

SPRINKLER STATIC ACTION TEMPERATURE AIR CHAMBER



Sprinkler Static Action Temperature Air Chamber — ToronFT™ SS-AT

ToronFT™ SS-AT Sprinkler Static Action Temperature Air Chamber is a precision air bath thermal testing instrument designed for the static activation temperature evaluation of fire sprinkler heads using the air bath (air oven) test method. Compliant with the Air Bath Test requirements of international sprinkler qualification standards, the ToronFT™ SS-AT delivers stable, uniform air temperature conditions and a precise, programmable heating rate to ensure repeatable and standard-compliant test results.

With a capacity of 50 sprinkler heads per test run and a dual-material construction combining an inner stainless steel chamber with an outer steel plate body finished in high-temperature electrostatic paint, the ToronFT™ SS-AT is built for both high-throughput production testing and long-term durability in demanding laboratory environments.

APPLICATIONS

Sprinkler Static Action Temperature Air Chamber — ToronFT™ SS-AT Applications

- Fire sprinkler manufacturers: air bath static activation temperature testing for production qualification and certification
- Third-party certification and listing laboratories: ISO 6182-1 Section 7.7 Air Bath Test compliance verification
- Quality assurance departments: high-throughput batch testing and periodic re-qualification of sprinkler temperature ratings
- R&D departments: evaluation of new heat-sensitive element designs under controlled air bath heating conditions
- Regulatory compliance programs: static temperature performance verification across all standard sprinkler temperature classes



FEATURES

Sprinkler Static Action Temperature Air Chamber — ToronFT™ SS-AT Key Features

- High-capacity design: 50 sprinkler heads per test run — ideal for high-throughput production and batch certification testing
- Dual-material construction: inner chamber fabricated from stainless steel for corrosion resistance; outer body from steel plate with high-temperature electrostatic paint for durability
- Programmable segmented heating system: precise and continuously controllable temperature ramp — $(0.50 \pm 0.3)^{\circ}\text{C}/\text{min}$ final activation ramp
- Standard-compliant test profile: room temperature ramp to nominal operating temperature (reached in ≥ 20 minutes), 20-minute hold, then ramp at $(0.50 \pm 0.3)^{\circ}\text{C}/\text{min}$ to sprinkler activation
- Designed specifically for the Air Bath Test per ISO 6182-1 Section 7.7
- Large interior volume accommodating 50 specimens simultaneously for efficient batch processing
- Robust, long-life construction suitable for continuous use in production and certification environments
- Intuitive control interface for straightforward multi-segment test profile programming

THEORY & METHOD

Theory and Method

The air bath static action temperature test evaluates a sprinkler's activation temperature by heating a batch of specimens in a controlled air oven environment. The ToronFT™ SS-AT begins by raising the chamber temperature from room temperature

to the nominal operating temperature of the test sprinklers — reaching that temperature in no less than 20 minutes to ensure thermal stabilization of the specimens — and then maintaining that temperature for 20 minutes. The temperature is then increased at a rate of $(0.50 \pm 0.3)^{\circ}\text{C}/\text{min}$ until the sprinkler operates.

This controlled ramp methodology directly replicates the slow, progressive heating exposure specified by the standard, distinguishing the air bath test from higher-rate thermal tests. The programmable segmented heating system of the ToronFT™ SS-AT provides precise control over each phase of the test profile — ramp, hold, and final ramp to activation — ensuring accurate, reproducible results for every specimen batch.

TECHNICAL SPECIFICATIONS

Sprinkler Static Action Temperature Air Chamber — ToronFT™ SS-AT

Technical Specifications

Parameter	Specification
Model	ToronFT™ SS-AT
Test Method	Air Bath Test (air oven)
Number of Samples (per run)	50 sprinkler heads
Inner Chamber Material	Stainless steel
Outer Body Material	Steel plate with high-temperature electrostatic paint
Heating System	Programmable segmented heating
Ramp Rate to Nominal Temp	Reach nominal temp in ≥ 20 minutes
Hold at Nominal Temp	20 minutes

Parameter	Specification
Final Ramp Rate to Activation	(0.50 ± 0.3)°C/min
Standard Compliance	ISO 6182-1 Section 7.7 — Air Bath Test



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