

# Portable Conditioning Units

## Mechanical & LN<sub>2</sub> 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 LN<sub>2</sub> cooling, virtually every environment is attainable with our portable conditioning units. A Russells mechanically cooled PCU offers robust environmental testing flexibility, while LN<sub>2</sub> cooling provides a wider cooling range and dramatically decreased temperature pull downs for your more extreme testing needs.



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

### 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



#### STANDARD FEATURES:

- » Single stage or cascade refrigeration system\*
- » Air or water cooled condensing systems\*
- » Direct or indirect LN<sub>2</sub> 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)\*
- » LN<sub>2</sub> 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 condensor\*
- » 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 LN<sub>2</sub> 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
- » LN<sub>2</sub> or CO<sub>2</sub> boost cooling
- » Running time meter
- » Electrical disconnect switch
- » Humidity water demineralizer\*
- » Circular or electronic chart recorders
- » GN<sub>2</sub> purge system
- » VFD fan control
- » Boost heating system
- » Dry air purge system
- » Additional LN<sub>2</sub> nozzles for variable flow rate
- » Can be equipped with battery testing safety features according to EUCAR hazard safety level

# Reliable. Trustworthy. Performance.