

iMPULSE X-Wings35™ Shaker 90 kN

Acutronic, with over 50 years of experience, is a market leader in developing and manufacturing highly precise and reliable dynamic test systems. Our products, ranging from multi-axis rate tables and centrifuges to custom motion test and simulation solutions, are designed for top performance and quality.

The iMPULSE X-Wings35™ Series of vibration test systems continues our tradition of supporting customers in ensuring product lifecycle safety. Our test equipment is essential for evaluating and qualifying products to ensure system safety, whether for construction tools, vehicle components, or medical devices. These products must withstand extreme mechanical stress, shocks, and vibrations throughout their lifespan. This reliability is achieved through rigorous environmental simulation testing during both development and production.


Testing methods, refined over decades with manufacturers, OEMs, and accredited laboratories, are embedded in global standards*, proving their effectiveness. Critical products support daily life and drive innovation across industries such as manufacturing, medical devices, chemical processes, aerospace, defense, and energy systems.

*) Examples include ISO, BS, MIL, IEC, AECTP and ASTM:

IEC 60068	General standards for Environmental Simulation
IEC 68 3-3	Seismic Loads // Earthquake Simulation
ISO 16750	Loads for Road Vehicles
IEC 60721	Transport Loads: Road Transport, Rail Transport
IEC 61373	Loads for Rail Vehicles
ISO 19453-6	Loads for E-Mobility Vehicles

Acutronic's advanced vibration testing systems ensure these products meet the highest standards of safety, reliability, and performance, delivering results we can all trust.

Unique Design Elements and Performance Characteristics:

- **AcuVibe Commander:** Provides user-friendly and safe operation of the PLC through sleek graphical interface
- **iPS – intelligent Power Saving mode:** Optimizes power consumption with cost savings up to 85% 
- **EtherCat Communication:** Ensures high-speed, real-time data exchange for precise control and monitoring
- **Scalable Interlocks and Input Management:** Provides flexible and secure system integration
- **Automatic Body Centering Controlled by PLC:** Enhances accuracy and efficiency in test setups
- **Automatic Armature Centering Controlled by PLC:** Ensures optimal alignment and performance
- **Position Measurement Accuracy of 0.1mm:** Offers superior precision compared to traditional limit switches
- **Datalogging in the PLC:** Facilitates comprehensive data collection and analysis
- **IoT Ready:** Enables seamless integration with modern IoT ecosystems for advanced monitoring and control
- **In-Axis Cable Routing:** Minimizes interference and enhances system reliability

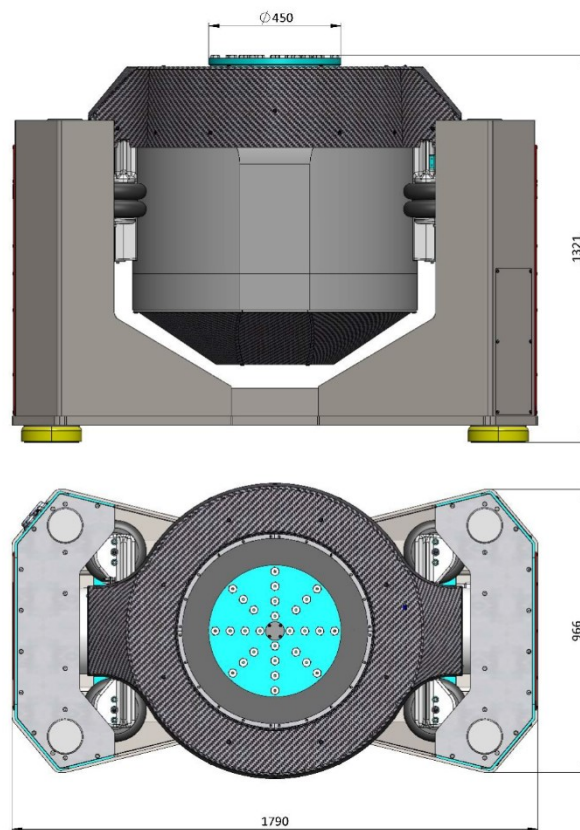
UN 38.3.	Transport Loads for Dangerous Goods // Li-Ion Battery Systems
MIL-STD 810 G	Environmental Engineering Considerations and Laboratory Tests
AECTP 400	Mechanical Environmental Test according to NATO Standards
ASTM	American Society US Transportation Standards for Rail, Road, Air, Sea



iMPULSE X-Wings35™ Shaker 90 kN – vertical

Specification / System	90 – 450A
Armature diameter	450 mm
Armature weight	55 kg
Armature Axial Resonance	2200 Hz
Force Sine	90 kN
Force Random ¹	90 kN rms
Shock Force ²	270 kN
Frequency Range	5-2500 Hz
Acceleration Sine	1000 m/s ²
Acceleration Random	1000 m/s ² rms
Acceleration Shock	2000 m/s ²
Velocity Sine	2 m/s
Velocity Random	3 m/s
Velocity Shock	3.5 m/s
Displacement Sine	76 mm; 3 in
Displacement Shock	76 mm; 3 in
Max Payload (static)	600 kg
Shaker Body Mass	4000 kg
Shaker Body Resonance	< 5 Hz
Stray Magnetic Field ³	< 0.001 T
Shaker Weight	5300 kg
Dimensions (W x D x H)	1790 x 966 x 1321 mm
Cooling type	Water

Environmental Parameters	
Acoustic Noise at 1m distance ⁴	120 dBA
Working Ambient Temperature Range	10 – 30°C

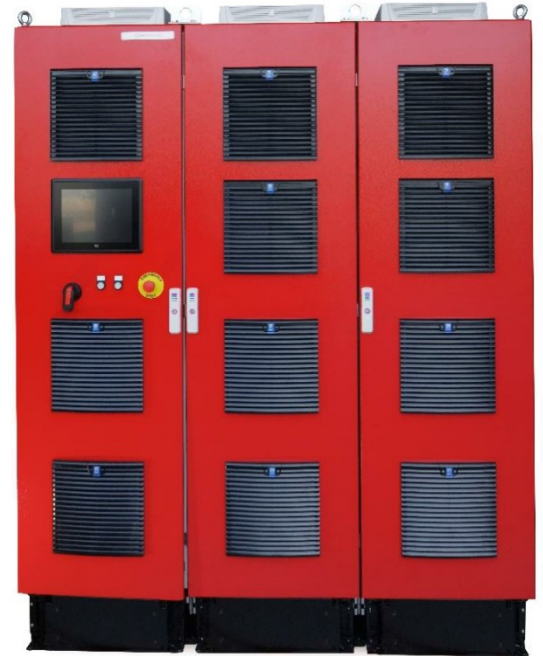




iMPULSE X-Wings35™ Power Cabinet

Parameters

Type	Pulse Width Modulated (PWM) Switching type, Class-D Power Amplifier
Capacity	100 KVA
Number of Cabinet	3x19" for power 1x12" for cooling
Individual Power Module Capacity	20 kVA (Up to 200 Arms & 200 Vrms)
Number of Power Modules	5 Nos
Efficiency	≥ 90 %
Switching Frequency	≥ 160 kHz
Total Harmonic Distortion (THD)	< 0.5 %
Signal to Noise Ratio	> 68 dB
Input Sensitivity	4 Vrms for 100% output.
Input Impedance	≥ 10 kΩ
Power amplifier acoustic noise level	< 90 dBA @ 1 m distance
DC Field Power Supply	300 V & 60 A full power: Voltage and current, tunable in Eco Mode
Electrical Mains Supply	3 Phase, 400 Volts AC +/- 5% 50 Hz
Control and Protection Circuits	PLC & Microprocessor based
Dimension (W x D x H)	1800 x 700 x 2300 m



Safety Interlocks

- Shaker Over travel
- Armature coil over temperature
- Field coil over temperature
- Shaker vertical/horizontal interlock • Low voltage supply's fault
- Under voltage/ Over voltage
- Field failure
- Cooling unit Fault
- Slip Table oil pressure fault
- Slip Table over travel
- Emergency abort

Technical data subject to change

^1 Random rating assumes a payload approximately twice the mass of armature in accordance with DIN ISO 5344 :2016

^2 Half-sine shock (100g/ 11ms >> 3,5 m/s, released 75 kg payload)

^3 Measured at 150mm above table with full field power.

^4 Maximum noise when running at full level.

