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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 11297.12-2012

Replacing GB 11297.12-1989

Test method for extinction ratio of optical crystal

光学晶体消光比的测量方法

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Foreword

Rules in this section in accordance with GB/T 1.1-2009 given draft. This Part replaces GB/T 11297.12-1989 measuring party "electro-optic crystal of lithium niobate, potassium dihydrogen phosphate and potassium phosphate dihydrate extinction ratio of deuterium law". This section compared with GB/T 11297.12-1989, have the following main changes.

- The original part of the name has been modified. Original Part Name "electro-optic crystal of lithium niobate, potassium dihydrogen phosphate and potassium phosphate dihydrate extinction ratio of deuterium Measuring method "to" measuring method "optical crystal extinction ratio. This part will also expand the scope of the standard to use other Wavelength measurement uniaxial optical crystal axis and the like;
- The original part of the measurement system extinction ratio indicators were modified, the original part of the measurement system indicators 100000, to be equipped with power output Higher rate ($P \geq 15\text{mW}$) helium-neon laser. Now part of the measurement system metrics revised 50000.1 using output power To 2mW of He-Ne laser;
- Original part extinction ratio index representation only xxxxx .1 This section adds decibels method;
- This section would increase the measured crystal placed in the transmitted light intensity takes a maximum value when the orthogonal polarization system;
- This part of the measurement system should be used to increase the necessary light shielding requirements;
- This section increases the measuring environmental conditions;
- This section increases the measured roughness light through two crystal end surface;
- This section increases the aperture test systems for the provision of 5mm, the demand and supply sides also determined through negotiation based on the sample size The size of the optical aperture;

--- This section increases the beam diameter of 90% of the diameter of the sample requirements, the demand and supply sides can also be determined based on a sample size of consultations Given the size of the beam diameter. This part is proposed by the Ministry of Industry and Information Technology of the People's Republic of China. This part of the jurisdiction of the China Electronics Standardization Institute. This in part by the China Electronics Technology Group Corporation Institute is responsible for drafting the twenty-sixth. The main drafters of this section. Xie Kecheng, Jinzhong Hong, Yang Jie, Zhang Xiaomei. This part of the standard replaces the previous editions are.

--- GB/T 11297.12-1989. Measurement of optical crystal extinction ratio

1 Scope

GB/T 11297.12-2012 is the Chinese national standard on test method for extinction ratio of optical crystal, in the field of electronics. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 31 December 2012 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 June 2013. Classification: ICS 31.140, CCS L21. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This section GB/T 11297 provides for a wavelength of 632.8nm light waves along a single axis optical crystal axis direction extinction ratio measurement Volume method. This section applies to a wavelength of 632.8nm, 1064nm, 830nm, 514nm, 488nm, 458nm light waves and uniaxial Consumers and other optical crystal axis light than measurements.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated edition applies to this article Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 11293-1989 solid-state laser material Terminology

3 Terms and Definitions

GB/T 11293-1989 defined terms and definitions apply to this document.

4 Measuring principle

Wavelength 632.8nm measured along a bundle of light through a crystal optical axis disposed orthogonal polarization system tested crystals, Rotates about the optical axis of the crystal, the maximum transmitted light intensity is measured, then rotate the polarization analyzer into a parallel system, measure the transmitted light intensity value, through the formula (1) calculate the extinction ratio (EX). $EX = I/I$ (1) Where. EX

--- extinction ratio measured crystals; I

--- polarized parallel system transmitted light intensity value, in millivolts (mV); I

--- orthogonal polarization system maximum transmitted light intensity, in millivolts (mV).

Can also be used formula (2). $EX' = 10 \times \lg(I/I)$ (2) Wherein the extinction ratio EX 'decibels (dB).

5 Measurement System

Extinction ratio measuring system 1 shown in a schematic diagram, a wavelength of 632.8nm He-Ne laser light. FIG using other wavelengths of light When the wave measurement, simply replace the corresponding optical power meter and laser wavelength.