



- **Optimized design of high performance**
- **Best for material characterization**
- **Very compact size**
- **Low VSWR**
- **Specific focusing performance can be requested**

Description

Anteral's Focusing Lens Horn Antennas are conical horn antennas with a **double-convex** TEFLON lens added in the aperture, in order to apply phase correction and achieve superior focusing performance with minimum size. The lenses are designed with optimized hyperbolic or spherical profiles to reduce the aberration to the minimum. They are designed to cover the frequency range of 8 to 90 GHz. Anteral designs all Lens Horn Antennas to show not only the best focusing performance, but also low VSWR (< 1.3).

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.

On the other hand, Anteral also offers Communication Lens Horn Antennas with plano-convex lenses with optimize performance for communication applications up to 170 GHz. Check it in Communication Lens Horn Antenna datasheet.

Additional Notes

All designs are optimized to offer the best focusing performance with the minimum size.

The performance of all devices is checked before delivery.

Extended performance datasheet is available if customer requires.

Anteral offers custom designs. Ask for more information.

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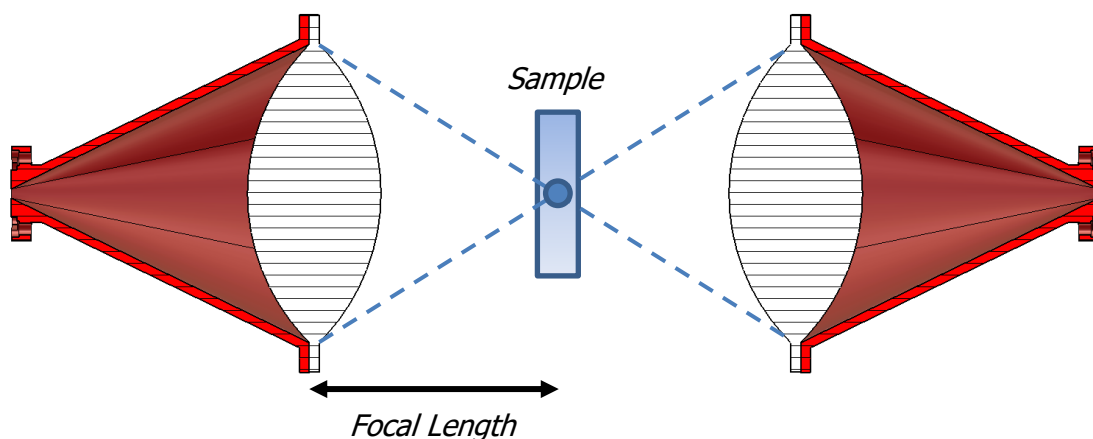
Mechanical and Electrical Specifications

| | Description |
|-------------------|--------------------|
| Typical Beamwidth | $\sim 1.5 \lambda$ |
| Typical VSWR | < 1.3 |
| External color | Ruby red |
| Material | Aluminum |

Focusing Performance

| Model | Frequency (GHz) | Focal Length (mm) | Diameter beamwidth (Power -3dB) | |
|------------|-----------------|-------------------|---------------------------------|--------------|
| | | | E-Plane (mm) | H-Plane (mm) |
| LHA-F-WR90 | 8.2 – 12.5 | 200 | 37.1 | 45.9 |
| LHA-F-WR62 | 11.9 – 18 | 135 | 23.7 | 29.5 |
| LHA-F-WR42 | 18 – 26.5 | 152 | 19.1 | 23.1 |
| LHA-F-WR28 | 26.5 – 40 | 148 | 13.2 | 17.3 |
| LHA-F-WR22 | 33 – 50 | 117 | 10.3 | 13.9 |
| LHA-F-WR19 | 40 – 60 | 100 | 9.0 | 11.3 |
| LHA-F-WR15 | 50 – 75 | 110 | 10.2 | 13.2 |
| LHA-F-WR12 | 60 – 90 | 72 | 6.6 | 8.3 |

*For higher frequencies Anteral offers Communication Lens Horn Antennas up to 170 GHz.



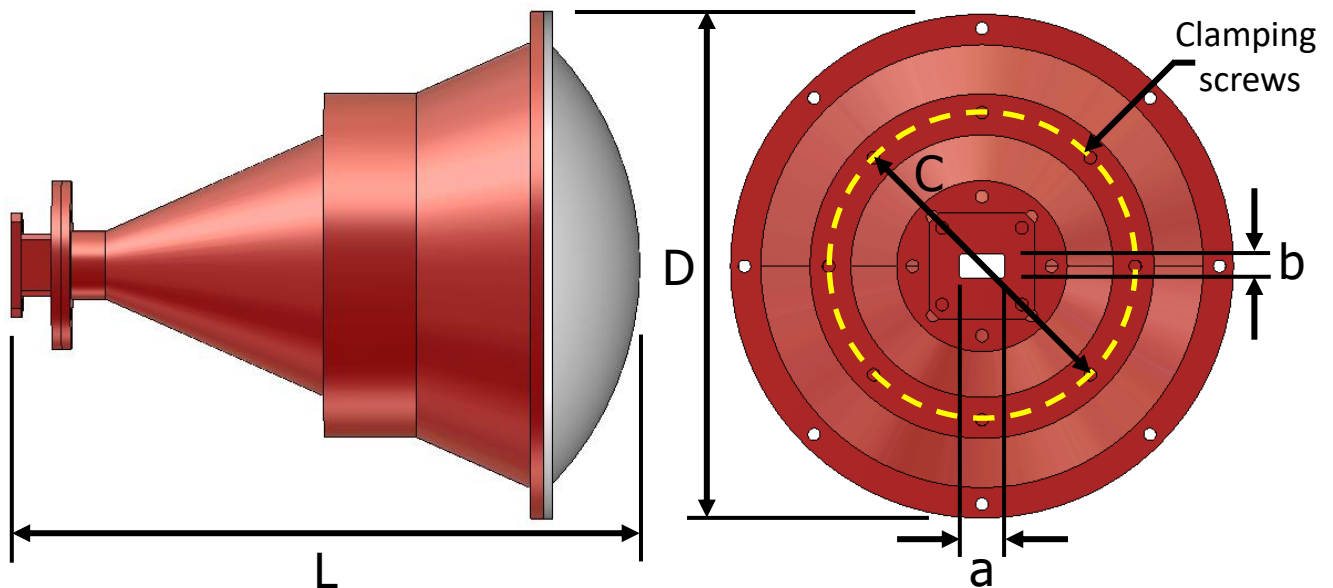
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Antenna Specifications

Rectangular Waveguide Feed

| Model | Frequency (GHz) | Input Waveguide | Dimensions a x b (mm) | Standard Flange | D (mm) | L (mm) |
|------------|-----------------|-----------------|-----------------------|-----------------|--------|--------|
| LHA-F-WR90 | 8.2 – 12.5 | WR-90 | 22.860 x 10.160 | UG-39/U | 222 | 286 |
| LHA-F-WR62 | 11.9 – 18 | WR-62 | 15.799 x 7.899 | UG-419/U | 162 | 201 |
| LHA-F-WR42 | 18 – 26.5 | WR-42 | 10.668 x 4.318 | UG-595/U | 144 | 175 |
| LHA-F-WR28 | 26.5 – 40 | WR-28 | 7.112 x 3.556 | UG-599/U | 130 | 153 |
| LHA-F-WR22 | 33 – 50 | WR-22 | 5.690 x 2.845 | UG-383/U | 108 | 124 |
| LHA-F-WR19 | 40 – 60 | WR-19 | 4.775 x 2.388 | UG-383/U | 93 | 104 |
| LHA-F-WR15 | 50 – 75 | WR-15 | 3.759 x 1.880 | UG-385/U | 72 | 74 |
| LHA-F-WR12 | 60 – 90 | WR-12 | 3.0988 x 1.5494 | UG-387/U | 62 | 62 |

*The antenna length includes a rectangular to circular waveguide transition



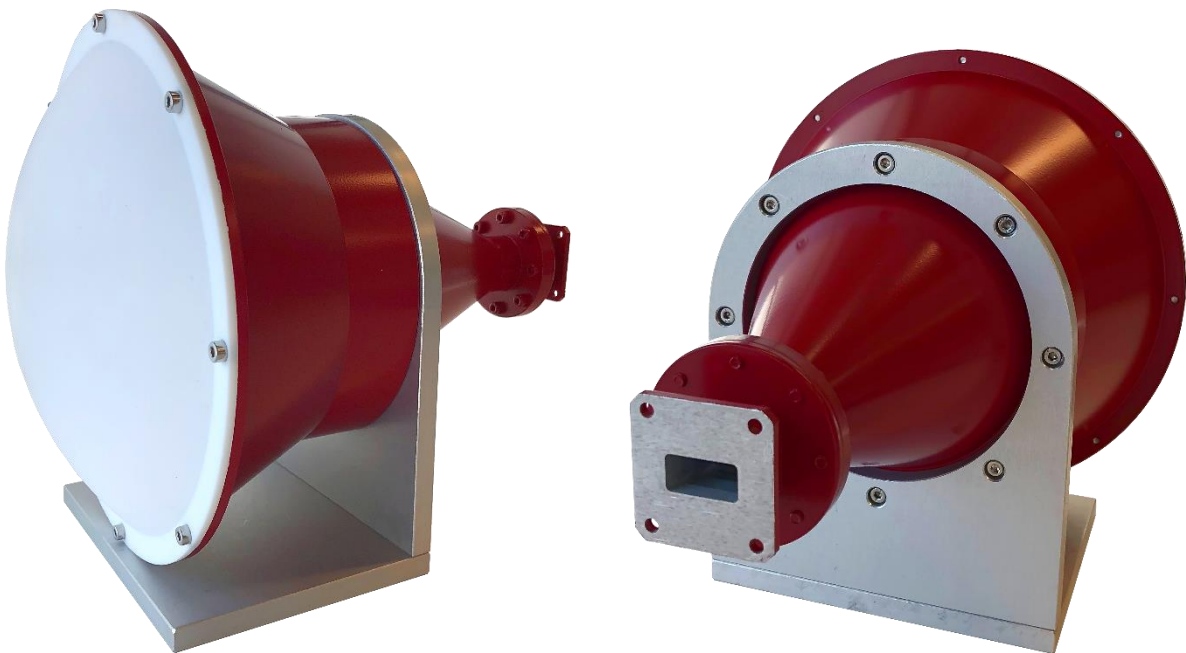
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Dimensions & Clamping Structure

| Model | D (mm) | L (mm) | LHA Weight (g) | C (mm) | Clamping Screws | Clamping Structure Weight (g) |
|-------------------|--------|--------|----------------|--------|-----------------|-------------------------------|
| LHA-F-WR90 | 222 | 286 | 4210 | 180 | M4 (↓16 mm) | 890 |
| LHA-F-WR62 | 162 | 201 | 1690 | 152 | M4 (↓10 mm) | 520 |
| LHA-F-WR42 | 144 | 175 | 1160 | 108 | M4 (↓10 mm) | 300 |
| LHA-F-WR28 | 130 | 153 | 840 | 75 | M3 (↓8 mm) | 260 |
| LHA-F-WR22 | 108 | 124 | 520 | 64 | M3 (↓8 mm) | 190 |
| LHA-F-WR19 | 93 | 104 | 340 | 58 | M3 (↓8 mm) | 150 |
| LHA-F-WR15 | 72 | 74 | 150 | - | - | - |
| LHA-F-WR12 | 62 | 62 | 100 | - | - | - |

**Clamping structure are only available for bigger and heavy models*

***Clamping structure base can be drilled with custom through holes*



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