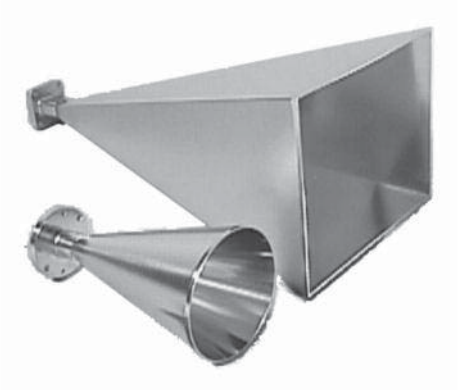
QUINSTAR TECHNOLOGY, INC.

Standard Gain Horn Antennas
QWH



Characteristics

- Pyramidal or Conical Shape
- Rectangular or Circular Waveguide Input
- Low VSWR

Product Description

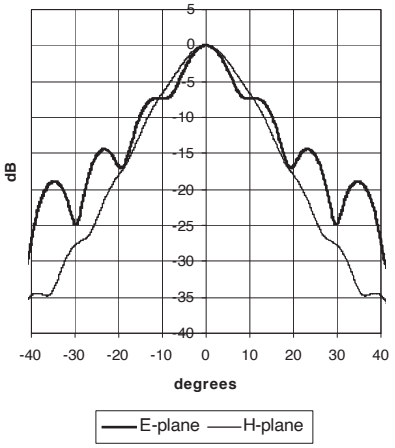
QuinStar Technology's **QWH** series of **standard gain horn antennas** cover the frequency range of 18 to 220 GHz in ten waveguide bands. They are available with either a rectangular aperture (pyramidal shape) for connecting to rectangular waveguide or a round aperture (conical shape) for use with either rectangular or circular waveguide. The pyramidal horns have a nominal mid-band gain of 24dB, with 21dB typical for the circular horns.

Standard gain horns are useful for a wide variety of propagation applications, including antenna testing and RF radiation measurements. These horns are often employed as calibration standard or reference for antenna gain measurements. Conical horns can be used to radiate or receive either linearly or circularly polarized waves. Both shapes are also usable as feed horns for lens and reflector antennas. The horns are precisely fabricated to control the aperture size and flare angle. Horns capable of producing customer-specific beam shapes and gain covering broad ranges are also available. Refer to series QRR custom feed horns.

Specifications

FREQUENCY BAND	K	Ka	Q	U	V	E	W	F	D	G
Frequency Range (GHz)	18-26.5	26.5-40	33-50	40-60	50-75	60-90	75-110	90-140	110-170	140-220
Waveguide Size	WR-42	WR-28	WR-22	WR-19	WR-15	WR-12	WR-10	WR-8	WR-6	WR-5
VSWR (max)	1.10:1	1.10:1	1.10:1	1.10:1	1.15:1	1.15:1	1.15:1	1.20:1	1.25:1	1.25:1
Pyramidal Horn Mid-band Gain (dB typ)	24									
Conical Horn Mid-band Gain (dB typ)	21									

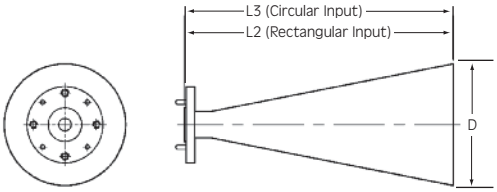
Pyramidal Horn Antenna Pattern



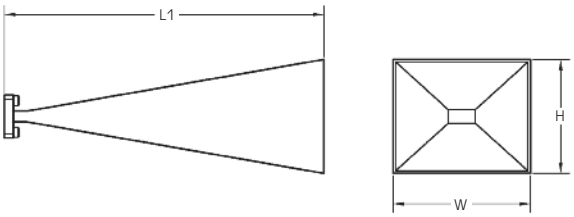
Made in USA

24085 Garnier Street, Torrance, CA 90505 ❖ (310) 320-1111 Fax: (310) 320-9968 ❖ sales@quinstar.com ❖ www.quinstar.com

Outline Drawings/Mechanical Specifications



Conical
(circular waveguide with
round flange pattern shown)



Pyramidal
(rectangular waveguide with
square flange pattern shown)

PYRAMIDAL AND CONICAL HORNS WITH RECTANGULAR WAVEGUIDE INPUT							
Frequency Band	Waveguide Size	Flange Pattern	Outline Dimensions, inches/mm				
			Pyramidal Horns			Conical Horns	
			W	H	L1	D	L2
Ku	WR-62	UG-419/U	5.60/142.2	4.16/105.7	11.95/303.5	4.0/101.6	7.0/177.8
K	WR-42	UG-595/U	4.12/104.6	3.12/79.2	7.48/190.0	2.37/60.2	5.0/127.0
Ka	WR-28	UG-599/U	2.73/69.3	2.12/53.8	5.0/127.0	1.87/47.5	4.2/106.7
Q	WR-22	UG-383/U	2.24/56.9	1.71/43.4	4.08/103.6	1.51/38.4	3.2/81.3
U	WR-19	UG-383/U	1.88/47.8	1.44/36.6	3.49/88.6	1.25/31.8	3.05/77.5
V	WR-15	UG-385/U	1.49/37.8	1.15/29.2	2.78/70.6	1.02/25.9	2.4/61.0
E	WR-12	UG-387/U	1.24/31.5	0.96/24.4	2.35/59.7	0.85/21.6	2.05/52.1
W	WR-10	UG-387/U	1.03/26.2	0.80/20.3	1.94/49.3	0.7/18.0	1.4/35.6
F	WR-8	UG-387/U	0.83/21.1	0.65/16.5	1.56/39.6	0.58/14.7	1.40/35.6
D	WR-6	UG-387/U	0.69/17.5	0.54/13.7	1.26/32.0	0.49/14.7	1.15/20.1
G	WR-5	UG-387/U	0.55/14.0	0.43/10.9	1.04/26.4	0.40/10.2	0.9/22.9

CONICAL HORNS WITH CIRCULAR WAVEGUIDE INPUT				
Frequency Band	Waveguide Diameter, inches/mm	Flange Pattern	Outline Dimensions, Inches/mm	
			D	L3
K	0.455/11.5	UG-381/U	2.37/60.2	4.0/101.6
Ka	0.315/8.0	UG-381/U	1.87/47.5	3.3/83.8
Q	0.251/6.3	UG-383/U	1.51/38.4	2.7/68.5
U	0.211/5.3	UG-383/UM	1.25/31.8	2.25/57.1
V	0.166/4.1	UG-385/U	1.02/25.9	1.90/40.2
E	0.137/3.4	UG-387/U	0.85/21.6	1.60/40.6
W	0.113/2.8	UG-387/UM	0.71/18.0	1.30/33.0
F	0.090/2.2	UG-387/UM	0.58/14.7	1.10/27.9
D	0.073/1.8	UG-387/UM	0.49/12.5	0.90/22.8
G	0.058/1.4	UG-387/UM	0.40/10.2	0.75/19.0

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Ordering Information

Model Number **QWH -** **A B C D 00**

waveguide band designator

K = K-band
A = Ka-band
Q = Q-band
U = U-band
V = V-band
E = E-band
W = W-band
F = F-band
D = D-band
G = G-band

horn shape

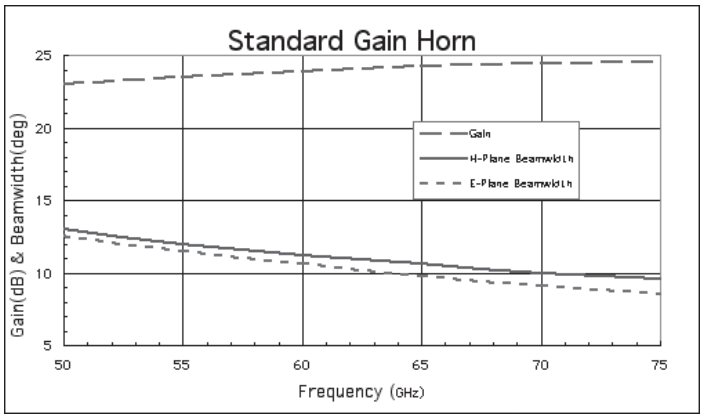
C = conical
P = pyramidal

flange type

R = round
S = square

waveguide input

C = circular (conical only)
R = rectangular (conical and pyramidal)



Pyramidal Standard Gain Horn

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