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Model 3106

Double-Ridged Waveguide Horn

MANUAL



 **ETS·LINDGREN**™
An ESCO Technologies Company

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INTRODUCTION

The ETS-Lindgren Model 3106 Double Ridged Waveguide Horn Antenna is a linearly polarized broadband antenna covering the frequency range of 200 MHz to 2.0 GHz. The Model 3106 was designed and built specifically for EMI measurements and specification compliance testing.

The Model 3106 has high gain and excellent VSWR characteristics over its entire frequency range. It is especially effective for generating high electromagnetic fields with relatively low power input. The antenna is also useful for receiving low level signals where high gain characteristics are needed.

The antenna is precision machined from aluminum making it lightweight and durable. The 50 Ω type N female connector is mounted on the base block of the antenna providing increased power handling.

MOUNTING INSTRUCTIONS

Two brackets are attached to the sides of the Model 3106 so it can be polarized either horizontally or vertically. To mount the antenna on a tripod, attach the antenna to the tripod with a ¼-20 mounting stud.

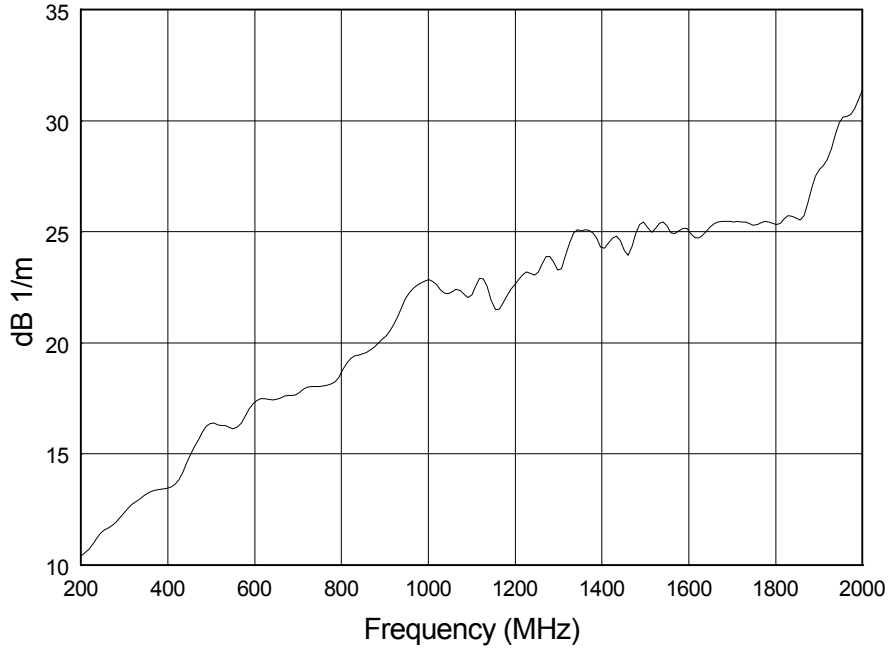
NOTE The picture on the cover of this manual shows the antenna in the vertically polarized position. The typical data in this manual is based on horizontal polarization.

APPLICATION

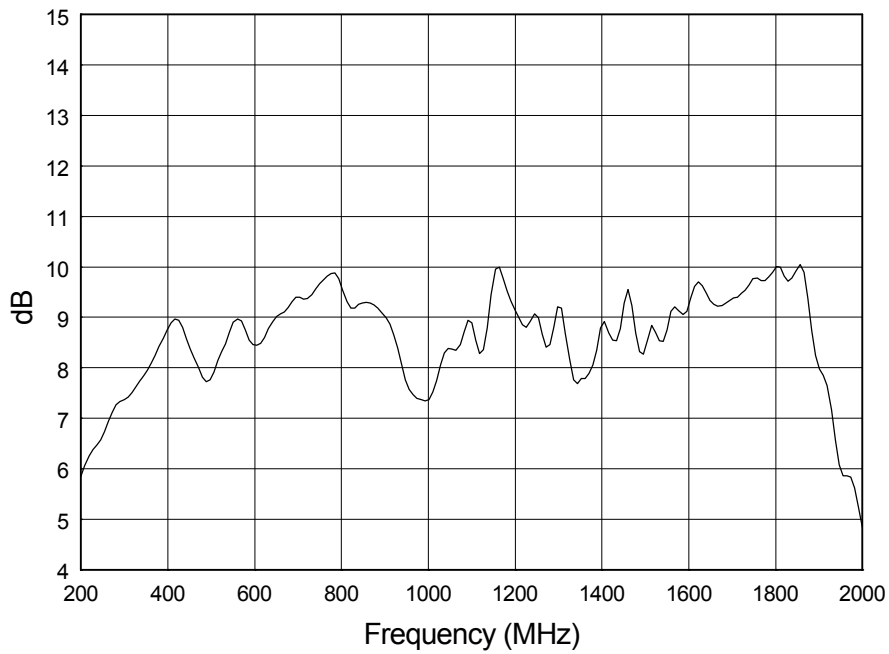
Each Model 3106 Double-Ridged Waveguide horn is individually calibrated during the manufacturing process. Using the three-antenna method of calibration per specification ARP-958, apparent gain at 1.0 meter from the end of the antenna is determined and used to check conformance to the antenna factor.

The antenna factor should be used in specification compliance testing to convert receiver reading (dBuV) to field intensity units (dBuV/m). The conversion is accomplished by adding the antenna factor in dB to the receiver reading in dB above 1 microvolt. To produce specific field strengths at 1 meter spacings see the Forward Power data on page 5.

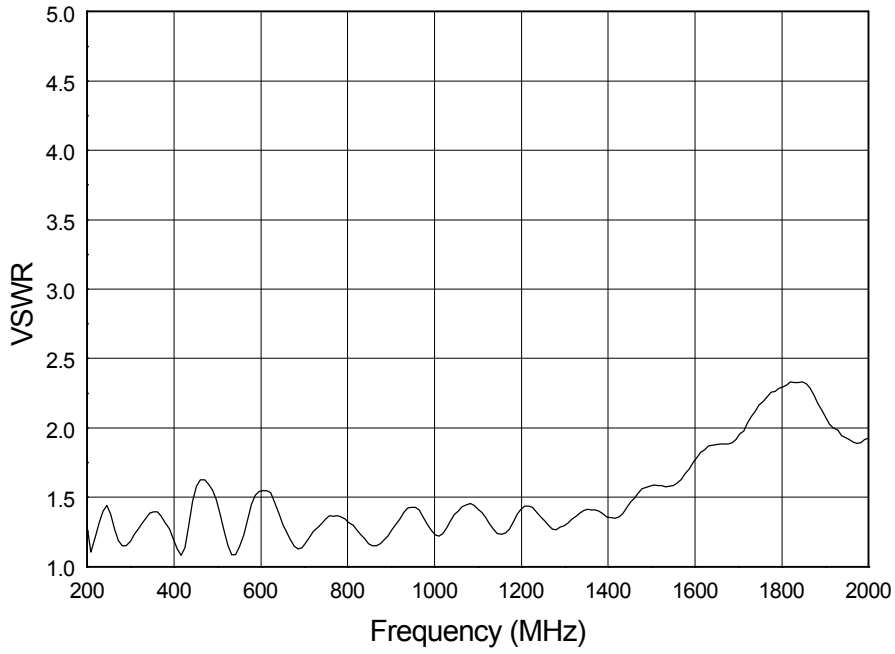
TYPICAL DATA



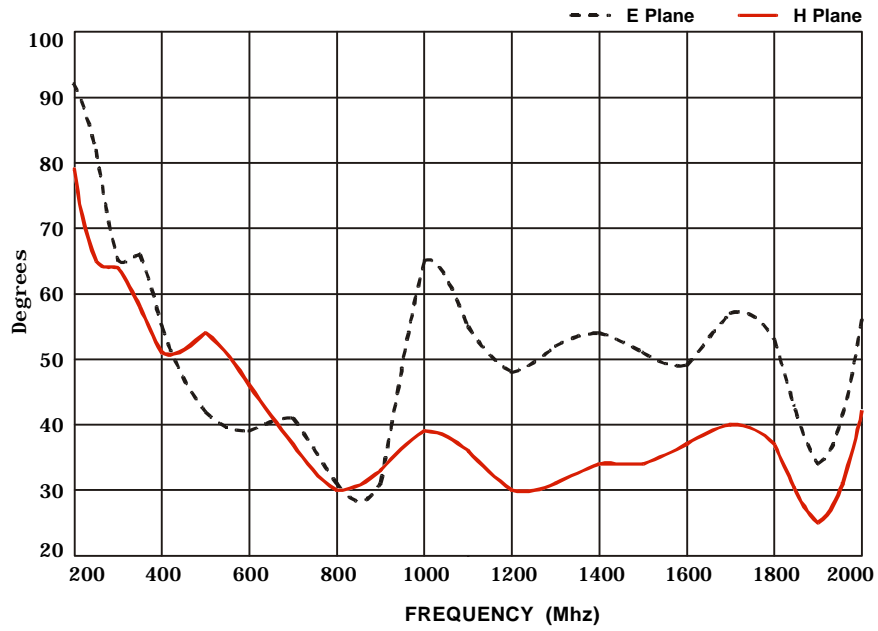
Model 3106 Antenna Factor



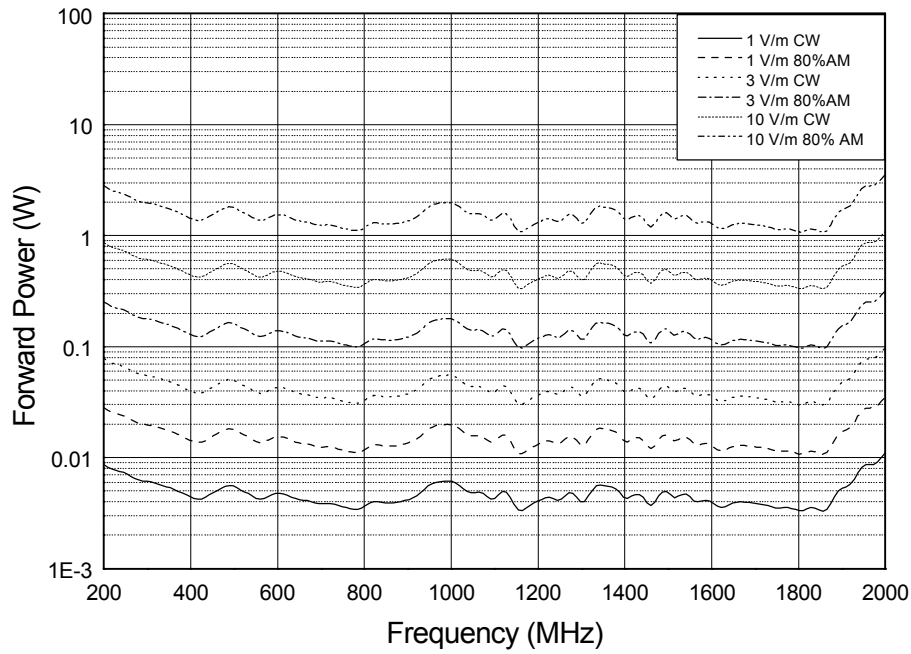
Model 3106 Gain



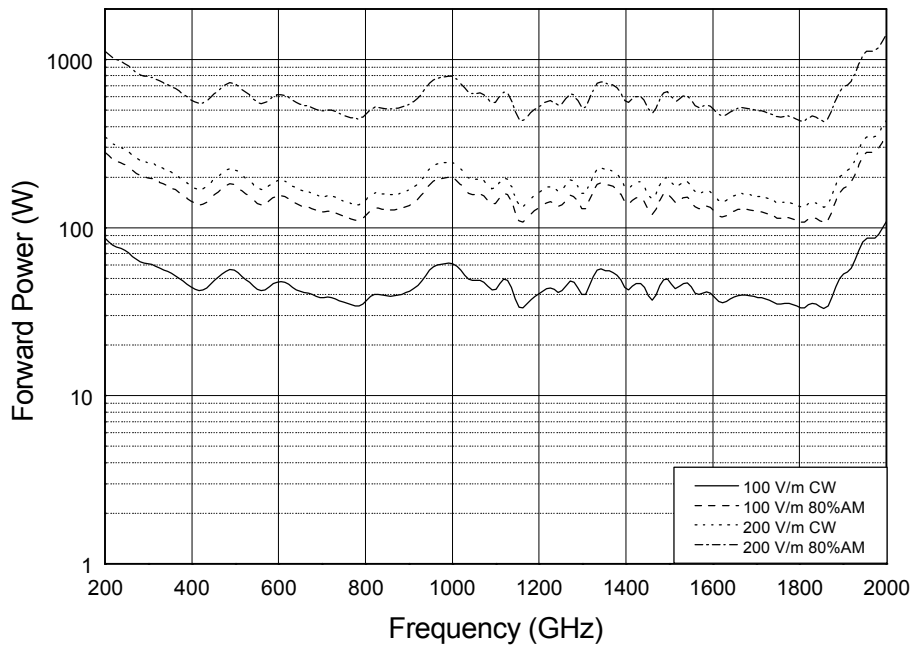
Model 3106 VSWR



Model 3106 Half Power Beam Width



Model 3106 Forward Power at 1 meter 1V/m to 10V/m



Model 3106 Forward Power at 1 meter 100 V/m and 200 V/m
 Maximum Continuous Power for the Model 3106 is 800 Watts
 The Maximum Peak Power Rating for this model is 1600 Watts

SPECIFICATIONS

Electrical

Frequency Range	200 MHz – 2 GHz
VSWR Ratio (AVG)	<1.6:1
Maximum Continuous Power	800 W
Peak Power	1600 W
Impedance	50 Ω
Connector	Type N female
Front to Back Ratio	20 dB
Cross Polarization	20 dB minimum

Physical

Width	93.3 cm 36.7 in
Depth	97.8 cm 38.5 in
Height	72.9 cm 28.7 in
Weight	11.8 kg 26.0 lb

MAINTENANCE

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

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.