

606L Series

The 606L series of panels are low wind load antennas suitable to provide a customized coverage for any single TV channel in Band I.

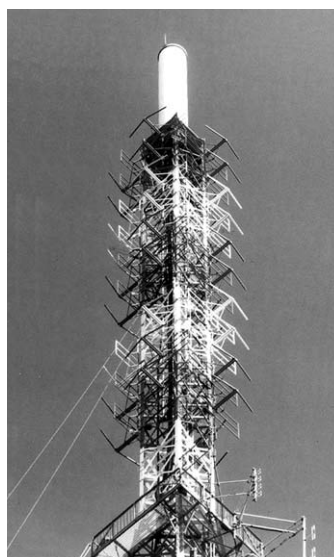
- Low wind load
- Pressurizable to dipole feed points
- Feed system radomes available for snow and ice conditions
- Temperature range -40 to +60 degrees C available
- Knocked down for easy transport
- Four sided array design
- Rugged galvanized steel construction
- Horizontal polarization - 606L
- Vertical polarization - 606LV
- Array design provides both directional and omnidirectional patterns as well as beam tilt and null fill to suit individual customer requirements, contact RFS for details

The 606L (and 606LV) panel comprises two separate dipole and screen assemblies vertically spaced a half wavelength apart. Each assembly has a half wave dipole mounted on a screen with a 7/8" EIA input and must be mounted in pairs. Both the dipole and screen are made from galvanized steel tube for maximum strength and minimum wind load. The open construction of these panels permits easy inspection and maintenance after installation.

The 606L (and 606LV) antenna can be arrayed to provide the required coverage for a particular service area. Array design is carried out by RFS engineers to provide both directional and omnidirectional patterns as well as beam tilt and null fill tailored to the customer's specification. Panels are fed through a power divider network which is usually fully pressurizable and designed to meet the power handling requirements of the array. As each half panel is rated at 5kW, high power ratings are easily achievable. To minimize shipping costs panels are supplied in "knock down" form with dipoles, screens, power dividers and interconnecting cables in separate packages.



606L



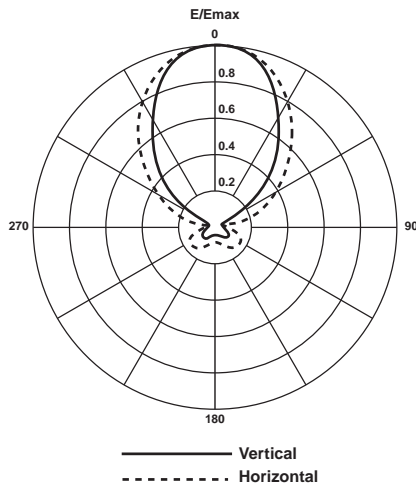
606L-20D

606L Series

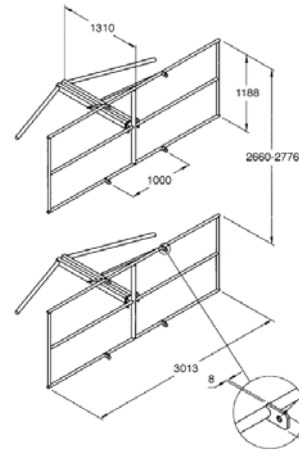
SPECIFICATIONS	606L	606LV
Frequency Range, MHz	44 - 88	44 - 88
Polarization	Horizontal	Vertical
Number of Channels	Single	Single
Nominal Gain (Mid-band), dBd	7.5	7.5
Half Power Beamwidth Azimuth, degrees	64	64
Return Loss, dB	26 Vision, 23 across channel	26 Vision, 23 across channel
Input Connector	2 x 7/8" EIA Flange / Panel	2 x 7/8" EIA Flange / Panel
Power Rating per Input, kW	5	5
Impedance, ohms	50 unbalanced	50 unbalanced
Weight, kg (lb)	130 (287)	130 (287)
Mounting (Standard), mm (in)	8 x 16mm (5/8) bolts	8 x 16mm (5/8) bolts
Recommended Spacing between Bays, cm (in)	273 (107)	273 (107)
Effective Area Front (full antenna), sq m (sq ft)	1.38 (14.85)	1.38 (14.85)
Effective Area Side (full antenna), sq m (sq ft)	0.78 (8.39)	1.2 (12.9)
Design Wind Speed (max), km/h (mph)	240 (150)	240 (150)
Pressurization Operational, kPa (psi)	10 - 35 (1.5 - 5)	10 - 35 (1.5 - 5)
Material - Insulators	PTFE	PTFE
Material - Radiators	Hot Dipped Galvanized steel	Hot Dipped Galvanized steel
Material - Reflecting Screen	Hot Dipped Galvanized steel	Hot Dipped Galvanized steel

Note 1

Dimensions and weights are for Ch E3 (54 to 61 MHz). These figures will vary with the selected channel.



Radiation Pattern



606L Antenna

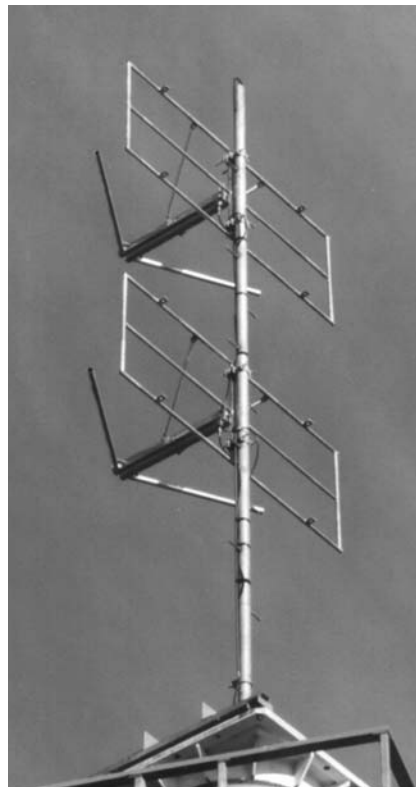
607L Series

The 607L series of panels are similar to the 606L having a low wind load and suitable for providing a customized coverage for any single TV channel in Band I. Whereas the 606L is designed for four sided array design, the 607L has a broader beamwidth suitable for arrays mounted on triangular towers.

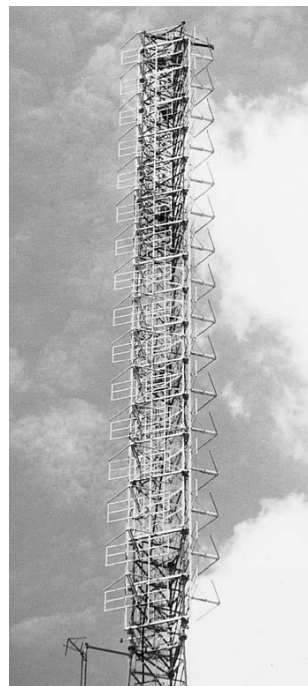
- Low wind load
- Pressurizable to dipole feed points
- Feed system radomes available for snow and ice conditions
- Temperature range -40 to +60 degrees C available
- Knocked down for easy transport
- Three sided array design
- Rugged galvanized steel construction
- Horizontal polarization
- Array design by RFS engineers provides both directional or omnidirectional patterns as well as beam tilt and null fill tailored to individual customer requirements, contact RFS for details

The 607L panel comprises two separate dipole and screen assemblies vertically spaced a half wavelength apart. Each assembly has a half wave dipole mounted on a screen with a 7/8" EIA input and must be mounted in pairs. Both the dipole and screen are made from galvanized steel tube for maximum strength and minimum wind load. The open construction of these panels permits easy inspection and maintenance after installation.

The 607L antenna can be arrayed to provide the required coverage for a particular service area. Array design is carried out by RFS engineers to provide both directional and omnidirectional patterns as well as beam tilt and null fill tailored to the customer's specification. Panels are fed through a power divider network which is usually fully pressurizable and designed to meet the power handling requirements of the array. As each half panel is rated at 5kW, high power ratings are easily achievable. To minimize shipping costs panels are supplied in "knock down" form with dipoles, screens, power dividers and interconnecting cables in separate packages.



607L



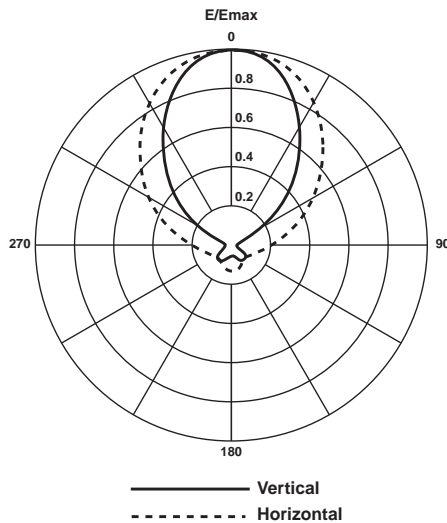
607L-24

607L Series

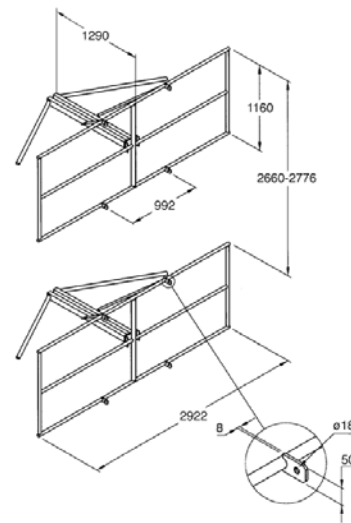
SPECIFICATIONS	607L
Frequency Range, MHz	47 - 88
Polarization	Horizontal
Number of Channels	Single
Nominal Gain (Mid-band), dBd	7.0
Half Power Beamwidth Azimuth, degrees	77
Return Loss, dB	23 Vision, 20 across channel
Input Connector	2 x 7/8" EIA Flange / Panel
Power Rating per Input, kW	5
Impedance, ohms	50 unbalanced
Weight, kg (lb)	120 (265)
Mounting (Standard), mm (in)	8 x 16mm (5/8) bolts
Recommended Spacing between Bays, cm (in)	273 (107)
Effective Area Front (full antenna), sq m (sq ft)	1.28 (13.77)
Effective Area Side (full antenna), sq m (sq ft)	1.08 (11.62)
Design Wind Speed (max), km/h (mph)	240 (150)
Pressurization Operational, kPa (psi)	10 - 35 (1.5 - 5)
Pressurization Test, kPa (psi)	100 (15)
Material - Insulators	PTFE
Material - Radiators	Hot Dipped Galvanized steel
Material - Reflecting Screen	Hot Dipped Galvanized steel

Note 1

Dimensions and weights are for Ch E3 (54 to 61 MHz). These figures will vary with the selected channel.



Radiation Pattern



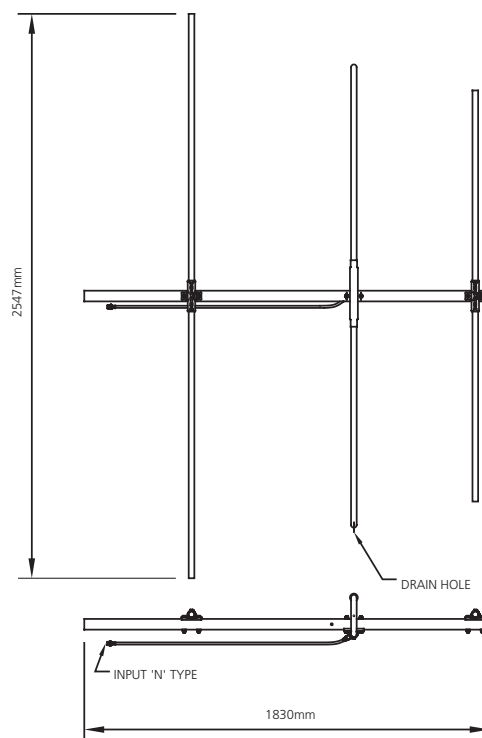
607L Antenna

YLV Series

The YLV3 yagi antenna is suitable for use as an element in VHF transmitting arrays. By arranging a number of these elements around a suitable tower or mast an omnidirectional or a number of directional radiation patterns can be achieved. The YLV3 can also be used as a stand alone antenna.

- Suitable for use as an array element or for stand alone operation
- Engineered for transmission of both Digital and Analog TV/Radio
- Light weight and low wind
- All elements are DC grounded for lightning protection

The antenna can be center mounted for single antenna applications or by an extended boom for mounting to tower or mast in an array configuration. Bracing kits are supplied as standard with antennas that require them. Mounting hardware is stainless steel. To facilitate package and transport, yagi antennas are transported as components. Detailed assembly instructions are provided. Mounting clamps and tower brackets are available to suit a range of tower types. Contact RFS with your requirements.

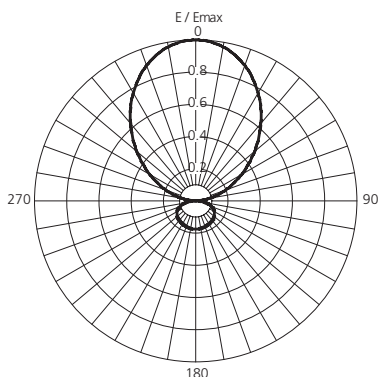


Y203 Yagi Antenna

YLV3 - Dimensions shown for the model covering 47 - 54 MHz

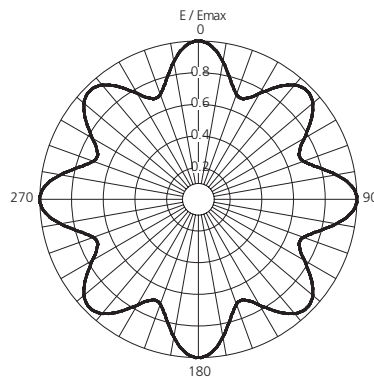
YLV Series

SPECIFICATIONS	YLV3
Frequency Range, MHz	47 - 108
Polarization	Horizontal
Number of Channels	Single channel up to 8 MHz
Nominal Gain (Mid-band), dBd	4.2
Return Loss, dB	>21 (typically 26 across channel)
Input Connector	N type
Power Rating per Input, kW	0.5
Impedance, ohms	50 unbalanced
Operating Temperature Range, degrees C	-10 to +50
Weight, kg (lb)	17 (37)
Dimensions (Height or Length), cm (in)	20
Dimensions (Width), cm (in)	325.4
Dimensions (Depth), cm (in)	222.0
Effective Area Front (full antenna), sq m (sq ft)	0.46 (4.95)
Effective Area Side (full antenna), sq m (sq ft)	0.13 (1.4)
Design Wind Speed (max), km/h (mph)	240 (150)
Wind Load @ 50 m/sec Front, kN (lb)	0.69 (155)
Wind Load @ 50 m/sec Side, kN (lb)	0.2 (45)
Material - Support Pole / Mounting	Stainless Steel
Material - Radiators	6000 Series aluminum alloy



Azimuth Radiation Pattern
Single Antenna

RADIATION PATTERN - Typical Azimuth Single antenna



Azimuth Radiation Pattern
4-Antenna array

RADIATION PATTERN - Typical Azimuth Array of four antennas on square mast

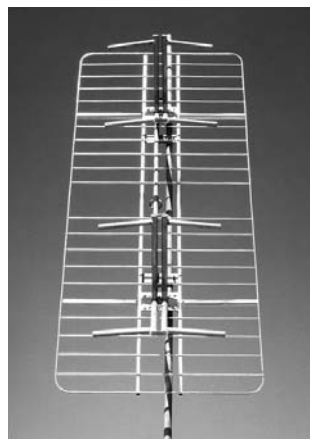
655, 656 Series

This series of panel antennas is ideal for four sided array design to provide a customized coverage for single or multi-station use in Band III. Model 655 has a nominal gain of 8 dBd and can be used for horizontally polarized services. Model 656 is horizontally polarized and provides a nominal gain of 11dBd.

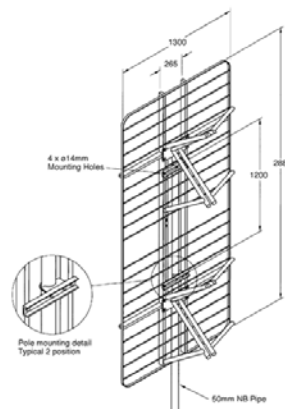
- Cyclone rated
- Rugged galvanized steel construction for maximum corrosion protection
- Stainless steel version available on request
- Low wind load
- Pressurizable coaxial feed
- Four sided array design
- Low VSWR full band operation
- Suitable for multi-station use, DAB and DTV
- High power rating
- Ideal array element allowing for a variety of horizontal radiation patterns to suit most requirements, contact RFS for details
- Medium power, unpressurized version available
- Temperature range -40 to +60 degrees C available

Construction from thick walled tube and solid steel bar gives a heavy duty panel which is designed for operation in very harsh environments. This design also ensures ideal hot dip galvanizing for optimum corrosion protection. Colors are available for aviation visibility and even further corrosion protection. The coaxial feed system can be fully pressurized and features twin 'O' ring seals on the feed point insulators. The panels are tolerant of light icing (radomes are available for use under heavy icing conditions down to -40 degrees C) and have a very low VSWR (typically less than 1.05:1) over the entire 174 - 230MHz band depending on the system configuration.

These panels are ideal array elements having low sidelobes, low mutual couplings between panels and high power ratings across the full band. This results in complete antenna systems that have very wide VSWR and pattern bandwidth. The ability to utilize larger tower cross sections allows support for a top mounted UHF antenna such as the PHP or PVP UHF antenna arrays. This provides a powerful combination for delivering DTV and/or DAB systems customized to suit the coverage requirements of the customer.



656 Panel



656 Panel

655, 656 Series

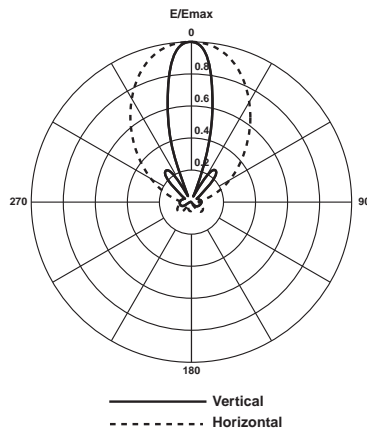
SPECIFICATIONS	655	656
Frequency Range, MHz	174 - 230	174 - 230
Polarization	Horizontal	Horizontal
Number of Channels	Multichannel	Multichannel
Nominal Gain (Mid-band), dBd	8.0	11.0
Half Power Beamwidth Azimuth, degrees	66	66
Return Loss, dB	26	26
Input Connector	7-16 DIN; 7/8" EIA Flange	7-16 DIN; 7/8" EIA Flange
Power Rating, kW	2.7; 4 Note#1	2.7; 4 Note#1
Impedance, ohms	50 unbalanced	50 unbalanced
Weight, kg (lb)	35 (77)	80 (177)
Mounting (Standard), mm (in)	4 x 12mm (1/2) bolts	4 x 12mm (1/2) bolts
Effective Area Front (full antenna), sq m (sq ft)	0.41 (4.45)	0.83 (8.90)
Effective Area Side (full antenna), sq m (sq ft)	0.53 (5.69)	1.06 (11.38)
Design Wind Speed (max), km/h (mph)	240 (150)	240 (150)
Pressurization Operational, kPa (psi)	10 - 35 (1.5 - 5)	10 - 35 (1.5 - 5)
Pressurization Test, kPa (psi)	100 (15) 7/8" EIA Version	100 (15) 7/8" EIA Version
Material - Insulators	PTFE	PTFE
Material - Radiators	Hot Dipped Galvanized steel	Hot Dipped Galvanized steel Note#2
Material - Reflecting Screen	Hot Dipped Galvanized steel	Hot Dipped Galvanized steel Note#2

Note1

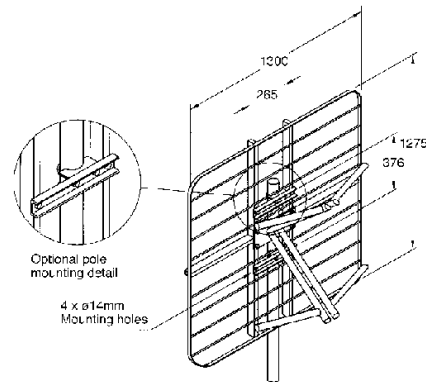
Power rating is limited by the input connector type. 2.7kW for 7-16 DIN, 4kW for 7/8" EIA

Note2

Stainless steel version available on request



Radiation Pattern



655 Panel

657, 658 series

This series of panel antennas has been designed for three sided arrays and provides a customized horizontally polarized coverage for single or multi-station use in Band III. Model 657 has a nominal gain of 7dBd and the 658 has a nominal gain of 10dBd.

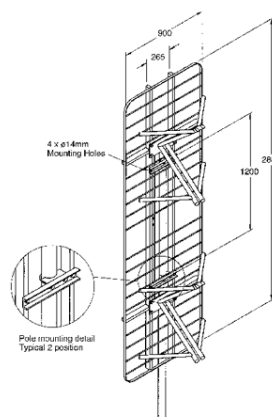
- Suitable for single or dual channel use
- Three sided array design - lower cost
- Cyclone rated
- Rugged galvanized steel construction for maximum corrosion protection
- Low wind load
- Pressurizable coaxial feed
- Horizontal polarization
- Array design allows a variety of standard horizontal radiation patterns as well as customized patterns, contact RFS for details
- Medium power, unpressurized version available
- Temperature range -40 to +60 degrees C available

Construction from thick walled tube and solid steel bar gives a heavy duty panel which is designed for operation in very harsh environments. This design also ensures ideal hot dip galvanizing for optimum corrosion protection. Colors are available for aviation visibility and even further corrosion protection. The coaxial feed system can be fully pressurized and features twin 'O' ring seals on the feed point insulators. The panels are tolerant of light icing (radomes are available for use under heavy icing conditions down to -40 degrees C) and has a very low VSWR (typically less than 1.05:1) over the entire 174 - 230MHz band depending on the system configuration.

These panels are ideal array elements for triangular mast with a 1.2m face and can provide omnidirectional patterns with less than ± 1 dB variation. By varying the number and positions of panels and feed amplitude/phase, patterns can be customized to optimize coverage over a given service area. The use of three panels around the structure offers significant cost and wind load reduction over four sided arrangements.



657 Panel



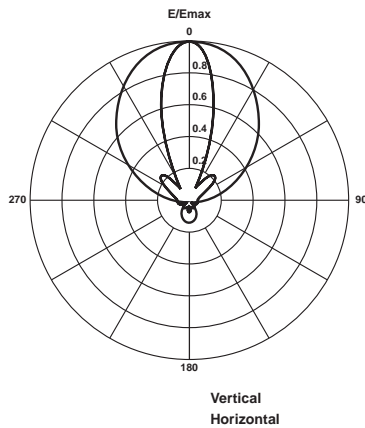
658 Panel

657, 658 series

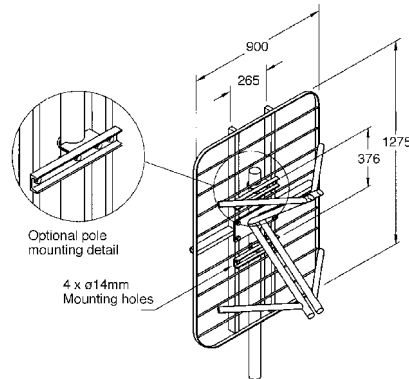
SPECIFICATIONS	657	658
Frequency Range, MHz	174 - 230	174 - 230
Operating Frequency Ranges, MHz	174 - 202, 202 - 230	174 - 202, 202 - 230
Number of Channels	Multichannel	Multichannel
Nominal Gain (Mid-band), dBd	7.0	10.0
Half Power Beamwidth Azimuth, degrees	77	77
Return Loss, dB	23	23
Input Connector	7-16 DIN; 7/8" EIA Flange	7-16 DIN; 7/8" EIA Flange
Power Rating, kW	2.7; 4 Note#1	2.7; 4 Note#1
Impedance, ohms	50 unbalanced	50 unbalanced
Weight, kg (lb)	33 (73)	75 (166)
Mounting (Standard), mm (in)	4 x 12mm (1/2) bolts	4 x 12mm (1/2) bolts
Effective Area Front (full antenna), sq m (sq ft)	0.40 (4.30)	0.80 (8.61)
Effective Area Side (full antenna), sq m (sq ft)	0.50 (5.38)	1.10 (11.83)
Design Wind Speed (max), km/h (mph)	240 (150)	240 (150)
Pressurization Operational, kPa (psi)	10 - 35 (1.5 - 5) 7/8" EIA Version	10 - 35 (1.5 - 5) 7/8" EIA Version
Pressurization Test, kPa (psi)	100 (15) 7/8" EIA Version	100 (15) 7/8" EIA Version
Material - Insulators	PTFE	PTFE
Material - Radiators	Hot Dipped Galvanized steel	Hot Dipped Galvanized steel
Material - Reflecting Screen	Hot Dipped Galvanized steel	Hot Dipped Galvanized steel

Note1

Power rating is limited by the input connector type. 2.7kW for 7-16 DIN, 4kW for 7/8" EIA



Radiation Pattern



657 Panel

Band III (High VHF) TV/DAB Panel Arrays 174 - 240 MHz

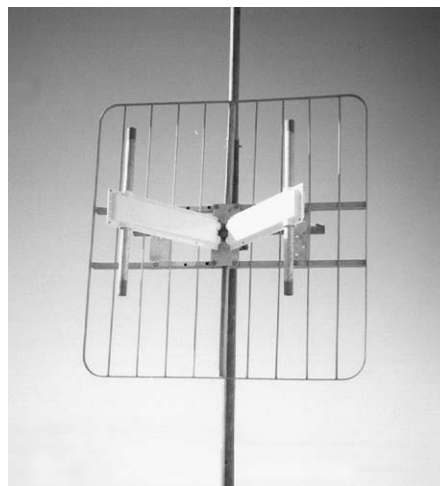
659, 660 Series

This series of panel antennas is ideal for four sided array design to provide a customized coverage for vertically polarized use in Band III. Model 659 has a nominal gain of 8dBd and the model 660 has a nominal gain of 11dBd.

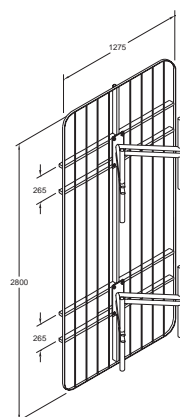
- Suitable for multi station use, DAB and DTV
- Vertical polarization
- Cyclone rated
- Rugged galvanized steel construction for maximum corrosion protection
- Low wind load
- Pressurizable coaxial feed
- Low VSWR full band operation
- Ideal array element allowing for a number of standard horizontal radiation patterns as well as customized patterns, contact RFS for details
- Medium power, unpressurized version available
- Temperature range -40 to +60 degrees C available

Construction from thick walled tube and solid steel bar gives a heavy duty panel which is designed for operation in very harsh environments. This design also ensures ideal hot dip galvanizing for optimum corrosion protection. The coaxial feed system can be fully pressurized and features twin 'O' ring seals on the feed point insulators. The panels are tolerant of light icing (radomes are available for use under heavy icing conditions down to -40 degrees C) and has a very low VSWR (typically less than 1.05:1) over the entire 174 - 230 MHz band depending on the system configuration.

These panels are ideal array elements having low sidelobes, low mutual couplings between panels and high power ratings across the full band. This results in complete antenna systems that have very wide VSWR and pattern bandwidth. The ability to utilize larger tower cross sections allows support for a top mounted UHF antenna such as our PHP or PVP UHF antenna arrays. This provides a powerful combination for delivering DTV and/or DAB systems customized to suit the coverage requirements of the customer.



659 Panel



660 Panel

659, 660 Series

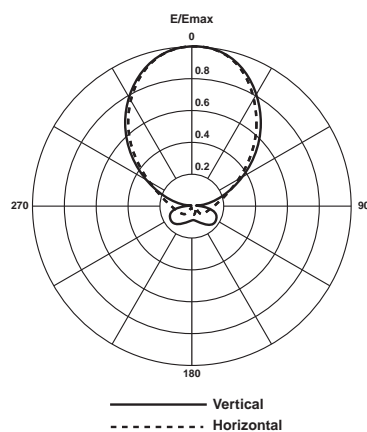
SPECIFICATIONS	659	660
Frequency Range, MHz	174 - 240	174 - 240
Polarization	Vertical	Vertical
Number of Channels	Multichannel	Multichannel
Nominal Gain (Mid-band), dBd	8.0	11.0
Half Power Beamwidth Azimuth, degrees	64	64
Return Loss, dB	26	26
Input Connector	7-16 DIN; 7/8" EIA Flange	7-16 DIN; 7/8" EIA Flange
Power Rating, kW	2.7; 4 Note#1	2.7; 4 Note#1
Impedance, ohms	50 unbalanced	50 unbalanced
Weight, kg (lb)	35 (77)	80 (177)
Mounting (Standard), mm (in)	4 x 12mm (1/2) bolts	4 x 12mm (1/2) bolts
Effective Area Front (full antenna), sq m (sq ft)	0.40 (4.30)	0.80 (8.61)
Effective Area Side (full antenna), sq m (sq ft)	0.50 (5.38)	1.10 (11.83)
Design Wind Speed (max), km/h (mph)	240 (150)	240 (150)
Pressurization Operational, kPa (psi)	10 - 35 (1.5 - 5)	10 - 35 (1.5 - 5)
Pressurization Test, kPa (psi)	100 (15) 7/8" EIA Version	100 (15) 7/8" EIA Version
Material - Insulators	PTFE	PTFE
Material - Radiators	Hot Dipped Galvanized steel	Hot Dipped Galvanized steel
Material - Reflecting Screen	Hot Dipped Galvanized steel	Hot Dipped Galvanized steel

Note1

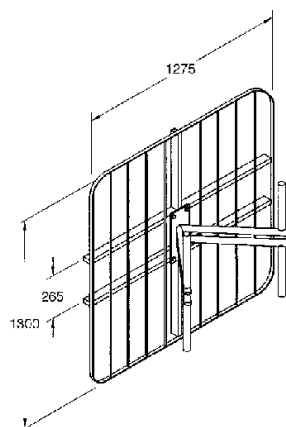
Power rating is limited by the input connector type. 2.7kW for 7-16 DIN, 4kW for 7/8" EIA

Note2

The 659 antenna has been primarily designed as a vertically polarized array element where low levels of mutual coupling exist between vertically stacked radiators. It may be used as a horizontally polarized panel in situations where a single bay (or level) of panels is used. This will provide better array VSWR in that circumstance. Where multiple levels of horizontally polarized antennas are needed, the 655 panel is recommended.



Radiation Pattern



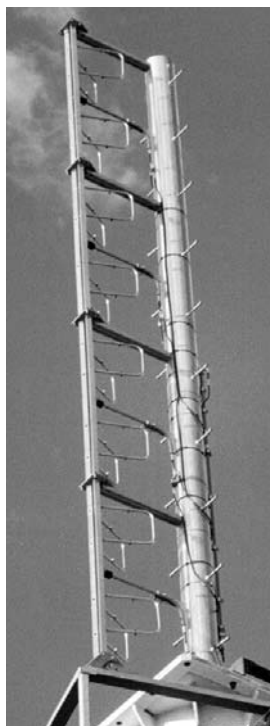
659 Panel

661 Series

Quadrant antennas provide a cost effective top or side mount TV antenna for omnidirectional coverage in Band III.

- Designed for high corrosion resistance and long life in harsh environments
- Includes top mounted hot dip galvanized support pole
- All solid outer, jacketed cables for high reliability
- Stainless steel radiators
- Omnidirectional coverage
- Horizontal polarization
- Available in low power (unpressurized) and medium power (pressurized) versions

Quadrant antennas are ideal for low and medium power single channel Band III TV applications. Coverage is basically omnidirectional and may be altered somewhat by adjustment of the positions of the radiators on the RFS antenna test range. Each bay comprises two radiating elements to give approximately 3.5dBd gain. Up to six bays are available to meet higher gain needs. The antenna system may be operated with pressurized or unpressurized feeders.



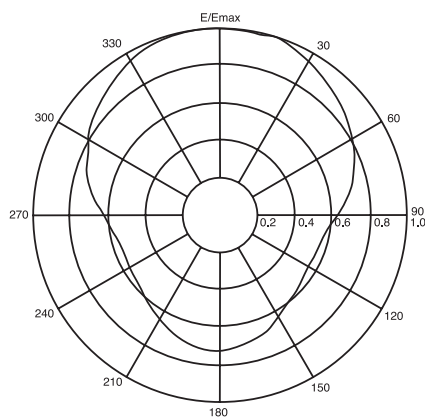
661-4

661 Series

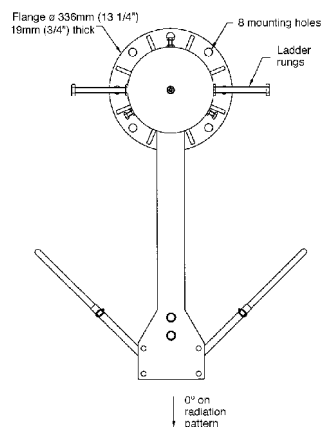
SPECIFICATIONS (ALL MODELS)

Frequency Range, MHz	174 - 230
Polarization	Horizontal
Number of Channels	Single
Return Loss, dB	26 Vision, 23 across channel
Input Connector	7/8" EIA Flange
Power Rating, kW	0.25/bay unpressurized; 2.5/bay pressurized
Impedance, ohms	50 unbalanced
Base Diameter, mm (in)	336 (13-1/4)
Mounting (Standard), mm (in)	8 x 20mm (3/4) bolts on 297mm (11-3/4) PCD
Design Wind Speed (max), km/h (mph)	240 (150)
Pressurization Operational, kPa (psi)	10 - 35 (1.5 - 5)
Pressurization Test, kPa (psi)	100 (15)
Material - Insulators	PTFE
Material - Support Pole / Mounting	Galvanized Steel
Material - Radiators	Stainless Steel

SPECIFICATIONS	661-1	661-2	661-4	661-6
Nominal Gain (Mid-band), dBd	3.5	6.5	9.5	11.0
Weight, kg (lb)	90 (198)	190 (419)	275 (606)	675 (1488)
Effective Area Front (full antenna), sq m (sq ft)	0.871 (9.40)	1.530 (16.50)	2.848 (30.60)	4.166 (44.80)
Effective Area Side (full antenna), sq m (sq ft)	0.823 (8.90)	1.447 (15.60)	2.693 (29.00)	3.939 (42.40)
Base Moment, kNm (lb-ft)	1.786	5.510	19.09	40.84
Base Shear, kN (lb)	1.854	3.256	6.06	8.864



Azimuth Radiation Pattern



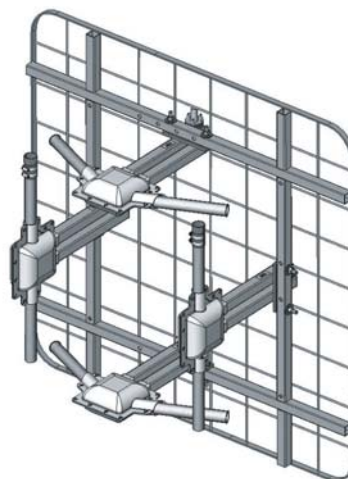
Top View

662 Series

The 662 series has been designed for circularly polarized Band III TV/DAB applications or alternatively, combined horizontal and vertical applications in the 174 - 230MHz frequency range and is extremely useful as an antenna building block.

- Horizontal, vertical or circular polarization, depending on model
- Full band (174 - 230MHz) operation is possible
- High power handling capacity
- Designed for high corrosion resistance and long life in harsh environments
- Array design allows a variety of standard radiation patterns and customized patterns to suit customer requirements. Contact RFS for details

Four dipoles are mounted in square configuration off a reflective screen to enable the horizontal and vertical components to be fed separately. It is possible to radiate separate services on horizontal, vertical or circular polarization using the one antenna system with a resultant saving on antenna and tower space and cost. The dipoles are fabricated from stainless steel for maximum corrosion protection. The screen is hot dipped galvanized to international standards. 662CP panels are available with either 2 or 4 input connectors while 662HP and 662VP panels are available with either 1 or 2 input connectors. All panels are available with either 7-16 DIN or 7/8" EIA flanged input connectors. The 7-16 DIN versions are un-pressurized. Contact RFS for details.



662 Antenna

662 Series

SPECIFICATIONS	662CP	662HP	662VP
Frequency Range, MHz	174 - 230	174 - 230	174 - 210; 190 - 240
Polarization	Circular, Horizontal, Vertical	Horizontal	Vertical
Number of Channels	Multichannel	Multichannel	Multichannel
Nominal Gain (Mid-band), dBd	4.5/ plane	4.5/ plane	4.5/ plane
Half Power Beamwidth Azimuth, degrees	65	65	65
Return Loss, dB	26	26	26
Input Connector	4 x 7-16 DIN; 4 x 7/8" EIA Flange, 2 x 7-16 DIN; 2 x 7/8" EIA Flange Note#2	2 x 7-16 DIN; 2 x 7/8" EIA Flange, 1 x 7-16 DIN; 1 x 7/8" EIA Flange Note#3	2 x 7-16 DIN; 2 x 7/8" EIA Flange, 1 x 7-16 DIN; 1 x 7/8" EIA Flange Note#3
Power Rating per Input, kW	2.7; 4 Note#1	2.7; 4 Note#1	2.7; 4 Note#1
Impedance, ohms	50 unbalanced	50 unbalanced	50 unbalanced
Weight, kg (lb)	50 (110)	50 (110)	50 (110)
Mounting (Standard), mm (in)	4 x 12mm (1/2) bolts	4 x 12mm (1/2) bolts	4 x 12mm (1/2) bolts
Effective Area Front (full antenna), sq m (sq ft)	0.75 (8.07)	0.6 (6.46)	0.6 (6.46)
Effective Area Side (full antenna), sq m (sq ft)	0.7 (7.53)	0.6 (6.46)	0.6 (6.46)
Design Wind Speed (max), km/h (mph)	240 (150)	240 (150)	240 (150)
Pressurization Operational, kPa (psi)	10 - 35 (1.5 - 5)	10 - 35 (1.5 - 5)	10 - 35 (1.5 - 5)
Pressurization Test, kPa (psi)	100 (15)	100 (15)	100 (15)
Material - Insulators	PTFE	PTFE	PTFE
Material - Radiators	Stainless Steel	Stainless Steel	Stainless Steel
Material - Reflecting Screen	Hot Dipped Galvanized steel	Hot Dipped Galvanized steel	Hot Dipped Galvanized steel

Note1

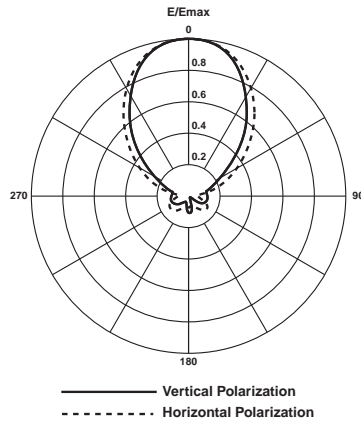
Power rating is limited by the input connector type. 2.7kW for 7-16 DIN, 4kW for 7/8" EIA

Note2

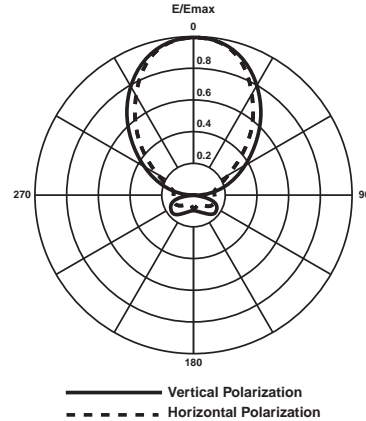
662CP Model is available with quad or dual inputs

Note3

662HP and 662VP models available with dual or single inputs



Radiation Patterns per Plane of Polarization HRP



Radiation Patterns per Plane of Polarization VRPs

663 Series

The 663 series has been designed for horizontally polarized VHF Band III TV applications.

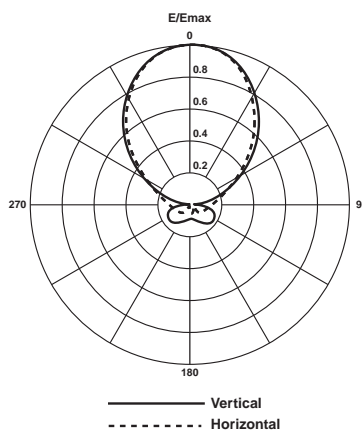
- Digital TV compatible
- Horizontal polarization
- High power handling capacity
- Designed for high corrosion resistance and long life in harsh environments

Each panel consists of two dipoles mounted in front of a plane reflector. The baluns are mounted in front of the reflector, and support the dipoles. The panel is fully radomed with a fiberglass reinforced plastic radome. The radiator assemblies may be fitted onto the backscreen in an inverted format when assembled as an array element. The dipole and screen element are fabricated from 6000 series aluminum for maximum corrosion protection. Each panel is fed by a single 7/8" EIA flange connector.



663 Antenna

SPECIFICATIONS	663
Frequency Range, MHz	174 - 230
Polarization	Horizontal
Number of Channels	Multichannel
Nominal Gain (Mid-band), dBd	7.0
Half Power Beamwidth Azimuth, degrees	66
Return Loss, dB	> 26 array element, 20 single element
Input Connector	7/8" EIA Flange
Power Rating, kW	4
Peak Voltage Rating, kV	2.7
Impedance, ohms	50 unbalanced
Weight, kg (lb)	50 (110)
Dimensions (Height or Length), cm (in)	120 (47-1/4)
Dimensions (Width), cm (in)	120 (47-1/4)
Dimensions (Depth), cm (in)	66 (26)
Mounting (Standard), mm (in)	8 x 10mm (3/8) bolts
Effective Area Front (full antenna), sq m (sq ft)	0.90 (9.70)
Effective Area Side (full antenna), sq m (sq ft)	1.10 (11.80)
Design Wind Speed (max), km/h (mph)	240 (150)
Wind Load @ 50 m/sec Front, kN (lb)	3.51 (790)
Wind Load @ 50 m/sec Side, kN (lb)	1.90 (427)
Wind Load @ 50 m/sec Rear, kN (lb)	4.75 (1067)
Pressurization Operational, kPa (psi)	10 - 35 (1.5 - 5)
Pressurization Test, kPa (psi)	100 (15)



Radiation Pattern

618 Series

These vertically polarized antennas for TV and DAB broadcasting applications are intended for use where low wind loadings are required. They are designed to be sidemounted to a tower leg or pole and optional mounting brackets are available for this purpose.

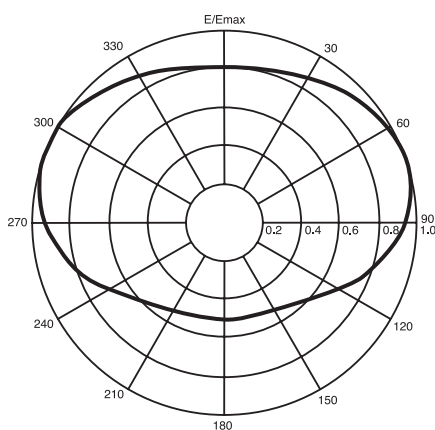
- Rugged construction for maximum corrosion protection
- Broadband operation
- Multichannel use if required
- Optional pressurization
- Low windload to minimize tower or mast costs
- Vertical polarization
- Temperature range -40 to +60 degrees C available

The 618 series are fabricated from stainless steel and will handle up to 4kW input power per bay for standard models. Beam tilt and null fill can be provided on request. Radomes are available for the 618 series if required.

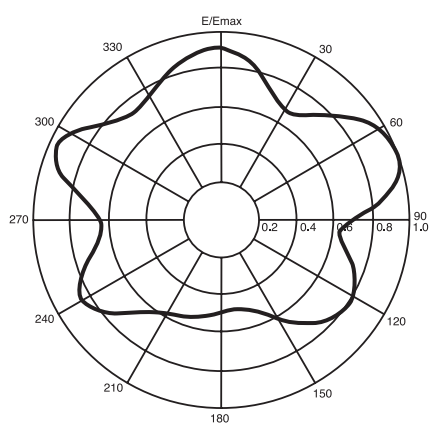
Multiple element arrays are supplied as a complete package including power dividers and distribution cables. An optional input tuner ensures optimum VSWR performance after installation as it enables the effects of tower steelwork to be eliminated. The 618 series can be arrayed with up to 6 or more bays as required. Horizontal radiation patterns can be modified on the RFS antenna test range if required, by adjusting the spacing between the antenna and tower.



618 Antenna



Azimuth Pattern Support pole spaced 0.25 wavelengths from tower.



Azimuth Pattern Support pole spaced 1.1 wavelengths from tower (reduced bandwidth).

Band III (VHF) TV/DAB Sidemount Antennas 174 - 240 MHz

618 Series

SPECIFICATIONS (ALL MODELS)

Frequency Range, MHz	174 - 240
Polarization	Vertical
Azimuth Radiation Pattern	Omnidirectional + 3 dB (Note#1)
Return Loss, dB	Typically 20 over 50MHz, 30 single channel, field tunable
Impedance, ohms	50 unbalanced
Dimensions (Height or Length), cm (in)	69.5 (27-3/8) typical
Dimensions (Width), cm (in)	6 (2-3/8)
Dimensions (Depth), cm (in)	100.8 (39-11/16)
Mounting (Standard), mm (in)	Clamping Dia. 43 - 76mm (1-3/4 - 3)
Pressurization Operational, kPa (psi)	10 - 35 (1.5 - 5)
Pressurization Test, kPa (psi)	100 (15)

SPECIFICATIONS	618-1	618-2	618-3
Nominal Gain (Mid-band), dBd	0	3.0	4.7
Input Connector	7-16 DIN ; 7/8" EIA Flange	7/8"EIA Flange ; 1-5/8" EIA Flange	7/8"EIA Flange ; 1-5/8" EIA Flange
Power Rating, kW	4	8 Note#2	12 Note#2
Weight, kg (lb)	8 (18)	30 (66)	45 (99)
Effective Area Front (full antenna), sq m (sq ft)	Ant 0.11 (1.18) Note #3	Ant 0.22 (2.37) Note #3	Ant 0.33 (3.55) Note #3
Wind Load @ 50 m/sec Front, kN (lb)	0.13 (30) Note#5	0.26 (60) Note#4 #5	0.39 (90) Note#4 #5

SPECIFICATIONS	618-4	618-6
Nominal Gain (Mid-band), dBd	6.0	7.9
Input Connector	7/8"EIA Flange ; 1-5/8" EIA Flange	7/8"EIA Flange ; 1-5/8" EIA Flange
Power Rating, kW	16 Note #2	20
Weight, kg (lb)	65 (143)	105 (231)
Effective Area Front (full antenna), sq m (sq ft)	Ant 0.44 (4.74) Note #3	Ant 0.66 (7.10) Note #3
Wind Load @ 50 m/sec Front, kN (lb)	0.52 (120) Note#4 #5	0.78 (180) Note#4 #5

Note 1

When antenna is mounted on a mast/tower with a face width of less than 150mm.

Note 2

Input power is limited to 5 kW maximum if a 7/8" connector is used.

Note 3

Connecting cables are not included in calculations - 0.03 meters squared per metre length should be allowed.

Note 4

Power divider included and considered adjacent to antennas.

Note 5

Calculated in accordance with AS1170-1989, Part 2: "SAA Loading Code - Wind Forces".

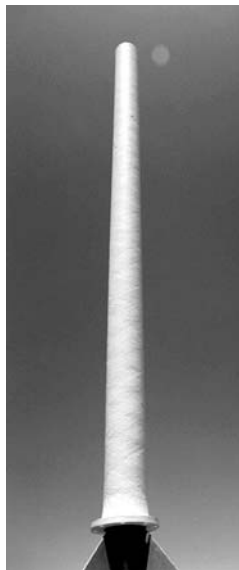
UD Series

The UD series are vertically polarized antennas which are complementary to the CBS series of slot antennas. They are ideal for low powered UHF TV transposer applications.

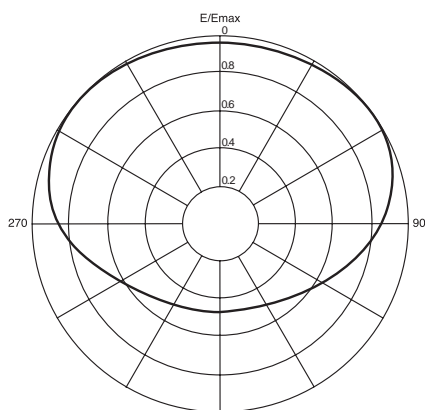
- Broadband design for Digital TV or multichannel use
- Band IV (470-650MHz) and Band V (620-860MHz) versions available
- Designed for maximum corrosion protection
- Vertically polarized
- Cyclone rated
- Can be pressurized if required
- Low wind loading

These dipole antennas are designed for broadband operation. Construction is of aluminum and the antenna is housed within a fiberglass radome which has been designed to survive wind speeds of 230 km/h (143mph).

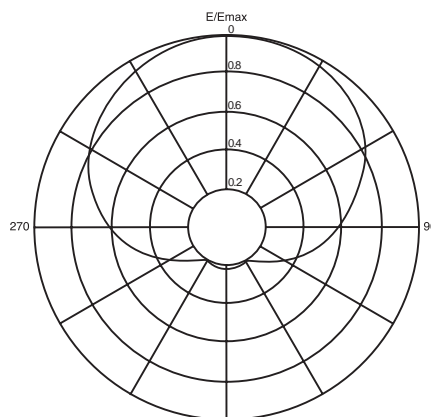
A range of dipole arrays (4 bay, 8 bay and 12 bay) are designed for various gain requirements. Dual inputs and custom VRPs are available as options. Custom azimuth patterns with a reduced backlobe are also available. Consult RFS for details.



8UD



Typical Azimuth Radiation Pattern Standard



Typical Azimuth Radiation Pattern Custom

Band IV/V (UHF) Dipole Arrays

470 - 860 MHz

UD Series

SPECIFICATIONS	4UD	8UD	12UD
Frequency Range, MHz	470 - 860	470 - 860	470 - 860
Operating Frequency Ranges, MHz	470 - 650,620 - 860	470 - 650,620 - 860	470 - 650,620 - 860
Polarization	Vertical	Vertical	Vertical
Number of Channels	Multichannel	Multichannel	Multichannel
Nominal Gain (Mid-band), dBd	9	12	14
Return Loss, dB	20	20	20
Input Connector	7/8" EIA Flange	7/8" EIA Flange	7/8" EIA Flange
Power Rating, kW	0.6	1.2	1.8
Impedance, ohms	50 unbalanced	50 unbalanced	50 unbalanced
Weight, kg (lb)	23 (51)	35 (77) Band IV;33 (73) Band V	65 (143) Band IV;56 (123) Band V
Dimensions (Height or Length), cm (in)	240 (94)	460 (181) Band IV;360 (142) BandV	610 (240) Band IV;530 (209) Band V
Mounting (Standard), mm (in)	8 x 20mm (3/4) bolts on a 292mm (11-1/2) PCD	8 x 20mm (3/4) bolts on a 292mm (11-1/2) PCD	8 x 20mm (3/4) bolts on a 292mm (11-1/2) PCD
Effective Area Front (full antenna), sq m (sq ft)	0.40 (4.3)	0.94 (10.1)	1.34 (14.4)
Design Wind Speed (max), km/h (mph)	230 (144)	230 (144)	230 (144)
Wind Load @ 50 m/sec Front, kN (lb)	0.47 (110)	1.12 (250)	1.59 (360)
Pressurization Operational, kPa (psi)	10 - 35 (1.5 - 5)	10 - 35 (1.5 - 5)	10 - 35 (1.5 - 5)
Pressurization Test, kPa (psi)	100 (15)	100 (15)	100 (15)
Material - Radome	fiberglass	fiberglass	fiberglass
Material - Support Pole / Mounting	aluminum/Silver plated brass/stainless steel	aluminum/Silver plated brass/stainless steel	aluminum/Silver plated brass/stainless steel
Material - Radiators	aluminum/Silver plated brass/stainless steel	aluminum/Silver plated brass/stainless steel	aluminum/Silver plated brass/stainless steel

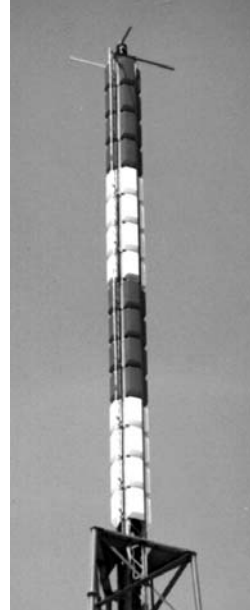
PHP, PVP Series

The PHP and PVP broadband panels are designed as building blocks for integration into complex antenna arrays or they can be used individually for simple antenna systems. Both models cover their associated transmitting bands without field adjustment.

- Fully re-engineered for Digital TV
- Corrosion resistant aluminum (optional stainless steel) construction with fiberglass radome
- PHP model - horizontal polarization
- PVP model - vertical polarization
- Low wind loading
- Cyclone rated
- Full band operation
- High power rating
- Array design allows a variety of horizontal radiation patterns with or without vertical beam tilt and null fill, contact RFS for details
- Temperature range -40 to +60 degrees C available

Standard antennas are pressurizable and have a 7/8" EIA input connector. The input connector is orientated vertically and a capacitive probe is supplied at the input. Panels can also be supplied with dual 7/8" EIA or single 1-5/8" EIA connectors to achieve the full 5kW power rating. 7-16 DIN input connectors are also available for low power, unpressurized operation. Radomes for individual panels are supplied in white and orange as standard and other Colors are available.

Array design can provide any of an almost infinite variety of horizontal patterns, with or without vertical beam tilt and null fill. Omnidirectional radiation characteristics can be achieved by mounting any number of panels around a suitably sized supporting structure. With a five panel configuration climbing access can be provided within the tower, a higher power rating for each level can be attained and, because of the larger cross section tower, higher gains can be achieved with less mechanical deflection due to windload.



PHP64 (Four sided) Array



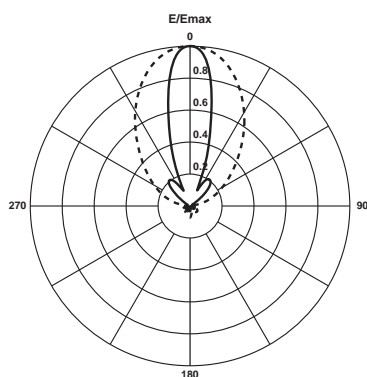
PVP Antenna Panel

PHP, PVP Series

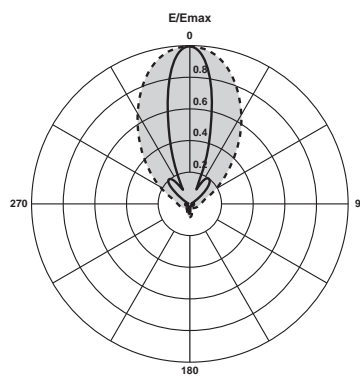
SPECIFICATIONS	PHP	PVP
Frequency Range, MHz	470 - 860	470 - 860
Polarization	Horizontal	Vertical
Number of Channels	Multichannel	Multichannel
Nominal Gain (Mid-band), dBd	11 - 13	11 - 13
Half Power Beamwidth Azimuth, degrees	60	60
Return Loss, dB	25	25
Input Connector	7-16 DIN; 7/8" EIA Flange; 1-5/8" EIA Flange	7-16 DIN; 7/8" EIA Flange; 1-5/8" EIA Flange
Power Rating, kW	2.5 Note # 1	2.5 Note # 1
Impedance, ohms	50 unbalanced	50 unbalanced
Weight, kg (lb)	11.5 (26)	12 (26)
Mounting (Standard), mm (in)	4 x 12mm (1/2) bolts	4 x 12mm (1/2) bolts
Effective Area Front (full antenna), sq m (sq ft)	0.35 (3.77)	0.45 (4.84)
Effective Area Side (full antenna), sq m (sq ft)	0.33 (3.55)	0.35 (3.76)
Design Wind Speed (max), km/h (mph)	240 (150)	240 (150)
Pressurization Operational, kPa (psi)	10 - 35 (1.5 - 5) 7/8" EIA Version	10 - 35 (1.5 - 5) 7/8" EIA Version
Pressurization Test, kPa (psi)	100 (15) 7/8" EIA Version	100 (15) 7/8" EIA Version
Material - Radome	fiberglass	fiberglass
Material - Insulators	PTFE	PTFE
Material - Radiators	Corrosion resistant aluminum (optional Stainless Steel)	Corrosion resistant aluminum (optional Stainless Steel)
Material - Reflecting Screen	Corrosion resistant aluminum	Corrosion resistant aluminum
Colour	White or Red radome standard, other upon request	White or Red radome standard, other upon request

Note 1

Power rating is limited by input connector. 5kW version available with dual 7/8" EIA inputs or single 1-5/8" EIA input.



Radiation Pattern PHP

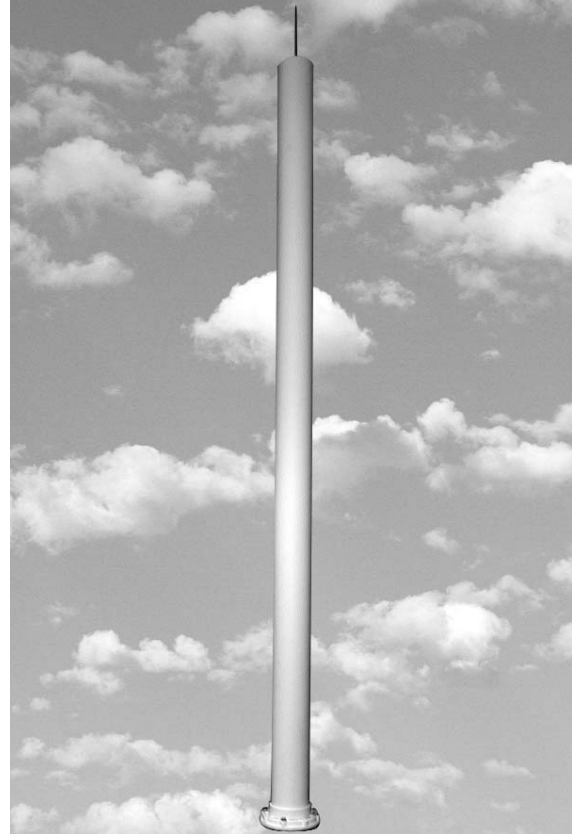


Radiation Pattern PVP

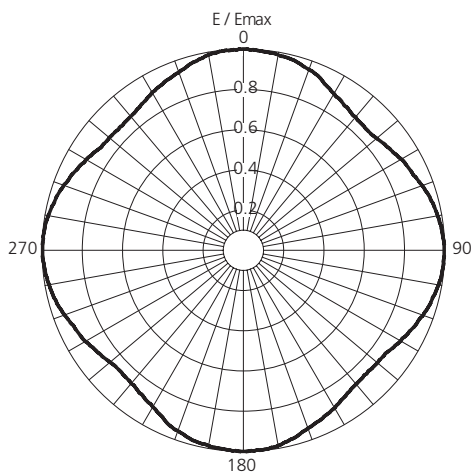
STA Series

A new ultra-slim and lightweight superturnstile UHF broadcast antenna supports the entire US and European UHF bands (470 to 862 MHz). This antenna exhibits pattern circularity that competing, higher priced, point antennas struggle to achieve. The profile of our new superturnstile is less than that of competing UHF broadband antennas. This has resulted in a significant reduction in wind loading and weight, providing broadcasters with enormous flexibility when considering installation on existing loaded towers.

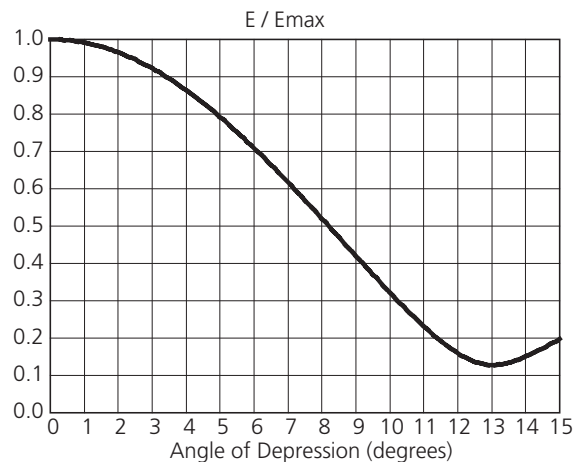
- Ideal low cost and wind load solution
- Ideal for many low, medium and high power broadcast applications.
- Exhibits pattern ripple of better than ± 1.5 dB across the entire UHF band
- Low drag profile underpins the antenna's high wind speed rating and low wind load characteristics
- Uniquely cost-effective
- Single rod lightning protection, fully DC grounded



STA Antenna



Azimuth Radiation Pattern



Elevation Pattern STA40

Band IV/V (UHF) Superturnstile Antennas 470 - 862 MHz

STA Series

SPECIFICATIONS	STA40	STA80	STA120	STA160
Frequency Range, MHz	470 - 862	470 - 862	470 - 862	470 - 862
Polarization	Horizontal	Horizontal	Horizontal	Horizontal
Number of Channels	Multichannel	Multichannel	Multichannel	Multichannel
Nominal Gain ¹ (Mid-band), dBd	7.3	10.1	11.8	12.9
Azimuth Radiation Pattern	Omnidirectional	Omnidirectional	Omnidirectional	Omnidirectional
Return Loss ² , dB	>26 across frequency range	>26 across frequency range	>26 across frequency range	>26 across frequency range
Input Connector Options ³	1-5/8" EIA	1-5/8" EIA	1-5/8" EIA	3-1/8" EIA
Impedance, ohms	50 unbalanced	50 unbalanced	50 unbalanced	50 unbalanced
Mounting (Standard)	Base Flange Mount	Base Flange Mount	Base Flange Mount	Base Flange Mount
Radome diameter, mm (in)	320 (12.6)	320 (12.6)	320 (12.6)	550 (21.7)
Length, m (ft)	2.84 (9.3)	4.80 (15.7)	6.90 (22.6)	9.00 (29.5)
Weight, kg (lb)	50 (110)	140 (309)	230 (507)	320 (705)
Wind Speed (max), km/h (mph)	240 (150)	240 (150)	240 (150)	240 (150)
Input Power Average (max), kw				
Low power version	5	5	5	20
Medium power version	10	20	30	40

Note 1

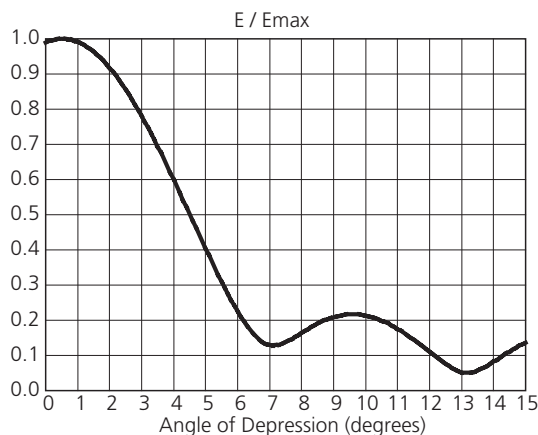
Includes all internal losses, including internal cable attenuation and loss due to null fill.

Note 2

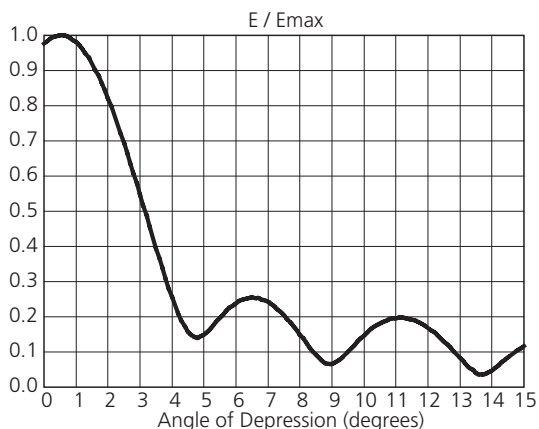
Can be optimized in in operating channels by tuning.

Note 2

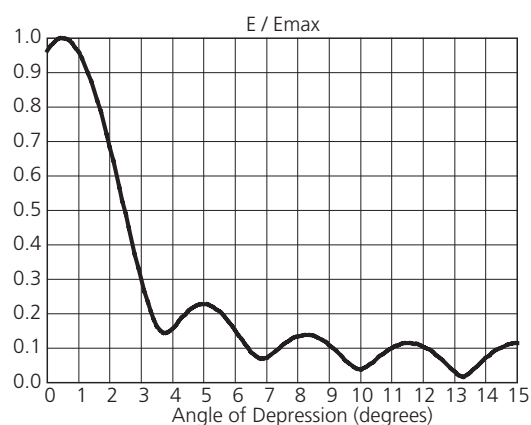
Radome diameter, weight and connector options are specified for low power version.



Elevation Pattern STA80



Elevation Pattern STA120



Elevation Pattern STA160

CBS Series

Slot antennas are a popular method of providing versatile antennas for UHF TV broadcasting applications. They offer extremely low wind loading characteristics and thus, low cost support structures. They are also aesthetically pleasing, having a low profile while maintaining great strength for the most severe weather conditions. The RFS CBS series of slot antennas were developed for Band IV and V antenna applications, offering bandwidths up to 110MHz for multichannel operation.

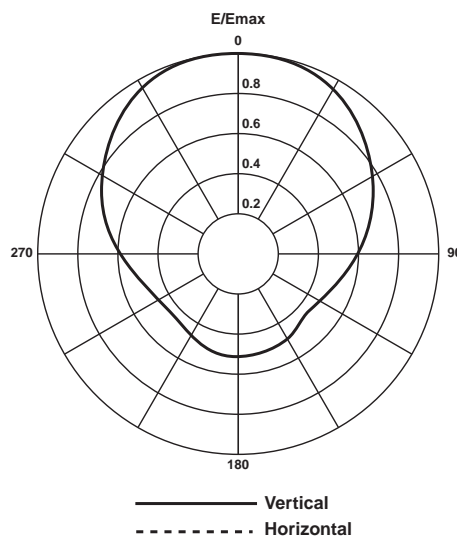
- Copper/brass construction - stainless steel mounting interface
- Horizontal polarization
- Low wind loading
- Fully pressurized
- Multichannel operation is possible
- Temperature range -40 to +60 degrees C available

These antennas offer many advantages over comparable panel arrays. Of compact cylindrical construction they are ideal for use in situations where low wind loadings are a primary concern. Mounting to a single leg of a tower structure is possible and on site assembly, erection and aligning are relatively simple. Minimal maintenance is required. Also available is a CBS7LP for low powered Band V repeater applications. The CBS7LP is of special lightweight construction with a simple 38mm stainless steel pole for mounting. It is rated to 200W maximum (type N input connector). An improved VSWR over one or two channels can be provided by an additional tuning unit that is connected to the input terminal of the antenna. Having a 7/8" EIA flange input (excepting the CBS7LP), plus the totally sealed fiberglass radome, these antennas are fully pressurizable and may be operated unpressurized by removal of a drain plug. They are base mounted, have considerable aesthetic appeal and have been designed to survive cyclonic conditions.

The standard CBS series is also available as a dual stack antenna (designated 2CBS series) with two CBS radiators stacked in a single fiberglass radome. Dual inputs are available on the 2CBS series as an option.



CBS7



Typical Azimuth Radiation Pattern

SPECIFICATIONS (ALL MODELS)

Polarization	Horizontal
Return Loss, dB	20 Note #1
Null Fill (minimum), %	5
Beam Tilt, degrees	1
Impedance, ohms	50 unbalanced
Material - Radome	fiberglass
Material - Radiators	Brass
Colour	Radome colour white or grey

Note 1

Better than 26dB over limited bandwidth with optional extra tuning unit.

Band IV/V (UHF) TV Slot Antennas

470 - 860 MHz

CBS Series

SPECIFICATIONS	CBS4	CBS5	CBS6	CBS7
Frequency Range, MHz	470 - 550	520 - 620	610 - 720	710 - 820
Nominal Gain (Mid-band), dBd	9.5	9.5	9.5	9.5
Input Connector	7/8" EIA Flange	7/8" EIA Flange	7/8" EIA Flange	7/8" EIA Flange
Power Rating, kW	1.3	1.3	1.3	1.3
Weight, kg (lb)	38 (84)	35 (77)	25 (55)	19 (42)
Dimensions (Height or Length), cm (in)	260 (102)	240 (91)	200 (79)	180 (71)
Base Diameter, mm (in)	336 (13-1/4)	336 (13-1/4)	336 (13-1/4)	215 (8-1/2)
Mounting (Standard), mm (in)	8 x 22mm (7/8) holes on a 292mm (11-1/2) PCD	8 x 22mm (7/8) holes on a 292mm (11-1/2) PCD	8 x 22mm (7/8) holes on a 292mm (11-1/2) PCD	8 x 22mm (7/8) holes on a 178mm (7) PCD
Effective Area Front (full antenna), sq m (sq ft)	0.54 (5.8)	0.49 (5.3)	0.40 (4.3)	0.21 (2.3)
Wind Load @ 50 m/sec Front, kN (lb)	0.64 (140)	0.56 (130)	0.47 (110)	0.25 (60)
Pressurization Operational, kPa (psi)	10 - 35 (1.5 - 5)	10 - 35 (1.5 - 5)	10 - 35 (1.5 - 5)	10 - 35 (1.5 - 5)
Pressurization Test, kPa (psi)	100 (15)	100 (15)	100 (15)	100 (15)
Material - Support Pole / Mounting	Base Flange - Stainless steel	Base Flange - Stainless steel	Base Flange - Stainless steel	Base Flange - Stainless steel

SPECIFICATIONS	CBS7LP	CBS8	2CBS4	2CBS5
Frequency Range, MHz	710 - 820	740 - 860	470 - 550	520 - 620
Nominal Gain (Mid-band), dBd	9.5	9.5	12.5	12.5
Input Connector	N type	7/8" EIA Flange	7/8" EIA Flange	7/8" EIA Flange
Power Rating, kW	0.2	1.3	1.3	1.3
Weight, kg (lb)	14 (31)	16 (35)	114 (251)	105 (232)
Dimensions (Height or Length), cm (in)	180 (71)	180 (71)	540 (213)	490 (191)
Base Diameter, mm (in)	See Mounting (Standard)	215 (8-1/2)	336 (13-1/4)	336 (13-1/4)
Mounting (Standard), mm (in)	Mount to 48mm (1-13/16) nominal stainless steel pipe	8 x 22mm (7/8) holes on a 178mm (7) PCD	8 x 22mm (7/8) holes on a 292mm (11-1/2) PCD	8 x 22mm (7/8) holes on a 292mm (11-1/2) PCD
Effective Area Front (full antenna), sq m (sq ft)	0.21 (2.3)	0.22 (2.4)	1.1 (11.8)	0.89 (9.6)
Wind Load @ 50 m/sec Front, kN (lb)	0.25 (60)	0.26 (60)		
Pressurization Operational, kPa (psi)	Unpressurized	10 - 35 (1.5 - 5)	10 - 35 (1.5 - 5)	10 - 35 (1.5 - 5)
Pressurization Test, kPa (psi)	N/A	100 (15)	100 (15)	100 (15)
Material - Support Pole / Mounting	Mounting pole - Stainless steel	Base Flange - Stainless steel	Base Flange - Stainless steel	Base Flange - Stainless steel

SPECIFICATIONS	2CBS6	2CBS7	2CBS8
Frequency Range, MHz	610 - 720	710 - 820	740 - 860
Nominal Gain (Mid-band), dBd	12.5	12.5	12.5
Input Connector	7/8" EIA Flange	7/8" EIA Flange	7/8" EIA Flange
Power Rating, kW	1.3	1.3	1.3
Weight, kg (lb)	75 (165)	60 (132)	51 (112)
Dimensions (Height or Length), cm (in)	420 (165)	420 (165)	400 (158)
Base Diameter, mm (in)	336 (13-1/4)	336 (13-1/4)	336 (13-1/4)
Mounting (Standard), mm (in)	8 x 22mm (7/8) holes on a 292mm (11-1/2) PCD	8 x 22mm (7/8) holes on a 292mm (11-1/2) PCD	8 x 22mm (7/8) holes on a 292mm (11-1/2) PCD
Effective Area Front (full antenna), sq m (sq ft)	0.91 (9.7)	0.45 (4.8)	0.91 (9.7)
Wind Load @ 50 m/sec Front, kN (lb)			
Pressurization Operational, kPa (psi)	10 - 35 (1.5 - 5)	10 - 35 (1.5 - 5)	10 - 35 (1.5 - 5)
Pressurization Test, kPa (psi)	100 (15)	100 (15)	100 (15)
Material - Support Pole / Mounting	Base Flange - Stainless steel	Base Flange - Stainless steel	Base Flange - Stainless steel

RD Series

The RD Series of wideband UHF antennas are lightweight in design, yet rugged in approach. They solve the critical question of using a single UHF antenna for multichannel Analog and DTV Broadcasting.

- Multichannel operation
- Wide bandwidth/ Low VSWR
- Power rating up to 160kW Average
- Top or Side mount
- Light weight/ Low wind load
- Single or Dual input
- Customized Vertical Pattern
- Multi pattern capacity

Utilizing slot cavity geometry, the RD series antenna is capable of wideband, low VSWR transmission for up to 120 MHz. This capability makes it possible for stations to utilize a single antenna for Analog and DTV channel allocation and relocation assignments which fall within 120 MHz of each other. Cavities are segmented into four groups. A unique one-piece aluminum extrusion integrates the antenna cavity and tower mounting backstructure, providing each four bay section with greater strength and power handling. Considering the requirements of tomorrow's broadcasting needs, the RD Series antenna combined with HELIFLEX transmission line, provides an alternative systems solution to heavy, stacked, slotted antennas and panel array antennas, minimizing tower load and maximizing tower space.

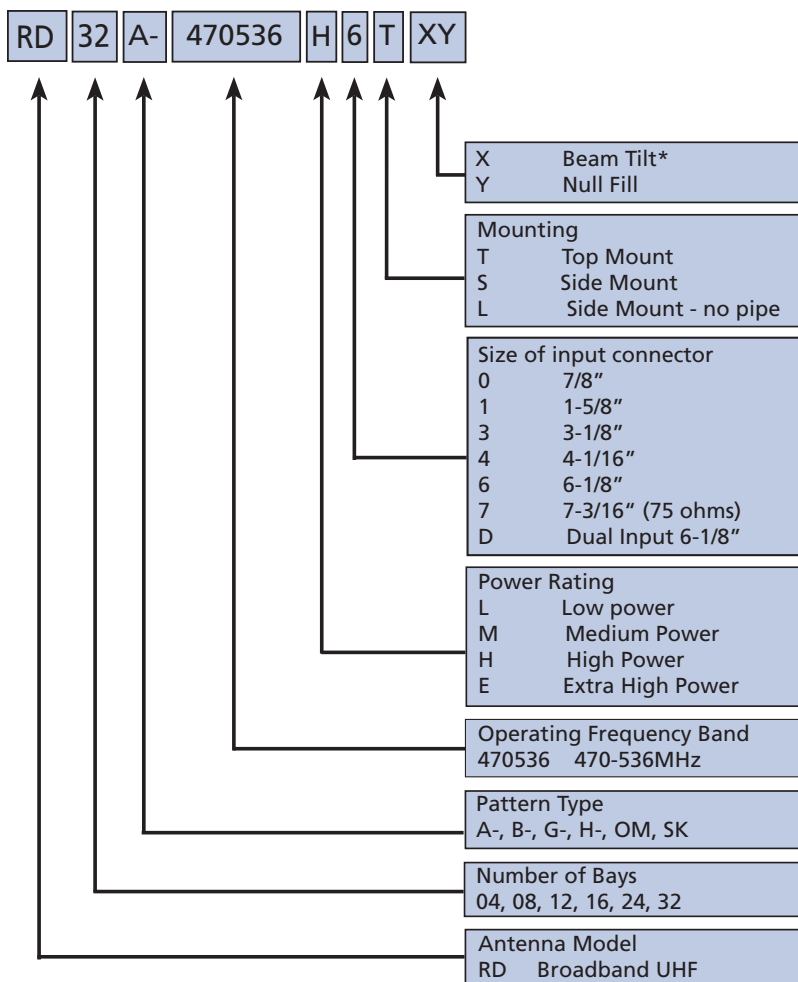
The RD antenna can also be used in various stacked arrangements especially in situations where adjacent channel combining may not be desired. By stacking an RD antenna either atop a panel antenna or another RD, increased channel capacity is obtained without pattern degradation as occurs in some other systems where an external feed is used to the top antenna.



SPECIFICATIONS (ALL MODELS)

Polarization	Horizontal
Number of Channels	Multichannel
Azimuth Radiation Pattern	A, B, G, H, OM, SK, Other Patterns on request.
Impedance, ohms	50 unbalanced

RD Series Ordering Information



RD Series Standard Power Rating

	Low Power			Medium Power			High Power		
	NTSC/PAL	Avg	Input	NTSC/PAL	Avg	Input	NTSC/PAL	Avg	Input
RD04	3 kW	2 kW	1-5/8" EIA, 50Ω	6 kW	4 kW	3-1/8" EIA, 50Ω	14 kW	10 kW	3-1/8" EIA, 50Ω
RD08	6 kW	4 kW	1-5/8" EIA, 50Ω	11 kW	8 kW	3-1/8" EIA, 50Ω	29 kW	20 kW	4-1/2" IEC, 50Ω ²
RD12	9 kW	6 kW	3-1/8" EIA, 50Ω	17 kW	12 kW	3-1/8" EIA, 50Ω	43 kW	30 kW	6-1/8" EIA, 50Ω
RD16	11 kW	8 kW	3-1/8" EIA, 50Ω	23 kW	16 kW	3-1/8" EIA, 50Ω	57 kW	40 kW	6-1/8" EIA, 50Ω
RD24	17 kW	12 kW	3-1/8" EIA, 50Ω	34 kW	24 kW	6-1/8" EIA, 50Ω	86 kW	60 kW	6-1/8" EIA, 50Ω ¹
RD32	23 kW	16 kW	3-1/8" EIA, 50Ω	45 kW	32 kW	6-1/8" EIA, 50Ω	86 kW	60 kW	6-1/8" EIA, 50Ω ³

Note 1

Power ratings are for single input models. Dual cavity versions can provide higher power ratings. Contact RFS for details.

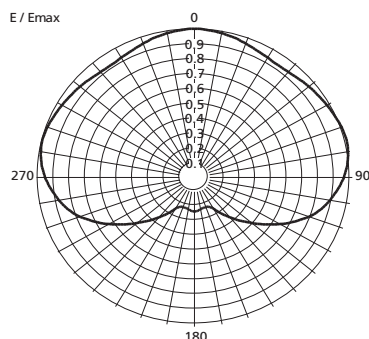
Note 2

Connector types and impedance may be varied to suit customer requirements, contact RFS for details.

Note 3

80 kW ave power option available with 7-3/16, 75 ohm input connector.

RD Antenna - A Pattern Data



Azimuth Pattern Gain 1.7 (2.3 dB)

RD Pattern & Cavity Group Specifications

Cavity Group	Frequency (MHz)
1	470 - 536
2	488 - 608
3	578 - 704
4	662 - 806

MECHANICAL SPECIFICATIONS

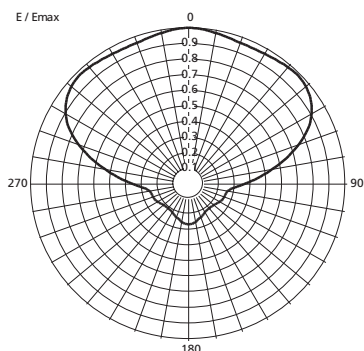
Cavity Group	Frequency Range	Height m (ft)	Height m (ft)	Weight Kg (lb)	Weight Kg (lb)	Effective Area (CaAc) sq m (sq ft)	Effective Area (CaAc) sq m (sq ft)
		Top Mount	Side Mount	Top Mount	Side Mount	Top Mount	Side Mount
RD04 - Gain 9.5 dBd (x 8.9)							
1	470 - 536	2.65 (8.7)	2.50 (8.2)	234 (515)	100 (220)	1.50 (16.1)	1.15 (12.4)
2	488 - 608	2.65 (8.7)	2.23 (7.3)	227 (500)	91 (200)	1.36 (14.6)	0.09 (10.9)
3	578 - 704	2.07 (6.8)	1.95 (6.4)	200 (440)	82 (180)	1.07 (11.5)	0.8 (8.6)
4	662 - 806	2.07 (6.8)	1.71 (5.6)	196 (430)	76 (166)	0.97 (10.4)	0.7 (7.5)
RD08 - Gain 12.2 dBd (x 16.6)							
1	470 - 536	5.09 (16.7)	4.97 (16.3)	450 (990)	254 (559)	2.96 (31.9)	2.31 (24.9)
2	488 - 608	4.48 (14.7)	4.39 (14.4)	409 (900)	236 (518)	2.60 (28.0)	2.02 (21.7)
3	578 - 704	3.96 (13.0)	3.84 (12.6)	373 (820)	218 (479)	2.11 (22.7)	1.56 (17.2)
4	662 - 806	3.50 (11.5)	3.38 (11.1)	350 (770)	205 (451)	1.85 (19.9)	1.40 (15.1)
RD12 - Gain 13.6 dBd (x 22.9)							
1	470 - 536	7.56 (24.8)	7.44 (24.4)	818 (1800)	357 (786)	4.43 (47.7)	3.47 (37.3)
2	488 - 608	6.64 (21.8)	6.43 (21.1)	741 (1630)	330 (725)	3.88 (41.8)	3.03 (32.6)
3	578 - 704	5.85 (19.2)	5.73 (18.8)	523 (1150)	303 (666)	3.15 (33.9)	2.40 (25.8)
4	662 - 806	5.12 (16.8)	5.03 (16.5)	477 (1050)	283 (623)	3.70 (39.7)	2.10 (22.6)
RD16 - Gain 14.7 dBd (x 29.5)							
1	470 - 536	10 (32.8)	9.91 (32.5)	1409 (3100)	478 (1052)	6.22 (67.0)	4.62 (49.8)
2	488 - 608	8.78 (28.8)	7.77 (28.5)	905 (1990)	441 (970)	5.43 (58.5)	4.03 (43.4)
3	578 - 704	7.71 (25.3)	7.60 (25)	855 (1880)	406 (892)	4.18 (45.0)	3.20 (34.4)
4	662 - 806	6.80 (22.3)	6.71 (22)	605 (1330)	380 (835)	3.68 (39.6)	2.81 (30.2)
RD24 - Gain 16.3 dBd (x 42.7)							
1	470 - 536	15.24 (50.0)	14.81 (48.6)	2864 (6300)	803 (1767)	9.85 (106.0)	6.93 (74.6)
2	488 - 608	13.41 (44.0)	13.01 (42.7)	2318 (5100)	747 (1644)	8.20 (88.3)	6.06 (65.2)
3	578 - 704	11.80 (38.7)	11.43 (37.5)	1796 (3950)	694 (1526)	6.69 (72.0)	4.80 (51.7)
4	662 - 806	10.42 (34.2)	10.03 (32.9)	1409 (3100)	656 (1442)	5.86 (63.1)	4.20 (45.2)
RD32 - Gain 17.5 dBd (x 56.2)							
1	470 - 536	20.12 (66.0)	19.66 (64.5)	5409 (11900)	1076 (2368)	14.03 (151.0)	9.24 (99.5)
2	488 - 608	17.68 (58.0)	17.34 (56.9)	4000 (8800)	1002 (2204)	12.27 (132.1)	8.07 (86.9)
3	578 - 704	15.58 (51.1)	15.21 (49.9)	3046 (6700)	931 (2047)	9.36 (100.7)	6.40 (68.9)
4	662 - 806	13.69 (44.9)	13.35 (43.8)	2705 (5950)	879 (1934)	8.22 (88.5)	5.60 (60.2)

Note:

1. Expected Pattern variation for the RD Series is typically less than +/- 5% for a 60 MHz bandwidth.

2. Weights are based on the high power model (LP and MP will be lighter). Typical Effective Area (CaAc) values are with wind to front of antenna and no ice.

RD Antenna - B Pattern Data



Azimuth Pattern Gain 2.5 (4.0dB)

RD Pattern & Cavity Group Specifications

Cavity Group	Frequency (MHz)
1	470 - 536
2	488 - 548
2	518 - 578
2	548 - 608
3	578 - 638
3	614 - 674
3	644 - 704
4	662 - 722
4	704 - 764
4	746 - 806

MECHANICAL SPECIFICATIONS

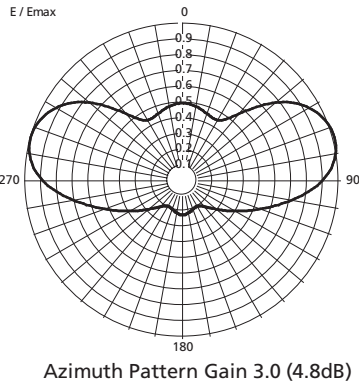
Cavity Group	Frequency Range	Height m (ft)	Height m (ft)	Weight Kg (lb)	Weight Kg (lb)	Effective Area (CaAc) sq m (sq ft)	Effective Area (CaAc) sq m (sq ft)
		Top Mount	Side Mount	Top Mount	Side Mount	Top Mount	Side Mount
RD4 - Gain 11.2 dBd (x 13.2)							
1	470 - 536	2.65 (8.7)	2.50 (8.2)	259.1 (570)	113.6 (250)	2.06 (22.2)	1.72 (18.5)
2	488 - 608	2.65 (8.7)	2.23 (7.3)	250.0 (550)	103.2 (227)	1.82 (19.6)	1.48 (15.9)
3	578 - 704	2.07 (6.8)	1.95 (6.4)	215.9 (475)	92.3 (203)	1.37 (14.8)	1.11 (11.9)
4	662 - 806	2.07 (6.8)	1.71 (5.6)	211.4 (465)	84.5 (186)	1.24 (13.3)	0.97 (10.4)
RD8 - Gain 13.9 dBd (x 24.5)							
1	470 - 536	5.09 (16.7)	4.97 (16.3)	509.1 (1120)	281.4 (619)	4.09 (44.0)	3.44 (37.0)
2	488 - 608	4.48 (14.7)	4.39 (14.4)	463.6 (1020)	260.0 (572)	3.53 (38.0)	2.95 (31.8)
3	578 - 704	3.96 (13.0)	3.84 (12.6)	418.2 (920)	238.6 (525)	2.72 (29.3)	2.21 (23.8)
4	662 - 806	3.50 (11.5)	3.38 (11.1)	390.9 (860)	223.2 (491)	2.39 (25.7)	1.94 (20.9)
RD12 - Gain 15.3 dBd (x 33.9)							
1	470 - 536	7.56 (24.8)	7.44 (24.4)	990.9 (2180)	398.2 (876)	6.11 (65.8)	5.15 (55.4)
2	488 - 608	6.64 (21.8)	6.43 (21.1)	809.1 (1780)	366.4 (806)	5.30 (57.0)	4.44 (47.8)
3	578 - 704	5.85 (19.2)	5.73 (18.8)	581.8 (1280)	334.1 (735)	4.07 (43.8)	3.32 (35.7)
4	662 - 806	5.12 (16.8)	5.03 (16.5)	527.3 (1160)	311.0 (684)	3.57 (38.4)	2.91 (31.3)
RD16 - Gain 16.4 dBd (x 43.7)							
1	470 - 536	10.00 (32.8)	9.91 (32.5)	1918.2 (4220)	532.7 (1172)	8.46 (91.1)	6.87 (73.9)
2	488 - 608	8.78 (28.8)	7.77 (28.5)	1345.5 (2960)	490.0 (1078)	7.32 (78.8)	5.92 (63.7)
3	578 - 704	7.71 (25.3)	7.60 (25)	922.7 (2030)	447.3 (984)	5.41 (58.2)	4.42 (47.6)
4	662 - 806	6.80 (22.3)	6.71 (22)	836.4 (1840)	416.0 (915)	4.74 (51.1)	3.87 (41.7)
RD24 - Gain 18.0 dBd (x 63.1)							
1	470 - 536	15.24 (50.0)	14.81 (48.6)	4222.7 (9290)	885.0 (1947)	13.93 (149.9)	10.30 (110.9)
2	488 - 608	13.41 (44.0)	13.01 (42.7)	2686.4 (5910)	821.0 (1806)	11.41 (122.8)	8.87 (95.5)
3	578 - 704	11.80 (38.7)	11.43 (37.5)	2163.6 (4760)	756.4 (1664)	8.52 (91.7)	6.63 (71.4)
4	662 - 806	10.42 (34.2)	10.03 (32.9)	1727.3 (3800)	710.0 (1562)	7.48 (80.5)	5.82 (62.6)
RD32 - Gain 19.2 dBd (x 83.2)							
1	470 - 536	20.12 (66.0)	19.66 (64.5)	6231.8 (13710)	1185.5 (2608)	19.11 (205.7)	13.73 (147.8)
2	488 - 608	17.68 (58.0)	17.34 (56.9)	4977.3 (10950)	1100.0 (2420)	16.03 (172.6)	11.84 (127.4)
3	578 - 704	15.58 (51.1)	15.21 (49.9)	3622.7 (7970)	1014.1 (2231)	11.80 (127.0)	8.84 (95.2)
4	662 - 806	13.69 (44.9)	13.35 (43.8)	2840.9 (6250)	951.8 (2094)	10.34 (111.3)	7.75 (83.4)

Note:

1. Expected Pattern variation for the RD Series is typically less than +/- 5% for a 60 MHz bandwidth.

2. Weights are based on the high power model (LP and MP will be lighter). Typical Effective Area (CaAc) values are with wind to front of antenna and no ice.

RD Antenna - G Pattern Data



RD Pattern & Cavity Group Specifications

Cavity Group	Frequency (MHz)
1	470 - 536
2	488 - 578
2	500 - 590
2	518 - 608
3	578 - 668
3	596 - 686
3	614 - 704
4	662 - 752
4	686 - 776
4	716 - 806

MECHANICAL SPECIFICATIONS

Cavity Group	Frequency Range	Height m (ft)	Height m (ft)	Weight Kg (lb)	Weight Kg (lb)	Effective Area (CaAc) sq m (sq ft)	Effective Area (CaAc) sq m (sq ft)
		Top Mount	Side Mount	Top Mount	Side Mount	Top Mount	Side Mount
RD04 - Gain 12.0 dBd (x 15.9)							
1	470 - 536	2.65 (8.7)	2.50 (8.2)	234 (515)	107 (235)	1.39 (15.0)	1.05 (11.3)
2	488 - 608	2.65 (8.7)	2.23 (7.3)	227 (500)	97 (214)	1.26 (13.6)	0.92 (9.9)
3	578 - 704	2.07 (6.8)	1.95 (6.4)	200 (440)	87 (192)	0.99 (10.7)	0.72 (7.8)
4	662 - 806	2.07 (6.8)	1.71 (5.6)	195 (430)	80 (176)	0.89 (9.6)	0.62 (6.7)
RD08 - Gain 14.7 dBd (x 29.5)							
1	470 - 536	5.09 (16.7)	4.97 (16.3)	450 (990)	268 (589)	2.76 (29.7)	2.11 (22.7)
2	488 - 608	4.48 (14.7)	4.39 (14.4)	409 (900)	248 (546)	2.42 (26.0)	1.84 (19.8)
3	578 - 704	3.96 (13.0)	3.84 (12.6)	373 (820)	229 (503)	1.96 (21.1)	1.45 (15.6)
4	662 - 806	3.50 (11.5)	3.38 (11.1)	350 (770)	215 (472)	1.69 (18.2)	1.24 (13.4)
RD12 - Gain 16.1 dBd (x 40.7)							
1	470 - 536	7.56 (24.8)	7.44 (24.4)	818 (1800)	378 (831)	4.12 (44.4)	3.16 (34.0)
2	488 - 608	6.64 (21.8)	6.43 (21.1)	741 (1630)	349 (767)	3.61 (38.9)	2.76 (29.7)
3	578 - 704	5.85 (19.2)	5.73 (18.8)	523 (1150)	319 (702)	2.92 (31.4)	2.16 (23.3)
4	662 - 806	5.12 (16.8)	5.03 (16.5)	477 (1050)	298 (655)	2.53 (27.2)	1.87 (20.1)
RD16 - Gain 17.3 dBd (x 53.7)							
1	470 - 536	10.00 (32.8)	9.91 (32.5)	1409 (3100)	506 (1112)	5.82 (62.6)	4.22 (45.4)
2	488 - 608	8.78 (28.8)	7.77 (28.5)	905 (1990)	466 (1026)	5.08 (54.7)	3.68 (39.6)
3	578 - 704	7.71 (25.3)	7.60 (25)	855 (1880)	427 (940)	3.87 (41.7)	2.89 (31.1)
4	662 - 806	6.80 (22.3)	6.71 (22)	605 (1330)	399 (877)	3.36 (36.2)	2.49 (26.8)
RD24 - Gain 18.8 dBd (x 75.9)							
1	470 - 536	15.24 (50.0)	14.81 (48.6)	2864 (6300)	844 (1857)	9.21 (99.1)	6.32 (68.0)
2	488 - 608	13.41 (44.0)	13.01 (42.7)	2318 (5100)	786 (1728)	7.67 (82.6)	5.50 (59.5)
3	578 - 704	11.80 (38.7)	11.43 (37.5)	1796 (3950)	726 (1598)	6.22 (67.0)	4.34 (46.7)
4	662 - 806	10.42 (34.2)	10.03 (32.9)	1409 (3100)	684 (1505)	5.41 (58.2)	3.74 (40.3)
RD32 - Gain 20.0 dBd (x 100.0)							
1	470 - 536	20.12 (66.0)	19.66 (64.5)	5409 (11900)	1131 (2488)	13.21 (142.2)	8.43 (90.7)
2	488 - 608	17.68 (58.0)	17.34 (56.9)	4000 (8800)	1053 (2316)	10.72 (115.4)	7.37 (79.3)
3	578 - 704	15.58 (51.1)	15.21 (49.9)	3046 (6700)	974 (2143)	8.73 (94.0)	5.78 (62.2)
4	662 - 806	13.69 (44.9)	13.35 (43.8)	2705 (5950)	917 (2018)	7.17 (77.2)	4.99 (53.7)

Note:

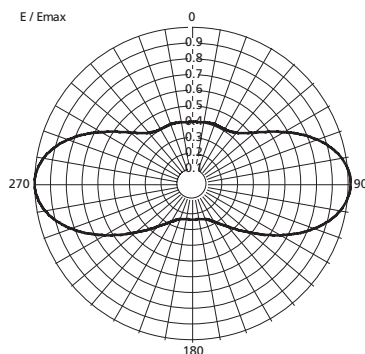
1. Expected Pattern variation for the RD Series is typically less than +/- 5% for a 60 MHz bandwidth.

2. Weights are based on the high power model (LP and MP will be lighter). Typical Effective Area (CaAc) values are with wind to front of antenna and no ice.

Band IV/V (UHF) TV Slot Antennas

470 - 806 MHz

RD Antenna - H Pattern Data



Azimuth Pattern Gain 3.0 (4.8)

RD Pattern & Cavity Group Specifications

Cavity Group	Frequency (MHz)
1	470 - 536
2	488 - 548
2	518 - 578
2	548 - 608
3	578 - 638
3	614 - 674
3	644 - 704
4	662 - 722
4	704 - 764
4	746 - 806

MECHANICAL SPECIFICATIONS

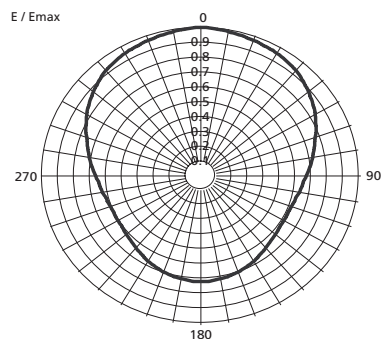
Cavity Group	Frequency Range	Height m (ft)	Height m (ft)	Weight Kg (lb)	Weight Kg (lb)	Effective Area (CaAc) sq m (sq ft)	Effective Area (CaAc) sq m (sq ft)
		Top Mount	Side Mount	Top Mount	Side Mount	Top Mount	Side Mount
RD4 - Gain 12.0 dBd (x 15.9)							
1	470 - 536	2.65 (8.7)	2.50 (8.2)	234.1 (515)	106.8 (235)	1.39 (15.0)	1.05 (11.3)
2	488 - 608	2.65 (8.7)	2.23 (7.3)	227.3 (500)	97.3 (214)	1.26 (13.6)	0.92 (9.9)
3	578 - 704	2.07 (6.8)	1.95 (6.4)	200.0 (440)	87.3 (192)	0.99 (10.7)	0.72 (7.8)
4	662 - 806	2.07 (6.8)	1.71 (5.6)	195.5 (430)	80 (176)	0.89 (9.6)	0.62 (6.7)
RD8 - Gain 14.7 dBd (x 29.5)							
1	470 - 536	5.09 (16.7)	4.97 (16.3)	450.0 (990)	267.7 (589)	2.76 (29.7)	2.11 (22.7)
2	488 - 608	4.48 (14.7)	4.39 (14.4)	409.1 (900)	248.2 (546)	2.42 (26.0)	1.84 (19.8)
3	578 - 704	3.96 (13.0)	3.84 (12.6)	372.7 (820)	228.6 (503)	1.96 (21.1)	1.45 (15.6)
4	662 - 806	3.50 (11.5)	3.38 (11.1)	350.0 (770)	214.5 (472)	1.69 (18.2)	1.24 (13.4)
RD12 - Gain 16.1 dBd (x 40.7)							
1	470 - 536	7.56 (24.8)	7.44 (24.4)	818.2 (1800)	377.7 (831)	4.12 (44.4)	3.16 (34.0)
2	488 - 608	6.64 (21.8)	6.43 (21.1)	741.0 (1630)	348.6 (767)	3.61 (38.9)	2.76 (29.7)
3	578 - 704	5.85 (19.2)	5.73 (18.8)	522.7 (1150)	319.1 (702)	2.92 (31.4)	2.16 (23.3)
4	662 - 806	5.12 (16.8)	5.03 (16.5)	477.3 (1050)	297.7 (655)	2.53 (27.2)	1.87 (20.1)
RD16 - Gain 17.3 dBd (x 53.7)							
1	470 - 536	10.00 (32.8)	9.91 (32.5)	1409.1 (3100)	505.5 (1112)	5.82 (62.6)	4.22 (45.4)
2	488 - 608	8.78 (28.8)	7.77 (28.5)	904.5 (1990)	466.4 (1026)	5.08 (54.7)	3.68 (39.6)
3	578 - 704	7.71 (25.3)	7.60 (25)	854.5 (1880)	427.3 (940)	3.87 (41.7)	2.89 (31.1)
4	662 - 806	6.80 (22.3)	6.71 (22)	604.5 (1330)	398.6 (877)	3.36 (36.2)	2.49 (26.8)
RD24 - Gain 18.8 dBd (x 75.9)							
1	470 - 536	15.24 (50.0)	14.81 (48.6)	2863.6 (6300)	844.1 (1857)	9.21 (99.1)	6.32 (68.0)
2	488 - 608	13.41 (44.0)	13.01 (42.7)	2318.2 (5100)	785.5 (1728)	7.67 (82.6)	5.50 (59.5)
3	578 - 704	11.80 (38.7)	11.43 (37.5)	1795.5 (3950)	726.4 (1598)	6.22 (67.0)	4.34 (46.7)
4	662 - 806	10.42 (34.2)	10.03 (32.9)	1409.1 (3100)	684.1 (1505)	5.41 (58.2)	3.74 (40.3)
RD32 - Gain 20.0 dBd (x 100.0)							
1	470 - 536	20.12 (66.0)	19.66 (64.5)	5409.1 (11900)	1131 (2488)	13.21 (142.2)	8.43 (90.7)
2	488 - 608	17.68 (58.0)	17.34 (56.9)	4000.0 (8800)	1052.7 (2316)	10.72 (115.4)	7.37 (79.3)
3	578 - 704	15.58 (51.1)	15.21 (49.9)	3045.5 (6700)	974.1 (2143)	8.73 (94.0)	5.78 (62.2)
4	662 - 806	13.69 (44.9)	13.35 (43.8)	2704.5 (5950)	917.3 (2018)	7.17 (77.2)	4.99 (53.7)

Note:

1. Expected Pattern variation for the RD Series is typically less than +/- 5% for a 60 MHz bandwidth.

2. Weights are based on the high power model (LP and MP will be lighter). Typical Effective Area (CaAc) values are with wind to front of antenna and no ice.

RD Antenna - OM Pattern Data



Azimuth Pattern Gain 1.7 (2.3dB)

RD Pattern & Cavity Group Specifications

Cavity Group	Frequency (MHz)
1	470 - 536
2	488 - 548
2	518 - 578
2	548 - 608
3	578 - 638
3	614 - 674
3	644 - 704
4	662 - 722
4	704 - 764
4	746 - 806

MECHANICAL SPECIFICATIONS

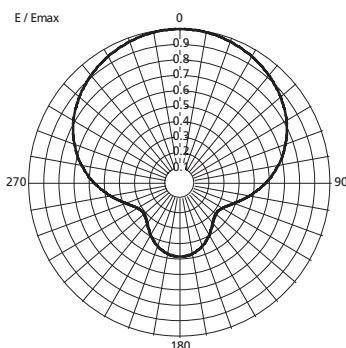
Cavity Group	Frequency Range	Height m (ft)	Height m (ft)	Weight Kg (lb)	Weight Kg (lb)	Effective Area (CaAc) sq m (sq ft)	Effective Area (CaAc) sq m (sq ft)
		Top Mount	Side Mount	Top Mount	Side Mount	Top Mount	Side Mount
RD4 - Gain 9.5 dBd (x 8.9)							
1	470 - 536	3.26 (10.7)	2.50 (8.2)	234.1 (515)	102.7 (226)	1.39 (15.0)	1.11 (12.0)
2	488 - 608	2.95 (9.7)	2.23 (7.3)	227.3 (500)	94.1 (207)	1.26 (13.6)	0.97 (10.4)
3	578 - 704	2.68 (8.8)	1.95 (6.4)	200.0 (440)	85.5 (188)	0.99 (10.7)	0.78 (8.4)
4	662 - 806	2.47 (8.1)	1.71 (5.6)	195.5 (430)	77.7 (171)	0.89 (9.6)	0.75 (8.1)
RD8 - Gain 12.2 dBd (x 16.6)							
1	470 - 536	5.70 (18.7)	4.97 (16.3)	450.0 (990)	260 (572)	2.76 (29.7)	2.23 (24.0)
2	488 - 608	5.09 (16.7)	4.39 (14.4)	409.1 (900)	242.3 (533)	2.42 (26.0)	1.93 (20.8)
3	578 - 704	4.57 (15)	3.84 (12.6)	372.7 (820)	225 (495)	1.96 (21.1)	1.56 (16.8)
4	662 - 806	4.12 (13.5)	3.38 (11.1)	350.0 (770)	209.6 (461)	1.69 (18.2)	1.51 (16.2)
RD12 - Gain 13.6 dBd (x 22.9)							
1	470 - 536	8.14 (26.7)	7.44 (24.4)	818.2 (1800)	366 (805)	4.12 (44.4)	3.35 (36.1)
2	488 - 608	7.25 (23.8)	6.43 (21.1)	741.0 (1630)	339.5 (747)	3.61 (38.9)	2.90 (31.2)
3	578 - 704	6.43 (21.1)	5.73 (18.8)	522.7 (1150)	313.6 (690)	2.92 (31.4)	2.35 (25.3)
4	662 - 806	5.76 (18.9)	5.03 (16.5)	477.3 (1050)	290.5 (639)	2.53 (27.2)	2.25 (24.2)
RD16 - Gain 14.8 dBd (x 30.2)							
1	470 - 536	10.58 (34.7)	9.91 (32.5)	1409.1 (3100)	489.6 (1077)	5.82 (62.6)	4.47 (48.1)
2	488 - 608	9.39 (30.8)	7.77 (28.5)	904.5 (1990)	454.5 (1000)	5.08 (54.7)	3.86 (41.6)
3	578 - 704	8.32 (27.3)	7.60 (25)	854.5 (1880)	420 (924)	3.87 (41.7)	3.13 (33.7)
4	662 - 806	7.41 (24.3)	6.71 (22)	604.5 (1330)	389.1 (856)	3.36 (36.2)	2.99 (32.2)
RD24 - Gain 16.3 dBd (x 42.7)							
1	470 - 536	15.67 (51.4)	14.81 (48.6)	2863.6 (6300)	820.5 (1805)	9.21 (99.1)	6.70 (72.1)
2	488 - 608	13.87 (45.5)	13.01 (42.7)	2318.2 (5100)	767.7 (1689)	7.67 (82.6)	5.79 (62.3)
3	578 - 704	12.28 (40.3)	11.43 (37.5)	1795.5 (3950)	715.5 (1574)	6.22 (67.0)	4.69 (50.5)
4	662 - 806	10.88 (35.7)	10.03 (32.9)	1409.1 (3100)	669.1 (1472)	5.41 (58.2)	4.51 (48.5)
RD32 - Gain 17.5 dBd (x 56.2)							
1	470 - 536	20.54 (67.4)	19.66 (64.5)	5409.1 (11900)	1099.1 (2418)	13.21 (142.2)	8.93 (96.2)
2	488 - 608	18.17 (59.6)	17.34 (56.9)	4000.0 (8800)	1029.1 (2264)	10.72 (115.4)	7.72 (83.1)
3	578 - 704	16.03 (52.6)	15.21 (49.9)	3045.5 (6700)	959.5 (2111)	8.73 (94.0)	6.26 (67.4)
4	662 - 806	14.17 (46.5)	13.35 (43.8)	2704.5 (5950)	897.7 (1975)	7.17 (77.2)	6.01 (64.7)

Note:

1. Expected Pattern variation for the RD Series is typically less than +/- 5% for a 60 MHz bandwidth.

2. Weights are based on the high power model (LP and MP will be lighter). Typical Effective Area (CaAc) values are with wind to front of antenna and no ice.

RD Antenna - SK Pattern Data



Azimuth Pattern Gain 2.2 (3.4dB)

RD Pattern & Cavity Group Specifications

Cavity Group	Frequency (MHz)
1	470 - 536
2	488 - 608
3	578 - 704
4	662 - 806

MECHANICAL SPECIFICATIONS

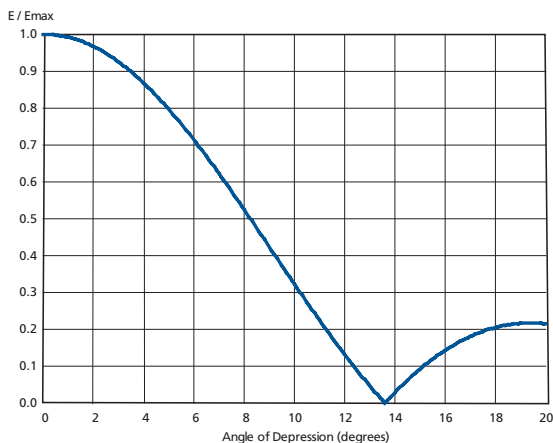
Cavity Group	Frequency Range	Height m (ft)	Height m (ft)	Weight Kg (lb)	Weight Kg (lb)	Effective Area (CaAc) sq m (sq ft)	Effective Area (CaAc) sq m (sq ft)
		Top Mount	Side Mount	Top Mount	Side Mount	Top Mount	Side Mount
RD4 - Gain 10.6 dBd (x 11.5)							
1	470 - 536	2.65 (8.7)	2.50 (8.2)	231.8 (510)	78.6 (173)	1.50 (16.1)	0.65 (7.0)
2	488 - 608	2.65 (8.7)	2.23 (7.3)	225.0 (495)	70.9 (156)	1.36 (14.6)	0.57 (6.1)
3	578 - 704	2.07 (6.8)	1.95 (6.4)	197.7 (435)	62.7 (138)	1.07 (11.5)	0.42 (4.5)
4	662 - 806	2.07 (6.8)	1.71 (5.6)	193.2 (425)	57.3 (126)	0.97 (10.4)	0.36 (3.9)
RD8 - Gain 13.3 dBd (x 21.4)							
1	470 - 536	5.09 (16.7)	4.97 (16.3)	445.5 (980)	236.0 (519)	2.96 (31.9)	1.31 (14.1)
2	488 - 608	4.48 (14.7)	4.39 (14.4)	404.5 (890)	220.0 (484)	2.60 (28.0)	1.14 (12.3)
3	578 - 704	3.96 (13.0)	3.84 (12.6)	368.2 (810)	204.1 (449)	2.11 (22.7)	0.84 (9.0)
4	662 - 806	3.50 (11.5)	3.38 (11.1)	345.5 (760)	193.6 (426)	1.85 (19.9)	0.72 (7.8)
RD12 - Gain 14.7 dBd (x 29.5)							
1	470 - 536	7.56 (24.8)	7.44 (24.4)	811.4 (1785)	330.0 (726)	4.43 (47.7)	1.96 (21.1)
2	488 - 608	6.64 (21.8)	6.43 (21.1)	734.1 (1615)	306.4 (674)	3.88 (41.8)	1.71 (18.4)
3	578 - 704	5.85 (19.2)	5.73 (18.8)	515.9 (1135)	282.3 (621)	3.15 (33.9)	1.24 (13.4)
4	662 - 806	5.12 (16.8)	5.03 (16.5)	470.5 (1035)	266.4 (586)	3.70 (39.7)	1.10 (11.8)
RD16 - Gain 15.9 dBd (x 38.9)							
1	470 - 536	10.00 (32.8)	9.91 (32.5)	1400.0 (3080)	441.8 (972)	6.22 (67.0)	2.62 (28.2)
2	488 - 608	8.78 (28.8)	7.77 (28.5)	895.5 (1970)	410.0 (902)	5.43 (58.5)	2.28 (24.5)
3	578 - 704	7.71 (25.3)	7.60 (25)	845.5 (1860)	378.2 (832)	4.18 (45.0)	1.66 (17.9)
4	662 - 806	6.80 (22.3)	6.71 (22)	595.5 (1310)	356.8 (785)	3.68 (39.6)	1.46 (15.7)
RD24 - Gain 17.4 dBd (x 55.0)							
1	470 - 536	15.24 (50.0)	14.81 (48.6)	2850.0 (6270)	748.6 (1647)	9.85 (106.0)	3.92 (42.2)
2	488 - 608	13.41 (44.0)	13.01 (42.7)	2304.5 (5070)	701.0 (1542)	8.20 (88.3)	3.42 (36.8)
3	578 - 704	11.80 (38.7)	11.43 (37.5)	1781.8 (3920)	652.7 (1436)	6.69 (72.0)	2.50 (26.9)
4	662 - 806	10.42 (34.2)	10.03 (32.9)	1395.5 (3070)	621.4 (1367)	5.86 (63.1)	2.18 (23.5)
RD32 - Gain 18.6 dBd (x 72.4)							
1	470 - 536	20.12 (66.0)	19.66 (64.5)	5404.5 (11890)	1003.6 (2208)	14.03 (151.0)	5.23 (56.3)
2	488 - 608	17.68 (58.0)	17.34 (56.9)	3995.5 (8790)	940.0 (2068)	12.27 (132.1)	4.55 (49.0)
3	578 - 704	15.58 (51.1)	15.21 (49.9)	3040.9 (6690)	875.9 (1927)	9.36 (100.7)	3.33 (35.8)
4	662 - 806	13.69 (44.9)	13.35 (43.8)	2700.0 (5940)	833.6 (1834)	8.22 (88.5)	2.92 (31.4)

Note:

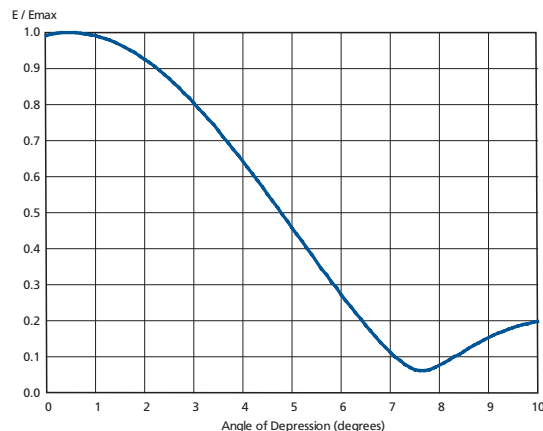
1. Expected Pattern variation for the RD Series is typically less than +/- 5% for a 60 MHz bandwidth.

2. Weights are based on the high power model (LP and MP will be lighter). Typical Effective Area (CaAc) values are with wind to front of antenna and no ice.

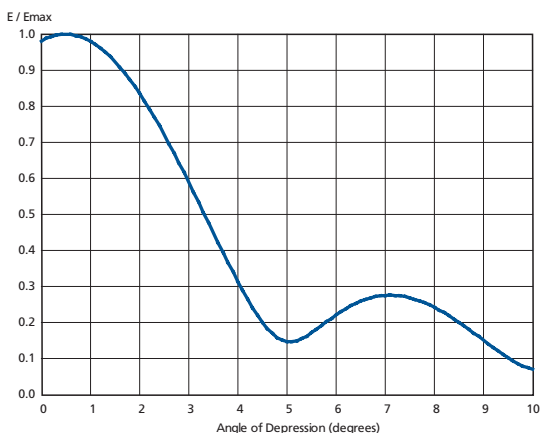
RD Series



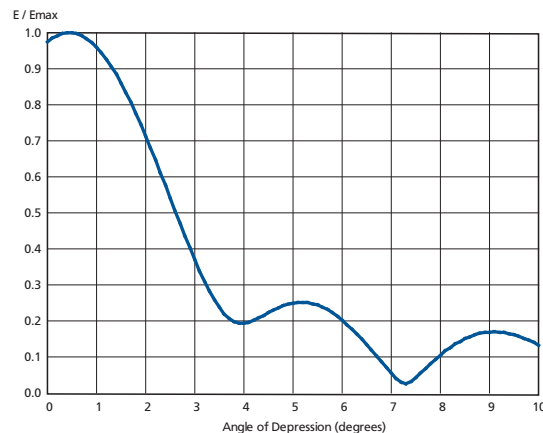
Elevation Pattern 4 Bay Vertical Directivity 5.21 (7.16 dBd) Beam Tilt (deg) 0



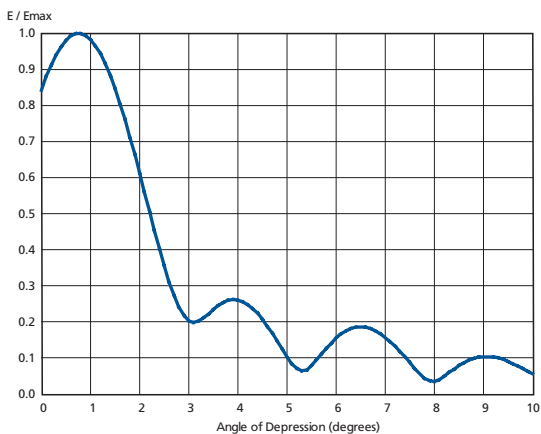
Elevation Pattern 8 Bay Vertical Directivity 9.77 (9.90 dBd) Beam Tilt (deg) 0.5 Note#1



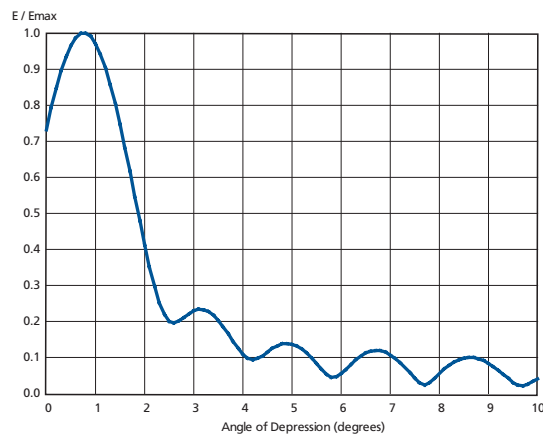
Elevation Pattern 12 Bay Vertical Directivity 13.38 (11.27 dBd) Beam Tilt (deg) 0.5 Note#1



Elevation Pattern 16 Bay Vertical Directivity 17.55 (12.44 dBd) Beam Tilt (deg) 0.5 Note#1



Elevation Pattern 24 Bay Vertical Directivity 25.36 (14.04 dBd) Beam Tilt (deg) 0.75 Note#1



Elevation Pattern 32 Bay Vertical Directivity 32.90 (15.17 dBd) Beam Tilt (deg) 0.75 Note#1

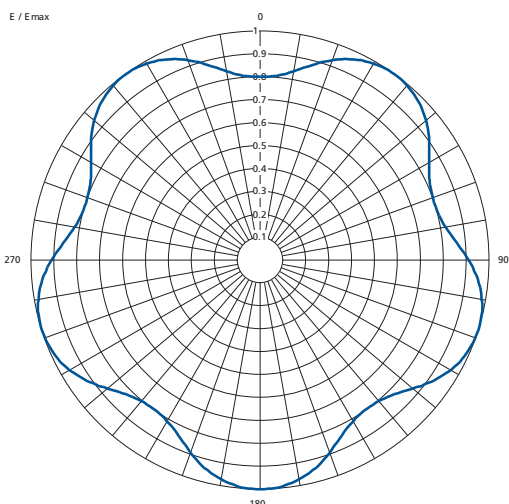
Note 1
Different Beam tilt and Null fill can be specified at time of order

RO Series

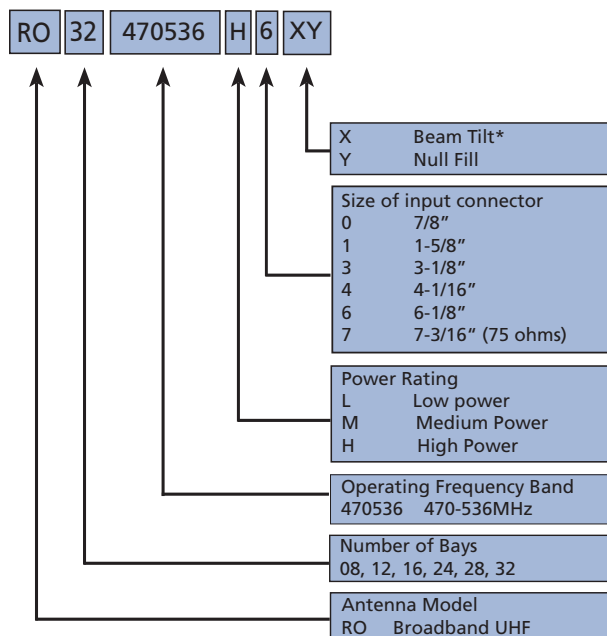
The RO series is typically supplied in a top mount configuration, with two service ladders and removable radome panels. The antenna is easily adapted to a variety of tower mounting requirements. A lifting lug is provided to lift the antenna into position. Lightning rods and beacon mounts are supplied. Typical beam tilts of 0 to 3 degrees are available in 0.25 degree increments with 0.5 degrees on the 8, 12 and 16 bay models and 0.75 degrees on the 24, 28 and 32 bay models as standard. Typical Null Fills of 0% to 30% are also available in 5% increments. Standard Null Fills are indicated in the Vertical Radiation Patterns.

- Very smooth omni-directional radiation pattern
- Multichannel operation
- Wide bandwidth/ Low VSWR
- Power rating up to 60kW Average
- Top mount
- Low wind load
- Fully enclosed in a cylindrical radome

The RO series is typically supplied in a top mount configuration, with two service ladders and removable radome panels. The antenna is easily adapted to a variety of tower mounting requirements. A lifting lug is provided to lift the antenna into position. Lightning rods and beacon mounts are supplied. Typical beam tilts of 0 to 3 degrees are available in 0.25 degree increments with 0.5 degrees on the 8, 12 and 16 bay models and 0.75 degrees on the 24, 28 and 32 bay models as standard. Typical Null Fills of 0% to 30% are also available in 5% increments. Standard Null Fills are indicated in the Vertical Radiation Patterns.



RO Series Azimuth Pattern Gain 1.2 (0.8 dB)



RO Series Ordering Information

SPECIFICATIONS (ALL MODELS)

Polarization	Horizontal
Impedance, ohms	50 unbalanced

RO Series Standard Power Ratings

Model	Low Power		Medium Power		High Power	
	Max Input Power (Avg)	Connector Size	Max Input Power (Avg)	Connector Size	Max Input Power (Avg)	Connector Size
RO08	4 kW	1 5/8" EIA	8 kW	3 1/8" EIA	20 kW	4 1/16"
RO12	6 kW	3 1/8" EIA	12 kW	3 1/8" EIA	30 kW	6 1/8" EIA
RO16	8 kW	3 1/8" EIA	16 kW	3 1/8" EIA	40 kW	6 1/8" EIA
RO24	12 kW	3 1/8" EIA	24 kW	6 1/8" EIA	60 kW	6 1/8" EIA
RO28	14 kW	3 1/8" EIA	28 kW	6 1/8" EIA	60 kW ¹	6 1/8" EIA
RO32	16 kW	3 1/8" EIA	32 kW	6 1/8" EIA	60 kW ¹	6 1/8" EIA

Note 1: Higher power option available with 7-3/16", 75 ohm input connector. Contact RFS for details.

Cavity Group Frequency Range Specifications

Cavity Group	Frequency Range (MHz)	Pattern Bandwidth (MHz)	Return Loss (dB)
1	470 - 536	66	>26
2	488 - 548, 518 - 578, 548 - 608	60	>26
3	578 - 584, 614 - 674, 644 - 704	60	>26
4	662 - 722, 704 - 764, 746 - 752	60	>26

Expected Pattern Variation for the RO Series is typically less than +/- 5% for a 60 MHz bandwidth

Cavity Group	Frequency Range	Height m (ft)	Weight Kg (lb)	Effective Area (CaAc) sq m (sq ft)	Radome Diameter cm (in)
--------------	-----------------	---------------	----------------	------------------------------------	-------------------------

RO8 - Gain 10.2 dBd (x 10.5)

1	471.00 - 536.00	5.67 (18.6)	1636 (3600)	3.32 (35.7)	71.12 (28)
2	489.00 - 608.00	5.09 (16.7)	1591 (3500)	2.97 (32)	71.12 (28)
3	579.00 - 704.00	4.54 (14.9)	1455 (3200)	2.53 (27.2)	66.04 (26)
4	663.00 - 806.00	4.08 (13.4)	1410 (3100)	2.27 (24.4)	66.04 (26)

RO12 - Gain 11.8 dBd (x 15.1)

1	471.00 - 536.00	8.26 (27.1)	2273 (5000)	4.83 (52)	71.12 (28)
2	489.00 - 608.00	7.38 (24.2)	2182 (4800)	4.31 (46.4)	71.12 (28)
3	579.00 - 704.00	6.58 (21.6)	1955 (4300)	3.64 (39.2)	66.04 (26)
4	663.00 - 806.00	5.88 (19.3)	1909 (4200)	3.26 (35.1)	66.04 (26)

RO16 - Gain 12.9 dBd (x 19.5)

1	471.00 - 536.00	10.85 (35.6)	2909 (6400)	6.34 (68.3)	71.12 (28)
2	489.00 - 608.00	9.66 (31.7)	2773 (6100)	5.65 (60.8)	71.12 (28)
3	579.00 - 704.00	8.60 (28.2)	2500 (5500)	4.77 (51.3)	66.04 (26)
4	663.00 - 806.00	7.68 (25.2)	2409 (5300)	4.25 (45.8)	66.04 (26)

RO24 - Gain 14.5 dBd (x 28.2)

1	471.00 - 536.00	16.03 (52.6)	5090 (11200)	9.36 (100.8)	71.12 (28)
2	489.00 - 608.00	14.23 (46.7)	4590 (10100)	8.32 (89.6)	71.12 (28)
3	579.00 - 704.00	12.65 (41.5)	4136 (9100)	7.00 (75.4)	66.04 (26)
4	663.00 - 806.00	11.25 (36.9)	3773 (8300)	6.23 (67.1)	66.04 (26)

RO28 - Gain 14.8 dBd (x 30.2)

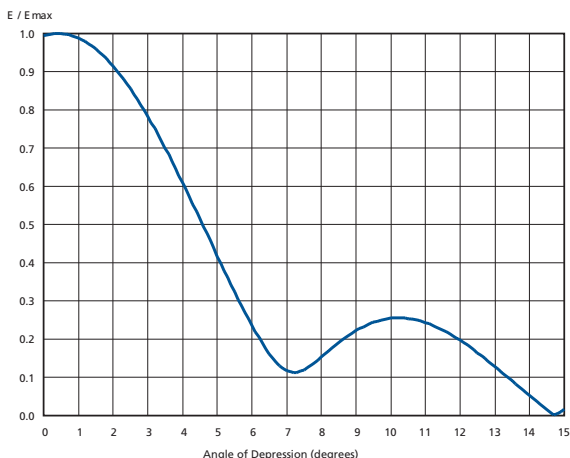
1	471.00 - 536.00	18.62 (61.1)	6636 (14600)	10.88 (117.1)	71.12 (28)
2	489.00 - 608.00	16.52 (54.2)	5773 (12700)	9.66 (104)	71.12 (28)
3	579.00 - 704.00	14.66 (48.1)	5182 (11400)	8.13 (87.5)	66.04 (26)
4	663.00 - 806.00	12.98 (42.6)	4546 (10000)	7.23 (77.8)	66.04 (26)

RO32 - Gain 15.7 dBd (x 37.2)

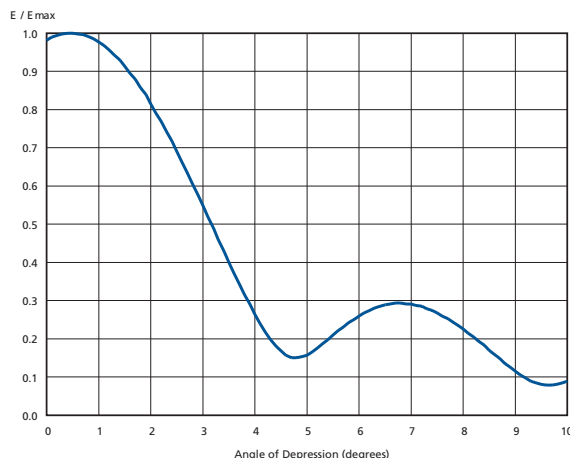
1	471.00 - 536.00	21.21 (69.6)	7546 (16600)	12.39 (133.4)	71.12 (28)
2	489.00 - 608.00	18.83 (61.8)	7091 (15600)	11.00 (118.4)	71.12 (28)
3	579.00 - 704.00	16.70 (54.8)	5773 (12700)	9.25 (99.6)	66.04 (26)
4	663.00 - 806.00	14.84 (48.7)	5546 (12200)	8.22 (88.5)	66.04 (26)

Note: Weights are based on the high power model (LP and MP will be lighter). Typical Effective Area (CaAc) values are with wind to front of antenna and no ice. Two service ladders are included.

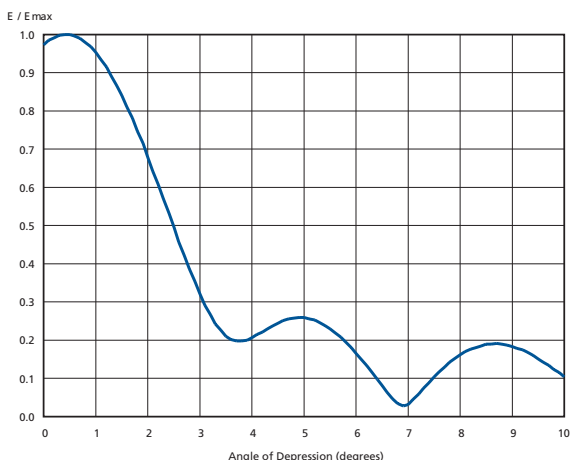
RO Series



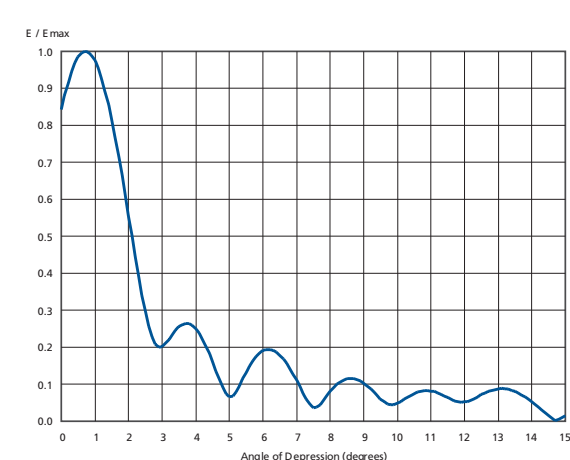
8 Bay Vertical Directivity 9.6 (9.8dBd) Beam Tilt (deg) 0.5 Note#1



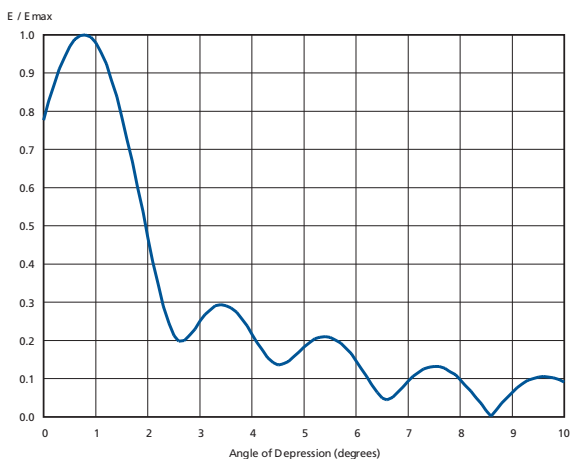
12 Bay Vertical Directivity 13.8 (11.4 dBd) Beam Tilt (deg) 0.75 Note#1



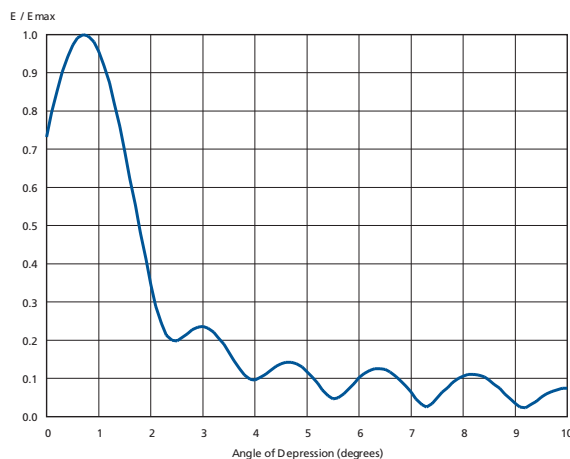
16 Bay Vertical Directivity 18.2 (12.6 dBd) Beam Tilt (deg) 0.5 Note#1



24 Bay Vertical Directivity 26.9 (14.3 dBd) Beam Tilt (deg) 0.75 Note#1



28 Bay Vertical Directivity 26.8 (14.6 dBd) Beam Tilt (deg) 0.75 Note#1



32 Bay Vertical Directivity 35.5 (15.5 dBd) Beam Tilt (deg) 0.75 Note#1

Note 1

Different Beam tilt and Null fill can be specified at time of order

PHP10S Series

The PHP10S broadband panel is designed as a building block for integration into complex antenna arrays or can be used individually for simple antenna systems. This panel covers upper Band V frequency range without field adjustment.

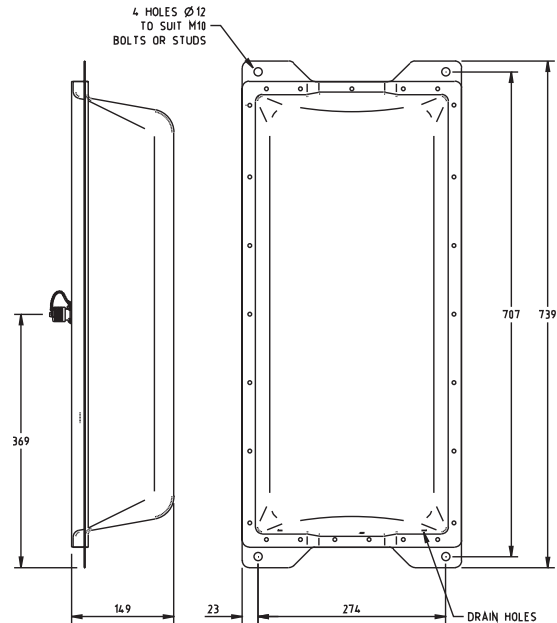
- Engineered for digital or analogue TV
- Corrosion resistant aluminum construction with luran radome
- Horizontal polarization
- Low wind loading
- Cyclone rated
- High power rating
- Array design allows a variety of horizontal radiation patterns with or without beam tilt and null fill, contact RFS for details

Standard antennas are pressurizable and have a 7/8" EIA input connector. A capacitive probe is supplied at the input. Panels can also be supplied with dual 7/8" EIA connectors to achieve 4.4kW power rating. 7-16 DIN and N type input connectors are also available for low power situations without the capacitive probe. Radomes for individual panels are supplied in white luran as standard. Also available in orange.

Array design can provide any of an almost infinite variety of horizontal patterns, with or without vertical beam tilt and null fill. Omnidirectional radiation characteristics can be achieved by mounting any number of panels around a suitably sized supporting structure. Horizontal radiation patterns for four panels around a 400 mm square. These are plotted for 750MHz, 800MHz and 860MHz. Panels can also be mounted 10 around on an 800mm square column.



PHP10S Panel



PHP10S Panel

PHP10S Series

SPECIFICATIONS (ALL MODELS)

Frequency Range, MHz	750 - 870
Polarization	Horizontal
Number of Channels	Multichannel
Nominal Gain (Mid-band), dBd	11
Half Power Beamwidth Azimuth, degrees	60
Return Loss, dB	> 26
Impedance, ohms	50
Mounting (Standard), mm (in)	4 x 10mm (3/8") bolts
Effective Area Front (full antenna), sq m (sq ft)	0.24 (2.58)
Effective Area Side (full antenna), sq m (sq ft)	0.16 (1.72)
Design Wind Speed (max), km/h (mph)	240 (150)
Pressurization Operational, kPa (psi)	10 - 35 (1.5 - 5) Note#2
Pressurization Test, kPa (psi)	100 (15)
Material - Radome	Luran
Material - Insulators	PTFE
Material - Radiators	Corrosion resistant aluminum
Material - Reflecting Screen	Corrosion resistant aluminum

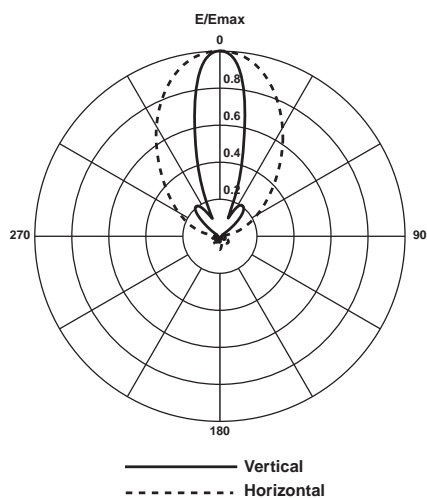
SPECIFICATIONS	PHP10SN	PHP10S4	PHP10S
Input Connector	N socket	7-16 DIN	7/8" EIA
Power Rating, kW	0.25	1.4 Note#1	2.2 Note#1
Weight, kg (lb)	3.7 (8)	3.7 (8)	5.5 (12)

Note 1

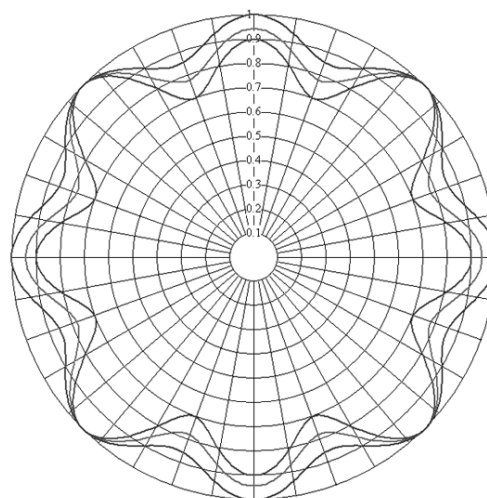
Double power version available with dual 7/8" EIA inputs.

Note 2

7/8" EIA version only.



Radiation Pattern



Radiation Pattern - 4 panels on 400 mm column
(750MHz, 800MHz, 860MHz)