Newtons4th Systems

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

Fully Compliant Harmonics and Flicker Test Solutions

Leading wideband accuracy	Basic 0.01% with class leading high frequency performance
ISO17025 Acredited	ISO17025 IEC6100 certification available
Sophisiticated data reporting	Enables user to determine failure modes accurately
PC software	Remote control, tables, graphs and database management of results
Impedance Network	N4L IMP161/163 Available for compliant measurements
Versatile interfaces	RS232, USB, optional LAN
1 to 3 Phase	Ability to Perform Single and 3 phase measurements
Various measurement modes	Power, Harmonic, RMS, LCR, Scope, Integ

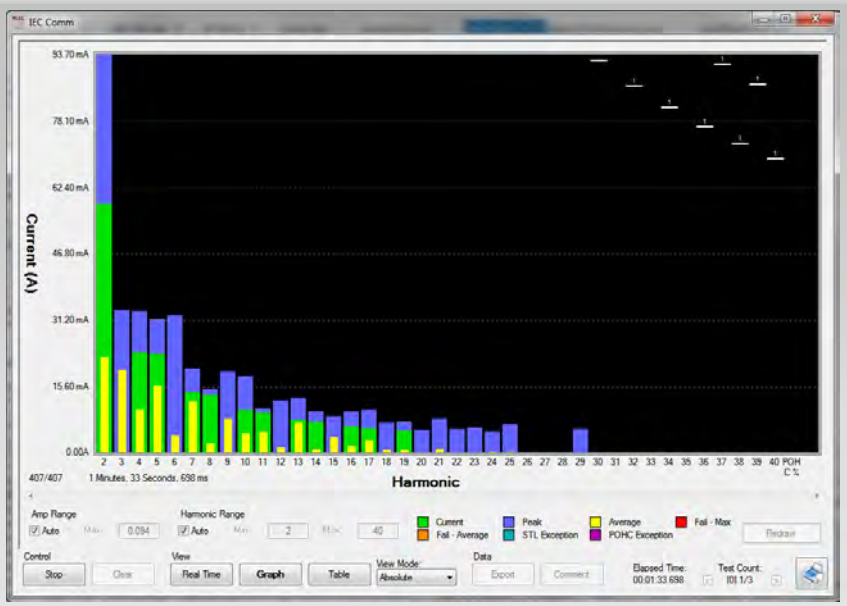
Fully Compliant IEC61000-3-2/3 Test Instruments

IEC61000-3-2 - Fluctuating Harmonics

The N4L PPA55xx Series of power analyzers provide fully compliant Harmonics and Flicker test instruments and systems. Certified by NPL (National Physical Laboratory) in the UK, the N4L PPA55xx provides reliable, accurate measurements compliant to the latest standards (IEC61000-3-2/3:2008)

In combination with the N4L IMP131/IMP133 Impedance Network and a compliant AC Source, you will be fully equipped to provide fully compliant Harmonics and Flicker testing certified to ISO17025.

User intuitive software package

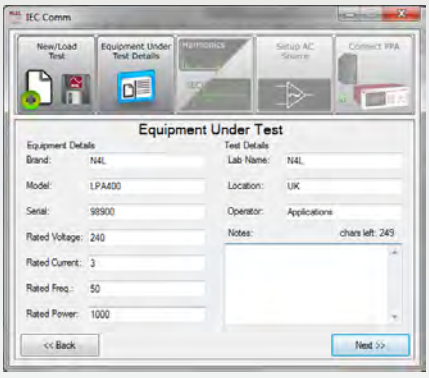


IECSoft IEC61000 Software is included with every instrument and presents the data acquired by the Power Analyzer in an easy to interpret way in order to enable swift and accurate diagnosis of the failure mode of a DUT. With the ability to "Rewind" time the user can scroll back through the test period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

Perform compliant IEC61000-3-2/3 tests in 6 steps, following intuitive software guidance (IECSoft)

Step 1 Begin New/Load Existing test

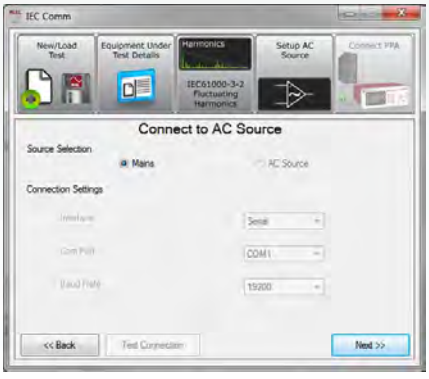
Step 2 Enter EUT/Test Lab details



Step 3 Select Harmonics/Flicker

Step 4 Setup Harmonics/Flicker

Step 5 Setup AC Source



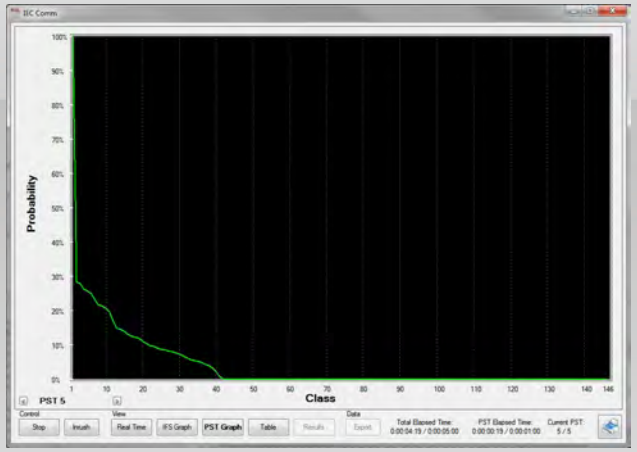
Step 6 Connect and begin tests

The Complete Solution in one package

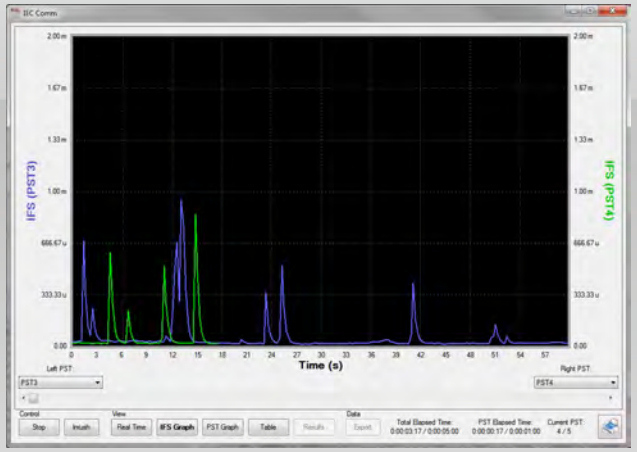
IEC61000-3-3 - Flicker

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

PST Graphical Display

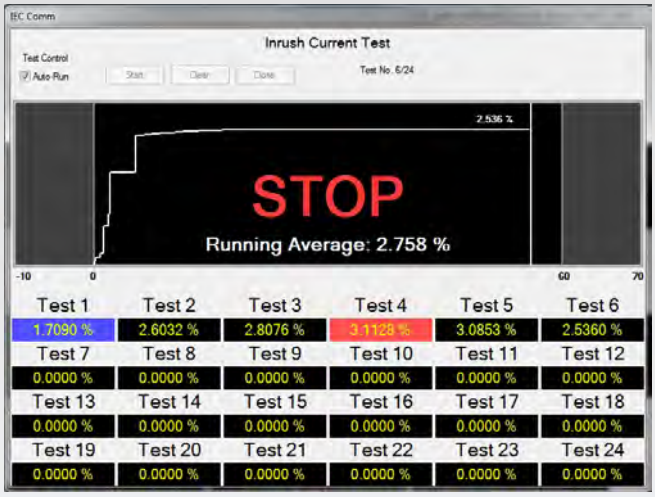


IFS Graphical Display



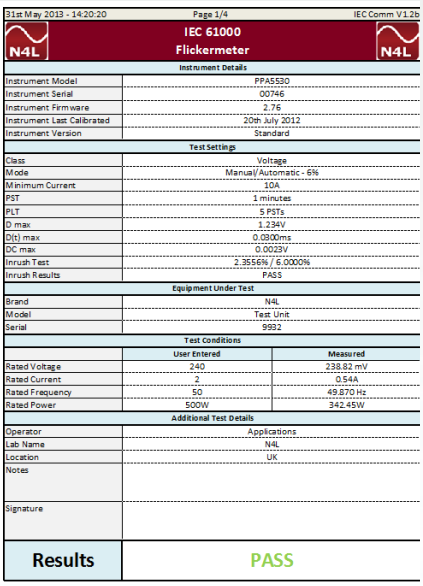
Switched Inrush Current testing

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



Fully Automated Report Generation

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



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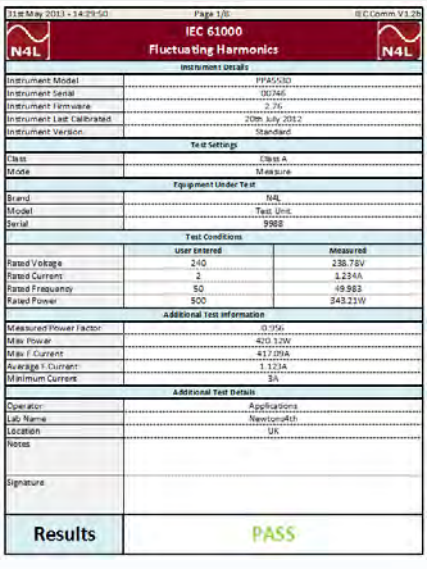
IEC 61000 Flickermeter

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



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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)		
Voltage Input				
Internal	Range	300mVpk～3000Vpk(1000Vrms) in 9 ranges (240Vrms within 300Vpk range, using 20% overange)		
	Accuracy	0.01% Rdg+0.038% Rng+(0.004%×kHz)+1mV		
External	Range	300μVpk～3Vpk in 9 ranges【BNC connector 3Vpk max input】		
	Accuracy	0.01%Rdg+0.038%Rng+(0.004%×kHz)+1μV		
Current Input				
	Low Impedance (Fully Compliant) 3mΩ Max 50Arms	Ranges	100mApk～1000Apk(50Arms) in	
		Accuracy	0.01% Rdg+0.038% Rng+(0.004%×kHz)+ 300μA	
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)+ 1μV	
Phase Accuracy				
	0.005deg+(0.01deg×kHz)【PPA5500-LC(10Arms), PPA5500(30Arms)】 0.01deg+(0.02deg×kHz)【PPA5500-HC(50Arms)】			
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°C to 40°C Ambient Temperature (or air intake temperature when rack mounted), 20-90% Non-Condensing Relative Humidity. 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 (30 with optional PC software)				
Datalog Window	No-Gap analysis, Minimum window 10ms			
Memory	10M records into flash RAM (Non-Volatile)			

Communication Ports	
RS232	Baud rate up to 38.4kbps,RTS/CTS flow control
LAN(Option L)	10/100 Base-T Ethernet auto sensing
GPIB(Option G)	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) + Auxilary
Standard Accessories	
Leads	Power, RS232, USB
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

	IMP131/IMP133
Compliance	
	Fully Compliant to IEC61000-3-3/IEC61000-4-15
Impedance Specification	
	R_A = 0.24Ω jX_A = 0.15Ω @ 50Hz R_N = 0.16Ω jX_N = 0.10Ω @ 50Hz
Current Rating	
IMP161	Max 16Arms
IMP163	Max 16Arms per phase

IMP161 Single 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

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