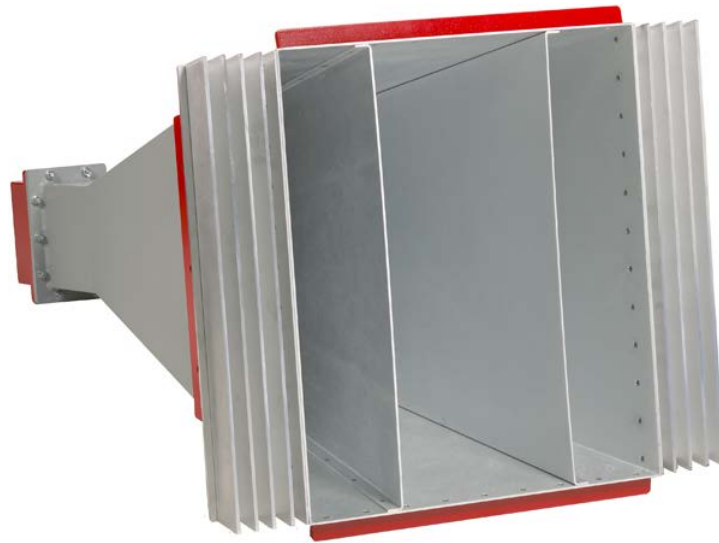


*Model 3162 Series*

# Field Generating Pyramidal Horn

User Manual



 **ETS-LINDGREN**<sup>™</sup>  
An ESCO Technologies Company

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#### Revision Record

#### MANUAL,3162 HIGH GAIN PYRAMIDAL HORNS | Part #399286, Rev. D

Revision	Description	Date
A	Initial Release	November, 2004
B	Update/edit	September, 2005
C	Update <i>Electrical Specifications</i> ; rebrand	November, 2008
D	Updated <i>Electrical Specifications</i> table	October, 2012
E	Corrected model numbers on page 7	June, 2016


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## Notes, Cautions, and Warnings

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	<p><b>Note:</b> Denotes helpful information intended to provide tips for better use of the product.</p>
<p><b>CAUTION</b></p>	<p><b>Caution:</b> Denotes a hazard. Failure to follow instructions could result in minor personal injury and/or property damage. Included text gives proper procedures.</p>
<p><b>WARNING</b></p>	<p><b>Warning:</b> Denotes a hazard. Failure to follow instructions could result in SEVERE personal injury and/or property damage. Included text gives proper procedures.</p>



See the ETS-Lindgren *Product Information Bulletin* for safety, regulatory, and other product marking information.

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## 1.0 Introduction

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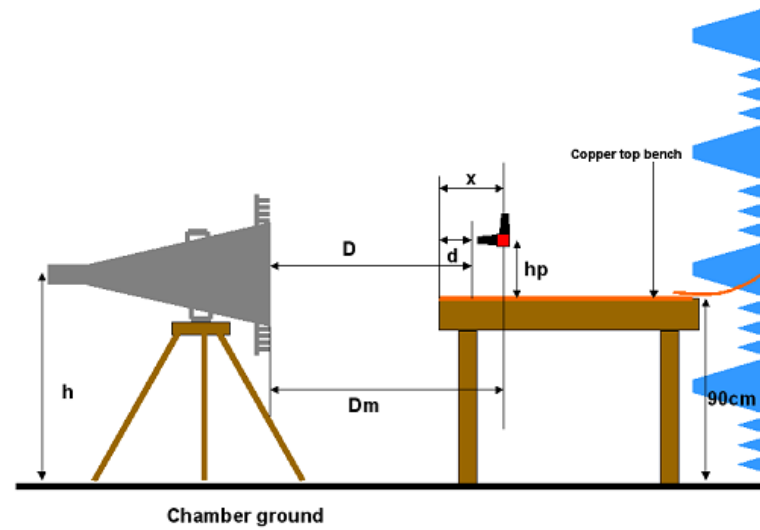
The **ETS-Lindgren Model 3162 Series Field Generating Pyramidal Horn** was developed to meet the following specifications for automotive EMC component testing:

- **GMW3097** (3162-01)
- **ES-XW7T-1A278-AC** (3162-01, 3162-02)

These tests require that the Equipment Under Test (EUT) be exposed to a pulsed peak field level of 600 V/m at a distance of 100 cm from the front of the horn when the EUT is placed on a metallic top test bench. At these frequencies it is difficult and expensive to find amplifiers with high power ratings; and because of near field gain compression, most horns fail to meet this specification at the required test distance unless power in excess of 800 W is used. The Model 3162 Series optimizes near field behavior, and produces a field level of 600 V/m with a 500 W amplifier.

## Standard Configuration

The standard configuration for the Model 3162 Series consists of one pyramidal horn antenna with a coax-to-waveguide adapter.

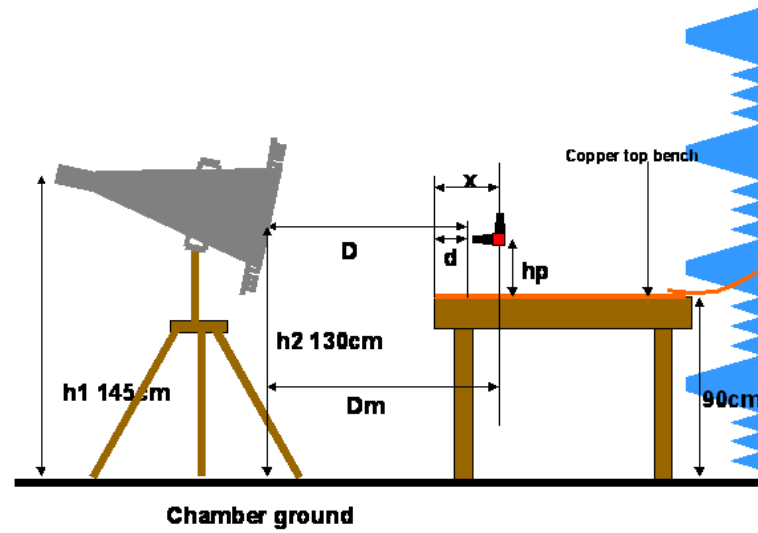




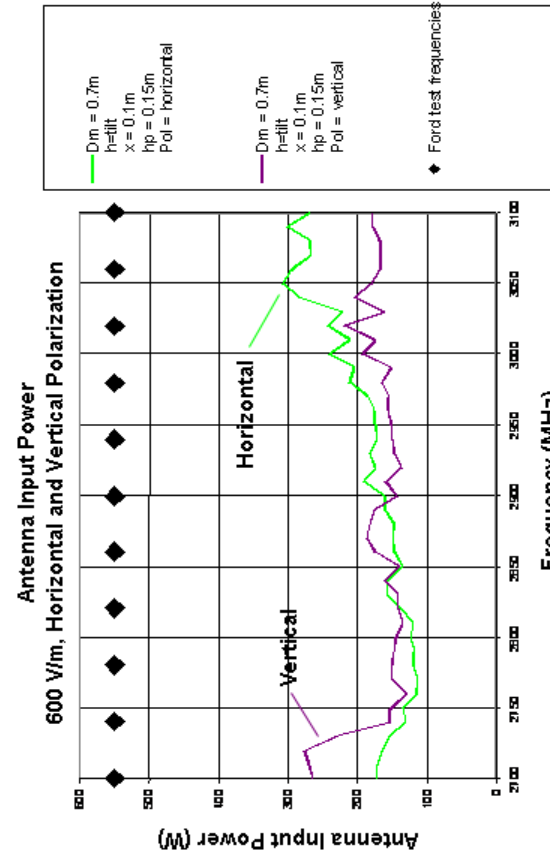
## Angled Orientation



Ford Motor Company is studying the benefits of a vertical orientation of the horn with a slight angle or tilt. Contact Ford for permission prior to using this set up.



The following graph illustrates the power requirements for vertical and horizontal polarization at a 70 cm distance once the horn is angled.



## **ETS-Lindgren Product Information Bulletin**

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See the ETS-Lindgren *Product Information Bulletin* included with your shipment for the following:

- Warranty information
- Safety, regulatory, and other product marking information
- Steps to receive your shipment
- Steps to return a component for service
- ETS-Lindgren calibration service
- ETS-Lindgren contact information

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## 2.0 Maintenance

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### CAUTION

Before performing any maintenance, follow the safety information in the ETS-Lindgren *Product Information Bulletin* included with your shipment.



Maintenance of the Model 3162 Series is limited to external components such as cables or connectors.

If you have any questions concerning maintenance, contact ETS-Lindgren Customer Service.

### Storage Recommendations

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When not in use, store the antenna in a dry area. Place the antenna on the floor or a shelf with the side extensions perpendicular to the surface. If necessary, the extensions may be removed for storage. If you remove the sides, make sure that the contact area is clean prior to reassembling the antenna.

### Annual Calibration

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See the *Product Information Bulletin* included with your shipment for information on ETS-Lindgren calibration services.

### Service Procedures

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For the steps to return a system or system component to ETS-Lindgren for service, see the *Product Information Bulletin* included with your shipment.

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### 3.0 Specifications

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#### Electrical Specifications

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	3162-01	3162-02
<b>Frequency Range:</b>	1.1 GHz–1.5 GHz	2.7 GHz–3.1 GHz
<b>Input Impedance:</b>	50 $\Omega$	50 $\Omega$
<b>VSWR:</b>	1.5:1 Typical 2:1 Maximum	1.5:1 Typical 2:1 Maximum
<b>Maximum Continuous Input Power:</b>	550 W	500 W
<b>RF Connector:</b>	Type N female	Type N female

#### Physical Specifications

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	3162-01	3162-02
<b>Length:</b>	160.27 cm 63.1 in	79.2 cm 31.2 in
<b>Width:</b>	64.77 cm 25.5 in	44.2 cm 17.4 in
<b>Height:</b>	74.68 cm 29.4 in	58.4 cm 23.0 in
<b>Weight:</b>	23.6 kg 52.0 lb	10.0 kg 22.0 lb

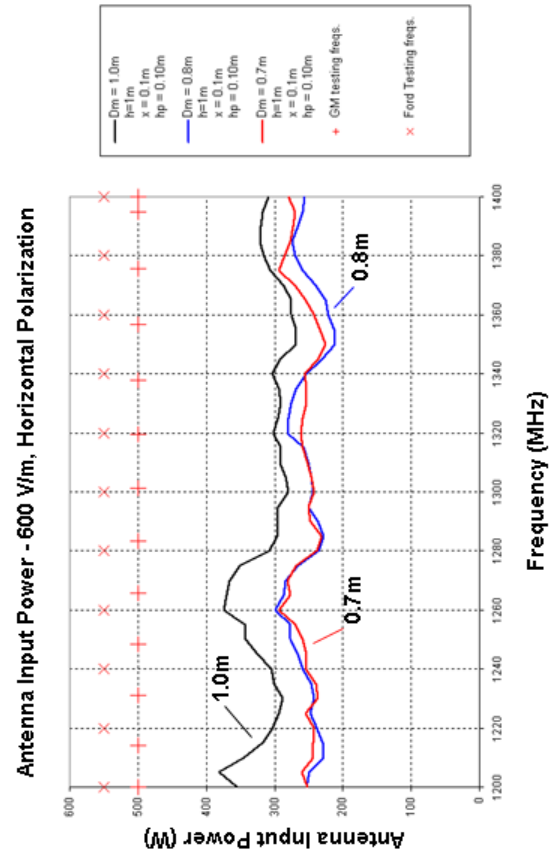
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## 4.0 Typical Data

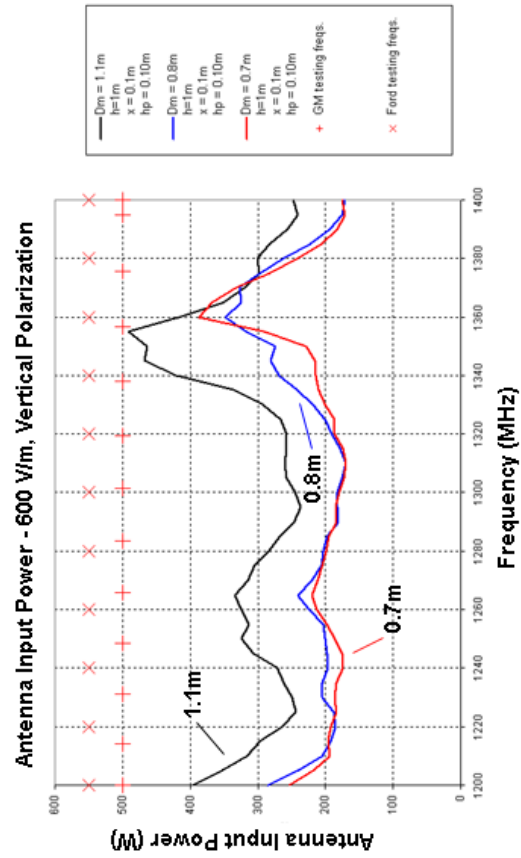
### Antenna Input Power–Horizontal Polarization

The following graph illustrates the power required to generate 600 V/m CW as measured inside an actual automotive component EMC chamber.



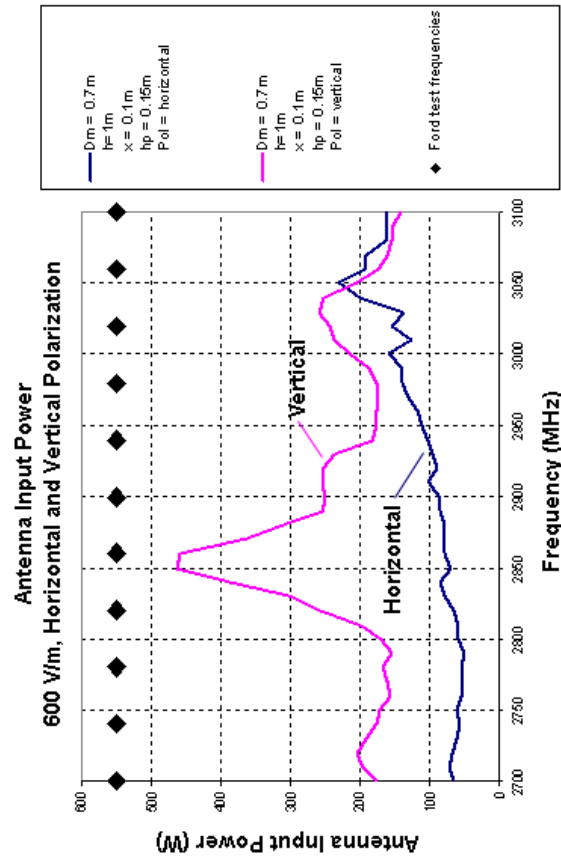
## Antenna Input Power–Vertical Polarization

The following graph illustrates the power requirements for vertical polarization. Data is proved at 1 m, 80 cm, and 70 cm distances.



## Antenna Input Power–Horizontal and Vertical Polarization

The following graph illustrates the power requirements for vertical and horizontal polarization at a 70 cm distance. Data is proved at 1 m, 80 cm, and 70 cm distances.



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## Appendix A: Warranty

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See the *Product Information Bulletin* included with your shipment for the complete ETS-Lindgren warranty for your Model 3162 Series.

### DURATION OF WARRANTIES FOR MODEL 3162 SERIES

All product warranties, except the warranty of title, and all remedies for warranty failures are limited to two years.

Product Warranted	Duration of Warranty Period
Model 3162 Series Field Generating Pyramidal Horn	2 Years