GTEM MODEL 5405

MODEL 5405

- **For all Phases of EMC Testing**
- **Emissions, Immunity, and Shielding Effectiveness**
- **Design Qualification**
- **Pre-Compliance**
- **Full Compliance IEC 61000-4-20 ANSI C63.4**

ETS-Lindgren's Model 5405 GTEM! Test Cell enables users to perform radiated emissions and radiated immunity tests in less time than either an OATS or in a chamber. Tests can be performed quickly and accurately throughout the product life cycle. Beginning with design qualification testing and moving through to pre-compliance testing, full-compliance testing, and production sampling, the Model 5405 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 design of the model 5405 is based on experience borne from research. 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! Test Cell are accepted for final compliance demonstration by the FCC for Part 15 & 18 radiated emissions testing, and comply with IEC 61000-4-20. The GTEM is also approved for use in field probe calibration as described in IEC 61000-4-3, and the model 5405 is suitably sized to accommodate large probes while maintaining low test volume perturbation for low measurement uncertainty. The GTEM!'s unique tapered shape, offset septum, resistive termination network, and absorber-lined backwall removes performance limitations of TEM cells and other rectangular 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.

The GTEM 5405 and GTEM 5411 models can be used for high voltage pulse testing testing using the optional High voltage (HV) feed and a pulse source for example when testing to MIL STD RS 105.

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
Maximum CW Input	250W/400W[3]
Shielding Effectiveness	10 kHz to 1 GHz From Internal E-Fields; 80 dB Minimum
VSWR Maximum	All Other Frequencies: ≤ 1.50:1; Characteristic Frequencies: ≤ 1.75:1
VSWR Typical	All Other Frequencies: 1.30:1; Characteristic Frequencies[4]: 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
[3]400W with Optimal Blower
[4]Characteristic Frequency: The frequency at which cross-over between the two terminations (the resisor load boards and the RF absorber occurs).

Physical Specifications	
Approximate Cell Weight	250 kg (551.15 lb)
Distributed Load Rating	250 kg (551.15 lb)
Door Dimension Primary Height	385.0 mm (15.16 in)
Door Dimension Primary Width	460.0 mm (18.11 in)
Door Dimension Secondary Height	N/A
Door Dimension Secondary Width	N/A
Highest Accuracy Transverse Test Surface in Center of Cell Height[5]	167.0 mm (6.57 in)
Highest Accuracy Transverse Test Surface in Center of Cell Width[5]	250.0 mm (9.84 in)
Maximum Recommended Transverse Test Surface in Center of Cell Height[6]	333.0 mm (13.11 in)
Maximum Recommended Transverse Test Surface in Center of Cell Width[6]	375.0 mm (14.76 in)
Maximum Septum Height[7]	565.0 mm (22.24 in)
Septum Height at Door Center	500 mm (19.68 in)
Outer Cell w/Base Dimension Height[8]	1.7 m (5.58 ft)
Outer Cell w/Base Dimension Length	3.0 m (9.84 ft)
Outer Cell w/Base Dimension Width	1.6 m (5.25 ft)

[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
[7]Measurement taken at rear of test volume.
[8]Cell Height Without Base: 1.1 m (3.7 ft)

Information presented is subject to change as product enhancements are made.
Contact ETS-Lindgren Sales Department for current specifications.

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