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**Test methods of rare earth phosphors for LED - Part 8:  
Determination of pressure cooker test property**

LED用稀土荧光粉试验方法 第8部分：高压加速老化性能的测定

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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.

This document is part 8 of GB/T 23595 Test methods for rare earth phosphors for LEDs. GB/T 23595 has been published for the following part.

- Part 1: Determination of spectrum;
- Part 2: Determination of relative brightness;
- Part 3: Determination of chromaticity coordinates;
- Part 4: Determination of high temperature and high humidity performance;
- Part 5: Determination of pH value;
- Part 6: Determination of electrical conductivity;
- Part 7: Determination of thermal quenching properties;
- Part 8: Determination of high voltage accelerated aging performance.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed and coordinated by the National Rare Earth Standardization Technical Committee (SAC/TC229).

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## Introduction

With the continuous development of semiconductor lighting and display technology, higher requirements are placed on the performance of phosphors.

Blue LED yellow phosphor developed into using UV-blue LED blue-green/yellow/yellow-green/red phosphor, and blue LED green/red phosphors, including garnet structure aluminate yellow/yellow-green phosphors, nitride red phosphors, silicate LED rare earth phosphor products of mainstream systems such as salt green/yellow phosphor, nitrogen oxide blue-green phosphor, etc. are becoming more and more diverse.

The comprehensive performance requirements are getting higher and higher, especially the new requirements for product reliability.

As photosensitive powder products and technologies change, it is necessary to establish a unified evaluation method that conforms to existing technologies.

GB/T 23595 "Test methods for rare earth phosphors for LEDs" consists of 8 parts.

- Part 1: Determination of spectrum;
- Part 2: Determination of relative brightness;
- Part 3: Determination of chromaticity coordinates;
- Part 4: Determination of high temperature and high humidity performance;
- Part 5: Determination of pH value;
- Part 6: Determination of electrical conductivity;
- Part 7: Determination of thermal quenching properties;
- Part 8: Determination of high voltage accelerated aging performance.

Test methods for rare earth phosphors for LED Part 8: Determination of high voltage accelerated aging properties

## 1 Scope

This document describes the high voltage accelerated aging performance of rare earth

phosphors for LEDs excited by ultraviolet light to blue light with wavelengths from 350nm to 480nm. Determination method.

This document is applicable to the high voltage accelerated aging performance of rare earth phosphors for LEDs excited by ultraviolet light to blue light with a wavelength of 350nm~480nm Determination.

## 2 Normative references

GB/T 5838.1

GB/T 8170

## 3 Terms and definitions

The terms and definitions defined in GB/T 5838.1 and the following apply to this document.

### 3.1 Phie

The power of light passing through a specific area per unit time.

### 3.2

A set of parameters used to characterize the color of the light emitted by the phosphor after being excited is calculated according to the CIE 1931 standard chromaticity observer rule.

### 3.3 Dx

In the CIE1931 coordinate system, the distance between one chromaticity coordinate and another chromaticity coordinate.

## 4 Principles of the method

The phosphor undergoes accelerated aging under high temperature, high humidity and high pressure environment. The original phosphor samples and the treated phosphor samples are subjected to light (irradiation) The measurement of light (radiation) power and chromaticity coordinates is used to characterize the high voltage heating of the phosphor being measured. Fast aging performance.