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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 44279-2024

Temperature-humidity-vibration-low pressure combined environmental testing system

温度-湿度-振动-低气压综合环境试验系统

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1.Structure and drafting rules for standardization documents" Drafting. Please note that some of the contents of this document may involve patents. The issuing organization of this document shall not be responsible for identifying patents. This document was proposed by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee for Standardization of Testing Machines (SAC/TC122). This document was drafted by: Suzhou Sushi Testing Group Co., Ltd., Zhejiang Mechanical and Electrical Products Quality Inspection Institute Co., Ltd., China Machine Testing Test Equipment Co., Ltd., Aerospace Science and Industry Defense Technology Research and Test Center, Beijing University of Aeronautics and Astronautics, Ministry of Industry and Information Technology Electronic Fifth Research Institute, Chongqing Galaxy Testing Instrument Co., Ltd., Dalian Zhiding Technology Co., Ltd., and Shenyang University of Technology. The main drafters of this document are. Wu Xi, Wu Fei, Ren Xia, Wang Gang, Wu Sa, Zheng Shuli, Li Shushan, Zhang Zhaoyu and Zhao Haining.
Temperature-humidity-vibration-low pressure comprehensive environmental test system

1 Scope

GB/T 44279-2024 specifies combined environmental test systems that apply temperature, humidity, vibration and reduced pressure to a specimen at the same time. Combined testing exists because failures do: a solder joint that survives thermal cycling and survives vibration will often fail under both together, and an altitude chamber changes the heat transfer that the thermal test assumed. Building one machine that does all four is difficult, because the vibration table has to pass its motion through the wall of a sealed, humidified, evacuated chamber without leaking or condensing. The standard sets the system composition and the basic parameters, then the technical requirements - conditions of use, performance indicators, interface components, the vibration table, the test chamber and the appearance - and the inspection methods, covering the inspection environment and conditions, the instruments and equipment, the test load and the verification of each performance indicator, followed by the inspection rules and the marking, packaging, transport and storage provisions. It took effect on 23 August 2024.

This document specifies the composition, technical requirements, inspection rules, marking and packaging of the temperature-humidity-vibration-low pressure comprehensive environmental test system. The test method of the temperature-humidity-vibration-low pressure comprehensive environmental test system is described. This document is

applicable to the manufacture of temperature-humidity-vibration-low pressure comprehensive environmental test system (hereinafter referred to as "four comprehensive test system").

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 191 Pictorial markings for packaging, storage and transportation

GB/T 2611-2022 General technical requirements for testing machines

GB/T 11159-2010 Technical requirements for low pressure test chambers

GB/T 13310-2007 Electric vibration table

GB/T 36416.3 Testing machine vocabulary Part

3 Terms and definitions

The terms and definitions defined in GB/T 36416.3 and the following apply to this document.

3.1 studiotestingroom The space defined by the inner walls of the test chamber.

3.2 Testing room volume The actual volume of the space defined by the inner wall of the test chamber.

Note. The unit is cubic meter (m3). [Source: GB/T 10592-2023, 3.2, modified]

3.3 workspace The space in a test chamber that can maintain specified test conditions within specified tolerances. [Source: GB/T 5170.1-2016, 3.2.2, modified]

3.4 Temperature setpoint Use the chamber controls to set the desired temperature. [Source: GB/T 10592-2023, 3.6]