

ISO 60529 IPX4 Splash Water Test Chamber

Professional Technical Datasheet

IEC 60529 Compliant | Splash Water Protection Testing from All Directions



Document No.: KP-IPX4-DS-2026-Rev2 | Revision: 2.0 | May 2026

Manufacturer: KingPo Test Equipment Co., Ltd.

www.dgkingpo.com | Tel: +86-769-81627526

1. Product Overview

The KingPo IPX4 Splash Water Test Chamber is a professional testing system designed to evaluate enclosure protection against water splashing from all directions in accordance with IEC 60529 IPX4. It provides high repeatability and reliable results for demanding outdoor applications by simulating intense splashing water from every angle using high-flow nozzles.

The system features a rotating turntable with adjustable speed for uniform exposure, a motorized 15° tilt mechanism for multi-position testing, and an integrated circulation and filtration system for stable performance. Constructed from robust SUS304 stainless steel, it is ideal for testing electrical products, household appliances, lighting fixtures, and industrial equipment under severe splash conditions.

2. Key Advantages

- High-Flow Splash Nozzle System**

Engineering: High-flow splash nozzles designed to simulate intense water splashing from all directions with adjustable flow rates meeting IPX4 requirements.

Benefit: Accurately replicates real-world heavy splash conditions for reliable outdoor product validation.
- Motorized 15° Tilt Mechanism**

Engineering: Motorized tilt system allows precise 15° inclination in four mutually perpendicular positions for comprehensive multi-angle testing.

Benefit: Ensures complete splash exposure from all directions as required by IEC 60529 IPX4, improving test accuracy and repeatability.
- Adjustable Rotating Turntable**

Engineering: Customizable turntable (500–800 mm diameter) with adjustable speed of 1–5 rpm for uniform specimen exposure.

Benefit: Provides consistent all-around splash testing for products of various sizes and shapes.
- Intelligent PLC Control System**

Engineering: Advanced PLC with 7-inch color touchscreen HMI for intuitive parameter setting, real-time monitoring, and data logging.

Benefit: Minimizes operator error, ensures test consistency, and generates traceable digital records for quality audits.
- Integrated Water Circulation & Filtration**

Engineering: Closed-loop circulation system with multi-stage filtration maintains stable flow rates and pressure while reducing water consumption.

Benefit: Ensures long-term reliability, minimizes maintenance, and supports eco-friendly laboratory operation.
- Robust SUS304 Stainless Steel Construction**

Engineering: Full SUS304 stainless steel chamber and components for superior corrosion resistance in wet testing environments.

Benefit: Delivers long-term durability and consistent performance with minimal maintenance requirements.

3. Technical Specifications

3.1 Performance Parameters

Parameter	Specification	Test Condition / Method
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Applicable Standard	IEC 60529 IPX4	Splash water from all directions
Spray Nozzle	High-flow splash nozzles	Simulates heavy splashing conditions
Water Flow Rate	Adjustable (IPX4 compliant)	Higher flow than IPX3 per standard
Turntable Speed	1–5 rpm (adjustable)	Ensures uniform all-around exposure
Tilt Angle	15° (motorized)	Four mutually perpendicular positions
Test Duration	10 minutes total	2.5 min per position × 4 positions

3.2 Mechanical Structure

Parameter	Specification	Notes
Chamber Material	SUS304 Stainless Steel	Corrosion resistant construction
Turntable Diameter	500–800 mm (customizable)	Suitable for various product sizes
Tilt Mechanism	Motorized 15° tilt	Precise multi-position control
Water System	Integrated circulation + filtration	Stable flow & reduced consumption

3.3 Electrical & Control System

Parameter	Specification	Notes
Control System	PLC + 7-inch color touchscreen	Intuitive operation & real-time monitoring
Safety Protection	Leakage, overload, E-Stop	Comprehensive laboratory safety interlocks
Power Supply	AC 220 V ±10%, 50/60 Hz	Single-phase three-wire system
Operating Environment	15°C–40°C, <70% RH	Standard laboratory conditions

4. Test Procedure (IEC 60529 IPX4)

The IPX4 test evaluates protection against water splashing from any direction. The specimen is tilted at 15° and exposed to high-flow splashing for a total of 10 minutes while rotating.

1. Securely mount the specimen at the center of the turntable and ensure proper positioning.
2. Set test parameters (flow rate, duration, tilt positions) via the 7-inch touchscreen HMI.
3. Tilt the specimen to 15° in the first of four mutually perpendicular positions.
4. Expose each position for 2.5 minutes (total 10 minutes) with high-flow splashing from all directions while the turntable rotates.
5. After completion, inspect the specimen for water ingress and generate the test report with logged parameters for traceability.

Fully compliant with IEC 60529 IPX4 splash water test requirements from all directions.

5. Typical Applications

- Household appliance manufacturers – external components and control panels
- Lighting and luminaire producers – outdoor and architectural lighting fixtures
- Electrical equipment manufacturers – control cabinets and power distribution units
- Third-party certification laboratories – IEC 60529 IPX4 compliance and type testing
- Quality control and R&D departments – new product development and batch inspection

6. Optional Modules & Ordering Information

Optional Upgrades

- ISO/IEC 17025 accredited third-party calibration report
- Custom turntable sizes or extended tilt configurations
- Advanced data logging and automatic report generation software
- Integration with other IP test modules (IPX1–IPX6 combined systems)

Standard Models

Model Code	Description	Standard Configuration
KP-IPX4-600	Standard Model	Main unit + PLC/HMI + factory calibration certificate
KP-IPX4-CERT	Metrology-Ready Model	Standard model + ISO/IEC 17025 calibration report

7. Compliance & Manufacturer

This equipment is engineered and manufactured in strict accordance with IEC 60529 for IPX4 splash water testing from all directions. It also supports related standards including ISO 20653, GJB150.8, GB2423.38, IEC 60068-2-68, and IEC 60034-5.

Factory calibration certificate is included as standard. ISO/IEC 17025 accredited third-party calibration is available upon request. The system is manufactured under ISO 9001 quality management system.

KingPo Test Equipment Co., Ltd.

Specialist in Precision Environmental, Ingress Protection & Reliability Test Systems

Address: Hengkeng Industrial Zone, Dongguan, Guangdong, China

Tel: +86-769-81627526 | Website: www.dgkingpo.com | Email: sales@dgkingpo.com

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