

# EMC Compliance Test Cell

LaplaCell 300

## Calibrated cell for Immunity and Emissions Testing

A fully calibrated table top test cell for the hassle-free measurement of the EMI / EMC performance of your products.

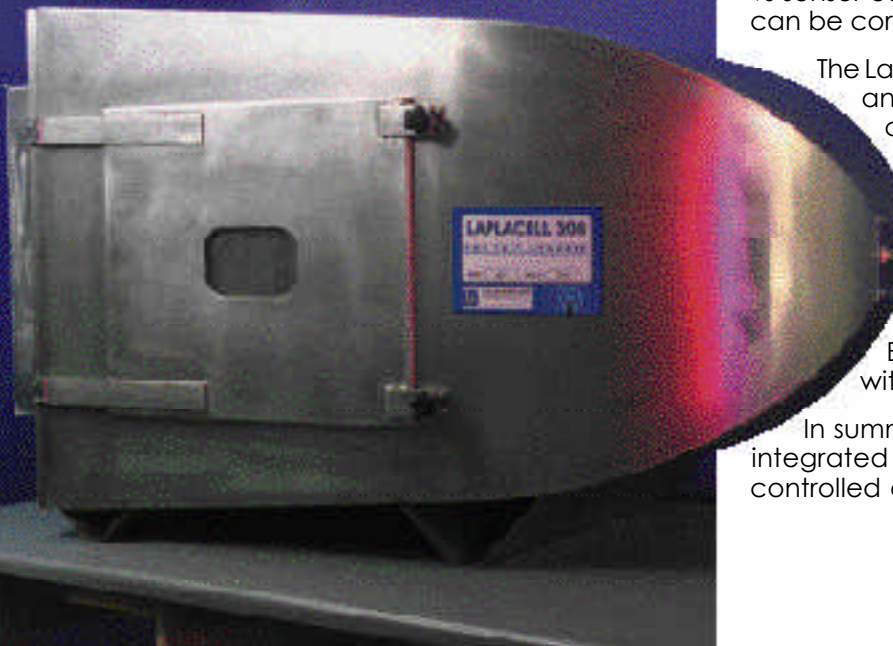
- ▼ Immunity and emissions testing
- ▼ Emissions measurements correlated to OATS as required to meet all common EN and FCC standards
- ▼ Immunity testing to IEC61000-4-3
- ▼ Exceptionally compact package

The LaplaCell is the result of an extensive R & D programme to provide a solution to the particular problems facing organisations who wish to self test products for EMC compliance. The unique design features a novel double tapered internal profile which provides a very compact cell with a built-in field sensor. Each cell is individually characterised for field strength vs sensor output and emissions sensitivity so that results can be correlated against an OATS.

The Laplace SA1000 emissions analyser (or any other analyser / receiver) will work directly with the cell, enabling compliance measurements to be made with ease, avoiding the problems of background radiation, test site distortion and the need for ground planes and height scanning.

When used with the RF1000 synthesiser and RF1100 power amplifier, fully compliant EN61000-4-3 testing can be accomplished with ease at levels up to 10V/m.

In summary, the cell provides the core of a totally integrated system which will deliver a complete, PC controlled emissions and immunity test package.



**Emissions.** Avoids all the major problems related to the use of open area test sites. Completely screened, all external signals are eliminated. And the calibration supplied with each unit enables measurements to be correlated to OATS conditions.

**Immunity.** Efficient broadband characteristics and excellent field uniformity enable fully compliant testing optimised for IEC61000-4-3 requirements.

**Integration.** The cell is optimised for use with the Laplace EMC analysers and power amplifiers, providing a fully integrated solution for both emissions and immunity compliance testing.



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## Excellence

The LaplaCell 300 provides the basic building block for providing an integrated EMI / EMC test facility which will deliver high integrity results with the minimum of complexity.

### In one step the problems of:

#### Emissions

- Strong ambient signals
- Test site distortion
- Lack of ground plane and / or height scanning
- Lack of space

#### Immunity

- Suitable chamber
- Power amplifier requirements
- Screening
- Field uniformity

... are all solved!

This approach ensures that all testing is fully valid and errors normally encountered when using OATS are eliminated . . . thus providing high integrity compliance testing.

## Immunity

IEC61000-4-3 immunity testing requires that the EUT (equipment under test) operates satisfactorily when subject to a strong electromagnetic field. This field must be 'contained' in order to avoid interfering with the outside world and must be uniform within the area used by the EUT.

The key aspects of containment and field uniformity are fully satisfied with the LaplaCell 300.

## Emissions

EN, FCC, As/NZ, and CISPR standards all require the use of an OATS (Open Area Test Site) for the measurement of emissions. This is a demanding requirement in terms of resources, calibration, procedures and space, and will be compromised by ambient interference.

The LaplaCell 300 is calibrated to deliver OATS performance without the OATS problems.

## CLIENTS

### The Combined Low cost Immunity and Emissions Test System

A complete integrated system using the LaplaCell 300 which delivers a turnkey solution for the emissions and immunity compliance testing of your product.

It includes:

- ▼ The LaplaCell 300 test chamber.
- ▼ RF Power amplifier. The RF1100 is a fixed gain 'building block' which will boost any suitable signal to the levels required to drive an antenna or cell in order to create the specified V/m field strength.
- ▼ Synthesiser. The Laplace RF1000 is PC controlled via the serial port. Generates the required signals and controls the amplitude to produce required field strength inside cell. Also interfaces simple EUT status signal back to PC and generates simple 'prompt' signal to EUT under PC control.
- ▼ Emissions analyser. The Laplace SA1000 is a powerful EMC measurement analyser, specifically developed for the compliance testing of products to all US, EU and international standards. Fully matched to the LaplaCell 300 to deliver accurate results within a Windows software environment.
- ▼ PC Windows software for the control, display and storage of both emissions and immunity tests.

## Specification

Usable EUT volume:	300mm cube
	Calibrated frequency range:
30MHz – 1GHz	Screening attenuation:
>60dB	Internal
damping:	Ferrite absorbers
	EUT Power Dissipation:
100W max	EUT
Cooling:	Optional forced air system

### Immunity mode

Max field strength with 10W power amplifier:	10V/m minimum
Field uniformity:	<6dB within EUT volume
Power / field ratio:	approx 1.0 m
Max input power:	10W nom
Sensor output level:	0 – 2V corresponding to internal field strength

Calibration data:	Supplied with each cell
Sensor supply:	5V dc, 25mA max
Power input Impedance:	50ohm
Input VSWR:	Better than 2: 1
Input connector:	N Type

### Emissions mode

Equiv. A.F. vs 3m OATS:	0.8 – 1.1
Output Impedance:	50ohm
Output connector:	N type

### I/O facilities

Integrated filter panel for power and signal connections into the cell.

Basic unit offers . . .	- Mains IEC connector
	- 10 way terminal block (10 amp max)

Additional interconnections may be specified at time of ordering.

### Monitoring

Door fitted with shielded viewing window.	
Options:	Internal lighting
	Internal video camera
Interlocks:	Door fitted with safety switch

### General

Door aperture:	35 x 35 cm
Weight:	100kg
Size:	1.44 x 0.76 x 0.79 metre
Outer construction:	Stainless steel
Internal EUT chamber:	Polypropylene
Septum:	Double tapered wire guided

## Ordering Information

Order code:	LaplaCell 300
Includes:	Test chamber.
	Calibration data.
	User manual.
	All mating connectors.

Available from:



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