



NetWave 3.1 Electronic Power Source

The NetWave series (1-phase) are single phase AC/DC power sources, specifically designed to meet the requirements as per the standards IEC/EN 61000-4-13, -4-14 and -4-28. Used as a DC power source it covers the requirements as per the standards IEC/EN 61000-4-17 (Ripple on DC) and IEC/EN 61000-4-29 for voltage dips and interruptions on DC supplies.

With its low distortion and high stability, even if supplying dynamic loads, the NetWave series guarantees full compliant measurements for harmonics and flicker testing as per IEC/EN 61000-3-2, -3-3, -3-11 and -3-12 as well as JIS C 61000-3-2.

The NetWave series is well suited for testing inverters (e.g. solar power, wind power) and e-vehicles. Additionally, the NetWave series (1-phase) offers the necessary capabilities for avionics testing as per DO-160, Airbus ABD0100 and Boeing as well as per MIL-STD-704 (isolation transformer required).

NETWAVE - THE POWERFUL MULTITALENT FOR AC AND DC SUPPLY SIMULATION

The programmable AC and DC power source with its wide frequency bandwidth offers powerful waveform generation capabilities for various test applications in the EMC area and for avionics testing. Based on a Dual-Processor technology, with an integrated high-performance PC, a digital signal processor (DSP) and equipped with a hard disk the NetWave is capable to generate and record waveforms in realtime.

Its output power with low distortion and high stability, even if supplying dynamic loads, guarantees full compliant measurements for harmonics and flicker testing as per IEC/EN 61000-3-2, JIS C 61000-3-2 and IEC/EN 61000-3-3 as well as per IEC/EN 61000-3-11 and IEC/EN 61000-3-12. The NetWave is well suited for testing inverters of solar and wind power generators and e-vehicles. Additionally, the NetWave offers full capabilities for avionics testing as per DO-160, Airbus ABD0100 and Boeing as well as per MIL-STD-704.

According to standard requirements, a pure sinusoidal voltage is needed for harmonics and flicker measurements. The output voltage of the NetWave is therefore guaranteed to have a very low distortion (THD) of less than 0.5% regardless of the load.

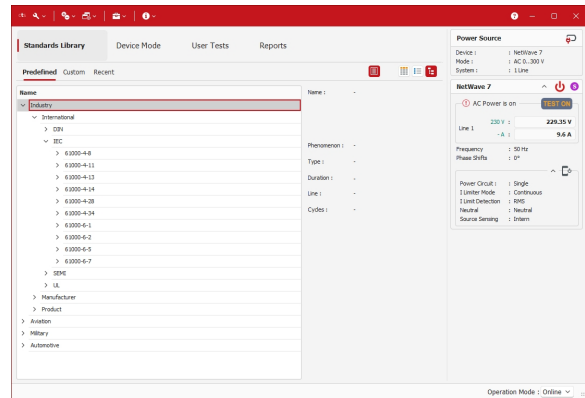
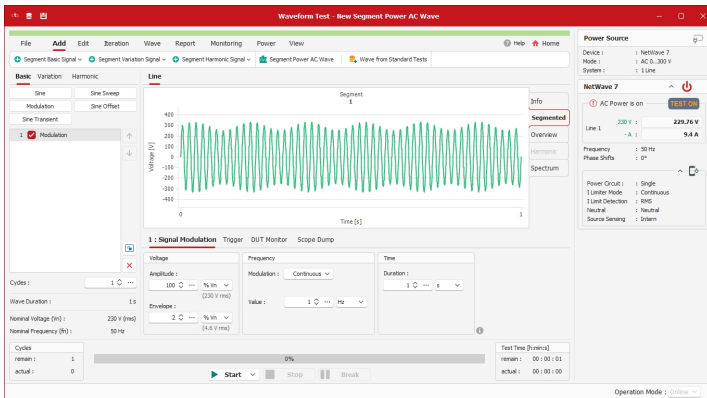
No matter whether waveforms are programmed of segments or of single points (normally resulting in MBs of data) the NetWave will do. Recording of waveforms with up to 1GByte is easily possible. The measuring channels are designed to handle up to +/- 500 V_{peak} and +/-150 A_{peak} with 16bit resolution. Interfaces like GPIB, Ethernet and USB (to connect a memory stick) are common features with the NetWave.

MAIN FEATURES

- **Wide Power Bandwidth; DC - 5 kHz**
- **Output power up to 3000 VA and 4250 W**
- **Output voltage max. 310 VAC and +/- 440 VDC**
- **High Inrush current capability up to 20 A**
- **Extended trigger and control capabilities**
- **Built-in Signal Waveform Generator**
- **Standard Test Routines for IEC/EN requirements**
- **Built-in voltage and current measurement (option)**

EDITING, DOCUMENTING AND MANAGING YOUR WAVEFORMS AND STANDARD TESTS

Compliance Test Studio is the all-in-one software platform to easily and conveniently control the NetWave Series. By means of the software the user can program any kind of waveforms either composed from segments or points and download them into the NetWave. Enhanced graphic tools are at hand to adjust the waveform according to individual requirements. Compliance Test Studio provides a library of an extensive compilation of predefined segments as well as tens of thousands of standard test routines as per EMC and avionics standards. Compliance Test Studio is also handling any waveform recorded by other method (e.g. captured by an oscilloscope) or imported as Excel or CSV files. All waveforms can be downloaded into the NetWave. Compliance Test Studio offers an enhanced reporting tool to generate test and measuring reports and can be used under Windows (10 / 11).

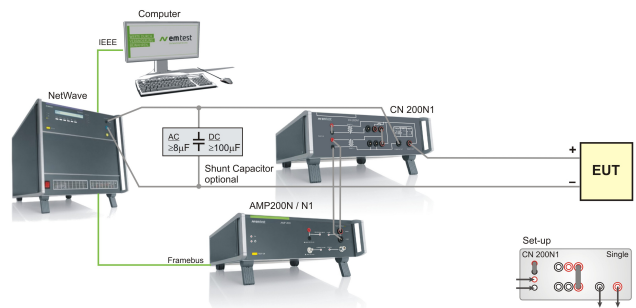


Available Options & Accessories

| | |
|-----------|--|
| Opt-1 NWB | built-in measurement board with power analyzer functionality (1 x voltage and 1 x current), recommended for Aerospace applications (i.e. DO-160, MIL STD 461 etc.) |
| F-Box | Lowpass filter for smoothing the DC voltage for very low ripple applications, i.e. MIL-HDBK-704 HDC 103 & LDC 103, several models available |
| L-Box | 50 µH decoupling coils with integrated 10 µF capacitor for MIL-STD-704 LDC, several models available |
| DPA 500N | Digital power analyzer for harmonics and flicker measurements according IEC 61000-3-2, -12, -3-3, -11 and other standards |
| AMP 200N2 | LF Signalgenerator & Amplifier to generate ripple and magnetic fields, DC to 250 kHz, (500 kHz), max. 1000 W, output voltage max. 160 Vp-p, 50 Vrms |
| CTS.xxx | Compliance Test Studio software, various licenses available for industry, aviation, military and automotive compliance testing |



NetWave 3.1 integrated in a rack with DPA 500N



Setup with AMP 200N and CN 200N for ripple immunity test

Technical Specifications

| | NetWave 3.1-208 | NetWave 3.1-230 |
|--------------------|--|-----------------|
| Output Power AC | 3 kVA | |
| Output Voltage AC | 310 V | |
| Output Current AC | max. 10 A cont. (at 300 V), 20 A for 3 s, 70 A repetitive peak | |
| Output Power DC | 4.25 kW | |
| Output Voltage DC | max. ± 440 V | |
| Output Current DC | max. 10 A cont. (at 360 V), 20 A for 3 s, 70 A repetitive peak | |
| Bandwidth | 5 kHz | |
| Ripple | <50 V: 110 mV; >50 V: <200 mVrms + 0.02% of set value, | |
| Voltage Accuracy | DC: ±0.2 % of set value ±0.15 % of full scale, AC: add ±0.1 % of set frequency /1000 | |
| Phase Resolution | 1 ° | |
| Frequency Accuracy | 100 ppm | |
| Slew Rate max. | 8000 V/ms | |

General Specifications

| | NetWave 3.1-208 | NetWave 3.1-230 |
|-----------------------|---|-----------------|
| Compensation / Sense | internal / external sense, max. compensation 15% | |
| Display and Controls | 2-Line LCD display, LED indicators, operating keys | |
| Signal Generator | Integrated, 3 channels, 16 bit, 50 kSa/s per channel, min. 60 GB memory on hard disk | |
| Operating Modes | Source AC: PLL synchronization with other voltage sources Trigger channel: extended trigger functions Segment Step: Ramping of voltage and/or frequency in constant time windows Extern mode: Control of the NetWave by an external control signal Simple mode: Optimized control for integration of the NetWave into existing automation environment (i.e. Matlab) | |
| Safety | Emergency stop | |
| Protection | Over current, over voltage, over temperature, low voltage, current limiter | |
| Com. Interface | GPIB, Ethernet, USB (Type A), Frame Bus | |
| Output Connectors | 4 mm lab plugs | |
| Supply Frequency | 45 Hz – 65 Hz | |
| Supply Voltage | 208 V, 1PH+PE | 230 V, 1PH+PE |
| Supply Current | 35 A | 32 A |
| Supply Connector | Screw Terminal | CEE 32A 1-phase |
| Dimensions | 19" / 9HU, 417 x 449 x 500mm / 17 x 18 x 20 in | |
| Net Weight | 45 kg / 99 lbs | |
| Operating Environment | 5°C - 35°C, 10% - 90% non-condensing, 86 kPa (860 mbar) to 106 kPa (1 060 mbar) | |