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

GB/T 24791.3-2009

**Photography -- Sensitometry of screen/film systems for medical
radiography -- Part 3: Determination of sensitometric curve
shape, speed and average gradient for mammography**

摄影 医疗X射线成像用屏/片系统的感光测定 第3部分：乳腺X射线成像感光特性
曲线形状、感光度与平均斜率的测定

(English Translation)

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Table of Contents

- Foreword
- Introduction
- 1 Scope
- 2 Normative references
- 3 Terms and Definitions

Foreword

This part identical with ISO 9236-3:1999 "photography medical X-ray imaging measurement - Part 3 photosensitive screen/film system.

The shape of the breast X-ray imaging sensitivity characteristics curves, speed and average gradient measurement "(in English).

This section is equivalent translation ISO 9236-3:1999.

For ease of use, this section made the following editorial changes.

- a) "this International Standard" be replaced by "this section";
- b) use a decimal point instead of a decimal comma " , " . " , " ;
- c) amend the foreword and introduction.

This section of the Appendix A, Appendix B is an informative annex.

This part is proposed by the China Petroleum and Chemical Industry Association.

This part of the photosensitive material by the National Standardization Technical Committee (SAC/TC102) centralized.

This section drafted by. China Lucky Film Group Corporation.

Introduction

This standard consists of the following sections.

Part 1. photosensitive characteristic curve shape, speed and average gradient measurement.

Part 2. Determination of the modulation transfer function (MTF) of.

Part 3. breast X-ray imaging of the photosensitive characteristic curve shape, speed and average gradient measurement.

The standard medical X-ray imaging characteristic shape with photosensitive screen/film/holder/processing system curve average slope sensitivity test methods.

Photosensitive other performance characteristic measurement is carried out when needed (e.g. Modulation Transfer Function), the photosensitive characteristic curve in the low scattering conditions by using X-ray intensity scale photographic measurement technology, the best is to use the inverse square of the photosensitive measured. In order to determine the characteristic curve of the photosensitive shape Like, need to screen/film/holder combination body irradiation were measured.

The average slope of the characteristic curve through the photosensitive shape drawn, you must use a separate method sensitivity was measured exposure conditions should be as You can simulate the actual application. Therefore, compared with the dimmer used in making photographic measurement of light quality, the composition of the scattered light is accompanied by the quality of light Slight changes. The clinical application of exposure is appropriate phantom voltage analog and tube made. Screen/film/holder combination after molding into the body Line exposure. To determine the sensitivity, exposure should be in absolute units Gy (Gy) were measured.

Typically it depends on the sensitivity of X-ray energy, the exposure time and the amount of scattered light. Therefore, in practical application, the size varies sensitivity Variety. As used in screen/film mammography tube voltage range is small, but this standard describes a method for determining the speed of a time Kinds of light quality. The use of the standard measurement conditions can calculate the size of the average slope sensitivity, providing for the practical application in accordance with.

GB/T 24791.3-2009/ISO 9236-3:1999 Photography Medical X-ray imaging with screen/film system Sensitometry Part 3. breast X-ray imaging Photosensitive characteristic curve shape, speed and Determine the average slope

1 Scope

Photosensitive characteristic curve shape this part of GB/T 24791 describes a breast X-ray screen/film/holder/processing system, and the average slope Determination of sensitivity.

The film holder can be any form, just make sure screen/film in close contact to prevent the film is exposed to ambient light. The film holder can be a Light does not leak vacuum bag frequently used in the experiment, or X-ray imaging cartridge for use in breast X-ray photographic process.

Note: In the following screen/film/holder combination called "combination" When included processing system, known as the "system."

2 Normative references

The following documents contain provisions which, through reference GB/T 24791 in this section constitute provisions of this section. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section. However, under this part are encouraged to reach Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 11500 photographic density measurements - Part 2. Geometric conditions (GB/T 11500-2008, ISO 5-2:2001, IDT) GB/T 11501 photographic density measurements - Part 3. Spectral conditions (GB/T 11501-2008, ISO 5-3:1995, IDT) ISO 554. 1976 standard atmospheric conditions and/or test specifications

3 Terms and Definitions

The following terms and definitions apply to this section.

The sum of the initial kinetic energy of all charged particles (such as electrons) released from the Central African air molecules charged particles (such as X-ray photons), divided by the release Air quality charged particles. Unit is Gy (Gy).

Logarithmic function of density and exposure of the film developing process after the correspondence between the curves.

In particular exposing, processing and density measurement conditions, screen/film systems for the quantitative measurement of radiation energy response.

On the photosensitive characteristic curve slope of the line connecting two specific points.

Film exposure, after subtracting the density of developed film density of the unexposed and developed.

GB/T 24791.3-2009/ISO 9236-3:1999