ETS•LINDGREN
An ESCO Technologies Company

EMC Antennas

Tuned Dipole Antenna

Model 3121D

FEATURES:

- **FCC Design**
- **Low VSWR and Balun Loss**
- **Appropriate for EMI Testing and Site Attenuation**
- **Quality Construction Complete with Accessories**
- **Both Stinger and EMCO Mounts Included**

ETS-Lindgren's Model 3121D Tuned Dipole Antenna Set

The ETS-Lindgren Model 3121D Tuned Dipole Antenna is virtually identical to the optimally matched, compensated balun design used by Willmar K. Roberts while he was Assistant Chief Engineer at the FCC laboratory. ETS-Lindgren has made select physical improvements to the original design assuring optimal performance and years of trouble-free use.

ETS-Lindgren's dipole offers an accurate standard for precise EMI measurements including FCC and EN compliance testing, site attenuation as described in EN55022 and ANSI C63.4, and antenna calibration as described in ANSI C63.5.

The Model 3121D tuned dipole antenna covers a frequency range of 30 MHz to 1 GHz and its behavior approaches to the theoretically perfect loss-less half-wavelength resonant dipole.

Each 3121D dipole is individually calibrated at 10 meters per ANSI C63.5, using the preferred three antenna method. All measurement equipment used is NIST traceable.

These measurements are made without the use of attenuators, so antenna factors are a true presentation of actual performance. A printout of the calibration data of each antenna is included with the Manual and is also archived. Individual calibration and actual antenna factors are preferred over typical or theoretical factors and provide confidence of test data.

FEATURES

FCC Design

ETS-Lindgren has incorporated contemporary materials, precision manufacturing and select improvements (such as Type N connectors for balun and cable connections) to the optimally matched, compensated balun design used by Willmar K. Roberts at the FCC laboratory. The result is a quality product that provides years of use.

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Low VSWR and Balun Loss

The Model 3121D tuned dipole antenna has an average VSWR of less than 1.6:1 and a balun loss of less than .5 dB throughout its frequency range of 30 MHz to 1 GHz.

Appropriate for EMI Testing and Site Attenuation

ETS-Lindgren's tuned dipole antenna is suitable for both commercial and military EMI emissions and immunity testing. The Model 3121D also can be used to perform site attenuation per EN55022 and ANSI C63.4.

Quality Construction Complete with Accessories

ETS-Lindgren's tuned dipole is constructed of lightweight corrosion resistant elements, providing years of trouble-free indoor and outdoor service. A clamp block, delrin support rod, and aluminum mounting base are included in the set. The aluminum mounting base accepts standard 1/4 in x 20 threads from an EMCO tripod or most other tripods. All components, including a tape measure, and ruler which shows corresponding frequency, are included in a shock-resistant carrying case.

Flexible Mounting System

The 3121D antenna includes both an EMCO traditional mount, which is ideal for tripod and fits all EMCO masts, and a rear "stinger" mount. The stinger mount permits on-axis rotation/polarization.

STANDARD CONFIGURATION

- Four element extension rods
- Two low-frequency adjustable elements
- Two medium frequency adjustable elements
- Four baluns: DB1 - 4 (Orders for individual balun models include elements. Mounting assembly PN 101947 must be ordered separately for tripod mounting.)
- Clamp block
- Support rod
- Stinger or Classic EMCO mount
- One 5 meter tape measure
- One high frequency ruler for DB4
- 7.6 m cable (25 ft) with Type N connectors
- Actual individual calibration factors and signed Certificate of Conformance included in a user manual
- Carrying case

Mounting Systems

- Individually calibrated at 1 m per SAE ARP 958 and 3 and 10 m per ANSI C63.5. Actual factors and a signed Certificate of Calibration Conformance included in Manual

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Electrical Specifications

MODEL	FREQUENCY RANGE	VSWR RATIO (AVG)	MAXIMUM CONTINUOUS POWER	IMPEDANCE (NOMINAL)	CONNECTORS
3121D	30 MHz - 1000 MHz	<1.6:1		50 Ω	Type N
Balun 1	30 MHz - 60 MHz		260 W		Type N
Balun 2	60 MHz - 140 MHz		160 W		Type N
Balun 3	140 MHz - 400 MHz		80 W		Type N
Balun 4	400 MHz - 1000 MHz		50 W		Type N

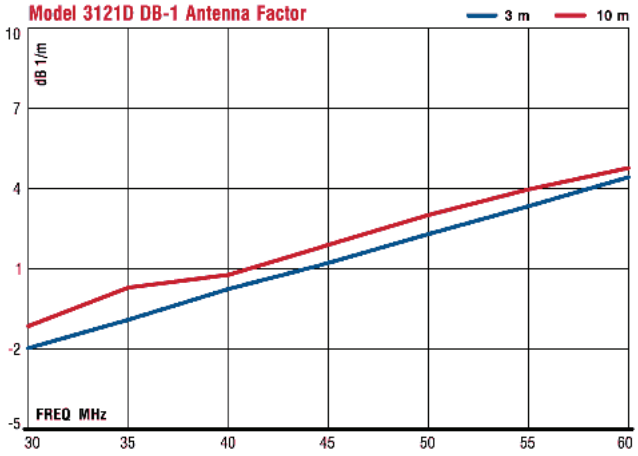
Physical Specifications- Antenna

MODEL	WIDTH	DEPTH	BALUN THICKNESS	BOOM THICKNESS	WEIGHT
3121D	5.2 m 17.0 ft	55.0 cm 21.6 in	7.0 cm 2.75 in	3.5 cm 1.38 in	9.5 kg 21.0 lb

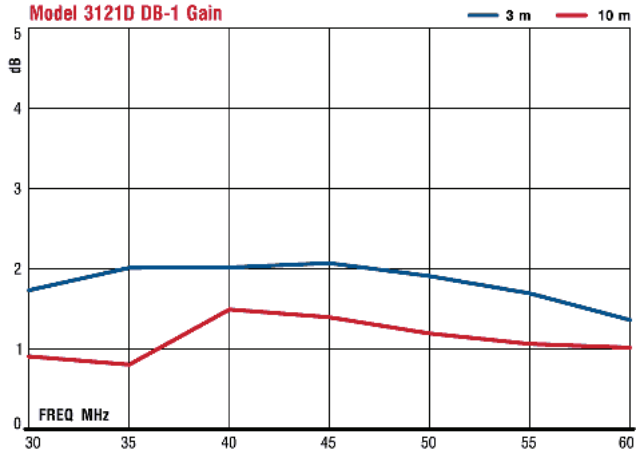
Physical Specifications- Balun

MODEL	LENGTH	WIDTH	RETRACTED ELEMENTS DIMENSIONS
3121D DB-1	68.3 cm 26.9 in	44.2 cm 17.4 in	19.8 cm 7.8 in
3121D DB-2	55.9 cm 22.0 in	43.4 cm 17.1 in	3.8 cm 1.5 in
3121D DB-3	52.1 cm 20.5 in	32.5 cm 12.8 in	3.8 cm 1.5 in
3121D DB-4	49.0 cm 19.3 in	12.7 cm 5.2 in	3.8 cm 1.5 in

Model 3121D DB-1 Typical Antenna Factor



Model 3121D DB-1 Typical Gain



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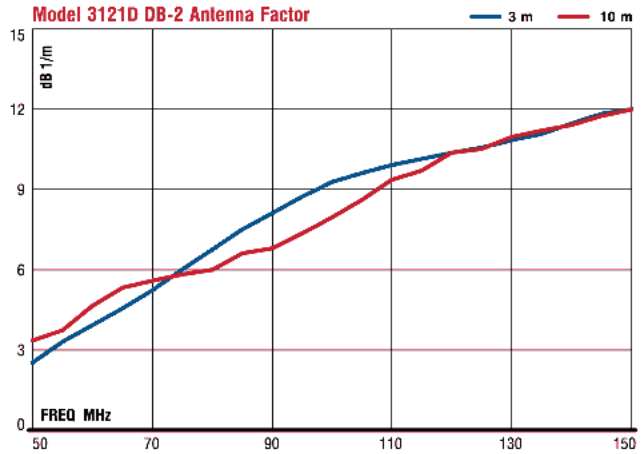
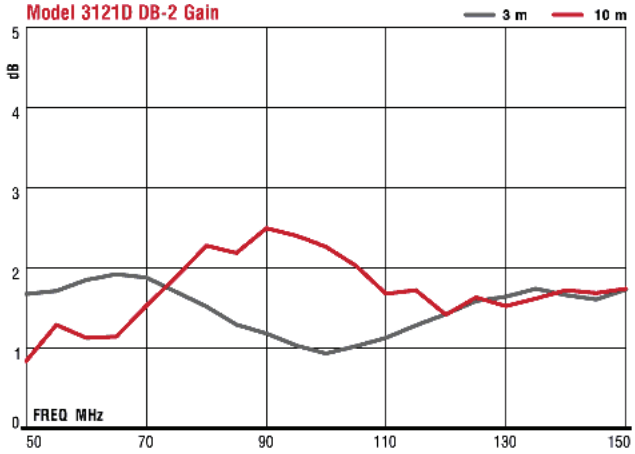
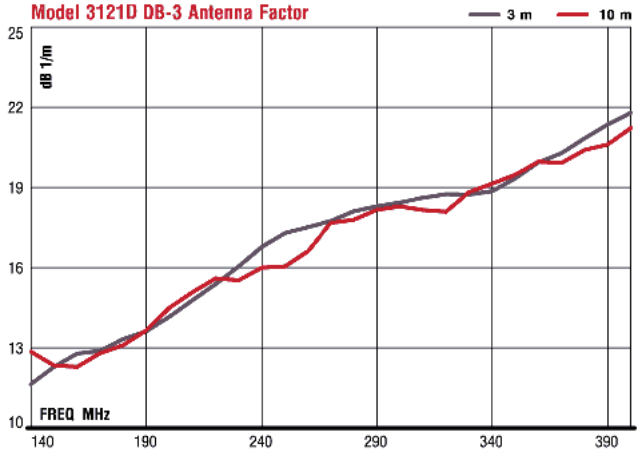
Model 3121D DB-2 Typical Antenna Factor



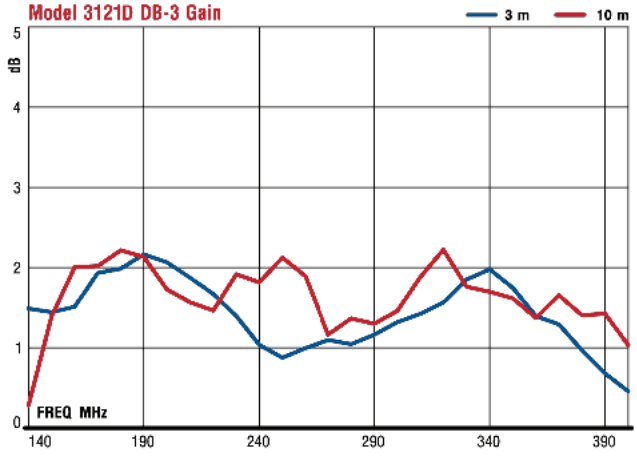
Model 3121D DB-2 Typical Gain



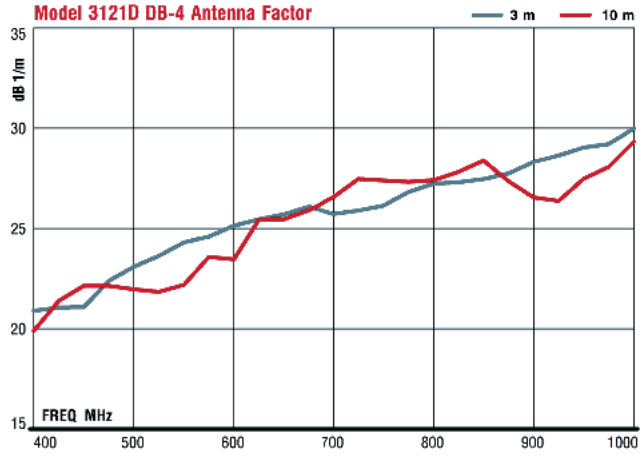
Model 3121D DB-3 Typical Antenna Factor



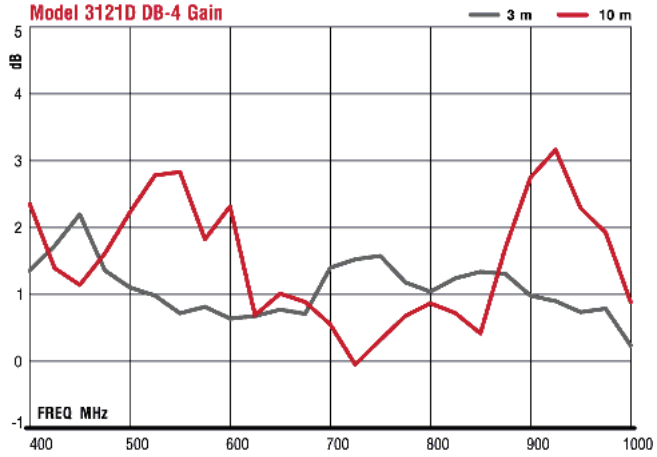
Model 3121D DB-3 Typical Gain



Model 3121D DB-4 Typical Antenna Factor



Model 3121D DB-4 Typical Gain



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