# TP04300A

## THERMOSTREAM® Thermal Airstream System

**Mobile Programmable Temperature System for high speed testing of components, parts, hybrids, modules, subassemblies, and printed circuit boards at precise temperature.**

## Temperature Performance and Airflow Capacity[1]

| | |
|---|---|
| **Temperature Range** | -80° to +225°C (60Hz Performance) |
| | -75° to +228°C  (50Hz Performance) |
| Typical  Temperature  Transition  Rate (air) | -55° to +125°C: approx. 10 seconds or less |
| | +125° to -55°C: approx. 10 seconds or less |
| System Airflow Output | 1.9 to 8.5 l/s  (4 to 18 scfm) CONTINUOUS |
| Temperature  Accuracy | 1.0°C (when calibrated against the NIST transfer standard) |
| Temperature Set Display and Resolutions | +/- 0.1°C |

[1] Note:   Transition is performed under nominal operating conditions

## Features

| | |
|---|---|
| Modes of Operation | Two: Operator Mode and Cycling Mode |
| Test Set-up Configurations | In Cycling Mode, an unlimited quantity may be created and saved to hard disk. |
| Ramp/Soak/Cycle Configurations | In Cycling Mode, up to 18 sequences per test set up. Cycling Table is displayed on screen. |
| Program and Data Storage | Datalogging and program files may be stored on the hard drive or USB storage device (i.e. a USB memory stick, USB mass storage device, or USB Printer) |

## Temperature Control:

| | |
|---|---|
| DUT Sensor Ports | Internal Diode, Type T, and Type K thermocouple and 100 Ohm platinum RTD. |
| DUT Control | Control to within +/- 0.1°C, SELF-TUNING available in DUT Control |
| DUT Temperature Control | Proprietary Dual Loop Temperature Control - Unique control algorithm enables direct temperature control (to within 0.1°C) at the device case; measures temperature at the device. |
| User Definable Temperature Limits | Allows operator to select and set the upper and lower temperature limits within the -80° to +225°C system temperature range. |
| Heat Only Mode | For reduced power consumption where cold temperatures are not required |
| Remote Interface Ports | IEEE-488, RS232, Start Test/End Test/Stop on First Fail (ST/ET/SFF) and Ethernet |
| Drivers | LabView® and LabWindows™ |
| External Device Ports | Ports are located on the front of the system for connecting a mouse, printer, and keyboard, in addition to a USB port. |
| On Screen HELP | On-Screen access to Operations, Applications, and Troubleshooting Guides |
| Status Indicators | On-Screen and Remote I/O |
| Purge Flow for Tester Interface | Dry air purge to protect tester electronics from condensation, uses manually adjustable airflow from 0.25 to 1.5 liters per second (0.5 to 3 scfm) |
| Temperature Calibration | Automated, simplified and accurate for all temperatures and airflows |
| Thermal Head | Operation: Pneumatic control for raising and lowering of thermal head, operated manually or via remote interface. Positioner: Manual locking, 360° head rotation. Head can be manually pivoted, tilted, turned and vertically swung for ease of interface at the tester site. |
| Manipulator (arm) movement | Motorized raising and lowering of arm; 330° positioning "swing" range around the base. |

## Thermal Enclosures / Chambers
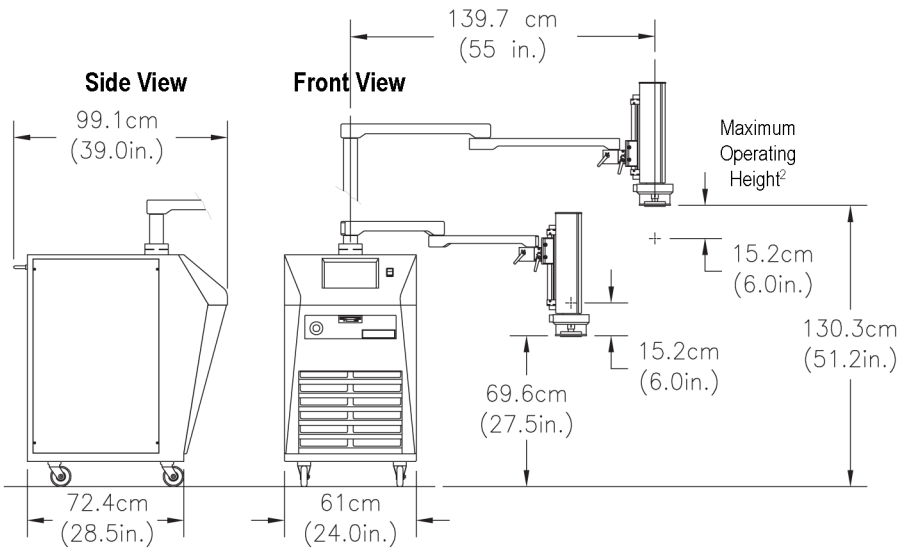
| | |
|---|---|
| Thermal Cap | Available in 2 sizes, (4.5 in. and 5.5 in. ID) in transparent glass. Choice of one glass Thermal Cap is included with System. The Thermal Cap attaches to thermal head to surround Unit Under Test (UUT), providing a localized test environment at the test site. Additional glass thermal caps are OPTIONAL and the non-transparent metal cap (5.5 in. ID only) is available by special order (check with factory). |
| MOBILETEMP™ Thermal Chambers | OPTIONAL  compact, portable thermal chamber attaches directly or via "Flexible Extender Hose" to THERMOSTREAM® for testing larger PCBs, assemblies, and UUTs (Units Under Test). Allows convenient access for adding and removing UUTs. Available in three standard designs: Hood, Clamshell (top load), and Front Load. See THERMOCHAMBER™ datasheet for specifications. |

# Specifications

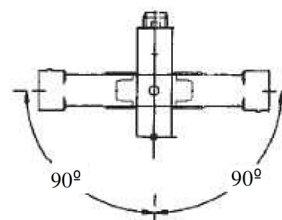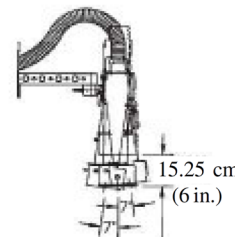## TP04300A THERMOSTREAM®
### Thermal Airstream System

inTEST Thermal Solutions

**Side View** **Front View**

139.7 cm (55 in.)

99.1cm (39.0in.)

Maximum Operating Height[2]

15.2cm (6.0in.)

15.2cm (6.0in.)

130.3cm (51.2in.)

69.6cm (27.5in.)

72.4cm (28.5in.)

61cm (24.0in.)

Thermal Head (right) can be tilted or swung ±7° and locked in place for ease of positioning at test site.

15.25 cm (6 in.)

90º    90º

**Head Rotation Front View**

Thermal head's range of rotation around the manipulator arm.

## Environmental and Safety Features

| | |
|---|---|
| Over Temperature Protection | +230°C (factory set): Operator can set high and low air temperature limits |
| Mobility | Four swivel caster wheels with locks, 10.16cm (4 inch) diameter, static dissipative; rear handle for ease of transport |
| Refrigerants | HCFC and CFC-free, non-toxic, non-flammable |
| Serviceability | Auto-diagnostics and field replaceable modules |
| Maximum Operating Height[2] | 130.3 cm (51.25 in.) approximately |
| Minimum Operating Height | 69.6 cm (27.4 in.) approximately |
| Noise Level | <65dBA |

[2] Taller operating height is optional. Contact factory for details.

## Weights and Dimensions

| | |
|---|---|
| Base[3] | Width: 61.0 cm (24 in.), Depth: 72.4 cm (28.5 in.) |
| | Height: 108 cm (42.5 in.) |
| System Weight | Not packed: 236 kg (520 lbs.) |
| | Packed: 365 kg (805 lbs.) |

[3] an additional 20.3 cm (8 in.) clearance is required for supply connections and cabinet ventilation.

## Facility Requirements[4]

| | |
|---|---|
| **Power**[5] | 200 - 250 VAC (230V nominal), 50/60Hz |
| | 30 amp, 1 phase |

### Compressed Air

| | |
|---|---|
| Clean, Dry Air (CDA) | Filtered to 5 micron particulate contamination. |
| | Oil Content: <0.1 ppm, by weight, filtered to 0.01 micron oil contaminant. |
| | Dewpoint: <10°C @ 6.2 BAR (90PSI) |
| Air Supply Pressure | 6.2 to 7.6 BAR (90 to 110 PSIG) |
| Total Air Flow Rate Required | 7.1 to 14.2 l/s (15-30 scfm) |
| | 11.8 l/s (25 scfm) nominal |
| Air Supply Temperature | +20° to +25°C; +22°C nominal |

### Operating Environment

| | |
|---|---|
| Operating Temperature | +20° to +28°C; +23°C nominal |
| Humidity | 0 to 60%; 45% nominal |

[4] Under operating conditions which are greater or less than nominal, performance may be less than specification provided

inTEST Thermal Solutions
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