

NEW PRODUCTS/APPLICATIONS HIGHLIGHTS

FA-64-CHM-15-15-S Altitude Test Chamber with Rain

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WHAT WAS SOLD?

Recently, a supplier for hydraulic, fuel, and pneumatic systems and components for the aerospace and defense industry was looking for a chamber to test their flight actuators. They needed a chamber capable of simulating different weather conditions and altitudes similar to standard flying conditions. With its custom rain system and modified altitude chamber, this version of Thermotron's FA-64 proved to be the solution for their testing requirements.

▪ Custom Rain System

The custom rain system includes:

- Reservoir to hold and cycle water continuously into the chamber during rain tests
- Liquid ring vacuum pump simulates altitudes up to 60,000 ft with water
- Four showerheads/nozzles with adjustable valves are easily adjustable ensuring proper product exposure. The valves located on each nozzle are used to increase and decrease water flow.
- Level chamber floor consisted of porous channels that drained the water down to a sloped ramp underneath the floor. The water is then released back into the reservoir. The chamber floor is constructed of durable and sturdy metal that can support up to 1,000 pounds.

▪ Altitude Chamber

This Thermotron altitude test chambers combines temperature, humidity, altitude and rain for simultaneous environment testing. This combination of elements allows you to precisely simulate any real-life conditions a product might



face and allows for a wide range of test profiles to be performed.

After closing all valves and purging the water, the chamber can be used like a standard altitude chamber. A second, standard vacuum pump is used during regular altitude tests and can demonstrate altitudes up to 100,000 ft.

▪ **8800 Programmer Controller**

With a brilliant 12" color touch screen display, the powerful 8800 Programmer Controller is Thermotrak II™ ready, making operations and data collection easier and more reliable than ever before. The controller is built to automatically adjust altitude levels within the chamber. Two control modules include four channels: air temperature, humidity, product temperature, and altitude.

Our controller has a Windows look and feel to support familiar and robust operations. The 8800 is Ethernet-compatible and web-enabled with an Internet-ready front end for virtual anytime/anywhere access. Multi-level, password-based security protects sensitive data.



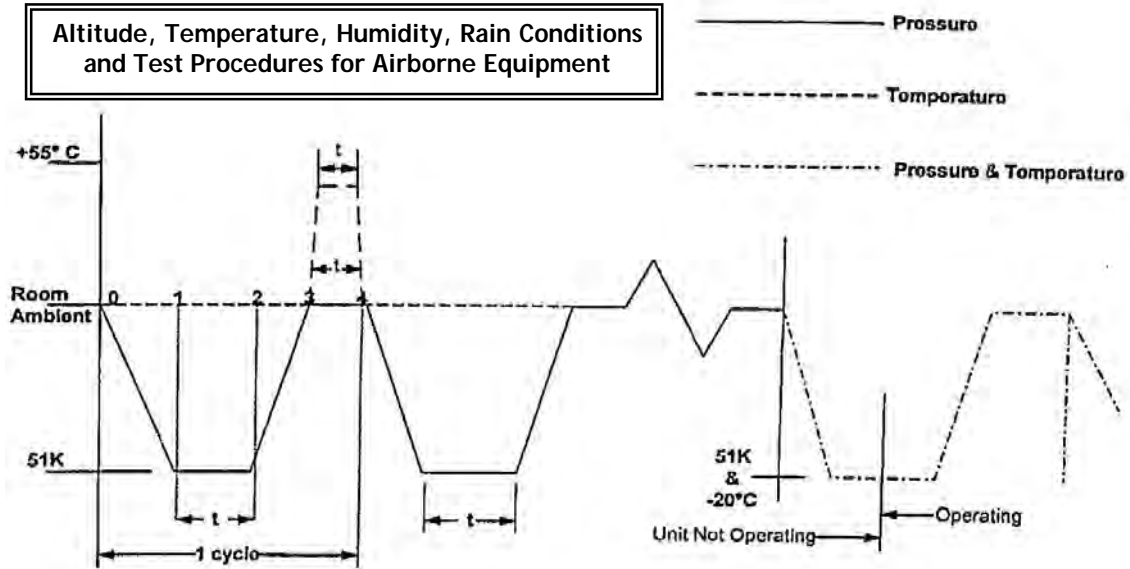
DESIGN CHARACTERISTICS

Chamber Interior Dimensions:	48" W x 48" D x 48" H / 122cm x 122 cm x 122cm
Chamber Exterior Dimensions:	84" W x 100" D x 124" H / 210cm x 254cm x 315 cm
Temperature Range:	-100°F to 350°F / -73°C to 177°C
Humidity Range:	20% to 95%RH
Altitude Range:	Ambient to 100,000 feet
Window with Guard:	1 - 12" x 12" / 30cm x 30cm
Electrical Power Requirements:	175 amps on 460/3/60
Cooling Water Needed:	32 GPM at 75°F / 121 LPM at 24°C 65 GPM at 85°F / 246 LPM at 29°C

FEATURES AND BENEFITS

- Two vacuum pumps: one for standard altitude testing and a second pump for operating in unison with the rain system
- Ability to test four variables at various ranges: temperature, humidity, altitude and moisture
- Four water spray nozzles with adjustable valves to test different water flows
- Interior light and large viewing window for added visibility
- Equipped with Thermalarm to protect the product from extraneous conditions
- Air compressor in the base of the chamber acts as a water purge for the nozzles in order to prevent water from freezing during temperature tests

- This versatile chamber is designed to meet the stringent requirements of RTCA/DO-160 simulating the actual operating environment of the equipment as installed on the aircraft. Below is an example of this chamber's testing capabilities:



	SPRAY	PRESSURE	TEMP	TIME	OPERATIONAL
Step 1	YES	DECREASE to Max operating altitude	> FREEZING	=> 10 Min	NO
Step 2					
Step 3	YES	RAISE to room ambient	> FREEZING	=> 10 Min	NO
Step 4	REPEAT STEPS 1-3, CYCLES = 100 50% AMBIENT TEMP = 55 C				
Step 5	REPEAT STEPS 1-3, CYCLES = 10 TIME = 60 Min each 50% AMBIENT TEMP = 55 C				
Step 6	NO SPRAY	DECREASE to Max operating altitude	STABILIZE TO -20 C		NO
Step 7	@ -20 C ATP (or Partial)				
Step 8		RAISE to room ambient	-20 C		YES
Step 9	REPEAT STEPS 6 TO 8 TOTAL = 4 CYCLES				

WHO ELSE CAN USE THIS?

The altitude test chamber with custom rain system can be used by organizations in the aerospace industry that develop and manufacture actuator systems, equipment, or mechanisms that could be affected by moisture. The ability to test altitude, temperature, humidity and moisture effects on a product allows aerospace organizations to test for various climates and altitudes at once.

Actuator Systems Manufacturers:

- Eaton
- Actuant (Elliot Manufacturing)
- Curtiss-Wright
- Goodrich Corporation
- ITT Corporation
- Moog
- United Technologies (Hamilton Sundstrand)
- Whittaker Controls
- Woodward Governor
- AMETEK Inc.
- Inter technique (IN LHC)
- MPC Products Corporation
- Vought Aircraft Industries
- Young & Franklin

Aerospace Component Manufacturers:

- Meggitt
- Aircelle
- Chilton Inc.
- L-3 Crestview Aerospace Corporation