GTEM! TEST CELLS 5405 GTEM! Test Cell

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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 Model 5405 is based on experience, not experimentation. Originally developed in the EMC Baden (Switzerland) Labs of ABB, the cell has been accepted in the EMC community for more than a decade, 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 61000-4-3 Annex D for immunity testing. The GTEM!'s unique tapered shape, offset septum, resistive termination network, and absorber-lined backwall removes performance limitations of TEM cells and boxy enclosures. Electromagnetic wave and RF current termination are smooth and controlled. Field uniformity is +/- 3 dB up to 1 GHz, and +/-4 dB above 1 GHz.

Key Features

- For all Phases of EMC Testing
  - Design Qualification
  - Pre-Compliance
  - Full Compliance IEC 61000-4-3 ANSI C63.4

Specifications

Electrical Specifications

Feed Connector Type: cw 7/16 DIN to N Adapter
Field Uniformity: f < 1 GHz, 0 -6dB
Frequency: 9 kHz to 5 GHz (RE)[1], DC - 20 GHz (RI)[2]
Input Impedance: 50 Ω
Maximum CW Input: 250W / 400W[3]
Shielding Effectiveness: 10 kHz to 1 GHz, From Internal E-Fields 80 dB min
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 Optional Blower
[4]Characteristic Frequency: The frequency at which cross-over between the two terminations (the resistor load boards and the RF absorber) occurs.

Physical Specifications

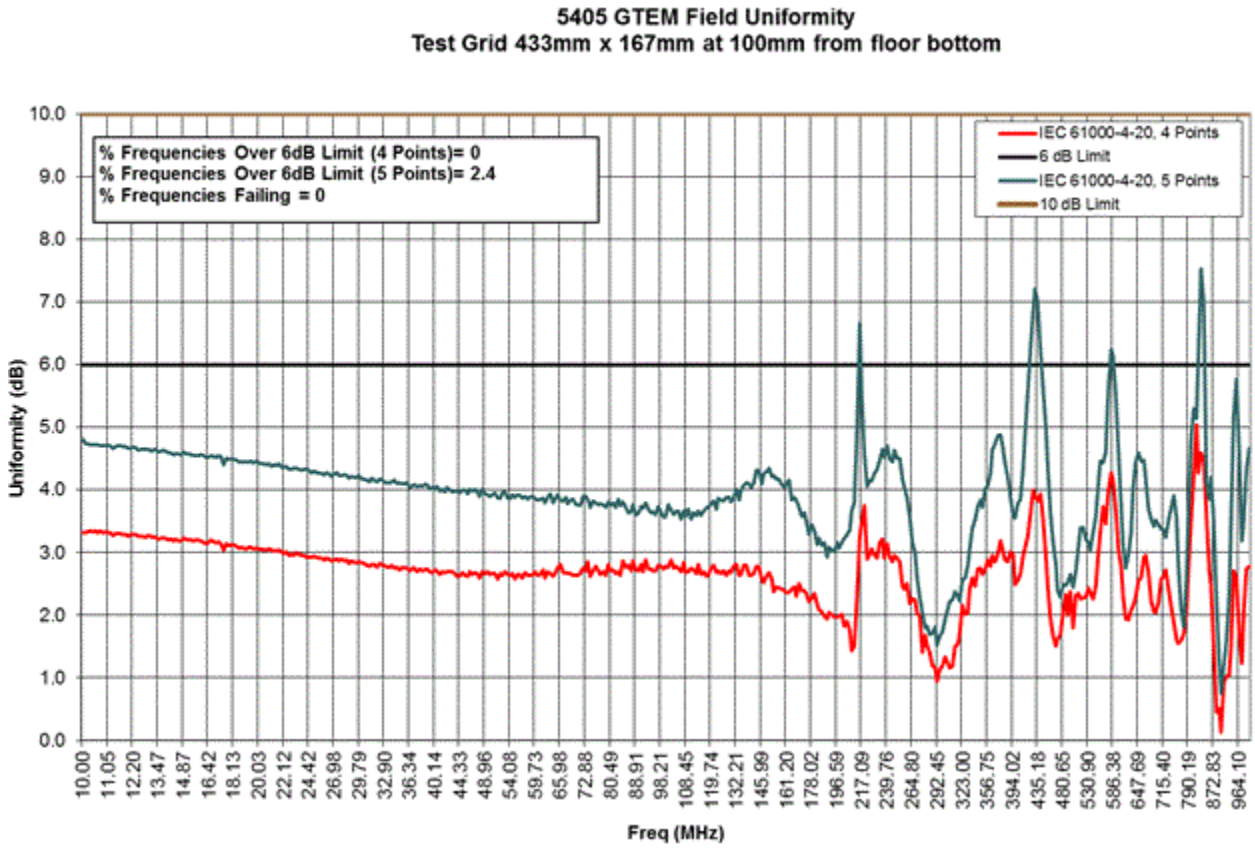
Approximate Cell Weight: 250 kg (551.15 lb)
Distributed Load Rating: 250 kg (551.15 lb)
Door Dimension Primary (H): 385.0 mm (15.16 in)
Door Dimension Primary (W): 460.0 mm (18.11 in)
Door Dimension Secondary (H): NA
Door Dimension Secondary (W): NA
Highest Accuracy Transverse Test Surface in Center of Cell (H)[5]: 167.0 mm (6.57 in)
Highest Accuracy Transverse Test Surface in Center of Cell (W)[5]: 250.0 mm (9.84 in)
Maximum Recommended Transverse Test Surface in Center of Cell (H)6: 333.0 mm (13.11 in)
Maximum Recommended Transverse Test Surface in Center of Cell (W)[6]: 375.0 mm (14.76 in)
Maximum Septum Height[7]: 500.0 mm (19.69 in)
Outer Cell w/Base Dimension (H)[8]: 1.7 m (5.58 ft)
Outer Cell w/Base Dimension (L): 3.0 m (9.84 ft)
Outer Cell w/Base Dimension (W): 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)

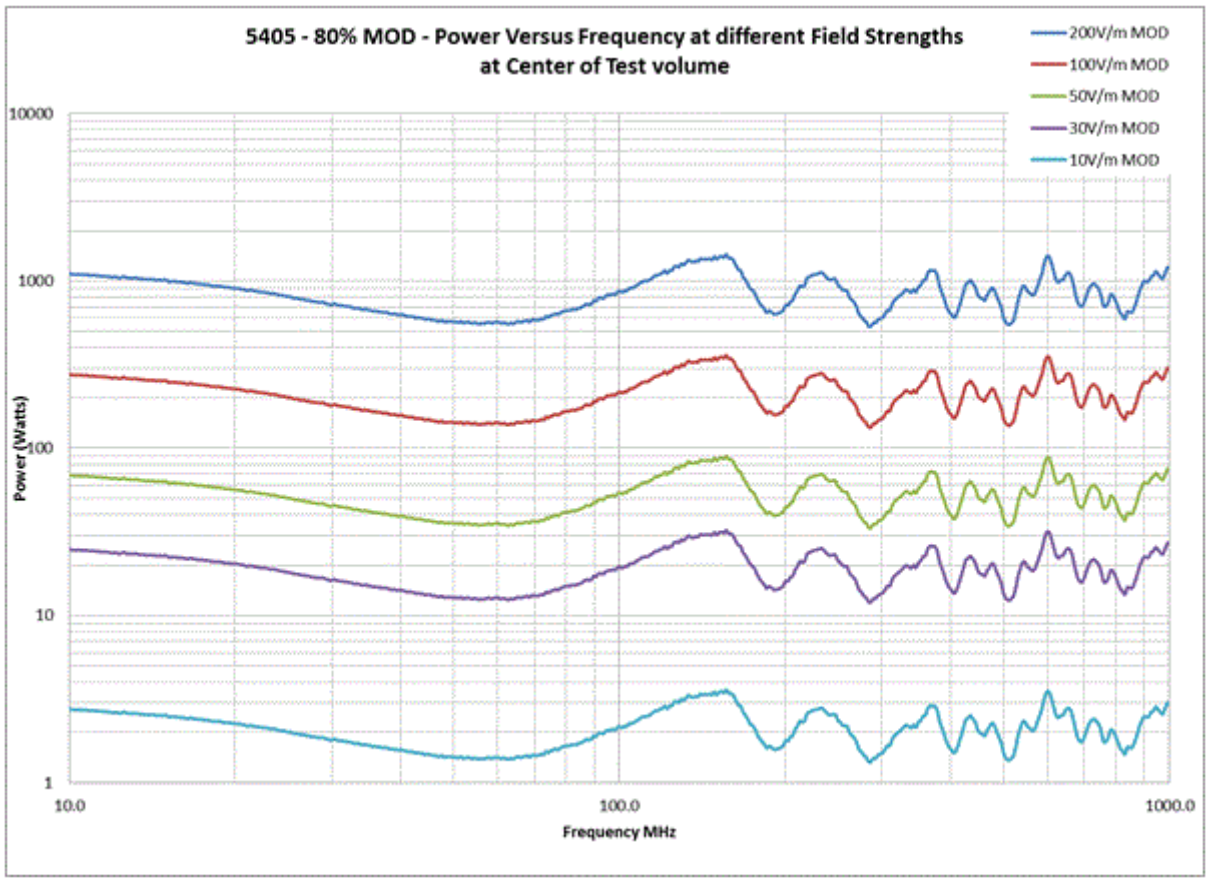
Other Specifications

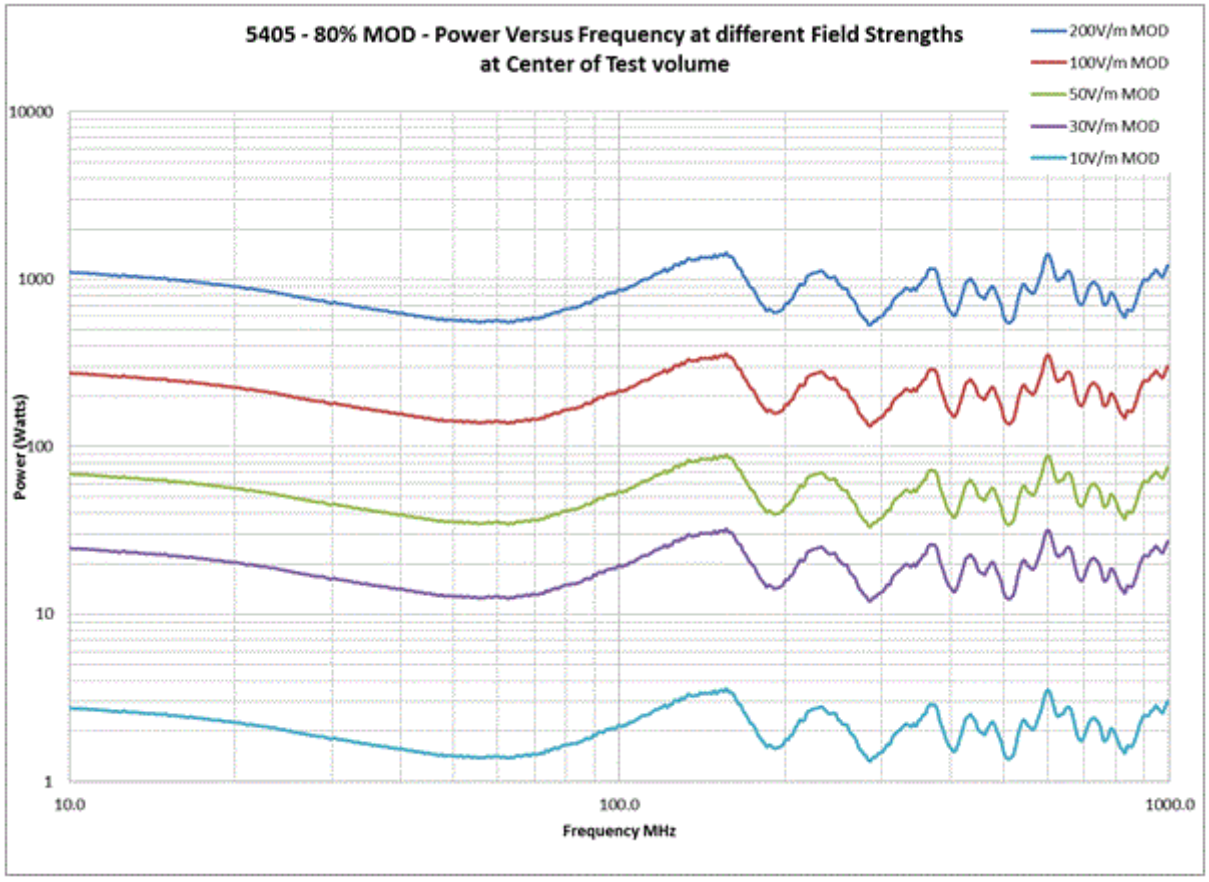
- One Fiber Optic Penetration
- Two AC Receptacles
- ETS-Lindgren Absorber Material
- Completely Assembled
- Mobile Base with Locking Casters
- Three N-type Connectors
- Manual Emissions Correlation Software (on Request)
- Primary Door 46 cm H x 38.5 cm W (18.11 in x 15.16 in) Clear Opening
- 7/16" DIN to Type "N" Adapter
- Individually Characterized with Results of TDR and VSWR tests
- One 20 Amp, Two Line Filter
- Manual

Product Charts



5405 GTEM! Test Cell Power Versus Frequency at different Field Strengths at Center of test volume


5405 - 80% MOD - Power Versus Frequency at different Field Strengths
at Center of Test volume
200V/m MOD
100V/m MOD
50V/m MOD
30V/m MOD
10V/m MOD
10000
1000
100
10
1
Power (Watts)
10.0
100.0
1000.0
Frequency MHz


5405 - 80% MOD - Power Versus Frequency at different Field Strengths
at Center of Test volume
200V/m MOD
100V/m MOD
50V/m MOD
30V/m MOD
10V/m MOD
10000
1000
100
10
1
Power (Watts)
10.0
100.0
1000.0
Frequency MHz