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NATIONAL METROLOGY TECHNICAL SPECIFICATION OF THE

PEOPLE'S REPUBLIC OF CHINA

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Calibration Specification for Phantoms Used in Computed Radiography (CR) and Digital Radiography (DR)

医用CD/DR性能模体校准规范

(English Translation)

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Introduction

This specification is based on JJF 1071-2010 "Rules for Compilation of National Metrology Calibration Specifications", JJF 1001-2011 "General Compiled with Measurement Terms and Definitions", JJF 1059.1-2012 "Measurement Uncertainty Evaluation and Representation".

According to the actual situation of medical CR/DR performance phantom, the formulation of this calibration specification refers to JJG1078-2012 "Medical Digital Photography (CR, DR) System X-ray Radiation Source Verification Regulations", WS76-2020 "Medical X-ray Diagnostic Equipment Quality Control Testing Specification.

This specification is published for the first time.

Specification for calibration of medical CR/DR performance phantoms

1 Scope

This specification is applicable to medical CR/DR performance phantoms and multifunctional phantoms for medical CR/DR performance testing.

The Quantitative section relates to the calibration of the module.

2 Reference documents this specification references the following documents.

JJF 1035 Ionizing Radiation Measurement Terms and Definitions JJG1078 Medical digital photography (CR, DR) system X-ray radiation source GB/T 23903 Radiographic Image Resolution Tester WS76-2020 Specification for quality control testing of medical X-ray diagnostic equipment for dated references, only the dated version applies to this specification; for undated references the latest version (including all amendments) applies to this specification.

3 Terminology and units of measurement the terms and definitions defined in JJF 1035, JJG1078, GB/T 23903 and the following apply to this specification.

3.1 Terminology

The minimum contrast of a specified shape and area that can be distinguished from a uniform low-density background, expressed as a percentage.

3.1.2 Uniformity

The difference in the equivalent thickness of the phantom due to the phantom material and along the thickness difference, usually expressed as a percentage.

3.1.3 Line pair density densityoflinepair the total number of wire pairs per unit length in the wire pair width direction, in LP/mm.

3.2 Units of measurement Unit name of phantom geometric length. mm; symbol. mm.

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4 Overview

The medical CR/DR performance phantom (hereinafter referred to as the phantom) is a systematic system for medical digital photography (CR, DR).

device that can be detected. It has holes (or protrusions), rulers, uniform areas, etc. of a specific depth, which are used to detect medical data.

Measurement of low-contrast resolution, spatial resolution, and consistency of light field and radiation field of digital photography (CR, DR) systems parameter. The phantom is generally composed of a low-contrast resolution module, a spatial resolution test plug-in, and a radiation field and light field consistency check.

It consists of test card and uniformity test plug-in.

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