NEW PRODUCT

Compressor Based HALT System

Introducing ESPEC's Compressor Based HALT System!

ESPEC North America Inc. (ENA) announces a compressor based HALT system, bringing a whole new level of accessibility and achievability to customers and locations where traditional HALT systems just aren't feasible. Whether LN_2 is difficult or too costly to attain and maintain, or the infrastructure just doesn't allow for LN_2, this is your answer.

Likewise, this new system serves customers who want the LN_2 boost for testing and achieving increased thermal ramps, but perhaps don't need it all the time for all testing. In those interim times, the mechanical refrigeration system can be used for a multitude of basic HALT tests with a temperature range of -70 to 180°C and temperature change rates as high as 15°C/minute. The random shock vibration table provides the complete combined environment needed for HALT testing.

This is a robust system built on the proven, quality technologies from ESPEC and Qualmark, so you know you are investing in the best.

Features

Refrigeration
- ESPEC Cascade refrigeration
- Boost LN_2 Injection - option

Controls
- Thermal-ESPEC integrated P-300 controller
- Vibration-Siemens PLC Based
- Interface-PC HMI with Flat Panel Monitor

Safety Features for Battery Testing
- Contact Factory

ORDER TODAY!

ESPEC Professional Services Delivering HALT from Theory to Practice:

ENA offers a wide range of on-site services specifically designed to ensure best practices are applied to your HALT/HASS/AccESS (Accelerated ESS) system use for maximum returns. The objective of ENA Professional Services is to add to the value derived from accelerated testing by tailoring services to deliver customer-specific program optimization. The educational value of ENA's Professional Services can dramatically improve reliability program outcomes that will quickly drive increases in product profitability.

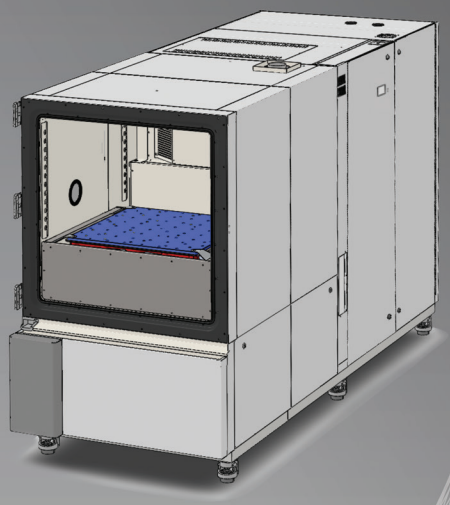
Professional Services include: Design Reliability Support (best practices, fixturing, custom test set-up, documentation & admin. protocols, project management), Test strategy education & Implementation. Check out www.qualmark.com/professional-services to learn more and schedule Services today.

Contact us today to learn how this new system will work for you, and to place your order!

ESPEC

www.espec.com

Specifications



Thermal Performance

- Cooling System — Cascade refrigeration; (2) Compressors (refrigerants R404a and R508b)
- Temperature Range — -70°C to +180°C
- Temperature Rate of Change[1]

Model	Dry Heaters	Compressor	Heating Rate (Average) (60 Hz)	Cooling Rate with refrigeration only (60 Hz)	Live Load (60 Hz) at -50°C kW
EQH2.5-R6	10kW	6hp x 2	8°C / min	5°C / min	3.6
EQH2.5-R12	15kW	12hp x 2	12°C / min	10°C / min	5
EQH2.5-R15	20kW	15hp x 2	15°C / min	15°C / min	9.4

[1] *per IEC 60068 3-5 except measured in supply air*

Vibration Performance and Features

- Vibration System — Six degree of freedom, random shock, OmniAxial broadband vibration
- Actuators — (8) pneumatic, impulse-type, lubricant-free actuators
- Table Top — 30" x 30" (762 mm x 762 mm), xLF2-series
- Table Top Hardware — 64 threaded holes 3/8-16 on 4" centers; M10x1.5 optional, 100 mm centers optional
- Table Product Capacity — 320 lbs (145 kg)
- Vibration Range[2] — 5 Grms to 75 Grms (10 Hz to 5000 Hz)

[2] *Measured on bare table; maximum Grms level dependent on table loading*

Interior Features

- Interior

Model	Dimensions (W x D x H)	Volume
EQH2.5-R	1000 x 1060 x 660 mm 39.4" x 41.7" x 26.0"	700 liter 24.7 ft^3

Exterior Features

- Exterior Dimensions[3]

Model	Dimensions (W x D x H)	Weight
EQH2.5-R6	1290 x 2419 x 2280 mm 50.8" x 95.2" x 89.8"	1320 Kg 2,910 lbs.
EQH2.5-R12	1290 x 2419 x 1920 mm 50.8" x 95.2" x 75.6"	1120 Kg 2,470 lbs.
EQH2.5-R15	1290 x 3334 x 2014 mm 50.8" x 131.3" x 79.3"	1800 Kg 3,970 lbs

[3] *Exterior dimensions include protrusions such as hinges and door latch*

Control

- Thermal Control — ESPEC integrated P-300 controller
- Vibration Control — Siemens PLC-based
- Interface — PC HMI with Flat Panel Monitor
- PC Operating System — Microsoft Windows®

Chamber Options

- QDaq - Data Acquisition System
- Spectrum Analyzer
- Dry air purge (10 SCFM)
- Additional cable ports: 2" (50 mm), 4" (100 mm), or 6" (150 mm)

Utilities - Power (Service Size, Amps)

Model	460V – 3φ – 60Hz	Cooling
EQH2.5-R6	45 A	Integrated-Air
EQH2.5-R12	70 A	Water
EQH2.5-R15	100 A	Water

- Refrigeration Cooling
  - Air Cooled (Built-in)

Model	Heat Rejection to Ambient (BTU/Hr)
EQH2.5-R6	60,000

  - Water Cooled

Model	Water[4,5] (gpm) @ 30°C	Connection Size (NPT)
EQH2.5-R12	27	1 1/4"
EQH2.5-R15	32	1 1/4"

[4] *Minimum 30 psi differential pressure*

[5] *Flow rate and pressure vary with water temperature. Detailed flowrate charts available upon request*

- Compressed Air for Vibration - 64 SCFM @ 85 psi (1.81 m^3/min @ 5.53 bar) Air quality conforms to ISO 8573.1, Class 4 or better

Included with Chamber

- Operations & Maintenance manual
- One (1) accelerometer for table control
- One (1) 20 Ft. accelerometer cable
- One (1) thermocouple for air temperature control
- Control PC with Windows® operating system and flat panel monitor

Specifications & Dimensions subject to change; contact ESPEC for quotation and detailed information

ESPEC | Qualmark IS your TOTAL Accelerated Reliability Solution Partner

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