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# NATIONAL METROLOGY TECHNICAL SPECIFICATION OF THE PEOPLE'S REPUBLIC OF CHINA

# JJF 1774-2019

## Program of Pattern Evaluation of Ophthalmometers

角膜曲率计型式评价大纲

**(English Translation)**

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## Introduction

This type evaluation outline is based on JJF 1015-2014 "General Specification for Type Evaluation of Measuring Instruments", JJF 1016-

2014 Compilation of "Guidelines for the Compilation of Type Appraisal Outline of Measuring Instruments".

The technical indicators of this type evaluation outline refer to JJG1011-2018 "Cornea Curvometer", GB/T 14710-2009 "Environmental requirements and test methods for medical appliances", ISO 10343.:2014 "Ophthalmic instrument keratometer" (Ophthalmicinstruments-Ophthalmometers) and other technical documents, of which JJG1011-2018 and GB/T 14710-2009 is the primary reference document.

This type evaluation outline is released for the first time.

Keratometer type evaluation outline

1 Scope

This type evaluation program is applicable to the type evaluation of the keratometer with classification code 33900000.

The type evaluation of the corneal curvature radius and axial position measurement function of the refractometer can refer to this type evaluation outline.

2 Reference documents JJG1011 Keratometer GB/T 14710 Environmental requirements and test methods for medical appliances for dated reference documents, only the dated version is applicable to this type of evaluation outline; those that are not dated the latest version (including all amendments) of the cited documents is applicable to this type



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evaluation outline.

3 Overview

3.1 Purpose and classification the keratometer is mainly used to measure the radius of corneal curvature, corneal refractive power and astigmatism axis of the human eye. Partial corneal curvature Rate meters can also be used for contact lens measurements.

The keratometer can be divided into continuous display type and digital display type according to the display mode. Continuous display is a Continuously scaled keratometer; digital display is a type of cornea that rounds the measured value to the nearest incremental value Curvometer.

Some refractometers also have functions to measure the radius of curvature and axial position of the human cornea.

3.2 Measuring principle the keratometer uses the principle of corneal reflection to measure the radius of curvature of the human cornea, corneal refractive power and axial position.

The method of manual focusing is used visually. The measurement principle is shown in Figure 1.

Figure 1 Schematic diagram of measurement principle

The keratometer is generally composed of four parts. a light source, a measuring light path system, a visual observation system, and a reading system. its the middle object reticle 1 and 2 are symmetrical with the optical axis at a fixed angle. When measuring the cornea of the human eye, divide from the object side After the light emitted from the reticle 1 and 2 is reflected by the front surface of the cornea of the tested person, two images are generated, and the light continues to pass the measurement After the optical path system, the image can be observed through the eyepiece. Operator moves corneal curvature through anterior, posterior, left, and right the camera adjusts the focus and adjusts the axis position, and you can observe a clear image in the field of view of the eyepiece.



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