Q-Band Focusing Lens Horn Antenna
## 33 to 50 GHz, WR22

DESCRIPTION

Anteral's Focusing Lens Horn Antennas are conical horn antennas with a **double-convex** Teflon (PTFE) lens added in the aperture, in order to apply phase correction and achieve superior focusing performance with minimum size.

The FLHA-F-WR22 model operates at the Q-band between 33 and 50 GHz with a focal length of 120.1 mm and a diameter beam focus of 11 mm.
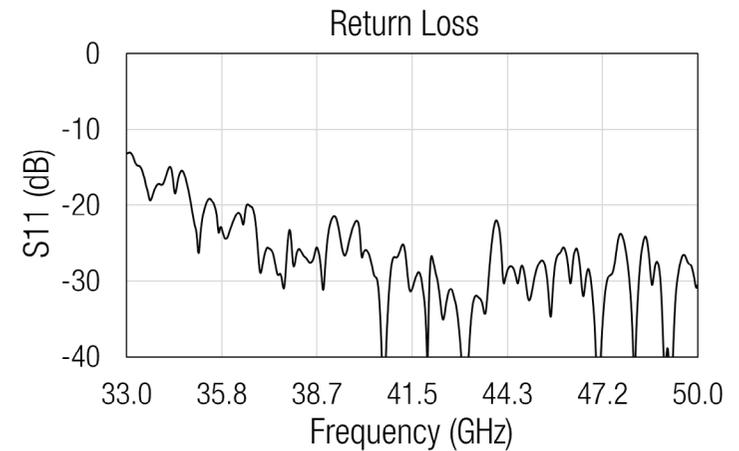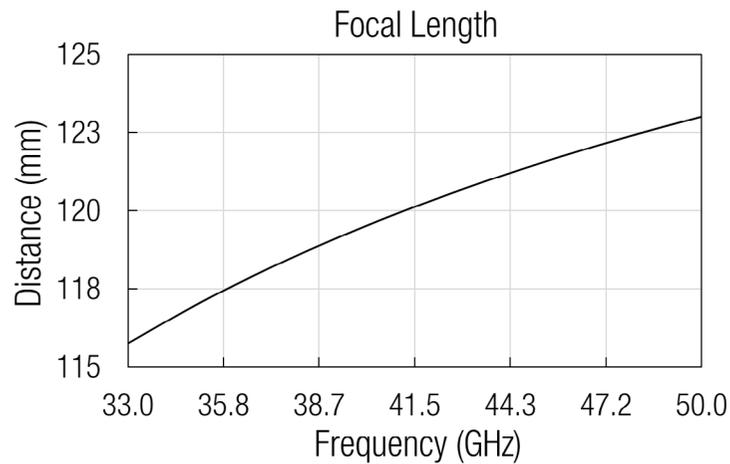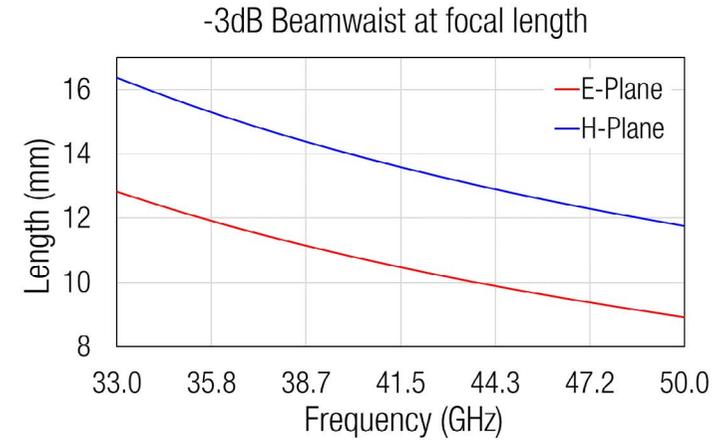
APPLICATIONS

Focusing Lens Horn Antennas are especially useful when focusing beam is required with short focal distances. Therefore, these antennas are widely used in testing and material characterization.

Anteral also offers their Lens Horn Antennas with plano-convex lenses to exhibit high gain (>30 dB) in a very compact size which makes them optimal for radar applications, communication links or meteorological systems among others.
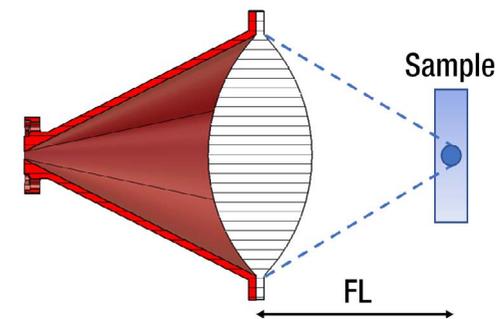
ELECTRICAL SPECIFICATIONS

Parameter	Typical value
Frequency	33 - 50 GHz
Focal Length	120.1 mm
3 dB Beamwaist, E-plane	10.5 mm
3 dB Beamwaist, H-plane	13.6 mm
S11	-18 dB

-3dB Beamwaist at focal length

Legend:
— E-Plane
— H-Plane

(Plot: Length (mm) vs Frequency (GHz), x-axis 33.0 to 50.0, y-axis 8 to 16)

Focal Length

(Plot: Distance (mm) vs Frequency (GHz), x-axis 33.0 to 50.0, y-axis 115 to 125)

Return Loss

(Plot: S11 (dB) vs Frequency (GHz), x-axis 33.0 to 50.0, y-axis -40 to 0)

MECHANICAL SPECIFICATIONS

Parameter	Description
Antenna Port*	WR-22 (5.690 mm x 2.845 mm)
Flange	UG-383/U
Total length	124.3 mm
Total diameter	108 mm
Total weight	490 g
Horn Material	Aluminum
Lens Material	PTFE
External Color	Ruby Red

*The antenna includes a rectangular to circular waveguide transition (WR-22 to WC-380)*
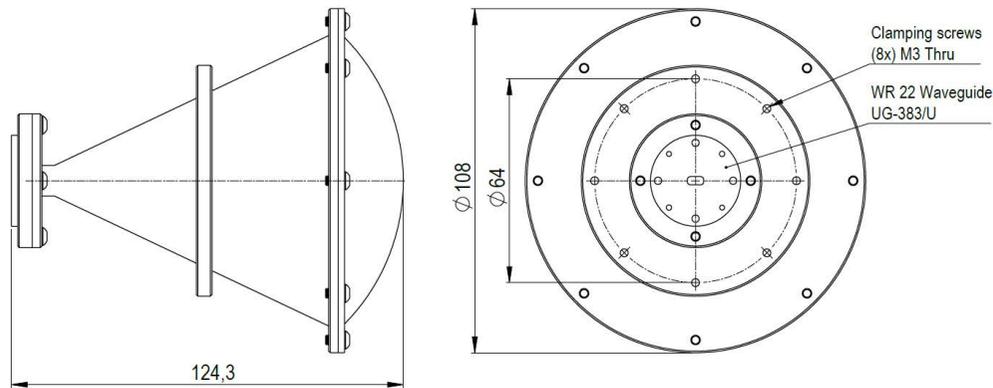
CLAMPING STRUCTURE

Anteral's Lens Horn Antennas are drilled with some threads for clamping purpose. See the mechanical outline.
Anteral also offers clamping structure for the LHA-F-WR22 with the following specifications.

Model	Material	Weight (g)
LHA-F-WR22-CLAMP	*Aluminum*	165

The base is drilled with 4 through holes but any custom holes can be added.

MECHANICAL OUTLINE

Clamping screws (8x) M3 Thru

WR 22 Waveguide UG-383/U

Ø 108
Ø 64
124,3

(2x) Ø 6,4 Thru
Ø 11 ↧ 6,4
50
75
58
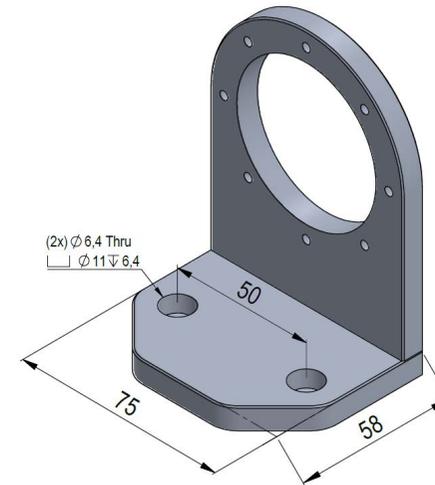
Additional notes

Focal length and beamwaist data are simulated. Return loss data is measured from a sample. Actual values could vary slightly.
The return loss performance of all items is checked before delivery.

Last version: 23/01/2023