



# Cisco N-type Lightning Arrestor

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This chapter contains the following sections:

- [Introduction, on page 1](#)
- [Kit Contents, on page 1](#)
- [Technical Specifications, on page 2](#)
- [Warnings, on page 3](#)
- [Installation Considerations, on page 3](#)
- [Installing the Lightning Arrestor, on page 3](#)
- [Suggested Cables, on page 5](#)

## Introduction

The Cisco Lightning Arrestor provides a level of safety protection to the user as well as to wireless equipment by shunting to ground over-voltage transients induced into outdoor antennas and cables. These transients, in mild cases can produce interfering signals in a wireless system, and in extreme cases, can be dangerous and destructive.

Overvoltage transients can be created through lightning static discharges, switch processes, direct contact with power lines, or through earth currents. The Cisco Lightning Arrestor limits the amplitude and duration of disturbing interference voltages and improves the overvoltage resistance of in-line equipment, systems, and components.

The Lightning Arrestor also provides the following benefits:

- Broadband operation
- DC continuity for outdoor powering
- Bidirectional installation
- Permanently installed gas capsule

## Kit Contents

The lightning arrestor (CGR-LA-NM-NF, CGR-LA-NF-NF) contains the following parts:

- Lightning arrestor, nut, and washer

- Grounding lug

## Technical Specifications

The following are the technical specifications of the Lightning Arrestor:

Feature	Description
Arrestor Type	Gas discharge tube
Main path connectors	Port 1: <ul style="list-style-type: none"> <li>• CGR-LA-NM-NF: protected, N (male)</li> <li>• CGR-LA-NF-NF: protected, N (female)</li> </ul> Port 2: protected, N (female, bulkhead side)
Impedance	50 ohms
Frequency range	0 MHz to 7000 MHz
Return loss	<ul style="list-style-type: none"> <li>• 0 to 6700 MHz: -20 dB max</li> <li>• 6700 to 7000 MHz: -17 dB max</li> </ul>
Insertion loss	<ul style="list-style-type: none"> <li>• 0 to 6700 MHz: 0.2 dB max</li> <li>• 6700 to 7000 MHz: 0.3 dB max</li> </ul>
RF CW power	Less than or equal to 60 W
Surge current handling capability	10 single, multiple kA (test pulse 8/20 microseconds)
Residual pulse energy	250 microsecond typically (test pulse 4 kV 1.2/50 microsecond; 2kA 8/20 microsecond), main path (protected side)
Operating temperature range	-40-degrees F to 185-degrees F (-40-degrees C to 85-degrees C)
Waterproof rating	IP 67 (according to IEC 60529, data refer to the coupled state)
Mounting and grounding	MH24 (bulkhead)
Material	<ul style="list-style-type: none"> <li>• Housing: white bronze-plated aluminum</li> <li>• Male center contact: silver-plated brass</li> <li>• Female center contact: silver-plated phosphor bronze</li> </ul>

## Warnings



**Warning** This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. **Statement 1071**



**Warning** Do not work on the system or connect or disconnect cables during periods of lightning activity. **Statement 1001**



**Warning** This equipment must be grounded. Never defeat the ground conductor or operate the equipment in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available. **Statement 1024**



**Warning** Only trained and qualified personnel should be allowed to install, replace, or service this equipment. **Statement 1030**

## Installation Considerations

We recommend that you bulkhead mount the lightning arrestor onto the router.

The importance of obtaining a good ground and bonding connection cannot be overstressed. Consider these points when grounding the lightning arrestor:

- Connect the lightning arrestor components directly to the chassis-mounted bulkhead connector.
- The contact points between the bulkhead connector and the lightning arrestor must be clean and free of dust and moisture.
- Tighten threaded contacts to the torque specified by the manufacturer.

## Installing the Lightning Arrestor

The Cisco Lightning Arrestor must be bulkhead-mounted onto the enclosure or router chassis. The lightning arrestor must be attached directly onto a well-grounded chassis through the threaded shaft of the lightning arrestor and the bulkhead adapter.



**Warning** Installation of the equipment must comply with local and national electrical codes. **Statement 1074**



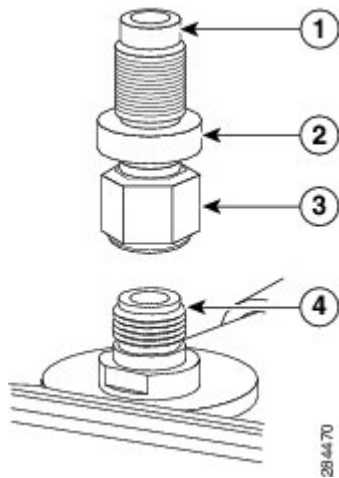
**Note** This part might be factory installed in an antenna port on the router when the router is shipped.



**Note** When you install the lightning arrestor, follow the regulations or best practices applicable to lightning protection installation in your local area.

Refer to the following figure during installation:

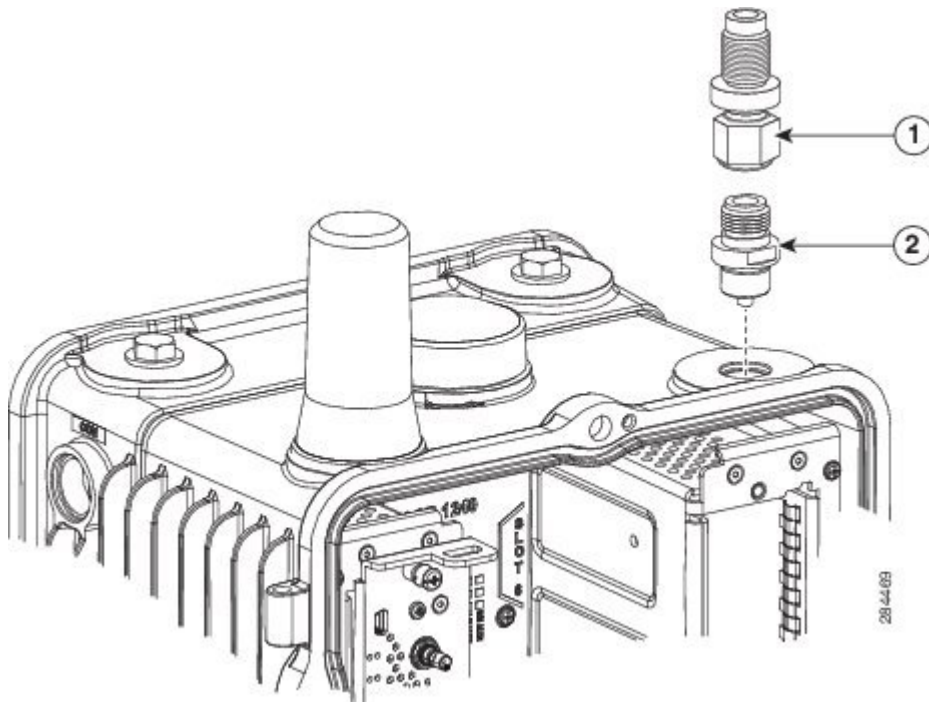
**Figure 1: Lightning Arrestor Detail (CGR-LA-NM-NF shown)**



1	Protected side N jack (to antenna)
2	Lightning arrestor
3	Protected side N plug (to radio)
4	N-bulkhead port (on host chassis)

## Installation Steps

- Step 1** Install the bulkhead N-connector adapter onto the appropriate antenna port on the router chassis. Tighten to a 6-to-7 ft-lbs torque rating.
- Step 2** Install the N-plug end of the lightning arrestor onto the top of the bulkhead N-connector). Tighten to a 6-to-7 ft-lbs torque rating.



1	Lightning arrester
2	N-bulkhead port (on host chassis)

**Step 3** Install the N-plug end of your antenna cable onto the N-jack of the lightning arrester. Tighten to a 6-to-7 ft-lbs torque rating.

## Suggested Cables

We recommend using a 20' LMR-400 N(m)-N(m) low-loss coaxial cable (part numbers CAB-L400-20-N-N) or a 30' LMR-600 N(m)-N(m) very low-loss coaxial cable (CAB-L600-30-N-N).

