Harmonics and Flicker
ISO17025 Certified Test Solutions
IEC61000-3-2 / IEC61000-3-3
IEC61000-3-11 / IEC61000-3-12

Full compliant Harmonics and Flicker Test Solutions	
Leading wideband accuracy	Basic 0.01% with class leading high frequency performance
ISO17025 accredited	ISO17025 IEC61000 certification available
Sophisticated data reporting	Enables user to determine failure modes accurately
PC software	Remote control, tables, graphs and database management of results
Impedance Network	N4L Impedance Networks available with ISO17025 calibration
Versatile interfaces	RS232, USB, GPIB and LAN as standard
1 to 3 Phase	Ability to perform single and 3 phase measurements
Various measurement modes	Power, Harmonic, RMS, LCR, Scope, Integ

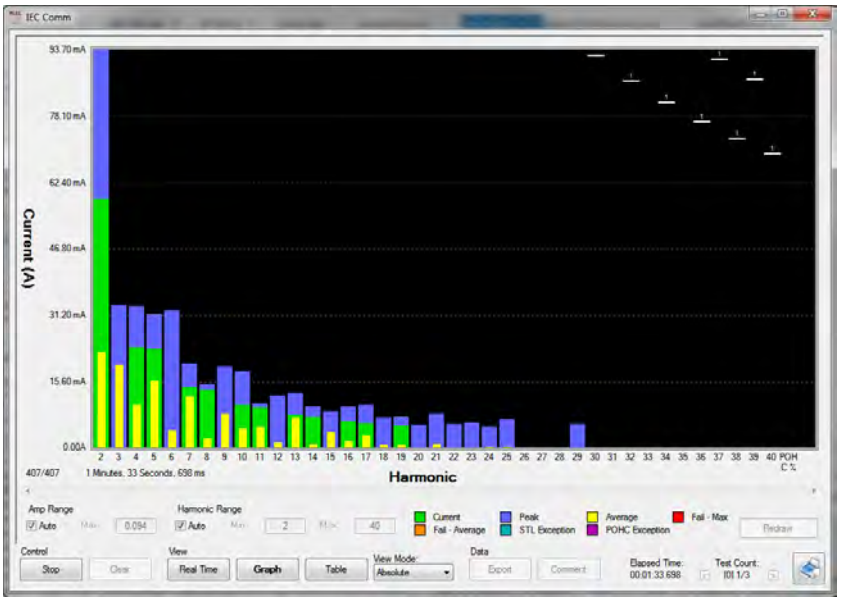
Fully Compliant IEC61000 Test Instruments

IEC61000-3-2/12 - Fluctuating Harmonics

The N4L PPA55xx series of power analyzers and impedance networks provide fully compliant Harmonics and Flicker test solutions. Certified by NPL (National Physical Laboratory) in the UK, the N4L PPA55xx provides reliable, accurate measurements compliant to the latest standards (IEC61000-3-2/3 and IEC61000-3-11/12)

In combination with an N4L Impedance Network and a compliant AC Source, you will be equipped to provide fully compliant Harmonics and Flicker measurements.

Intuitive software package

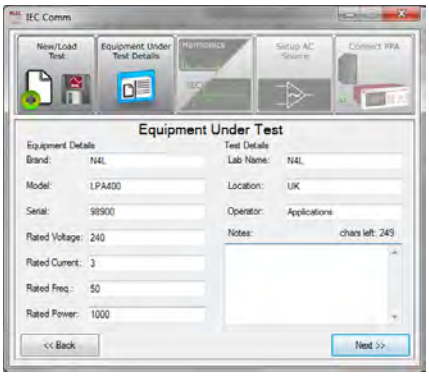


IECSoft IEC61000 Software is included with every instrument and presents the data acquired by the Power Analyzer in an easy to interpret way in order to enable swift and accurate diagnosis of the failure mode of a DUT. With the ability to "Rewind" time the user can scroll back through the test period in order to analyze events in more detail.

Perform compliant IEC61000 tests in 6 steps, following intuitive software guidance (IECSoft)

Step 1 Begin New/Load Existing test

Step 2 Enter EUT/Test Lab details



Step 3 Select Harmonics/Flicker

Step 4 Setup Harmonics/Flicker

Step 5 Setup AC Source

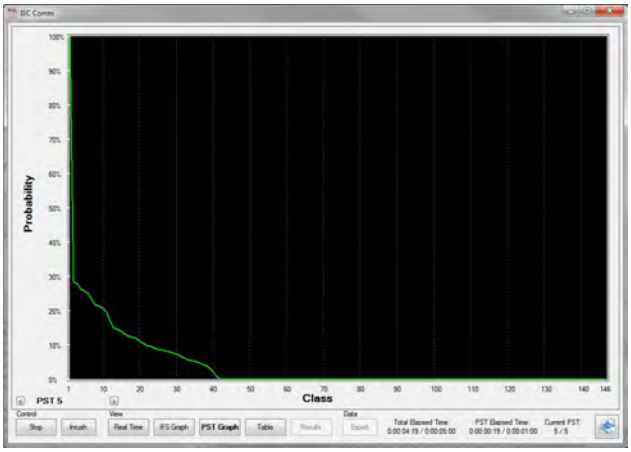
Step 6 Connect and begin tests

The Complete Solution in one package

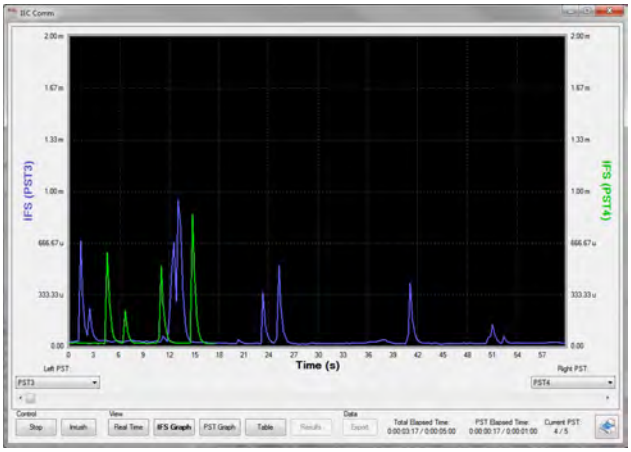
IEC61000-3-3/11 - Flicker

Using the same setup process as described for Fluctuating Harmonics, Flicker is quickly configured and measurements can commence. Both IFS and PST are graphed for reference.

PST Graphical Display

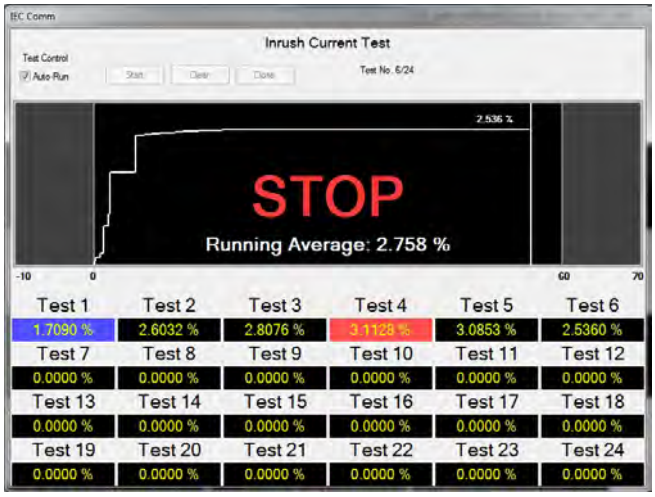


IFS Graphical Display



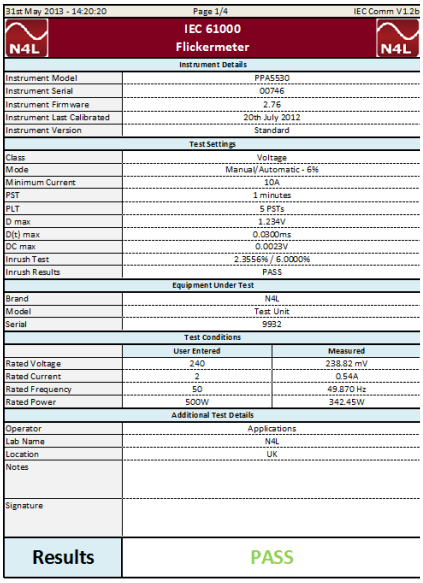
Switched Inrush Current testing

IECSoft includes an integrated "Inrush test user prompt" program, this provides the operator with a prompt to perform the switching operation of the device under test, records Dmax values with a running average and final result. The software will also auto calculate the results as per IEC61000-3-3:2013 ed.3.0.



Fully Automated Report Generation

Along with sophisticated test failure diagnosis, IECSoft includes an automatic report generator presenting detailed test results.



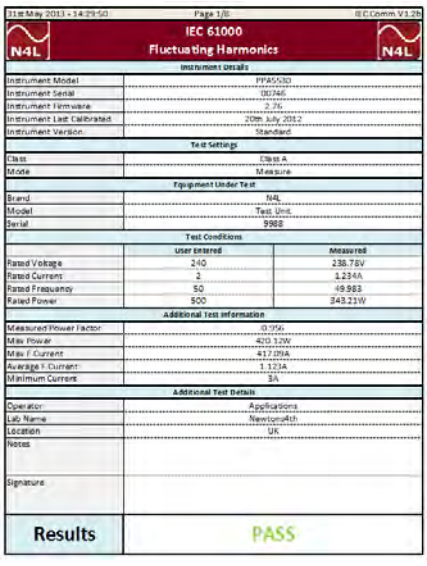
31st May 2013 - 14:20:20 Page 1/4 IEC Comm V1.2b

IEC 61000
Flickermeter

Instrument Details	
Instrument Model	PPA5530
Instrument Serial	00746
Instrument Firmware	2.76
Instrument Last Calibrated	20th July 2012
Instrument Version	Standard
Test Settings	
Class	Voltage
Mode	Manual/Automatic - 6%
Minimum Current	10A
PST	1 minutes
PLT	5 PSTs
D max	1.234V
D(t) max	0.0300ms
DC max	0.0023V
Inrush Test	2.3556% / 6.0000%
Inrush Results	PASS
Equipment Under Test	
Brand	N4L
Model	Test Unit
Serial	9932
Test Conditions	

	User Entered	Measured
Rated Voltage	240	238.82 mV
Rated Current	2	0.54A
Rated Frequency	50	49.870 Hz
Rated Power	500W	342.45W

Additional Test Details	
Operator	Applications
Lab Name	N4L
Location	UK
Notes	
Signature	
Results	PASS



31st May 2013 - 14:29:50 Page 1/6 IEC Comm V1.2b

IEC 61000
Fluctuating Harmonics

Instrument Details	
Instrument Model	PPA5530
Instrument Serial	00746
Instrument Firmware	2.76
Instrument Last Calibrated	20th July 2012
Instrument Version	Standard
Test Settings	
Class	Class A
Mode	Measure
Equipment Under Test	
Brand	N4L
Model	Test Unit
Serial	9988
Test Conditions	

	User Entered	Measured
Rated Voltage	240	238.78V
Rated Current	2	1.234A
Rated Frequency	50	49.983
Rated Power	500	343.21W

Additional Test Information	
Measured Power Factor	0.956
Max Power	420.32W
Max I Current	417.09A
Average I Current	1.121A
Minimum Current	3A
Additional Test Details	
Operator	Applications
Lab Name	Newtons4th
Location	UK
Notes	
Signature	
Results	PASS

POWER ANALYZER SPECIFICATION

		PPA55x1		
Frequency Range				
		DC,10mHz～1MHz - PPA55x1 - Low Impedance Shunt (50Arms)		
IEC61000 Voltage Input				
Internal	Range	300mVpk～3000Vpk(1000Vrms) in 9 ranges (240Vrms within 300Vpk range, using 20% over range)		
	Accuracy	0.01% Rdg+0.038% Rng+(0.004%×kHz Rdg)+5mV		
External	Range	300μVpk～3Vpk in 9 ranges【BNC connector 3Vpk max input】		
	Accuracy	0.01%Rdg+0.038%Rng+(0.004%×kHz Rdg)+3μV		
IEC61000-3-2 Compliant Current Input, including Harmonic Accuracy				
		Low Impedance (Fully Compliant) 3mΩ Max 50Arms	Ranges	100mApk～1000Apk(50Arms) in 9 ranges
			Accuracy	0.01% Rdg+0.038% Rng+(0.004%×kHz Rdg)+ 900μA
External input (External shunt Current sensor)		BNC Connector (Max input 3Vpk)	Ranges	300μVpk～3Vpk in 9 ranges
			Accuracy	0.01% Rdg+0.038% Rng+(0.004%×kHz Rdg)+ 3μV
Phase Accuracy				
		0.005deg+(0.01deg×kHz)【PPA5500-LC(10Arms), PPA5500(30Arms)】 0.01deg+(0.02deg×kHz)【PPA5500-HC(50Arms)】		
Flicker Accuracy				
Pst		3%		
Plt		3%		
Pinst		5%		
d(c),d(max), d(t)		3%		
Power Accuracy				
		[0.03%+0.03%/pf+(0.01%×kHz)/pf] Rdg+0.03%VA Rng		
40-400Hz		[0.03%+0.03%/pf+(0.01%×kHz)/pf] Rdg+0.02%VA Rng		
General				
Crest Factor		20(Voltage and Current)		
Sample Rate		2.2Ms/s on all channels, No-Gap		
IEC Modes		IEC61000 Harmonics and Flicker (PPA5500), IEC62301 Standby Power		
Application Modes		PWM Motor Drive, Ballast, Inrush, Power Transformer, Standby Power, Fluctuating Harmonics, Flicker Meter		
CMRR - Common Mode Rejection Ratio				
		250V @ 50Hz - ≥ 1mA (150dB)		
		100V @ 100kHz - ≥ 3mA (130dB)		
Operating Conditions		5 to 40°C Ambient Temperature (or air intake temperature when rack mounted) 20-90% Relative Humidity non condensing. Temperature coefficient ±0.01% per °C of reading at 5-8°C and 28-40°C		
Measurement Parameters				
		W, VA, Var, pf, V & A - rms, rectified mean, AC, DC, Peak, Surge, Crest Factor, Form Factor, Star to Delta Voltage		
		Frequency (Hz), Phase (deg), Fundamentals, Impedance		
		Harmonics, THD, TIF, THF, TRD, TDD		
		Integrated Values, Datalog, Sum and Neutral values		
Datalog - Up to 4 user selectable measurement functions (60 with optional PC software)				
Datalog Window		No-Gap analysis, Minimum window 2ms		
Memory		10M records into flash RAM (Non-Volatile)		

Communication Ports	
RS232	Baud rate up to 38.4kbps, RTS/CTS flow control
LAN	10/100 Base-T Ethernet auto sensing
GPIB	IEEE488.2 compatible
USB	USB 2.0 and 1.1 compatible
Analogue Output	Bipolar ±10V(BNC)
Speed Input	BNC Bipolar±10V or Pulse count 1Hz to 1MHz 0.01% Rdg
Torque	BNC Bipolar±10V or Pulse count 1Hz to 1MHz 0.01% Rdg
Sync	4～6 Phase measurement (Master/Slave)
Extension	4～6 Phase (Master/Slave) + Auxiliary
Standard Accessories	
Leads	Power, RS232, USB, GPIB
Connection Cables	36A 1.5m long 4mm stackable terminals 1x red, 1x yellow and 2x black per phase (1x red, 1x black with HC version)
Connection Clips	4mm terminated aligator clips - 1x red, 1x yellow and 2x black per phase (1x red and 1x black per phase with PPA5500-HC version)
CD-ROM	IECSoft, CommView2 (RS232/USB/LAN), Command line, Script based communication software
Documents	User manual, Communications manual, Calibration certificate, Quick start guide
Mechanical/Environmental	
Display	320×240 dot full colour TFT, White LED Backlit
Dimensions	130H×400W×315D mm excluding feet
Weight	5.4kg(1 Phase), 6kg(3 Phase)
Safety Isolation	1000Vrms or DC(CATII), 600Vrms or DC(CATIII)
Power supply	90～265Vrms, 50～60Hz, 40VAmax

IMPEDANCE NETWORK SPECIFICATION

	IMP161/3(16Arms) , IMP321/3(32Arms) and IMP753(75Arms) models available
Compliance	
IMP161/3	Fully Compliant to IEC61000-3-3
IMP321/3 & IMP753	Fully Compliant to IEC61000-3-11
Impedance Specification	
	R_A = 0.24Ω jX_A = 0.15Ω @ 50Hz R_N = 0.16Ω jX_N = 0.10Ω @ 50Hz
Current Rating	
IMP16x	Max 16Arms
IMP32x(753)	Max 32Arms(75Arms)

IMP753 Three Phase Impedance Network

All specifications at 23°C ± 5°C . These specifications are quoted in good faith but Newtons4th Ltd reserves the right to amend any specification at any time without notice

Newtons4th

Contact your local N4L Distributor for further details

Newtons4th Ltd (abbreviated to N4L) was established in 1997 to design, manufacture and support innovative electronic equipment to a worldwide market, specialising in sophisticated test equipment particularly related to phase measurement. The company was founded on the principle of using the latest technology and sophisticated analysis techniques in order to provide our customers with accurate, easy to use instruments at a lower price than has been traditionally associated with these types of measurements

Flexibility in our products and an attitude to providing the solutions that our customers really want has allowed us to develop many innovative functions in our ever increasing product range

Newtons4th Ltd are ISO9001 registered, the internationally recognised standard for the quality management of businesses

In recognition of the technical innovation and commercial success of the PPA series, N4L received the "Innovation 2010" Queen's award for enterprise

Distributed By :

Newtons4th Ltd
1 Bede Island Road
Leicester
LE2 7EA
UK
Phone: +44 (0)116 230 1066
Fax: +44 (0)116 230 1061
Email: sales@newtons4th.com
Web: www.newtons4th.com

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