Explosion Proof Test Chambers for Battery Testing

ToronEXPC Series

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Explosion-proof test chambers are **designed to safely assess the performance, reliability, and safety of batteries under extreme conditions**. Reinforced enclosures prevent the release of harmful gases, flames, or debris in the event of failure. These chambers simulate stresses like high temperatures, overcharging, rapid discharge, short circuits, and physical impacts to help manufacturers identify risks and improve battery design.

Used widely in industries such as automotive, aerospace, electronics, renewable energy, and electric vehicles, these chambers support testing of lithium-ion batteries, packs, and energy storage systems. They comply with international standards including **UN 38.3**, **IEC 62133**, **UL 1642**, **IEC 62660**, **ISO 12405**, and **SAE J2464**, ensuring consistent and reliable results. Torontech's chambers offer advanced safety, precise control, and flexible configurations for both manufacturers and researchers.

EXPLOSION-PROOF DESIGN FEATURES

❯ **Explosion-Proof Window**
Reinforced glass with stainless steel mesh prevents glass fragments from scattering during an explosion.

❯ **Automatic Pressure Relief**
The chamber door opens automatically to release pressure if it exceeds the safe threshold.

❯ **Explosion-Proof Chains**
Secure the door to prevent excessive movement during an explosion, improving safety for operators.

❯ **Three-Layer Warning Light**
Activates a red light and buzzer during emergencies or system faults for immediate alerts.

❯ **Smoke Detector**
Instantly detects smoke and provides immediate warnings.

FEATURES/ADVANTAGES

❯ Durable Construction
Robust SUS304 stainless steel interior with a cold-rolled steel exterior ensures long-term durability under demanding test conditions.

❯ Advanced Sealing System
Custom-designed seals combined with electric heating effectively prevent condensation and frost during extreme temperature cycles.

❯ Reliable Safety Protection
Built-in comprehensive safety system maintains consistent chamber operation while minimizing the risk of downtime.

❯ Clear Observation Window
Electric anti-fogging film ensures clear visibility through the observation window even during high humidity or rapid temperature changes.

❯ Stable Performance Across Conditions
Engineered to handle both high and low temperature extremes, ensuring reliable test results across various battery testing scenarios.

❯ Efficient Cooling Performance
Smart air-cooled system provides reliable cooling, improving energy efficiency and maintaining stable test environments.

TECHNICAL SPECIFICATIONS

SPECIFICATIONS	DETAILS	
	ToronEXPC - 408	**ToronEXPC - 1000**
Test Space Volume (Liters)	408	1000
Inner Chamber Size W × H × D (mm)	800 × 850 × 600	1000 × 1000 × 1000
Exterior Chamber Size W × H × D (mm)	1000 × 1755 × 1360	1200 × 1865 × 1725
Temperature Range	R: –20°C to +150°C L: –40°C to +150°C S: –70°C to +150°C (180°C optional)	
Temperature Fluctuation	±0.5°C	
Temperature Uniformity	≤ 2.0°C	
Temperature change rate acc. IEC 60068-3-5	Heating rate: 3°C/min, Cooling rate 1°C/min (average rate, no load)	
Exterior Chamber Material	High-quality carbon steel with painting	
Interior Chamber Material	SUS304 matte stainless steel plate	
Insulation Material	Rigid polyurethane foam insulation	
Explosion-Proof Window	Multi-layer vacuum glass window with a stainless steel protective net, preventing the glass from flying in case of explosion	
Explosion-Proof Pressure Relief Vent	When the pressure in the equipment or pipeline exceeds the pressure of the safety valve, the pressure relief is automatically opened	
Explosion-Proof Door Chain Lock	Quickly vent internal air pressure and protect personnel safety	
Cooling Mode	Air cooled	
Controller	LCD Touch Screen Controller with PID control	
Safety Protection Device	NFB (No fuse breaker), over pressure, over heat and over current protectors for compressor, over temperature protectors, over load protector of fan, dry heat protector, short of water protector	
Standard Accessory	Sight window (×1), Cable port (port Ø100mm)(×2), Shelves (×2), LED lighting device (×1), Smoke detector (×1), 3-Color tower alarm lamp (×1), Mobile Casters with foot cups, Power cable (5m)	
Environment temp.	+5 to +35°C	
Voltage	380V AC 30 50Hz	
Customization Service	Non-standard or special requirements can be customized.	

TORONTECH

Torontech Inc.

251 Consumers Road, Suite 1200

Toronto, Ontario, M2J 4R3, Canada 🇨🇦

Phone: +1 416 368 2721 | Fax: +1 416 981 7652

Email: info@torontech.com

Torontech, LLC

601 Brickell Key Drive, Suite 700

Miami, FL 33131, USA 🇺🇸

Toll-Free: 1-866-383-7919

Email: sales@torontech.com

USA | Canada | EU | UAE | GCC | India | Africa | Latin America | Asia

TORONTECH.com