

# Model TP4500A System

ThermoStream® Thermal Airstream System



*The compact, mobile TP4500A ThermoStream® has a very small footprint, and mounts easily to the benchtop or workstation. (Cart is optional.)*

## Ideal for:

- Device characterization, testing and failure analysis at temperature.
- Production Test Facilities
- Engineering Labs
- All device types and power dissipations.
- Facilities with limited power and compressed air supply.

## Compact Thermal System for Testing from -45° to +225°C<sup>1</sup>

The small footprint and convenience of the TP4500A System make this system ideal for use in all laboratories or production facilities for testing, characterization and failure analysis of devices and PCBs to commercial/ industrial specifications.

For temperature cycling with fast transitions and high airflow at all temperatures, the TP4500A provides the necessary environment to quickly thermally test devices of any size and power dissipation from small NAND Flash to larger high power devices and PCBs.

- **Wide -45° to +225°C temperature range<sup>1</sup>**
- High adjustable airflow (up to 10 scfm) over the full temperature range
- Fast temperature transitions: -40° to +125°C in less than 12 seconds<sup>1</sup>
- Proprietary Dual Loop Control manages the temperature directly at the device.
- 115V and 230V systems available.
- 15 amp and 20 amp systems available.
- No LN<sub>2</sub> or CO<sub>2</sub> required.
- Self-aligning glass Thermal Cap

<sup>1</sup> Ultimate low temperature and system performance may vary under operating conditions which are less than or greater than nominal.



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## ThermoStream® Thermal Airstream System

The TP4500 ThermoStream® clamps conveniently to the benchtop or workstation using the optional Benchmount.



## SPECIFICATIONS<sup>1</sup>

### Temperature Performance / Airflow Capacity

**Temperature Range<sup>2</sup>:** -45° to +225°C

Typical Temperature Transition Rate (air) in seconds at 10 scfm:

-40° to +125°C: <12 seconds

125° to -40°C: <40 seconds

System Airflow Output: 1.9 to 4.7 l/s (4 to 10 scfm, 240 to 600 scfm)

Temperature Accuracy:

1.0°C (when calibrated against NIST Transfer Standard)

Temperature Set, Display and Resolution: 0.1°C

Temperature Control:

DUT Sensor Ports: Types K and T standard.

DUT Control: Control to within +/-0.1°C

Remote Interface Ports: IEEE-488, RS232 Serial and ST/ET/SFF

Ramp/Soak/Cycle Configurations:

In Program Mode, up to 12 sequences per test set-up; Table is displayed online.

### Facility Requirements

#### Power Configurations:

115 +/-10% VAC, 60 Hz, 20 Amp (15 Amp available)

100 +/-10% VAC, 50 Hz, 20 Amp (15 Amp available)

220 +/-10% VAC, 60 Hz, 16 Amp

220 +/-10% VAC, 50 Hz, 16 Amp

#### Compressed Air Requirements: (Optional Air Dryer is available.)

Clean, Dry Air (CDA) filtered to 5 micron particulate contamination.

Oil content: < 0.01 ppm by weight, filtered to 0.01 micron oil contaminant

Dewpoint: < -70°C (ideal) @ 6.2 BAR (90 PSI)

Supply pressure<sup>3</sup>: 5.5 to 7.6 BAR (80-110 PSI)

Supply flow<sup>3</sup>: 5.7 l/s (12 scfm) [2.8 l/s (6 scfm) minimum]

Air supply temperature: +20° to +25°C (+22°C nominal)

**Operating Temperature:** +20° to +28°C (+23°C nominal)

**Humidity:** 60% maximum

<sup>1</sup> Ultimate low temperature and system performance may vary under operating conditions which are less than or greater than nominal.

<sup>2</sup> Ultimate low temperature may reach -50°C under certain circumstances.

<sup>3</sup> At lower pressures and flow, performance may be derated.

### Dimensions and Weights

Approximate, cm. (inches)

#### Benchtop Controller

Dimensions:

cm: 26.7 w x 20.65 h x 9.75 d

(inches: 10.5 w x 8.13 h x 3.84 d)

#### Refrigeration module (Chiller)

Dimensions:

cm: 51.3 w x 41.45 h x 74.93 d

(inches: 20.20 w x 16.32 h x 29.5 d)

Weight: 74.5 kg (157 lbs.)

## OPTIONS

- Benchmount
- Castors and handle
- Cart
- Air Dryer: Recommended to achieve specified Clean Dry Air (CDA). See Compressed Air Specifications.

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**TEMPTRONIC**  
an inTEST Company

4 Commercial St.  
Sharon, MA. 02067  
USA

Tel: 781-688-2300

FAX: 781-688-2301

www.temptronic.com

sales@temptronic.com