



# LABORATORY INCUBATOR

# The Complete Laboratory Incubator Range for Modern Research

Precision laboratory incubators engineered for every controlled-environment requirement from simple electric heating to CO<sub>2</sub> cell culture, low-temperature stability testing, and pharmaceutical-grade humidity control.

## What Is a Laboratory Incubator?

A laboratory incubator is a controlled-environment instrument that maintains precise temperature and where required, humidity, CO<sub>2</sub> concentration, or both to support biological, chemical, and microbiological processes. Whether culturing mammalian cells at 37 °C, running multi-phase enzymatic biochemical assays, incubating agar plates in a mould incubator, performing ICH-compliant pharmaceutical stability studies, or conditioning reagents for diagnostic workflows, the right laboratory incubator eliminates environmental variability as a source of experimental error.

The ToronCubator™ portfolio is one of the most comprehensive laboratory incubator lineups available for B2B procurement spanning heating-only electric incubators, water-jacket incubators, CO<sub>2</sub> cell culture incubators, dedicated mould incubators, constant temperature and humidity chambers, and full-range refrigerated incubators. Across all categories, every model shares the same construction foundation: mirror-finished stainless steel interior chambers, cold-rolled steel housings, internationally sourced compressor components where applicable, and proven control platforms.

All models are manufactured under ISO 9001:2015 quality management and carry CE marking and IEC 61010-1 electrical safety certification. Safety systems, alarm functions, and power recovery features are standard across the lineup, not optional extras providing a consistent quality baseline regardless of which incubator tier a laboratory selects.

- **Heating-Only Incubators** The heating-only range covers water-jacket, forced-air, natural convection, programmable electric, and precision microbiological configurations. Spanning chamber volumes from 40 L to 1001 L and temperature ranges from RT+2 °C to 100 °C, these laboratory incubators serve cell culture, microbiology, biochemical assay, pharmaceutical QC, and food safety workflows that require stable warmth without refrigeration capability.

- **CO<sub>2</sub> Cell Culture Incubators** The ToronCubator™ CC and ToronCubator™ CI series deliver simultaneous precision control of temperature, CO<sub>2</sub> concentration (0–20%, ±0.1%), and relative humidity (>90% RH) the three parameters critical for sustained mammalian cell viability. NDIR dual-wavelength CO<sub>2</sub> sensing eliminates sensor drift over a five-year service life, while dry heat or moist heat sterilization cycles maintain a contamination-free internal environment between culture runs.
- **Low-Temperature & Refrigerated Incubators** The refrigerated range extends temperature control below room temperature down to -10 °C on the flagship FH-X enabling protocols that require controlled cooling alongside warming capability. From entry-level biochemical incubators to flagship pharmaceutical stability chambers with 98% RH capability, 10-year data storage, and variable-frequency compressor refrigeration, this range covers the full spectrum of temperature-controlled incubation requirements.
- **Dedicated Mould Incubators** The ToronCubator™ MP, ToronCubator™ MU-P, and ToronCubator™ MI-P series are purpose-designed mould incubator configurations not adapted from general-purpose laboratory incubators. UV sterilization lighting, combined temperature-humidity control where required, 6-stage fan speed regulation for managing surface moisture on culture media, and dual-channel lighting make these models the technically correct choice for mycology research, antifungal efficacy testing, and fungal cultivation programs.
- **Constant Temperature & Humidity Incubators** The ToronCubator™ TH-P, ToronCubator™ TH-I, and ToronCubator™ FH-X series add humidity control to the thermal stability of the base incubator platform serving pharmaceutical ICH stability testing, environmental material aging, food safety shelf-life evaluation, and agricultural research programs requiring defined combined temperature and humidity setpoints across long-duration protocols.

*Not sure which model fits your application? Contact our team to discuss your incubation requirements application, volume, temperature range, humidity needs, and regulatory context and we will recommend the ToronCubator™ incubator matched to your workflow.*

## **APPLICATIONS**

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## Where ToronCubator™ Laboratory Incubators Are Used

Every incubator in the ToronCubator™ portfolio is matched to specific laboratory workflows. Whether the application requires a biochemical incubator for enzyme kinetics, a mould incubator for fungal cultivation, or a regulatory-grade laboratory incubator for ICH pharmaceutical stability programs, there is a ToronCubator™ configuration built for that purpose.

Cell & Tissue Culture: stable 37 °C incubation for mammalian cell lines, primary cultures, stem cell research, and IVF with CO<sub>2</sub> and humidity control for sustained viability across extended culture periods. The CC and CI series CO<sub>2</sub> laboratory incubators are purpose-built for these workflows.

- Microbiology: bacterial and yeast culture incubation at physiological or elevated temperatures. These laboratory incubators from entry-level electric heating to precision MB-S microbiological incubators support reproducible growth kinetics for clinical and research-grade microbiological workflows.
- Biochemical Assays: as a precise biochemical incubator platform, the ToronCubator™ range supports enzymatic reactions, hybridization assays, multi-phase temperature-gradient protocols, and metabolic pathway studies requiring programmable segment control and stable, unattended operation throughout the incubation period.
- Mould & Fungal Cultivation: the still-air EH-N, fan-equipped MB-S, dedicated MP, MU-P, and MI-P series serve as a comprehensive mould incubator platform for mycology research, antifungal efficacy testing, spore viability studies, and fungal identification programs where controlled thermal incubation and clean construction minimize cross-contamination risk.
- Pharmaceutical Research & QC: ICH Q1A-compliant stability testing, dissolution test pre-warming, sterility testing, and GMP-adjacent cell-based assay platforms with audit-ready data export, multi-level access control, and 21 CFR Part 11 compliance readiness across the mid-to-upper tier incubators.
- Food Science & Safety: fermentation studies, microbiological shelf-life testing, spoilage microbiology, pathogen detection cultures, and pasteurization simulation at stable, reproducible incubation temperatures across both temperature-only and combined temperature-humidity configurations.
- Environmental & Material Testing: humidity-sensitive aging, corrosion resistance testing, thermal cycling, and stress testing of electronics, polymers, packaging, and construction materials at defined temperature and RH setpoints served by the TH-I and FH-X humidity-capable laboratory incubators.

- Clinical & Diagnostic Labs: specimen warming, reagent pre-conditioning, diagnostic culture plate incubation, and clinical sample preparation at controlled temperatures for diagnostic and point-of-care workflows.
- Agricultural & Plant Science: seed germination trials, plant pathogen incubation, soil microbiology research, and tissue culture programs requiring repeatable, programmable temperature and humidity conditions over extended timelines.
- Academic & Teaching Labs: general-purpose laboratory incubators for undergraduate coursework, multi-user shared facilities, and routine science programs requiring dependable, easy-to-operate incubation across a wide range of temperatures.

## FEATURES

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### Why Choose ToronCubator™ for Your Laboratory Incubator?

From a compact benchtop mould incubator to a 1600 L flagship pharmaceutical stability chamber, every instrument in the ToronCubator™ portfolio is built around the same core commitments.

1. Consistent Performance Across the Full Range: every laboratory incubator in the ToronCubator™ lineup from the entry-level ToronCubator™ BC-E to the flagship ToronCubator™ FH-X is built around the same core construction standards. Mirror stainless steel interior chambers, cold-rolled steel housings, and internationally sourced compressor components are consistent across all tiers. Performance specifications are verified, not estimated fluctuation ratings, uniformity values, and humidity tolerances are traceable to the actual control systems in each model. Laboratories can move between tiers within the ToronCubator™ family and expect the same build quality, even when the feature set changes significantly.

2. A Tiered Portfolio Built Around Real Laboratory Needs The ToronCubator™ series was designed to cover the full range of laboratory incubators that modern research and QC environments require without forcing buyers to over-specify. The ToronCubator™ BC-E and ToronCubator™ EH-E address straightforward biochemical incubator and routine heating needs at accessible price points. The ToronCubator™ SPLT, ToronCubator™ FT, ToronCubator™ EH-P, and ToronCubator™ FC-X add programmability and connectivity for more demanding workflows. The ToronCubator™ TH-I and ToronCubator™ FH-X bring

pharmaceutical-grade humidity control, variable-frequency refrigeration, and regulatory-compliant data management for regulated environments. Each tier is a genuine step up in capability, not a cosmetic change.

3. Purpose-Built Models for Mould and Fungal Research Standard laboratory incubators are not optimized for mycology. The ToronCubator™ portfolio includes dedicated mould incubator configurations the ToronCubator™ MP, ToronCubator™ MU-P, and ToronCubator™ MI-P series that address the specific requirements of fungal and microbial growth studies. UV sterilization lighting, adjustable 6-stage fan speed to manage surface moisture conditions on culture media, and combined temperature-humidity control on humidity-capable variants make these models purpose-designed for mould incubator applications, not adapted from general-purpose designs.

4. Intelligent Control Systems BRIGHT I and BRIGHT II intelligent controllers automatically compensate operating parameters in response to real-time ambient conditions maintaining set-point accuracy across seasonal temperature shifts and HVAC cycling without manual recalibration. This adaptive capability is particularly valuable in laboratory incubators running long-duration, unattended protocols where operator presence between checks may be limited.

5. Data Integrity and Access Control as Standard Features: across the mid-to-upper tier models, data storage, access control, and power recovery are not sold as add-ons. Internal non-volatile memory retains program data for five to ten years depending on the model. Multi-level password management and screen lock timers prevent unauthorized parameter changes in shared laboratory incubator environments. Power recovery functions protect active incubation runs from data loss during electrical interruptions. For regulated environments pharmaceutical QC labs, accredited testing facilities, GMP-adjacent manufacturing settings these features directly support compliance readiness without requiring additional hardware.

6. Scalable Connectivity for Modern Laboratory Infrastructure: the mid-to-upper tier incubators in this series are designed to integrate with the systems laboratories already use. USB, RS232, and RS485 interfaces are standard on the BRIGHT I and BRIGHT II equipped models, enabling direct connection to LIMS platforms, data acquisition systems, and building management networks. Optional GPRS SMS alarm notification, online monitoring platforms, and embedded printers extend that connectivity further. For procurement teams managing multi-site laboratory operations, the ability to monitor every laboratory incubator centrally without adding third-party hardware has real operational value.

7. Scalable with Volume Range: with chamber volumes spanning from 40 L compact benchtop incubators to 1600 L industrial-scale floor-standing units, ToronCubator™ laboratory incubators scale with laboratory throughput without requiring a change of platform or supplier. A single product family covers research, QC, and high-volume production workflows across all incubator categories.

8. International Safety & Regulatory Compliance: every ToronCubator™ laboratory incubator is manufactured under ISO 9001:2015 quality management and carries IEC 61010-1 electrical safety certification, CE marking, RoHS compliance, and reference compliance with UL 61010-1. Pharmaceutical-relevant models reference 21 CFR Part 11 compliance readiness for electronic records and access control architecture, and humidity-controlled models are specified in alignment with applicable ICH stability testing guidelines providing a certified quality baseline that supports procurement in regulated laboratory and clinical environments globally.

TECHNICAL SPECIFICATIONS

Compare All Laboratory Incubator Models

All ToronCubator™ incubators across both the heating and low-temperature ranges compare category, temperature range, humidity capability, volume range, and key differentiating features to identify the right laboratory incubator for your application.

Heating Incubators

| Model                     | Series       | Volumes    | Temp. Range   | Heating Method                              | Temp. Fluctuation | Key Differentiator or                                | Best For                                      |
|---------------------------|--------------|------------|---------------|---------------------------------------------|-------------------|------------------------------------------------------|-----------------------------------------------|
| ToronCubator™ WJ-P Series | Water-Jacket | 46 – 247 L | RT+2 to 65 °C | Tri-directional water-jacket (sides + base) | ±0.2 °C @ 60 °C   | Highest thermal inertia; LCD control; power recovery | Long-duration cell culture, biological assays |

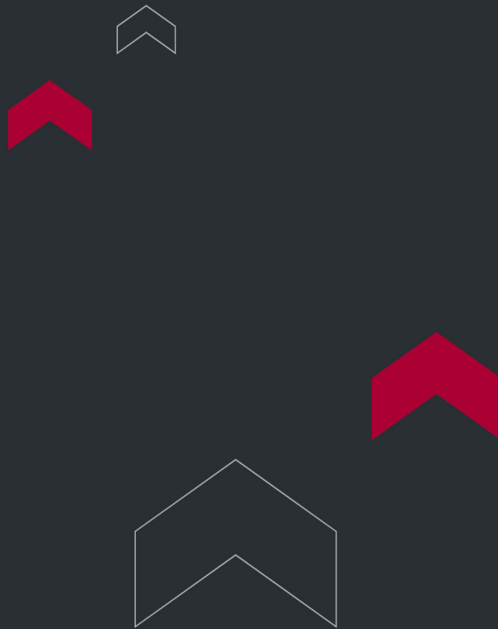
| Model                               | Series                        | Volumes     | Temp. Range    | Heating Method                          | Temp. Fluctuation | Key Differentiator or                                                                    | Best For                                                         |
|-------------------------------------|-------------------------------|-------------|----------------|-----------------------------------------|-------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| ToronCubator™ CC Series             | CO <sub>2</sub> / Humidity    | 55 – 260 L  | RT+3 to 60 °C  | Direct heat air-jacket (6-sided)        | ≤0.05 °C          | 7-inch touch screen; 3-level access; 150 °C dry heat sterilization; NDIR CO <sub>2</sub> | Mammalian cell culture, IVF, biomedical research                 |
| ToronCubator™ CI Series             | CO <sub>2</sub> / Intelligent | 100 – 260 L | RT+5 to 55 °C  | Direct hot gas jacket (3-zone)          | ±0.3 °C           | BRIGHT I; 500,000-record data log; Boxun IoT; 90 °C moist heat sterilization             | GLP/GMP regulated labs, clinical IVF, pharmaceutical biologists  |
| ToronCubator™ EH-E Series           | Forced Air                    | 40 – 234 L  | RT+5 to 65 °C  | Forced-air electric heating             | ±0.5 °C @ 37 °C   | Nano-magnetic door seal; LED display; PMMA I; observation window                         | Routine microbiology, biochemical assays, educational labs       |
| ToronCubator™ EH-P Series (Heating) | Programmable                  | 40 – 1001 L | RT+5 to 85 °C  | Forced-air electric heating             | ±0.5 °C @ 37 °C   | 10-segment / 100-cycle profiles; 6-stage fan; LCD; 0-9999 min/h timer                    | Programmable assays, material testing, pharmaceutical QC         |
| ToronCubator™ FC-X Series           | Performance                   | 64 – 452 L  | RT+5 to 100 °C | Forced-air with preheating chamber      | ±0.3 °C @ 37 °C   | BRIGHT I; preheating chamber; dual over-temp alarm; RS-485; countdown reservation        | Biochemical incubator workflows, pharmaceutical QC, food science |
| ToronCubator™ EH-N Series           | Natural Conv.                 | 70 – 300 L  | RT+5 to 100 °C | Gravity / natural convection (fan-free) | ±0.5 °C @ 37 °C   | Fan-free still-air; BRIGHT I; preheating design; dual over-temp alarm                    | Agar plates, mould incubator protocols, open culture vessels     |
| ToronCubator™ MB-S Series           | Precision Micro               | 65 – 530 L  | RT+5 to 100 °C | Forced-air + 5 cm Al foil insulation    | ±0.2 °C @ 37 °C   | BRIGHT II; 5-inch touchscreen; >10-year data storage; 21 CFR Part 11 readiness           | Microbiological QC, pharmaceutical microbiology, food safety     |

## Low-Temperature & Refrigerated Incubators

| Model | Series | Volume | Temp. Range | Humidity Control | Key Differentiator | Best For |
|-------|--------|--------|-------------|------------------|--------------------|----------|
|-------|--------|--------|-------------|------------------|--------------------|----------|



|                                          |                             |              |                                    |                |                                                                                            |                                                                      |
|------------------------------------------|-----------------------------|--------------|------------------------------------|----------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Toron Cubator™<br>BC-E Series            | Biochemical Entry           | 100 – 250 L  | 5 to 50 °C                         | No             | PMMA I control; 999h timer; power recovery; entry-level price point                        | Routine biochemical incubator workflows, general microbiology        |
| Toron Cubator™<br>EH-P Series (Low Temp) | Biochemical Mid             | 100 – 250 L  | 5 to 60 °C                         | No             | Frequency-conversion refrigeration; R134a; 6-stage fan; PMMA II                            | Mid-range biochemical assays, compressor-equipped incubation         |
| Toron Cubator™<br>SPLT Series            | Biochemical Performance     | 100 – 800 L  | 4 to 70 °C                         | No             | 30-segment / 99-cycle programmable; screen lock; password protection; side test ports      | Complex programmable biochemical incubator protocols, regulated labs |
| Toron Cubator™<br>MP Series              | Mould Programmable          | 100 – 800 L  | 4 to 70 °C                         | No             | UV sterilization; 30-seg / 99-cycle; fluorescent + UV dual lighting                        | Mould incubator applications, fungal cultivation, mycology research  |
| Toron Cubator™<br>TH-P Series            | Temp & Humidity Practical   | 150 – 800 L  | 4–60 °C (dry) / 10–40 °C (humid)   | Yes, 50–90% RH | PMMA II; ±5% RH fluctuation; 30-seg / 99-cycle                                             | Constant temperature and humidity, food safety, pharma stability     |
| Toron Cubator™<br>MU-P Series            | Mould + Humidity            | 150 – 800 L  | 4–60 °C (dry) / 10–40 °C (humid)   | Yes, 50–90% RH | Humidity + UV sterilization; PMMA II; non-CFC compressor; mould-focused dual control       | Mould incubator with humidity, mycology, fungal growth studies       |
| Toron Cubator™<br>TH-I Series            | Temp & Humidity Performance | 150 – 1600 L | 0–70 °C (dry) / 10–60 °C (humid)   | Yes, 25–95% RH | BRIGHT I; 4.3-inch touchscreen; variable-frequency refrigeration; 5-year data storage      | Advanced pharma stability, environmental testing, material aging     |
| Toron Cubator™<br>FH-X Series            | Temp & Humidity Flagship    | 150 – 1600 L | -10–85 °C (dry) / 10–60 °C (humid) | Yes, 15–98% RH | BRIGHT II; 7-inch touchscreen; USB/RS232/RS485; 10-year data storage                       | ICH stability testing, regulated pharmaceutical environments         |
| Toron Cubator™<br>FT Series              | Full Temperature            | 150 – 1000 L | 4 to 70 °C                         | No             | BRIGHT I; 5-inch touchscreen; 6-stage fan; USB + 2× RS-485; 10-year storage                | High-volume temperature-only incubation, LIMS-integrated labs        |
| Toron Cubator™<br>MI-P Series            | Mould Performance           | 150 – 1000 L | 4 to 70 °C                         | No             | BRIGHT I; UV + fluorescent lighting; 6-stage fan; variable-frequency cooling; USB + RS-485 | High-performance mould incubator, fungal studies, mycology QC        |



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