

SAZ-2410-05-S1

WR-05 Standard Gain Horn Antenna, 24 dBi Gain

SAZ-2410-05-S1 is a G-band standard gain horn antenna that operates from 140 GHz to 220 GHz. The antenna offers 24 dBi nominal gain, a typical half power beamwidth of 9.7 degrees on the E-plane and 10.9 degrees on the H-plane at the center frequency, respectively. The antenna supports linear polarized waveforms. The input of this antenna is a WR-05 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	140 GHz		220 GHz
Gain		24 dBi	
Polarization		Linear	
3 dB Beamwidth, E-Plane @ 180 GHz		9.7°	
3 dB Beamwidth, H-Plane @ 180 GHz		10.9°	
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-05 Waveguide with UG-387/U-M Anti-Cocking Flange
Size	1.24" (L) x 0.56" (W) x 0.47" (H)
Material	Brass
Finish	Gold Plated
Weight	0.6 Oz
Outline	AZ-G24-A

ECCN

EAR99

FEATURES

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

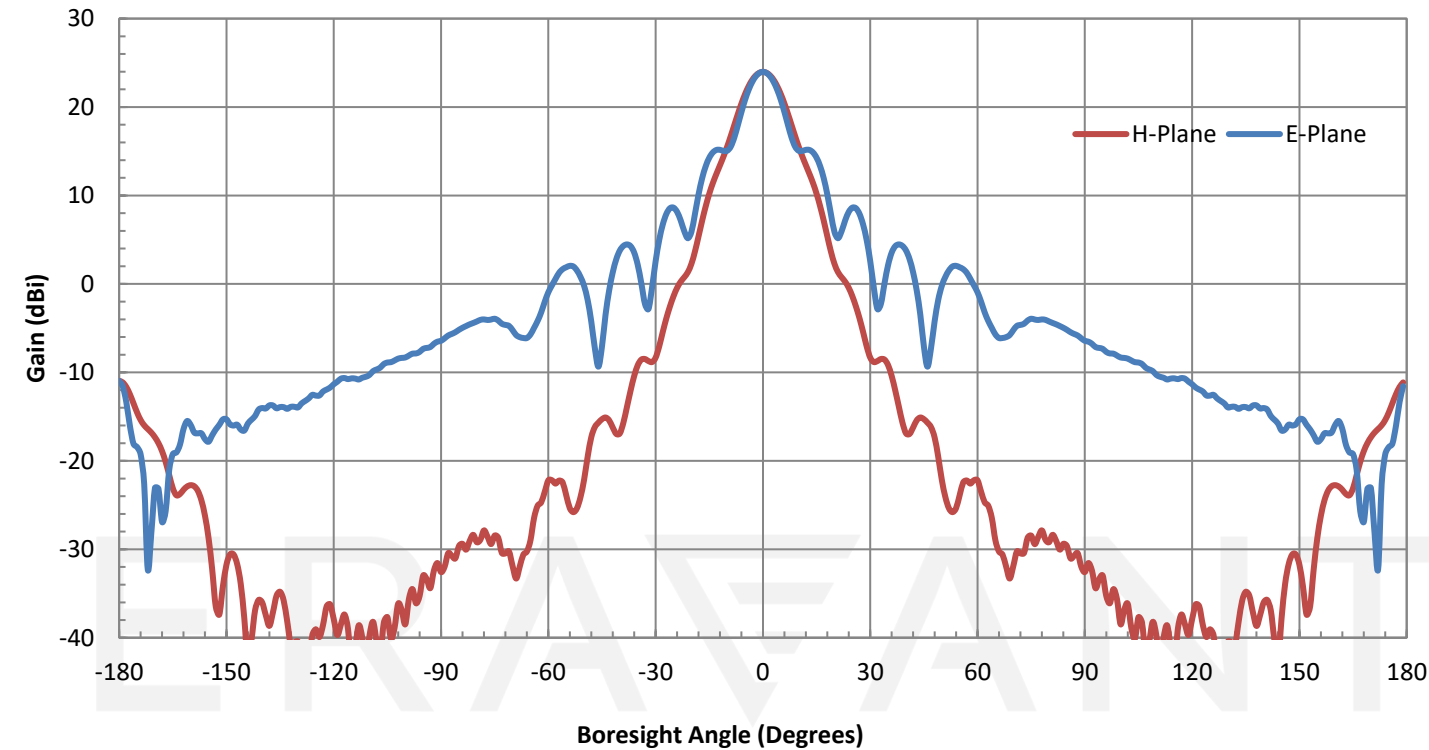
APPLICATIONS

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

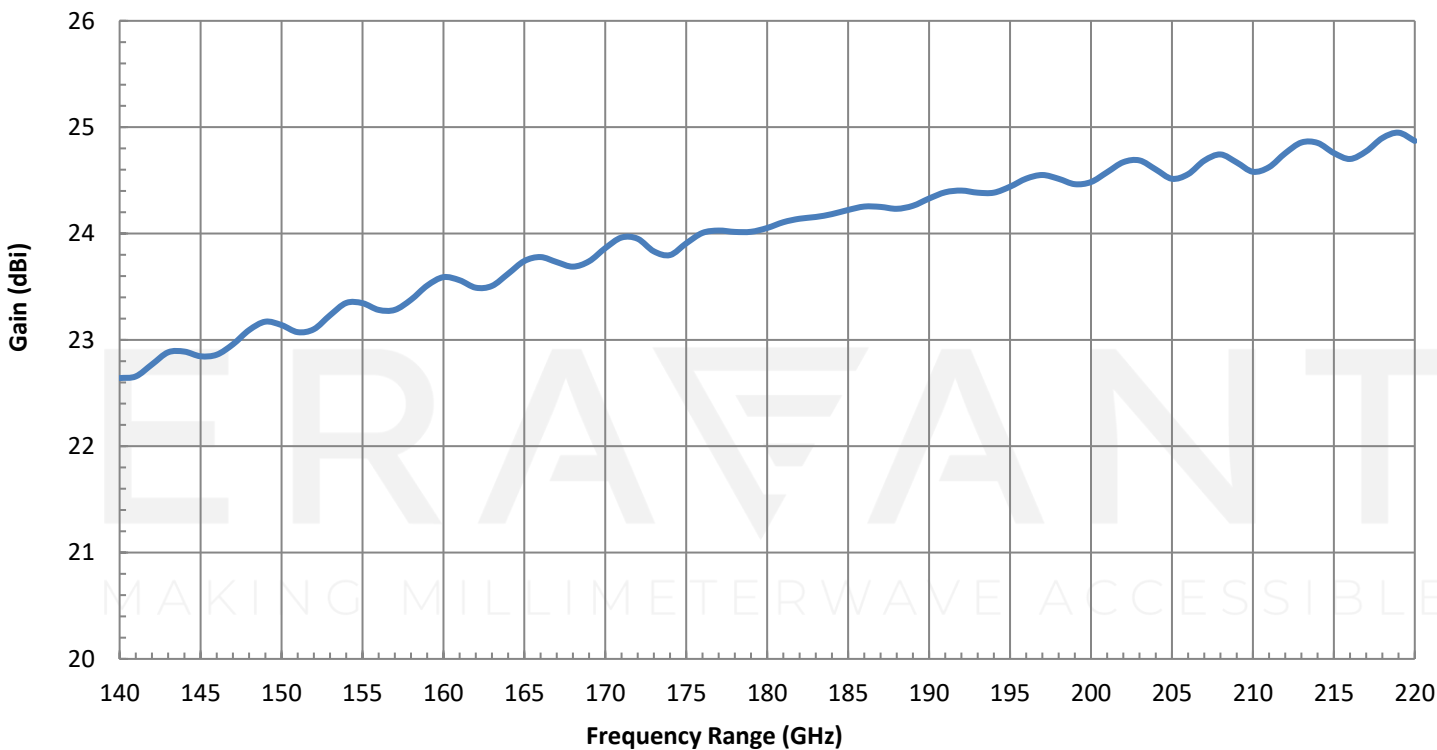
SUPPLEMENTAL DETAILS



Simulated Antenna Patterns @ 180 GHz



Simulated Gain vs. Frequency



Gain vs. Frequency in Tabular Format

Frequency (GHz)	Gain (dBi)	Frequency (GHz)	Gain (dBi)
140	22.6	181	24.1
141	22.7	182	24.1
142	22.8	183	24.2
143	22.9	184	24.2
144	22.9	185	24.2
145	22.9	186	24.3
146	22.9	187	24.3
147	23.0	188	24.2
148	23.1	189	24.3
149	23.2	190	24.3
150	23.1	191	24.4
151	23.1	192	24.4
152	23.1	193	24.4
153	23.2	194	24.4
154	23.4	195	24.4
155	23.4	196	24.5
156	23.3	197	24.6
157	23.3	198	24.5
158	23.4	199	24.5
159	23.5	200	24.5
160	23.6	201	24.6
161	23.6	202	24.7
162	23.5	203	24.7
163	23.5	204	24.6
164	23.6	205	24.5
165	23.7	206	24.6
166	23.8	207	24.7
167	23.7	208	24.7
168	23.7	209	24.7
169	23.7	210	24.6
170	23.9	211	24.6
171	24.0	212	24.8
172	24.0	213	24.9
173	23.8	214	24.9
174	23.8	215	24.8
175	23.9	216	24.7
176	24.0	217	24.8
177	24.0	218	24.9
178	24.0	219	25.0
179	24.0	220	24.9
180	24.1		

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

Frequency (GHz)	Beamwidth (degrees)	Frequency (GHz)	Beamwidth (degrees)
140	13.1	181	10.9
141	12.5	182	11.0
142	12.2	183	10.9
143	12.4	184	10.7
144	12.7	185	10.7
145	12.7	186	10.7
146	12.4	187	10.8
147	12.0	188	10.8
148	12.1	189	10.6
149	12.3	190	10.5
150	12.4	191	10.5
151	12.2	192	10.6
152	11.9	193	10.6
153	11.8	194	10.5
154	11.9	195	10.4
155	12.1	196	10.3
156	12.0	197	10.3
157	11.8	198	10.4
158	11.6	199	10.5
159	11.6	200	10.4
160	11.7	201	10.2
161	11.7	202	10.2
162	11.6	203	10.3
163	11.4	204	10.3
164	11.4	205	10.3
165	11.5	206	10.1
166	11.5	207	10.0
167	11.4	208	10.1
168	11.3	209	10.2
169	11.2	210	10.2
170	11.2	211	10.0
171	11.3	212	9.7
172	11.2	213	9.8
173	11.1	214	10.1
174	11.0	215	10.2
175	11.0	216	10.0
176	11.1	217	9.5
177	11.1	218	9.4
178	11.0	219	9.8
179	10.9	220	10.1
180	10.8		

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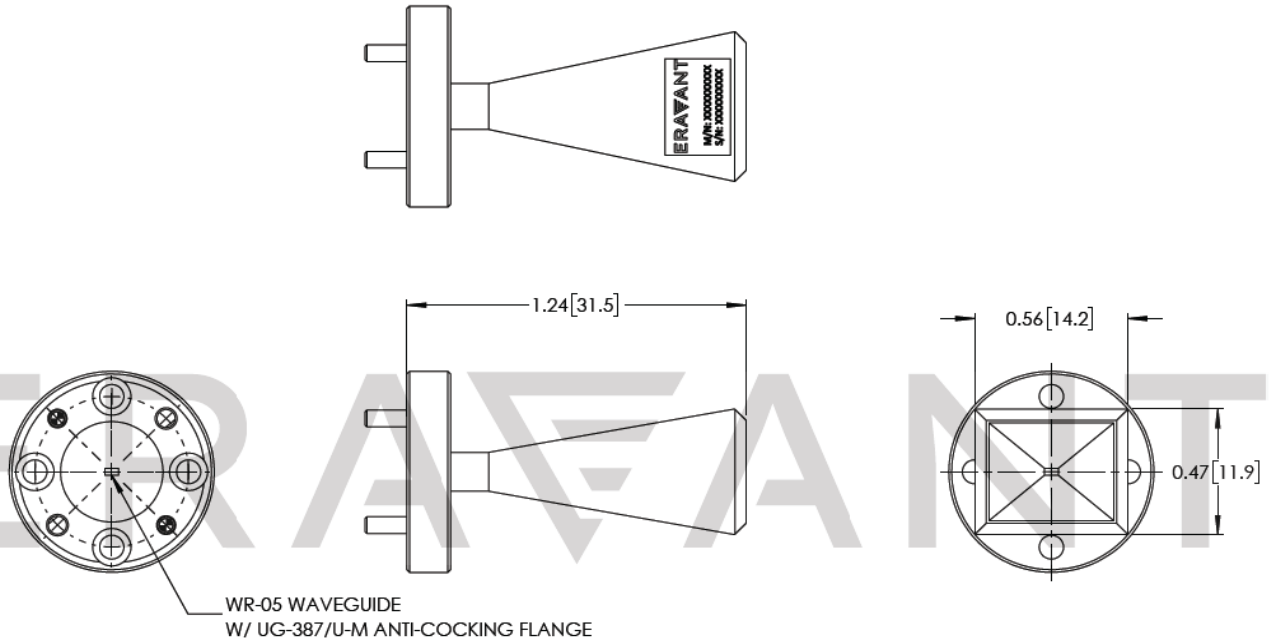
Simulated Half Power Beamwidth (E-Plane) vs. Frequency in Tabular Format

Frequency (GHz)	Beamwidth (degrees)	Frequency (GHz)	Beamwidth (degrees)
140	12.1	181	9.4
141	11.8	182	9.6
142	11.1	183	9.3
143	10.9	184	8.8
144	11.2	185	8.6
145	11.6	186	8.8
146	11.6	187	9.2
147	11.2	188	9.2
148	10.8	189	8.8
149	10.7	190	8.3
150	11.1	191	8.2
151	11.3	192	8.5
152	11.1	193	8.8
153	10.7	194	8.6
154	10.5	195	8.1
155	10.7	196	8.1
156	11.0	197	7.8
157	11.0	198	8.0
158	10.6	199	8.5
159	10.4	200	8.7
160	10.4	201	8.2
161	10.6	202	7.6
162	10.7	203	7.4
163	10.6	204	7.9
164	10.3	205	8.4
165	10.2	206	8.3
166	10.3	207	7.7
167	10.5	208	7.3
168	10.4	209	7.5
169	10.1	210	8.2
170	9.9	211	8.3
171	10.0	212	7.6
172	10.1	213	7.0
173	10.0	214	7.0
174	9.7	215	7.6
175	9.7	216	8.1
176	9.9	217	7.6
177	10.0	218	6.8
178	9.6	219	6.6
179	9.2	220	7.4
180	9.2		

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



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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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