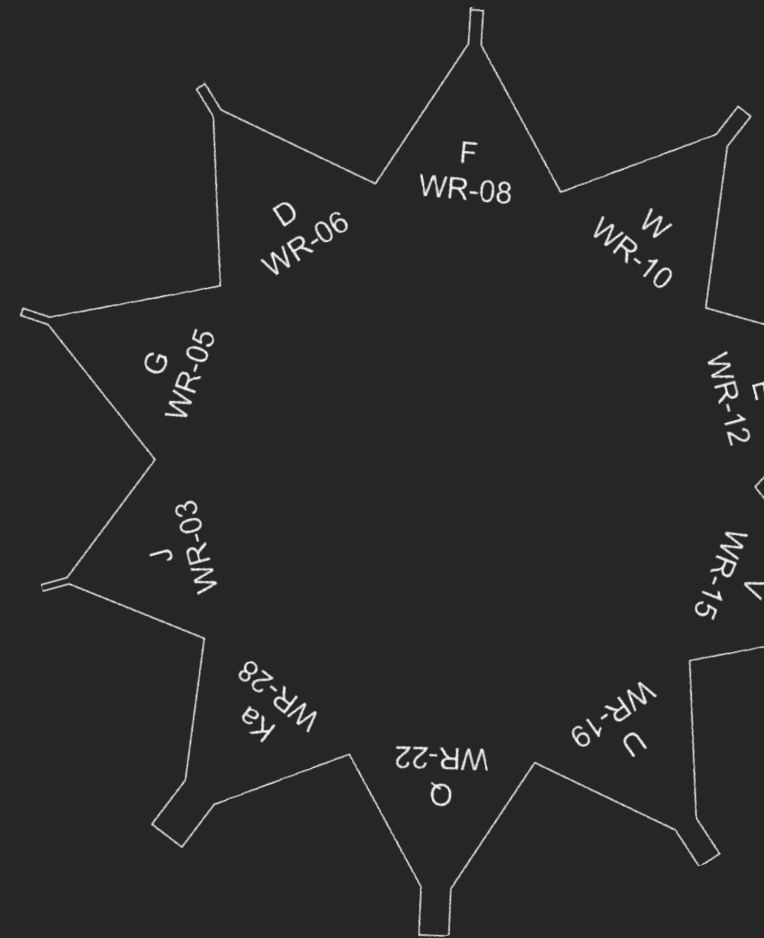


# ERA<sup>ANT</sup>

MAKING MILLIMETERWAVE ACCESSIBLE

## G-BAND UPDATES

AUGUST 2022



# CONTENTS

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## **INTRODUCTION**

ANTENNAS: RECTANGULAR HORNS, SCALAR HORNS, CHOKE FLANGE HORN, AND GAUSSIAN ANTENNA

AMPLIFIER: LOW NOISE

FREQUENCY MULTIPLIERS: ACTIVE AND PASSIVE

MIXERS: BALANCED AND SUBHARMONICALLY PUMPED

DETECTOR: AMPLITUDE SMALL SIGNAL

SWITCHES: SPST

WAVEGUIDES: STRAIGHT, BEND, TWIST, TRANSITION

PASSIVE COMPONENTS: MAGIC TEE, POWER DIVIDER AND DIRECTINAL COUPLER

FERRITE DEVICES: STANDARD, COMPACT AND MINIATURE

PHASE SHIFTER: MECHANICAL ADJUSTABLE

ATTENUATORS: FIXED, LEVEL SETTING, DIRECT READING AND PROGRAMMABLE

## **WEBSITE**

# INTRODUCTION

**ERAVANT** designs and manufactures total solutions for microwave and millimeterwave applications covering 10 MHz to 220 GHz.

- **This presentation introduces Eravant's selective standard product offerings in the G-Band (140 to 220 GHz).**
- The product offering, including Limited Run models, are listed on the website at [www.eravant.com](http://www.eravant.com).

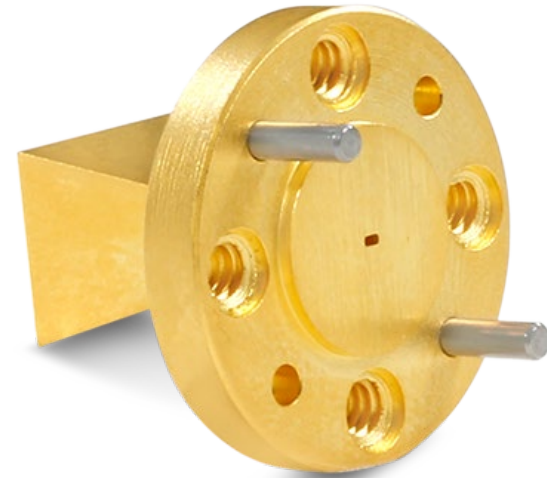
**Additional products and presentations are available upon request.**

- Custom models for components and subassemblies can be configured to customers' specifications.
- Presentations about Ka, Q, U, V, E, W, F, and D-Bands are available.
- Presentations for specific applications like 5G/IoT, Space, Test Instrumentation, Communications, and Radar are available online [here](#).

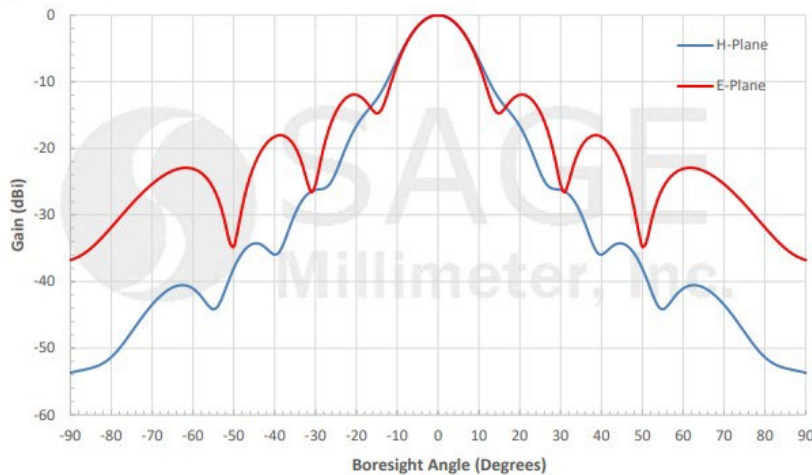
# INTRODUCTION

- ERAVANT offers Total Product Solutions to configure any system applications in the Frequency Range of DC to 325 GHz.
- G Band products are mainly used in
  - 5G and 6G mmW systems
  - Security cameras
  - Radar systems
  - Scientific and industrial systems
  - Test equipment and lab set ups
- The intent of this presentation is to present the ERAVANT product offerings in G Band (140 to 220 GHz) to help the customers having a quick overview of available product families for their project and system planning. The model selected is for illustration purpose. Many models with various performance in the same product family are available on the website.

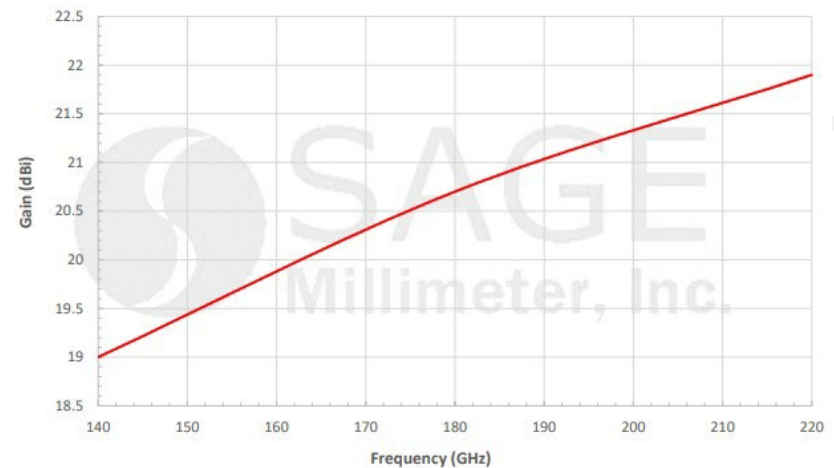
| Parameter               | Minimum | Typical | Maximum |
|-------------------------|---------|---------|---------|
| Frequency               | 140 GHz |         | 220 GHz |
| Gain                    |         | 20 dBi  |         |
| Polarization            |         | Linear  |         |
| 3 dB Beamwidth, E-Plane |         | 13°     |         |
| 3 dB Beamwidth, H-Plane |         | 13°     |         |
| Side Lobes, E -Plane    |         | 12 dB   |         |
| Side Lobes, H Plane     |         | 25 dB   |         |
| VSWR                    |         | 1.18:1  |         |



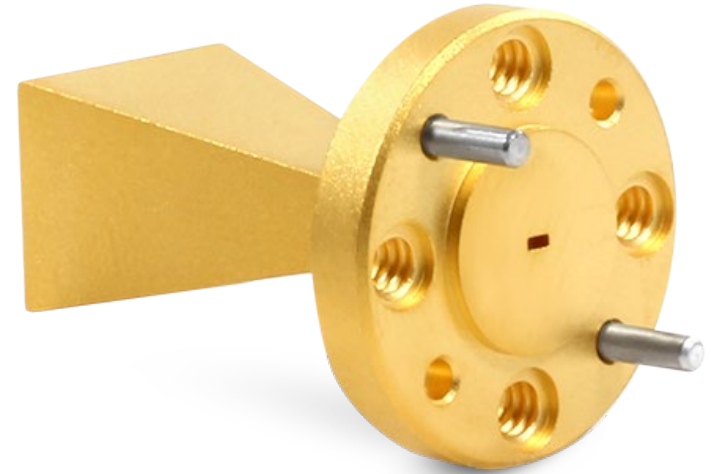
Typical Antenna Pattern @ 180 GHz



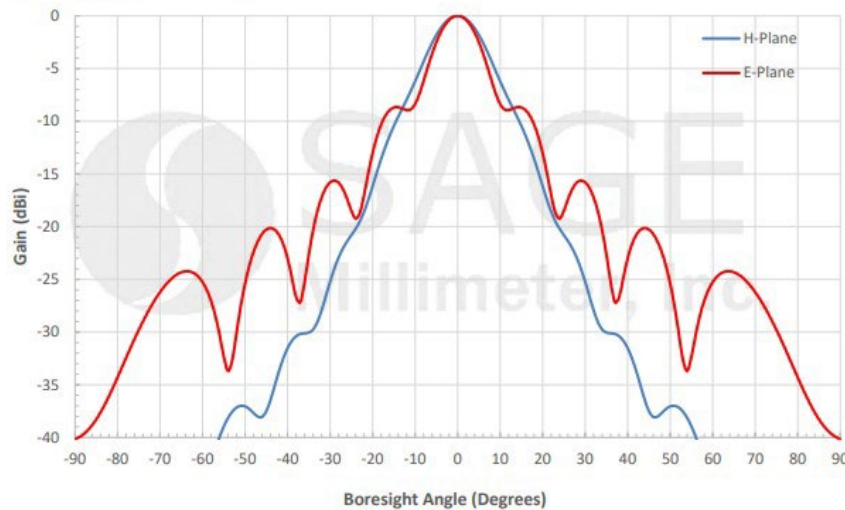
Typical Gain vs. Frequency



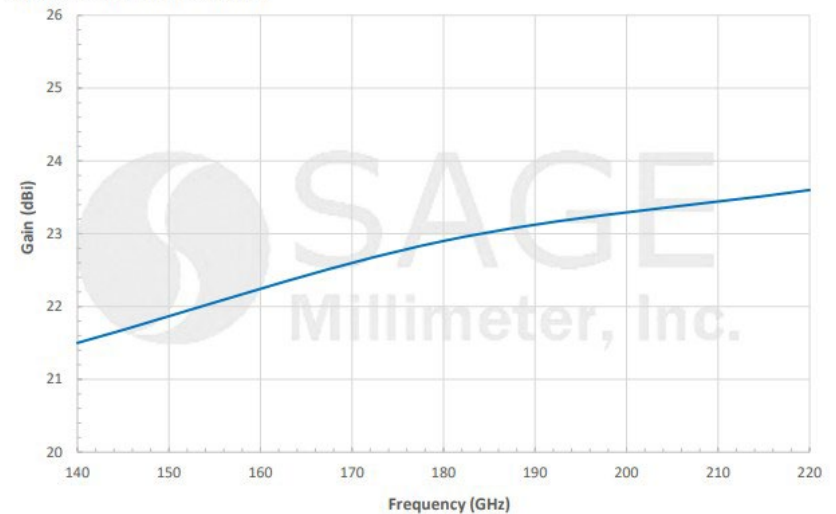
| Parameter               | Minimum | Typical | Maximum |
|-------------------------|---------|---------|---------|
| Frequency               | 140 GHz |         | 220 GHz |
| Gain                    |         | 23 dBi  |         |
| Polarization            |         | Linear  |         |
| 3 dB Beamwidth, E-Plane |         | 9°      |         |
| 3 dB Beamwidth, H-Plane |         | 12°     |         |
| Side Lobes, E -Plane    |         | 9 dB    |         |
| Side Lobes, H Plane     |         | 26 dB   |         |
| VSWR                    |         | 1.2:1   |         |



Typical Antenna Pattern @ 180 GHz



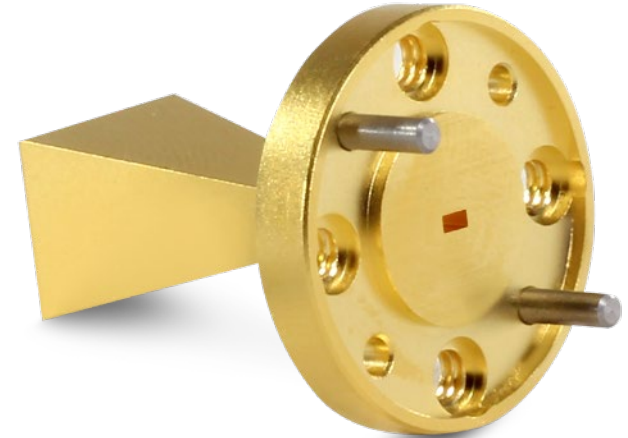
Typical Gain vs. Frequency



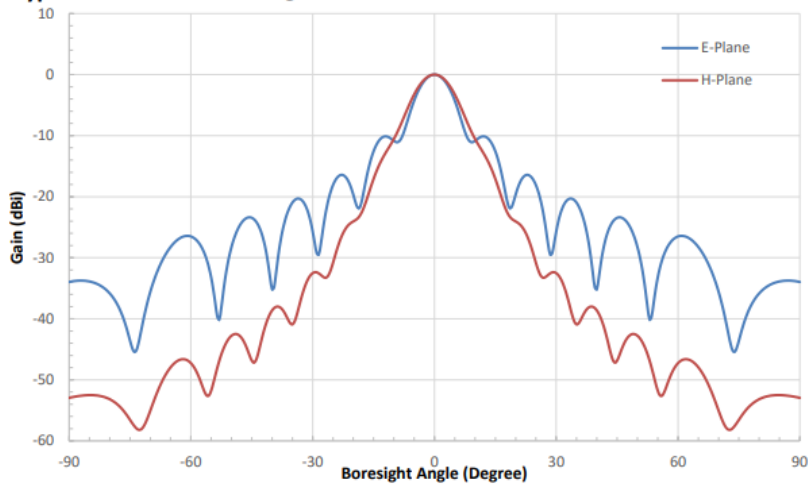
# SAR-2507-05-S2

Rectangular Horn Antenna, 25 dBi

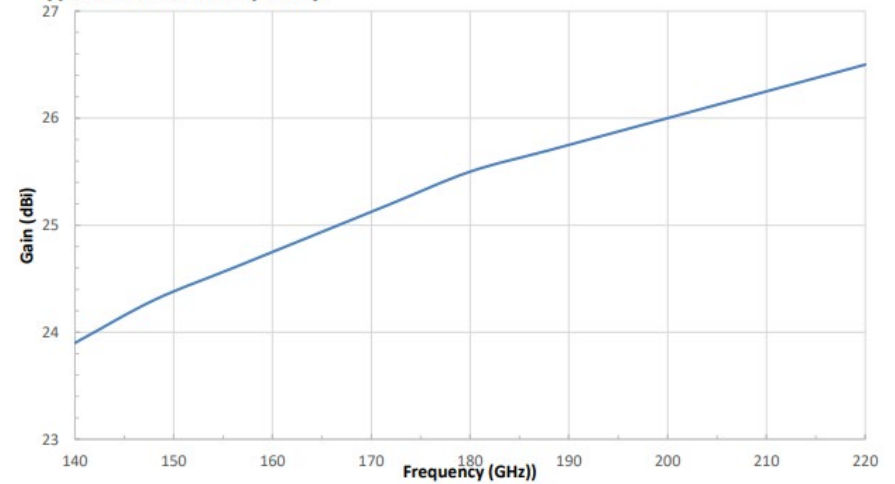
| Parameter               | Minimum | Typical | Maximum |
|-------------------------|---------|---------|---------|
| Frequency               | 140 GHz |         | 220 GHz |
| Gain                    |         | 25 dBi  |         |
| Polarization            |         | Linear  |         |
| 3 dB Beamwidth, E-Plane |         | 7°      |         |
| 3 dB Beamwidth, H-Plane |         | 12°     |         |
| Side Lobes, E -Plane    |         | 9 dB    |         |
| Side Lobes, H Plane     |         | 26 dB   |         |
| VSWR                    |         | 1.2:1   |         |



Typical Antenna Patterns @ 180 GHz



Typical Gain Vs. Frequency



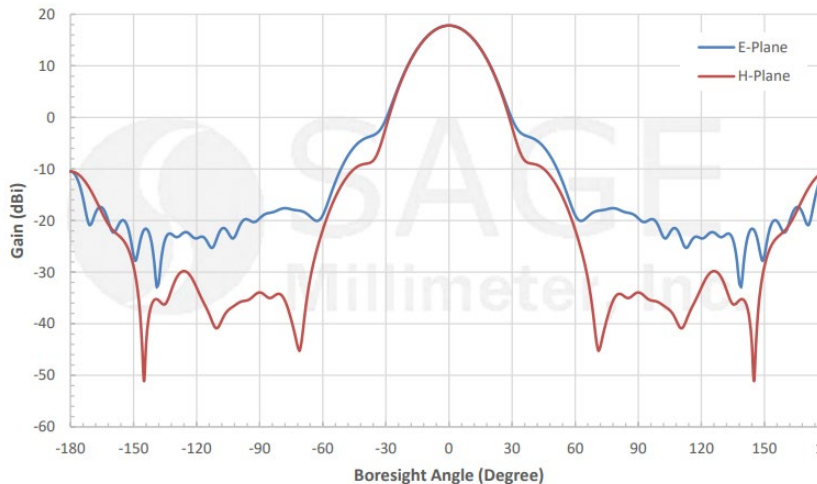
# SAF-1442241725-067-S1

Scalar Feed Horn Antenna, 23 dBi

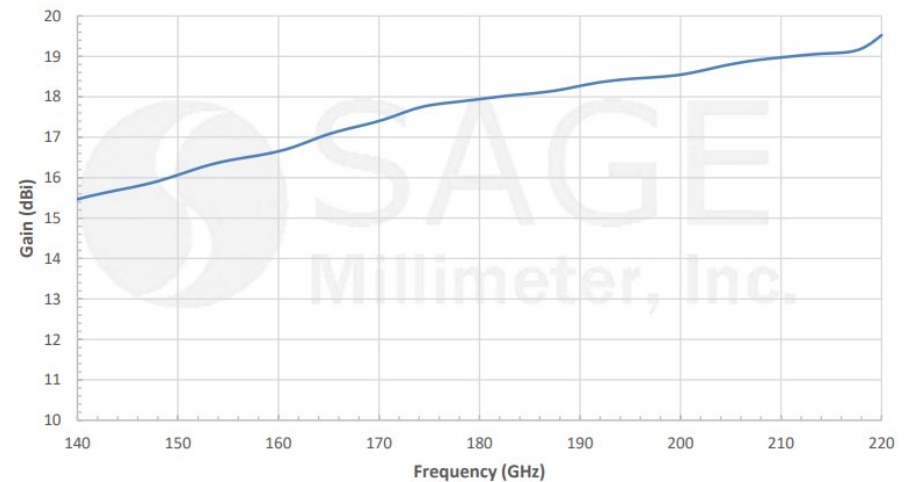
| Parameter               | Minimum             | Typical | Maximum |
|-------------------------|---------------------|---------|---------|
| Frequency               | 140 GHz             |         | 220 GHz |
| Gain                    |                     | 17 dBi  |         |
| Polarization            | Linear and Circular |         |         |
| 3 dB Beamwidth, E-Plane |                     | 25°     |         |
| 3 dB Beamwidth, H-Plane |                     | 25°     |         |
| Side Lobes, E -Plane    |                     | 25 dB   |         |
| Side Lobes, H Plane     |                     | 25 dB   |         |
| VSWR                    |                     | 1.2:1   |         |



Simulated Antenna Patterns @ 180 GHz



Simulated Gain vs. Frequency



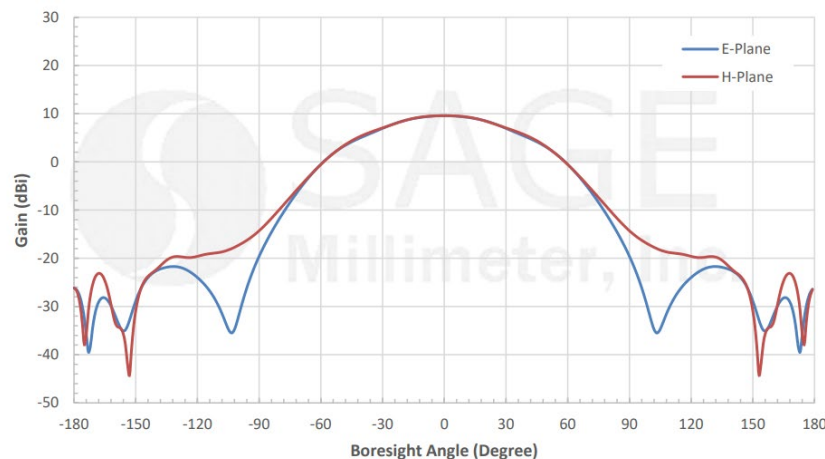


# SAH-1442241060-059-S1 Choke Flange Feed Antenna, 10 dBi

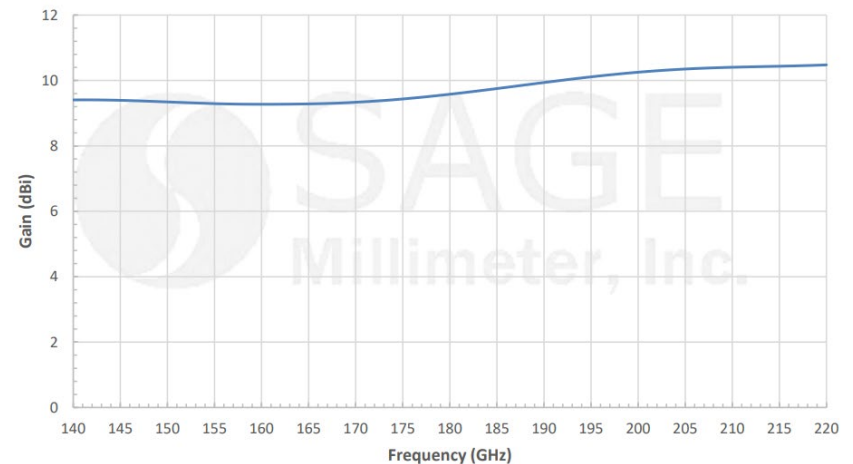
| Parameter               | Minimum | Typical             | Maximum |
|-------------------------|---------|---------------------|---------|
| Frequency               | 140 GHz |                     | 220 GHz |
| Gain                    |         | 10 dBi              |         |
| Polarization            |         | Linear and Circular |         |
| 3 dB Beamwidth, E-Plane |         | 60°                 |         |
| 3 dB Beamwidth, H-Plane |         | 60°                 |         |
| Side Lobes, E -Plane    |         | 30 dB               |         |
| Side Lobes, H Plane     |         | 30 dB               |         |
| VSWR                    |         | 1.2:1               |         |



Simulated Antenna Patterns @ 180 GHz



Simulated Gain vs. Frequency



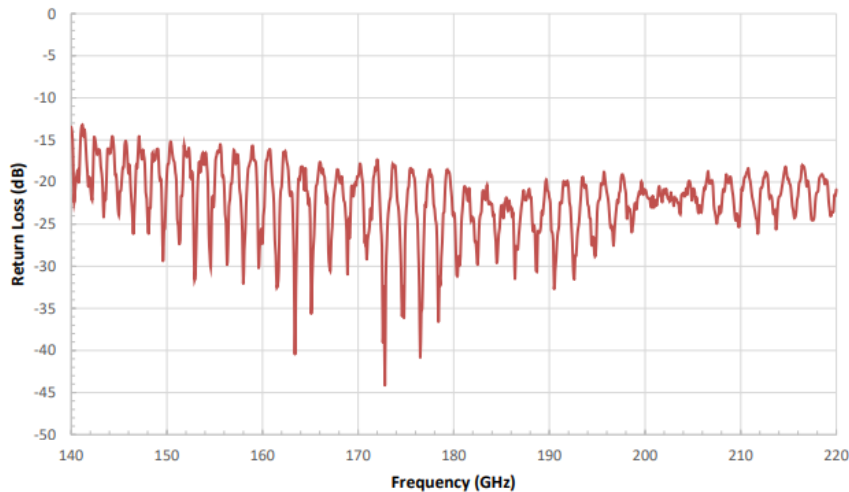
# SAG-1442244501-059-S1

Gaussian Optics Antenna

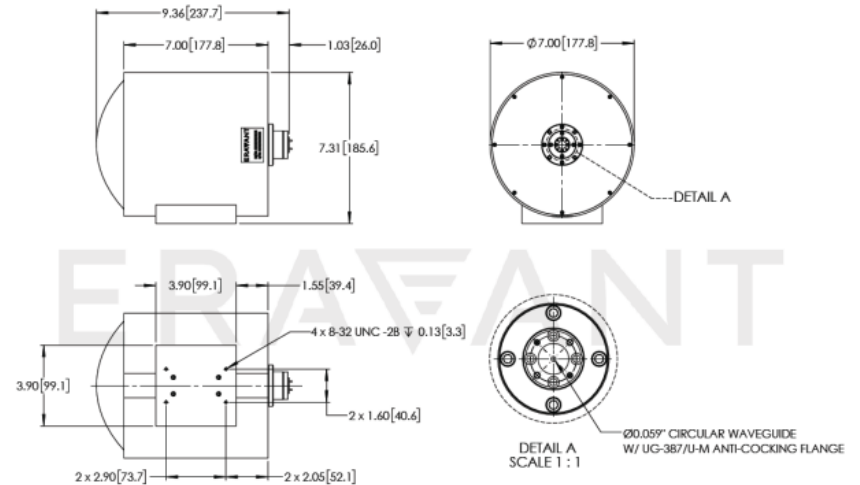
| Parameter               | Minimum             | Typical | Maximum |
|-------------------------|---------------------|---------|---------|
| Frequency               | 140 GHz             |         | 220 GHz |
| Gain                    |                     | 45 dBi  |         |
| Polarization            | Linear and Circular |         |         |
| 3 dB Beamwidth, E-Plane |                     | 1.0°    |         |
| 3 dB Beamwidth, H-Plane |                     | 1.0°    |         |
| Side Lobes, E -Plane    |                     | 15 dB   |         |
| Side Lobes, H Plane     |                     | 15 dB   |         |
| Return Loss             |                     | 15 dB   |         |



Typical Measured Return Loss vs Frequency



Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])

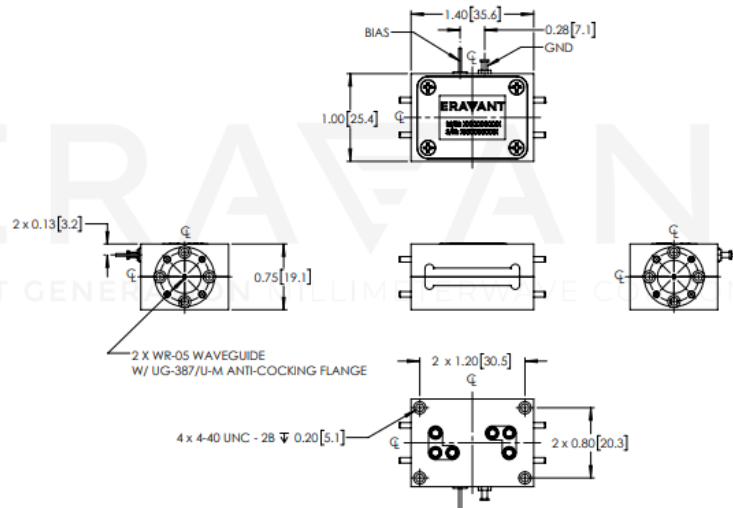


| Parameter             | Minimum | Typical            | Maximum             |
|-----------------------|---------|--------------------|---------------------|
| Frequency             | 140 GHz |                    | 200 GHz             |
| Gain                  |         | 15 dB              |                     |
| $P_{1dB}$             |         | -5 dBm             |                     |
| $P_{in}$              |         |                    | -3 dBm              |
| Input Return Loss     |         | 6 dB               |                     |
| Output Return Loss    |         | 10 dB              |                     |
| DC Voltage            |         | +8 V <sub>DC</sub> | +12 V <sub>DC</sub> |
| DC Supply Current     |         | 40 mA              |                     |
| Operation Temperature | 0 °C    |                    | +50 °C              |



### Mechanical Outline:

Unless otherwise specified, all dimensions are in inches [millimeters])



### Features

- Broad Band Operation
- Low Noise Figure
- Low Bias Current
- Compact Package

# SFP-05210-S2

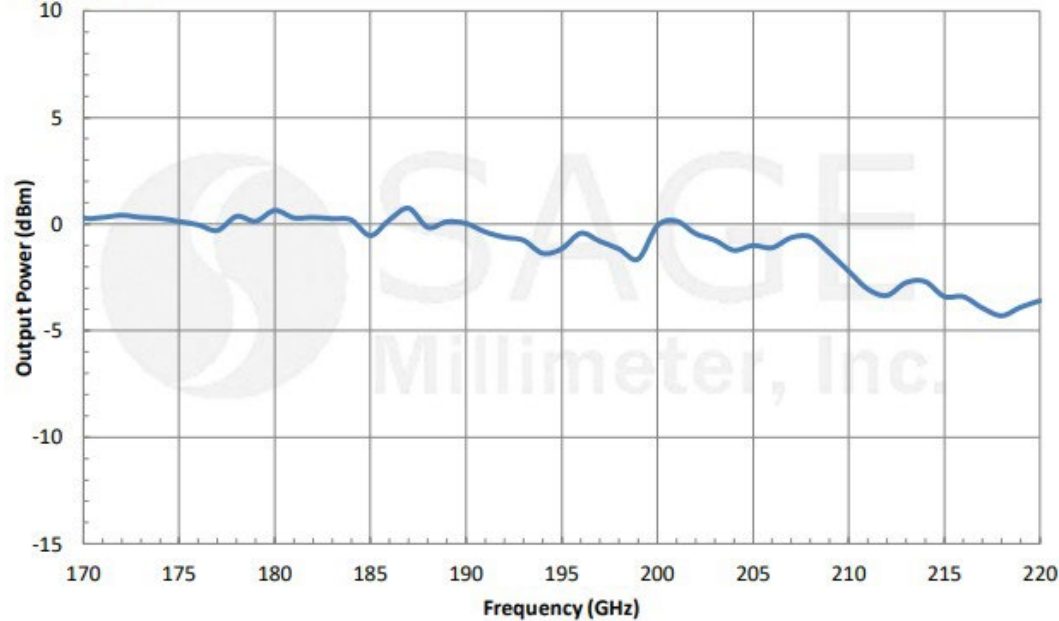
X2 Passive Multiplier

| Parameter            | Minimum | Typical | Maximum |
|----------------------|---------|---------|---------|
| Input Frequency      | 70 GHz  |         | 110 GHz |
| Output Frequency     | 140 GHz |         | 220 GHz |
| Input Power          |         | +16 dBm | +18 dBm |
| Output Power         |         | -3 dBm  |         |
| Harmonic Suppression |         | 20 dB   |         |



## Typical Output Power vs. Frequency

Pin: +16 dBm



## Features

- Full band Operation
- Low Conversion Loss
- No External Bias
- Compact Package

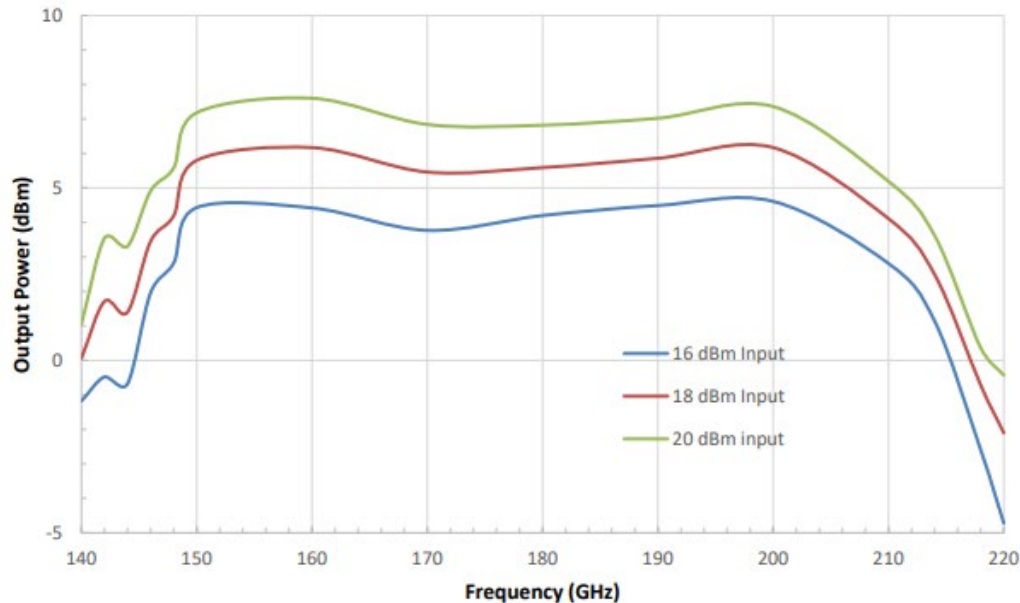
# SFP-154214303-0515-UEB

X3 Passive Multiplier

| Parameter            | Minimum | Typical | Maximum |
|----------------------|---------|---------|---------|
| Input Frequency      | 50 GHz  |         | 70 GHz  |
| Output Frequency     | 150 GHz |         | 210 GHz |
| Input Power          |         | +16 dBm | +20 dBm |
| Output Power         |         | +3 dBm  |         |
| Harmonic Suppression |         | 20 dB   |         |



**Output Power vs. Frequency**



## Features

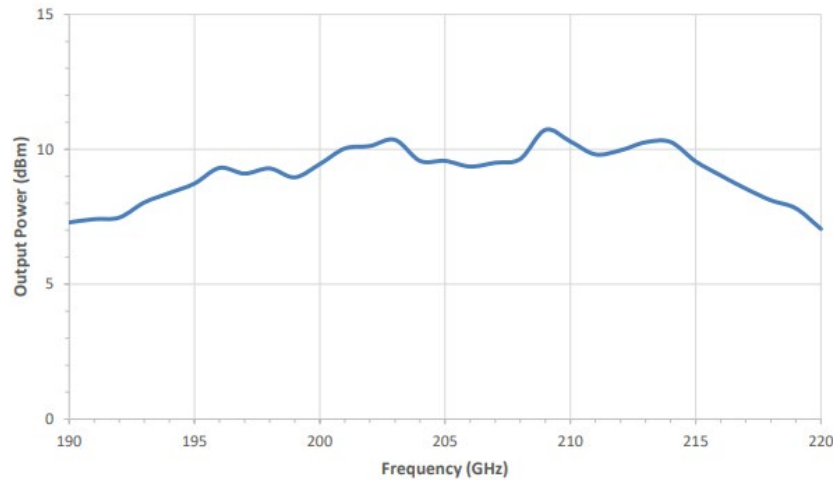
- Near Full Band Operation
- Low Conversion Loss
- No External Bias
- Compact Package

| Parameter            | Minimum | Typical        | Maximum |
|----------------------|---------|----------------|---------|
| Input Frequency      | 95 GHz  |                | 110 GHz |
| Output Frequency     | 190 GHz |                | 220 GHz |
| Input Power          |         | +12 dBm        | +14 dBm |
| Output Power         |         | +8 dBm         |         |
| Harmonic Suppression |         | -15 dBc        |         |
| Spurious             |         | -60 dBc        |         |
| DC Bias              |         | +8 VDC /170 mA |         |

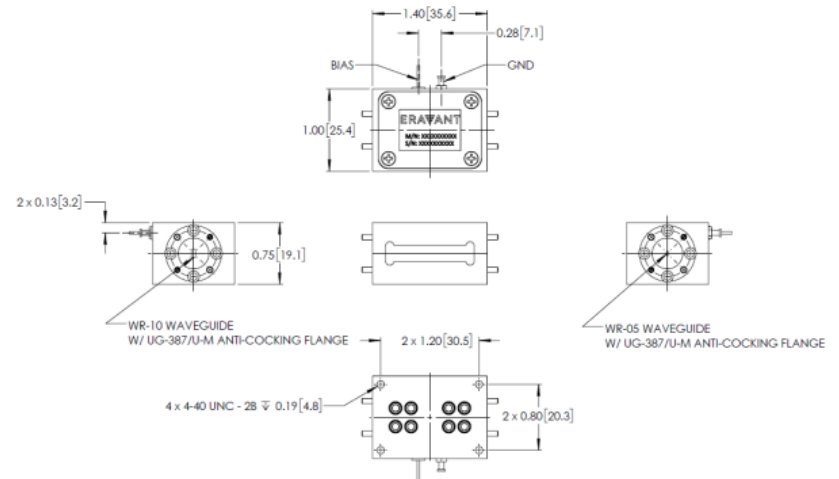


### Output Power vs. Frequency

Bias: +8V<sub>DC</sub>/153 mA; Input Power = +12 dBm  
 RFsat: +8V<sub>DC</sub>/170 mA



### Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



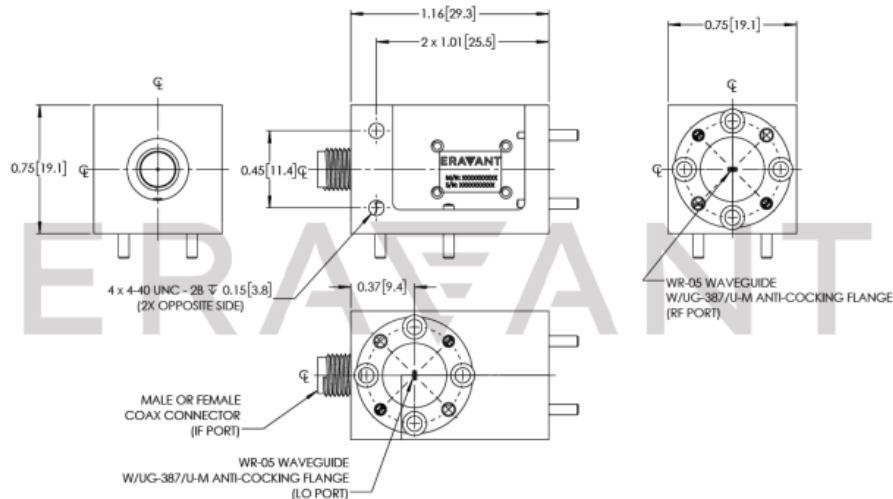
# SFB-05-N1

Balanced Mixer

| Parameter                | Minimum | Typical | Maximum |
|--------------------------|---------|---------|---------|
| RF Frequency             | 140 GHz |         | 220 GHz |
| LO Frequency             | 140 GHz |         | 220 GHz |
| IF Frequency             | DC      |         | 40 GHz  |
| LO Pumping Power         |         | +13 dBm | +15 dBm |
| Conversion Loss          |         | 13 dB   |         |
| Input P <sub>1dB</sub>   |         | -3 dBm  |         |
| RF to LO Isolation       |         | 30 dB   |         |
| Combined RF and LO Power |         |         | +18 dBm |



## Mechanical Outline:



## Features

- Full band Operation
- Low Conversion Loss
- No External Bias
- Compact Package

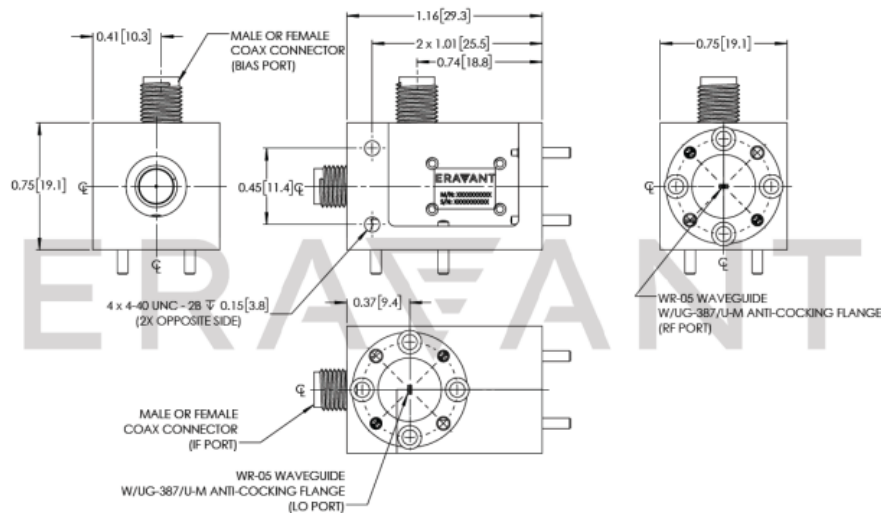
# SFB-05-E2

## Externally Biased Balanced Mixer

| Parameter                     | Minimum | Typical     | Maximum     |
|-------------------------------|---------|-------------|-------------|
| RF Frequency                  | 140 GHz |             | 220 GHz     |
| LO Frequency                  | 140 GHz |             | 220 GHz     |
| IF Frequency                  | DC      |             | 40 GHz      |
| LO Pumping Power              | 0 dBm   | +3 dBm      | +10 dBm     |
| Conversion Loss               |         | 13 dB       |             |
| Input P <sub>1dB</sub>        |         | -10 dBm     |             |
| RF to LO Isolation            |         | 30 dB       |             |
| Combined RF and LO Power      |         |             | +13 dBm     |
| External Bias Voltage/Current |         | +5 VDC/2 mA | +5 VDC/5 mA |



### Mechanical Outline:



### Features

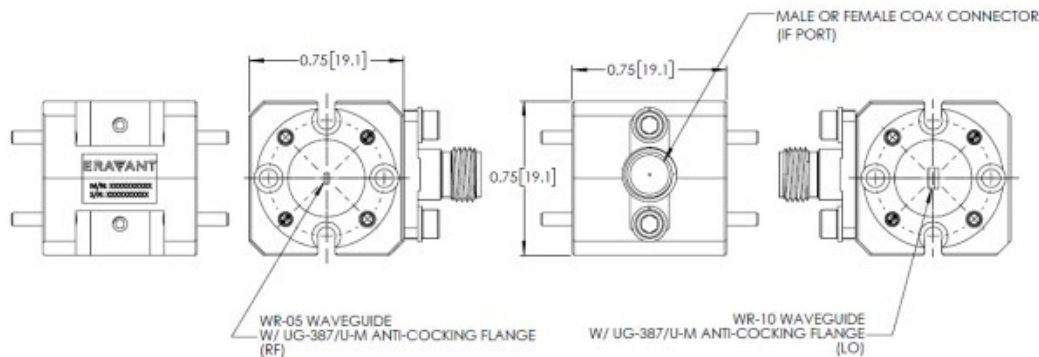
- Full band Operation
- Low Conversion Loss
- Low LO Power
- Compact Package



# SFS-05-UEB

## Subharmonically Pumped Mixer

| Parameter                | Minimum | Typical | Maximum |
|--------------------------|---------|---------|---------|
| RF Frequency             | 140 GHz |         | 220 GHz |
| LO Frequency             | 70 GHz  |         | 110 GHz |
| IF Frequency             | DC      |         | 5.0 GHz |
| LO Pumping Power         | +7 dBm  | +10 dBm | +15 dBm |
| Conversion Loss          |         | 13 dB   |         |
| Input P <sub>1dB</sub>   |         | -3 dBm  |         |
| LO to IF Isolation       |         | 30 dB   |         |
| LO to RF Isolation       |         | 15 dB   |         |
| Combined RF and LO Power |         |         | +18 dBm |



### Features

- Full band Operation
- Low Conversion Loss
- Low LO Power
- ½ LO Frequency of RF
- Compact Package

# SFD-144224-05SF-N1

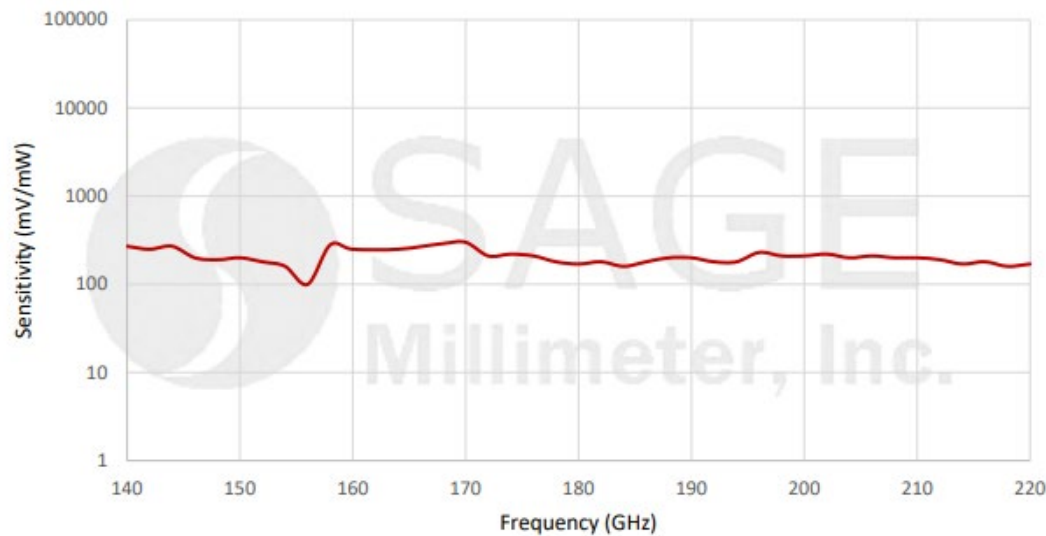
Amplitude Detector

| Parameter                        | Minimum | Typical      | Maximum |
|----------------------------------|---------|--------------|---------|
| Frequency Range                  | 140 GHz |              | 220 GHz |
| Sensitivity (SFD-403603-19SF-N1) |         | -200 mV/mV   |         |
| Sensitivity (SFD-403603-19SF-P1) |         | +200 mV/mV   |         |
| Sensitivity Flatness             |         | $\pm 2.0$ dB |         |
| Linear Detection Range           | -40 dBm | -20 dBm      | -10 dBm |
| RF Input Power                   |         | -20 dBm      | +17 dBm |
| Video Bandwidth                  |         | 10 MHz       |         |



## Typical Performance vs. Frequency

Pin = -20 dBm



## Features

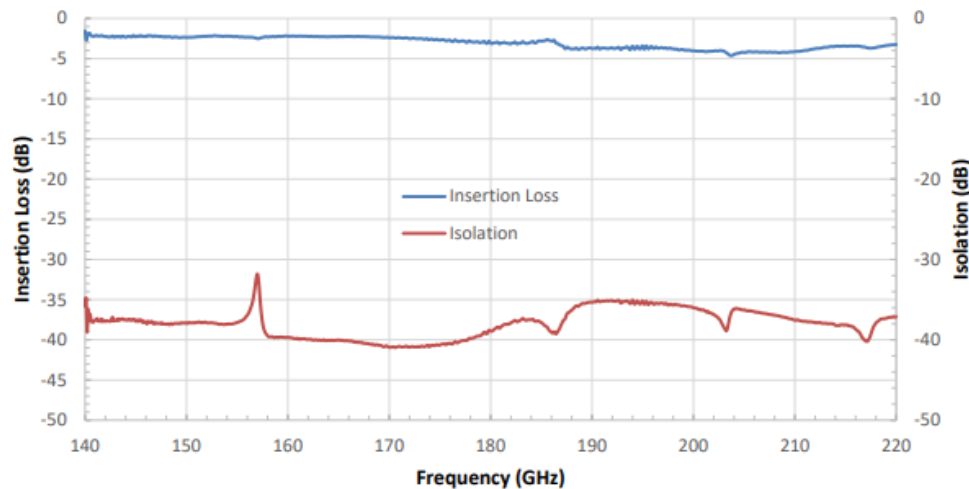
- Full Waveguide Band Operation
- High Sensitivity Without Tuning
- High Sensitivity Stability Over Broad Temperature Range

| Parameter       | Minimum | Typical          | Maximum |
|-----------------|---------|------------------|---------|
| RF Frequency    | 140 GHz |                  | 220 GHz |
| Insertion Loss  |         | 2.5 dB           |         |
| Isolation       | 25 dB   | 30 dB            |         |
| Power Handling  |         | +20 dBm          | +23 dBm |
| Bias Voltage    |         | $\pm 1.0 V_{DC}$ |         |
| Bias Current    |         | +3 mA/0 mA       |         |
| Control Signal  |         | TTL              |         |
| Switching Speed |         | 100 ns           |         |



### Insertion Loss and Isolation vs. Frequency

Bias:  $+1 V_{DC}/3 \text{ mA}$  and  $-2 V_{DC}/<0 \text{ mA}$



### Features

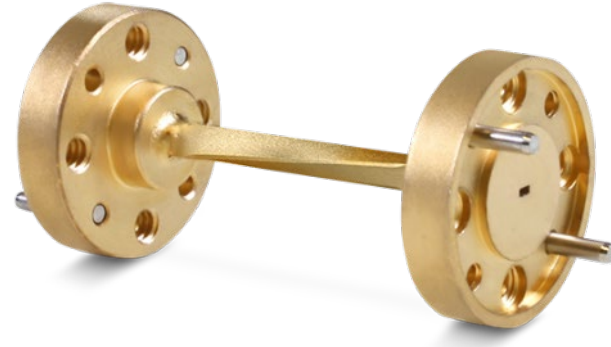
- Full Band Operation
- Low Insertion Loss
- High Isolation
- Fast Control Speed

# Waveguides

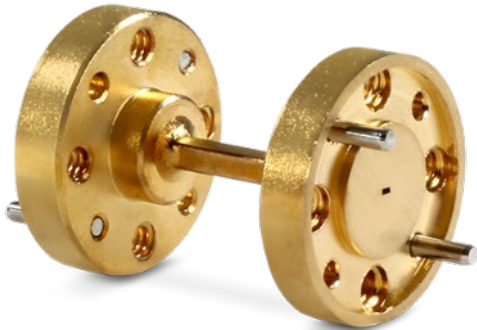
- Straights: 1", 2" etc. and Custom Length
- Bends, 45°, 90° and Custom Angle
- Twists, 45°, 90° and Custom Angle



Waveguide E-Bend: 90°



Waveguide Twist: 90°



Waveguide Straight: 1.25"



Waveguide H-Bend: 90°

# Instrumentation Waveguide Sections



Metrology Grade  
Model: STQ-WG-05025-F1-A-R



Contactless Flange  
Model: STQ-WG-05025-FB-CF



Wave-Glide VNA Rail System  
Model: STQ-TL-RW-S10-M1

# Waveguide Transitions



WR-05 to WR-04  
Model: SWT-0504-LB



WR-05 to WR-03  
Model: SWT-0503-LB



WR-05 to 0.059" Dia  
Model: SWT-05059-SB



WR-05 to 0.067" Dia  
Model: SWT-05067-SB

# SWM-14422420-05-SB

Waveguide Magic Tee

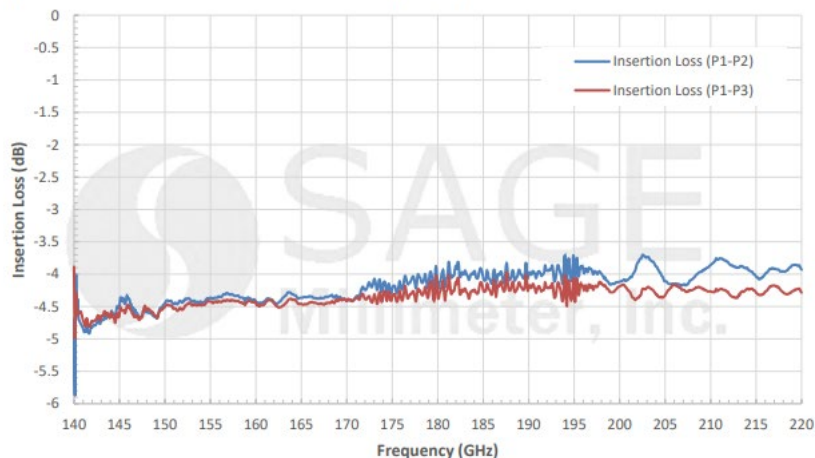
| Parameter       |                    | Minimum | Typical | Maximum |
|-----------------|--------------------|---------|---------|---------|
| Frequency       |                    | 140 GHz |         | 220 GHz |
| Power Unbalance |                    |         | ±0.3 dB |         |
| Insertion Loss  |                    |         | 1.7 dB  |         |
| Isolation       | Sum and Difference |         | 30 dB   |         |
|                 | Colinear           |         | 20 dB   |         |
| Return Loss     |                    |         | 15 dB   |         |



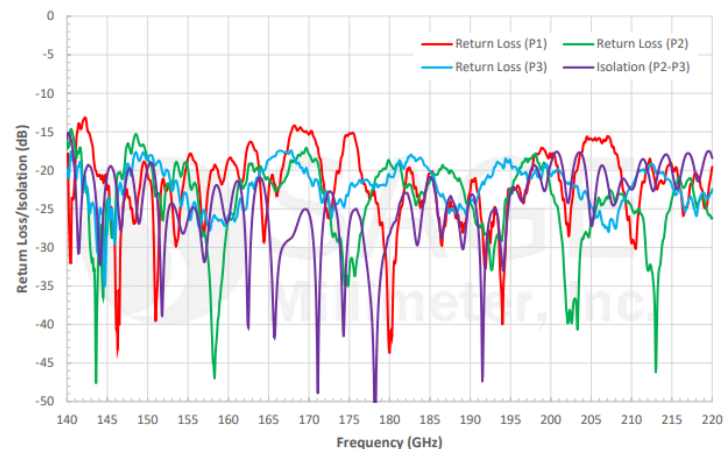
## Features

- Full Band Operation
- Low Insertion Loss
- High Isolation
- Compact Design

Typical Measured Insertion Loss vs Frequency



Typical Measured Return Loss and Isolation vs Frequency



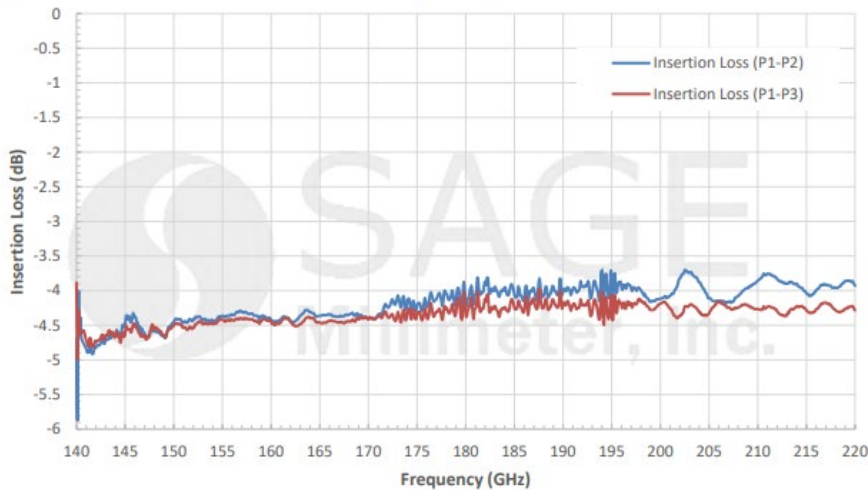
| Parameter       | Minimum | Typical | Maximum |
|-----------------|---------|---------|---------|
| Frequency       | 140 GHz |         | 220 GHz |
| Power Unbalance |         | ±0.3 dB |         |
| Insertion Loss  |         | 1.7 dB  |         |
| Isolation       |         | 20 dB   |         |
| Return Loss     |         | 15 dB   |         |



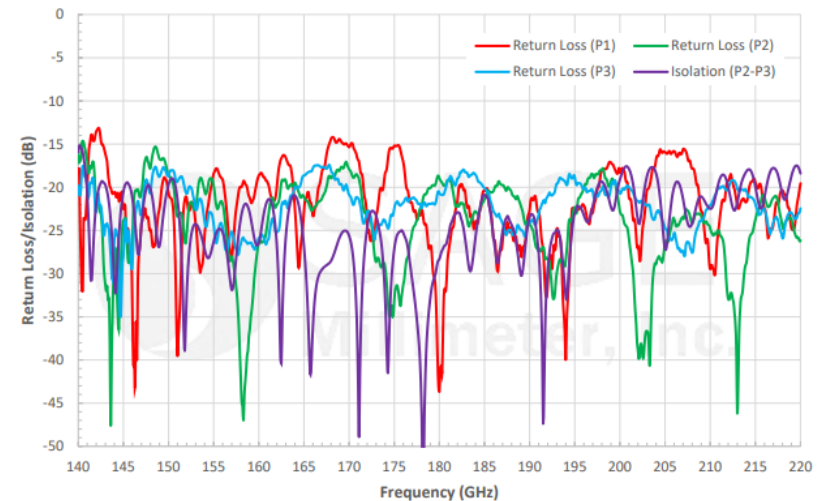
### Features

- Full Band Operation
- Low Insertion Loss
- High Isolation
- Compact Design

Typical Measured Insertion Loss vs Frequency



Typical Measured Return Loss and Isolation vs Frequency





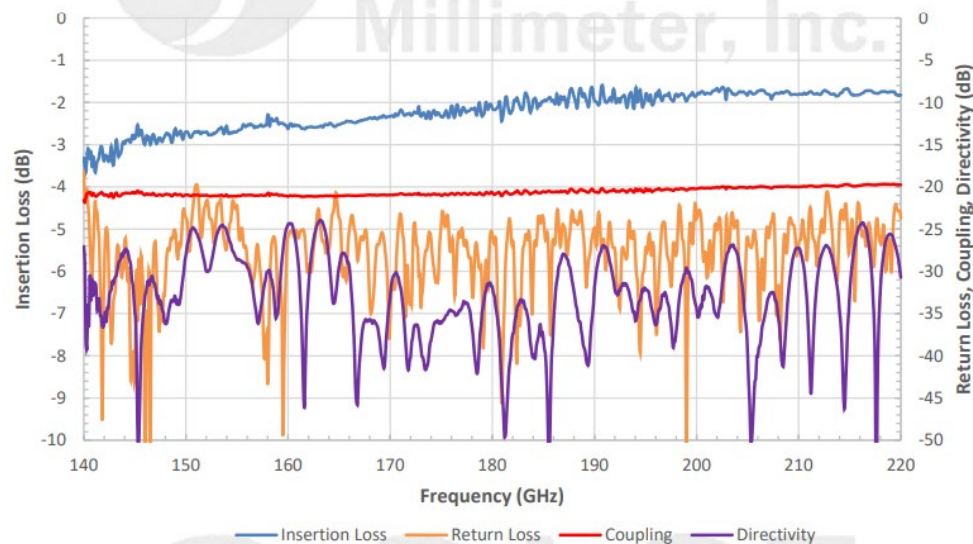
# SWD-1025H-05-SB

Directional Couplers: Standard and Dual Directional

| Parameter      | Minimum | Typical   | Maximum |
|----------------|---------|-----------|---------|
| Frequency      | 140 GHz |           | 220 GHz |
| Insertion Loss |         | 3.0 dB    |         |
| Coupling       |         | 10, 20 dB |         |
| Directivity    |         | 25 dB     |         |
| Return Loss    |         | 18 dB     |         |



Typical Performance vs Frequency



## Features

- Full Band Operation
- Low Insertion Loss
- Good Directivity
- Compact Design

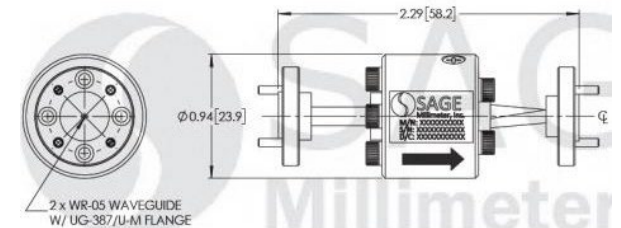
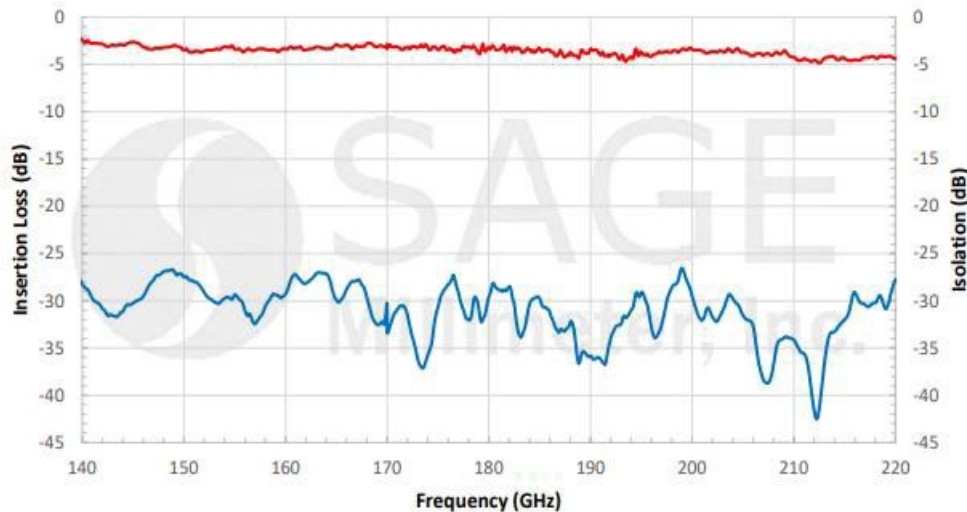
# STF-05-S1

Faraday Isolator, Full Band

| Parameter              | Minimum | Typical    | Maximum    |
|------------------------|---------|------------|------------|
| RF Frequency Range     | 140 GHz |            | 220 GHz    |
| Insertion Loss         |         | 4.0 dB     |            |
| Isolation              |         | 30 dB      |            |
| VSWR                   |         |            | 1.5:1      |
| Forward Power Handling |         | 0.1 W (CW) | 0.2 W (CW) |
| Reverse Power Handling |         | 0.1 W (CW) | 0.2 W (CW) |



## Typical Performance vs. Frequency



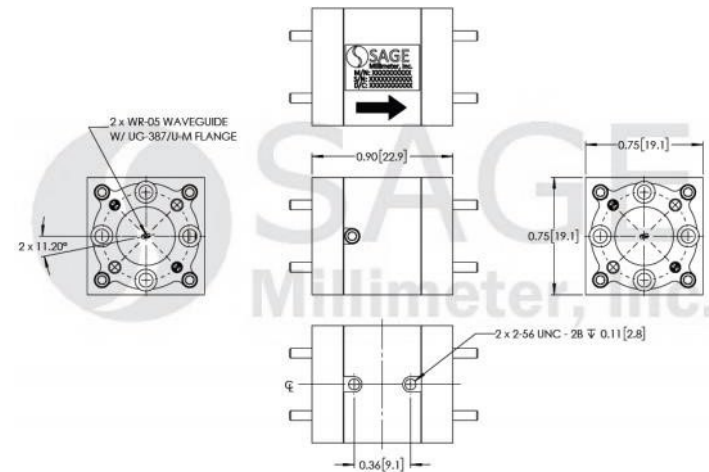
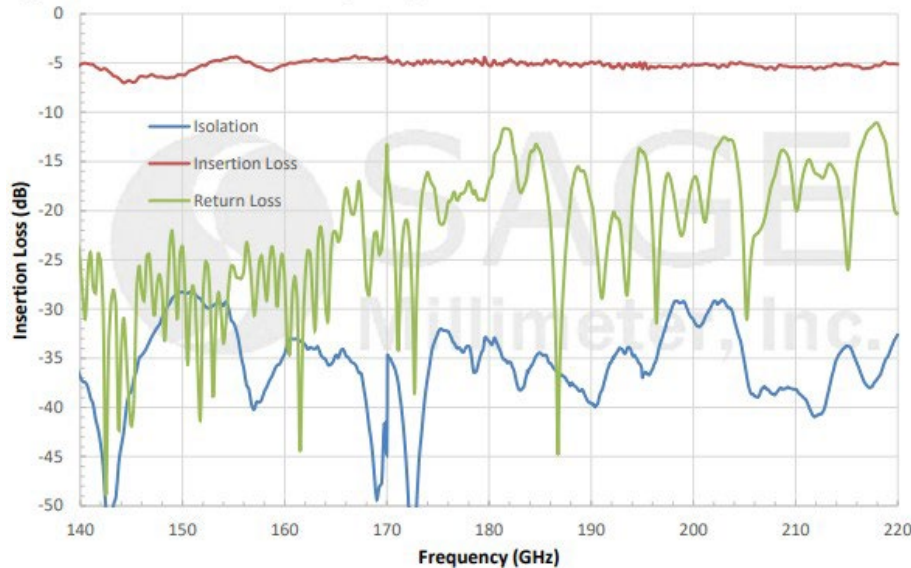
# STF-05-S1-C

Faraday Isolator, Full Band, Compact

| Parameter              | Minimum | Typical    | Maximum    |
|------------------------|---------|------------|------------|
| RF Frequency Range     | 140 GHz |            | 220 GHz    |
| Insertion Loss         |         | 5.0 dB     |            |
| Isolation              |         | 30 dB      |            |
| VSWR                   |         |            | 1.5:1      |
| Forward Power Handling |         | 0.1 W (CW) | 0.2 W (CW) |
| Reverse Power Handling |         | 0.1 W (CW) | 0.2 W (CW) |



Typical Performance vs. Frequency



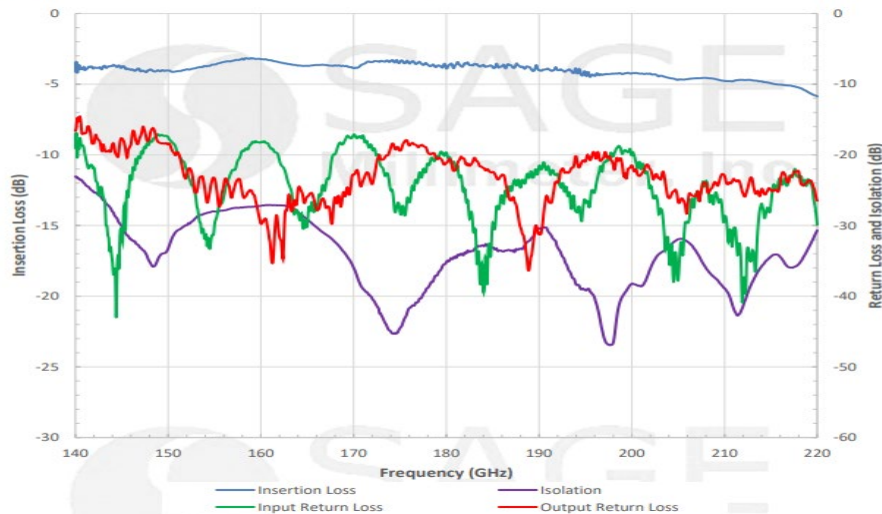
# STF-05-S1-M

Faraday Isolator, Full Band, Miniature

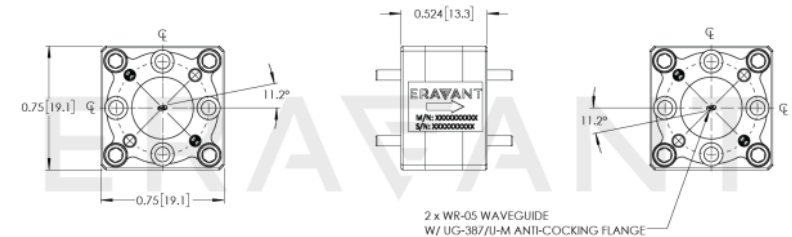
| Parameter              | Minimum | Typical    | Maximum    |
|------------------------|---------|------------|------------|
| RF Frequency Range     | 140 GHz |            | 220 GHz    |
| Insertion Loss         |         | 4.5 dB     |            |
| Isolation              |         | 23 dB      |            |
| VSWR                   |         |            | 1.5:1      |
| Forward Power Handling |         | 0.1 W (CW) | 0.2 W (CW) |
| Reverse Power Handling |         | 0.1 W (CW) | 0.2 W (CW) |



Typical Measured Performance vs Frequency



Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



### Features

- Full Band Coverage
- Compact Size
- Low Insertion Loss
- Precision Machined Housing

### Applications:

- Test Lab
- Instrumentations
- Manual Test Set



| Parameter            | Minimum                      | Typical | Maximum |
|----------------------|------------------------------|---------|---------|
| RF Frequency Range   | 140 GHz                      |         | 220 GHz |
| Insertion Loss       |                              | 2.0 dB  |         |
| Phase Shifting Range | 0°                           |         | 180°    |
| Return Loss          |                              | 20 dB   |         |
| Power Handling       |                              |         | 100 mW  |
| Waveguide            | WR-05 with UG-387/U-M Flange |         |         |

### Features

- Full Band Coverage
- 3, 6, 10, 20, 30 dB etc. Attenuation Levels
- High Performance
- Rugged Mechanical Structure

### Applications:

- Test Lab
- Instrumentations
- Subsystems



| Parameter          | Minimum                      | Typical | Maximum |
|--------------------|------------------------------|---------|---------|
| RF Frequency Range | 140 GHz                      |         | 220 GHz |
| Attenuation        |                              | 10 dB   |         |
| Return Loss        |                              | 16 dB   |         |
| Power Handling     |                              |         | 100 mW  |
| Waveguide          | WR-05 with UG-387/U-M Flange |         |         |

# STA-30-05-M1-C-1.2

Level Setting Attenuator

## Features

- Full Band Coverage
- Compact Size
- Precision Machined Housing
- Convenient Level Setting

## Applications:

- Test Lab
- Instrumentations
- Manual Test Set



| Parameter          | Minimum                      | Typical | Maximum |
|--------------------|------------------------------|---------|---------|
| RF Frequency Range | 140 GHz                      |         | 220 GHz |
| Insertion Loss     |                              | 2.0 dB  |         |
| Attenuation Range  | 0 dB                         |         | 30 dB   |
| Return Loss        |                              | 20 dB   |         |
| Power Handling     |                              |         | 100 mW  |
| Waveguide          | WR-05 with UG-387/U-M Flange |         |         |

# STA-60-05-D1

Direct Reading Attenuator

## Features

- Full Band Coverage
- High Attenuation Accuracy
- Large Scaled Dial

## Applications:

- Test Lab
- Instrumentations
- Manual Test Set



| Parameter            | Minimum   | Typical | Maximum |
|----------------------|---|---------|---------|
| RF Frequency Range   | 140 GHz   |         | 220 GHz |
| Insertion Loss       |   | 3.0 dB  |         |
| Attenuation Range    | 0 dB  |         | 60 dB   |
| Attenuation Accuracy | 0.1 dB or 3% of reading, whichever is larger, up to 40 dB |         |         |
| Return Loss          |   | 17 dB   |         |
| Power Handling       |   | 50 mW   | 100 mW  |



# STA-60-05-D5

Digital Direct Reading Attenuator

## Features

- Full Band Coverage
- High Attenuation Accuracy
- Digital Screen with Back Light

## Applications:

- Test Lab
- Instrumentations
- Manual Test Set



| Parameter            | Minimum   | Typical | Maximum |
|----------------------|---|---------|---------|
| RF Frequency Range   | 140 GHz   |         | 220 GHz |
| Insertion Loss       |   | 4.0 dB  |         |
| Attenuation Range    | 0 dB  |         | 60 dB   |
| Attenuation Accuracy | 0.1 dB or 2% of reading, whichever is larger, up to 40 dB |         |         |
| VSWR                 |   | 17 dB   |         |
| Power Handling       |   | 50 mW   | 200 mW  |

### Features

- Full Band Coverage
- High Attenuation Accuracy
- IEEE-488 and USB Control Ports

### Applications:

- Test Lab
- Instrumentations
- Auto Test Set



| Parameter            | Minimum   | Typical | Maximum |
|----------------------|---|---------|---------|
| RF Frequency Range   | 140 GHz   |         | 220 GHz |
| Insertion Loss       |   | 6.0 dB  |         |
| Attenuation Range    | 0 dB  |         | 60 dB   |
| Attenuation Accuracy | 0.1 dB or 3% of reading, whichever is larger, up to 40 dB |         |         |
| VSWR                 |   | 17 dB   |         |
| Power Handling       |   | 150 mW  | 500 mW  |

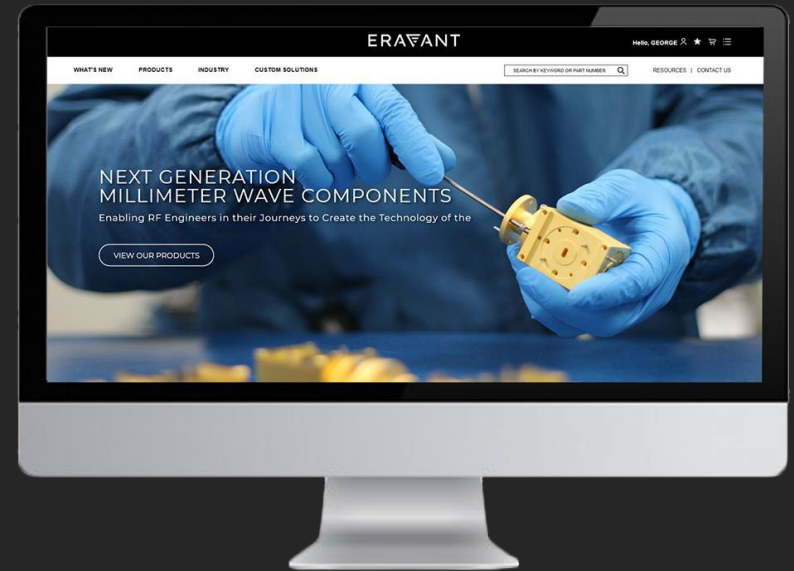
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### PASSIVE FREQUENCY MULTIPLIERS

GRID TABLE 28 RESULTS

| MODEL                  | MINIMUM OUTPUT FREQUENCY | MAXIMUM OUTPUT FREQUENCY | OUTPUT POWER | MINIMUM INPUT FREQUENCY | MAXIMUM INPUT FREQUENCY | INPUT POWER | OUTPUT PORT     | INPUT PORT      | DOWNLOADS              | VIEW |
|------------------------|--------------------------|--------------------------|--------------|-------------------------|-------------------------|-------------|-----------------|-----------------|------------------------|------|
| SFP-06212-S2           | 110 GHz                  | 170 GHz                  | 0 dBm        | 55 GHz                  | 85 GHz                  | +16 dBm     | WR-06 Waveguide | WR-12 Waveguide | Datasheet              | View |
| SFP-06319-U6           | 110 GHz                  | 170 GHz                  | -3 dBm       | 36.67 GHz               | 56.67 GHz               | +20 dBm     | WR-06 Waveguide | WR-16 Waveguide | Datasheet              | View |
| SFP-06210-S2           | 140 GHz                  | 220 GHz                  | -3 dBm       | 70 GHz                  | 110 GHz                 | +17 dBm     | WR-05 Waveguide | WR-10 Waveguide | Datasheet              | View |
| SFP-223403205-28SF-S1  | 22 GHz                   | 40 GHz                   | +5 dBm       | 11 GHz                  | 20 GHz                  | +18 dBm     | WR-28 Waveguide | SMA (F)         | Datasheet<br>STEP File | View |
| SFP-445423303-28SF-S1  | 24 GHz                   | 42 GHz                   | +3 dBm       | 8 GHz                   | 14 GHz                  | +20 dBm     | WR-28 Waveguide | SMA (F)         | Datasheet<br>STEP File | View |
| SFP-2835F-U9           | 26.5 GHz                 | 40.0 GHz                 | +5 dBm       | 8.37 GHz                | 13.33 GHz               | +20 dBm     | WR-28 Waveguide | SMA (F)         | Datasheet              | View |
| SFP-2734033N05-28SF-S1 | 26.5 GHz                 | 40 GHz                   | -5 dBm       | 8.37 GHz                | 13.33 GHz               | +10 dBm     | WR-28 Waveguide | SMA (F)         | Datasheet<br>STEP File | View |
| SFP-2235F-S1           | 33 GHz                   | 50 GHz                   | +3 dBm       | 11 GHz                  | 16.67 GHz               | +20 dBm     | WR-22 Waveguide | SMA (F)         | Datasheet<br>STEP File | View |
| SFP-222XF-S1           | 33 GHz                   | 50 GHz                   | +7 dBm       | 10.5 GHz                | 25 GHz                  | +20 dBm     | WR-22 Waveguide | 2.92 mm (F)     | Datasheet<br>STEP File | View |
| SFP-3635T3303-10SF-F1  | 57 GHz                   | 36 GHz                   | +3 dBm       | 12 GHz                  | 19 GHz                  | +20 dBm     | WR-19 Waveguide | SMA (F)         | Datasheet<br>STEP File | View |
| SFP-192XF-S1           | 40 GHz                   | 80 GHz                   | +0 dBm       | 20 GHz                  | 30 GHz                  | +20 dBm     | WR-19 Waveguide | 2.92 mm (F)     | Datasheet<br>STEP File | View |