

LaplaCell EMC test cells

Lc300Lc600

Calibrated cells for emissions and immunity testing.

- Fully calibrated and ready-to-use.
- Avoid the hassles of OATS testing.
- Compact - ideal if space is limited.
- Affordable - easy on the budget. Avoid test lab expenditure by self testing.
- Calibrated to comply with IEC61000-4-20.



The LaplaCell is a unique concept featuring a balanced sepium design, proven to deliver better uniformity of field than any other GTEM or similar compact cell.

Three models are available, covering EUT sizes up to 60cm cube, and frequencies up to 3GHz. The cells are fitted internally with a field strength sensor, so no need to provide this as a separate item. Each cell is individually calibrated and shipped fully checked and tested so that when they arrive, simply connect to the ancillary equipment, switch on and go.

When used with the RF1000 or RF2000 system controller for immunity testing, operation is entirely automatic.

Emissions Avoid all the difficulties of background signals, test site calibration, poor weather conditions and lack of space by using the LaplaCell.

Immunity Efficient design means that 20V/m can be delivered with just 10W RF input power. If used in conjunction with the Laplace signal generators and software, testing is fully automated

Compliance These cells provide the capability to test to IEC61000-4-3, domestic, commercial, medical and industrial levels. For emissions and immunity, these cells meet the requirements of IEC61000-4-20

Convenience The LaplaCell occupies just one small corner in the lab, yet provides a simple and immediate resource for EMC testing as and when you need it. Testing prototypes or production samples avoids potentially costly and time consuming rectification work at a later date.

LAPLACE INSTRUMENTS LTD



EMC test cells... making life easier

The LaplaCell range provides a practical solution to the issues and difficulties related to EMC testing. They are specifically designed to offer a resource that is quick and easy to use and which will deliver results of immediate benefit to the user.

Emissions... problem?	Solution	Immunity... problem?	Solution
Strong ambient signals	The cell provides an ambient-free 'space' due to total screening	Expensive ancillaries	LaplaCells include an internal field sensor as standard.
Test site distortion	The cell is fully correlated and traceable to a 3m OATS.	Power amplifier requirements	Very efficient design so that RF power requirements are minimal
Lack of ground plane and height scanning	Not required!	Leakage of high power RF	Fully screened so RF energy is contained
Lack of space	LaplaCells are very compact. Just fit into any odd corner of the lab.	Field uniformity	LaplaCell concept produces better uniformity than GTEM

APPLICATION

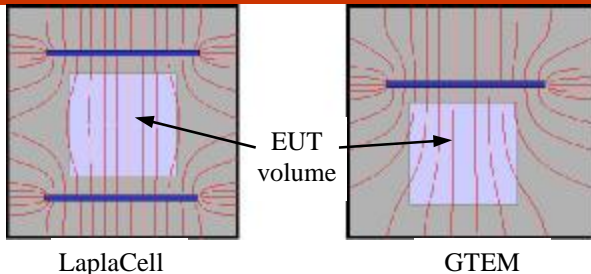
IMMUNITY

IEC61000-4-3 sets the requirements for RF immunity testing. It specifies fields of up to 10V/m over the range 80MHz to 1GHz and provides minimum performance requirements. The LaplaCell range fully meets these requirements and, when used in conjunction with the Laplace synthesiser and power amplifier, provides a complete integrated solution.

EMISSIONS

European, US and international EMC/EMI standards all require the use of an OATS (Open Area Test Site). This is a demanding requirement in terms of space, resources, calibration and expertise. The LaplaCell range provides an ideal solution, delivering equivalent OATS performance without OATS problems.

Why LaplaCell?



Uniformity: The balanced septum design ensures good uniformity, even when compared with the 'industry-standard' GTEM type. The above views make this obvious.

Impedance: The aim of a test cell is to emulate an OATS test. Free space impedance on an OATS is 377ohm. Conventional test cells (eg GTEM) are 50ohm systems. The unique design of the LaplaCell, matches the incoming 50ohm impedance to around 200ohm inside the cell, a much closer match to the free space impedance.

Calibration: The calibration of LaplaCells is in accordance with IEC61000-4-20. Our standard technique measures the performance every 2MHz or 4MHz over the full range for each individual cell, and the resultant data is supplied on disk.

Available from

SPECIFICATION SUMMARY

	Lc300	Lc300/2	Lc600
EUT size (max)	30cm cube	30cm cube	60cm cube
EUT volume (cm)	35 x 38 x 45	35 x 38 x 45	78 x 82 x 87
Frequency range	30—1000MHz	30—3000MHz	30—3000MHz
Range switching	None required	2 bands, switched (local and remote switching)	
Screening attenuation	60dB	60dB	60dB
Max RF power in	50W	100W	100W
Power for 10V/m	5W	5W	10W
Field @ max RF in	40V/m	60V/m	40V/m
RF input/output connector	N type / 50ohm VSWR better than 2:1		
Auxiliary power requirements	5v dc @ 25mA	24v dc. (Mains power unit supplied with cell, 110—240v ac)	
Field sensor	Included with cell. Calibrated for 0-2.5v dc output		
Emissions calibration	Calibrated and correlated to 3m OATS. Full calibration data included (Hardcopy & disk)		
Door interlock	Yes		
Filtered I/O	Mains feed plus 10 general purpose signals. 5 way DIN connections for camera and lighting.		
Options	Camera and lighting. Additional I/O filtered feeds (to suit application)		
Construction	Stainless steel with polypropylene EUT chamber.		
Mounting	Table top	Table top	Floor, fitted with castors
Total Weight	120kg	200kg	400kg
EUT weight (max)	20kg	20kg	100kg
Size, L x H x W (m)	1.5 x 0.9 x 0.87	2.3 x 1.0 x 0.87	3.2 x 1.6 x 1.3

LAPLACE INSTRUMENTS LTD

3B Middlebrook Way, Cromer, Norfolk
NR27 9JR. UK

Tel: +44 (0)1263 51 51 60
Fax: +44 (0)1263 51 25 32
Web site: www.laplace.co.uk
E-mail: tech@laplace.co.uk

