INTERNATIONAL STANDARD

ISO 15781

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Photography — Digital still cameras — Measuring shooting time lag, shutter release time lag, shooting rate, and start-up time

Photographie — Caméras numériques — Mesurage du décalage dans le temps de la prise de vue, décalage dans le temps de l'ouverture de l'objectif, cadence de prise et temps de démarrage

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 42, *Photography.*

This second edition cancels and replaces the first edition (ISO 15781:2013), of which it constitutes a minor revision.

Introduction

Taking pictures of a moving target was nearly impossible in the early days of digital photography. After pressing the exposure button, it took a significant amount of time to capture the image and the chance to preserve the desired moment was gone.

Part of the time between pressing the exposure button and the exposed picture is needed to focus while another part is needed to adjust the exposure, etc. This unwelcome, but unavoidable period of time is called the **shooting time lag.** This is often mixed with the term **shutter release time lag** which is also defined in this International Standard. Optimized systems are nowadays able to decrease these time lags.

Capturing the different stages of a fast moving object is sometimes very important, especially in areas like sports or people photography. This high **shooting rate** requires a fast image processing within the digital still camera that can be measured according to the method described in this International Standard.

When a photographer decides to capture an image of a changing scene, if his or her digital still camera takes a long time to be ready to shoot once it is turned on, the opportunity to capture the image is lost. This time named **start-up time** is therefore another important value which can be determined using this International Standard.

Photography — Digital still cameras — Measuring shooting time lag, shutter release time lag, shooting rate, and start-up time

1 Scope

This International Standard specifies how to measure and report the shooting time lag, shutter release time lag, shooting rate, and start-up time for digital still cameras including camera modules in phones and tablet computers. It includes a method that uses control signals inside the digital still camera and a method that determines the timing values without requiring access to the inside of the digital still camera.

Depending on the method used to start the timing device, there can be a time lag between the activation of the timing device and the closure of the exposure switch of the digital still camera.

This International Standard does not address the measurement of auto focus accuracy and speed at low light conditions.

For digital still cameras that continuously shoot images into the buffer, the exposure button only acts as a selector of an image that was taken before the exposure button was pressed. The methods to measure shutter time lag and shooting time lag do not address this case and cannot be used for this type of digital still camera.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7589, *Photography — Illuminants for sensitometry — Specifications for daylight, incandescent tungsten and printer*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
digital still camera
device which incorporates an image sensor and produces a digital signal representing a still picture

Note 1 to entry: A digital still camera is typically a portable, hand-held device. The digital signal is usually recorded on a removable memory such as a solid-state memory card or magnetic disk.

Note 2 to entry: This term is also defined in ISO 12231, ISO 12232, ISO 15739, and ISO 17321-1.

3.2
shooting time lag
time between pressing the exposure button (firmly depressing the shutter button to the maximum extent without introducing a discontinuity) on a *digital still camera* [3.1] or a module built into a mobile device and the beginning of the exposure

Note 1 to entry: This period of time includes all measurements and adjustments (e.g. auto focus and exposure control) a digital still camera needs to make prior to the beginning of the exposure.