



环境模拟试验行业专家

AN EXPERT IN CLIMATIC SIMULATION TESTING

苏州佐竹冷热控制技术有限公司
SUZHOU SATAKE ENGINEERING CO., LTD.



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COMPANY INTRODUCTION

公司介绍

苏州佐竹冷热控制技术有限公司成立于 2017 年,是一家中日合资的高新技术企业。专业设计和建造环境模拟试验舱、环境风洞及各类冷热测试设备。

公司位于苏州常熟市高新技术产业开发区,并在上海设有技术研发中心,双引擎驱动业务发展。公司通过 ISO 9001 和 ISO14001 认证。

Suzhou Satake Engineering Co., Ltd. (SSEC), founded in 2017, is a Sino-Japanese joint venture specializing in the design and construction of environmental test chambers, wind tunnels, and thermal testing equipment.

Located in the Changshu High-Tech Industrial Development Zone in Suzhou, SSEC also houses a technology R&D center in Shanghai. SSEC committed to quality management and environmental responsibility, holds ISO 9001 and ISO 14001 certifications.

2017 年に設立された蘇州佐竹冷熱制御技術有限公司は、中国と日本のハイテク合弁企業である。環境シミュレーション試験室、環境風洞、各種高温・低温試験装置の設計・建設を専門としている。

同社は蘇州市常熟市のハイテク産業開発区に位置し、上海には技術研究開発センターがあり、デュアルエンジン駆動の事業展開を行っている。ISO9001 と ISO14001 の認証を取得した。



OUR CLIENTS

主要客户



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FUEL CELL STACK CLIMATIC TEST CHAMBER

- 可根据客户不同需要订制各种高性能舱体
- Custom-built Solutions for Customer Requirements

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- 可根据客户不同需要订制各种高性能舱体
- Custom-built Solutions for Customer Requirements



AUTOMOTIVE CLIMATIC WIND TUNNEL

整车环境风洞

本环境风洞可精确模拟从赤道到极地的各类气候以及汽车在道路上的行驶状况, 随时复现气流、温度、湿度、光照、降雨、降雪和道路阻力等汽车测试条件, 真正实现不受季节和地域限制的汽车动态试验测试。大大缩短开发周期并降低试验成本。

● 典型的性能指标

温度范围
-40~+60°C

湿度范围
5~95% R.H.

日照模拟系统
300~1200 W/m²

风速
0~250 km/h

风口面积根据需要设计, 降雨降雪模拟功能可选



CWT can simulate all kinds of climatic conditions from tropic to arctic zone and different road conditions. Temperature, humidity, wind speed, road load, rain, snow, etc. can be controlled separately or together. The chassis dynamometer simulates different road characteristics and vehicle operating statuses. There is no limit of location, season and time to do tests in the CWT, which helps to simulate natural conditions, extreme conditions and repeatability test under the same environmental conditions. It accelerates the development phase of vehicles and greatly reduces the on-road testing costs.

● Typical Performance Parameters

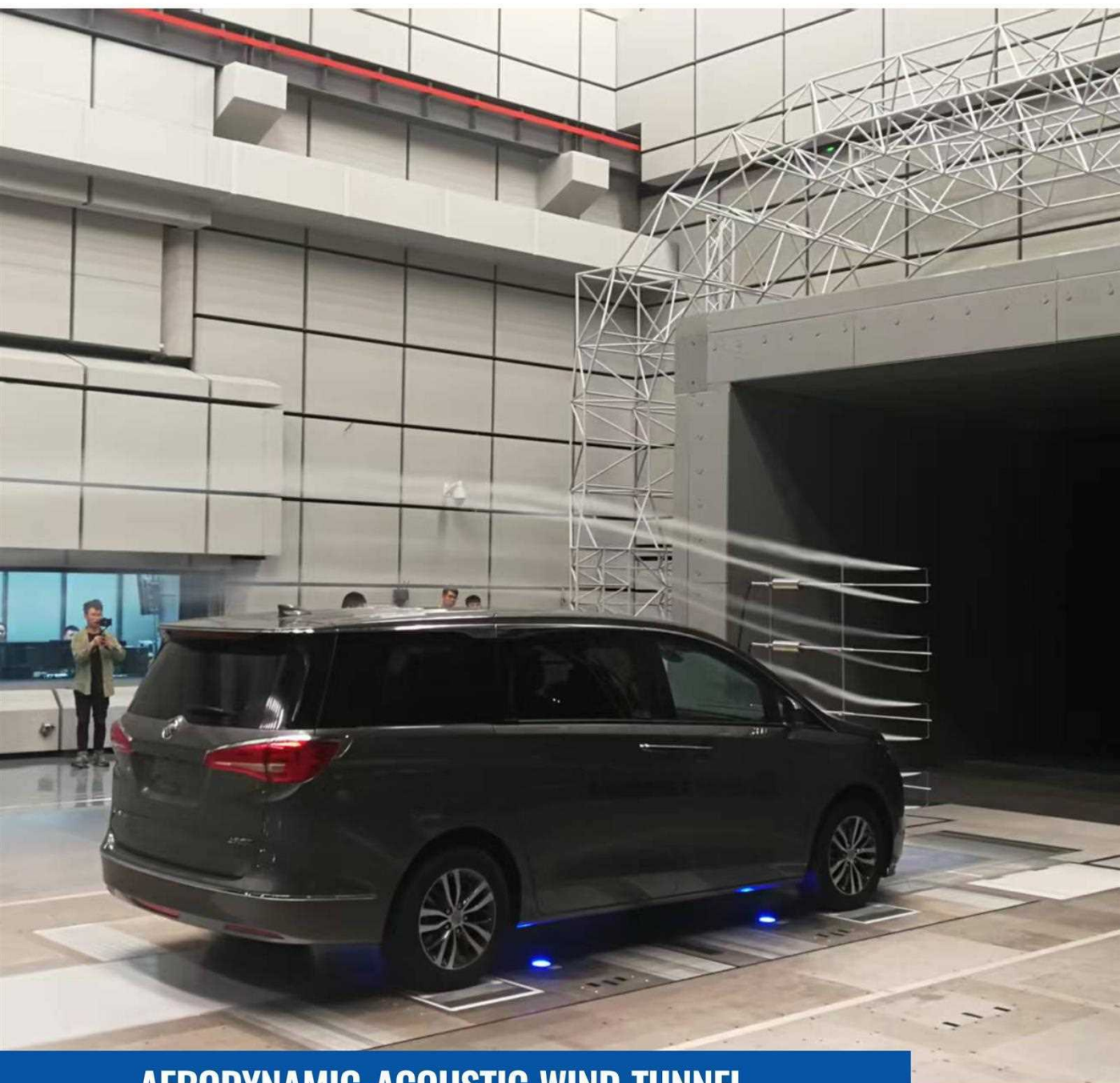
Temperature Range
-40~+60°C

Humidity Range
5~95% R.H.

Solar Irradiation
300~1200 W/m²

Wind Speed
0~250 km/h

Nozzle size to be custom-built , Rainfall and snowfall simulation function optional



AERODYNAMIC-ACOUSTIC WIND TUNNEL

气动声学风洞

气动声学风洞用于测试车辆及其组件的行驶阻力、气流扰动及噪音，是汽车制造商和研究机构在研发中优化空气动力学性能和提升静音效果的关键设施。



Aerodynamic-Acoustic Wind Tunnel is essential for testing vehicles and components to assess airflow losses, airflow disturbances, and noise generation. They are crucial facilities to optimize aerodynamic performance and reduce the vehicle wind noise for car-maker and research institutes during the R&D phase.



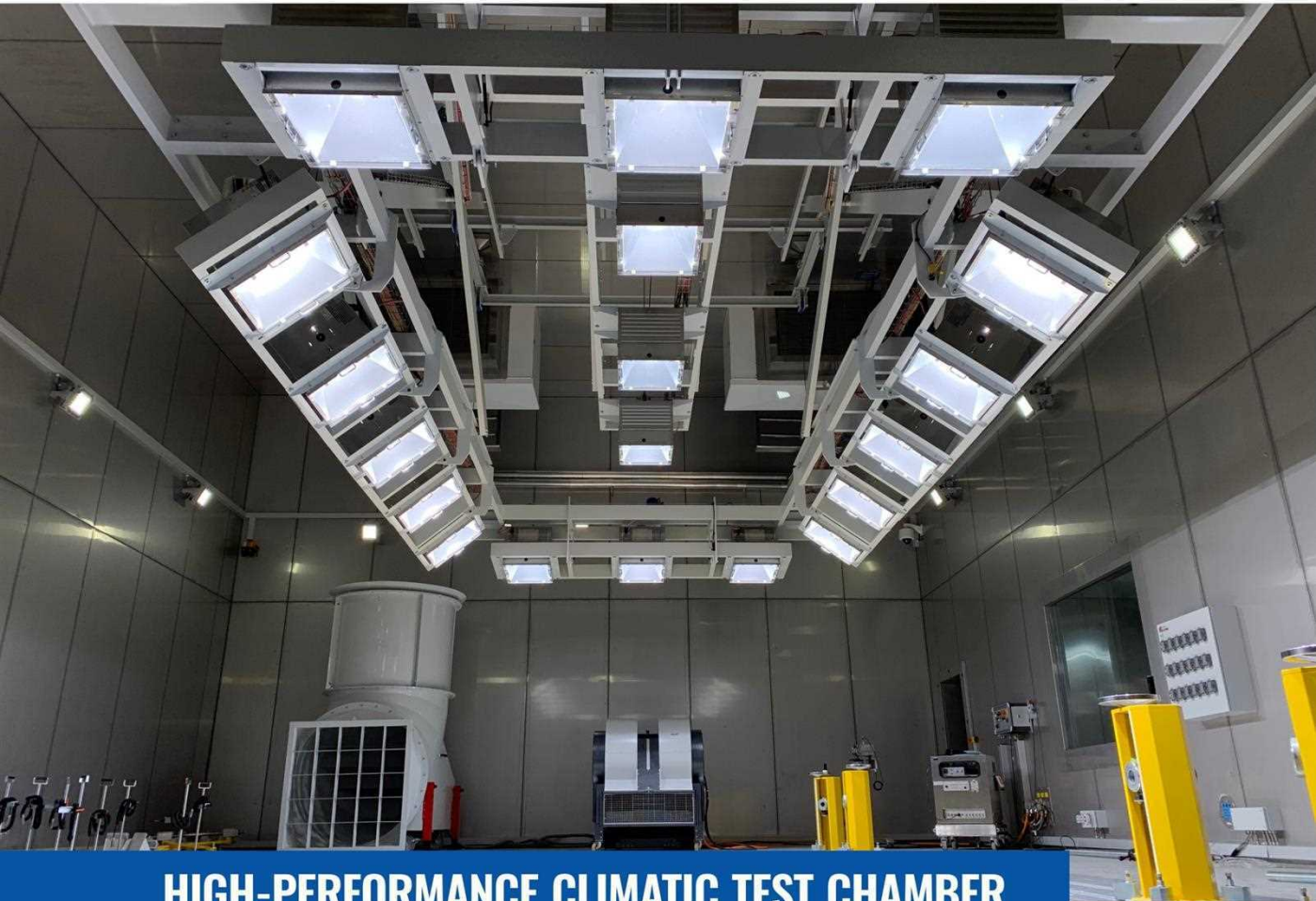
SEMI WIND TUNNEL

半风洞实验室

该实验室规模介于整车风洞和环境舱之间, 设有较大的出风口及整流装置, 迎面风气流品质显著优于环境舱。但由于没有外置的整流风道, 其气流品质略逊风洞一筹。



The size of semi wind tunnel is a compromise of automotive climatic wind tunnel and climatic test chamber. It features a tunnel-like nozzle and chamber-like air circuit, delivering significantly better airflow quality than a climatic test chamber. However, the absence of an external air circuit means its airflow quality is slightly inferior to that of a real climatic wind tunnel.

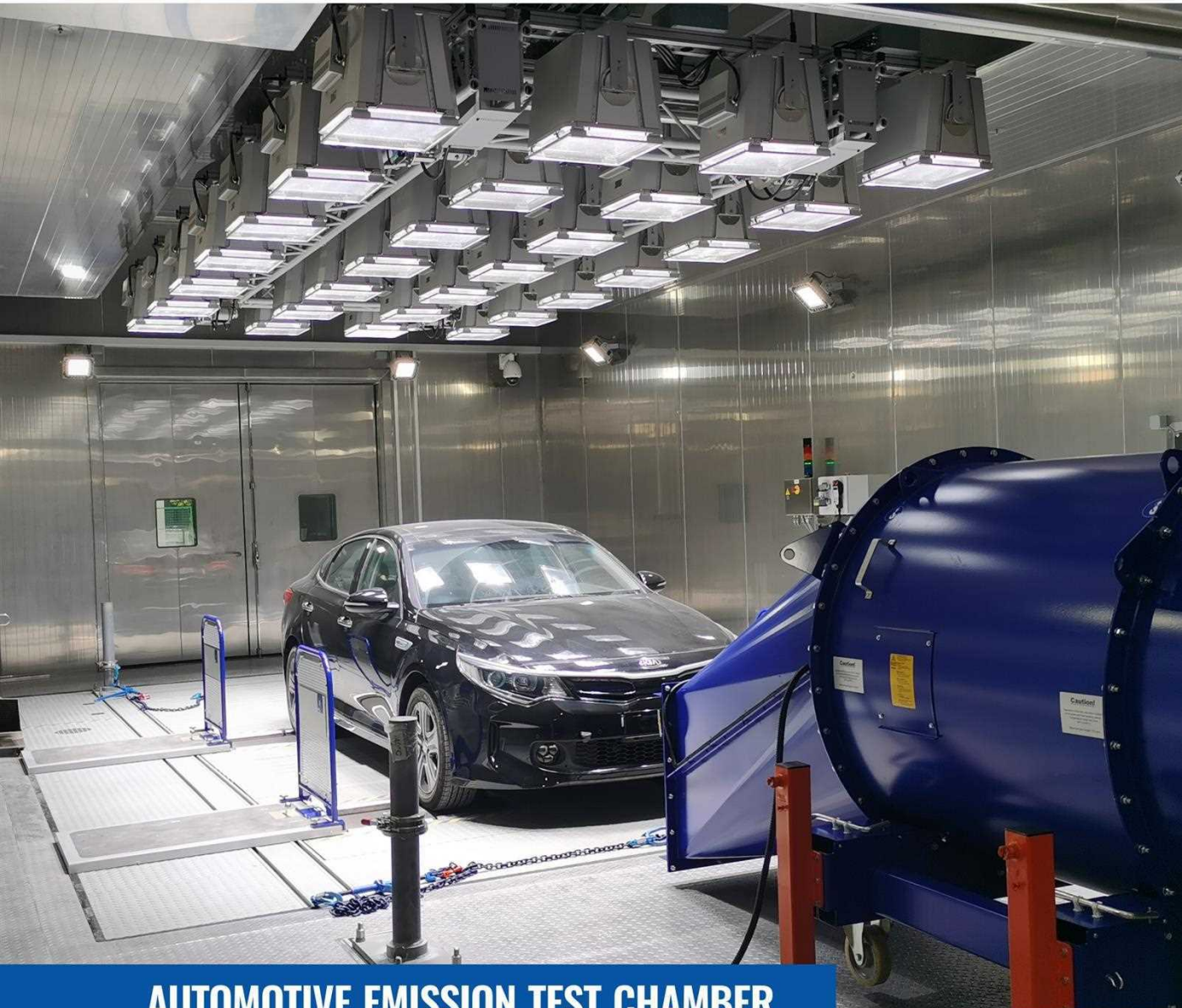


HIGH-PERFORMANCE CLIMATIC TEST CHAMBER

高性能环境舱

高性能环境舱温湿度模拟范围广(例如, -40°C 至 $+60^{\circ}\text{C}$, 10%至 95%RH), 控制精度高, 动态试验特性好。除了基本的气候条件外, 通常配备阳光模拟、风速模拟等功能, 更真实地模拟实际道路的驾驶条件。适用于排放测试、燃油效率分析、新能源车续航里程、热管理系统效能分析、热舒适性试验、热平衡试验、零部件耐久性测试等, 可满足不同阶段的研发及试验测试需求。

High-Performance Climatic Test Chamber is featured with wide-range temperature and humidity (-40°C to $+60^{\circ}\text{C}$, 10% to 95% RH), together with solar, wind and road condition simulation. It can be used for R&D or quality-check tests, such as emission, fuel efficiency, driving range, thermal management, comfort, thermal balance, and component endurance.

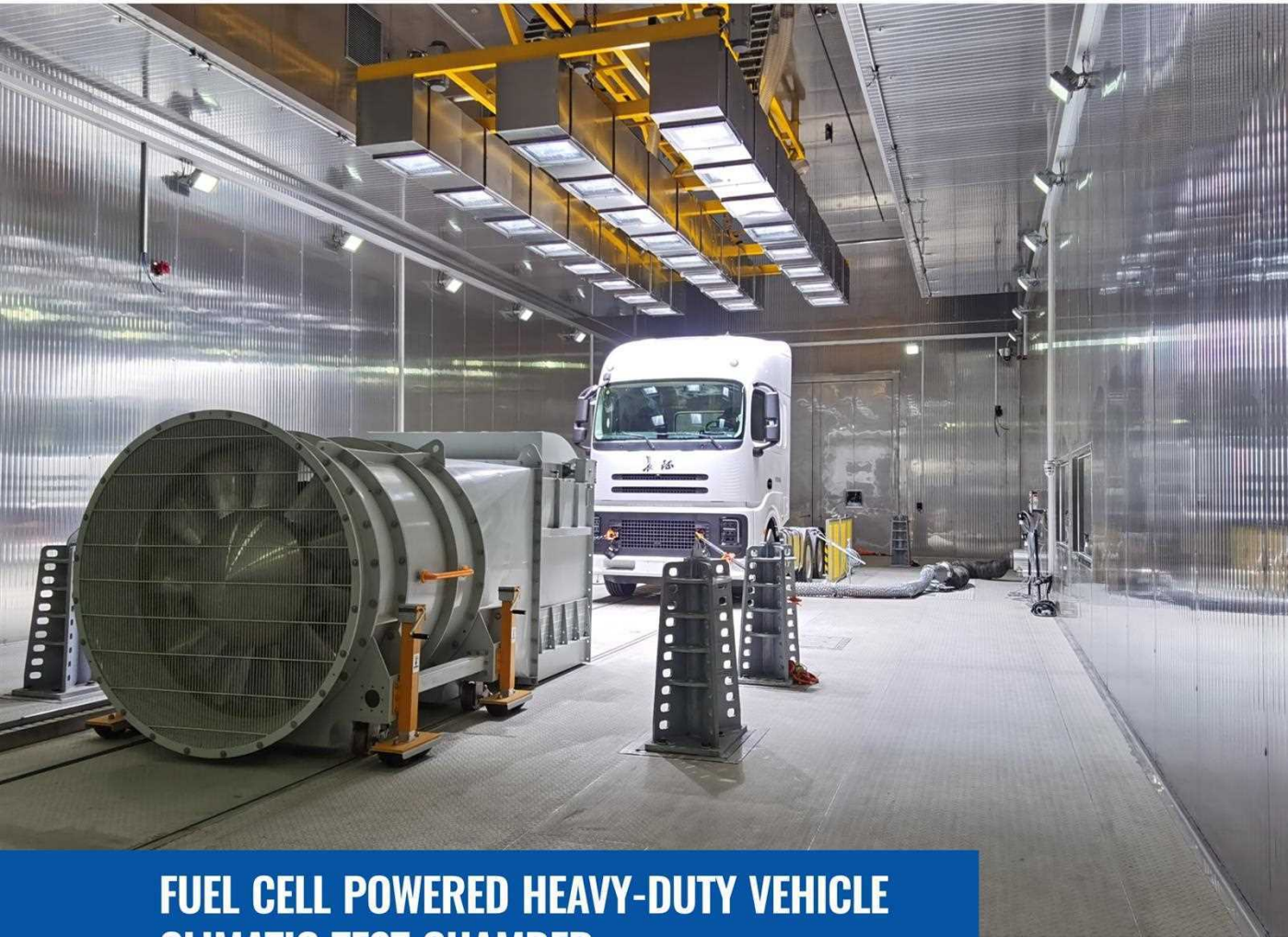


AUTOMOTIVE EMISSION TEST CHAMBER

整车排放试验室

整车排放试验室专为精确测量和分析车辆在不同运行条件下的排放测试而设计。符合欧洲、美国、日本及中国等国的最新排放标准，满足车辆研发及认证阶段的排放测试要求。

Automotive Emission Test Chamber is designed for precise emission measurement under various conditions. It meets the latest standards in Europe, the U.S., Japan, and China, supporting testing needs during vehicle development and certification.



FUEL CELL POWERED HEAVY-DUTY VEHICLE CLIMATIC TEST CHAMBER

重型燃料电池整车环境舱

本环境试验舱适用于氢燃料电池重型车辆，包括传统燃油及电动新能源卡车和大巴等车型的开发与认证测试。主要测试项目涵盖动力性能、经济性能、环境适应性、热管理系统效能、除霜除雾功能以及低温启动能力等关键领域。该环境舱采用防爆理念设计。

This climatic chamber meet testing requirements for hydrogen fuel cell powered heavy-duty vehicles, including traditional and electric trucks and buses. Key tests cover power performance, fuel efficiency, environmental adaptability, thermal management, defrosting/demisting, and cold-start capabilities. It is specifically designed with Ex concept.



FUEL CELL POWERED LIGHT-DUTY VEHICLE CLIMATIC TEST CHAMBER 轻型燃料电池整车环境舱

适用于 450kg~5400kg 的氢燃料电池车辆、电动汽车及传统车辆的开发认证试验。该环境舱采用防爆理念设计。

Suitable for development and certification testing of hydrogen fuel cell vehicles, electric vehicles, and traditional vehicles weighing between 450kg and 5400kg. It is specifically designed with Ex concept.



HYDROGEN-FUEL-CELL ENGINE CLIMATIC TEST CHAMBER 氢燃料发动机环境舱

专为燃料电池动力系统设计，能模拟温度、湿度和海拔条件。支持启动特性、稳态性能、动态响应、气密性检测、绝缘电阻检测及性能匹配等测试。提供氢气预冷、冷却液控制和海拔模拟等选项，并具备氢防爆设计。

Specifically designed for fuel cell power systems, this climatic chamber simulates temperature, humidity, and altitude conditions. It meets the testing requirements for startup characteristics, steady-state performance, dynamic response, leak detection, insulation resistance, and performance matching. Optional functions include hydrogen pre-cooling, coolant control, and altitude simulation. This chamber is specially designed with Ex concept.

FUEL CELL STACK CLIMATIC TEST CHAMBER

燃料电池电堆环境舱

可与系统测试台配合使用，提供适宜的温度、湿度和气压等环境条件，并满足氢防爆要求。

● 典型的性能指标

温度范围
-40~+85°C;
可扩展至-55~+95°C;

湿度范围
10~95% R.H.

Fuel Cell Stack Climatic Test Chamber, together with the system test bench, can provide appropriate environmental conditions (temperature, humidity, and pressure). This chamber is specially designed with Ex concept.

● Typical Performance Parameters

Emperature Range
-40°C to +85°C
(expandable to -55°C to +95°C)

Humidity Range
10% to 95% R.H.





ALTITUDE SIMULATION CHAMBER FOR VEHICLES 整车海拔舱

整车海拔舱专为模拟高原环境条件、评估车辆在不同海拔高度下的性能试验而设计。能够精准模拟高海拔地区的低气压、低温、低氧及其他复杂气候条件。

Altitude Simulation Chamber for Vehicles is designed to simulate the high-altitude conditions for whole vehicle performance testing, accurately simulating low pressure, cold temperatures, oxygen scarcity, and other key environmental factors.

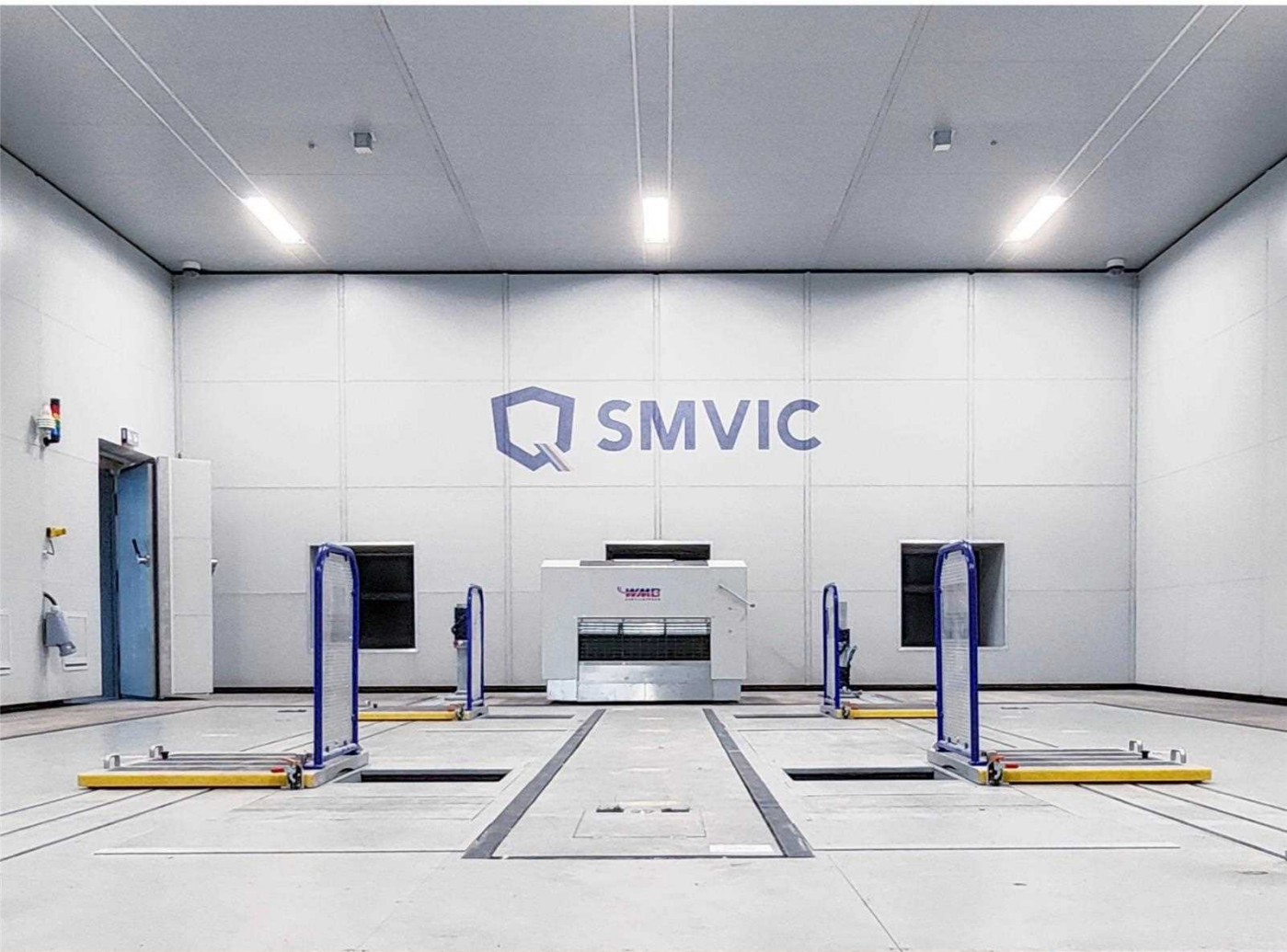


ALTITUDE SIMULATION CHAMBER FOR ENGINES

发动机海拔舱

本海拔舱能模拟高海拔地区的温湿度条件, 与测功机配合使用, 进行发动机标定、性能、排放、耐久性测试, 以及寒带、热带和高原环境试验。

Altitude Simulation Chamber for Engines, together with the emission analysis system and dynamometer, can simulate high-altitude pressure, temperature and humidity conditions. It meets the requirements of engine calibration, performance, emission, durability, and environmental tests for cold, tropical, and high-altitude conditions.



NVH TEST CHAMBER

NVH 环境舱

本试验室为新能源及传统汽车提供带环境模拟的 NVH 测试,可在高低温、不同湿度和日照条件下进行噪音测试。支持整车稳态和动态 NVH、空调系统噪音、制动噪声等相关试验。

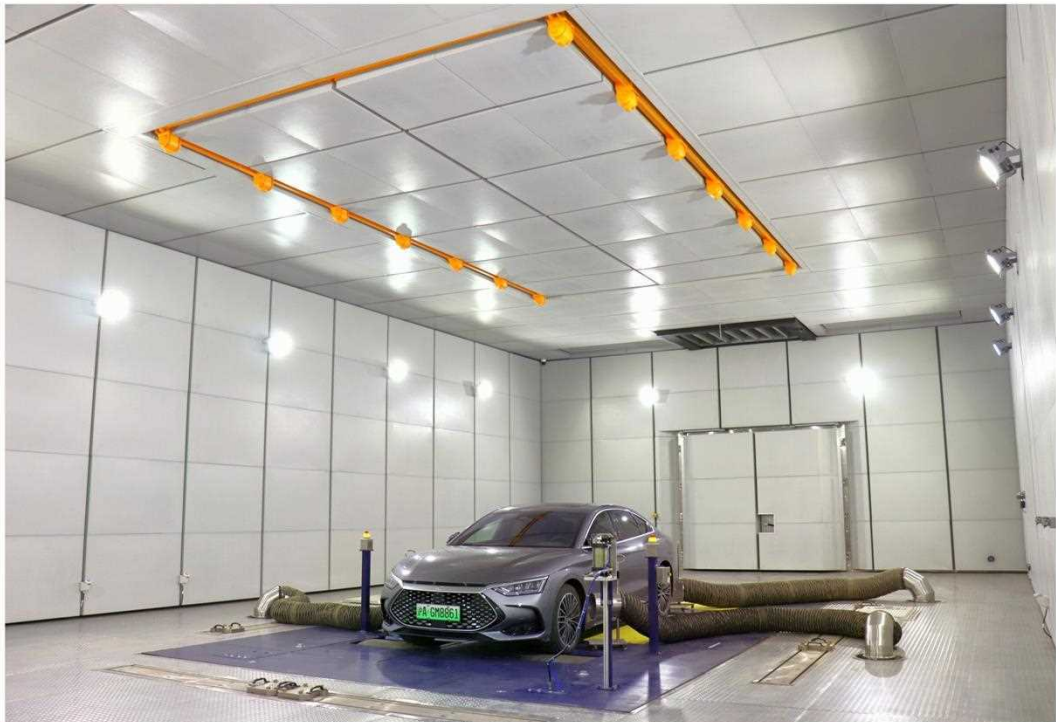
NVH Test Chamber offers NVH testing condition with solar simulation for new energy and conventional vehicles. It meets the requirements of noise tests under varied temperatures, humidity levels, and sunlight conditions. The facility supports whole-vehicle steady-state and dynamic NVH tests, as well as assessments of air conditioning and braking system noise.

NVH TEST CHAMBER WITH SOLAR SIMULATION

带日照模拟的 NVH 环境舱



Solar Simulator Emerged



Solar Simulator Hiden



VIBRATION TEST CHAMBER WITH 4-POSTER BENCH 四立柱环境舱

本实验室结合环境模拟与轮耦合道路模拟试验机,进行整车耐久性评估、振动异响分析及结构耐久测试。可复现“极寒+颠簸”和“高温+剧烈振动”等极端工况,通过四立柱振动台模拟长期颠簸路面(如碎石路、坑洼路),评估底盘、悬架和车身的疲劳影响。同时,环境舱精确控制温度、湿度和日照,真实再现驾驶场景。

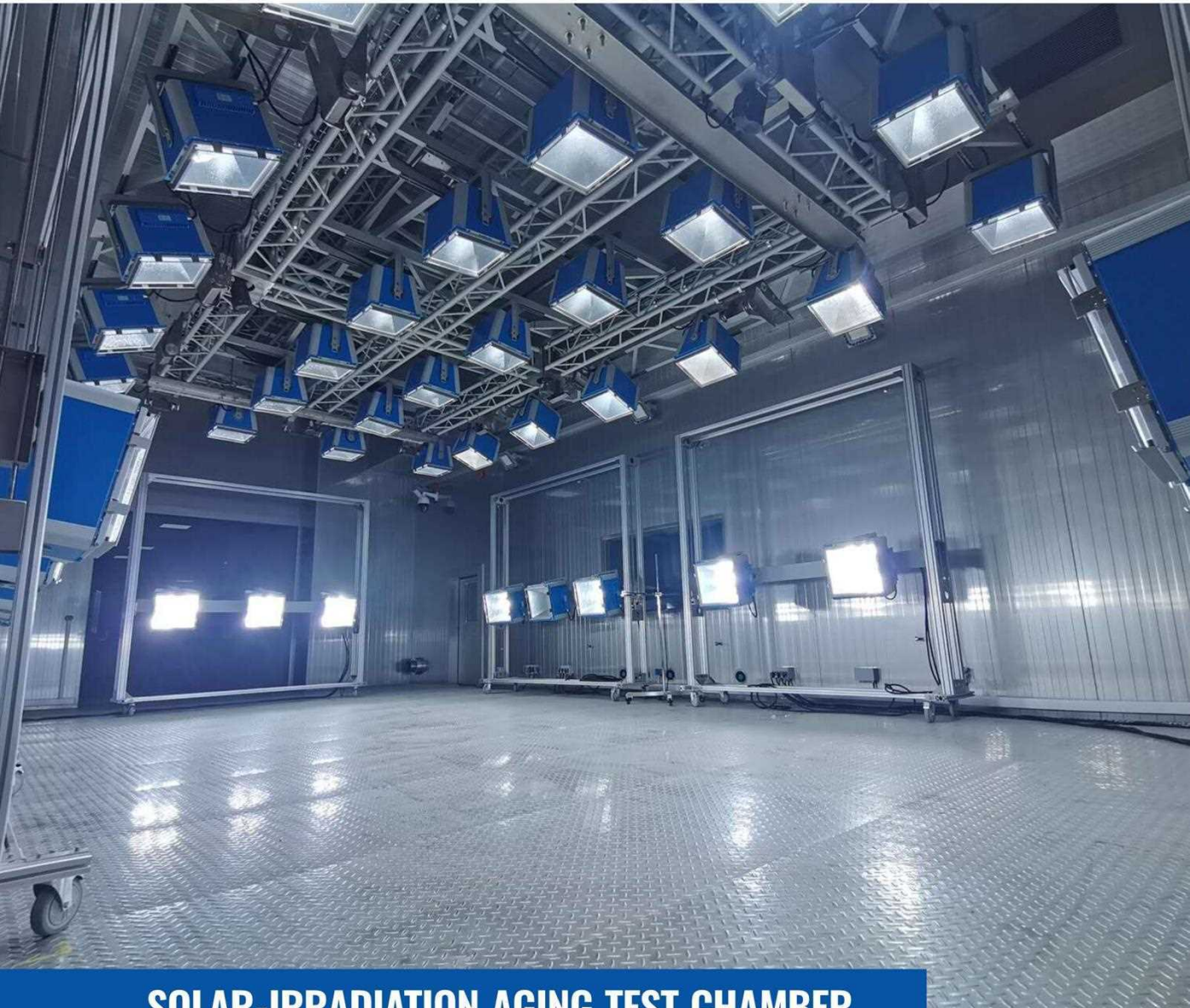
Vibration Test Chamber with 4-Poster Bench , together with a wheel-coupled road simulator (4-Poster Bench) for full-vehicle durability, NVH analysis, and structural fatigue testing, can simulate extreme conditions like "sub-zero temperatures with rough roads" and "high thermal loads with severe vibrations." The 4-Poster Bench is essentially a road simulator, using 4-posters that move up and down in order to simulate various road conditions, testing the durability of vehicles. At the same time, the climatic chamber accurately controls temperature, humidity and sunlight to realistically reproduce driving scenarios.



MAST CLIMATIC CHAMBER 六自由度振动环境舱

将 MAST 六自由度振动台置于高低温环境舱内,可测试不同温度、湿度、光照等环境中的零部件的耐久性能。试验项目包括但不限于,三电系统、座舱系统、智驾系统、热管理系统及零部件的振动耐久、道路工况、不同温湿度和光照强度下的振动试验。

Durability tests of components are conducted under varying temperature, humidity, and light conditions, by placing of a mast 6-DOF (Six Degrees of Freedom) shaker in high & low temperature chambers. The tests include vibration endurance assessments for electric systems, cabin systems, ADAS (Advanced Driver Assistance Systems), thermal management systems, and road simulations, as well as vibration testing under various environmental conditions.



SOLAR-IRRADIATION AGING TEST CHAMBER

暴晒老化环境舱

提供整车测试所需的高低温环境温度、湿度、光照模拟等环境测试条件。用于进行整车在干热及湿热太阳光的加速老化试验。

Solar-Irradiation Aging Test Chamber can provide appropriate environmental conditions (temperature, humidity, and pressure). It is used to conduct accelerated aging tests on vehicles under dry heat and humid heat conditions.



● 典型的性能指标

温度范围
-40~+60°C;

湿度范围
15~95% R.H.

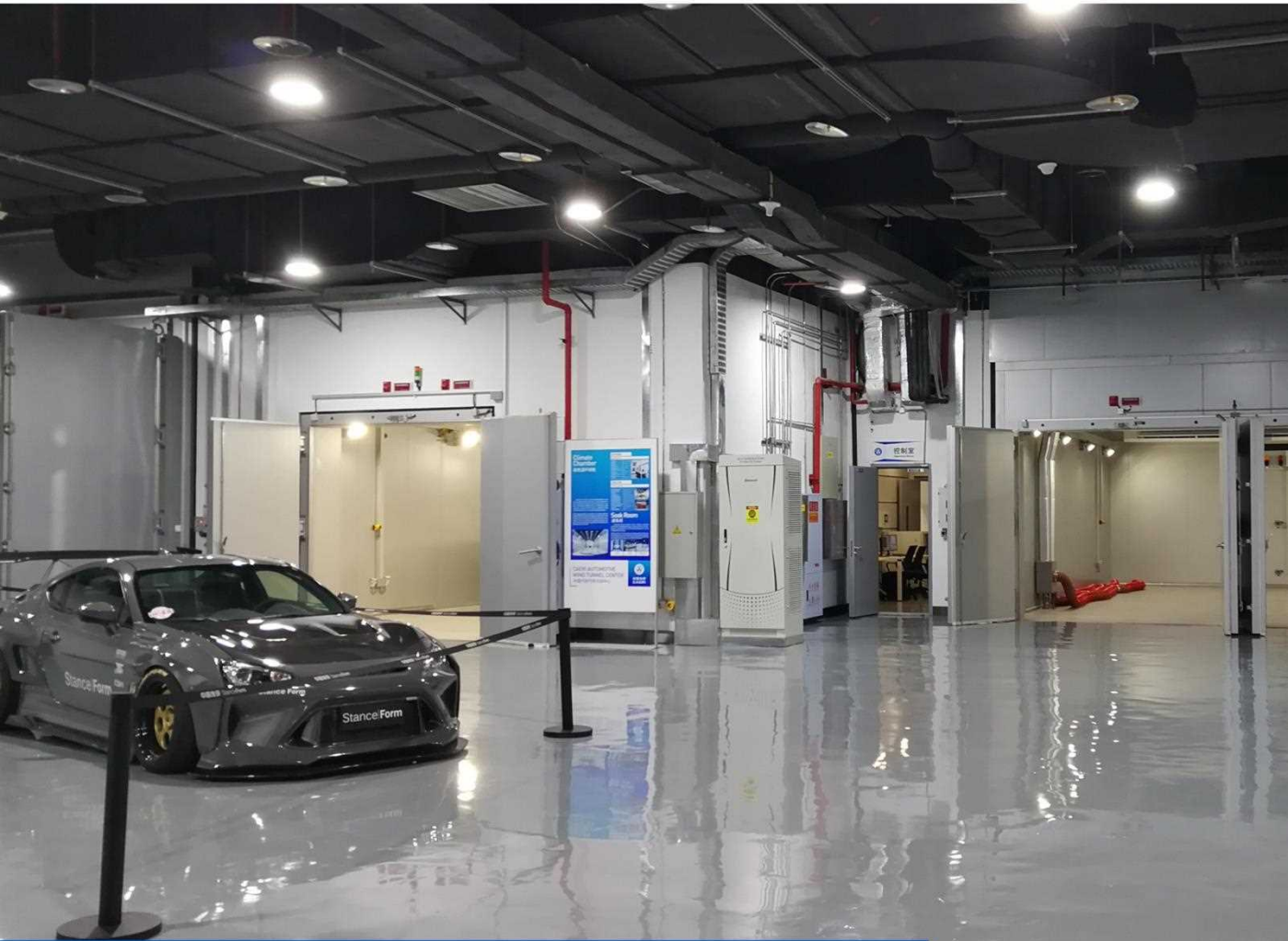
日照辐射范围
400~1200W/m²

● Typical Performance Parameters

Temperature Range
-40~to 60°C;

Humidity Range
15 to 95% R.H.

Solar Irradiation
400 to 1200W/m²



AUTOMOTIVE HIGH & LOW TEMPERATURE TEST CHAMBER

整车高低温试验室

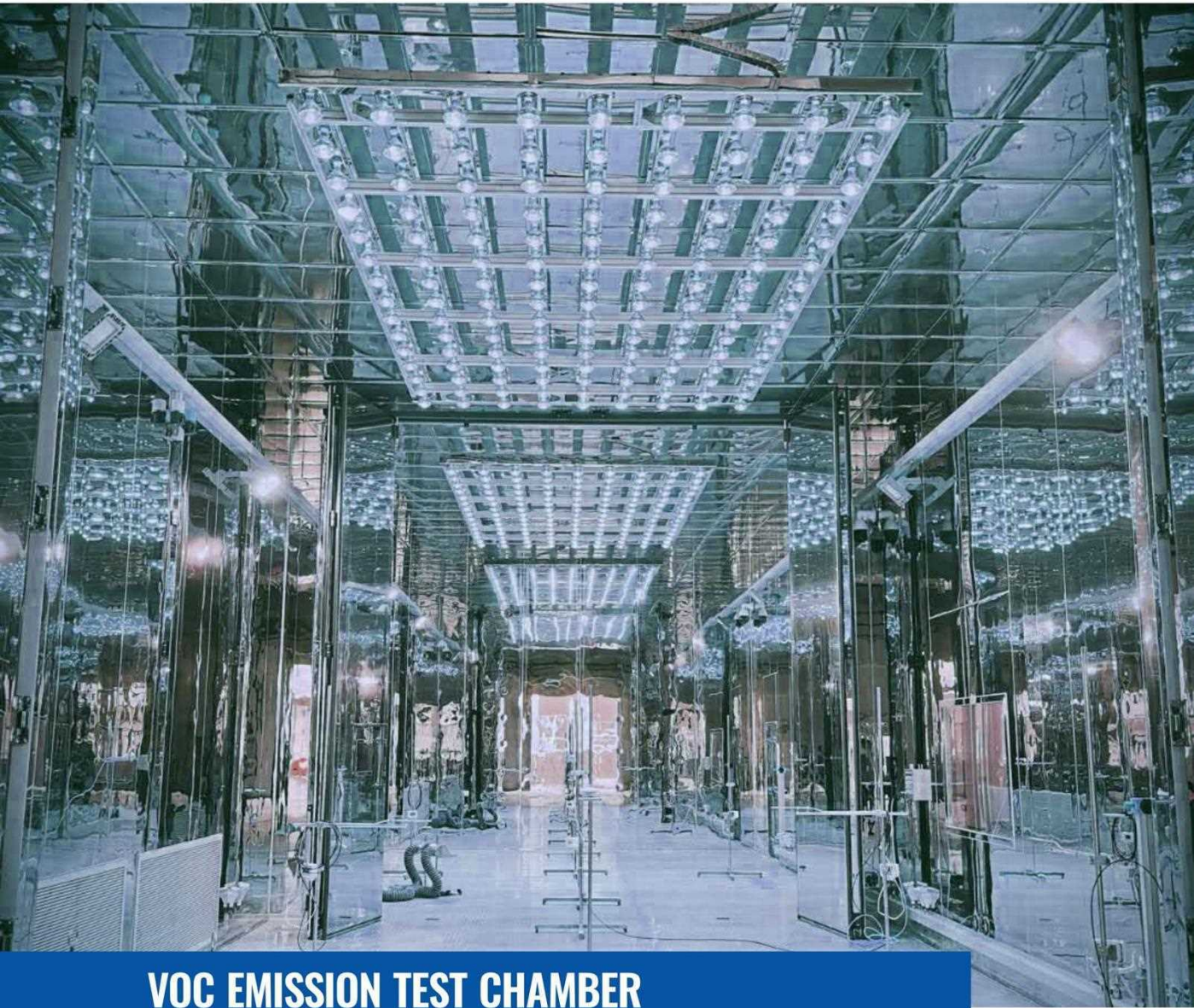
整车高低温环境舱能够模拟高低温环境条件，模拟范围可扩展至： -55°C ~ $+120^{\circ}\text{C}$ 。用于整车、电池以及其他大型部件的各类高低温冲击试验。

Automotive High & Low Temperature Test Chamber can simulate extreme temperature conditions, with a range extendable to -55°C to $+120^{\circ}\text{C}$. It is used for conducting high and low-temperature shock tests on entire vehicles, batteries, and other large components.



**BATTERY CLIMATIC TEST CHAMBER
(CUSTOM-BUILT SOLUTIONS)**

电池舱(非标定制)



VOC EMISSION TEST CHAMBER

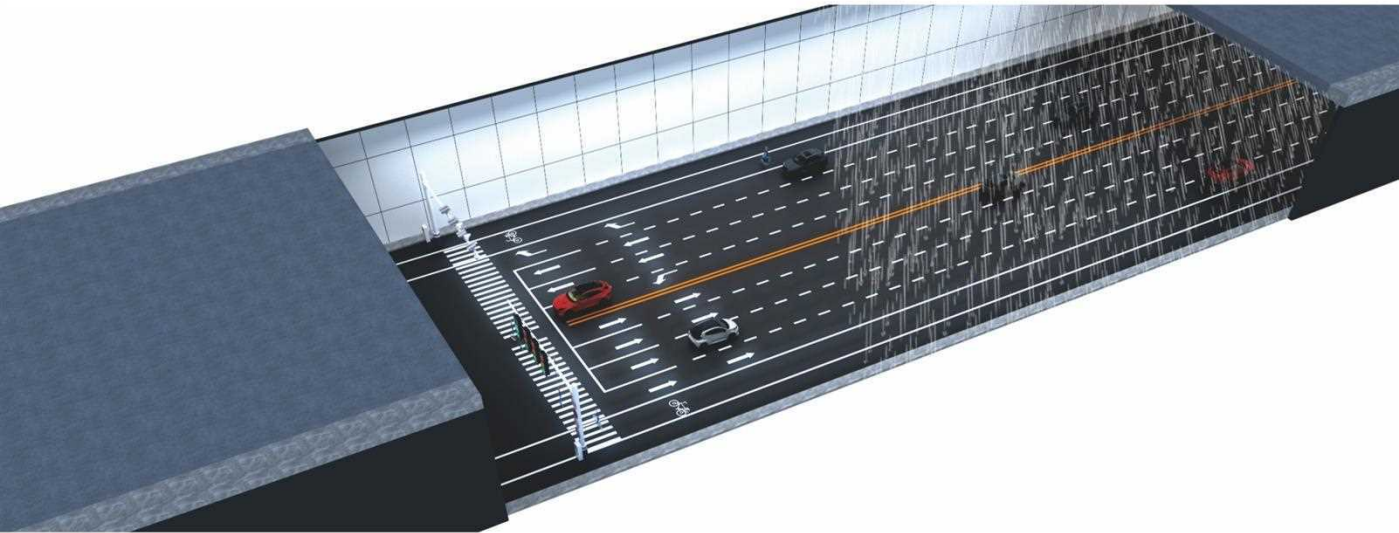
VOC 测试环境舱

汽车 VOC 测试环境舱可对汽车内饰材料及零部件的 VOC 释放量进行检测。带有温度、湿度和日照环境模拟系统。

VOC Emission Test Chamber evaluates the VOC (Volatile Organic Compounds) emissions from interior materials and components. It features integrated systems for simulating temperature, humidity, and sunlight conditions.

INTELLIGENT CONNECTED VEHICLE TEST TUNNEL WITH CLIMATIC SIMULATION

全天候环境模拟智能网联实车试验室



本试验场具备全天候环境模拟和交通场景模拟的智能网联车辆研发平台,进行环境模拟(包括雨、雾、日夜照度、日照眩光等)和交通场景(交通弱势群体、交通目标车辆、交通信号灯、交通标识等)模拟,为智能网联车辆安全设计、开发、测试和标定提供可复现和可控制的全天候试验环境。

Intelligent Connected Vehicle Test Tunnel can simulate extreme weather conditions for intelligent connected vehicles, including weather (rain, fog, day/night lighting, sun glare) and traffic scenarios (pedestrians, vehicles, signals, signs). It meets the testing requirements of a controlled, repeatable environment for safety design, development, testing, and calibration.