

Conical & Diagonal Horn Antennas

FEATURES:

- ❖ Available from 6 to 220 GHz
- ❖ Nominal Gain of 15, 20, and 25 dBi
- ❖ Made with Precise Dimensional Tolerance Control
- ❖ Gain Calibration is Accurate to 0.5 dB
- ❖ Over Full Waveguide Bandwidth



CCA Series

DESCRIPTION:

Cernex CCA series conical horns are fabricated with very close tolerances to ensure the precision of every horn manufactured by Cernexwave. Each unit is supplied with a short section of circular waveguide and terminated in a standard round flange. Conical horns can be used to determine experimentally 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 radar transmitter test, known-gain radiators in field propagation studies, and transmitting or receiving antennas in test bench applications. **Please Note:** 10, 15, 20 dB models are available in all bands.

SPECIFICATIONS:

Waveguide Band	X	Ku	K	Ka	Q	U	V	E	W	F	D	G
Waveguide Size	WR-90	WR-62	WR-42	WR-28	WR-22	WR-19	WR-15	WR-12	WR-10	WR-8	WR-6	WR-5
Frequency Range (GHz)	8.5 to 11.6	12.4 to 18	18 to 26.5	26.5 to 40	33 to 50	40 to 60	50 to 75	60 to 90	75 to 110	90 to 140	110 to 170	140 to 220
Square Flange	Full Band											
Circular Flange	Consult Cernexwave for Dimensions Due to Wide Variety of Circular Waveguide Sizes and Gain Options											

Notes: Please refer to chart for correct pipe size based on center frequency and bandwidth

HOW TO ORDER:

Specify Model Number

CCA – WG LF HF GN R -- XX

WG: Waveguide

LF: Low End Frequency

HF: High End Frequency

GN: Gain

R: For Rectangular Waveguide

XX: To be specified by the factory

Example: To order WR-15 with a frequency band of 5053Ghz, and a gain of 15 dB, specify CCA-15505315C-XX.

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Waveguide Band	WR-6.5	WR-5.1	WR-4.3	WR-3.4	WR-2.8	WR-2.2
Waveguide Size						
Waveguide Type	Rectangular	Rectangular	Rectangular	Rectangular	Rectangular	Rectangular
Frequency Range (GHz)	110 to 170	140 to 220	170 to 260	220 to 325	260 to 400	325 to 500
Horn Type	Conical	Conical	Conical	Diagonal	Diagonal	Diagonal
Horn Length (mm)	26.0	20.5	16.5	26.4	21.4	16.8
Aperture Diameter (mm)	10.8	8.4	7.1	5.6	4.6	3.6
Taper Half-Angle (deg)	11.7	11.6	12.1	6.0	6.1	6.1
Full 3 dB Bandwidth (deg)	13	13	13	10	10	10
Gain (dB)	21	21	21	26	26	26
Beam Waist Radius (mm)	4.1	3.2	2.7	2.3	1.9	1.5

HOW TO ORDER:

Specify Model Number

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WG: Waveguide

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HF: High End Frequency

GN: Gain

R: For Rectangular Waveguide

XX: To be specified by the factory

Example: To order WR-6.5 with a frequency band of 110-170Ghz, and a gain of 21 dB, specify CCA-0611017021-XX.

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