

## SAZ-2410-12-S1

### WR-12 Standard Gain Horn Antenna, 24 dBi Gain

**SAZ-2410-12-S1** is a E-band standard gain horn antenna that operates from 60 GHz to 90 GHz. The antenna offers 24 dBi nominal gain, a typical half power beamwidth of 9.7 degrees on the E-plane and 11.0 degrees on the H-plane at the center frequency, respectively. The antenna supports linear polarized waveforms. The input of this antenna is a WR-12 waveguide with UG-387/U anti-cocking flange. The standard gain horn is offered for antenna range calibration purpose mainly, but it can be also used for general purpose system set ups.



#### Electrical Specifications:

| Parameter                        | Minimum | Typical | Maximum |
|----------------------------------|---------|---------|---------|
| Frequency                        | 60 GHz  |         | 90 GHz  |
| Gain                             |         | 24 dBi  |         |
| Polarization                     |         | Linear  |         |
| 3 dB Beamwidth, E-Plane @ 75 GHz |         | 9.7°    |         |
| 3 dB Beamwidth, H-Plane @ 75 GHz |         | 11.0°   |         |
| Sidelobes, E-Plane               |         | -13 dB  |         |
| Sidelobes, H-Plane               |         | -36 dB  |         |
| Return Loss                      |         | 23 dB   |         |
| Specification Temperature        |         | +25 °C  |         |
| Operation Temperature            | -40 °C  |         | +85 °C  |

#### Mechanical Specifications:

| Item         | Specification                    |
|--------------|----------------------------------|
| Antenna Port | WR-12 Waveguide                  |
| Flange Type  | UG-387/U Anti-Cocking Flange     |
| Size         | 2.56" (L) X 1.20" (W) X 0.98"(H) |
| Material     | Brass                            |
| Finish       | Gold Plated                      |
| Weight       | 1.94 Oz                          |
| Outline      | AZ-E24-A                         |

#### ECCN

EAR99

#### FEATURES

- Rectangular Waveguide Interface
- Precisely Machined and Gold Plated
- Linear Polarization
- High Return Loss

#### APPLICATIONS

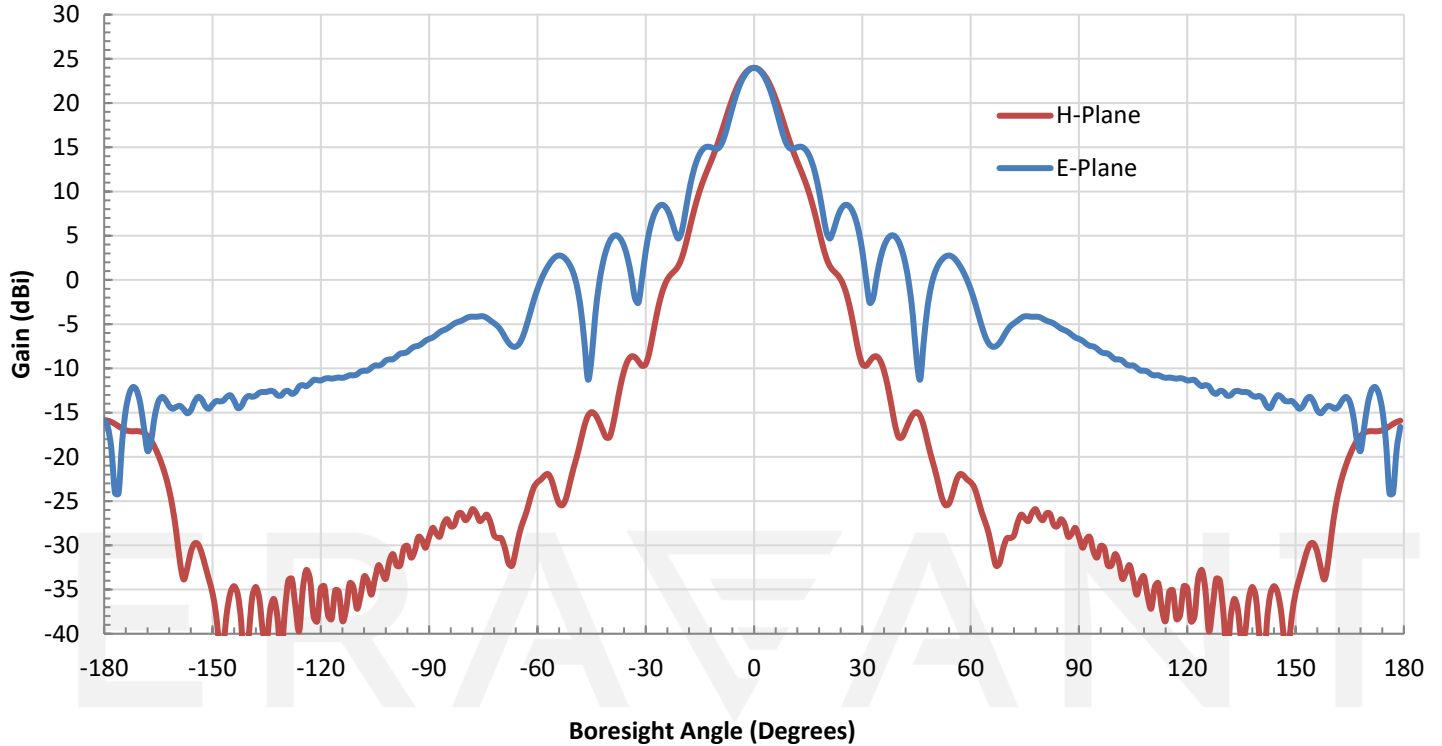
- Antenna Range
- Antenna Gain Measurements
- General System Setups
- Radar/Communication Systems

#### SUPPLEMENTAL DETAILS

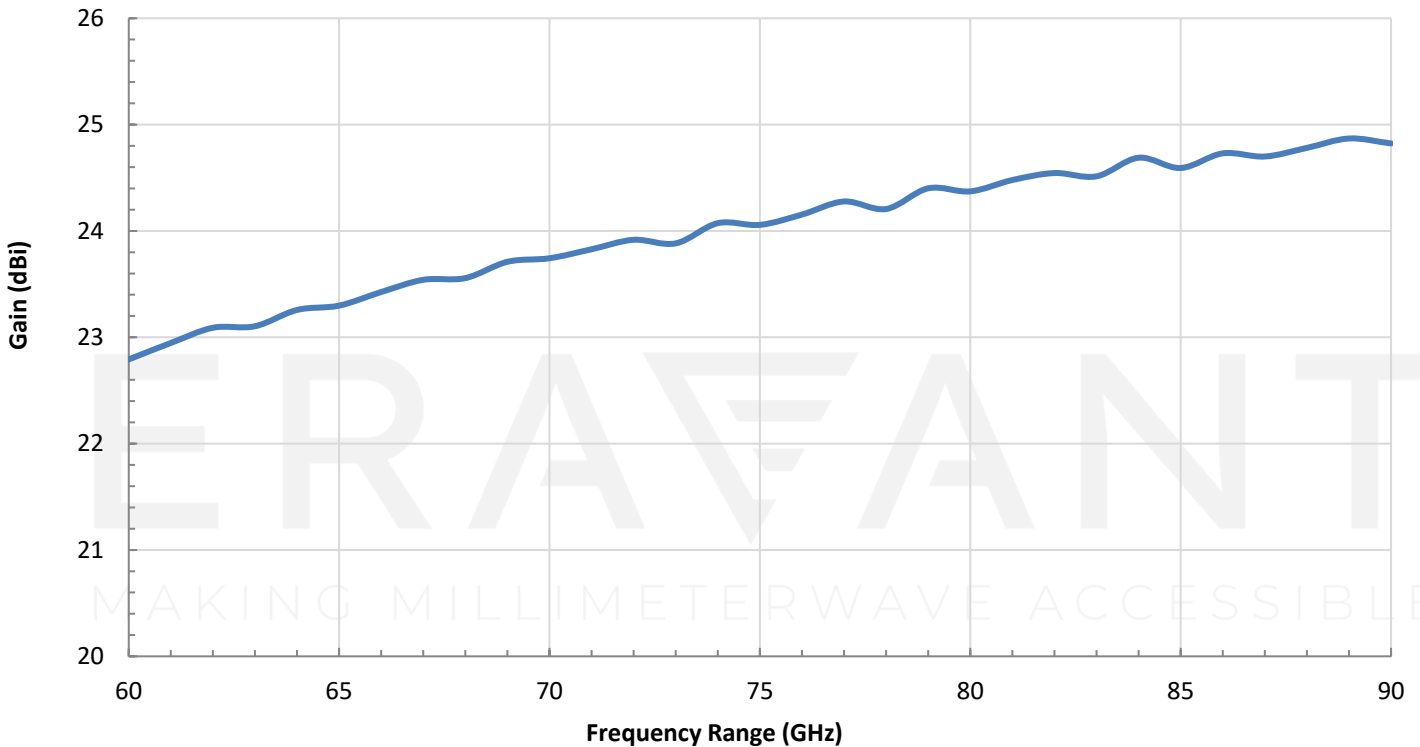


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### Simulated Antenna Patterns @ 75 GHz



### Simulated Gain vs. Frequency



### Simulated Gain vs. Frequency in Tabular Format

| Frequency (GHz) | Gain (dBi) | Frequency (GHz) | Gain (dBi) |
|-----------------|------------|-----------------|------------|
| 60              | 22.8       | 76              | 24.2       |
| 61              | 23.0       | 77              | 24.3       |
| 62              | 23.1       | 78              | 24.2       |
| 63              | 23.1       | 79              | 24.4       |
| 64              | 23.3       | 80              | 24.4       |
| 65              | 23.3       | 81              | 24.5       |
| 66              | 23.4       | 82              | 24.5       |
| 67              | 23.5       | 83              | 24.5       |
| 68              | 23.6       | 84              | 24.7       |
| 69              | 23.7       | 85              | 24.6       |
| 70              | 23.7       | 86              | 24.7       |
| 71              | 23.8       | 87              | 24.7       |
| 72              | 23.9       | 88              | 24.8       |
| 73              | 23.9       | 89              | 24.9       |
| 74              | 24.1       | 90              | 24.8       |
| 75              | 24.1       |                 |            |

### Simulated Half Power Beamwidth (H-Plane) vs. Frequency in Tabular Format

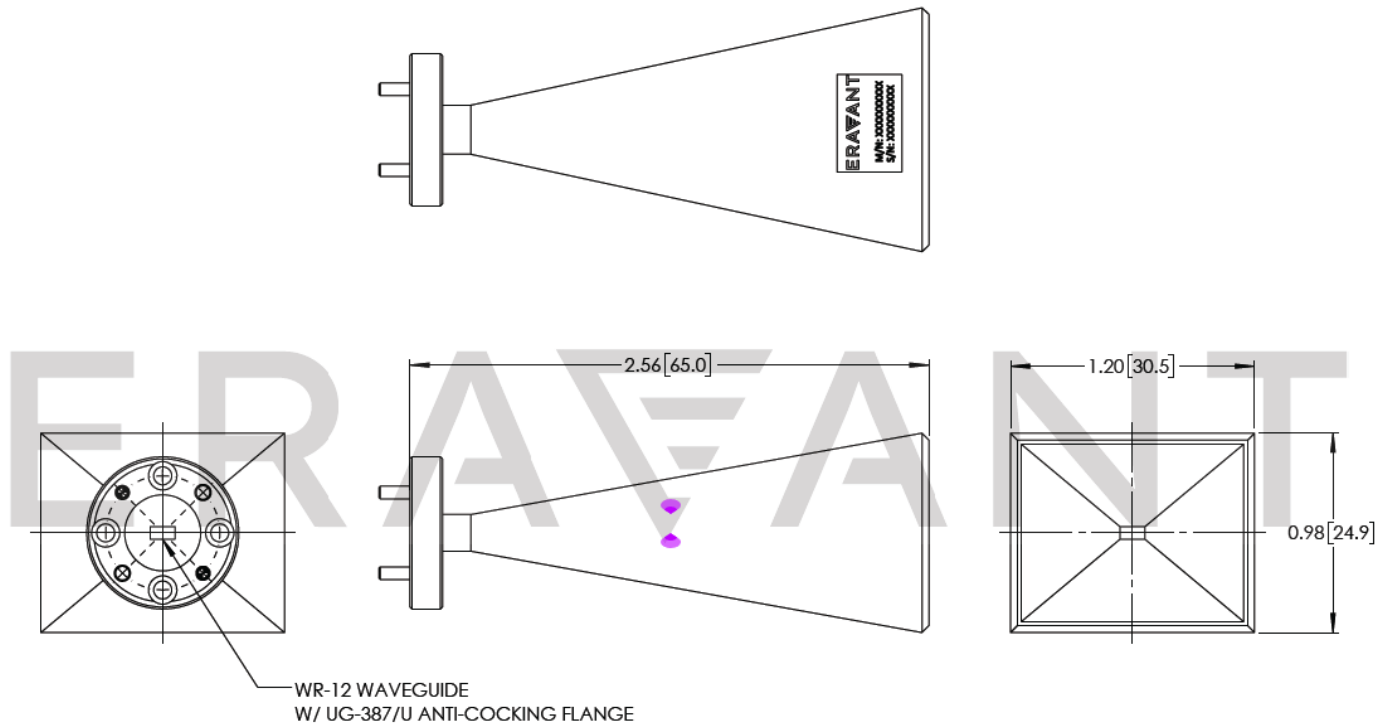
| Frequency (GHz) | Beamwidth (Degrees) | Frequency (GHz) | Beamwidth (Degrees) |
|-----------------|---------------------|-----------------|---------------------|
| 60              | 12.5                | 76              | 10.9                |
| 61              | 12.3                | 77              | 10.7                |
| 62              | 12.3                | 78              | 10.7                |
| 63              | 12.0                | 79              | 10.6                |
| 64              | 12.0                | 80              | 10.6                |
| 65              | 11.8                | 81              | 10.4                |
| 66              | 11.8                | 82              | 10.4                |
| 67              | 11.6                | 83              | 10.4                |
| 68              | 11.5                | 84              | 10.2                |
| 69              | 11.4                | 85              | 10.3                |
| 70              | 11.3                | 86              | 10.1                |
| 71              | 11.3                | 87              | 10.2                |
| 72              | 11.1                | 88              | 10.0                |
| 73              | 11.1                | 89              | 10.0                |
| 74              | 11.0                | 90              | 9.9                 |
| 75              | 10.9                |                 |                     |

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### Simulated Half Power Beamwidth (E-Plane) vs. Frequency in Tabular Format

| Frequency (GHz) | Beamwidth (Degrees) | Frequency (GHz) | Beamwidth (Degrees) |
|-----------------|---------------------|-----------------|---------------------|
| 60              | 11.3                | 76              | 9.3                 |
| 61              | 11.3                | 77              | 8.8                 |
| 62              | 11.0                | 78              | 9.0                 |
| 63              | 11.0                | 79              | 8.6                 |
| 64              | 10.9                | 80              | 8.4                 |
| 65              | 10.8                | 81              | 8.3                 |
| 66              | 10.7                | 82              | 8.0                 |
| 67              | 10.5                | 83              | 8.1                 |
| 68              | 10.5                | 84              | 7.7                 |
| 69              | 10.3                | 85              | 7.7                 |
| 70              | 10.2                | 86              | 7.7                 |
| 71              | 10.1                | 87              | 7.4                 |
| 72              | 9.9                 | 88              | 7.5                 |
| 73              | 10.1                | 89              | 7.1                 |
| 74              | 9.5                 | 90              | 7.1                 |
| 75              | 9.4                 |                 |                     |

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



**NOTE:**

- All data presented is simulated by a full EM simulator. Eravant recommends using simulated data over measured for standard gain horn antenna for accuracy. See Blog [here](#) for further information.
- The antenna electrical performance is guaranteed through accurate mechanical tolerance control. Each antenna is examined by CMM (coordinate Measuring Machine) inspection and measurement process.
- A calibration certificate can be issued with a fee under part number FTA-0150-S1-SAZ. Eravant reserves the right to change the information presented without notice.

**CAUTION:**

- Any foreign objects in the antenna will cause performance degradation and possible device damage.

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