

STY-MAA-AZ-101F-R1

WR-10 Standard Gain Horn Assembly, 24 dBi Directivity

**STY-MAA-AZ-101F-R1** is a W-band standard gain horn assembly that operates from 75 GHz to 110 GHz. The antenna offers 24 dBi nominal directivity, a typical half-power beamwidth of 9.7 degrees on the E-plane and 11 degrees on the H-plane at the center frequency, respectively. The antenna supports linear polarized waveforms. The RF port is a right angle (90°) 1.0 mm coax connector. The antenna is mounted on a universal mounting cage, which is constructed from sturdy black anodized aluminum plates and optical-grade stainless steel posts. The cage includes an integrated bubble level and a removable Velcro-fastened absorber shield. The standard gain horn assembly is offered for antenna range gain calibration purposes, but it can be also used for general-purpose system setups.



Electrical Specifications:

| Parameter                        | Minimum | Typical | Maximum   |
|----------------------------------|---------|---------|-----------|
| Frequency                        | 75 GHz  |         | 110 GHz   |
| Directivity                      |         | 24 dBi  |           |
| Polarization                     |         | Linear  |           |
| 3 dB Beamwidth, E-Plane @ 92 GHz |         | 9.7°    |           |
| 3 dB Beamwidth, H-Plane @ 92 GHz |         | 11.0°   |           |
| Sidelobes, E-Plane               |         | -13 dB  |           |
| Sidelobes, H-Plane               |         | -36 dB  |           |
| Return Loss                      |         | 15 dB   |           |
| Power Handling                   |         |         | 10 W (CW) |
| Specification Temperature        |         | +25 °C  |           |
| Operation Temperature            | -40 °C  |         | +85 °C    |

Mechanical Specifications:

| Item     | Specification   |
|----------|---|
| RF Port  | 1.0 mm Female Coax Connector  |
| Material | Brass, Aluminum, Stainless Steel  |
| Finish   | Gold Plated (Brass), Black Anodized (Aluminum), Passivated (Stainless Steel), |
| Weight   | 11 lbs.   |
| Outline  | TY-MAA-AZ-WC-R  |

ECCN

EAR99

FEATURES

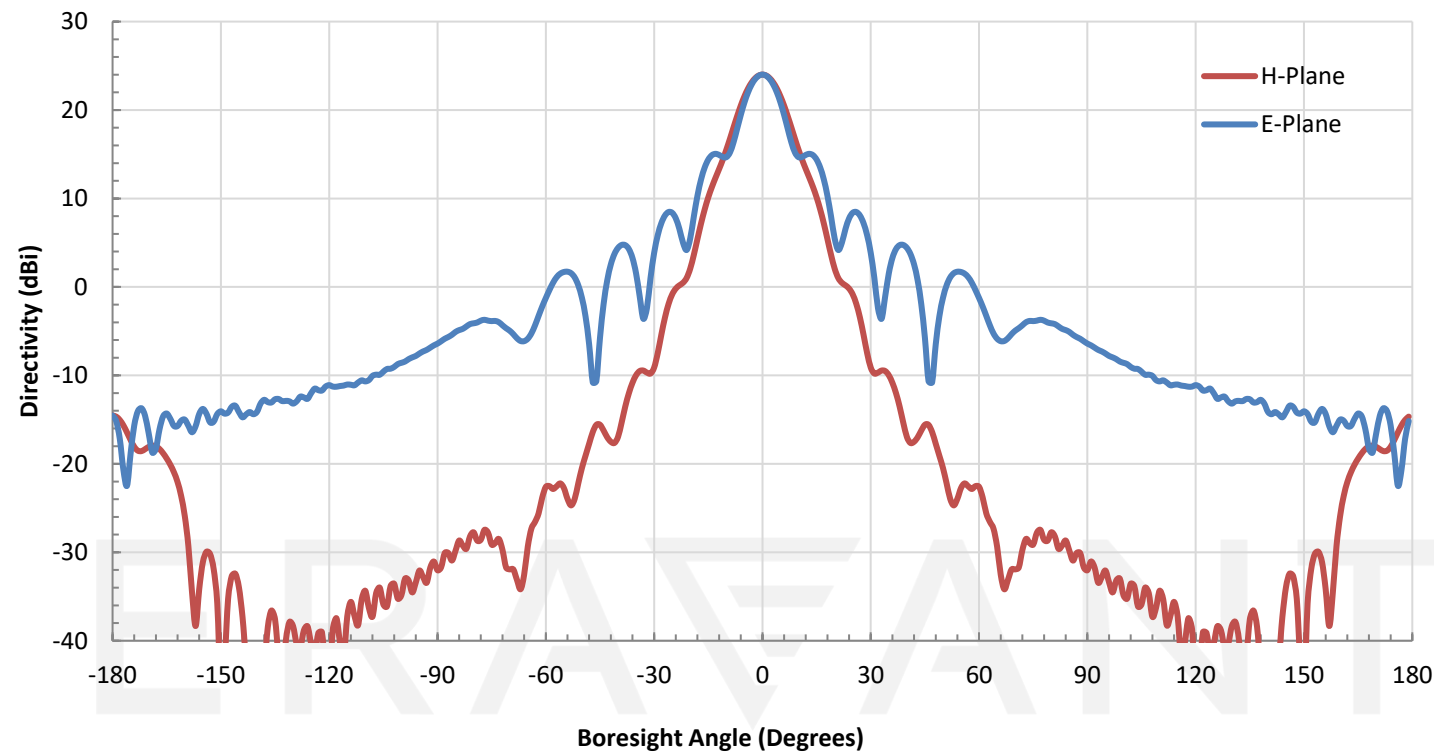
- Robust Universal Mounting Cage
- Bubble Level and Absorber Shield
- Right Angle Connector Configuration
- Linear Polarization
- High Return Loss
- DC Open Circuit

APPLICATIONS

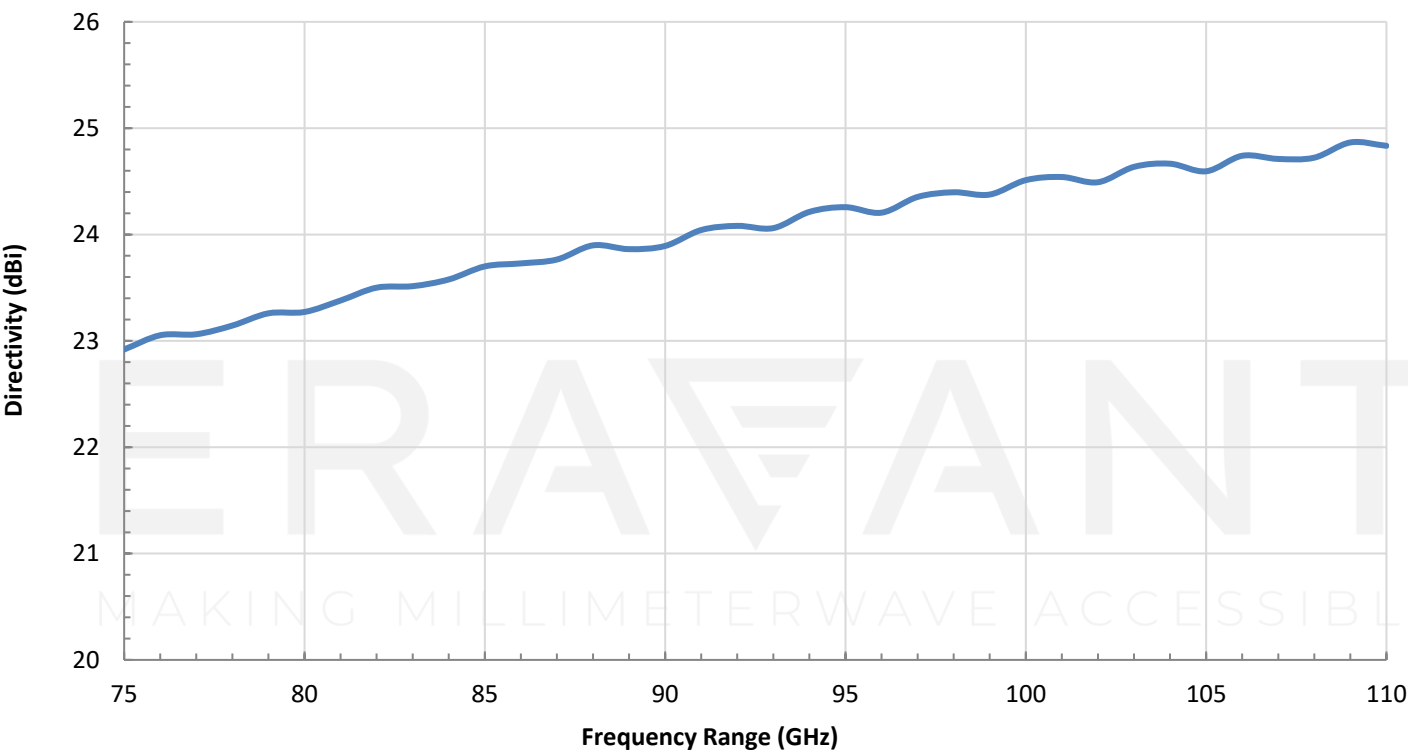
- Antenna Range Measurements
- Antenna Directivity Calibration
- General System Setups

SUPPLEMENTAL DETAILS

Simulated Antenna Patterns @ 92 GHz



Simulated Directivity vs. Frequency



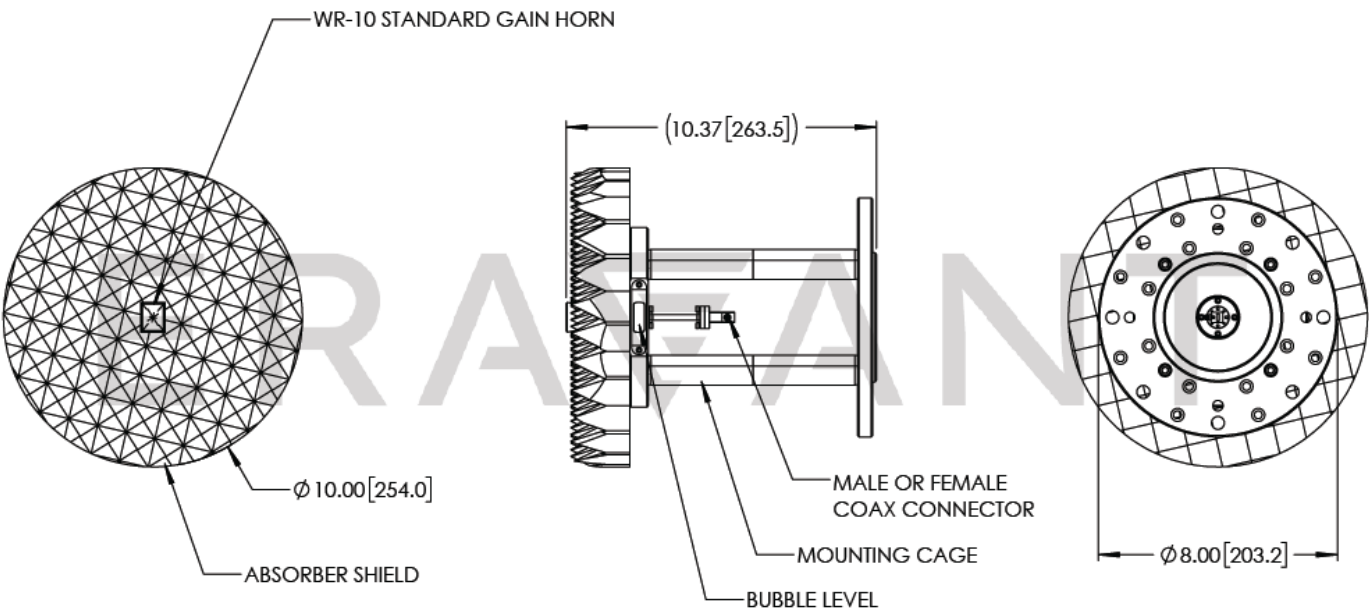
STY-MAA-AZ-101F-R1

Simulated Directivity vs. Frequency in Tabular Format

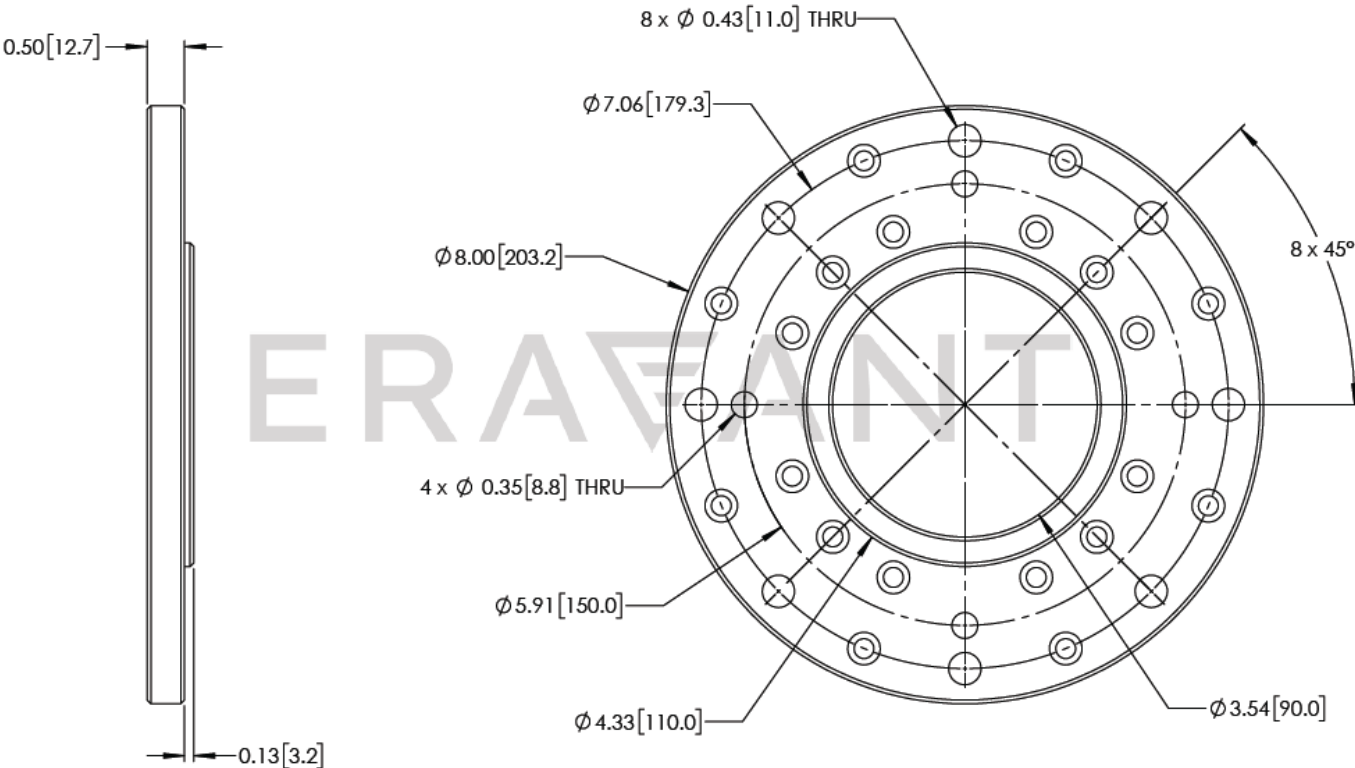
| Frequency (GHz) | Directivity (dBi) | Frequency (GHz) | Directivity (dBi) |
|-----------------|-------------------|-----------------|-------------------|
| 75              | 22.9              | 93              | 24.1              |
| 76              | 23.1              | 94              | 24.2              |
| 77              | 23.1              | 95              | 24.3              |
| 78              | 23.1              | 96              | 24.2              |
| 79              | 23.3              | 97              | 24.4              |
| 80              | 23.3              | 98              | 24.4              |
| 81              | 23.4              | 99              | 24.4              |
| 82              | 23.5              | 100             | 24.5              |
| 83              | 23.5              | 101             | 24.5              |
| 84              | 23.6              | 102             | 24.5              |
| 85              | 23.7              | 103             | 24.6              |
| 86              | 23.7              | 104             | 24.7              |
| 87              | 23.8              | 105             | 24.6              |
| 88              | 23.9              | 106             | 24.7              |
| 89              | 23.9              | 107             | 24.7              |
| 90              | 23.9              | 108             | 24.7              |
| 91              | 24.0              | 109             | 24.9              |
| 92              | 24.1              | 110             | 24.8              |

Mechanical Outline:

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



MOUNTING INTERFACE



NOTE:

- All data presented is simulated. Actual data may vary slightly.
- 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.
- For 1 mm connectors proper torque should be applied:  $4.0 \pm 0.15$  inch-pounds ( $0.45 \pm 0.02$  Nm). Torque wrench model SCH-06004-S1 is highly recommended.

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