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## Photography — Digital cameras — Measuring low-light performance

*Photographie — Caméras numériques — Mesurage des performances  
dans des conditions de faible luminosité*



Reference number  
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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](http://www.iso.org/directives)).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 42, *Photography*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

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## Introduction

The major engineering difference between a system camera, a point and shoot camera, and a camera in a mobile device is the sensor size. The sensor size is also related to the overall system size including the lens. With smaller sensors, the individual light sensitive areas are also smaller and therefore less light falls onto each of the pixels.

Smaller individual light sensitive areas require higher signal amplification that leads to higher noise levels or other problems that can occur due to denoising algorithms. These problems become more visible at low-light conditions because of the lower signal levels.

Most cameras are used without a tripod even at low-light conditions. At low light in combination with a tripod, the performance of a camera is always good because the sensitivity setting can be kept to a low value and the exposure time can be very long. For these reasons the low-light performance is measured using conditions that reflect the result of a handheld shot.

Sometimes the data sheets of a camera state a light level for the low-light performance of a camera. Prior to the creation of this document, the way to determine these values was not defined and therefore the values were unreliable to users.