

PRACTICAL CONSTANT TEMPERATURE HUMIDITY INCUBATOR



Practical Constant Temperature Humidity Incubator — ToronCubator™ TH-P Series

ToronCubator™ TH-P is a precision Practical Constant Temperature Humidity Incubator designed to meet the demanding requirements of laboratory, pharmaceutical, and life science research environments. This laboratory incubator delivers stable, programmable climate conditions with tight temperature and humidity control, making it suitable for a wide range of biological, chemical, and material testing applications.

Available in four capacity configurations — 150 L, 250 L, 400 L, and 800 L — the ToronCubator™ TH-P series gives laboratories the flexibility to match chamber size to their specific workload. The stainless-steel interior, PAMMA II digital control system, and integrated refrigeration unit work together to maintain precise environmental conditions across extended test cycles. With up to 30 programmable segments and 99 repeatable cycles, this biochemical incubator supports complex, multi-phase protocols without manual intervention.

APPLICATIONS

Practical Constant Temperature Humidity Incubator — ToronCubator™ TH-P Series Applications

The ToronCubator™ TH-P series is widely used across industries and research disciplines where stable temperature and humidity conditions are required:

- Pharmaceutical and Biotech Research — stability testing of drug formulations, active ingredients, and biological samples
- Microbiology and Cell Culture — controlled growth environments for bacterial, fungal, and cell-based studies

- Mould and Fungi Testing — as a dedicated mould incubator, it supports standardized growth studies for spoilage analysis and antimicrobial testing
- Seed Germination and Plant Science — consistent temperature-humidity conditions for plant tissue culture and germination trials
- Food Science and Quality Control — accelerated shelf-life testing and microbiological analysis
- Material and Environmental Testing — humidity-sensitive component aging, corrosion resistance, and stress testing
- Academic and Clinical Laboratories — general-purpose laboratory incubators for multi-user research settings



FEATURES

Practical Constant Temperature Humidity Incubator — ToronCubator™ TH-P Series Key Features

Control and Display



- PAMMA II dual-parameter control system with LCD display showing real-time temperature, humidity, and elapsed time
- Over-temperature alarm function for added safety during unattended operation
- Programmable design supporting 30 segments and 99 repeatable cycles
- Power supply recovery function retains data and program settings after power interruption

Chamber Construction

- Working chamber constructed from mirror-finish stainless steel for durability and easy cleaning
- Outer shell fabricated from cold-rolled steel with electrostatic powder coating

- Adjustable shelving to accommodate samples of varying height and configuration
- Internal LED lighting for clear visual monitoring without opening the door

Airflow and Temperature Uniformity

- Centrifugal fan ensures uniform air circulation throughout the working chamber
- Temperature fluctuation at 25°C held within $\pm 0.5^{\circ}\text{C}$
- Spatial temperature uniformity within $\pm 1^{\circ}\text{C}$ at reference point

Humidity System



- Imported precision humidity sensor for accurate, responsive RH measurement
- Electric heating humidification system with large-capacity water tank
- Humidity operating range: 50% to 90% RH, fluctuation within $\pm 5\%$

Design and Access

- Double-door design with inner observation glass panel for sample monitoring without chamber access
- Test ports on both sides with 30 mm internal diameter for external sensor or cable pass-through
- Mechanical lock for chamber security

Refrigeration System



- Integrated refrigeration unit with internationally sourced compressor
- Non-CFC refrigerant for compliance with environmental regulations
- Self-contained system for straightforward installation and minimal external utility requirements

THEORY & METHOD

Theory and Method

The ToronCubator™ TH-P operates on a closed-loop climate control principle, simultaneously managing temperature and relative humidity within the working chamber. Temperature regulation is achieved through a compressor-based refrigeration circuit combined with electric resistance heating. A centrifugal fan distributes conditioned air throughout the chamber to maintain spatial uniformity, with temperature fluctuation held to $\pm 0.5^{\circ}\text{C}$ and uniformity within $\pm 1^{\circ}\text{C}$ at 25°C .

Humidity control relies on an imported precision humidity sensor paired with an electric heating humidification system. Purified water from the built-in large-capacity water tank is evaporated and introduced into the chamber to reach the target relative humidity level within the 50% to 90% RH range. The system continuously monitors actual humidity and adjusts output accordingly.

The PAMMA II microprocessor controller governs both parameters. Users program up to 30 operating segments and repeat them across 99 cycles, enabling complex ramp-and-soak temperature profiles typical of stability testing protocols. A power recovery function retains all programmed data and session states after unexpected interruptions, preventing data loss and protecting ongoing test integrity.

TECHNICAL SPECIFICATIONS

Practical Constant Temperature Humidity Incubator — ToronCubator™ TH-P Series Technical Specifications

Parameter	ToronCubator™ TH-150P	ToronCubator™ TH-250P	ToronCubator™ TH-400P	ToronCubator™ TH-800P
Volume (L)	150	250	400	800

Parameter	ToronCubator™ TH-150P	ToronCubator™ TH-250P	ToronCubator™ TH-400P	ToronCubator™ TH-800P
Type	Constant Temperature & Humidity Incubator			
Temp. Range Without Humidifying (°C)	4 ~ 60			
Temp. Range With Humidifying (°C)	10 ~ 40			
Temp. Resolution (°C)	0.1			
Temp. Fluctuation at 25°C (°C)	±0.5			
Temp. Uniformity at 25°C (°C)	±1			
Humidity Range (% RH)	50 ~ 90			
Humidity Fluctuation (% RH)	±5			
Power (W)	1450	1500	1700	2600
Timer Range (min)	0 ~ 9999			
Internal Dimensions W×D×H (mm)	510×390×760	510×450×1100	600×640×1050	1220×585×1123
External Dimensions W×D×H (mm)	650×680×1400	650×740×1726	745×930×1695	1503×910×1820
Number of Shelves	3	4	4	6
Net Weight / Gross Weight (kg)	114 / 131	132 / 162	162 / 194	298 / 354
Package Size (mm)	750x820x1590	750x880x1910	890x1120x1880	1600x1040x2020



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