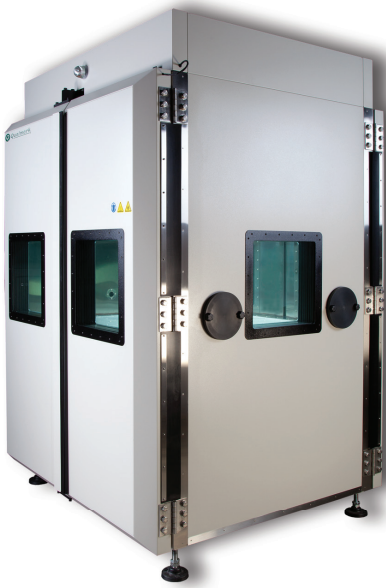


Typhoon 4.0+



This system is designed specifically for the task of performing Highly Accelerated Stress Screening (HASS) and Highly Accelerated Life Test (HALT) on large products. Its 48" x 48" vibration table is capable of supporting hundreds of pounds of products, fixturing and mounts at two different heights. ESPEC's Qualmark Typhoon™ 4.0+ provides optimal thermal and vibration performance to drive out failures fast, yet is amazingly quiet.

Part Number: 971-4006

Standard Features

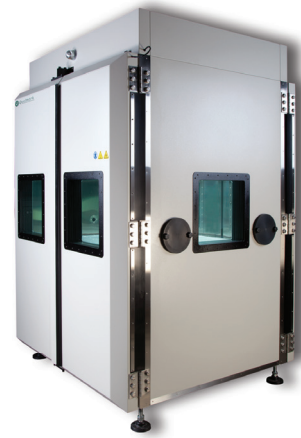
- High Rate, High Flow Typhoon Thermal System
- xLF2 Vibration Table with PSD Management
- Vacuum Jacketed Manifold
- PLC Control
- Desktop PC with Monitor
- Typhoon Manager Software

Work Space	Lower Table Position 53.8" w x 54.0" d x 53.6" h (1367 mm x 1372 mm x 1362 mm) Upper Table Position 53.8" w x 54.0" d x 34.6" h (1367 mm x 1372 mm x 879 mm)
Outer Dimensions	69.8" w x 78.3" d x 108.4" h (1772 mm x 1989 mm x 2753 mm)
Table Size	48" x 48" (1219 mm x 1219 mm)
Actuators	12 Actuators Lubricant-free
Table Capacity¹	600 lb (272 kg)
Acceleration²	5 – 75 gRMS
Temp Range	+200°C to -100°C
Thermal Ramp Rate³	70°C/min
Power Requirements	380V, 400V, 440V, 480V 3Φ 50/60Hz, 100A (Service Rating)

See Qualmark product line brochure for configuration options, accessories, and post warranty service and maintenance plans. All specifications are subject to change without notice.

Typhoon 4.0+ System includes:

- Two (2) year warranty
- Operations & Maintenance manual
- One (1) accelerometer for table control provided
Three (3) additional accelerometer input channels available
- Two 72" thermocouples provided - one (1) for product, one (1) for air
Four (4) additional thermocouple input channels available
- One (1) 20 ft accelerometer cable
- Eight (8) User State Relays (USR)
- Control PC with Windows® operating system and monitor



Vibration Features	Table Top	48" x 48" (1219 mm x 1219 mm)
	Table Top Hardware	144 threaded holes 3/8-16 on 4" centers; M10 optional
	Actuators	12 pneumatic, impulse-type, lubricant-free actuators
	Vibration	Six degree of freedom, random, OmniAxial™ broadband excitation
	PSD Management	Monitor and reset to factory specification for Power Spectral Density (PSD)
	Table Product Capacity ¹	600 lb (272 kg)
Vibration Range ²		5 - 75 gRMS (10 Hz to 5000 Hz)
Thermal Features	Heating System	Open-element nichrome type
	Cooling System	Vacuum jacketed liquid nitrogen injection
	Temperature Range	+200°C to -100°C (+392°F to -148°F)
	Thermal Ramp Rate ³	70°C /minute
Internal Features	Interior Dimension	Table in Lower Position: 53.8" w x 54.0" d x 53.6" h (1367 mm x 1372 mm x 1362 mm) Table in Upper Position: 53.8" w x 54.0" d x 34.6" h (1367 mm x 1372 mm x 879 mm)
	Interior Construction	Stainless steel
	Plenum Exit	Flexible aluminum ducting directs air to the product
	Lighting	2 recessed ceiling lights; 1 optional fiber optic light
Exterior Features	Exterior Dimensions	69.8" w x 78.3" d x 108.4" h (1772 mm x 1989 mm x 2753 mm)
	Doors	4 automated locking doors, two on each side; each door opens 150°
	External Construction	Painted steel construction with stainless steel trim
	Windows	(4) 17" x 17" (432 mm x 432 mm) multi-pane windows, 1 in each door (1) 17" x 17" (432 mm x 432 mm) multi-pane window in the front wall
	Access Ports	(4) 6" (152 mm) round ports with phenolic covers, 2 in front and 2 in back
	Door Lock Sound	Interlocking system prohibits system operation when any door is ajar 73 dBA at 50 gRMS (at 1 meter)
Control	Vibration/Temperature Interface	PLC based, PC Typhoon Manager
	Operating System	Microsoft Windows
	Safety	Eurotherm temperature (independent safety)
Utilities	Electrical	380V, 400V, 440V, 480V, 3Φ, 60 Hz, 100A
	Air	96 SCFM Max @ 85 psi (2.7 m ³ /min at 5.9 bar)

1. Greater load capacities can be designed; contact ESPEC for custom options.
2. Measured on bare table; maximum gRMS level dependent on table configuration.
3. Measured as the average rate between -65°C and 85°C in open air 3" above table center (in an empty chamber); levels vary by make and model