ETS·LINDGREN
An ESCO Technologies Company

Model 3126C Series

Sleeve Dipole Antenna

Product Manual

PN: 1723532

August, 2023

Rev C

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Revision Record

MANUAL, 3126C | Part # 1723532 Rev C

Revision	Description	Date
A	Initial Release	January, 2021
B	Update to match antenna version	November, 2022
C	Added 3126C-6500	August, 2023

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Notes, Cautions, and Warnings

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

*All notes, cautions, and warnings will be located on the left column area of the page.

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

1.0 Introduction

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

ETS-Lindgren may substitute a similar part or new part number with the same functionality for another part/part number. Contact ETS-Lindgren for questions about part numbers and ordering parts.

Only qualified personnel should operate (or service) this equipment. If you have any questions concerning maintenance, contact ETS-Lindgren Technical Support. Warranty may be voided if housing is opened.

The ETS-Lindgren **Model 3126C Series Sleeve Dipole** antennas are omnidirectional, having an electric dipole pattern approaching that of a half wave resonant dipole.

The sleeve dipole design allows the antenna to be end fed to avoid cable and feed point interactions that interfere with the performance of the antenna. Integral quarter wave chokes and ferrite loading also help to reduce cable interaction. The max VSWR is 1.75:1 through the entire band. Symmetry is <±0.2 dB throughout the frequency range. The dipoles have nominal impedance of 50 Ω, a maximum continuous transmit power of one watt, and are equipped with a female SMA connector.

Standard Configuration

- Model 3126C Sleeve Dipole Antenna
- Accredited Calibration certificate for the VSWR, Gain and Symmetry

ETS-Lindgren Product Information Bulletin

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

- 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

2.0 Maintenance

ETS-Lindgren may substitute a similar part or new part number with the same functionality for another part/part number. Contact ETS-Lindgren for questions about part numbers and ordering parts.

Cleaning

Maintenance of the Model 3126 is limited to external components such as cables or connectors.

If the 3126C requires cleaning, use a clean soft cloth moistened with water. Do not use any harsh or abrasive chemicals; they may damage the components.

Service Procedures

Contacting ETS-Lindgren

Please see ets-lindgren.com for a list of ETS-Lindgren offices, including phone and email contact information.

Sending a Component For Service

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

Calibration Services and Annual Calibration

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

3.0 Specifications

Performance Specifications

Model	Range	Pass/Fail Criteria
3126C-3500	3 GHz to 4 GHz	a) Symmetry < 0.2dB through entire Calibration Range
3126C-4500	4 GHz to 5 GHz	b) Max VSWR is 1.75:1 through entire band.
3126C-6500	6 GHz to 7.2 GHz	c) Gain for 3126C-3500 must be greater than 1.0 MHz at center frequency.

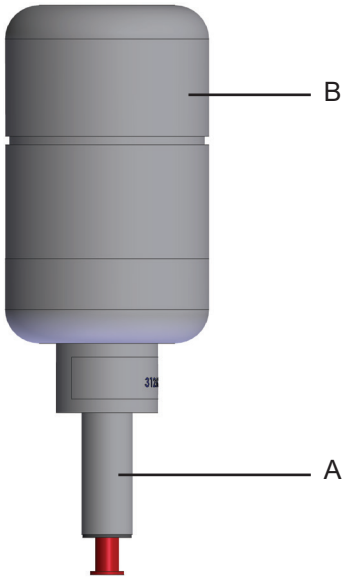
Model	VSWR Entire Band		Gain (MHz)		Calibration Range (MHz)		Pts per Trace
	Upper Limit	From-To (MHz)	Lower Limit	Upper Limit	From-To	Span	
3126C-3500	1.75:1	3000-4000	1.0	2.2	3000-4000	1000	501
3126C-4500	1.75:1	4000-5000	1.0	2.2	4000-5000	1000	501
3126C-6500	1.75:1	6000-7200	1.0	2.2	6000-7000	1000	601

Electrical Specifications

Maximum Continuous Power	1 Watt
Impedance (Nominal)	50 Ohms
Connector	SMA

Physical Specifications

Model	Diameter A	Diameter B	Overall Length	Weight
3126C-3500	1.9 cm (0.75 in)	7.62 cm (3.00 in)	20.83 cm (8.20 in)	0.13 kg (0.29 lb)
3126C-4500	1.9 cm (0.75 in)	7.62 cm (3.00 in)	20.83 cm (8.20 in)	0.13 kg (0.29 lb)
3126C-6500	1.9 cm (0.75 in)	7.62 cm (3.00 in)	20.83 cm (8.20 in)	0.13 kg (0.29 lb)



4.0 Mounting

CAUTION

3126C antennas are precision measurement devices. Handle your antenna with care.

The **Model 3126C Series Sleeve Dipole Antenna** must be mounted to a support at the connector end of the antenna. An ETS-Lindgren mounting kit is recommended to support the antenna.

Under no circumstances should any mounting structure extend inward more than 1.5 inches (38 mm) past the connector end of the antenna. This area approaches the radiating element of the antenna and any material in this region will significantly change the performance of the antenna and affect the accuracy of the measurement. The mounting structure should have a low dielectric and a minimum amount of mass in the region of the antenna.

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When mounting to an ETS-Lindgren mounting kit:

- The antenna mount consists of a Teflon® sleeve with small clamp screws to hold the antenna in place.
- Fixed length spacers are then attached to the mounting sleeve to position it at each test position. For repeatable positioning, the antenna must be inserted into the sleeve until it bottoms out in the socket, then the clamp screws should be tightened symmetrically around the antenna to ensure that the axis of the antenna is along the axis of the mount.
- Note that an RF cable must be attached to the antenna prior to inserting it into the mounting socket.
- An optional blind mate socket and adapter combination is available to allow attaching the cable to the Teflon socket adapter and sliding the antenna with blind mate connector adapter into the RF socket.

Only qualified personnel should operate (or service) this equipment. If you have any questions concerning maintenance, contact ETS-Lindgren Technical Support. Warranty may be voided if housing is opened.

Ferrite loaded RF cables are recommended for use with the Model 3126C to minimize the interaction with the dipole. ETS-Lindgren offers a line of ferrite loaded cables for this application. Lightweight RF cabling should be used and properly supported to avoid putting unnecessary load on the SMA connector of the antenna. Route cabling away from the antenna along the antenna axis for as far away as is practical to minimize the interaction of the cable with the antenna and to avoid distortion of the antenna pattern.

5.0 Operation

CAUTION

Before placing into operation, follow the safety information in the ETS-Lindgren *Product Information Bulletin* included with your shipment.

It is recommended that a 10 dB pad/attenuator be used at the input end of the Model 3126C Series Sleeve Dipole to minimize standing waves on the transmit cable. This is especially important for frequencies where the input VSWR is greater than 1.2:1.

The electric field of the antenna is polarized parallel to the antenna axis. The specified antenna gain is realized along the plane perpendicular to the antenna axis and centered at the center of the dipole elements. The center of the dipole elements (bore sight location) is indicated by a line marked on the dipole, approximately 5.9 inches (15 cm) from the base (connector end) of the antenna housing.