
**Photography — Digital still cameras
— Determination of exposure index,
ISO speed ratings, standard output
sensitivity, and recommended
exposure index**

*Photographie — Appareils de prises de vue numériques —
Détermination de l'indice d'exposition, des régimes de vitesse ISO, de
la sensibilité normale de sortie et de l'indice d'exposition recommandé*

(<https://standards.iteh.ai>)
Document Preview

ISO 12232:2019

<https://standards.iteh.ai/catalog/standards/iso/538f7b10-2317-4145-9d3e-7d6fac550149/iso-12232-2019>



iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

ISO 12232:2019

<https://standards.iteh.ai/catalog/standards/iso/538f7b10-2317-4145-9d3e-7d6fac550149/iso-12232-2019>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Exposure index	3
4.1 General	3
4.2 Focal plane measurement	4
4.3 Estimating focal plane exposure from scene luminance	4
5 Test conditions	4
5.1 General	4
5.2 Illumination	4
5.2.1 Daylight reference illuminant	5
5.2.2 Tungsten reference illuminant	5
5.3 Temperature and relative humidity	5
5.4 White balance	5
5.5 Infrared (IR) blocking filter	5
5.6 Photosite integration time	5
5.7 Compression	5
5.8 Other DSC user settings	5
6 Determination of ISO speed and ISO speed latitude	6
6.1 General	6
6.2 Saturation-based calculations	6
6.2.1 Focal plane measurement	6
6.2.2 Scene luminance measurement	7
6.3 Noise-based calculations	7
6.3.1 Focal plane method	7
6.3.2 Scene luminance method	8
6.3.3 Colour cameras	8
6.3.4 Quantization effects	8
6.4 Method of reporting	9
7 Determination of standard output sensitivity (SOS)	11
7.1 Method for calculating SOS	11
7.2 Method of reporting	12
8 Specification of recommended exposure index (REI)	12
8.1 General	12
8.2 Method for calculating recommended exposure index	12
8.3 Method of reporting	12
Annex A (informative) Recommended procedure for determining the noise-based ISO speed	15
Annex B (informative) Scene luminance and focal plane exposure	17
Annex C (informative) Recommended procedure for determining SOS values	19
Annex D (normative) Removing low frequency variations from the image data	20
Bibliography	21

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 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 the following URL: www.iso.org/iso/foreword.html.

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

This third edition cancels and replaces the second edition (ISO 12232:2006), which has been technically revised.

The main changes compared to the previous edition are as follows:

- definitions of photographic sensitivity and sensitivity setting were added;
- [Clause 4](#) was simplified and clarified;
- it has been defined how to determine the exposure saturation level in [6.2](#);
- the applicability of SOS values for scene-dependent rendering and raw files was clarified;
- original [Table 1](#) was expanded to include higher values, and separated the SOS and REI columns into a new [Table 2](#), which includes alternate values for some of the rows;
- [Annex B](#) was updated to clarify the mathematical basis of [Formula \(2\)](#);
- Annex E was cancelled.