

THERMAL VACUUM

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 capability over a wide temperature range. The portable 100 cfm unit is outfitted with Dynavac's proprietary high pressure blower to handle high pressure drops through hardware designed with small diameter extrusions and piping. Adding to its capability is an auxiliary liquid nitrogen zone for testing at -196C.

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 much flexibility in executing a variety of test profiles.

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

The flawless performance you expect

From the most respected name in thermal vacuum systems: Dynavac





Specifications

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