

ARA TECH offers three different types of linearly polarized horn antennas for immunity testing per MIL-STD 461/462 and IEC 1000-4-3, and emission testing per ANSIC63-4 and EN55022.

SWH Series standard waveguide horns and **OWH Series** octave band horns are described on pages 24 and 25.

The **DRG series** double-ridge waveguide horns are linearly polarized antennas ideally suited for broadband applications. Only three **DRG** horns (**DRG-2020/A**, **DRG-118/A**, and **DRG-1840/A**) are required to cover the entire test frequency range of 200 MHz to 40 GHz. **DRG series** horns are equipped with mounting brackets for vertical or horizontal polarization measurements.



DRG-2010

The **DRG-2010** is a large, but significantly higher gain antenna. It is a dual-ridge waveguide horn, which can handle input power levels in excess of 1500W. The high gain of the horn coupled with high input power handling capability makes it ideally suited for generating high fields (up to 200v/m) in the frequency band of 200 MHz to 1 GHz.

Two additional high gain horns, models **MWH-1826** and **MWH-2640** are available for 18 – 26 GHz and 26 – 40 GHz test setups.

SPECIFICATIONS

INDIVIDUALLY CALIBRATED

	Frequency (GHz)	Typical Antenna Factor (dB m ⁻¹)	Typical Gain (dBi)	Output* Connector	Power CW	Size (inches)		
						Height	Width	Depth
DRG - 2010	0.2 – 1.0	5.0 - 16.0	11.0 - 15.0	C - F	1 kW	43	58	72
DRG - 2020/A	0.20 - 2.0	See table	See table	N - F	800 W	27.0	38.0	37.0
DRG - 4010/A	.400 - 1.0	12.0 - 15.0	10.3 - 15.2	C - F	1 kW	22.5	31.5	29.0
DRG - 118/A	1.0 - 18.0	See table	See table	N - F	400 W	5.6	9.5	7.8
DRG - 5018/A	5.0 - 18.0	See table	11.0 - 17.0	N - F	250 W	4.5	4.5	8.2
DRG - 1840/A	18.0 - 40.0	See table	See table	K - F	50 W	2.0	2.6	5.3
MWH - 1826/B	18.0 - 26.0	See table	See table	K - F	50 W	3.3	4.0	8.5
MWH - 2640/B	26.0 - 40.0	See table	See table	K - F	50 W	2.3	2.7	6.8

*Note: Power levels shown are for the output connectors listed. Other output connectors, or waveguide outputs, are available. Power levels are higher for waveguide inputs.

HORN ANTENNAS

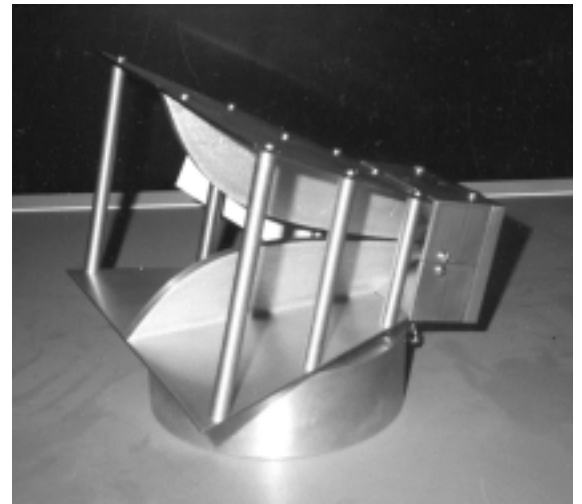
200 MHz - 40 GHz

VSWR: 1.5 : 1 (avg)					
DRG - 2020/A					
Typical Antenna Factor and Gain			Power Requirement (Watts) at 1 Meter Spacing to Obtain Field Strength		
Frequency (MHz)	AFE (dB m ⁻¹)	Gain (dBi)	E 20 V/m	E 100 V/m	E 200 V/m
200	9.5	6.8	2.8	70.4	281.7
400	12.2	10.1	1.3	32.8	131.2
600	16.5	9.3	1.6	39.2	156.9
800	16.1	12.2	.8	20.1	80.5
1000	19.7	10.5	1.2	29.5	118.0
1200	23.2	8.6	1.8	45.9	183.5
1400	23.6	9.6	1.5	36.9	147.8
1600	26.5	7.8	2.2	55.2	220.6
1800	26.7	8.6	1.8	45.6	182.6
2000	30.0	6.3	3.2	79.0	316.1



DRG-2020/A

VSWR: 1.5 : 1 (avg)					
DRG - 118/A					
Typical Antenna Factor and Gain			Power Requirement (Watts) at 1 Meter Spacing to Obtain Field Strength		
Frequency (GHz)	AFE (dB m ⁻¹)	Gain (dBi)	E 10 V/m	E 20 V/m	E 100 V/m
1	22.93	7.3	0.62	2.48	62.0
2	30.15	6.1	0.82	3.27	81.8
3	30.67	9.1	0.41	1.64	40.9
4	29.97	12.3	0.20	0.78	19.6
5	32.81	11.4	0.24	0.97	24.1
6	32.99	12.8	0.17	0.70	17.4
7	35.33	11.8	0.22	0.88	22.0
8	36.79	11.5	0.24	0.94	23.5
9	36.21	13.1	0.16	0.65	16.3
10	38.03	12.2	0.20	0.80	20.0
12	37.81	14.0	0.13	0.53	13.2
14	42.35	10.8	0.28	1.11	27.7
16	38.51	15.8	0.09	0.35	8.7
18	42.54	12.8	0.18	0.70	17.5



DRG-118/A



HORN ANTENNAS 200 MHz - 40 GHz

VSWR : 2.0 : 1 (avg.)

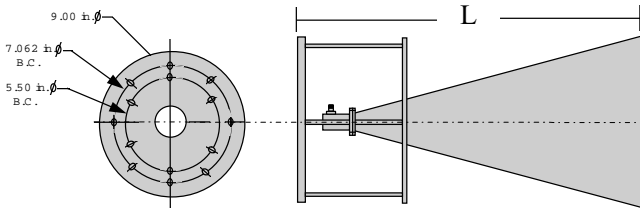
DRG - 5018/A

Typical Antenna Factor and Gain		
Frequency (GHz)	Gain (dBi)	AFE (dB m ⁻¹)
5	10.9	33.3
6	12.1	33.7
7	12.7	34.4
8	12.7	35.6
9	14.0	35.3
10	13.9	36.3
12	14.4	37.4
14	15.8	37.4
16	17.0	37.3
18	17.9	37.4

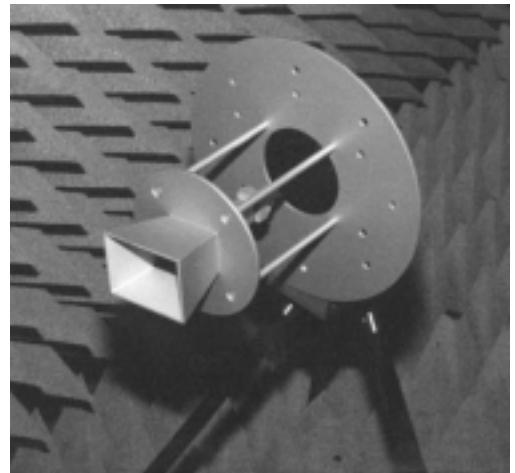
VSWR: 1.5 : 1

DRG - 1840/A

Typical Antenna Factor & Gain @ 1 meter spacing			Power(W) required 10 V/m @ 1 m spacing	Power(W) required 100 V/m @ 1 m spacing
Frequency (GHz)	AFE (dB m ⁻¹)	Gain (dBi)		
18	36.3	19.0	0.05	4.10
20	35.7	20.6	0.03	3.18
22	35.2	21.9	0.03	3.04
25	35.1	23.1	0.02	1.50
28	35.1	24.0	0.01	1.27
31	36.4	23.7	0.02	1.45
34	38.1	22.8	0.02	1.52
38	41.0	20.8	0.03	3.20
40	43.3	19.0	0.05	4.10



Mounting Plate for DRG-1840, MWH-1826/B, MWH-2640/B, SWH-28 and SWH-29



DRG-1840

VSWR: 1.5 : 1 (avg.)

MWH - 1826/B

Typical Antenna Factor & Gain @ 1 meter spacing			Power(W) required 100 V/m @ 1 m spacing
Frequency (GHz)	Gain (dBi)	AFE (dB m ⁻¹)	
18	23.5	31.8	.22
19	23.7	32.1	.20
20	24.2	32.0	.21
21	24.3	32.4	.19
22	24.6	32.5	.18
23	24.7	32.8	.18
24	24.9	32.9	.17
25	25.2	32.9	.17
26	25.1	33.4	.15

VSWR: 1.5 : 1 (avg.)

MWH - 2640/B

Typical Antenna Factor and Gain			Power Requirement (Watts) at 1 Meter Spacing to Obtain Field Strength		
Frequency (GHz)	Gain (dBi)	AFE (dB m ⁻¹)	E 10 V/m	E 20 V/m	E 100 V/m
26	23.2	35.3	.0009	.004	.10
28	23.6	35.6	.0009	.004	.09
30	24.1	35.7	.0009	.004	.09
32	24.3	36.0	.0008	.003	.08
34	24.4	36.4	.0007	.003	.08
36	24.7	36.6	.0007	.003	.07
38	24.9	36.9	.0007	.003	.07
40	25.0	37.3	.0006	.002	.06