

*EMC Antennas*  
**Double-Ridged  
Waveguide Horn  
with Pre-Amplifier**  
Model 3116C-PA

**FEATURES:**

- 18 GHz to 40 GHz Frequency Range
- Maintains Single Lobe Radiation
- Fitted with Pre-Amplifier for Increased Sensitivity
- Extremely Low Antenna Factor
- Flexible Mounting



*ETS-Lindgren's Model 3116C-PA Double-Ridged Waveguide Horn Antenna with Pre-Amplifier*

**ETS-LINDGREN'S MODEL 3116C-PA** is a special version of our popular Model 3116C Double-Ridged Waveguide Horn Antenna, fitted with a pre-amplifier package and calibrated as a single unit. By doing this, any possible mismatches between antenna and pre-amplifier are taken into account in the antenna factor (AF), which is provided with this unit. The antenna is ideal as a receive antenna for emissions testing above 18 GHz.

**FEATURES**

**Frequency Range**

This antenna covers the 18 GHz to 40 GHz range when fitted with the pre-amplifier. The range is determined by the pre-amplifier module. The range makes it ideal as a receive antenna for any emissions testing above 18 GHz.

**Maintains Single Lobe Radiation**

Like the Model 3116C, the Model 3116C-PA maintains a single main lobe pattern in the direction of the

horn axis over its frequency range. This characteristic is essential for even distribution of electromagnetic energy on a target surface, and accurate measurement of gain and emissions.

**Fitted Amplifier**

The pre-amplifier attached to the antenna has a frequency range of 18 GHz to 40 GHz and a typical gain of 35 dB. The gain flatness across the range is  $\pm 3$  dB and the noise figure is 3.7 dB. The power output is +8 dB minimum at the 1 dB point. The input and output characteristics of the pre-amplifier are an input and output VSWR of 2.9:1 maximum. The operating temperature ranges from  $-40^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$  to  $+167^{\circ}\text{F}$ ).

**Low Antenna Factor**

The result of matching the Model 3116C with the pre-amplifier is an antenna that is calibrated as a system and it provides an extremely low AF that is less than 15 dB (1/m) for the entire frequency range.

**Flexible Mounting**

The Model 3116C-PA includes both a 1/4 20 thread classic mount and a rear "stinger" mount.

**STANDARD CONFIGURATION**

- Antenna and Pre-amplifier
- Mounting Bracket for 1/4 20 Threads
- Stinger Mount
- AC/DC Power Supply for the Pre-amplifier Module
- Individually Calibrated Factors at 1m per SAE ARP 958
- Manual

**OPTIONS**

- 4-TR Tripod
- 7-TR Tripod

## Electrical Specifications

| MODEL    | FREQUENCY RANGE  | VSWR (AVG)    | MAXIMUM CONTINUOUS POWER | IMPEDANCE (NOMINAL) | CONNECTOR TYPE      |
|----------|------------------|---------------|--------------------------|---------------------|---------------------|
| 3116C-PA | 18 GHz to 40 GHz | N/A (Rx Only) | N/A (Rx Only)            | 50 $\Omega$         | K (2.92 mm, Female) |

## Physical Specifications

| MODEL    | LENGTH*           | WIDTH              | HEIGHT*           | WEIGHT           |
|----------|-------------------|--------------------|-------------------|------------------|
| 3116C-PA | 14.2 cm<br>5.6 in | 26.9 cm<br>10.6 in | 22.1 cm<br>8.7 in | 1.4 kg<br>3.0 lb |

\*Includes stinger and pre-amplifier box.

## Model 3116C-PA Typical Antenna Factor and Gain

