

RF SHIELDED ENCLOSURES Series 81 RF Shielded Enclosures

ETS-Lindgren's Series 81 RF Shielded Enclosure uses a time-proven design for superior Radio Frequency Shielding and EMI Shielding applications.



ETS-Lindgren's Series 81 Radio Frequency Shielded Enclosure uses a time-proven design for superior RF Shielding and EMI Shielding applications, with more than 10,000 installations worldwide. These EMI EMC shielded enclosures have modular panels, meaning that these enclosures can be built to almost any dimensional configuration. Thirty-six standard formations are available, or we can custom design a configuration that best fits your needs, including solutions with RF doors, RF screen rooms, Faraday cages and integrated waveguide air vents.

In the heart of the RF shielding system are the 1.9 cm (.75 in) thick dimensionally-stable cores, which are laminated on both sides with 28-gauge sheet steel (cores meet ANSI A208.1 specifications). The steel laminate provides the best attenuation to magnetic and electric fields and plane waves.

Panels are joined together with a 3.175 mm (.125 in) "hat & flat" clamping system. No special tools are required for construction. Enclosures can be erected, dismantled, and moved to another location as needed. Enclosures are self-standing and do not require attachment to the parent building.

Key Features

- RF Shielding & EMI Shielding
- "Hat & Flat" Clamping System for Shield Integrity
- Architectural, Electrical Options
- Manual, Automatic RF Door Options
- Standard and Custom Designs are Available
- Modular Panel Construction

Features

Performance

Series 81 RF shielding provides excellent RFI and EMI shielding effectiveness and is the most commonly specified shielding for NSA 65-6/NSA 94-106 testing requirements. Series 81 delivers high performance attenuation over a broad frequency range and complies with a variety of other specifications including:

- Federal Specification SS-A-118B: Flame Resistance Test
- ASTM E84-81-A: Test for Surface Burning Characteristics of Building Materials
- ASTM E90-83: Recommended Practice for Laboratory Measurements of Airborne Sound Transmission Loss of Building Partitions

Series 81 RF shielding also complies with Universal Building Codes (UBC) and can be assembled in the most stringent seismic zones. Combining performance and value, Series 81 RF shielding meets a wide range of critical testing needs.

Series 81 Shielding Applications

- EMC Product Compliance Testing
- EMI Shielding
- Instrumentation Repair and Calibration
- Production and Quality Product Line Testing
- Wireless Service Centers
- High Voltage Test Labs
- Secure Computer Rooms
- Wireless Product Testing
- Metrology Labs
- Magnetic Resonance Imaging (MRI)
- Medical Equipment and Instrumentation
- Biomedical Engineering Labs
- Embassies and Consulates
- TEMPEST Security Areas

Construction

Series 81 RF shielded enclosures consist of shielded modular panel sections that are assembled with a clamping system into a self-supporting enclosure structure. Sheets of 28-gauge galvanized steel are laminated to a 1.9 cm (.75 in) high-density particle and/or plywood board core. Each panel section provides excellent stability to airborne moisture-induced warping and structure strength that lends to its rugged structural design.

Series 81 panels are joined together with an extruded “hat and flat” and “cove” clamping system, to provide uniform and consistent pressure contact against the shielded panel mating surfaces. These structural clamping sections are zinc-plated to resist corrosion and are joined with self-taping zinc-plated fasteners, spaced 10.16 cm (4.0 in) on center to ensure a secure shield. The corners of the shielded enclosure are secured with precision-machined trihedral end cap sections.

To maintain electrical isolation, a 6-mil dielectric vapor barrier and 3.175 mm (.125 in) dielectric underlayment are placed beneath the shielded floor panels. Counter-sunk floor screws in the clamping system ensure a smooth floor surface. Attractive vinyl floor tiles are applied with adhesives over the exposed steel surface as a durable wearing surface. In addition, Series 81 enclosures can be converted into a ferrite-lined and/or

feature makes it a truly flexible RF shielding or EMI shielding solution.

Specifications

Electrical Specifications

Magnetic Field: 20 dB @ 1 KHz; 56 dB @ 10 KHz; 100 dB @ 200 KHz

Electric Field: 100 dB from 200 KHz thru 50 MHz

Plane Wave: 100 dB @ 50 MHz to 1 GHz

Microwave: 100 dB @ 10 GHz

Physical Specifications

| Height | Length | Width |
|------------------|-------------------|-------------------|
| 2.51 m (8.23 ft) | 2.52 m (8.27 ft) | 2.50 m (8.20 ft) |
| 2.51 m (8.23 ft) | 3.11 m (10.20 ft) | 2.52 m (8.27 ft) |
| 2.51 m (8.23 ft) | 3.76 m (12.34 ft) | 2.50 m (8.20 ft) |
| 2.51 m (8.23 ft) | 4.99 m (16.37 ft) | 2.50 m (8.20 ft) |
| 2.51 m (8.23 ft) | 3.15 m (10.33 ft) | 3.11 m (10.20 ft) |
| 2.51 m (8.23 ft) | 3.76 m (12.34 ft) | 3.11 m (10.20 ft) |
| 2.51 m (8.23 ft) | 4.99 m (16.37 ft) | 3.11 m (10.20 ft) |
| 2.51 m (8.23 ft) | 6.23 m (20.44 ft) | 3.11 m (10.20 ft) |
| 2.59 m (8.50 ft) | 3.76 m (12.34 ft) | 3.74 m (12.27 ft) |
| 2.59 m (8.50 ft) | 6.23 m (20.44 ft) | 3.76 m (12.34 ft) |
| 2.59 m (8.50 ft) | 6.23 m (20.44 ft) | 3.74 m (12.27 ft) |
| 2.59 m (8.50 ft) | 7.47 m (24.51 ft) | 3.74 m (12.27 ft) |
| 2.59 m (8.50 ft) | 4.99 m (16.37 ft) | 4.96 m (16.27 ft) |
| 2.59 m (8.50 ft) | 6.23 m (20.44 ft) | 4.96 m (16.27 ft) |
| 2.59 m (8.50 ft) | 7.47 m (24.51 ft) | 4.96 m (16.27 ft) |
| 2.61 m (8.56 ft) | 6.23 m (20.44 ft) | 6.18 m (20.28 ft) |
| 2.61 m (8.56 ft) | 7.47 m (24.51 ft) | 6.18 m (20.28 ft) |
| 2.61 m (8.56 ft) | 7.47 m (24.51 ft) | 7.42 m (24.31 ft) |

NOTES:

Available in 3.05 m (10.0 ft) sizes. Custom Sizes Available.

Installation Requires 50.8 mm (2.0 in) Clearance Around 3.05 m (10.0 ft) the Enclosure.

Product Charts

Series 81 Shielding Effectiveness

