treatment	Surtec 650 <sup>(3)</sup>	Surtec 650 <sup>(3)</sup>	Surtec 650 <sup>(3)</sup>	Surtec 650 <sup>(3)</sup>	Surtec 650 <sup>(3)</sup>
Interface	Circular Ø 110 mm	Circular Ø 110 mm	Circular Ø 60 mm	Circular Ø 60 mm	Circular Ø 60 mm

(1) Huber & Suhner type 23 PC35-50-0-51/199 UE

(2) SWMI type 1012-16SF

(3) According to MIL-C 5541E class 3



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