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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 11158-2008

Replacing GB/T 11158-1989

Specifications for high temperature test chambers

高温试验箱技术条件

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Issued by: General Administration of Quality Supervision, Inspection and Quarantine;
Standardization Administration of the PRC

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8.3 Storage

Foreword

This standard is one of the Specifications for environmental test equipment" series of standards. This series of standards consists of the following standards. - GB/T 10586-2006 Specifications for damp heat chambers - GB/T 10587-2006 Specification for salt mist test chambers - GB/T 10588-2006 Specification for mould growth test chambers - GB/T 10589-2008 Specifications for low temperature test chambers - GB/T 10590-2006 Specifications for high and low temperature/low air pressure testing chambers - GB/T 10591-2006 Specifications for high temperature/low air pressure testing chambers - GB/T 10592-2008 Specification for low/high temperature test chambers - GB/T 11158-2008 Specifications for high temperature test chambers - GB/T 11159-2008 Specifications for low air pressure test chamber This standard replaces GB/T 11158-1989 Specifications for high temperature test chambers". The main changes between this standard and GB/T 11158-1989 are as follows: - ADD the chapter "Terms and definitions"; the content adopts the relevant parts of IEC 60068-3-5; - According to the concept of temperature fluctuation of IEC 60068-3-5, CHANGE the temperature fluctuation index into 1 °C (see Table 1); - According to the temperature data recording requirements of IEC 60068-3- 5, CHANGE to record data once per minute (see 6.3); - According to the test method of temperature rise rate in IEC 60068-3-5, MODIFY the test method of temperature rise rate (see 6.5); - EXPAND the range of atmospheric pressure in the environmental conditions of use (see 4.1); - MODIFY the temperature grade (see Table 1); - MODIFY the wind speed requirements (see Table 1); - For the temperature rise conditions, in addition to the temperature rise rate, ADD the temperature rise time (see Table 1); - MODIFY the safety protection requirements; ADD the requirements for electrical insulation strength (see 5.3); - CHANGE the test conditions to the no-load conditions (see 6.2); - ADD the information on the evaluation method of Temperature variation measurement uncertainty and its application (see Appendix B). Appendix A and Appendix B of this standard are informative appendixes. This standard was proposed by China Machinery Industry Federation. This standard shall be under the jurisdiction of the Mechanical Industry Laboratory Instrument and Equipment Standardization Technical Committee. Responsible drafting organizations of this standard. Chongqing Yinhe Test Instrument Co., Ltd., Shanghai Espec Environmental Equipment Co., Ltd., the Fifth Institute of Electronics of the Ministry of Information Industry, and Shanghai Experimental Instrument Factory Co., Ltd. Participated drafting organizations of this standard. Chongqing Star Test Equipment Co., Ltd., Wuxi Sunan Test Equipment Co., Ltd., Chengdu Tianyu Test Equipment Co., Ltd., Hunan Institute of Metrology and Inspection. The main drafters of this standard. Wang Huabin, Lu Liming, Lai Wenguang, Feng Mingkang, Chen Yunsheng, Ni Yiming, Kuai Zhengxin, Li Qingxian, Xu Qinglu. This standard replaces the standard previously issued as follows: - GB/T 11158-1989.

Specifications for high temperature test chambers

1 Scope

China's national specification for high temperature test chambers - the companion of GB/T 10589 on low temperature chambers, covering the cabinets in which products are held hot to establish whether they survive, function and last. The high temperature test is the one that finds the failures of time compressed into days: the softening and creep of plastics under their own load, the drying and hardening of elastomers, the migration of plasticiser, the oxidation of lubricants, the drift of electronic components, the delamination of adhesives, and the simple fact that most degradation processes go faster when hot - which is why a high temperature chamber is used as much for accelerated ageing as for establishing a maximum operating temperature. This standard specifies the terms and definitions, the conditions of use, the technical requirements, the test methods, the inspection rules and the marking, packaging, storage and transport of high temperature test chambers. The requirements are those that determine whether the specimen experiences what the test method asked for: the highest temperature the chamber will reach and hold; the uniformity through the working space and the fluctuation over time, which decide whether a specimen at the back has been tested to the same conditions as one at the front; the heating rate and the recovery after the door has been opened; and the overshoot, since a chamber that goes past the set point on the way up has exposed the specimen to a condition nobody asked for and nobody recorded. Around them sit the heating and air circulation, the insulation and the surface temperature of the outside of a hot cabinet, the through-holes for instrumentation, the control and recording, and the safety devices - the independent over-temperature cut-out above all, which on a chamber that can hold a specimen for weeks unattended is what stands between a drift and a fire. Issued on 30 June 2008 and in force since 1 January 2009, it replaces GB/T 11158-1989.

This standard specifies the terms and definitions, conditions of use, technical requirements, test methods, inspection rules, markings, packaging, storage related to high temperature test chambers (referred to as test chambers"). This standard applies to test chambers that conduct low-temperature tests for electrical, electronic and other products, parts, materials.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For the dated references, the subsequent amendments (excluding corrections) or revisions do not apply to this Standard; however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 191-2008 Packaging - Pictorial marking for handling of goods (ISO 780.1997, MOD)

GB 14048.1-2006 Low-voltage switchgear and controlgear - Part

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1 Test chamber An enclosed chamber and space the part of which can meet the specified test conditions.

3.2 Temperature setpoint The desired temperature set by the test chamber control device.

3.3 Achieved temperature After stabilization, the temperature at any point in the working space of the test chamber.

3.4 Temperature stabilization The temperature of all points in the working space reaches the temperature setpoint and is maintained within the specified tolerance range.

3.5 Temperature fluctuation After stabilization, the difference between the highest and lowest temperature at any point in the working space within a specified arbitrary time interval.

3.6 Working space The part of the test chamber that can maintain the specified conditions within the specified tolerance range.

4.2 Power supply conditions

4.3 Load conditions The load of the test chamber shall meet the following conditions at the same time.

5 Technical requirements

5.1 Product performance The performance items and indexes of the test chamber are as shown in Table 1.

5.2 Product structure and appearance requirements

5.2.1 The inner wall of the test chamber shall be made of materials that are heat-resistant, resistant to oxidation, corrosion-resistant, have certain mechanical strength. There shall be no pollution sources that affect the test.

5.2.2 Insulation materials shall have flame retardant properties.

5.2.3 The thickness of the insulation layer shall ensure that the temperature of

5.2.8 The appearance coating layer shall be flat and smooth, with uniform color; there shall be exposed bottom, blistering, layering or scratches.