

ACUTRONIC



iMPULSE™ X-Wings35™ Shaker Series 40 kN – 300 kN

With over 50 years of experience, Acutronic 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 ultra-high performance and quality

The iMPULSE X-Wings35™ Series of vibration test systems continues our tradition of supporting customers who are committed to ensuring product lifecycle safety. Our test equipment is essential for evaluating and qualifying products to ensure system safety, intended to be used in a wide range of applications such as construction tools, vehicle components, or medical devices. These products must withstand extreme mechanical stress, shock and vibration 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.

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

***Examples include ISO, BS, MIL, IEC, AECTP, 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

Unique Design Elements and Performance

Characteristics:

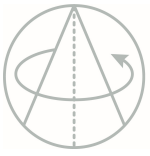
- **AcuVibe Commander:** Provides user-friendly and safe operation of the PLC through sleek graphical interface
- **iPSM – intelligent Power Saving Mode:** Optimizes power consumption with cost savings up to 85%
- **EtherCat Communication:** Ensures high-speed, real-time data exchange for precise control 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
- **Precise Body Positioning** : Offers efficient slip table alignment
- **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 of 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,



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Specification / System	Unit	40 – 400A	60 – 450A	70 – 450W	90 – 450W	120 – 600W	140 – 600W	200 – 650W	300 – 650W
Force Sine	kN	40	60	70	90	120	140	200	300
Force Random ¹	kN rms	40	60	70	90	120	140	200	300
Shock Force ²	kN	120	180	210	270	360	420	600	900
Frequency Range	Hz	5-2500	5-2500	5-2500	5-2500	5-2000	5-2000	5-2000	5-2000
Acceleration Sine	g	100	100	100	100	100	100	100	100
Acceleration Random	g rms	70	70	70	70	70	70	70	70
Acceleration Shock	g	180	180	180	180	180	180	180	180
Armature diameter	mm	400	450	450	450	600	600	650	650
Velocity Sine ³	m/s	2	2	2	2	2	2	2	2
Velocity Random	m/s	3	3	3	3	3	3	3	3
Velocity Shock ⁴	m/s	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Displacement Sine ⁵	mm	63.5	63.5	63.5	63.5	63.5	63.5	63.5	63.5
Displacement Shock	mm	76	76	76	76	76	76	76	76
Max Payload static	kg	600	600	600	600	800	800	1000	1200
Cooling Type		Air	Air	Water	Water	Water	Water	Water	Water

Head Expander	Size [mm]	40 – 400A	60 – 450A	70 – 450W	90 – 450W	120 – 600W	140 – 600W	200 – 650W	300 – 650W
Square	600x600	x							
Square	800x800	x	x	x	x	x	x		
Square guided	1000x1000		x	x	x	x	x	x	x
Square guided	1200x1200			x	x	x	x	x	x
Square guided	1400x1400					x	x	x	x

Head expanders can be customized and suited to the application with defined overturning moments. Please contact Acutronic for more information.

Slip Tables	Size [mm]	40 – 400A	60 – 450A	70 – 450W	90 – 450W	120 – 600W	140 – 600W	200 – 650W	300 – 650W
Standard pressure	600x600	x							
Standard pressure	800x800	x	x	x	x	x	x		
Standard pressure	1000x1000		x	x	x	x	x	x	x
Standard pressure	1200x1200			x	x	x	x	x	x
Standard pressure	1400x1400					x	x	x	x

The slip table offering goes above and beyond this list. Acutronic offers as well medium pressure and high pressure solutions. For more information please contact Acutronic.

Notes	
*1	In accordance to DIN ISO 5344 :2016.
*2	Half-sine shock.
*3	Long term high velocity at high displacement has a derating as eddy currents can occur and heat up the armature.
*4	In order to perform the shock test with 11ms @ 100g, the peak velocity of about 3.5m/s will be achieved.
*5	Long term sine tests at large displacements will increase wear and tear. Body movement can restrict available range.
*6	Standard combination / other combination on request.
*7	Requires external guidance.
*9	Non Condensing.

The specifications identified in this data sheet are representative of standard systems. To satisfy customer specific requirements ACUTRONIC is able to design systems with specifications that are increased or decreased relative to standard systems.