

TCU-100-HP Thermal Conditioning Unit with High Pressure Blower

Dynavac's TCU-100-HP is the ideal choice for test facilities requiring auxiliary thermal control over a wide temperature range. The portable 100 cfm unit with Dynavac's proprietary high pressure blower handles high pressure drops encountered with small diameter extrusions and piping.

The TCU-100-HP is based on Dynavac's standard gaseous nitrogen TCU platform using a closed-loop, forced convection method. Its onboard PLC-based controller provides full flexibility in executing test profiles.

Dynavac designs, manufactures, and installs a full array of systems to support the development and test of spacecraft. Few companies rival Dynavac's thermal vacuum capabilities to simulate the harsh conditions of space.

Visit www.Dynavac.com/space-simulation or contact our sales group to learn more.



System highlights

- Controllable from -180C to 150C using a centrifugal blower and electric resistance heater to control the temperature of the gas stream
- One-pass liquid nitrogen zone for operation at -196C
- Heat exchanger option for facilities with low-pressure delivery of liquid nitrogen
- Enables exceptional thermal control and uniformity of test hardware
- Adjustable blower speeds to reduce LN₂ consumption during steady state operation
- Onboard PLC-based control system enables setpoint control of test parameters and profiles
- Low maintenance, energy efficient operation
- Thermal hardware design and manufacturing services

TCU-100-HP Thermal Conditioning Unit

Performance Specifications

Operating Temperature	-180C to 150C
Flow Rate	100 cfm
Mass Flow	2,000 lbm/hr
Differential Pressure	8 psi
Operating Pressure	5-80 psig
Max RPM	13,500
Motor Size	6.50 hp
Refrigeration Capacity	14 kW@ -150C
Heater	4.5 kW
Control	Onboard PLC based controller; can be interfaced to main control console
Power Requirements	480 V, 50 A 3 ph, 60 Hz
Size	30" W x 60" L x 60" H
Weight	2300lbs
Features	Auxiliary one-pass flooded LN ₂ zone Heavy-duty casters for portability
Options	Heat exchanger for facilities with low-pressure LN ₂ delivery



Utility Requirements

Cooling Water	Built-in Chiller
Compressed Air	80-100 PSI @ 3 cfm
GN ₂	80-100 PSI @ 5 cfm
LN ₂ - Low Pressure - Heat Exchanger	≤25 psi
LN ₂ - High Pressure - Direct Injection	>90 psi