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

GB/T 26332.5-2022

**Optics and photonics - Optical coatings - Part 5: Minimum
requirements for antireflecting coatings**

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Standardization Administration**

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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 of Standardization Documents" drafted.

This document is part 5 of GB/T 26332 "Optics and Photonics Optical Films". GB/T 26332 has published the following parts.

- Part 1. Definitions;
- Part 2. Optical characteristics;
- Part 3. Environmental adaptability;
- Part 4. Specified test methods;
- Part 5. Basic requirements for anti-reflection coatings;
- Part 6. Basic requirements for reflective films;
- Part 7. Basic requirements for neutral beamsplitters;
- Part 8. Basic requirements for laser optical films.

This document is revised and adopted ISO 9211-5:2018 "Optics and Photonics Optical Films - Part 5. Basic Requirements for Anti-Reflection Coatings".

The technical differences between this document and ISO 9211-5:2018 and their reasons are as follows.

--- In the introduction of "Terms and Definitions", the content about maintaining the "standardized terminology database" of ISO and IEC has been deleted (see Section 3 Chapter), because my country's national standards do not involve the maintenance of ISO and IEC 's "standardized terminology database" content;

--- Deleted the word "coating" in the "symbol identification" (see Chapter 4). Because compared with "ARcoating", writing "AR" is simpler

Clean and clear without causing ambiguity, and in line with the application habits of the industry;

--- Replace ISO 9211-1 with the normatively cited GB/T 26332.1 (see Chapter 3), and GB/T 26332.2 instead of ISO 9211-2

(see 3.4, 6.2, 6.3, Chapter 7) to adapt to the technical conditions of our country;

---Because the serial number of the specific test method is cited in the text, use the normatively cited GB/T 26332.3-2015 instead of ISO 9211-3

(see 6.7, 6.8, 6.9), GB/T 26332.4-2015 replaces ISO 9211-4 (see 6.5), GB/T 12085.2-2010 replaces

ISO 9022-2 (see 6.10) to adapt to the technical conditions of our country.

The following editorial changes have been made to this document.

--- In the "Basic Requirements", the table description method of "Table 1" and "Table 2" in the original text of the International Standard is changed to the description method of the article (see Section 1).

Chapter 6);

---Added "Note. If the refractive index n of the substrate is not within the above range, the anti-reflection

The spectral reflectance ρ value of the film is determined by agreement between the film manufacturer and the user" [see 6.2a)].

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

Optical thin-film elements are widely used in various fields of science and technology related to optics and photonics to realize reflection, beam splitting, filtering, etc.

Different optical functions such as light are an irreplaceable and important part of the optical system. With the continuous advancement of science and technology, optical thin film components are becoming more and more

It is developing in the direction of higher performance requirements and more diverse demand types. Therefore, it is necessary to formulate a set of technologies specifically for optical thin film technology.

The content is in line with international standards of national standards. This is not only

conducive to promoting the normative and orderly development of my country's optical film industry, but also better promoting related

trade, exchanges and technical cooperation in the field. GB/T 26332 "Optics and Photonics Optical Films" was drafted under this background.

GB/T 26332 adopts the standard ISO 9211 series and is intended to consist of eight parts.

--- Part 1. Definitions. The purpose is to standardize technical representations of common terms related to optical films.

--- Part 2. Optical properties. The purpose is to standardize the description methods of various spectral properties of optical films.

--- Part 3. Environmental suitability. The purpose is to establish an environmental test method suitable for investigating the environmental adaptability of optical thin film elements.

--- Part 4. Specified test methods. The purpose is to supplement the detailed technical requirements for several environmental test methods, part 3

The test methods are cited in.

--- Part 5. Basic requirements for anti-reflection coatings. The purpose is to specify the basic requirements for commonly used anti-reflection coatings.

--- Part 6. Basic requirements for reflective films. The purpose is to specify the basic requirements for commonly used metal reflective films.

--- Part 7. Basic requirements for neutral beamsplitters. The purpose is to specify the basic requirements for commonly used neutral beamsplitters.

--- Part 8. Basic requirements for laser optical films. The purpose is to specify the basic requirements for commonly used laser optical films.

The first four parts of the GB/T 26332 series of standards describe general specifications for optical films, the rest are for specific applications

Orientation of optical films specifies the basic technical requirements. GB/T 26332.5 is aimed at anti-reflection coatings widely used in optical systems.

The main function of the anti-reflection coating is to reduce the reflection of the optical surface and improve the performance of the optical system. GB/T 26332.5 according to commonly used anti-reflection

The spectral characteristics of the film are classified and defined, and the symbol identification and graphic identification methods are proposed. At the same time, the corresponding spectral characteristics and environmental adaptation are given.

Technical requirements for properties and film defects.

Optical and Photonics Optical Films

Part 5. Basic requirements for antireflection coatings

1 Scope

This document specifies the basic requirements for the optical properties, mechanical properties, chemical stability and environmental suitability of antireflection coatings.

This document applies to anti-reflection coatings for optical applications. This document meets both the requirements of film manufacturers for material selection and preparation methods.

It can also enable users to accurately understand the relevant quantitative regulations of the film product.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 12085.2-2010 Environmental test methods for optics and optical instruments - Part 2. Low temperature, high temperature, damp heat (ISO 9022-2.

2002, MOD)

GB/T 26332.1 Optical and Photonics Optical Films Part 1. Definitions (GB/T 26332.1-2018, ISO 9211-1.

2010, IDT)

GB/T 26332.2 Optical and Photonics Optical Films Part 2. Optical Properties (GB/T 26332.2-2015,

ISO 9211-2.2010, IDT)

GB/T 26332.3-2015 Optical and Photonics Optical Films Part 3. Environmental Adaptability (ISO 9211-3.2008,

IDT)

GB/T 26332.4-2015 Optical and Photonics Optical Films Part 4. Specified Test Methods (ISO 9211-4.2012,

IDT)