

DRAGON

Temperature Forcing System



Ultra-performant, for 24/7 use.

A first in class temperature forcing system providing fast and accurate results. This versatile and stable thermal air conditioning unit is perfect for heating electronic components and printed circuits boards, performing climatic simulations, electronic characterisations, temperature cycling and targeted freezing.

PERFORMANCE (Ambient temp: +22 °C)

Temperature range	-75 °C to +250 °C
Pull down from +125 °C to -55 °C	14 s
Thermal stability	<+/-0.3 °C

WARRANTY

Parts	2 years
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-75 °C

Coldest temperature



7 s

From -55 °C to 125 °C

Technical Specifications

DRAGON TEMPERATURE FORCING SYSTEM

☰ REFERENCE

Applications	Rapid, precise and reproducible heating & cooling of samples
Version	3.1
Temperature Range	From -75 °C to +250 °C (with arm length = 1m)

☰ 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 (natural gas)	1st stage : ISCEON99 (340 g) / 2nd stage : R170 (110 g) Certified F-gas
Thermal production	Electrical heating resistance

☰ PERFORMANCES (AMBIENT TEMPERATURE +22 °C)

Temperature range	From -75 °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 0.03 °C to 15 °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)	+/- 0.3 °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 Loop-back : 0 to 999 cycles
Thermal Protection	The head temperature is protected by an independent probe against temperatures above 260 °C

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	RS232 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	Final test sheet (temperature drop curve made with fictitious load) Quality control sheet 2 technical notices: <ul style="list-style-type: none">• Implementation, installation, commissioning, use, preventive maintenance and communication• Refrigeration and electrical diagrams• Spare parts list• Regulator manufacturer's manual
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