



Power Quality Analyzer

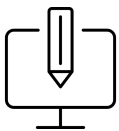
The smartest way to approach the rising Power Quality issues is to address the situation quickly with accurate data.

NANOVIP® CUBE™

Feature-rich and powerful PQ analyzer for balanced and unbalanced networks.



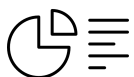
NANOVIP® CUBE™ is a handy, compact and lightweight tool aimed both at those who want to operate on their systems and at professionals in the sector who need precise energy audits and detailed power quality analysis. Has the feature of deriving required Capacitor bank to meet 0.95 PF



Class S Accuracy:
High level of accuracy for analytical power quality surveys

TOD

4 Tariff Bands:
Tariff bands setting for TOD measurements and analysis



Energy audit:
A true energy audit tool

Technical Specifications

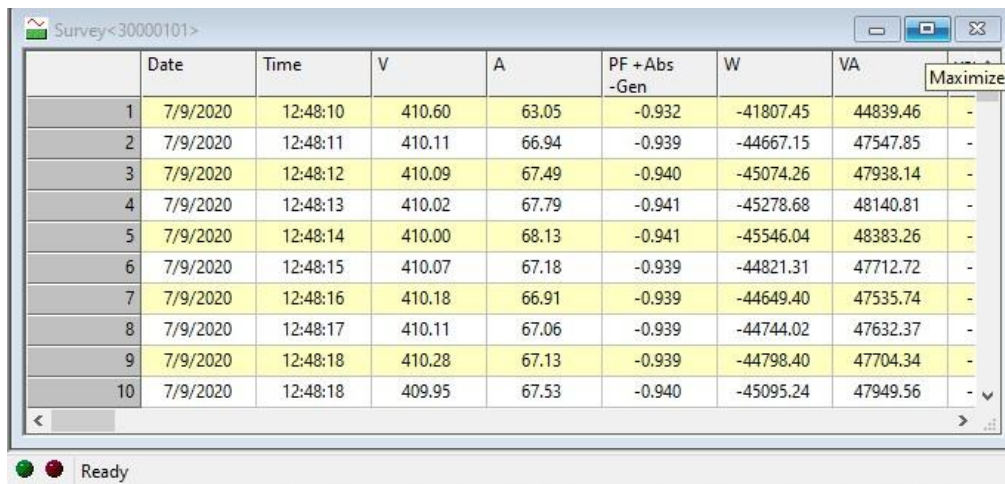
CASE:	Nano VIP CUBE
Dimensions	203X116X53mm
Material	
Protection class	IP30
Weight	580g
DISPLAY:	
Dimensions	68X68mm
Type	128X128 FSTN Negative dot matrix graphic LCD
Backlight	White LED
Languages	English - Spanish - Italian - German - French
KEYPAD:	
Type	Membrane keypad with 10 double- function keys
POWER SUPPLY:	
External power supply	wall - plug switching; input 100-240VAC +- 10% 47-63Hz with interchangeable plug; output 7.5VDC -12W
Battery pack	
External power supply (Optional)	wall - plug switching; input 100-240VAC +- 10% 47-63Hz with interchangeable plug; output 7.5VDC -12W
Battery	4XAA commercial 1.5V alkaline or rechargeable NiMh
Duration of the battery charge	> 24h (wireless off)
CONNECTING SYSTEMS:	
Single frequencies	
Single phase	Yes
Two phase	Yes
Three phase, 3-wires, balanced	Yes
Three phase, 3-wires, unbalanced -	Yes
Three phase, 4-wires, balanced	Yes
Three phase, 4-wires, unbalanced -	Yes
4 phase, 4-wires, balanced	Yes
4 phase, 4-wires, balanced	Yes
CONNECTIONS:	
Voltages	Flexible cables L= 1.5mm2 - 36A; 100V CATIII - 600V CAT IV with 4mm, protected blade plug connector, crocodile clip with 45mm opening (for sections upto 32mm) with magnetic captors
Currents	
Solar radiations	-
PT100	-
Anemometer	-
Transducers	-
FUNCTIONS:	
Traditional electrical analysis	V, I, P, Q S, F, PF, THD(V)%, THD (I)%, cosφ, o, peaks, minimums, maximums, averages, max. Demands, etc.
Neutral current	Measured
Three phase counters	kWh, kVAh, kVAh, both absorbed that generated
Counter for each single phase	kWh, kVAh, kVAh, both absorbed that generated
Cogeneration	Yes
Waveforms	V&I
Harmonics	Values and histograms upto the 50th order
Oscillo	
Sags	Dips, Swells, Interpretations
Transients	Over voltages & over currents
Unbalance	Yes
test EN 50160	Yes
Inrush current	Yes
DC Measures	Yes
K factor	Upto 25th order
Alarms	Displayed
Alarms log	5 at display
Tariff bands	4
Energy costs	Yes
IEC 61724 network parameters	Yes
Test EN 82.25	-
OSUTM (one shot UPS)	-
Measurement campaigns	unlimited, upto fill the memory card

MEASUREMENTS:	Nano VIP CUBE
Sampling frequency	128 samples per cycle (adaptive in 40 Hz - 70 Hz range)
Data record rate	1 sec
Data storage rate	User selectable: 1",5",10",30",1',5',10',15'
Type of connections available	Three phase (3or4 leads balanced/unbalanced), single phase grid and DC
Type of grid which can be connected	Low and medium voltage (LV and MV)
VOLTAGE (TRMS)	
Channels	3 channels with common neutral + 1 independent, auxiliary channel
Input impedance	4 Mohm
Scales	2
Direct measurement	Phase-phase: 7-690VAC 40-70Hz Phase-neutral: 5-400VAC 40-70Hz Aux: 5-1000VAC 40-70Hz, 10-1400VDC
Measurement with VT	Ratio: 1- 60000 maximum value which can be displayed:20MV
Permanent overload	Phase-phase: 1200 VAC Phase-Neutral: 700VAC Aux: 1200 VAC,1700VDC
Sensitivity	SVAC phase-neutral, 7VAC Phase-phase, 10VDC
CURRENT (TRMS)	
Channels	5 independent channels
Input impedance	10KOhm
Scales	4
Measurement with VT	Ratio: 1-60000 Maximum value which can be displayed: 500KA
Sensitivity	0,2% of F. S
POWERS	
Single phase power	Values < 999 GW,Gva,GVA
Total power	Values < 999 GW,Gvar,GVA
POWR COUNTERS	
Maximum value before reset	99999999 kWh,Kvarh,kVAh
ACCURACY	
RMS Voltage:	Scale 1 + 0.25% +0.1%FS (2) @RMS V < 350VAC (1) Scale 2 + 0.25% +0.5%FS (2) @RMS V < 350VAC (1)
RMS Currents:	Scale 1 + 0.25% +0.1%FS (2) @RMS V < 5% IN clamp (1) Scale 2 + 0.25% +0.05%FS (2) @5% < RMS I < 20% IN clamp (1) Scale 3 + 0.25% +0.05%FS (2) @20% < RMS I < 50% IN clamp (1) Scale 4 + 0.25% +0.05%FS (2) @ > 50% IN clamp(1)
	Power +- 0.5% + 0.5%FS (2)
	Power factor (PF) +- 0.5o
	Frequency +-0.01Hz (40-70Hz)
	Active power count (KW) Class 0.5
	Reactive power count (KVar) Class 1
HARMONIC ANALYSIS	Upto 50th order Upto 7th at 400Hz
ANALYSIS OF EN50160 parameters	
Interruptions	>5000mS
Dips	>5000mS
Swells	>5000mS
Swells and overcurrents	>150uS
Inrush current analysis	RMS continuous sampling every 2 periods - duration 1,2,5,10sec
COMMUNICATION:	
USB	to PC
DATA STORAGE:	
Internal memory	64kB
External memory	micro SD (4Gb included)

OPERATING CONDITIONS:	Nano VIP CUBE
Operating temperature	-10 to +55oC
Storage temperature	-20 to +85oC
Relative humidity	max 95%
Maximum altitude a.s.l. (600CAT III)	2000m
EC COMPLIANCE:	
Directives	93/68/EEC (Low voltage electrical equipment); 89/336/EEC and 2004/108/EC (EMC - Electromagnetic compatibility); 2006/95/EC - 72/23/EEC (LVD - Low voltage directive); 2002/95/EC (RoHS - restriction of hazardous substances); "2002/96/EC and 2003/108*EC (WEEE - waste electrical and electronic equipment); IEC 91724
REFERENCE STANDARDS:	
Safety	EN 61010-1
Electromagnetic compatibility (EMC)	EN 61326 EN 61326/A1 EN 61326/A2 EN 61326/A3
Temperature	IEC 60068 2-1 (operating temperature) IEC 60068 -2-2 (Storing temperature)
Vibrations	IEC 60068 2-6
Humidity	IEC 60068 2-30 (humidity)
Overload	IEC 60947 -1

Nanostudio Software

A simple Nano Studio software, can be downloaded from www.elmeasure.com/power-analyzer.



	Date	Time	V	A	PF + Abs -Gen	W	VA
1	7/9/2020	12:48:10	410.60	63.05	-0.932	-41807.45	44839.46
2	7/9/2020	12:48:11	410.11	66.94	-0.939	-44667.15	47547.85
3	7/9/2020	12:48:12	410.09	67.49	-0.940	-45074.26	47938.14
4	7/9/2020	12:48:13	410.02	67.79	-0.941	-45278.68	48140.81
5	7/9/2020	12:48:14	410.00	68.13	-0.941	-45546.04	48383.26
6	7/9/2020	12:48:15	410.07	67.18	-0.939	-44821.31	47712.72
7	7/9/2020	12:48:16	410.18	66.91	-0.939	-44649.40	47535.74
8	7/9/2020	12:48:17	410.11	67.06	-0.939	-44744.02	47632.37
9	7/9/2020	12:48:18	410.28	67.13	-0.939	-44798.40	47704.34
10	7/9/2020	12:48:18	409.95	67.53	-0.940	-45095.24	47949.56