

## EMC ANTENNAS MODEL 3149



### MODEL 3149

- Ultra Broadband: 80 MHz to 6 GHz
- 750 W Max Continuous Power
- Input Meets CISPR Cross Polarization Requirements
- On-Axis Antenna Polarization
- Compact Size

### ETS-Lindgren's Model 3149 Hybrid Log Periodic and Bowtie (BiConiLog™) 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.

#### Construction

Model 3149 is constructed to maximize structural integrity to better maintain its electrical properties. The benefits are better measurement repeatability, lower uncertainty values and longer calibration validity. This antenna's rugged design makes it ideal for constant use. Custom aluminum extrusions are used for the boom material. Dipole elements securely attach with capped Allen screws, yet also allow repair and replacement if necessary. The RF transparent radome protects the high frequency element section. Tubular bow-tie elements fit to the balun box using positive alignment, yet easily attached, compression fittings. The finished antenna receives a tough, durable powder coat finish.

#### 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 3149 exceeds 20 dB, making this antenna one of the few antennas that are compliant for CISPR 16-1 measurements.

#### 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. Contrary to most biconical/log periodic hybrid antennas, the 3149 has a relatively low VSWR at its lowest frequency of operation, allowing about half the power to be radiated by the antenna.

#### 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 (0.86 in) diameter rear tube, or with a mount (included) at the center of the lower element boom. 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.

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## Standard Configuration

- Antenna Assembly
- Mounting Bracket for ETS-Lindgren or Other Tripod Mounts with Standard 1/4 in x 20 Threads
- Stinger Mount
- Individually Calibrated:
  - 10 m Calibration per ANSI C63.5
  - 3 m Calibration per SAE ARP 958
  - 1 m Calibration per SAE ARP 958
- Actual Antenna Factors and a Signed Certificate of Calibration Conformance Included in Manual
- Manual

## Options

- ETS-Lindgren offers several non-metallic, non-reflective tripods. For easy horizontal and vertical polarization changes, the 7-TR tripod is recommended.

## Technical Specifications

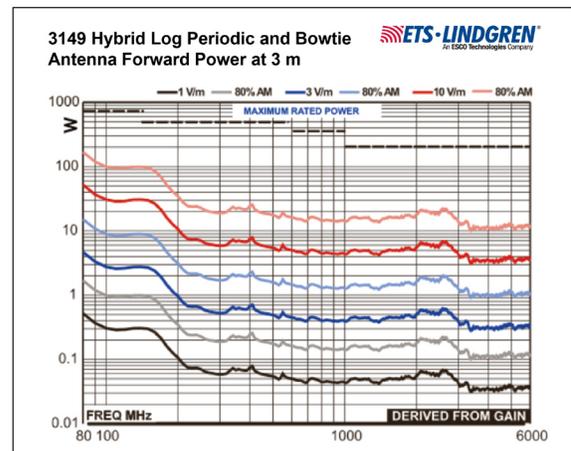
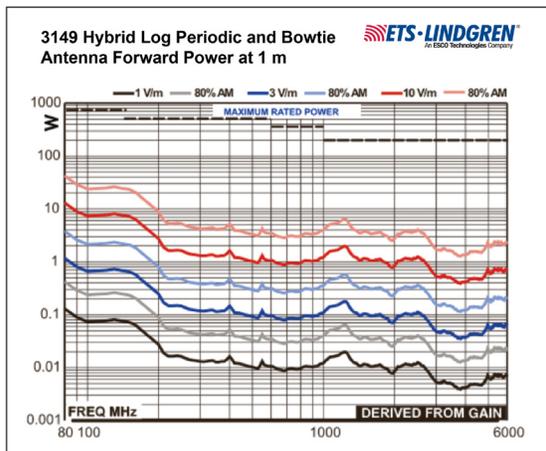
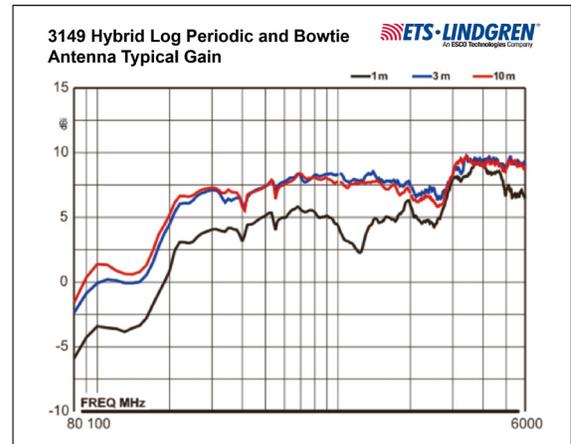
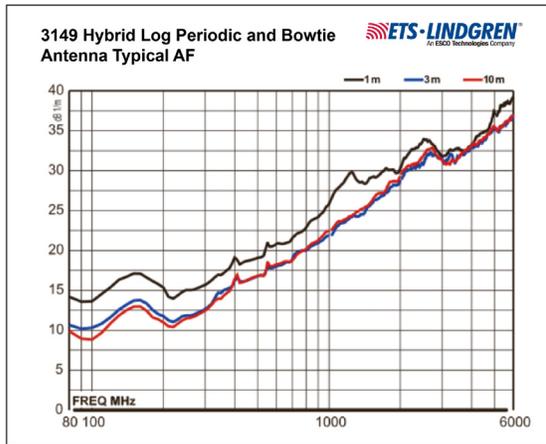
### Electrical

Frequency Minimum	80 MHz
Frequency Maximum	6 GHz
VSWR	6.5:1 (Maximum with Bowtie Elements in Place)
Impedance (Nominal)	50
Maximum Continuous Power	750 W at 80 MHz
Pattern Type	Directional
Polarization	Linear
Connectors	Type N

### Physical

Height	53.24 cm (20.96 in)
Depth	129.50 cm (50.98 in)

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3149 Hybrid Log Periodic and Bowtie Antenna Typical VSWR

