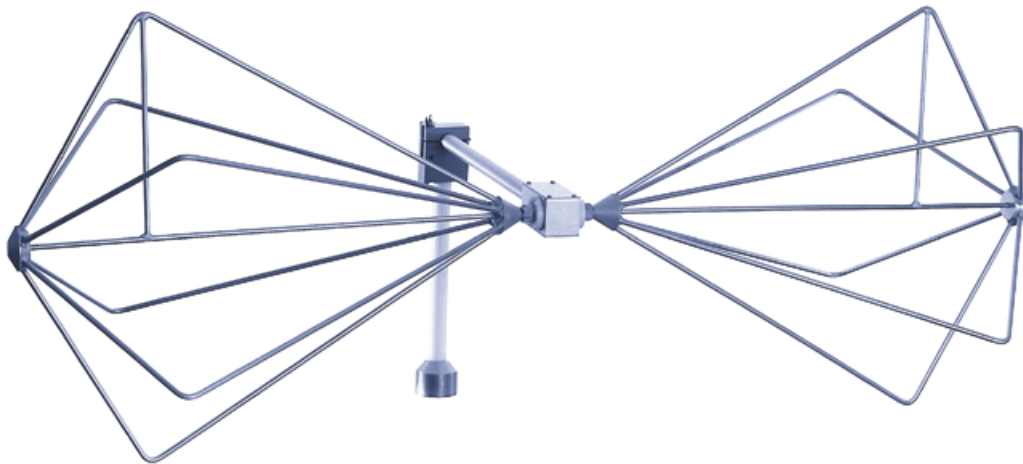




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*Model 3110B*  
**Biconical Antenna**  
**MANUAL**



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# INTRODUCTION

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The ETS-Lindgren EMCO brand Model 3110B Biconical Antenna is specifically designed for radiated emissions testing. This high performance, receive only, antenna operates with in a frequency range of 30 to 300 MHz.

The biconical elements are made from aluminum rods and are welded into a fixed assembly. The elements mount onto a balun network which is fabricated of aluminum and the necessary impedance-matching components. Its lightweight construction provides for ease in portability and storage.

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# ASSEMBLY INSTRUCTIONS

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The Model 3110B consists of the following (shipped unassembled):

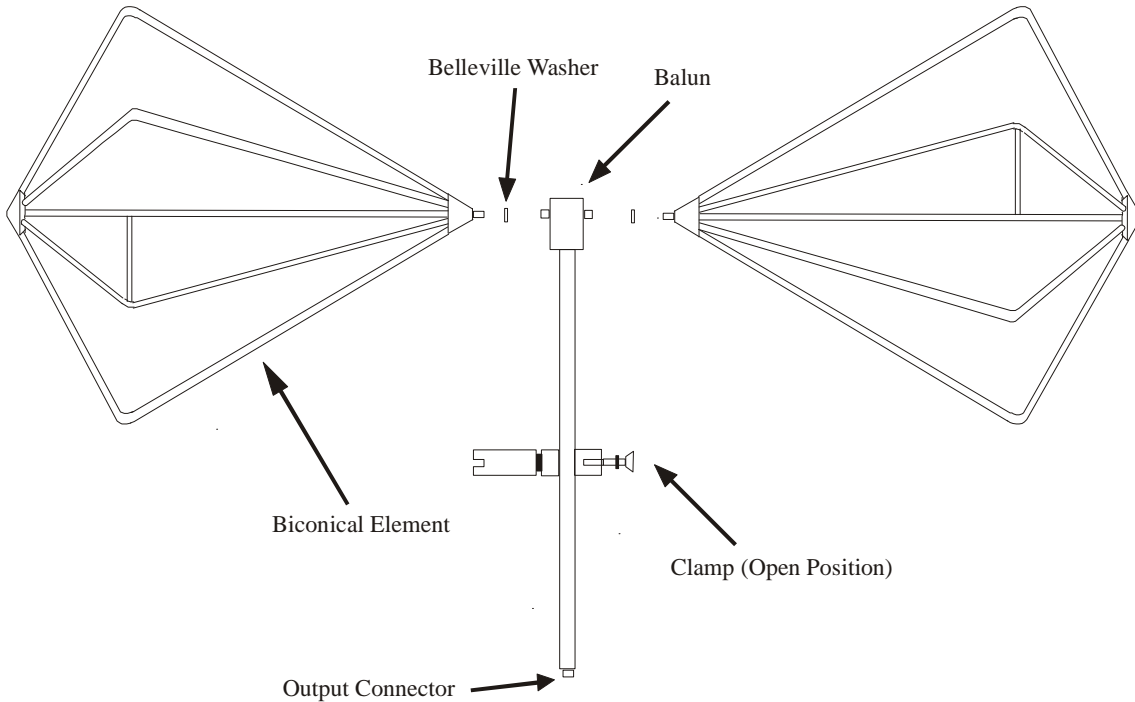
- 1 ea. Balun
- 2 ea. Biconical Elements
- 2 ea. Belleville Washers (In a small plastic bag)
- 1 ea. Mounting Clamp

**Step 1.** After carefully unpacking all of the components, take one of the belleville washers and slide it onto the threaded screw end of one of the biconical elements.

**Step 2.** Line up the screw threads with the receptacle hole on the balun and turn the biconical element until it is firmly secured in the balun. Be careful not to cross-thread this connection or permanent damage to the joint could occur.

**Step 3.** Repeat Steps 1 and 2 with the other washer and biconical element.

Now you are ready to mount the antenna on a tripod for testing.



## MOUNTING INSTRUCTIONS

The mounting clamp of the Model 3110B uses standard 7/8x14 threads and comes with a 1/4x20 thread adapter for versatility when connecting to an ETS tripod or most other tripods for support.

After the mounting clamp is attached to a tripod, unscrew the latch and open the clamp. Insert the balun of the 3110B into the clamp and close the top over the balun. Move the screw latch to the closed position and tighten, so the balun is held securely. The cable can now be attached to the output connector.

# APPLICATION

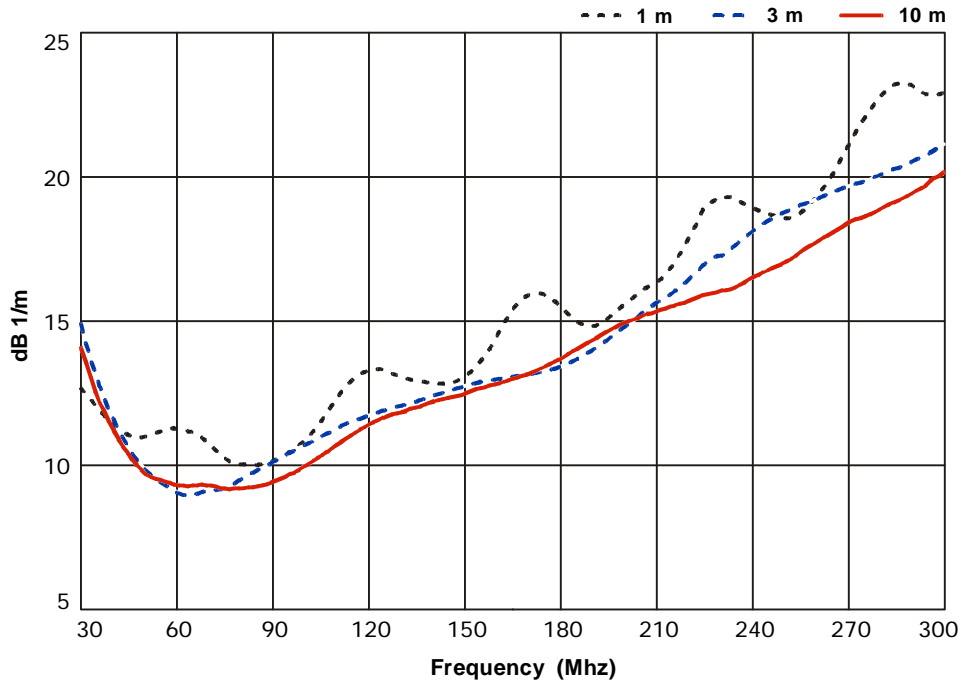
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The Model 3110B is ideally suited for swept site attenuation measurements per ANSI and FCC specifications. Also, the Model 3110B can be used for horizontal as well as vertical site attenuation measurements. A 20 dB pre-amp is recommended in line with the receive antenna to minimize the required transmitted power and to reduce the possibility of saturation of the transmitting antenna. The maximum continuous input power to the Model 3110B is 250 mW.

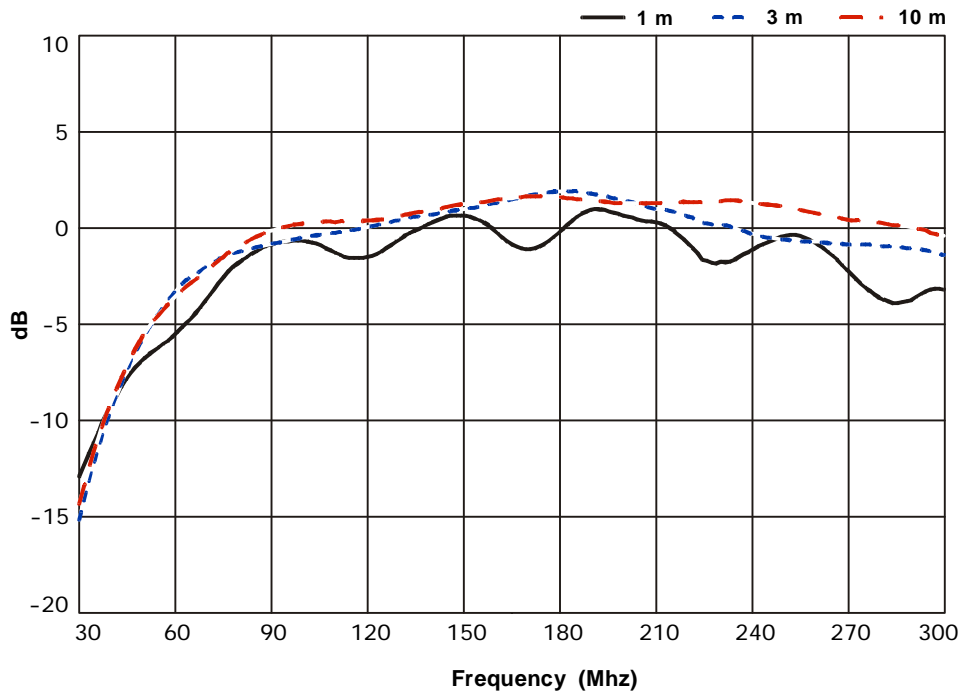
When the 3110B is used vertically, the same element orientation need not be maintained from measurement to measurement. The Model 3110B exhibits excellent symmetrical performance and test repeatability is assured by the balun design.

Each antenna is calibrated during manufacturing. The results of the calibration are tabulated and included with this manual as gain and antenna factor vs frequency for use in Specification Compliance Testing. Typical data for the Model 3110B can be found in the next section.

# TYPICAL DATA

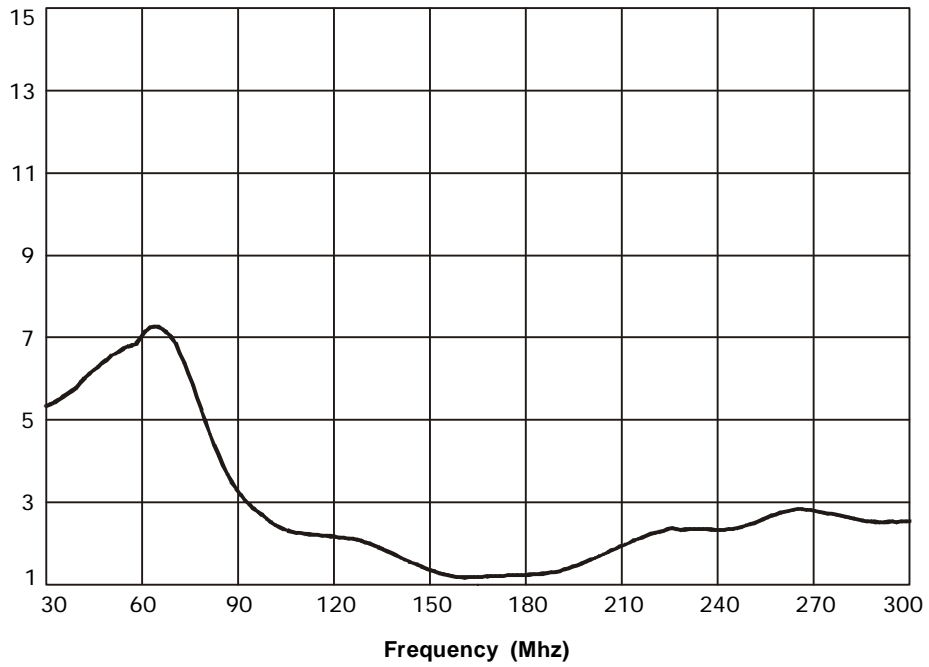


Model 3110B Antenna Factor

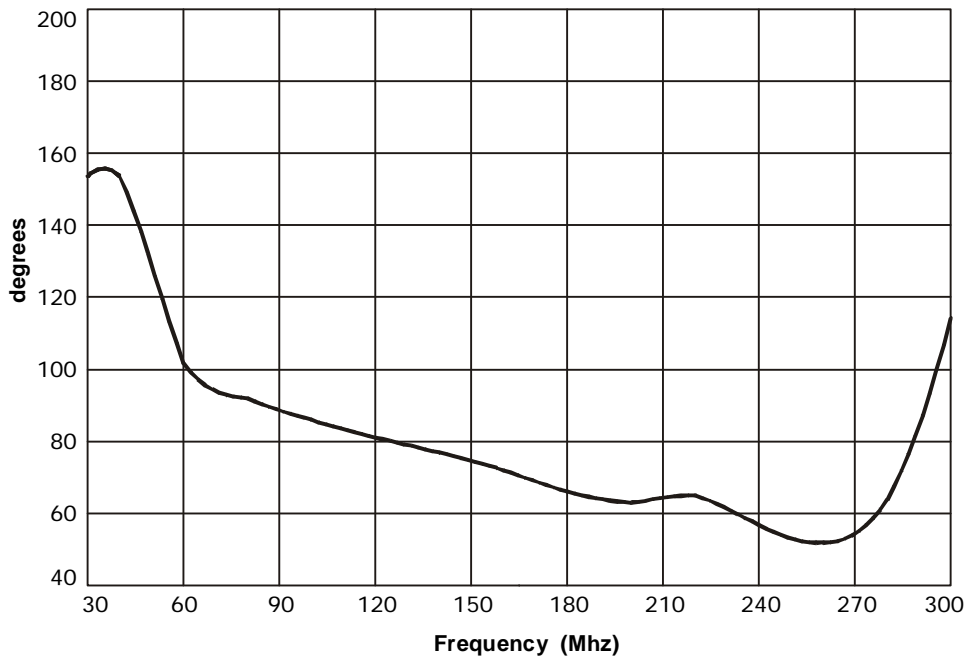


Model 3110B Gain





Model 3110B VSWR



Model 3110B Half Power Beamwidth

# SPECIFICATIONS

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## Electrical

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Frequency Range	30 to 300 MHz
VSWR Ratio (AVG)	2.0:1
Maximum Continuous Power	250 mW
Peak Power	NA
Impedance	50 $\Omega$
Connector	Type N female

## Physical

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Width	132.1 cm
	52.0 in
Depth	55.9 cm
	22.0 in
Diameter	52.0 cm
	20.5 in
Weight	2.7 kg
	6.0 lb

*NOTE: ETS-Lindgren recommends using a 6DB pad attached to the end of the antenna, otherwise high VSWR may occur.*

# MAINTENANCE

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To ensure reliable and repeatable long-term performance, annual recalibration of your antenna by ETS-Lindgren's experienced technicians is recommended. Our staff can recalibrate almost any type or brand of antenna. Please call to receive a Service Order Number prior to sending an antenna to us for calibration.

For more information about our calibration services or to place an order for antenna calibration visit our calibration website at <http://www.antennacalibration.com/>.

# WARRANTY STATEMENT

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**EMC Test Systems, L.P.**, hereinafter referred to as the Seller, warrants that standard EMCO products are free from defect in materials and workmanship for a period of two (2) years from date of shipment. Standard EMCO Products include the following:

- ❖ Antennas, Loops, Horns
- ❖ GTEM cells, TEM cells, Helmholtz Coils
- ❖ LISNs, PLISNs, Rejection cavities & Networks
- ❖ Towers, Turntables, Tripods, & Controllers
- ❖ Field Probes, Current Probes, Injection Probes

If the Buyer notifies the Seller of a defect within the warranty period, the Seller will, at the Seller's option, either repair and/or replace those products that prove to be defective.

There will be no charge for warranty services performed at the location the Seller designates. The Buyer must, however, prepay inbound shipping costs and any duties or taxes. The Seller will pay outbound shipping cost for a carrier of the Seller's choice, exclusive of any duties or taxes. If the Seller determines that warranty service can only be performed at the Buyer's location, the Buyer will not be charged for the Seller's travel related costs.

This warranty does not apply to:

- ❖ Normal wear and tear of materials
- ❖ Consumable items such as fuses, batteries, etc.
- ❖ Products that have been improperly installed, maintained or used
- ❖ Products which have been operated outside the specifications
- ❖ Products which have been modified without authorization
- ❖ Calibration of products, unless necessitated by defects

**THIS WARRANTY IS EXCLUSIVE. NO OTHER WARRANTY, WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE REMEDIES PROVIDED BY THIS WARRANTY ARE THE BUYER'S SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT IS THE SELLER LIABLE FOR ANY DAMAGES WHATSOEVER, INCLUDING BUT NOT LIMITED TO, DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON CONTRACT, TORT, OR ANY OTHER LEGAL THEORY.**

*Note: Please contact the Seller's sales department for a Return Materials Authorization (RMA) number before shipping equipment to us.*