RFecho
A Gateway to RF World

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 Luneberg 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

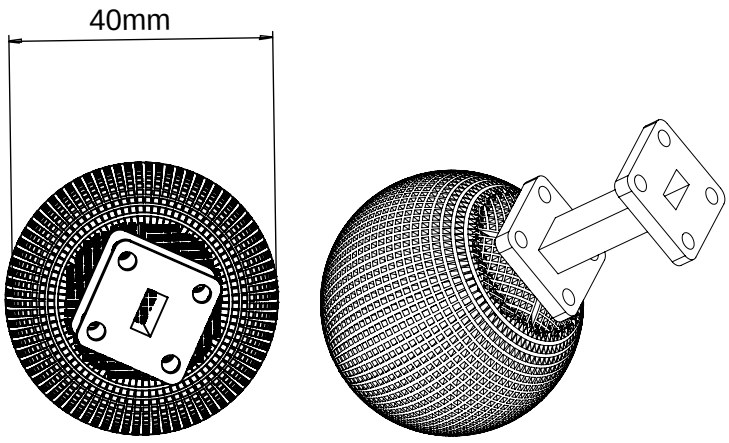
Applications

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

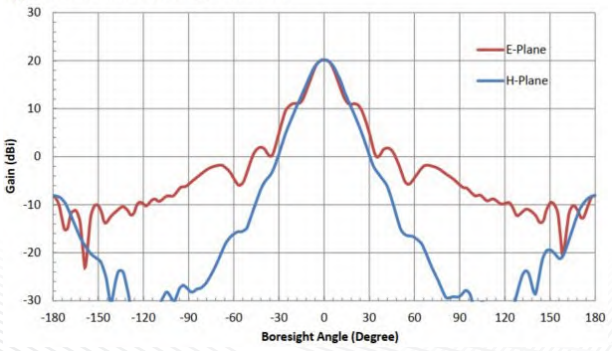
Electrical Specifications

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 Leve	-20 dB
Diameter dimensions	40mm
Antenna weight	32 g

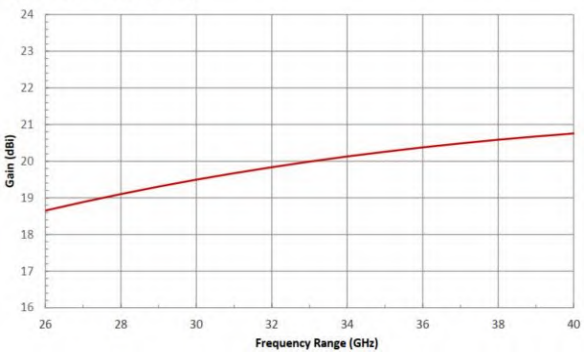
PRODUCT DIMENSIONS



Typical Antenna Pattern @ 33.25 GHz



Typical Gain vs. Frequency



EC Microwave is trademark of Ocean Microwave
All rights of respective trademark owners reserved.
© EC Microwave 2017