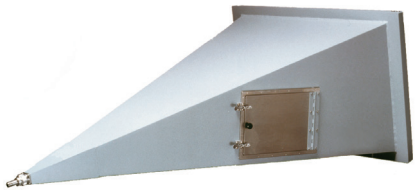
GTEM MODEL 5402



MODEL 5402

- **For all Phases of EMC Testing:**
- **Design Qualification**
- **Pre-Compliance**
- **Full Compliance IEC 61000-4-20 ANSI C63.4**

ETS-Lindgren's Model 5402 GTEM! Test Cells enables users to perform radiated emissions and radiated immunity tests in less time than either an OATS or in a chamber. Beginning with design qualification testing and moving through to pre-compliance testing, full compliance testing, and production sampling, the 5402 GTEM! Test Cell is a time saving device for your test lab. A typical radiated emissions test (10,000 point scan) can be completed in 15 minutes or less, while a typical radiated immunity test can usually be completed in half the normal time. The GTEM 5402 is the smallest member of the GTEM family with a septum that is comparable in height with many standard TEM cells. This means that the 5402 can be used for testing small electronic modules over a wider frequency than standard TEM cells.

The design of the model 5402 is based on experience borne from research. and data from several installed units. Originally developed in the EMC Baden (Switzerland) labs of ABB, the cell has been accepted in the EMC community for more than two decades, and is field proven daily at more than 400 installations worldwide. Measurements made with a GTEM! are accepted for final compliance demonstration by the FCC for Part 15 & 18 radiated emissions testing, and comply with IEC 61000-4-20 for immunity testing. The GTEM!'s unique tapered shape, offset septum, resistive termination network, and absorber-lined back wall reduce some of the performance limitations of TEM cells and boxy enclosures. Electromagnetic wave and RF current termination are smooth and controlled. Field uniformity is better than +/- 3 dB up to 1 GHz, and +/-4 dB above 1 GHz.

The GTEM lends itself best to the measurement of devices that are self-contained with minimal cables that fit within a test volume that is 1/3 the height of the septum and 2/3 the width. As a coaxial transmission line structure, the smaller the impact the DUT has on the RF propagation within the GTEM the better the uniformity of the field and lower the uncertainty of measurements.

Technical Specifications

Electrical	
Feed Connector Type	cw 7/16 DIN to N Adapter
Field Uniformity	f ≤ 1 GHz; 0 -6 dB
Frequency	9 kHz to 5 GHz (RE)[1]; DC - 20 GHz (RI)[2]
Input Impedance	50
Shielding Effectiveness	10 kHz to 1 GHz From Internal E-Fields; 80 dB Minimum
Maximum CW Input	250 W
VSWR Maximum	All Other Frequencies: <1.5:1; Characteristic Frequencies: <1.75:1
VSWR Typical	All Other Frequencies: 1.30:1; Characteristic Frequencies[3]: 1.75:1

[1]Measurement Range – Where Correlation to OATS is Established
3 Measurement – 3 Input GTEM-OATS Correlation Algorithm, 30 MHz to 5 GHz
9 Measurement – 9 Input GTEM-OATS Correlation Algorithm, 9 kHz to 5 GHz
[2]Low Input VSWR to f</= 20 GHz Available
[4]Characteristic Frequency: The frequency at which cross-over between the two terminations (the load resisor and RF absorber termination) occurs.

Physical Specifications	
Distributed Load Rating	100 mm (3.94 in)
Door Dimension Primary Height	160.0 mm (6.30 in)
Door Dimension Primary Width	230.0 mm (9.06 in)
Door Dimension Secondary Height	100 mm (3.94 in)
Door Dimension Secondary Width	100 mm (3.94 in)
Outer Cell w/Base Dimension Height	0.5 m (1.64 ft)
Outer Cell w/Base Dimension Length	1.4 m (4.59 ft)
Outer Cell w/Base Dimension Width	0.75 m (2.46 ft)
Maximum Septum Height[4]	250.0 mm (9.84 in)
Septum Height at Door Center	200 mm (7.87 in)
Highest Accuracy Transverse Test Surface in Center of Cell Height[5]	83.0 mm (3.27 in)
Highest Accuracy Transverse Test Surface in Center of Cell Width[5]	125.0 mm (4.92 in)
Maximum Recommended Transverse Test Surface in Center of Cell Height[6]	125.0 mm (4.92 in)
Maximum Recommended Transverse Test Surface in Center of Cell Width[6]	167.0 mm (6.57 in)
Approximate Cell Weight	40.0 kg (88.18 lb)

[4]Measurement taken at rear of test volume.
[5]From quasi-static E-field with H=1/3 septum height and W=1/3 septum width
[6]From quasi-static E-field with H=2/3 septum height and W=2/3 septum width

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