

## SMART™ REVERB CHAMBERS SMART™ 80 Reverb Chambers

ETS-Lindgren's SMART™ (Statistical Mode Averaging Reverberation Test-Site) Chambers use the latest developments in proven reverberation technology and experienced chamber design and construction, to create a suitable electromagnetic environment (EME) for immunity, emissions and shielding effectiveness testing.



ETS-Lindgren's SMART (Statistical Mode Averaging Reverberation Test-Site) Chambers use the latest developments in proven reverberation technology and experienced chamber design and construction, to create a suitable electromagnetic environment (EME) for immunity, emissions and shielding effectiveness testing. Co with other test methods, SMART chambers offer the advantages of lower cost, higher field-to-input power ratios, and the ability to accept large test systems.

SMART chambers operate by using their interior surfaces to reflect internally radiated RF energy. One or more rotating paddles, or tuners, are used to change the cavity boundary conditions during the course of the measurement. This creates fields having statistical isotropy and homogeneity over a large working volume. ETS-Lindgren's tuner design ensures fast settling times and maximum test throughput during mode tuning testing. As an alternative, higher measurement throughput can also be achieved using the slow tuner rotation speeds in Stirred mode operation as defined in some of the recent standards.

The reverberation chamber has intrinsic properties of isotropy and homogeneity that provide several unique features for testing. Assuming proper configuration and a given uncertainty level; field measurement results will be the same regardless of where in the room they are taken; reconfiguration of the EUT will have minimal effect on those measurements; EUT measurements made between one or more chambers will be equivalent. The benefits are high measurement repeatability and test result reproducibility.

Adding to the appeal of reverberation chambers is that robust field strengths can be generated using less power than typically required by other test environments. The benefit is that less expensive amplifiers can be used without sacrificing performance. SMART chambers are well suited to simulate the complex EMC of cavities, such as computer rooms, medical equipment rooms, aircraft avionics bays, and vehicle engine compartments. A SMART chamber simulates all wave polarizations and incidence angles during a full test.

ETS-Lindgren understands reverberation chamber technology, and can design a chamber to meet your exact needs. We can work with you to determine the optimum chamber volume for accommodating your maximum DUT, satisfying your frequency range requirement and test field levels. We can select from different interior materials finishes to optimize mode density and 'Q' and recommend the preferred antenna and amplifier combination for your testing needs.

### Key Features

- For Full and Pre-Compliance Testing Including:
  - MIL-STD 461G
  - SAEJ1113/27
  - GMW3097
  - FMC-1278
  - EUROCAE\RTCA DO160F/G
  - IEC6000-4-21
  - DEF STAN 5941
  - HERO, HIRF Testing
  - SE Testing
  - Single or Dual Stirrers
  - Continuous or Stepped Rotation
  - 80 MHz - 18 GHz (40GHz)

## Specifications

### Electrical Specifications

---

Frequency Minimum 80 MHz

Frequency Maximum 18 GHz (40 GHz)

### Physical Specifications

---

Shield Room Inner Length: 13.41 m (44.00 ft)

Shield Room Inner Dim Width: 6.09 m (20.00 ft)

Shield Room Inner Dim Height: 4.87 m (16.00 ft)

Internal Working Volume Length: 4.50 m (14.76 ft)

Internal Working Volume Width: 4.00 m (13.12 ft)

Internal Working Volume Height 2.20 m (7.22 ft)

### Other Specifications

---

- Two ETS-Lindgren 6060 'Z' Fold Tuners, CW RF Shielded Bearing Mounting Assembly
- Two ETS-Lindgren Motor Base Drivers with Rotational Speed Control of 1 to 16 rpm
- Four LED Strip Light Fixtures (Electrical Distribution not Included)
- Installation of Enclosure and ETS-Lindgren Equipment
- Two 5.08 cm (2 in) Threaded Brass Pipe Penetrations with Flange Nuts and Caps
- Two Waveguide Vents, 30.48 cm x 30.48 cm (12 ft x 12 ft) in the Ceiling
- One Single-leaf, ETS-Ray Proof Series 201, Recessed Contact Mechanism (RCM), Manually Operated, RF-shielded Personnel Door, .91 m x 2.13 m (3 ft x 7 ft) Clear Opening
- One Connector Panel, 20.32 cm x 20.32 cm (8 in x 8 in)
- Reverberation Test per IEC 61000-4-21 in Steps from 80 MHz to 1 GHz per the Recommended Procedure
- Two Connector Panels, 15.24 cm x 61 cm (6 in x 24 in)
- Dielectric Floor Underlay 3.175 mm (.125 in) Thick
- Shield Test per IEEE 299, One Frequency Test at 1 GHz
- One Threaded Brass Ground Stud 1.27 cm (0.5 in) Diameter x 12.7 cm (5 in) Long
- Modular Shielded Room and Support Structure
- One ETS-Lindgren EMCenter™ with EMControl™ Device Controller Plug-in
- Interior Nominal Shield-to-shield Dimensions of 13.41 m x 6.09 m x 4.87 m (44 ft x 20 ft x 16 ft)
- One Door Maintenance Kit
- Guaranteed Performance and a Five-year Limited Warranty; One-year Warranty on Doors, Filters and Moving Parts; Two Year Warranty on Optional ETS-Lindgren's Equipment