# SAZ-2410-08-S1-WPC

## WR-08 Standard Gain Horn Antenna, 24 dBi Gain

**SAZ-2410-08-S1-WPC** is an F-band standard gain horn antenna that operates from 90 GHz to 140 GHz. The antenna offers 24 dBi nominal gain, a typical half power beamwidth of 9.6 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-08 waveguide with UG-387/U-M 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 Range | 90 GHz | | 140 GHz |
| Gain | | 24 dBi | |
| Polarization | | Linear | |
| 3 dB Beamwidth, E-Plane @115 GHz | | 9.6° | |
| 3 dB Beamwidth, H-Plane @ 115 GHz | | 11.0° | |
| Sidelobes, E-Plane | | -13 dB | |
| Sidelobes, H-Plane | | -36 dB | |
| Return Loss | | 23 dB | |
| Specification Temperature | | +25°C | |
| Operating Temperature | -40°C | | +85°C |

## Mechanical Specifications:

| Item | Specification |
|---|---|
| Antenna Port | WR-08 Waveguide |
| Flange Type | UG-387/U-M Anti-Cocking Flange |
| Material | Brass |
| Finish | Gold Plated |
| Weight | 0.759 Oz |
| Size | 1.77” (L) X 0.82” (W) X 0.68”(H) |
| Outline | AZ-F24-A |

### ECCN

EAR99

### FEATURES

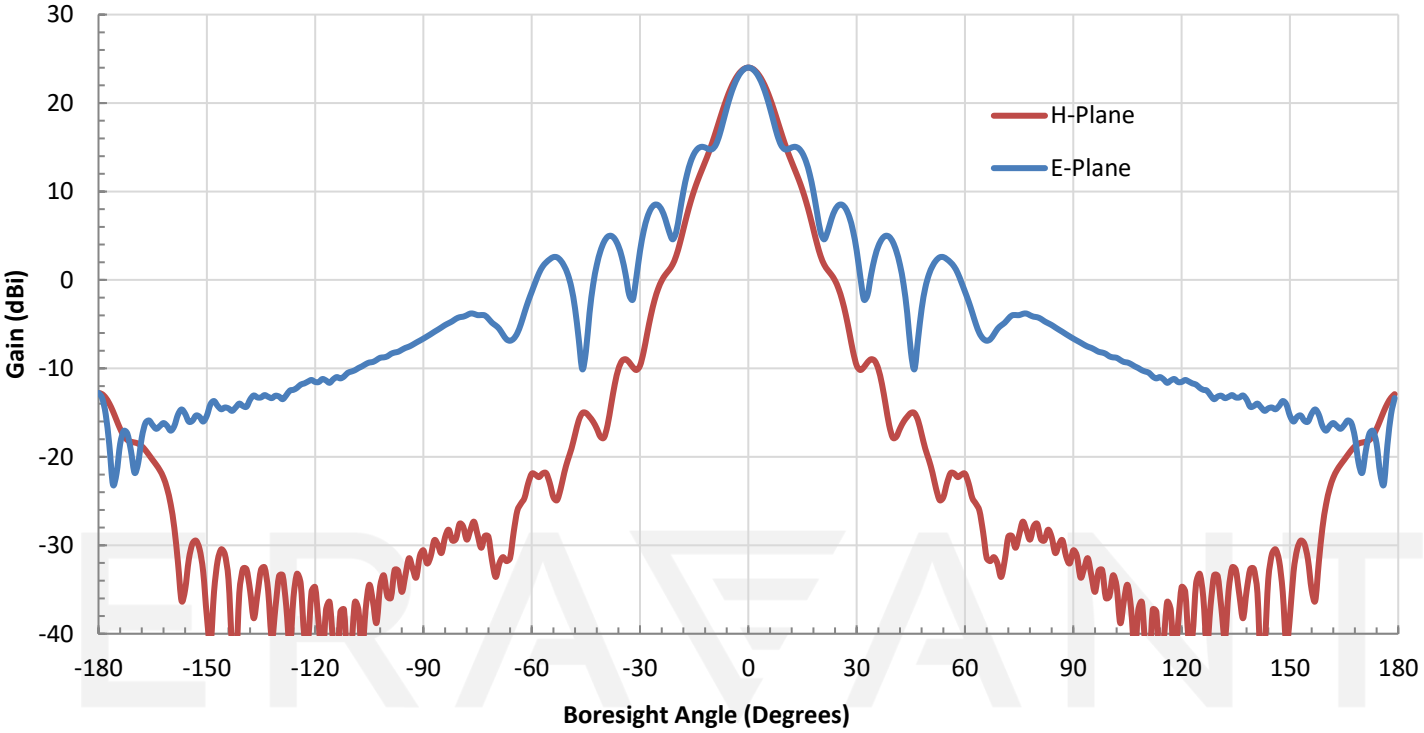
- Rectangular Waveguide Interface
- Precisely Machined and Gold Plated
- Linear Polarization
- High Return Loss

### APPLICATIONS

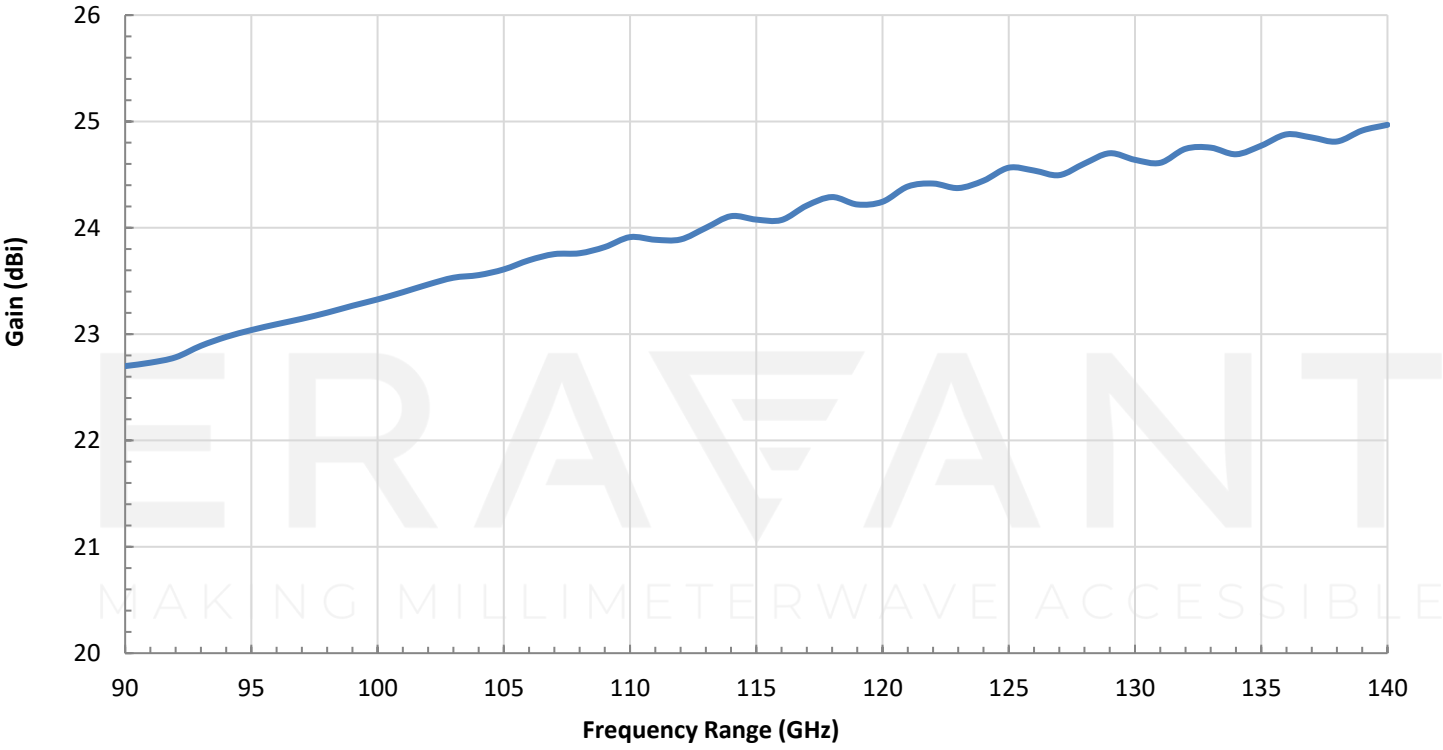
- Antenna Range
- Antenna Gain Measurements
- General System Setups
- Radar/Communication Systems

### SUPPLEMENTAL DETAILS

## Simulated Antenna Patterns @ 115 GHz




## Simulated Gain vs. Frequency



## Simulated Gain vs. Frequency in Tabular Format

| Frequency (GHz) | Gain (dBi) | Frequency (GHz) | Gain (dBi) |
|---|---|---|---|
| 90 | 22.7 | 116 | 24.1 |
| 91 | 22.7 | 117 | 24.2 |
| 92 | 22.8 | 118 | 24.3 |
| 93 | 22.9 | 119 | 24.2 |
| 94 | 23.0 | 120 | 24.2 |
| 95 | 23.0 | 121 | 24.4 |
| 96 | 23.1 | 122 | 24.4 |
| 97 | 23.1 | 123 | 24.4 |
| 98 | 23.2 | 124 | 24.4 |
| 99 | 23.3 | 125 | 24.6 |
| 100 | 23.3 | 126 | 24.5 |
| 101 | 23.4 | 127 | 24.5 |
| 102 | 23.5 | 128 | 24.6 |
| 103 | 23.5 | 129 | 24.7 |
| 104 | 23.6 | 130 | 24.6 |
| 105 | 23.6 | 131 | 24.6 |
| 106 | 23.7 | 132 | 24.7 |
| 107 | 23.8 | 133 | 24.8 |
| 108 | 23.8 | 134 | 24.7 |
| 109 | 23.8 | 135 | 24.8 |
| 110 | 23.9 | 136 | 24.9 |
| 111 | 23.9 | 137 | 24.9 |
| 112 | 23.9 | 138 | 24.8 |
| 113 | 24.0 | 139 | 24.9 |
| 114 | 24.1 | 140 | 25.0 |
| 115 | 24.1 | | |

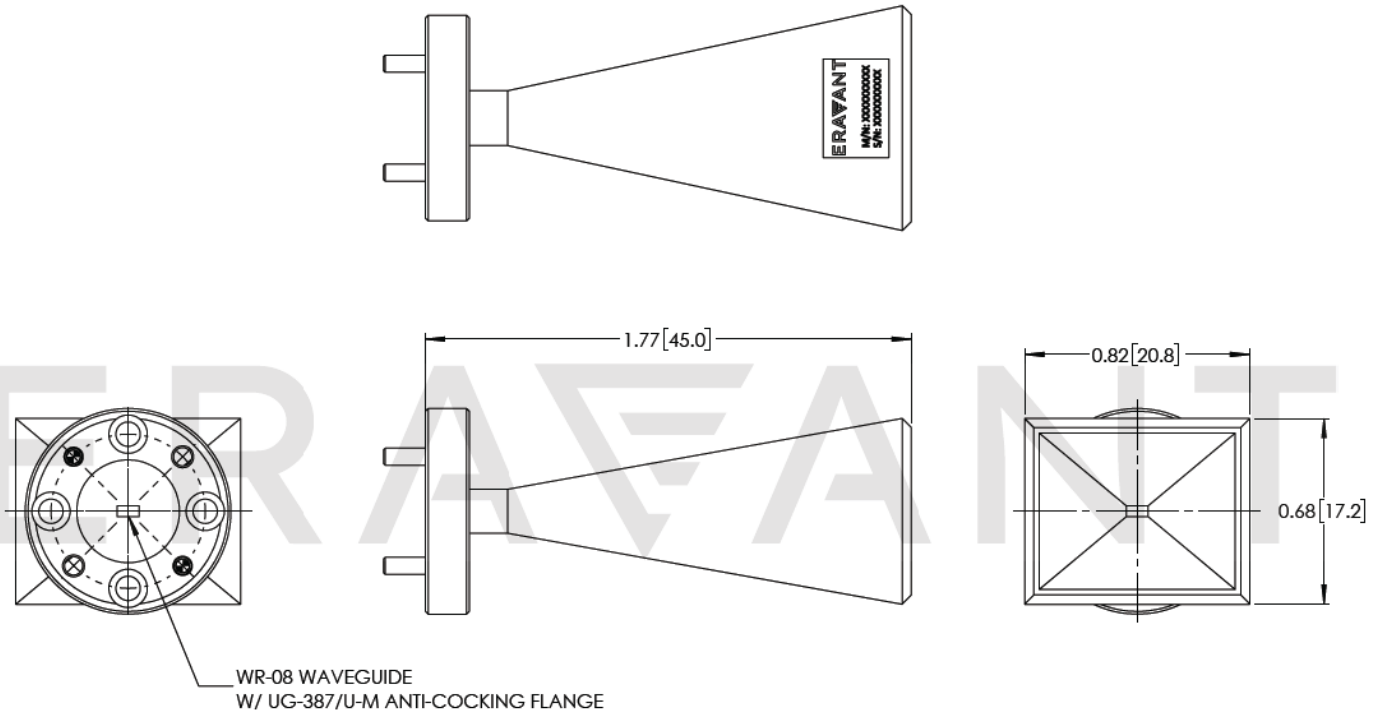
## Simulated Half Power Beamwidth (H-Plane) vs. Frequency in Tabular Format

| Frequency (GHz) | Beamwidth (Degrees) | Frequency (GHz) | Beamwidth (Degrees) |
|---|---|---|---|
| 90 | 12.8 | 116 | 10.9 |
| 91 | 12.6 | 117 | 10.8 |
| 92 | 12.4 | 118 | 10.7 |
| 93 | 12.4 | 119 | 10.7 |
| 94 | 12.3 | 120 | 10.7 |
| 95 | 12.2 | 121 | 10.6 |
| 96 | 12.1 | 122 | 10.6 |
| 97 | 12.1 | 123 | 10.6 |
| 98 | 12.0 | 124 | 10.5 |
| 99 | 11.9 | 125 | 10.4 |
| 100 | 11.8 | 126 | 10.4 |
| 101 | 11.8 | 127 | 10.4 |
| 102 | 11.7 | 128 | 10.3 |
| 103 | 11.6 | 129 | 10.2 |
| 104 | 11.6 | 130 | 10.3 |
| 105 | 11.5 | 131 | 10.2 |
| 106 | 11.4 | 132 | 10.1 |
| 107 | 11.3 | 133 | 10.1 |
| 108 | 11.3 | 134 | 10.1 |
| 109 | 11.3 | 135 | 10.0 |
| 110 | 11.1 | 136 | 9.9 |
| 111 | 11.1 | 137 | 10.0 |
| 112 | 11.1 | 138 | 10.0 |
| 113 | 11.0 | 139 | 9.7 |
| 114 | 10.9 | 140 | 9.6 |
| 115 | 10.9 | | |

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

| Frequency (GHz) | Beamwidth (Degrees) | Frequency (GHz) | Beamwidth (Degrees) |
|---|---|---|---|
| 90 | 11.6 | 116 | 9.5 |
| 91 | 11.4 | 117 | 9.1 |
| 92 | 11.4 | 118 | 8.7 |
| 93 | 11.3 | 119 | 8.8 |
| 94 | 11.2 | 120 | 9.0 |
| 95 | 11.1 | 121 | 8.6 |
| 96 | 11.0 | 122 | 8.3 |
| 97 | 11.0 | 123 | 8.4 |
| 98 | 10.9 | 124 | 8.4 |
| 99 | 10.8 | 125 | 8.0 |
| 100 | 10.7 | 126 | 7.9 |
| 101 | 10.7 | 127 | 8.1 |
| 102 | 10.6 | 128 | 8.0 |
| 103 | 10.5 | 129 | 7.6 |
| 104 | 10.5 | 130 | 7.6 |
| 105 | 10.4 | 131 | 7.8 |
| 106 | 10.3 | 132 | 7.6 |
| 107 | 10.2 | 133 | 7.3 |
| 108 | 10.2 | 134 | 7.5 |
| 109 | 10.2 | 135 | 7.5 |
| 110 | 10.0 | 136 | 7.2 |
| 111 | 9.9 | 137 | 7.0 |
| 112 | 10.0 | 138 | 7.2 |
| 113 | 9.8 | 139 | 7.2 |
| 114 | 9.3 | 140 | 6.8 |
| 115 | 9.3 | | |

**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:**

- If a waveguide is present, any foreign objects in the waveguide will cause performance degradation and may damage or destroy the unit.
- Any foreign objects in the antenna will cause performance degradation and possible device damage.