HARMONICS & FLICKER ANALYSER AC2000A

Full IEC61000-3-2 and IEC61000-3-3 compliance test system

▼ **Full compliance with IEC61000-3-2 standard when used with AC1000 power source**

▼ **Fully compliant IEC61000-3-3 flicker measurement**

▼ **Harmonic measurement in accordance with EN61000-4-7 and Flicker as defined by EN61000-4-15.**

▼ **P.C. Software and USB interface included for downloading results, archiving and printout.**

European requirements for EMC compliance now include limits for any harmonics and flicker imposed on the mains supply by the product. Modern power supplies for many electronic products draw current from the supply in a very non-sinusoidal manner thus creating high harmonic levels which affect the efficiency and quality of the mains supply.

IEC61000-3-2 (harmonics) and IEC61000-3-3 (flicker) define the test methods and allowable limits. The AC2000A fully incorporates all this information in its firmware and is automatically able to take into account variables such as minimum power and rated power levels when setting the limits.

The AC2000A Harmonics & Flicker analyser fully complies with these measurement standards and enables test laboratory grade measurements to be made quickly and simply. For loads up to 1kW, the optional AC1000 delivers 'clean' a.c. power with THD less than 0.1%.

COMPREHENSIVE The AC2000A is not only a compliant harmonics analyser and flickermeter, it is also a powerful mains power meter and in-rush current meter, with a wide selection of display modes, including tabular, graphical and bargraph.

CONFIDENCE The AC2000A is a no-compromise compliance test instrument. It removes all the guesswork from product evaluation and test setting and delivers an unambiguous pass/fail result.

COMPLIANCE The AC2000A Flickermeter option measures P_{st} and P_{lt} in accordance with IEC61000-3-3.

CONVENIENCE The AC2000A is a completely self contained instrument. Just switch on and take the measurements. The display gives clear indication of the pass/fail states of the test.

LAPLACE INSTRUMENTS LIMITED

HARMONICS & FLICKER ANALYSER AC2000A

Features

High performance Power Analyser

Mains voltage (rms & peak) and harmonic content.
Load power (kW, VA), Amps rms, Amps peak, crest factors, THD, phase angle, Power factor, waveshape & Frequency.

Compliance-quality Harmonics Analyser

Original and up-dated versions of IEC61000-3-2 included. All harmonics up to 40th, including POHC summation.
Absolute and percent fundamental.
Real time measurements.
Classes A, B, C and D evaluation.
Display of standard limit values and comparison of results with limits.
Simple Pass/fail indication.
User control of all test parameters.

Inrush current up to 425A.

EN61000-3-3 now requires measurement of the voltage fluctuation caused by inrush current when a product is switched on, Due to the nature of modern power supply circuits, this test needs to be conducted on almost all electronic products.

Compliance quality Flickermeter

Display of PU (instantaneous perception), P_{st} and P_{lt} values.
Flicker severity evaluation according to EN60868-0.

General

Self contained unit.
Output for printer and PC.
Separate load power and instrument power inputs.

LCD display features:

All test control parameters.
Power meter screen.
Graphical voltage and current waveshape display.
Harmonic presentation either bargraph, tabular, chart recorder or compliance.

PC Software:

The AC2000A includes a USB and RS232 interface for connection to any standard PC. Software is included that will enable results to be viewed in real time on the PC screen and provides facilities for saving results to disk and hardcopy reports.

Compliance

For precise harmonics measurements to IEC61000-3-2 the mains supply must have very low harmonic content. This requirement is very seldom met by the 'normal' mains so a separate, clean supply is required for true compliance measurements. The Laplace AC1000 provides this mains supply for loads up to 1kW. The harmonic content of the AC1000 output is well within the requirements of the IEC standard when used with typical mains supplies.

Flicker

Flicker measurements are required for products that rapidly switch loads on the mains supply thus causing fluctuations of the mains voltage. A typical example would be a heating system that used a 'burst fire' technique for power control. Such products need to be tested for compliance.

Specification

Performance standards:

IEC61000-3-2	Harmonics analysis (IEC 61000-4-7).
IEC61000-3-3	Flickermeter.
EN60868	Flicker evaluation (IEC 61000-4-15).

Mains analyser

Current rating	16A rms continuous, or national connector rating, whichever is lower
Voltage ranges	115V (±200V pk), 230V (±400V pk)
Current ranges	±24mA to ±400A pk in fifteen ranges
Frequency	45 – 66Hz
Shunt resistance	3mohm
Sampling rate	300 samples per second
Basic accuracy	<0.2%
Monitor outputs	Re-constructed Voltage and Current signals

Harmonics analyser

Measurements	Fundamental to 40th harmonic
Basic accuracy	Better than 5% of limit or 0.2% of selected range, whichever is the greater
Display modes	Numeric readout of parameters Graphical waveform display with accumulate and max. hold modes and class mask. Tabular and histogram harmonics display with absolute and percent limit scales.

Flickermeter

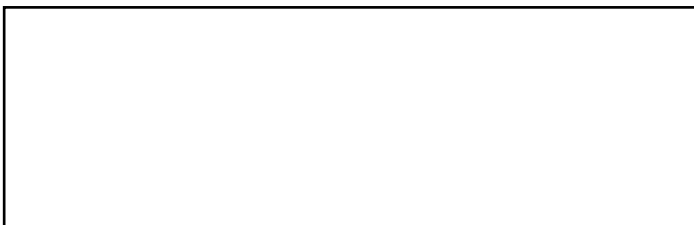|	
Measurements	P_{st} and P_{lt} to EN61000-4-15 and IEC61000-3-3
Voltage ranges	115V (±200V pk), 230V (±400V pk)
Current ranges	±24mA to ±400A pk in fifteen ranges
Frequency	45 – 66Hz
Shunt resistance	3mohm
Sampling rate	300 samples per second

General

Display	320 x 240 pixel backlit LCD
Interfaces	RS-232 and USB
Instrument supply	Separate from EUT supply 230V or 115V ±14%, 48 - 65Hz
Operating range	+5 to +40 °C, 20 - 80% RH
Storage range	-10 to + 60 °C
Dimensions	305 x 148 x 220mm (W x H x D)
Weight	4.2kg
Safety	Complies with EN61010-1
EMC Compliance	Complies with EN61326-1

Ordering Information

Order code:	Includes:
AC1000	Power cable, User manual
AC2000A	Load and instrument power cables, User manual, USB cable, PC Software.

Available from: