

## ANTENNAS

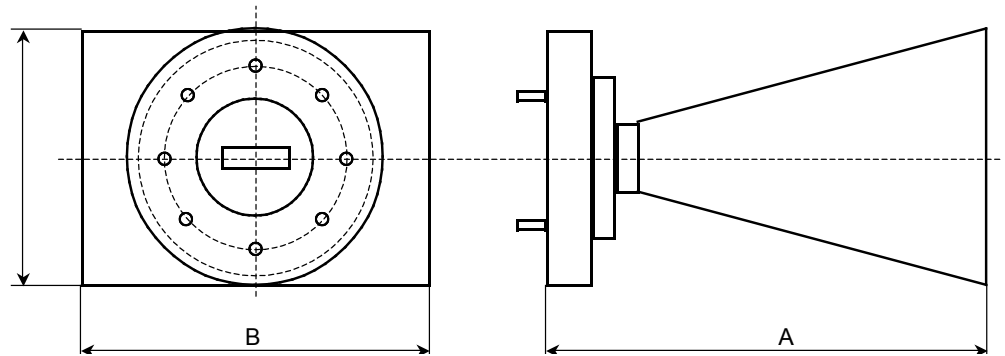
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## GAIN HORN ANTENNAS

### Description:

These antennas have an optimum length of flare for the specified gain and for maintaining the lowest VSWR. Gain variation across the bandwidth of the antenna is less than 1.5dB from the nominal value.



MODEL	FREQ (GHz)	CONNECTOR	FLANGE/ COAX	NOMINAL GAIN(dBi)	VSWR (MAX)	DIM. A (mm)	DIM. B (mm)	DIM. C(mm)
GH1-18N	1.0-18.0	Coax	Type N	6-10	2.50	250.0	244.0	158.0
GH1-12N	1.0-12.0	Coax	Type N	8-12	2.50	245.0	193.0	148.0
GH-90-20	8.2-12.4	WR-90	UG135/U	20	1.20	157.0	140.0	104.0
GH-90-25	8.2-12.4	WR-90	UG135/U	25	1.20	552.0	249.0	184.8
GH-75-20	10.0-15.0	WR-75	UBR-120	20	1.20	130.0	117.0	87.0
GH-75-25	10.0-15.0	WR-75	UBR-120	25	1.20	460.0	208.0	154.0
GH-62-20	12.4-18.0	WR-62	UG 419/U	20	1.20	112.0	101.0	74.0
GH-62-25	12.4-18.0	WR-62	UG 419/U	25	1.20	394.3	178.0	132.0
GH-51-20	15.0-22.0	WR-51	UBR-180	20	1.20	TBD	TBD	TBD
GH-51-25	15.0-22.0	WR-51	UBR-180	25	1.20	TBD	TBD	TBD
GH-42-20	18.0-26.5	WR-42	UG 595/U	20	1.20	71.3	64.0	47.0
GH-42-25	18.0-26.5	WR-42	UG 595/U	25	1.20	251.0	114.0	84.0
GH-34-20	22.0-33.0	WR-34	UBR-260	20	1.20	60.2	54.0	40.0
GH-34-25	22.0-33.0	WR-34	UBR-260	25	1.20	212.0	96.0	71.1
GH-28-20	26.5-40.0	WR-28	UG 599/U	20	1.20	49.0	44.0	33.0
GH-28-25	26.5-40.0	WR-28	UG 599/U	25	1.20	173.0	77.9	57.7
GH-22-20	33.0-50.0	WR-22	UG 383/U	20	1.15	47.0	34.9	26.8
GH-22-25	33.0-50.0	WR-22	UG 383/U	25	1.20	143.0	61.0	47.0
GH-19-20	40.0-60.0	WR-19	UG383/U-M	20	1.15	43.8	30.3	22.8
GH-19-25	40.0-60.0	WR-19	UG383/U-M	25	1.20	123.9	51.5	39.2
GH-15-20	50.0-75.0	WR-15	UG 385/U	20	1.15	37.5	24.7	19.0
GH-15-25	50.0-75.0	WR-15	UG 385/U	25	1.25	102.4	42.0	32.0
GH-12-20	60.0-90.0	WR-12	UG 387/U	20	1.20	33.0	21.0	16.3
GH-12-25	60.0-90.0	WR-12	UG 387/U	25	1.20	82.5	33.3	25.0
GH-10-20	75.0-110.0	WR-10	UG 387/UM	20	1.15	31.0	17.3	13.4
GH-10-25	75.0-110.0	WR-10	UG 387/UM	25	1.20	64.4	28.8	21.9

**Note:** Other Gain Levels such as 10dBi; 18dBi; 23dBi and 30dBi are available on special order for most frequency ranges.

## LENS CORRECTED HORN ANTENNAS (8 to 39.5GHz)

The Lens Corrected Horn Antennas are high performance designs which offer low sidelobes and a high ratio of cross polarization of 30dB or more. Standard products are available for operating center frequencies from 8.0 to 40GHz with gain value of up to 33dBi. The waveguide input power of these antennas can be up to 500W CW or pulse power. Custom antennas to meet exact specifications can be built in a wide range of designs. These include dual polarization, circular polarization as well as linear or slant polarization. Special designs with either round or rectangular apertures and wide choice of gain values up to 35 dBi available.

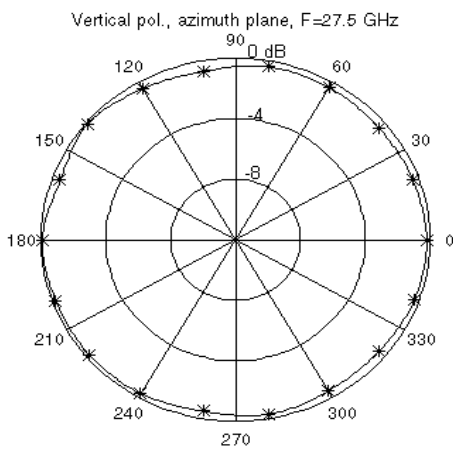


### GENERAL SPECIFICATION

Model:	LA-10-1	LA-28-1	LA-38-1	LA-38-2
Frequency Range, GHz	8.0-12.5	27.5-28.5	37.5-39.5	37.5-39.5
Gain, Nominal, (dB)	16.0	27.0	28.0	33.0
Polarization	Linear	Linear	Linear	Linear
Beamwidth, Degrees		6.0	5.5	3.5
VSWR, (max)	1.45	1.30	1.50	1.50
First side lobe, (dB)	-15	-16	-16	-16
Cross polarization, (dB)	-30	-30	-30	-30
Power, Watt	10	500	500	500
Temperature, (°C)	-10°C to +50°C	-30°C to +50°C	-30°C to +50°C	-30°C to +50°C
Waveguide	SMA	WR-28	WR-28	WR-28
Dimensions, (mm)	Ø117×200	Ø140×185	Ø110×105	Ø180×250
Flange		UG 599/U	UG 599/U	UG 599/U
Weight, kg		0.6	0.5	0.5

## OMNI – DIRECTIONAL ANTENNAS (24 to 43GHz)

	HORIZONTAL	VERTICAL
Frequency Range (GHz)	24.0-43.0	24.0-43.0
Bandwidth (%)	3	7
Beamwidth (Elevation)	8°	8°
Beamwidth (Azimuth)	360°	360°
Gain (dB)	9.5	10
Cross Polarization (dB)	20	24
VSWR	1.4	1.4
Power Handling (Watts)	100	500
Operating Temperature (°C)	-40 to +50	-40 to +50
Humidity (%)	0 to 100	0 to 100
Wind Velocity (meters/second)	50	50
Weight (kg)	0.5	4.5
Outline Drawing	Fig. A	Fig. B



Azimuth plane

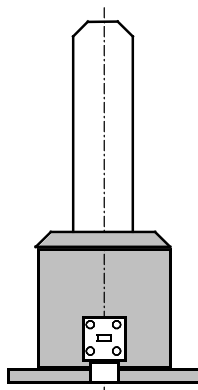
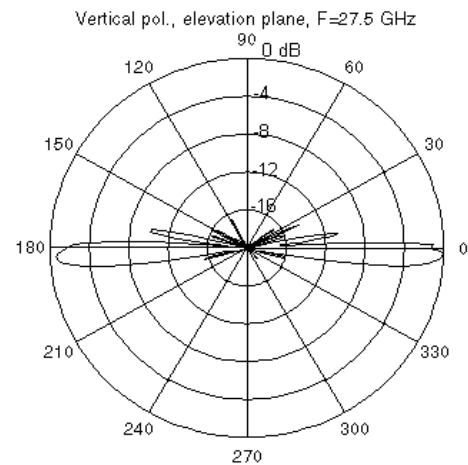


Fig. A



Elevation plane

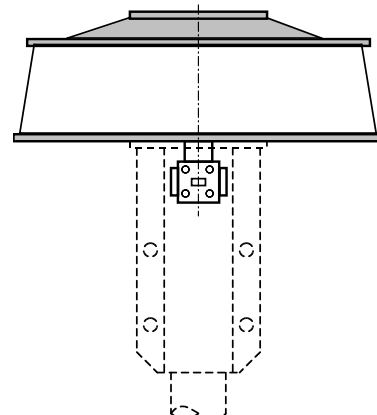
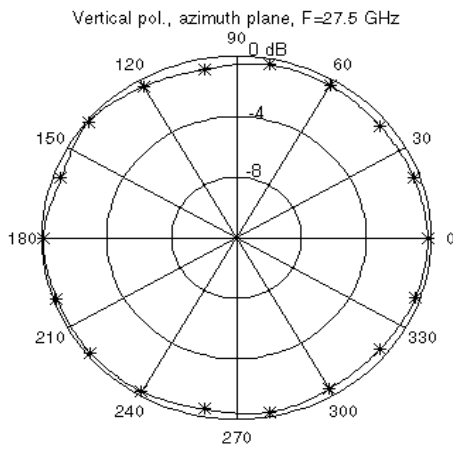


Fig. B

## OMNI – DIRECTIONAL ANTENNAS (27.5 to 42.5GHz)

MODEL	OMNI-28H	OMNI-28V	OMNI-28-VW	OMNI-41-V
Polarization	Horizontal	Vertical	Vertical	Vertical
Type	High Gain	High Gain	Wide Beam	Wide Beam
Frequency Range (GHz)	27.5-28.5	27.5-28.5	27.5-28.5	40.5-42.5
Beamwidth (Elevation.)	8.2°	8.2°	15.5°	9.0°
Beamwidth (Azimuth.)	360°	360°	360°	360°
Gain (dB)	9.5	9.5	7.0	8.5
Gain Ripple (dB)	1.5	1.5	1.5	2.0
Cross Polarization (dB)	-24	-24	-24	-20
Sidelobe Level (dB)	-15	-15	-15	-15
VSWR	1.40	1.40	1.40	1.5
Power Handling (Watts)	60	60	60	20
Operating Temperature (°C)	-35 to +50	-40 to +50	-35 to +50	-35 to +50
Humidity (%)	0 to 100	0 to 100	0 to 100	0 to 100
Wind Velocity (meters/second)	50	50	50	50
Outline Drawing	Fig. A	Fig. B	Fig. B	Fig. B



Azimuth plane

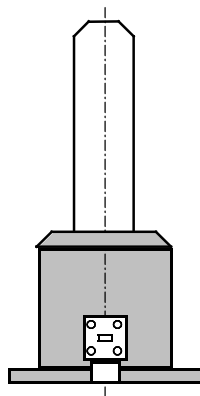
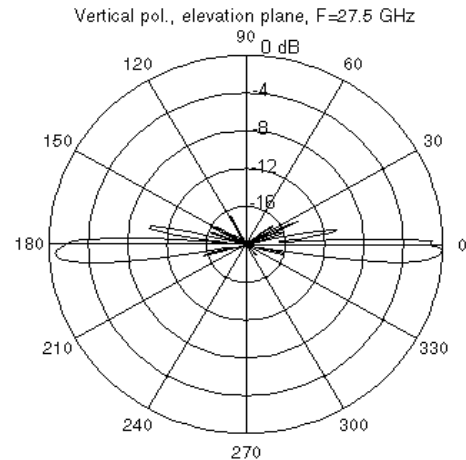


Fig. A



Elevation plane

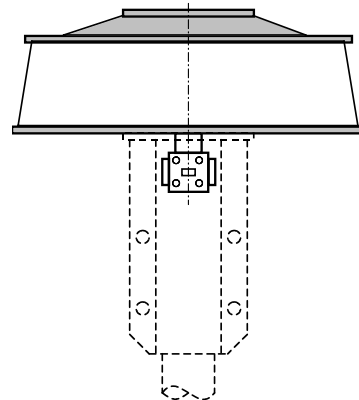


Fig. B

## CSC<sup>2</sup> SECTOR HORN ANTENNAS FOR LMDS

### HIGH GAIN NULL FREE SECTOR ANTENNAS FOR LMDS AND OTHER POINT TO MULTIPOINT APPLICATIONS

Dorado International has unveiled a new series of sector horn antennas for use in point to multipoint communication systems for millimeter wave frequencies between 18 and 44GHz. A unique cosecant squared (CSC<sup>2</sup>) elevation pattern design is utilized to provide an optimum signal distribution below the horizon and only a few percent of the energy is lost above the horizon. They are available for 90°, 60°, 45° and 30° azimuth sector patterns.

These antennas incorporate a new low loss lens that not only reduces the aperture size but also enables the antenna to provide an ideal distribution of energy with the highest gain directed at the horizon and a gradual reduction in gain as the signal is distributed below the antenna with no nulls. The overall size is shown below for our sector horn antennas with a choice of either Horizontal and Vertical polarization available. Special mounting arrangements can be accommodated.



FREQUENCY RANGE (GHZ)	24.25-27.0 GHz	25.0-27.5 GHz	27.5-29.5 GHz	31.0-31.3 GHz	37.0-40.0 GHz	40.0-43.5 GHz
Waveguide Type (Waveguide Option)	WR-42 (WR-34)	WR-34 (WR-28)	WR-28 (WR-34)	WR-28 (WR-34)	WR-28 (WR-22)	WR-22 (WR-19)
Azimuth Beamwidth	Model No.	Model No.	Model No.	Model No.	Model No.	Model No.
30°	SHC25-30*	SHC26-30*	SHC28-30*	SHC31-30*	SHC38-30*	SHC42-30*
45°	SHC25-45*	SHC26-45*	SHC28-45*	SHC31-45*	SHC38-45*	SHC42-45*
60°	SHC25-60*	SHC26-60*	SHC28-60*	SHC31-60*	SHC38-60*	SHC42-60*
90°	SHC25-90*	SHC26-90*	SHC28-90*	SHC31-90*	SHC38-90*	SHC42-90*

Polarization: \* Add "V" to Model No. For Vertical and "H" for Horizontal

Gain for 30° Beamwidth is 22 dBi (max 1.5 dB ripple over beamwidth)

Gain for 45° Beamwidth is 21 dBi (max 1.5 dB ripple over beamwidth)

Gain for 60° Beamwidth is 19.5 dBi (max 1.5 dB ripple over beamwidth)

Gain for 90° Beamwidth is 18 dBi (max 1.5 dB ripple over beamwidth)

Cross Polarization is -22 dB minimum at all angles (Relative gain)

Backlobe is -50 dB minimum at ±180 degrees (Relative gain)

Maximum Input Return Loss is 12.5 dB

Power Handling is 25 Watts

Operating Temperature Range -35°C to +60°C

Survival Temperature Range -40°C to +80°C

Environmental Specifications per ETSI 300 019-1-4, T4.1

Typical Outline Dimensions: ~12.5 x 8.0 x 2.0 inches (~ 31.7 x 20.3 x 5.1cm) (frequency dependent)

SPECIAL PERFORMANCE REQUIREMENTS CAN BE ACCOMODATED (ETSI, FCC etc).