

SHIELDING SERIES 81 RADIO FREQUENCY SHIELDED ENCLOSURE



SERIES 81

- RF & EMI Shielding
- Modular Panel Construction
- "Hat & Flat" Clamping System for Shield Integrity
- Architectural, Mechanical, Plumbing, and Electrical Options
- Manual, Automatic RF Door Options
- Standard and Custom Designs are Available
- Meets or Exceeds NSA 94-106 Requirements

ETS-Lindgren's Series 81 Radio Frequency Shielded Enclosure is a proven solution for robust RF and EMI isolation, with more than 10,000 installations worldwide. This modular system is highly customizable, available in 36 standard configurations as well as fully tailored designs that incorporate specialized geometries, RF doors, filters, cable penetrations, and waveguide air vents.

At the core of each enclosure is a 1.9 cm (0.75 in) dimensionally stable panel constructed from high-density particle board or plywood laminated with 28-gauge galvanized steel, meeting ANSI A208.1 specifications. These panels provide excellent attenuation for magnetic fields, electric fields, and plane waves across a wide frequency spectrum.

The Series 81 connects via a simple 3.175 mm (0.125 in) hat-and-flat clamping system, enabling fast assembly, dismantling, and relocation without specialized tools. The self-supporting design eliminates the need for attachment to the parent building, making the enclosure suitable for permanent installations, temporary test setups, EMC testing, MRI shielding, secure communications, and industrial RF isolation.

Product Features

Performance

Series 81 delivers high shielding effectiveness and is the most commonly specified solution for NSA 73-2A and NSA 94-106 requirements. It complies with key performance and safety standards, 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

The system meets Universal Building Codes and can be assembled in stringent seismic zones, offering reliable performance and strong value for a wide range of applications.

Construction

Each enclosure consists of modular shielded panels joined using an extruded hat-and-flat clamping system that ensures consistent pressure and continuous shielding along all seams. Zinc-plated clamping components and self-tapping screws spaced 10.16 cm (4.0 in) apart provide durability and corrosion resistance, while precision-machined trihedral corner caps enhance structural stability.

A 6-mil dielectric vapor barrier and 3.175 mm (0.125 in) dielectric underlayment maintain electrical isolation beneath the shielded floor. Countersunk floor screws create a smooth surface ready for vinyl tile finishing. The panel design also offers acoustic benefits, with an STC 31 rating.

For expanded functionality, Series 81 enclosures can be upgraded to ferrite-lined or absorber-lined anechoic chambers, providing a versatile foundation for evolving test and measurement needs.

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Applications

- EMC Product Compliance Testing
- RF and 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
- Drone/UAV (Unmanned Aerial Vehicle) Testing
- Metrology Labs
- Magnetic Resonance Imaging (MRI)
- Medical Equipment and Instrumentation
- Biomedical Engineering Labs
- Embassies and Consulates
- TEMPEST Security Areas
- NSA 73-2A and NSA 94-106 Applications
- Digital Forensic Labs

Technical Specifications

Performance

Magnetic Field	20 dB @ 1 kHz; 56 dB @ 14 kHz; 100 dB @ 100 kHz
Electric Field	110 dB from 14 kHz to 30 MHz
Plane Wave	110 dB @ 30 MHz to 1 GHz
Microwave	110 dB @ 1 GHz; 100 dB @ 10 GHz to 40 GHz

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Physical Specifications

Standard Sizes¹

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)

¹ Custom Sizes Available

