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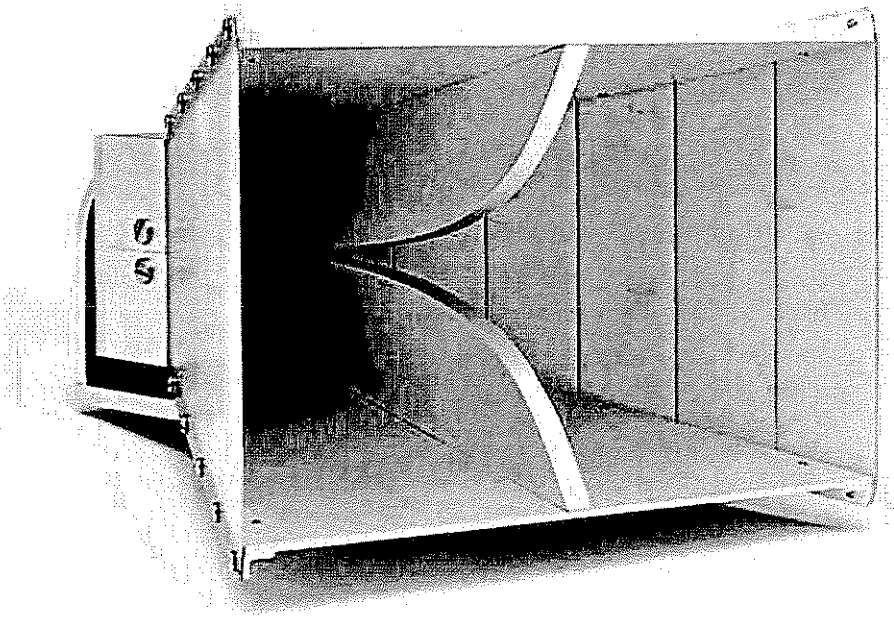
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Model 3115

Double-Ridged Waveguide Horn

MANUAL



ETS·LINDGREN™

An ESCO Technologies Company

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REV D – PN 399039

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Table of Contents

INTRODUCTION 1

MOUNTING INSTRUCTIONS 2

APPLICATIONS 3

TYPICAL DATA 4

SPECIFICATIONS & MAINTENANCE 7

WARRANTY STATEMENT 9

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INTRODUCTION

The ETS-Lindgren Model 3115 Double Ridged Waveguide Antenna is a linearly polarized broadband antenna covering the frequency range of 1GHz to 18GHz. The Model 3115 was designed and built specifically for EMI measurements and specifications compliance testing. However it can also be used for antenna gain, pattern measurement, surveillance and other applications.

The Model 3115 is ideally suited for IEC 61000-4-3 and MIL-STD 461/462 immunity tests as well as ANSI C634 and EM 55033 emissions testing.

The antenna is precision machined from aluminum with side plates of copperclad, tin-solder, epoxy fiberglass (G-10). The 50 Ω precision high frequency type N connector is mounted on the base block of the antenna. A bracket is provided for standard tripod mounting in multiple polarization positions.

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MOUNTING INSTRUCTIONS

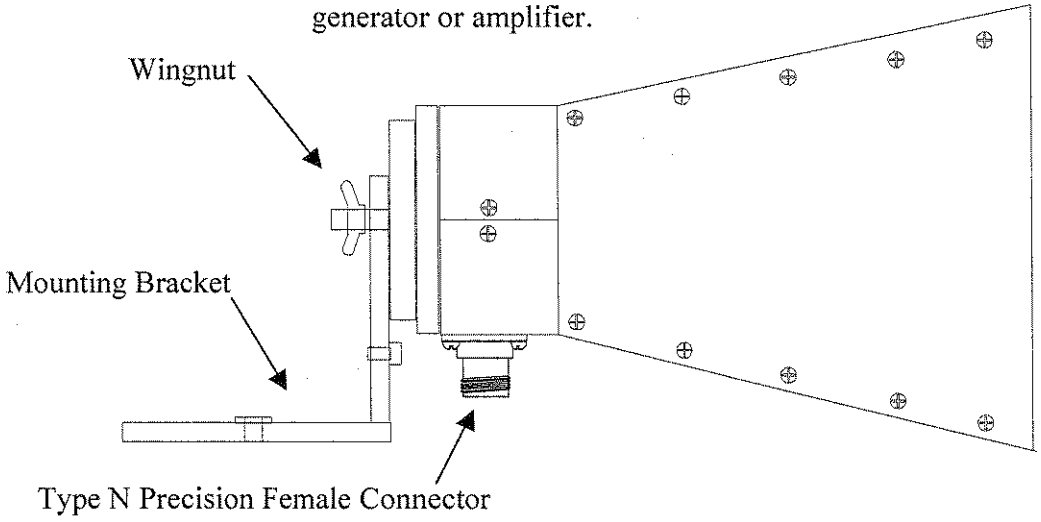
The Model 3115 consists of the following:

1 ea Double Ridged Waveguide Horn
1 ea Mounting Bracket with ¼-20 threads to accept ETS-EMCO or other tripod mount

Step 1. The Model 3115 is shipped with the mounting bracket attached backwards, for packaging purposes. Before the antenna is mounted on a tripod the user will need to unscrew the wing nut and separate the antenna from the mounting bracket.

Step 2. To mount the antenna on the tripod, attach the antenna bracket to the tripod with the ¼-20 bolt. To attach the antenna to the antenna bracket, place the antenna in its position locks, and tighten the wing nut. To rotate the antenna, loosen the wing nut, reset the antenna in the desired position lock and tighten the wing nuts.

Step 3. After you have mounted the Model 3115 onto the tripod or tower you will be using for testing; connect an N-type coaxial cable from the antenna connector to a signal generator or amplifier.



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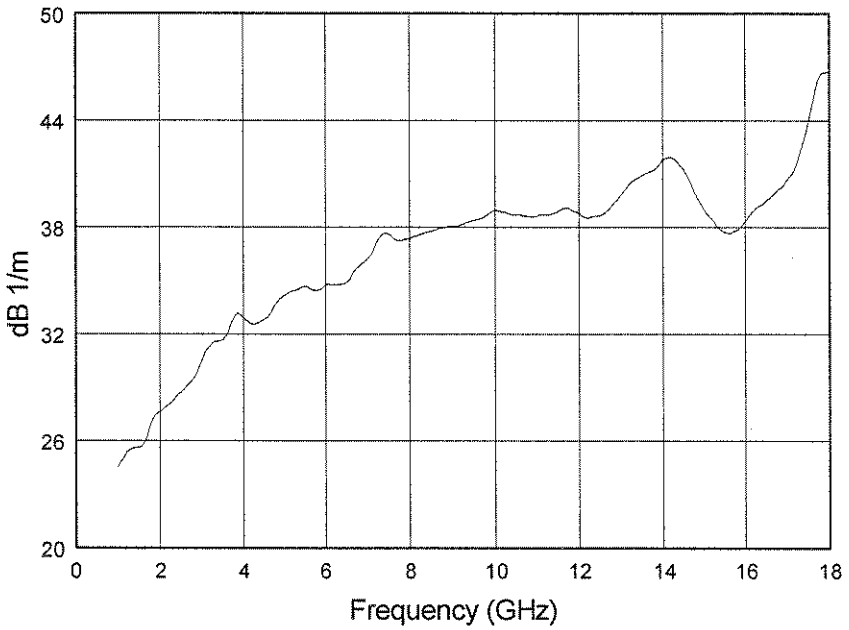
APPLICATIONS

Radiated Emissions	FCC-15 FCC-18 NACSIM
Radiated Emissions, Radiated Immunity (Susceptibility)	IEC/CISPR/EN SAE J1113 SAE J551 MIL-STD-462 MIL-STD-1541
Transmit / Receive	MIL-STD-285
Receive	IEEE STD 299

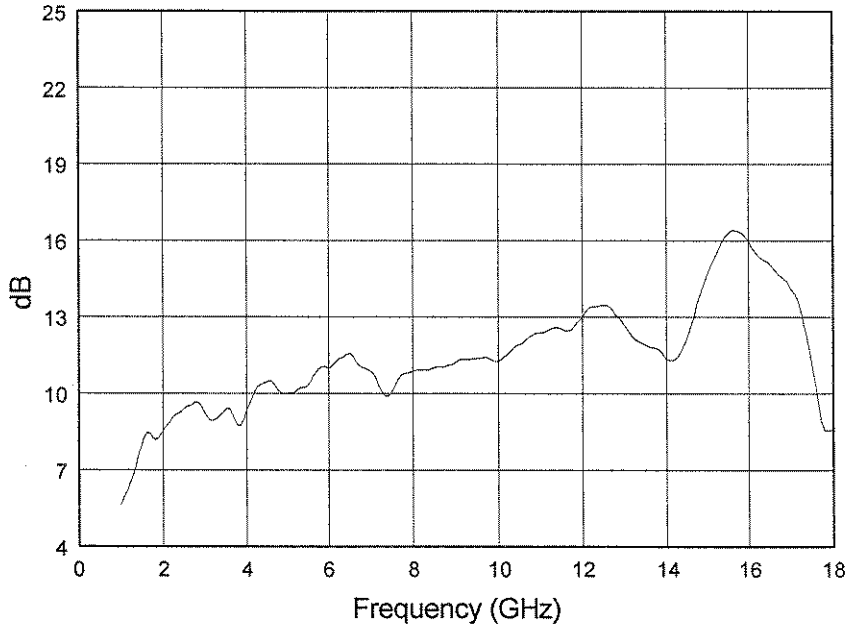
Each Model 3115 Double Ridged Waveguide Antenna is individually calibrated at 1 m per SAE ARP 958. Factors for your antenna, with apparent gain at 1.0 meter from the end of the antenna, have been determined and are included with this manual along with a signed Certificate of Calibration Conformance.

This 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 one meter spacings, see the Forward Power data on page 6.

TYPICAL DATA

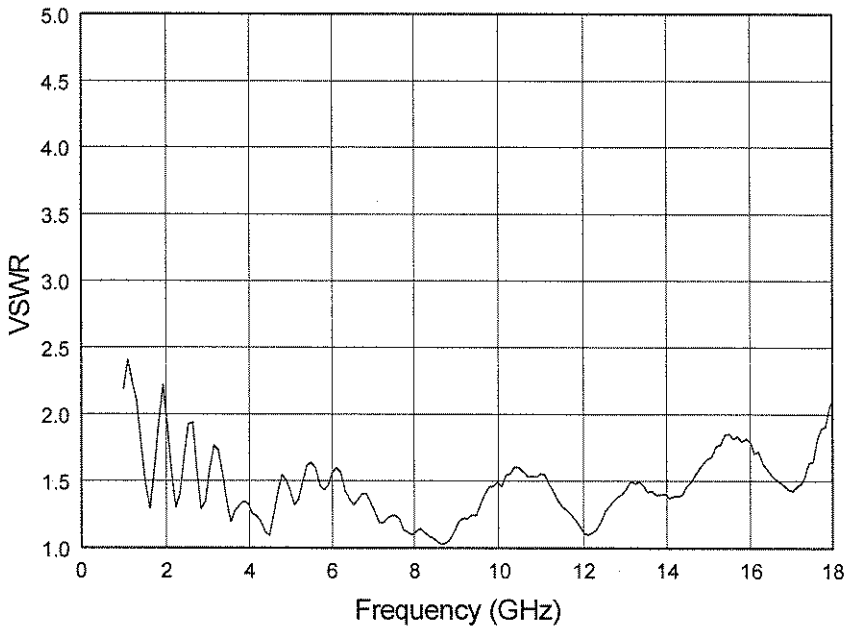


Model 3115 Antenna Factor at 1 meter

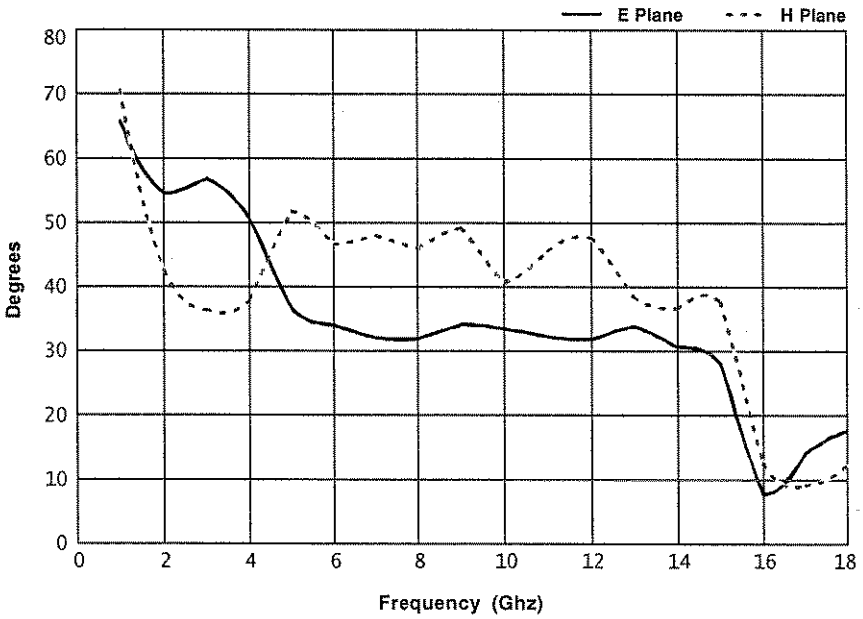


Model 3115 Gain

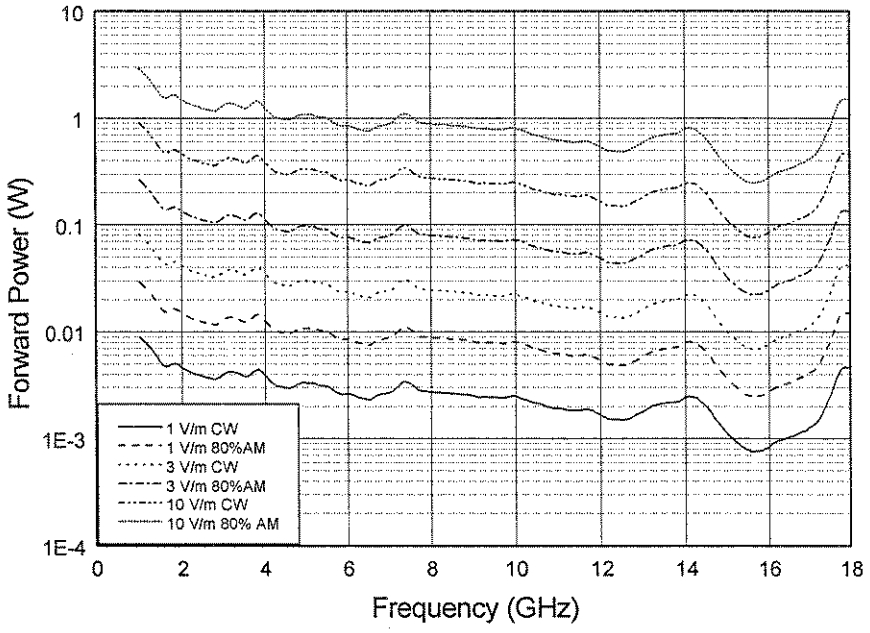
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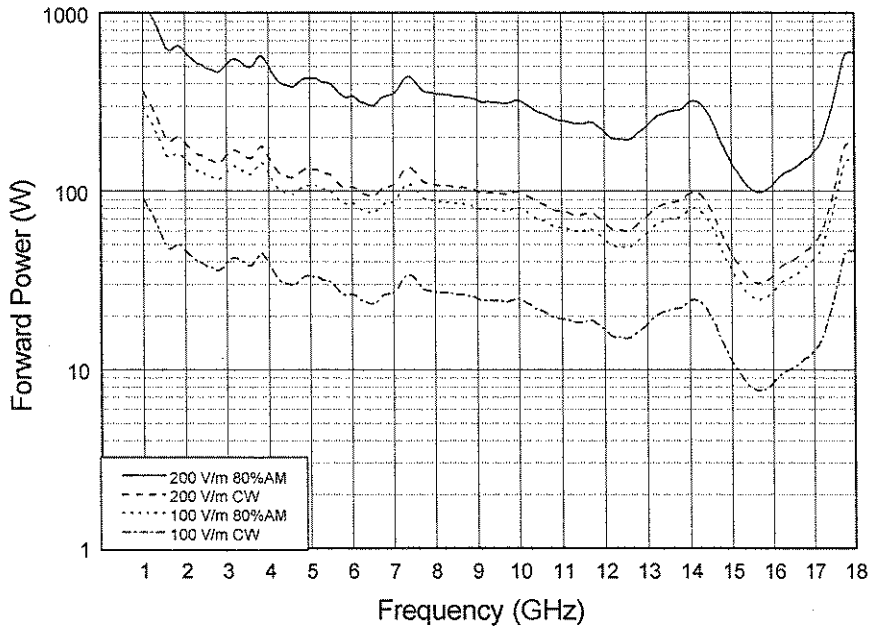
Model 3115 VSWR



Model 3115 Half Power Beamwidth



Model 3115 Forward Power at 1 meter 1V/m to 10V/m



Model 3115 Forward Power at 1 meter 100V/m and 200V/m

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SPECIFICATIONS

ELECTRICAL

Frequency Range	1 – 18 GHz
VSWR Ratio (AVG)	<1.5:1
Maximum Continuous Power	300 Watts
Peak Power	500 Watts
Impedance	50 Ω
Connector	Type N precision female
Front to Back Ratio	20 dB
Cross Polarization	20 dB minimum

PHYSICAL

Width	24.4 cm 9.6 in
Depth	27.9 cm 11.0 in
Height	15.9 cm 6.2 in
Weight	1.8 kg 4.0 lb

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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.

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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 LMITED 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.

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