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AVIATION WIRE AND CABLE BURNING TESTER

Aviation Wire and Cable Burning Tester — ToronFT™ BT-WC

ToronFT™ BT-WC Aviation Wire and Cable Burning Tester is a precision non-flammability testing instrument designed for the fire performance evaluation of aviation and aerospace wires and cables under direct combustion by specified fire sources. Compliant with US military specifications MIL-W-5186C, MIL-DTL-22759D, MIL-DTL-81381A, ISOR 1220, and ISOR 1491, the ToronFT™ BT-WC provides the controlled, standardized flame exposure environment required for aerospace-grade wire and cable non-flammability qualification — ensuring that aviation wiring systems will not propagate fire in the event of an ignition event.

The aviation wire and cable burning tester features a precision-engineered metal enclosure (600 mm H × 360 mm W × 250 mm D), a standard propane gas burner with defined outer and inner flame dimensions, high-pressure automatic ignition, arbitrarily settable burning time (0–99.99 s/m), and a synchronous ignition delay time display — providing the complete, automated test infrastructure required for aerospace wire and cable non-flammability certification.

APPLICATIONS

Aviation Wire and Cable Burning Tester — ToronFT™ BT-WC Applications

- Aviation and aerospace wire and cable manufacturers — non-flammability qualification for aircraft wiring, coaxial cable, and aerospace-grade conductors
- Aerospace OEMs and Tier 1 suppliers — incoming material qualification for aviation wiring systems
- Third-party aerospace testing and certification laboratories — wire non-flammability testing per MIL-W-5186C, MIL-DTL-22759D, MIL-DTL-81381A, and related US military specifications
- Defense procurement and quality assurance programs — non-flammability compliance verification for military aircraft wiring

- R&D departments — evaluation of new aerospace wire insulation materials and jacket compounds for improved non-flammability performance

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ToronFT™ BT-WC - Aviation Wire and Cable Burning Tester

Standards

The ToronFT™ BT-WC supports aviation wire and cable burning testing in compliance with US military specifications and internationally recognized aviation fire safety standards, including:

- MIL-W-5186C: Wire, electrical, high-temperature, fire-resistant (aerospace applications)
- MIL-DTL-22759D: Wire, electrical, fluoropolymer-insulated, copper or copper alloy
- MIL-DTL-81381A: Wire, electrical, polyimide-insulated, copper or copper alloy
- ISOR 1220: International Specification for aerospace wire non-flammability
- ISOR 1491: International Specification for aerospace cable fire performance

FEATURES

Aviation Wire and Cable Burning Tester — ToronFT™ BT-WC Key Features

- Compliant with MIL-W-5186C, MIL-DTL-22759D, MIL-DTL-81381A, ISOR 1220, and ISOR 1491 — the primary US military aviation wire and cable non-flammability specifications
- Metal enclosure: 600 mm (H) × 360 mm (W) × 250 mm (D); open at front and top, closed at bottom — standardized test geometry with controlled air flow
- Standard propane gas burner: outer flame 175 mm; inner flame 55 mm — defined flame geometry per military specification requirements
- Fuel gas: propane, purity 95% (customer supplied) — aviation-grade fuel specification
- High-pressure automatic ignition — reliable, consistent flame initiation for every test cycle
- Fume hood: not included; provided by customer or purchased separately — laboratory infrastructure note for installation planning
- Burning time: 0–99.99 s/m (arbitrarily settable); resolution 0.01 s — precise, standard-compliant exposure duration control

- Ignition delay time display: 0–99.99 s/m; resolution 0.01 s — accurate post-flame burn time measurement

THEORY & METHOD

Theory and Method

Aviation wire and cable non-flammability testing subjects a defined length of wire or cable specimen to a standardized propane gas flame for a specified duration, then evaluates whether the specimen self-extinguishes within the required time after the flame is removed. The test flame — delivered by a standard propane gas burner with a 175 mm outer flame and 55 mm inner flame — is applied to the specimen at the specified position for the programmed burning time (0–99.99 s/m, set arbitrarily with 0.01 s resolution).

High-pressure automatic ignition ensures reliable, consistent flame initiation for every test cycle. After the programmed burning time elapses, the flame is removed and the ignition delay time display records the additional time the specimen continues to burn — which is compared against the self-extinguishing time limit specified by the applicable military specification. The open top and front of the metal enclosure allow natural air flow while the closed bottom ensures that the specimen is not exposed to drafts that would affect the standardized flame geometry.

TECHNICAL SPECIFICATIONS

Aviation Wire and Cable Burning Tester — ToronFT™ BT-WC Technical Specifications

Parameter	Specification
Test Application	Aviation and aerospace wire and cable non-flammability

Parameter	Specification
Metal Cover Dimensions (H×W×D)	600 mm × 360 mm × 250 mm
Cover Opening	Open at front and top; closed at bottom
Burner Type	Standard propane gas burner
Outer Flame Length	175 mm
Inner Flame Length	55 mm
Fuel Gas	Propane, purity 95% (customer supplied)
Ignition	High-pressure automatic ignition
Fume Hood	Not included (customer provided or purchased separately)
Burning Time Range	0 – 99.99 s/m (arbitrarily settable); resolution 0.01 s
Ignition Delay Time Display	0 – 99.99 s/m; resolution 0.01 s
Standard Compliance	MIL-W-5186C; MIL-DTL-22759D; MIL-DTL-81381A; ISOR 1220; ISOR 1491

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