



TORONTECH

## MULTIPLE GROUPS OF CLOSED ELECTRIC FURNACES



## Multiple Groups of Closed Electric Furnaces — ToronFT™ CEF

ToronFT™ CEF Multiple Groups of Closed Electric Furnaces is a direct-adjustable electric heating platform widely recognized as an experimental electric furnace and universal adjustable electric furnace. This instrument represents one of the most widely deployed heating solutions across laboratories in hospitals, agriculture, animal husbandry, environmental protection, universities, scientific research units, and industrial and mining enterprises.

The closed electric furnace design encloses multiple independently controllable heating zones within a single platform, providing flexible, simultaneous multi-sample heating for a broad array of laboratory applications. Its robust construction, straightforward power adjustment, and compact size make it an indispensable workhorse for any laboratory environment.

### APPLICATIONS

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## Multiple Groups of Closed Electric Furnaces — ToronFT™ CEF Applications

- Hospital and clinical laboratories: sample digestion, evaporation, and chemical preparation
- Agricultural and environmental laboratories: soil analysis, water testing, and sample preparation
- University and research institutions: general heating, synthesis, and reaction support
- Industrial and mining quality control: material processing and preparatory thermal treatment
- Animal husbandry laboratories: feed analysis and biological sample preparation



# Standards

The ToronFT™ CEF closed electric furnaces are designed to meet general laboratory safety and performance requirements including:

- IEC 61010-1: Safety requirements for electrical equipment for measurement, control, and laboratory use
- ISO/IEC 17025: General requirements for the competence of testing and calibration laboratories (applicable to laboratory equipment selection)

## FEATURES

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### Multiple Groups of Closed Electric Furnaces — ToronFT™ CEF Key Features

- Multiple independently controlled heating groups for simultaneous, flexible multi-zone operation
- Direct adjustable power control providing immediate and precise temperature response
- Rated power of 1.0 kW per unit — energy-efficient performance for daily laboratory use
- Power supply: 220V / 10% tolerance, 50Hz  $\pm$  2% — compatible with standard North American laboratory outlets
- Compact appearance size: 19 cm  $\times$  22 cm  $\times$  12.5 cm — ideal for space-constrained benchtops
- Packaging size: 21 cm  $\times$  25 cm  $\times$  17 cm for safe shipping and storage
- Lightweight design: net weight 2.5 kg / gross weight 2.9 kg — easy to move and reposition
- Closed heating surface protects elements from chemical splatter, extending equipment lifespan
- Widely used across diverse sectors — hospitals, agriculture, environmental labs, universities, and industry

## THEORY & METHOD

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# Theory and Method

Closed electric furnaces operate by converting electrical energy into heat through embedded resistance heating elements housed beneath a smooth, enclosed heating surface. The closed design minimizes heat loss and protects the heating elements from contamination, extending service life and maintaining heating efficiency.

Multiple independently adjustable groups allow the operator to set different power levels across heating zones, enabling simultaneous processing of samples with differing thermal requirements. The direct-adjustment control mechanism allows immediate response to changes in desired output, making temperature management straightforward and reliable.

## TECHNICAL SPECIFICATIONS

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### Multiple Groups of Closed Electric Furnaces — ToronFT™ CEF Technical Specifications

| Parameter                      | Specification                                |
|--------------------------------|----------------------------------------------|
| Model                          | Multiple Groups — Closed Electric Furnaces   |
| Rated Power (per unit)         | 1.0 kW                                       |
| Power Supply / Voltage         | 220V ±10%, 50Hz ±2% (110V is also available) |
| Appearance Size (cm)           | 19 × 22 × 12.5                               |
| Packaging Size (cm)            | 21 × 25 × 17                                 |
| Net Weight / Gross Weight (kg) | 2.5 / 2.9                                    |



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