



EMC Antennas

Double-Ridged Waveguide Horn

Model 3117

3-D Patterns Available at
www.ets-lindgren.com/3117

FEATURES:

- **Ultra Broadband: 1 GHz - 18 GHz**
- **Maintains Single Lobe Radiation Pattern Over Frequency**
- **300 W Power Input Capacity**
- **Optimized High Frequency Gain**
- **Low VSWR**
- **Flexible Mounting Systems**



ETS-Lindgren's Model 3117 Double-Ridged Waveguide Horn
PATENT # 6,995,728

The Model 3117 Double Ridged Waveguide is the latest addition to a family of double ridge waveguides for microwave and EMC measurement from ETS-Lindgren. This model corrects the lower gain at the upper end of the frequency range, commonly found in ridged waveguide antennas. Users of this antenna benefit from uniform illumination of target surfaces and accurate gain measurement. In addition, the Model 3117 exhibits high gain and low VSWR across its operational frequency band, accepting moderate power input of 300 watts.

The electrical characteristics of this antenna were designed and modeled using powerful workstations running electromagnetic simulation software. Equally important, experienced RF engineers worked with our manufacturing team to produce a practical and affordable realization of the modeling process. All production units are individually calibrated at our A2LA accredited lab.

FEATURES
Single Lobe Radiation Pattern

The Model 3117 maintains a single main lobe pattern in the direction of the horn axis over its frequency

range. This characteristic is essential for even distribution of electromagnetic energy on a target surface, and accurate measurement of gain and vector information. The Model 3117's unique design suppresses the propagation of high order modes. The result is an antenna with a well-defined single lobe radiation pattern that outperforms other antennas in its class.

Ultra Broadband

The Model 3117 sweeps from 1 GHz to 18 GHz without stopping for band breaks, making it ideal

for automated testing. It has the widest usable frequency range of any antenna in its class, with no performance degradation from high order modes.

Power Input

The Model 3117 uses a Type N connector and accepts up to 300 watts of continuing input power with up to 400 watts of peak power. The antenna's high gain and low VSWR over its operating frequency translates into efficient amplifier use and high field strengths.

Uniform Gain, Low VSWR

The Model 3117 has a more uniform gain and antenna factor because of the better behavior of its radiation pattern. Since the pattern is stable over frequency, the gain and the AF also remain stable. Similar antennas of this class exhibit large variations of the gain and the AF as the frequency increases.

Flexible Mounting System

The Model 3117 antenna includes both an EMCO classic mount and a rear "stinger" mount.

STANDARD CONFIGURATION

- Antenna Assembly
- Mounting bracket drilled to accept ETS-Lindgren or other tripod mounts with 1/4 in x 20 threads
- Rear "stinger" Mount
- Individually calibrated at 1 m per SAE ARP 958 at our A2LA accredited lab. 3 m calibration per ANSI C63.5 available at additional cost. Actual antenna factors and a signed Certificate of Calibration Conformance included with manual.

OPTIONS

- Antenna Mast
- Antenna Tripod

Electrical Specifications

MODEL	FREQUENCY RANGE	VSWR RATIO (AVG)	MAXIMUM CONTINUOUS POWER	PEAK POWER	IMPEDANCE (NOMINAL)	CONNECTORS
3117	1 GHz - 18 GHz	3.5:1 max <2:1 above 1.5 GHz	300 W	400 W	50 Ω	Type N

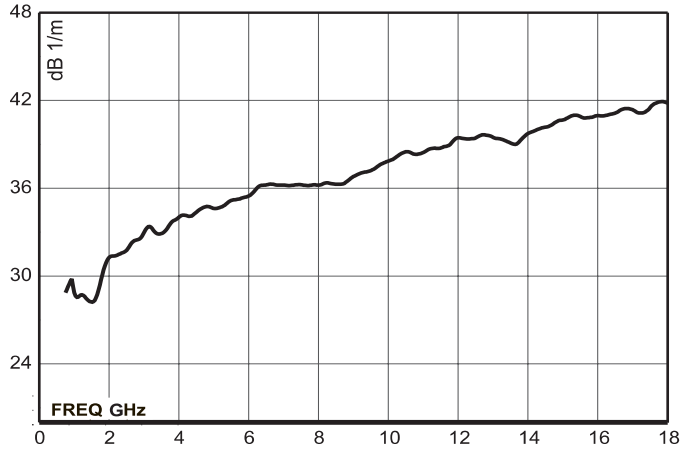
Physical Specifications

MODEL	WIDTH	DEPTH	HEIGHT	WEIGHT
3117	17.5 cm 6.9 in	17.5 cm + 15.5 cm mount 6.9 in + 6.1 in mount	15.5 cm 6.1 in	1.13 kg 2.5 lb

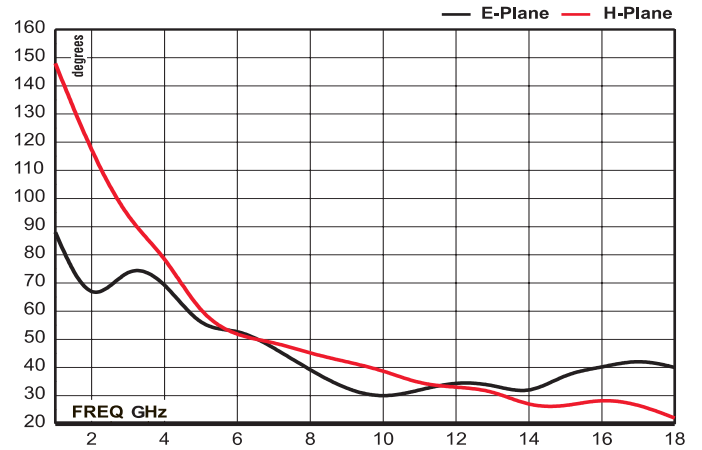
Double-Ridged Waveguide Horn

Model 3117

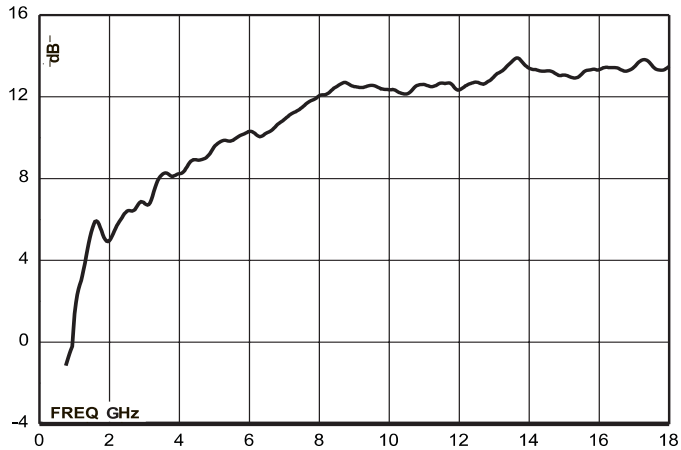
Model 3117 Antenna Factor



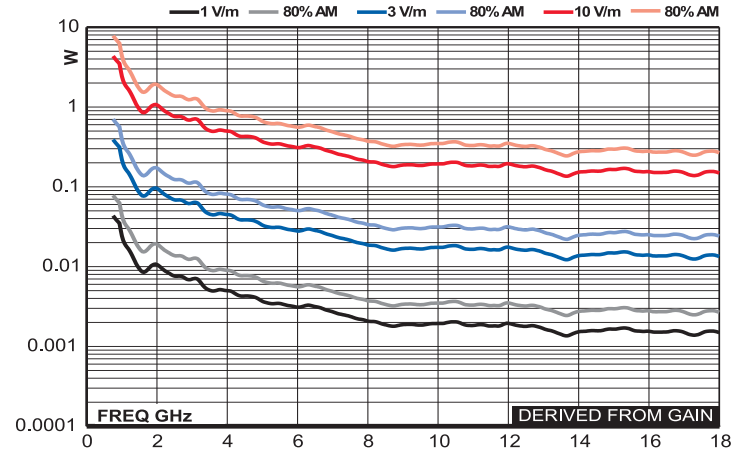
Model 3117 Half Power Beamwidth



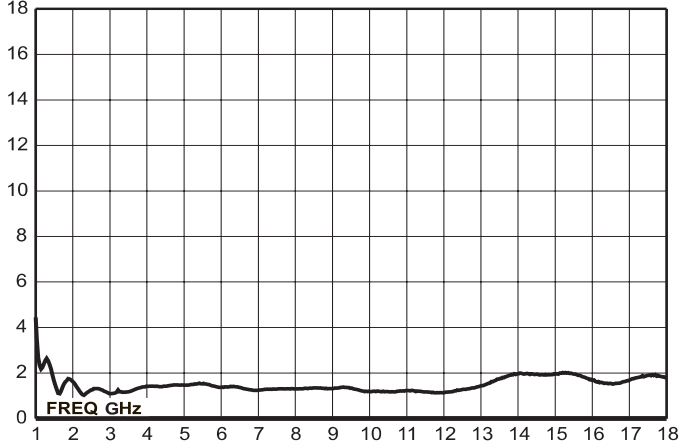
Model 3117 Gain



Model 3117 Forward Power @ 1 m



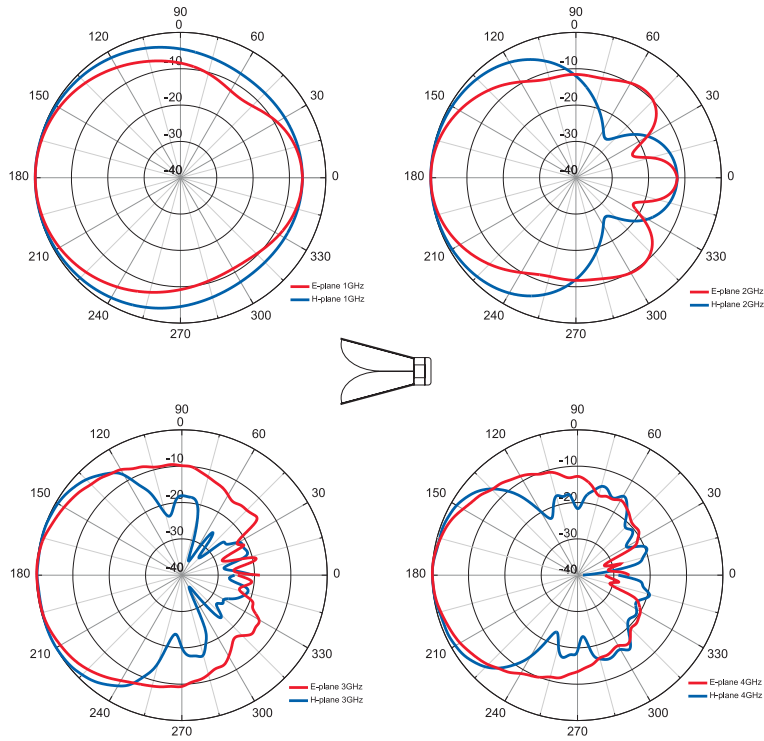
Model 3117 VSWR



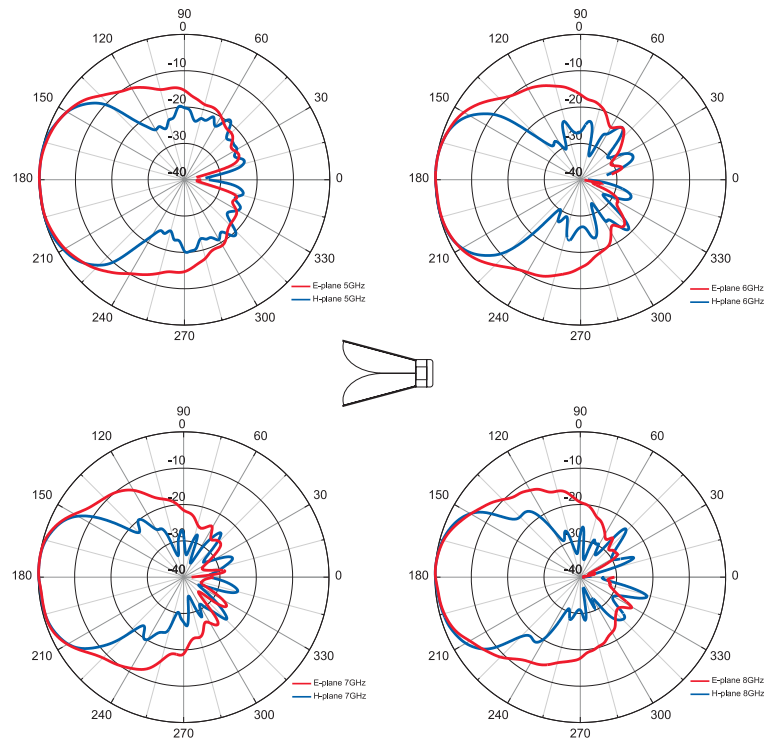
Double-Ridged Waveguide Horn

Model 3117

Model 3117 (1 GHz - 4 GHz)



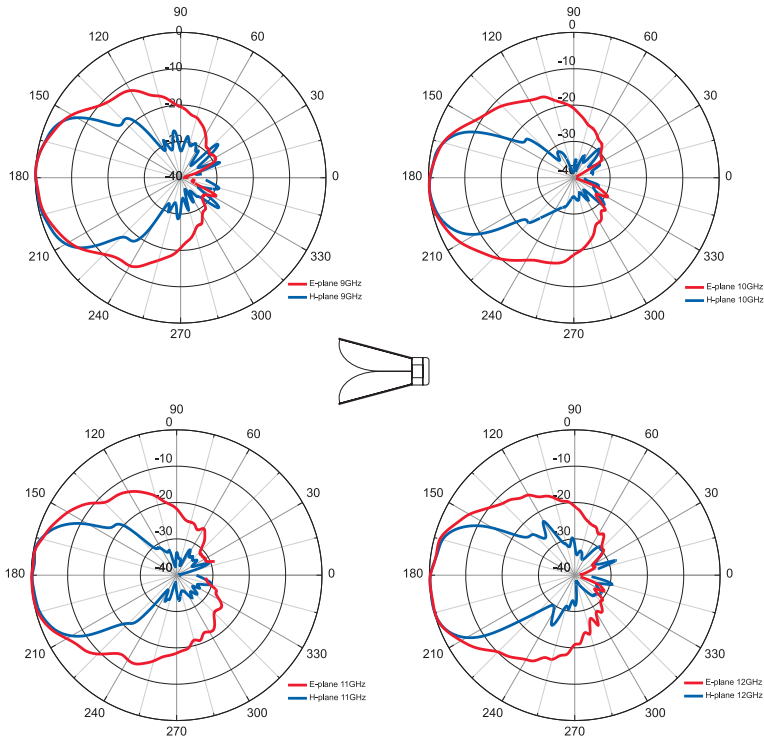
Model 3117 (5 GHz - 8 GHz)



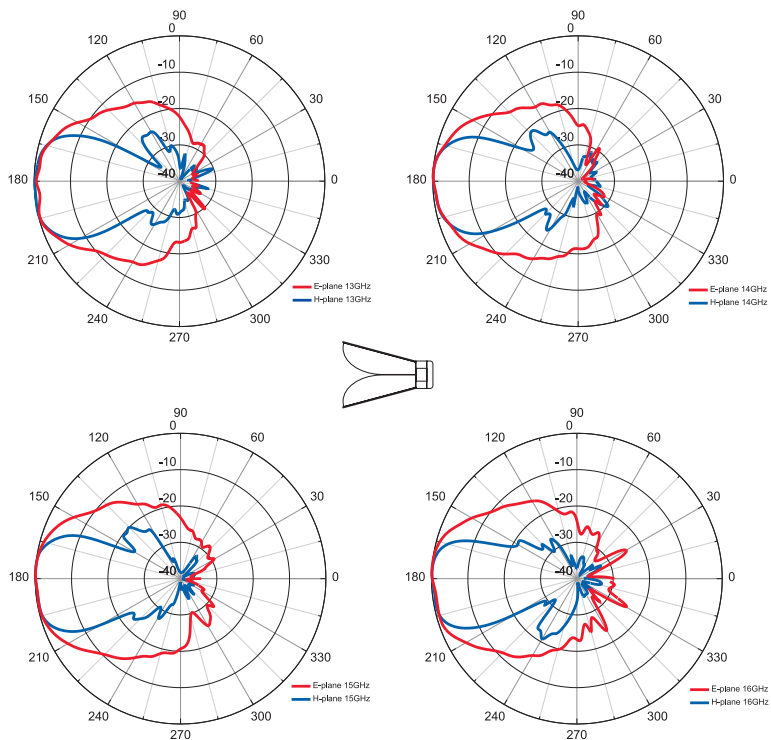
Double-Ridged Waveguide Horn

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Model 3117 (9 GHz - 12 GHz)



Model 3117 (13 GHz - 16 GHz)



Double-Ridged Waveguide Horn

Model 3117

Model 3117 (17 GHz - 18 GHz)

