

Portable Conditioning Units

Mechanical & LN₂ Cooling



Russells Technical Products portable conditioning units provide innovative, practical solutions for customers across a variety of applications. Offering a robust range of temperature and/or humidity capabilities, these units will condition existing environmental test chambers, temporary test spaces, and custom remote enclosures.

With options for single-stage or cascade refrigeration, or LN₂ cooling, virtually every environment is attainable with our portable conditioning units. A Russells mechanically cooled PCU offers robust environmental testing flexibility, while LN₂ cooling provides a wider cooling range and dramatically decreased temperature pull downs for your more extreme testing needs.



TYPICAL PCU PERFORMANCE:

- » **Temperature Range:**
-73°C to +180°C (-100°F to +356°F)*
- » **Humidity Range:**
5% to 95% RH within the bounds of a +85°C (+185°F) max dry bulb and a +4°C (+40°F) min dewpoint*
- » **Air Delivery Range:**
686 CFM to 372 CFM*

*extended ranges available



PCU systems are available as an optional add-on to the Russells standard G-Series line of environmental test chambers.



STANDARD FEATURES:

- » Single stage or cascade refrigeration system*
- » Air or water cooled condensing systems*
- » Direct or indirect LN₂ cooling^
- » Maintenance free powder coated exterior
- » 230v, 208v, or 460v operation
- » UL 508A compliant control panel
- » Heavy duty casters with incorporated leveling pads
- » Watlow F4T Controller
- » Product safeguard
- » 6" duct ports
- » Air delivery from 686 to 372 CFM
- » Single stage temperature range:
-30°C to +180°C (-22°F to +356°F)*
- » Cascade temperature range:
-70°C to +180°C (-94°F to +356°F)*
- » LN₂ temperature range:
-85°C to +180°C (-120°F to +356°F)^

REFRIGERATION:

- » Low or zero ozone depletion refrigerants*
- » Energy saving refrigeration bypass capacity control*
- » Low stage desuperheater*
- » Oil pressure switches*
- » Compressor suction and discharge pressure switches*
- » ASME certified vapor tank and condenser*
- » Compressor overload protection*
- » High stage compressor crankcase heater*
- » Compressor head fans*
- » Low stage oil separator*
- » All piping joints silfos or silver soldered
- » Stainless steel compressor condensate pans*
- » Direct injection liquid nitrogen cooling^
- » Cryogenic service control solenoid valve^

* denotes mechanical cooling only feature

^ denotes LN₂ cooling only feature

HUMIDITY:

- » Quick response vapor generator with replaceable Inconel sheath immersion heater*
- » Vapor generator failsafe overtemp protection*
- » Humidity range: 5% RH to 95% RH*

ELECTRICAL:

- » All wiring meets NEC/NFPA standards
- » 120v control circuit transformer
- » Fully enclosed electrical panel
- » All circuits fused or circuit breaker protected
- » Full system function switches with system status pilot lights
- » All wiring numbered or color coded
- » High Temperature limit safety
- » Master heating circuit contactor
- » Air circulator/heater interlock
- » Balanced load on 3 phase power
- » 3rd party NRTL/CSA marking available

OPTIONAL ACCESSORIES:

- » russellsOne touch screen temperature, and humidity programmer controller
- » Insulated flexible air ducts
- » Air or water cooled condenser
- » LN₂ or CO₂ boost cooling
- » Running time meter
- » Electrical disconnect switch
- » Humidity water demineralizer*
- » Circular or electronic chart recorders
- » GN₂ purge system
- » VFD fan control
- » Boost heating system
- » Dry air purge system
- » Additional LN₂ nozzles for variable flow rate
- » Can be equipped with battery testing safety features according to EUCAR hazard safety level

Reliable. Trustworthy. Performance.