

# Luneburg lens antenna

## OLLA-265400

Luneburg lens antenna is a spherical dielectric lens antenna, which focuses microwaves to the focal point through dielectric. Luneburg lens antenna is widely used in microwave, millimeter wave, mobile communication, satellite communication and radio astronomy due to its high gain, low profile and multi-feed multi-beam operation.

The distribution has sphere symmetry, which makes any point on the Luneburg lens sphere the focal point of the lens sphere. Therefore, as long as the position of the antenna feed on the spherical surface is controlled, the electromagnetic radiation beam can be directed in any direction, and there is no defocus problem as the position of the feed on the spherical surface changes.

Due to the medium distribution characteristics of the lens, the antenna is relatively insensitive to the frequency band of electromagnetic waves, so the frequency band can be very wide.

Customize Luneburg lens antenna are offered for the frequency range of 2 to 110 GHz. The standard gain value and corresponding half power beamwidth at 26.5GHz-40GHz is 20 dBi and 18 degrees.

Other gain values are available as custom order. The 3D printed antenna can be connected to standard waveguide interface. Other customized feeds are also available.



### Features

|                    |
|--------------------|
| All-dielectric     |
| Light weight       |
| Low cost           |
| Low side lobe      |
| Easy configuration |
| Customized design  |

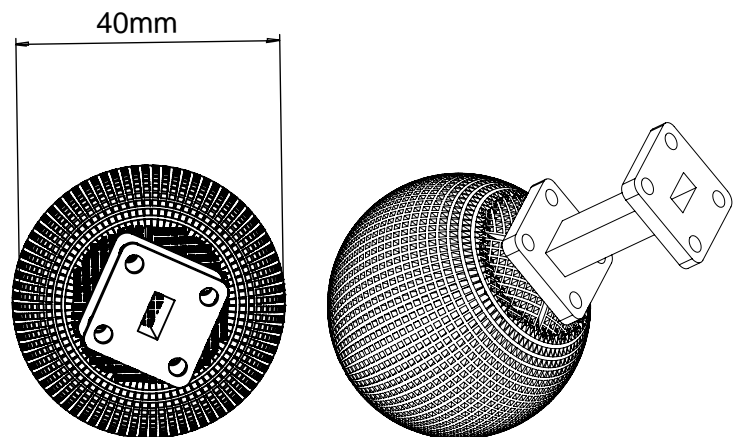
### Applications

|                                      |
|--------------------------------------|
| Antenna reference                    |
| Radiation element for sub-systems    |
| Antenna mounted on Ka-band waveguide |

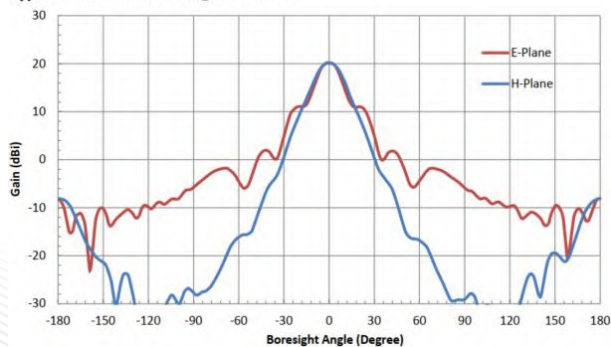
### Electrical Specifications

|                      |                   |
|----------------------|-------------------|
| Frequency Range(GHz) | (26.5-40)GHz      |
| Gain(dB)             | 20 dBi            |
| Return Loss (dB)     | < -20 dB          |
| Beamwidth            | 18 degree@33GHz   |
| Polarization type    | All polarizations |
| Sidelobe Level       | -20 dB            |
| Diameter dimensions  | 40mm              |
| Antenna weight       | 32 g              |

### PRODUCT DIMENSIONS



Typical Antenna Pattern @ 33.25 GHz



Typical Gain vs. Frequency

