

Features:

- **Ultra Broadband: 80 MHz -6 GHz**
- **750 W Max Continuous Power Input**
- **Meets CISPR Cross-Polarization Rejection Requirements**
- **On-axis Center Point Polarization**
- **Compact Size**
- **Tough Powder Coat Finish**



ETS-Lindgren's Model 3149 BiConiLog Antenna

The Model 3149 BiConiLog is the latest addition to a family of hybrid antennas for EMC measurement from ETS-Lindgren. This antenna has an ultra broadband frequency range, accepts high power input, and is size-efficient for easy transport and use in compact chambers. Rugged construction assures dimensional and electrical stability over extended use.

The electrical characteristics of this antenna were 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. On completion, the antenna was tested and calibrated at our A2LA accredited lab facility. All production units are individually calibrated at this facility.

Features

Ultra Broadband

Combining the best characteristic of biconical and log periodic antennas, BiConiLogs sweep over a wide frequency range-- ideal for automated testing. The Model 3149's 80 MHz - 6 GHz frequency range is the broadest and highest of all BiConiLog antennas, and most commercially available antennas of this type.

High Gain

The Model 3149 accepts up to 750 W of continuous power input at its lower frequencies of operation. The antenna's high gain and low VSWR over its operating frequency translates into efficient amplifier use for field generation. Unlike most hybrid biconical and log periodic antennas, the Model 3149 has a relatively low VSWR at its lowest frequency of operation, allowing approximately half the power to be radiated by the antenna.

Cross Polarization

Antenna performance can be degraded by cross polarization of horizontal and vertical signals. In high frequency log periodics where elements are small and closely spaced, cross polarization can be difficult to avoid. The high frequency section of the Model 3149 was carefully modeled and precision manufactured to avoid this problem. Cross polarization rejection in the Model 3149 exceeds 20 dB, making this antenna one of the few antennas that are compliant for CISPR 16-1 measurements.

Polarization on Center Point Axis

The Model 3149 was designed with a flexible mounting scheme to accommodate most antenna towers and tripods. The antenna can be securely mounted from the 22 mm diameter rear tube, or with a mount (included) at the center of the lower element boom.

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The rear tube mounting provides on-axis center point rotation of the antenna during polarization and can be mounted to ETS-Lindgren and most other brands of antenna towers. The receiving tube on the antenna tower can be either square or round. The antenna's center boom mount can be used with ETS-Lindgren antenna masts having an offset cross-boom, and all tripods.

Construction

An antenna constructed to maximize structural integrity is better able to maintain its electrical properties. The benefits are better measurement repeatability, lower uncertainty

values and longer calibration validity. The Model 3149 is constructed to be a rugged antenna that thrives in an environment of constant use. Custom aluminum extrusions are used for the boom material. Dipole elements attach with capped Allen screws for secure attachment, yet allow repair and replacement if necessary. An all-weather impact radome protects the high frequency element section. Tubular bow-tie elements fit to the balun box using positive aligning-- yet easily attached-- compression fittings. The finished antenna receives a tough, durable powder coat finish.

Standard Configuration

- Antenna Assembly
- Rear tube mounting and element boom mounting. Element boom mounting bracket drilled to accept ETS-Lindgren or other tripod mount with 1/4 in x 20 threads.
- Individually calibrated at 1 m per SAE ARP 958 at our A2LA accredited lab. 3 m and 10 m per ANSI C63.5 at our A2LA accredited lab. Actual antenna factors and a signed Certificate of Calibration Conformance included with manual

Options

- Antenna Mast
- Antenna Tripod
- Support Rod

Electrical Specifications

MODEL	FREQUENCY RANGE	VSWR RATIO (AVG)	MAXIMUM CONTINUOUS POWER	IMPEDANCE (NOMINAL)	CONNECTORS
3149	80 MHz - 6 GHz	6.5:1 max* <2:1 typical	750 W 80 MHz - 150 MHz 500 W 150 MHz - 600 MHz 365 W 600 MHz - 1 GHz 200 W 1 GHz - 6 GHz	50 Ω	Type N

* 6.5:1 max is for the bowtie element, better than 2:1 is for the LPDA section

Physical Specifications

MODEL	WIDTH	DEPTH	HEIGHT	WEIGHT
3149	91.00 cm 35.83 in	129.50 cm 50.98 in	53.24 cm 20.96 in	5 .0 kg 11.0 lb

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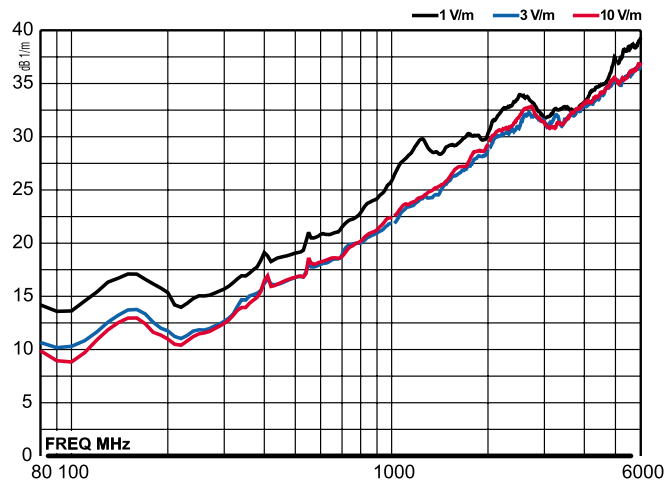
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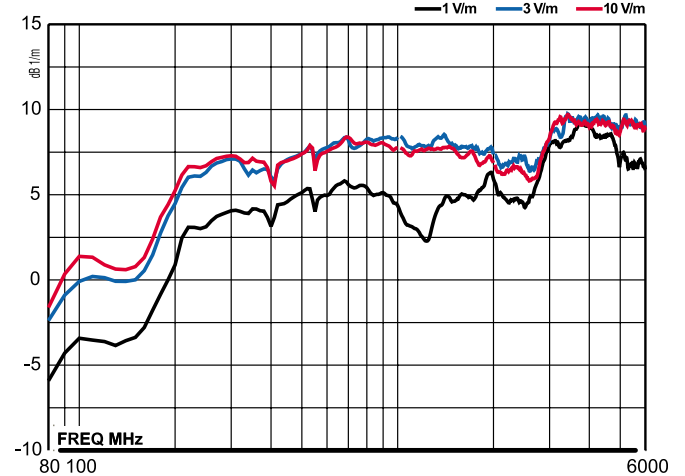
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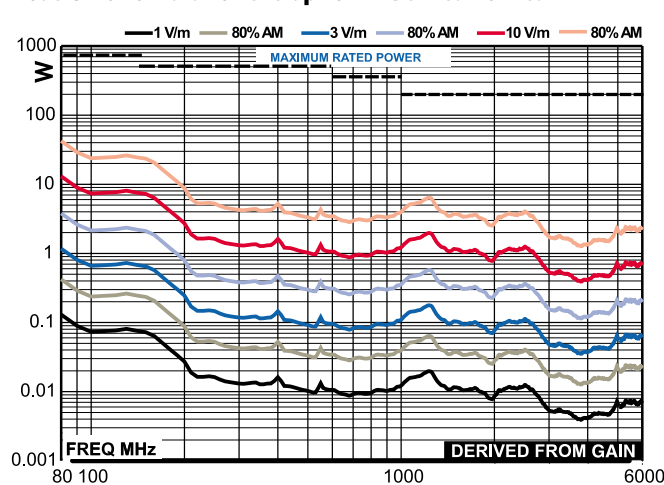
Model 3149 Antenna Factor



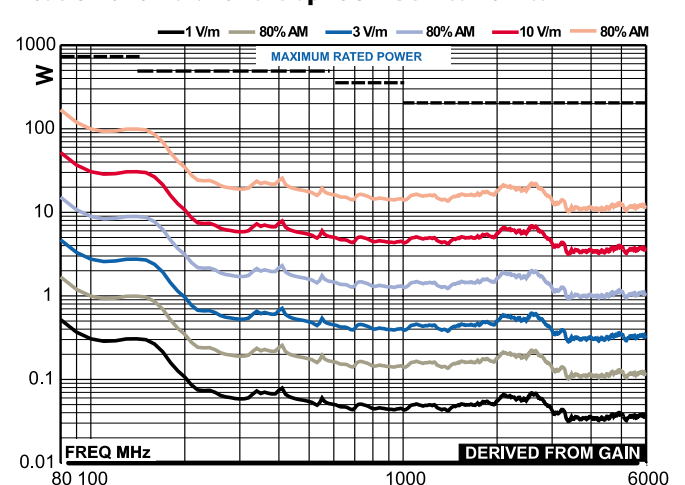
Model 3149 Gain



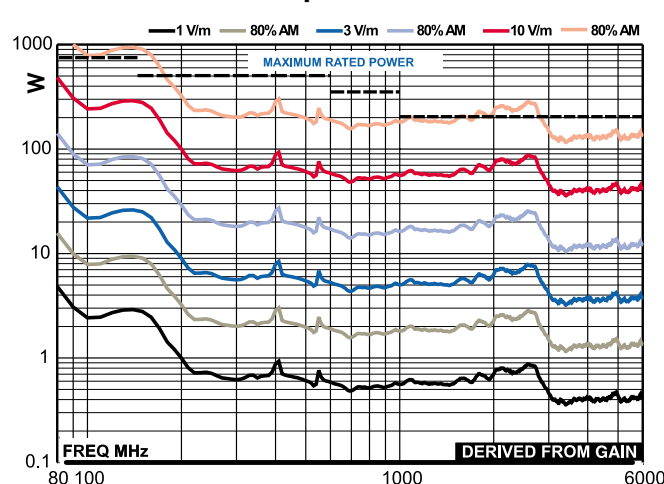
Model 3149 Forward Power Graph @ 1 m Derived from Gain

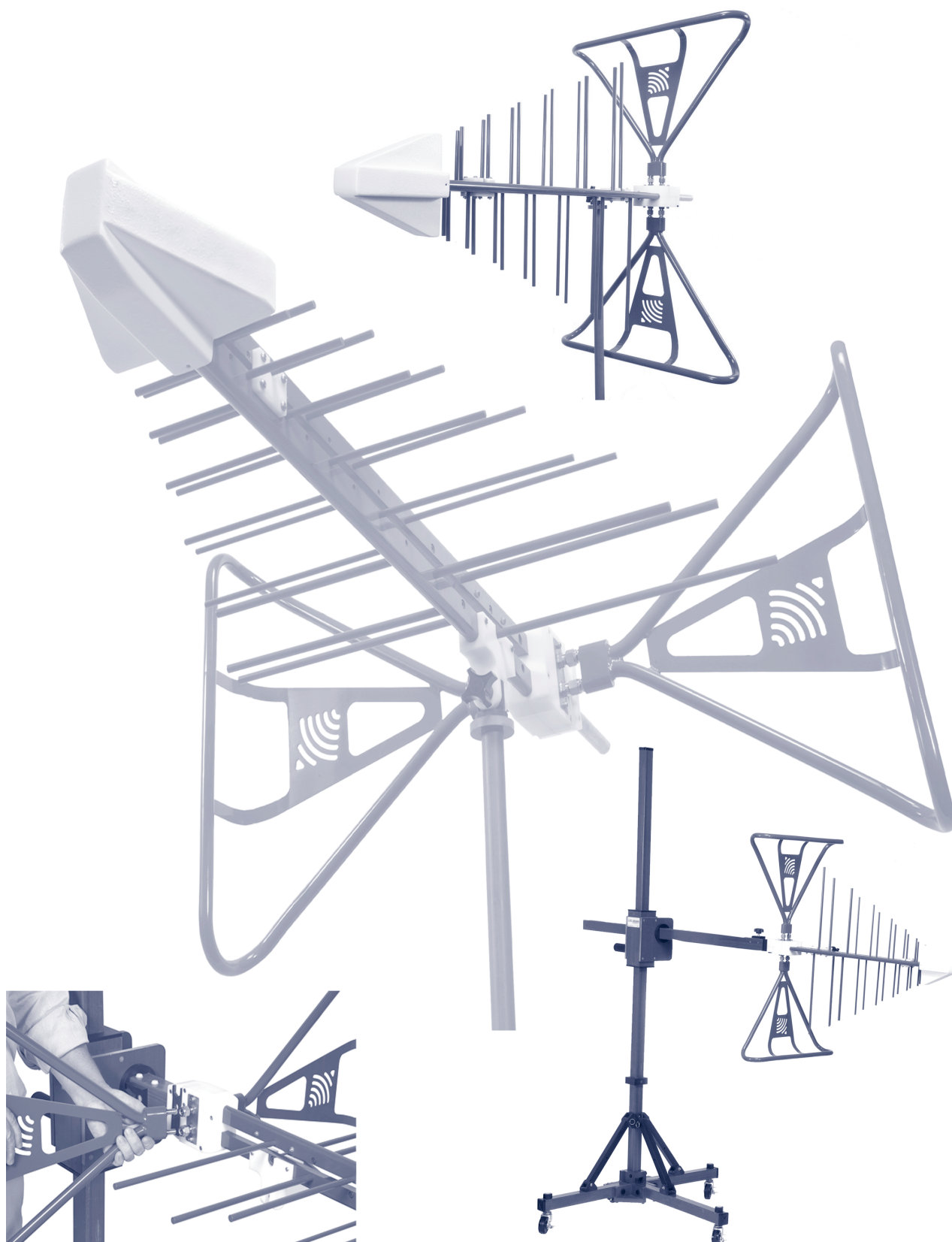


Model 3149 Forward Power Graph @ 3 m Derived from Gain



Model 3149 Forward Power Graph @ 10 m Derived from Gain





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