222 & 223 Series
Cassegrain Antennas

MI-WAVE®
Millimeter Wave Products Inc.

Description

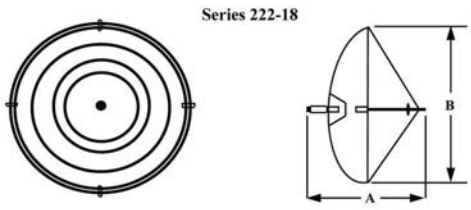
Mi-Wave's 222 Series Cassegrain Antenna consists of a parabolic reflector, a primary feed, sub-reflector, and a feed support assembly of four low profile aluminum spars that are attached to the rim if the reflector to position the feed.

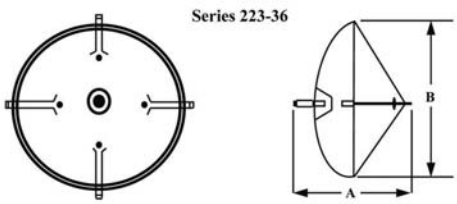
- *Low VWSR*
- *Aluminum or Fiberglass Construction*
- *High Performance at Millimeter Wave Frequencies*

The 223 Series antennas feature metalized fiberglass reflectors and are available from 5.0 to 220 GHz. They offer very high performance in a lightweight antenna structure. These antennas are available in effective diameters of 10 to 84 inches. Because of the low surface tolerance (typically 0.0025 inch RMS) they provide excellent high frequency radiation characteristics.

Applications

Radars
Satellite Tracking
Communication Systems

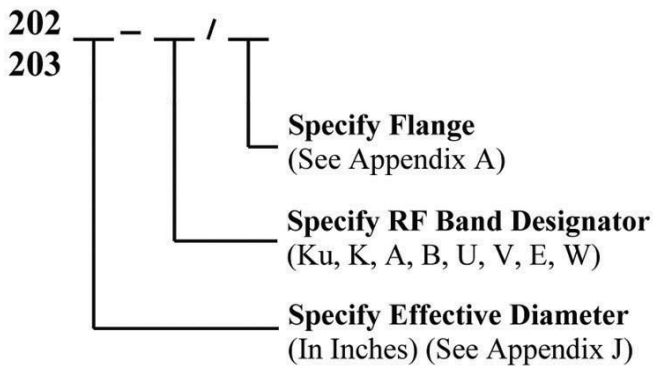




Dimensional Specifications

Model No.	Effective Diameter	A		B	
	in.	in.	mm	in.	mm
822	12	14	376	12	257
822	18	16	564	18	338
822	24	20	716	28	394
823	18	22.2	564	13.3	338
823	24	28.2	706	15.5	394
823	36	39.1	993	20.9	531
823	48	54.0	1372	23.0	594

Ordering Information



The center frequency should be specified when ordering these antennas.

Please consult Miwave for current dimensions

PLEASE NOTE:

- Larger Diameters Available 60, 72, 84

Description

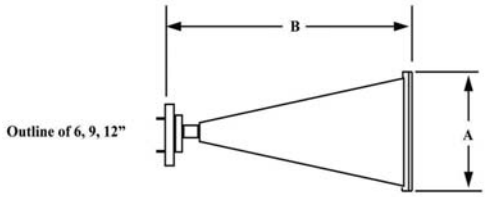
Mi-Wave's 258 Series horn lens antenna consists of a circular scalar feed horn illuminating a piano-convex lens. Housed in either aluminum or plastic, these horn lens antennas provide a high efficiency beam with equal E and H plane amplitude patterns.

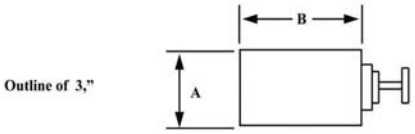
- *Low Cost*
- *High Directivity and Gain*
- *Simple Mechanical Performance*
- *Wide Range of Available Beamwidths and Reflector Sizes*

The 258 Series antennas are available from 8 to 170 GHz in standard sizes of 3, 6, 9, and 12 inch lens apertures. Other custom sizes and configurations are available, please consult Mi-Wave for further information.

Applications

Radars, Radioastronomy, Surveillance Equipment, and Communication Systems





Please Note:

- Final dimensions are subject to variations from the tabulated date due to tuning, focusing, and mechanical tolerances.

Dimensional Specifications					
Model No.	**Effective Diameter**	**A**		**B**	
	in.	in.	mm	in.	mm
258KU	12	14.0	356	21.0	533
258K	9	11.0	276	15.7	399
258K	12	14.0	356	19.5	495
258A	3	4.1	104	8.30	210
258A	6	7.6	193	11.1	282
258A	9	11.0	276	14.0	356
258A	12	14.0	356	18.2	462
258B, U	3	4.1	104	8.3	210
258B, U	6	7.6	193	10.6	269
258B, U	9	11.0	279	14.0	356
258B, U	12	14.0	356	17.7	450
258V, E, W	3	4.2	107	6.0	152
258V, E, W	6	7.6	193	9.6	244
258V, E, W	9	11.0	279	13.0	330
258V, E, W	12	14.0	356	16.7	424

Consult for current outline diemensions

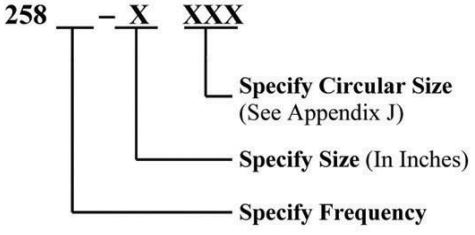
Production Capabilities

From small orders to high volume projects, we can accommodate all your volume production needs. Call us for more information.

Picture left:
77 GHz Telecommunications volume order example.

Typical Electrical Specifications	
Frequency	12.4 to 140 GHz
Sizes	3, 6, 9, 12
Sidelobes	25dB (typical)
VSWR	1.2:1 (typical)
Cross Polarization	25dB (typical)

Ordering Information



Description

Mi-Wave's 261 Series standard gain horns are fabricated with very close tolerances to ensure the precision of every horn manufactured by Mi-Wave. Each unit is joined to a short section of rectangular wave-guide and terminated in a standard flange.

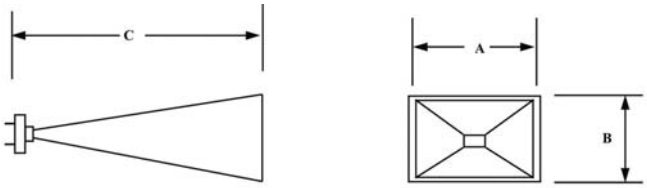
- *Nominal Gain of 25 dB*
- *Available from 12.4 to 500 GHz*
- *Made with precise dimensional tolerance control*
- *Gain calibration is accurate to 0.5 dB over full waveguide bandwidth*
- *Other gain values available upon request (ex: 10, 15, 20, etc.)*

Standard gain horns can be used to experimentally determine the gain of other antennas by using the substituion method. The standard gain horn and the antenna under test are alternately connected to a well-matched detector system in order to compare their relative power levels. The power level difference is then added to the appropriate level of the calibration curve to determine the absolute gain of the antenna under test.

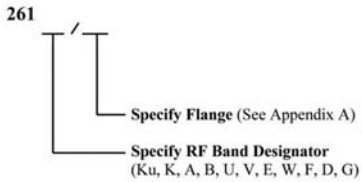
Standard gain horns are also useful as power monitors in radar transmitter tests, known-gain radiators in field propagation studies, and transmitting or receiving antennas in test bench applications. The completed units are gold-plated to protect from corrosion and for minimum RF losses.

Additional Information

- Other common gains 10, 15, 20dB.
- Custom Gain horns (27 dB, etc.) and sectorial horns available from 7 to 27dB can be manufactured per customer request.



Ordering Information



Custom Gain Horns Available

* Ku & K band 20dB gain

Specifications

Model No.	Frequency Band (GHz)	Waveguide Dimension	Waveguide WR-	Flange Types	A		B		C	
					in.	mm	in.	mm	in.	mm
261KU	12.4–18.0	.622 x .311	62	425	5.62	142.8	4.18	106.2	12.50	317.5
261K	18.0–26.5	.420 x .170	42	595	4.12	104.7	3.40	86.4	9.20	233.7
261A	26.5–40.0	.280 x .140	22	599	2.84	72.1	2.35	59.7	6.60	167.6
261B	30.0–50.0	.224 x .112	22	383	2.30	58.4	1.91	48.5	5.10	129.5
261U	40.0–60.0	.188 x .094	19	385	1.81	46.0	1.38	35.1	4.05	102.9
261V	50.0–75.0	.148 x .074	15	387	1.72	43.7	1.43	36.3	3.90	99.1
261E	60.0–90.0	.122 x .061	12	387	1.46	37.1	1.21	30.8	3.20	81.3
261W	75.0–110.0	.100 x .050	10	387	1.21	30.7	1.02	25.9	2.80	71.1
261F	90.0–140.0	.080 x .040	8	387	1.00	25.4	0.84	21.3	2.10	53.3
261D	110.0–170.0	.065 x .0325	6	387	.083	21.1	0.70	17.8	1.73	43.9
261G	140.0–220.0	.051 x .0255	5	387	.054	13.7	0.64	16.3	1.25	31.8

Description

Mi-Wave's 262 Series Conical horns are fabricated with very close tolerances to ensure the precision of every horn manufactured by Mi-Wave. Each unit is supplied with a short section of circular waveguide supplied with a short section of circular waveguide and terminated in a standard round flange.

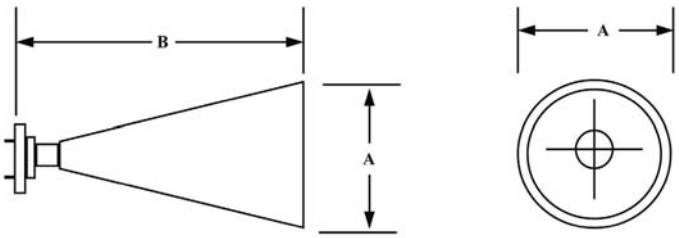
- *Available from 12.4 to 325 GHz*
- *Nominal Gain of 10, 15, 20, and 25 dBi*
- *Made with Precise Dimensional Tolerance Control*
- *Gain Calibration is accurate to 0.5 dB over operating bandwidth.*

Conical horns can be used to experimentally determine the gain of other antennas by using the substitution method. The conical horn and the antenna under test are alternately connected to a well-matched detector system in order to compare their relative power levels. The power level difference is then added to the appropriate level of the calibration curve to determine the absolute gain of the antenna under test.

Conical horns are also useful as power monitors in radars transmitter test, known-gain radiators in field propagation studies, and transmitting or receiving antennas in test bench applications.

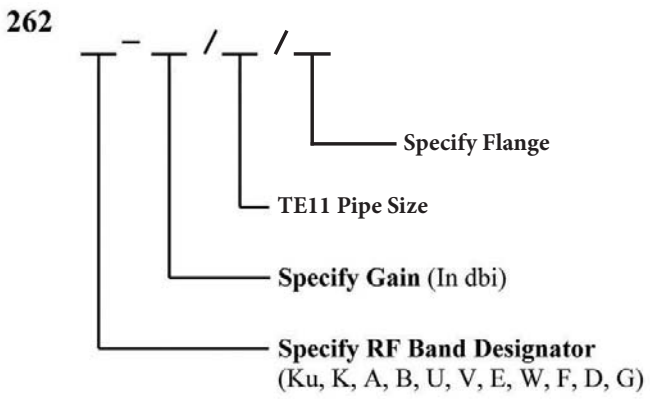
Please Note:

- 10, 15, 20 and 25dB models are available in all bands. Custom sizes also available.
- Gain calibration is an optional feature.



NOTE:
Due to wide variety of circular waveguide sizes and gain options, Consult Mi-Wave for dimensions.

Ordering Information



Order Example:

Model number 262W-25/.094/387 is a conical horn operating in W-band with a 25dB gain and 0.094 circular waveguide.

263 Series
Wide Angle Scalar Feed Horns

MI-WAVE®
Millimeter Wave Products Inc.

Description

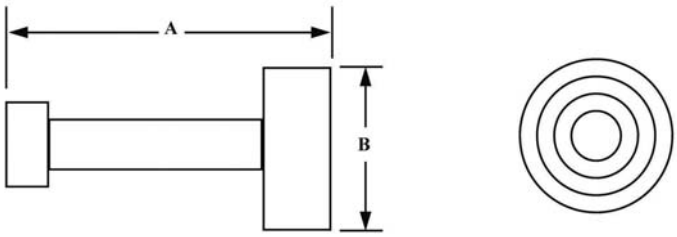
Mi-Wave's 263 Series wide angle scalar feed horn, also called a choke horn, has been designed to be used in applications where wide beamwidth (55 Deg.) is required such as low F/D ratios of 0.5 and 0.4 in parabolic reflectors and offset feed applications.

- *Low VSWR*
- *Wide Beamwidths*
- *Polarization Insensitive*
- *Partial Waveguide Bandwidths*

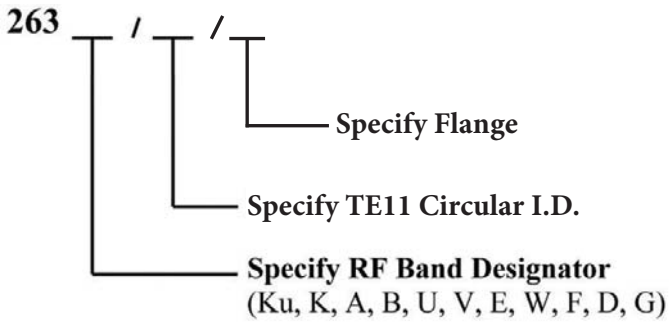
Applications

Low F/D Antennas
Surveillance Systems
Offset Feed Antennas

Typical Electrical Specifications	
Beamwidth (3 dB)	E-Plane 55 Deg. H-Plane 56 Deg.
SideLobes	E-Plane -25dB H-Plane -25dB
Bandwidth	50%



Ordering Information



Order Example:

Model number 263 W/387 is a wide beam scalar feed horn operating in W-band with a UG-387 flange.

Dimensional Specifications						
Model No.	**Frequency Band (GHz)**	**EIA-WG Designation**	**A**		**B**	
			in.	mm	in.	mm
263	12.4–18.0	WR62	5.00	127.0	3.12	79.3
263	18.0–26.5	WR42	3.50	88.9	2.15	54.6
263	26.5–40.0	WR21	2.75	69.9	1.52	38.6
263	33.0–55.0	WR22	2.50	63.5	1.25	31.8
263	40.0–60.0	WR19	2.25	57.2	1.12	28.5
263	50.0–75.0	WR15	1.75	44.5	0.88	22.4
263	60.0–90.0	WR12	1.62	41.2	0.75	19.0
263	75.0–100.0	WR10	1.50	38.1	0.62	15.8
263	90.0–140.0	WR8				
263	110.0–170.0	WR-6				

Check with Miwave for current dimensions

Description

Mi-Wave's 267 Series Omni-directional Antennas have been designed to be used in wide angle applications.

Please consult Mi-Wave for other available beamwidths.

Applications

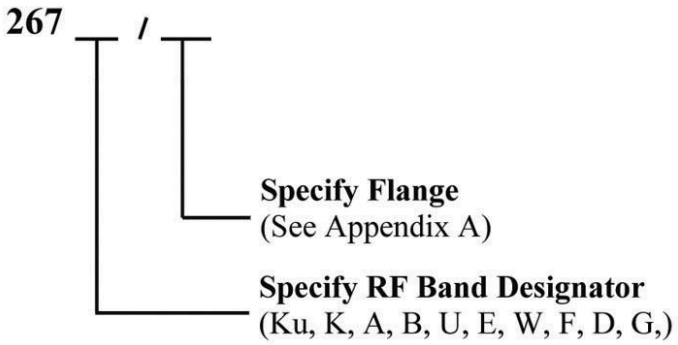
Surveillance
Network Broadcast and Receiving Systems
RF Probes

- *Low VWSR*
- *Wide Bandwidths*
- *360 degree Azimuth Beamwidths*
- *Variable Elevation Beamwidths*
- *45 Degree Typical*

170 GHz Omni-Directional

Consult Mi-Wave for complete dimensional outline for the application and specifications required.

Ordering Information



Order Example:

Model number 267A-35/599 is an Omni Antenna operating in A-band at 35 GHz with a circular polarization capability.

Description

Mi-Wave's 268 Series Scalar feed horn has been designed to be used in lens illumination such as scalar lens antennas and Cassegrain antennas. Low sidelobes are inherent in this type of feed.

Please consult Mi-Wave for other available gain and beamwidths.

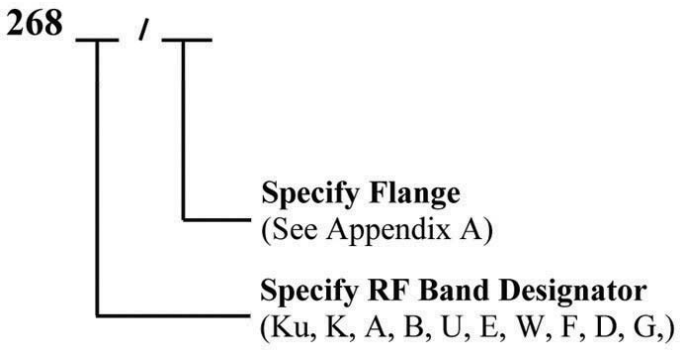
- *Low VWSR*
- *Wide Bandwidths*
- *Narrow Beamwidths*
- *Polarization Insensitive*

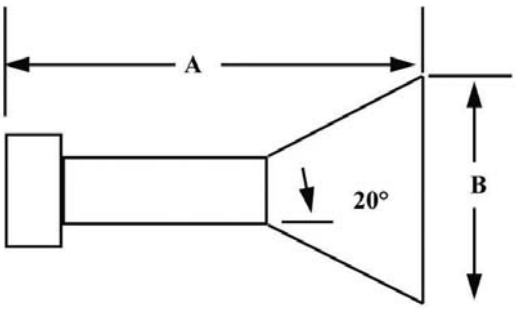
Applications

Feeds for Scalar Lens and Cassegrain Antennas

Typical Electrical Specifications	
Beamwidth (3 dB)	E-Plane 22 Deg. H-Plane 26 Deg.
SideLobes	E-Plane -25dB H-Plane -25dB
Bandwidth	35%

Ordering Information





NOTE:

- 263 Series Feed Horns are normally supplied with a standard circular waveguide. Rectangular waveguide is also available.
- Consult factory for current outline drawing.

Order Example:

Model number 268A is a scalar feed horn operating in A-band at 35 GHz with a circular polarization capability.