

# Low Pressure Test Chamber High Altitude Test Chamber Battery Explosion Proof Test Chamber

Item Number: DA06



## Introduction

Evaluate battery safety under 11.6kPa low pressure conditions with this high altitude explosion proof test chamber featuring PLC touchscreen control automatic vacuum replenishment reinforced viewing protection and clear observation for reliable no fire no smoke and no leakage validation.

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| Application                              | Description                                                                                                                                    | Key Benefit                                                                                                                               |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Battery low-pressure safety testing      | Simulates reduced atmospheric pressure by testing battery samples at 11.6kPa (1.68psi) negative pressure.                                      | Helps verify that batteries do not explode, ignite, smoke, leak, or damage their protection valves under low-pressure conditions.         |
| High-altitude battery simulation         | Reproduces the low-pressure environment associated with high-altitude operation or transportation.                                             | Provides a controlled method for evaluating battery safety before use in elevated locations or altitude-related scenarios.                |
| Lithium-ion battery development          | Supports battery R&D teams assessing cell or battery behavior during abnormal-environment testing.                                             | Generates observable test outcomes through direct viewing, displayed test results, and controlled vacuum conditions.                      |
| Battery quality control                  | Provides a repeatable enclosure for production or incoming inspection teams performing safety-oriented pressure tests.                         | Helps standardize test conditions and supports consistent review of pressure-related failure behavior.                                    |
| Battery protection valve verification    | Examines whether the battery protection valve remains intact after exposure to the specified negative pressure.                                | Supports confirmation that critical protective components are not damaged during testing.                                                 |
| Battery failure observation              | Allows operators to monitor the test area through 20mm tempered explosion-proof glass, explosion-resistant film, and external LED lighting.    | Improves visibility of smoke, leakage, fire, or other abnormal conditions without opening the chamber during testing.                     |
| Academic and advanced materials research | Provides a dedicated low-pressure environment for university, research institute, and materials laboratory investigations involving batteries. | Combines programmable touchscreen operation, automatic vacuum replenishment, and an easy-clean chamber for repeatable research workflows. |

| Parameter               | Specification                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Product item number     | DA06                                                                                                                                |
| Primary application     | Battery low-pressure and high-altitude simulation testing                                                                           |
| Test pressure           | 11.6kPa negative pressure                                                                                                           |
| Test pressure in psi    | 1.68psi negative pressure                                                                                                           |
| Test sample requirement | All tested samples are tested under 11.6kPa (1.68psi) negative pressure                                                             |
| Safety test objective   | Battery must not explode or catch fire; battery must not produce smoke or leak liquid; battery protection valve must not be damaged |
| Control system          | PLC touchscreen control system                                                                                                      |
| Vacuum input            | Touchscreen manual input of vacuum value                                                                                            |
| Vacuum unit selection   | Touchscreen input and selection of vacuum unit                                                                                      |
| Test display            | Actual test result and corresponding test data displayed during testing                                                             |

| Parameter                       | Specification                                                                                         |
|---------------------------------|-------------------------------------------------------------------------------------------------------|
| Vacuum setting                  | Automatic vacuum value setting available                                                              |
| Vacuum maintenance              | Automatic vacuum replenishment available                                                              |
| Cabinet material                | High-quality cold-rolled steel plate                                                                  |
| Cabinet surface treatment       | Electrostatic powder coating                                                                          |
| Cabinet coating characteristics | Hard, firmly bonded coating with strong rust resistance                                               |
| Working chamber material        | High-quality steel plate                                                                              |
| Working chamber design          | Rounded-corner, smooth, flowing interior surface                                                      |
| Working chamber cleaning        | Easy-clean interior design                                                                            |
| Door construction               | Reinforced front door design                                                                          |
| Door glass                      | 20mm thick tempered explosion-proof glass                                                             |
| Door glass protection           | Explosion-proof film applied to the viewing window for double protection                              |
| Door reinforcement              | Reinforcing ribs welded inside the door to increase strength                                          |
| Door hinge                      | External hinge on the left side; reinforced equipment-specific standard component                     |
| Door lock                       | High-strength door locking buckle on the right side; reinforced equipment-specific standard component |
| Hinge and lock serviceability   | Standard high-strength components designed for safe, convenient installation and replacement          |
| Door sealing                    | Rubber sealing ring between the working chamber and glass door                                        |
| Sealing function                | Helps the chamber reach a higher vacuum level                                                         |
| Lighting                        | LED lighting mounted outside the viewing window                                                       |
| Lighting arrangement            | Light reflects into the inner chamber for observation                                                 |
| Lighting purpose                | Clear observation of battery condition while supporting lighting component service life and safety    |
| Configuration                   | Integrated construction with low-pressure chamber below and vacuum pump above                         |
| Mobility                        | Four casters at the bottom                                                                            |
| Caster function                 | Convenient movement and fixing                                                                        |