

THERMOJET_{ES} Precision Temperature Cycling System

Overview

ThermoJet Environment Simulator is a precision-controlled temperature forcing system that delivers an airstream of up to 20 SCFM to rapidly change the temperature of a product or Device Under Test (DUT).

ThermoJet provides temperature transition speeds unmatched in the industry, and can sustain air cooling temperatures of -80°C at 20 SCFM.

ThermoJet Highlights

- The only temperature forcing system that maintains -80°C at 20 SCFM (full range $+375^{\circ}\text{C}$ to -80°C) to deliver faster testing.
- Our air coolers deliver true extended low temp testing so your devices (even large ones) get to lower temperatures faster and stay there longer.
- DualCool™ Cascade refrigeration system reliably delivers vigorous temperature cycling, even in a 24/7 operating environment.
- Portable space-saving touchscreen controller.
- Compact footprint (21" x 27") and caster-mounted for mobility.
- Cycle from $+125^{\circ}\text{C}$ to -55°C / -55°C to $+125^{\circ}\text{C}$ in less than 10 seconds...you save time.

ThermoJet_{ES} delivers efficient electronic control and maximizes productivity.



Key Features

- ▶ Control temperature from -80°C to $+225^{\circ}\text{C}$
- ▶ Flow rate of up to 20 SCFM
- ▶ $\pm 0.5^{\circ}\text{C}$ temperature stability
- ▶ Enhanced digital temperature control
- ▶ Utilizes off-the-shelf refrigerants
- ▶ Highest heat removal capacity in the industry
- ▶ Compact footprint smallest on market
- ▶ CE compliant
- ▶ Removable touch screen interface

Additional Features:

- Save & trend data with our USB stick data logging feature
- Enhanced nozzle design allows for device testing at greater pressures. Devices may operate at pressures up to 70 PSI
- Effortlessly adjust the height of the arm with a click of a button. Our improved Motorized Arm allows for precise adjustment from the touch screen
- Save on utility costs with the updated energy-efficient software
- Utilizes CFC and HCFC free refrigerants
- External thermocouple with auto-tuning for convenient temperature control and monitoring of DUT
- LabView drivers and control application available upon request
- Command sets compatible with similar systems in market

General Accessories

Model	Description
THJ-AP	Auxiliary Purge, Adjustable Flow
THJ-NAA	Nozzle Adaptor Accessory
THJ-TC1	Thermocouple Kit

Thermal Caps

Model	Description
SH25T1	Transparent 2.5" ID x 2" deep
SH35T1	Transparent 3.5" ID x 2" deep
SH45T1	Transparent 4.5" ID x 2" deep
SH55T1	Transparent 5.5" ID x 2" deep

NOTES:

1. Specifications based on 230V, 60 Hz at 15 SCFM, ambient 23°C, 50% humidity.
2. System may be used with lower pressure at reduced specifications.
3. Clock started when temperature reached setpoint.
4. Operating at low air flow.

ThermoJet_{ES} Specifications^{1,2}

Temperature

Maximum Low	-80°C
Maximum High	Standard +225°C / High Temp +375
Accuracy	1°C - Factory calibrated with NIST traceable device
Setability	0.1°C
Indication/Resolution	0.1°C
Stability	±0.5°C at discharge nozzle
Sensors:	Special limits of error type-T thermocouples
Calibration	Software controlled
Max. Transition Rates	+125°C to -55°C in <10s / -55°C to +125°C in <10s +200°C to -65°C in <15s / -80°C to +200°C in <15s
Stabilization Rate ³	+125°C to -55°C in <12s -55°C to +125°C in <4s

Air Filtering/Drying

Coalescent	Water, Oil, and Particle Filtering
Heatless Regenerative	-85°C dew point

Air Flow Specifications

Input	25 SCFM @ 80-125 psig, dew point 10°C (11.8 l/s @ 5.5 - 8.6 bar)
Output	5-20 SCFM (2.3 - 9.4 l/s) Factory calibrated with NIST traceable device
Setability	1 SCFM (0.4 l/s)

Physical Characteristics

Footprint	21" wide x 27" deep (54 cm x 69 cm)
Arm Reach	56" radius (140 cm) max.
Rotation	350°
Work Surface Height	38" (100 cm)
Weight	425 lbs (193 kg)
Mobility	4 full swivel, lockable casters
DB Rating ⁴	≅ 65 dB(A)

System Controller Features

Type	Microprocessor PLC-based PID
Program	Save and load 48 programs of 8 segments each
Safeties	Low flow, over temp, EMO interlock
Status Indication	Air input, air temp, air/DUT control, OK, run/idle, purge, defrost
Available Limits	Max. ramp rate, min./max. air temperatures
Ramp Rates	1°C/min. incremental up to 999°C
Remote Information	IEEE, RS232 Communication

System Requirements

Temperature	+12°C to +25°C
Humidity	0% to 65% RH
Electrical	208V-230V/60Hz, 200V/50Hz @ 1Ph 30A 220V-230V/50Hz @ 1Ph 30A



European Union EMC & Safety Compliance Declaration

The European Conformity (CE) marking symbolizes conformity of SP Scientific products with the applicable 2010 EN and CE Standards. For more information about CE compliance, please contact SP Scientific at 800-431-8232 x2372.