



TORONTECH

BUNDLED CABLE VERTICAL BURNING TESTER



Bundled Cable Vertical Burning Tester - ToronFT™ BCV

ToronFT™ BCV Bundled Cable Vertical Burning Tester is a large-scale laboratory instrument designed to determine and evaluate the ability of vertically installed bundled wire and cable systems or optical cables to inhibit the vertical spread of flames under specified fire conditions. Bundled cable vertical burning testing is a critical safety requirement for wire and cable systems installed in buildings, industrial plants, and infrastructure where large quantities of cables are routed together in vertical trays, conduits, or risers — where fire propagation along a cable bundle can have catastrophic consequences.

The ToronFT™ BCV complies with IEC 60332-3-10, IEC 60332-3-21, IEC 60332-3-22, IEC 60332-3-23, IEC 60332-3-24, and IEC 60332-3-25 — the complete suite of international bundled cable vertical burning standards — making it a comprehensive and versatile platform for wire and cable fire performance certification across all IEC 60332-3 categories.

APPLICATIONS

Bundled Cable Vertical Burning Tester - ToronFT™ BCV Applications

The ToronFT™ BCV is designed for bundled cable vertical burning testing of:

- Power cables, control cables, and instrumentation cables installed vertically in cable trays or racks for IEC 60332-3 bundled vertical burning certification
- Communication cables, data cables, and fiber optic cables in bundled vertical routing configurations for vertical burning tester compliance
- Building wiring systems requiring bundled cable vertical burning performance data for fire safety and building code compliance
- Marine, offshore, and industrial plant cable bundles requiring IEC 60332-3 vertical burning tester qualification

- New cable designs and flame-retardant cable jacket formulations for bundled vertical burning performance evaluation and optimization
- Type testing and certification of bundled wire and cable installations for IEC 60332-3 vertical burning category compliance



Standards

The ToronFT™ BCV is designed to comply with the following international standards for bundled cable vertical burning testing:

- IEC 60332-3-10: Tests on electric and optical fibre cables under fire conditions: Test for vertical flame spread of vertically-mounted bunched wires or cables — Apparatus
- IEC 60332-3-21: Category A F/R: Tests on electric and optical fibre cables under fire conditions (IEC 60332-3 suite)
- IEC 60332-3-22: Category A: Tests on electric and optical fibre cables under fire conditions (IEC 60332-3 suite)
- IEC 60332-3-23: Category B: Tests on electric and optical fibre cables under fire conditions (IEC 60332-3 suite)
- IEC 60332-3-24: Category C: Tests on electric and optical fibre cables under fire conditions (IEC 60332-3 suite)
- IEC 60332-3-25: Category D: Tests on electric and optical fibre cables under fire conditions (IEC 60332-3 suite)

FEATURES

Bundled Cable Vertical Burning Tester – ToronFT™ BCV Key Features



Two ribbon-type propane gas torches



Steel ladder

- Full IEC 60332-3 suite compliance — the ToronFT™ BCV covers IEC 60332-3-10 through -3-25, providing a single bundled cable vertical burning tester platform for all IEC 60332-3 category certifications (Categories A F/R, A, B, C, and D)
- Large test box (W 1000 ± 50 mm × D 2000 ± 50 mm × H 4000 ± 50 mm) accommodates full-length bundled wire and cable specimens mounted at industry-standard installation density for realistic vertical burning assessment
- Thermally insulated test chamber — back wall and both sides insulated with 0.7 W/m²·K·1 heat transfer coefficient material — with high-grade stainless steel inner construction and 65 mm thick mineral fiber insulation to maintain controlled thermal conditions throughout the bundled cable vertical burning test
- Controlled air inlet flow rate maintained at 5000 ± 500 L/min before and during the bundled cable vertical burning test ensures standardized airflow conditions per IEC 60332-3-10 throughout the entire test duration
- Air inlet opening at the bottom of the combustion box (800 ± 20 mm × 400 ± 10 mm) provides standardized, uniform airflow distribution across the base of the bundled cable vertical burning test specimen
- Standardized test length dimensions — 300 mm horizontal, 457 mm vertical — comply with IEC 60332-3 burning tester geometry requirements for consistent, reproducible bundled cable vertical fire propagation measurements
- Water extinguishment provision — after test completion, if the specimen is still burning, the fire supply is stopped and burning extinguished by water — ensuring safe termination of all bundled cable vertical burning tests
- Complies with IEC 60332-3-10 through -3-25, providing internationally recognized bundled cable vertical burning test results accepted by wire and cable certification bodies globally

THEORY & METHOD

Theory and Method

Bundled cable vertical burning testing evaluates the fire propagation behavior of a vertically mounted array of wire and cable specimens exposed to a sustained ribbon burner flame applied at the base of the bundle. The test measures the

extent of cable charring above the burner after a defined exposure period — bundles that limit charring to within the specified distance are considered to inhibit vertical flame spread and meet the IEC 60332-3 category requirements.

In the ToronFT™ BCV, the large test box (width 1000 ± 50 mm, depth 2000 ± 50 mm, height 4000 ± 50 mm) is thermally insulated on both back wall and sides with material of heat transfer coefficient approximately 0.7 W/m²·K¹. The chamber material is high-grade stainless steel with 65 mm thick thermal insulation mineral fiber sandwiched inside.

The air flow at the air inlet is maintained at 5000 ± 500 L/min before and during the test to provide the standardized airflow required for IEC 60332-3 bundled cable vertical burning tests. After test completion, if the specimen is still burning, the fire supply is stopped and the burning extinguished by water. The air inlet size at the bottom of the combustion box is 800 ± 20 mm × 400 ± 10 mm, and the test length dimensions are 300 mm (horizontal) and 457 mm (vertical).

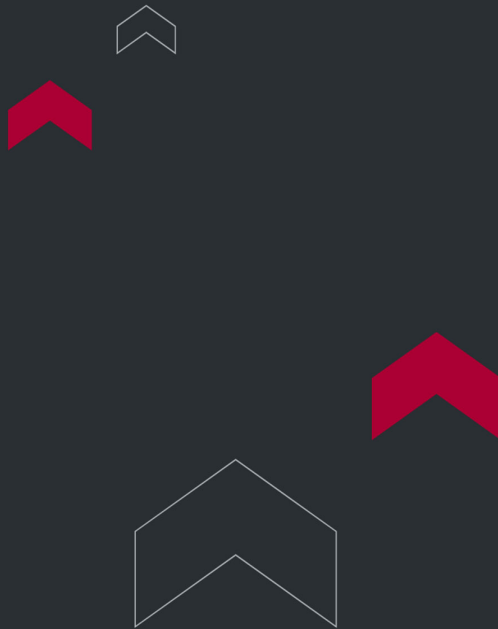
TECHNICAL SPECIFICATIONS

Bundled Cable Vertical Burning Tester - ToronFT™ BCV Technical Specifications

Parameter	Specification
Product Name	Bundled Cable Vertical Burning Tester — ToronFT™ BCV
Test Box Width	1000 ± 50 mm
Test Box Depth	2000 ± 50 mm
Test Box Height	4000 ± 50 mm
Chamber Thermal Insulation	Heat transfer coefficient ≈ 0.7 W/m²·K ¹ ; 65 mm mineral fiber inside stainless steel
Chamber Inner Material	High-grade stainless steel

Parameter	Specification
Air Flow Rate (Inlet)	5000 ± 500 L/min (before and during test)
Air Inlet Size (bottom)	(800 ± 20) mm × (400 ± 10) mm
Test Length — Horizontal	300 mm
Test Length — Vertical	457 mm
Post-Test Extinguishment	Water (if specimen still burning after fire supply stopped)
Compliance Standards	IEC 60332-3-10; IEC 60332-3-21; IEC 60332-3-22; IEC 60332-3-23; IEC 60332-3-24; IEC 60332-3-25

For more information, pricing, or to request a quotation, please contact ToronFT. Specifications are subject to change without prior notice.



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