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Part 4: Digital negative format

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Partie 4: Format négatif numérique

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

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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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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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.

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

A list of all parts in the ISO 12234 series can be found on the ISO website.

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.

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Introduction

Advanced and professional photographers often choose to capture and edit photos in raw format, for additional flexibility and artistic control. Unlike display-referred formats (such as JPEG, PNG, and TIFF) which store images that have already been processed by the camera, raw formats store unprocessed or minimally processed data directly from the camera sensor. This enables photographers to adjust many parameters to taste, including white balance, tone mapping, noise reduction, sharpening, and so on. Photos in raw format are analogous to film negatives in a photographer's workflow, so they are often referred to as "digital negatives."

The purpose of this document is to define a standardized file format for storing raw photographs. This file format can be used in a wide range of hardware and software applications for generating, processing, managing, transcoding, or archiving raw photographs. Since raw photographs are closely tied to the camera sensor and other characteristics, camera manufacturers may use and support their own Vendor Raw formats to meet various design requirements.

The name of this file format is Digital Negative (DNG). DNG is an extension of TIFF 6.0 and is compatible with TIFF-EP standard. It is possible (but not required) for a DNG file to simultaneously comply with both this document and the TIFF-EP standard.

Adobe Systems published the "Digital Negative (DNG) Specification." This includes specifying DNG by capturing and reconciling major adoptions and implementations of Adobe DNG.

Annex A describes the relationship of this document to the Adobe versions of DNG.

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Digital imaging — Image storage —

Part 4:
Digital negative format

1 Scope

This document specifies the Digital Negative (DNG) image file format. A DNG file meets the requirements provided in this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 12234-1, *Electronic still-picture imaging — Removable memory — Part 1: Basic removable-memory model*

ISO 12234-3, *Electronic still picture imaging — Removable memory — Part 3: XMP for digital photography*

ISO/TS 22028-3, *Photography and graphic technology — Extended colour encodings for digital image storage, manipulation and interchange — Part 3: Reference input medium metric RGB colour image encoding (RIMM RGB)*

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
opcode
image processing instruction to be executed on reading

3.2
raw
unprocessed or minimally processed image data which is directly related to the colur information captured by the sensor and suitable for further processing

Note 1 to entry: In this document there is a distinction between "vendor raw" and "standard raw", defined below, and use "raw" to refer to "'standardized raw".

3.3
reader
device that consumes files compliant with this document

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