

DRAGON

Temperature Forcing System



Ultra-performant, for 24/7 use.

Our temperature forcing system offers precise and accurate thermal testing, with a temperature range from -70°C to +250°C. With an adjustable air flow and fast ramping, the dragon is the perfect solution for rapid heating and cooling of samples. This versatile product is perfect for a wide range of applications, including heating electronic components, sensors aircraft engineering, and any other industry which requires testing of resistance, reliability, and performance.

PERFORMANCE (Ambient temp: +22 °C)

Temperature range	-70 °C to +250 °C
Pull down from +125 °C to -55 °C	14 s
Thermal stability	<+/-0.5 °C

WARRANTY

Parts	2 years
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-70 °C

Coldest temperature



7 s

From -55 °C to 125 °C



Technical Specifications

DRAGON TEMPERATURE FORCING SYSTEM

REFERENCE

Function	Rapid, precise and reproducible heating & cooling of samples
Version	3.1
Temperature Range	From -70 °C to +250 °C (with arm length = 1m)
Application	Heating electronic components and circuit boards, performing climatic simulations, electronic characterization, temperature cycling, targeted freezing, aerospace and defense.

GENERAL SPECIFICATIONS

Frame dimensions (H x W x D)	1040 x 900 x 700 mm (without electrical arm)
Construction	Electrogalvanized steel with epoxy paint
Net weight	250 kg
Standard Equipment	4 swivel casters with lock 2 easy moving handle Glass Thermo Cup (T-Cup) & nozzle n°7 Foam mat Type K thermocouple
Climate class (temperature)	From +18 °C to +30 °C
Relative humidity	< 70%
Indoor / Outdoor use	Indoor use only
Environment	Not designed for use in an explosive atmosphere (ATEX)
Noise level	< 63 dB
Warranty	2 years by FROILABO (during and after warranty period)

ELECTRICAL ARM AND HEAD

Positioning	2 electric cylinders for vertical and horizontal positioning of the head
Arm length (deployed / folded)	900 mm / 1400 mm (from pivot to nozzle)
Working height	From 675 mm to 1270 mm
Arm rotation	270°
Head cylinder	Pneumatic for component change (fast up/down)
Head rotation	180°
T-Cup dimensions	Internal diameter : 144 mm / available height : 50 mm

REFRIGERATION AND THERMAL PRODUCTION

Refrigeration system	2 cascade-mounted compressors with intermediate plate heat exchanger
Type of regulator	Capillary tube
Refrigerant charge	1st stage: ISCEON89 / 2nd stage: R508B
Thermal production	Electrical heating resistance

PERFORMANCES (AMBIENT TEMPERATURE +22°C)

Temperature range	From -70 °C to +250 °C, display and setting (on air) at +/- 0.1 °C
Air flow	From 2.2 L/s to 8.4 L/s
Controlled ramp	From 0.1°C to 16°C/s
Transition time without control	From -55 °C to +125 °C /s : 7 seconds / from +125 °C to -55 °C/s : 14 seconds
Head stability (AIR regulation)	+/- 0.5 °C

Technical Specifications

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CONTROL AND PROGRAMMING

Controller	Temperature regulator
Interface	7" tactile display (800 x 480) - curve tracking - Languages : French / English
Mode	Hot mode (heating resistance only) / Hot & Cold mode
Data	Data recording on USB key (.csv) Alarms historical
Regulation	Air or component
Operating Mode	Manual : 3 sets of 4 parameters (T °C, q air, ramp, level time) Automatic : 20 programs of 32 steps with settings of : T °C, q air, ramp, level time Loopback : 0 to 999 cycles Automatic programs for tests in appliances with international standards (Program 10: JESD22-A104 – Temperature Cycle / Program 11: MIL-STD-202 Method 107 – Thermal Shock).
Thermal Protection	The head temperature is protected by an independent probe against temperatures above 260 °C
Remote connection	VNC connection via ethernet connection for run status monitoring and method creation.

ELECTRICAL DATA AND CONNECTIONS

Compressed air source	Flow : 12 l/s Supply pressure : from 6 to 10 bars Air temperature : from +15 °C to +25 °C
Types of power supply	230 V +/-10%, 50 Hz, circuit breaker 32 A circuit breaker D curve (motor support) with differential 30 mA
Electrical protection	Protection of power elements by fuse

OPTIONS AND CONFORMITIES

Options	Commands for the machine via RS232 or GPIB communication Board IEEE / 488.1 / GPIB Anti-static equipment (head, nozzle and mat) Specific nozzles and boxes on request Support service for adjusting the regulation parameters on request
Supplied with	Quality control sheet 2 technical notices: <ul style="list-style-type: none">• Implementation, installation, commissioning, use, preventive maintenance and communication• Refrigeration and electrical diagrams
Certification / Conformity	Comply with the standard NF EN61010-1 Meets CE requirements 2014/35/UE – Low pressure directive 2014/30/UE – EMC directive, class A device 2014/68/UE – Under pressure device

SHIPMENT

Shipment size (H x W x D)	1750 x 1400 x 900 mm
Shipment weight	370 kg
Type of package	Delivered in a wooden case

TECHCOMP GROUP

In addition to Froilabo, Techcomp Europe comprises of the following companies:



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