BS ISO 18383:2015

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Photography — Digital cameras — Specification guideline

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National foreword

This British Standard is the UK implementation of ISO 18383:2015.

The UK participation in its preparation was entrusted to Technical Committee CPW/42, Photography.

A list of organizations represented on this committee can be obtained on request to its secretary.

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ISO 18383

First edition
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Photography — Digital cameras — Specification guideline

Photographie — Caméras numériques — Ligne directrice de spécification

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Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Definition set of the product specifications of DSCs **2**
4.1 Basic requirements 2
4.2 Definitions of specifications 3
4.2.1 General 3
4.2.2 Optical system 4
4.2.3 Camera control system 8
4.2.4 Key components 14
4.2.5 Recording system 21
4.2.6 Image quality 23
4.2.7 Response time 30
4.2.8 Miscellaneous features 33
Annex A (normative) **Measurement methods of features not related to image quality** **39**
Annex B (normative) **Related standards** **46**
Annex C (informative) **Commentary** **58**
Bibliography **61**

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Full document details: BS ISO 18383:2015

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*.

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Introduction

The digital still camera (DSC) marketplace continuously produces and promotes new and competitive cameras. Requiring that manufacturers produce DSCs with standard numerical specifications impedes the technical progress, interferes with fair market competition, hinders the sound development of the industry, reduces camera innovation, and limits the customer's choice. On the other hand, standardized definitions of a fundamental set of camera specifications can help consumers to choose, purchase, and use these cameras because they provide the information needed to understand and compare the numerical specifications offered by the manufacturers and, thus, contribute to the fair competition in the market.

The various fundamental features of DSCs have close relationships with other features, such as camera size or cost. Nonetheless, these features, their relationships, and their numerical values vary with time and technological evolution. Manufacturers design and build their cameras to numerical specifications that balance performance with their estimation of the competitiveness of the product in and the feedback from the marketplace.

This International Standard identifies a set of fundamental features that describe DSCs, along with their accepted definitions, measurements, and presentation methods, but it does not define nor specify numerical values for the features, functions for calculating these values, nor limiting values required for these features.

This International Standard is based on Reference [1] prepared by Camera and Imaging Products Association (CIPA).

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INTERNATIONAL STANDARD ISO 18383:2015(E)

Photography — Digital cameras — Specification guideline

1 Scope

This International Standard identifies a set of features that describes digital still cameras (DSCs), and it specifies their definitions, measurement methods, and presentation methods. This International Standard applies to DSCs designed and produced for and promoted to general consumers and need not be applied to those DSCs designed and produced to meet individual and special specifications agreed upon by particular business or industrial users and the manufacturer.

The presentation methods specified in this International Standard are intended for use as notations on camera bodies, on product packaging, on promotional materials for advertising and at the point of purchase, in electronic or printed catalogues and other materials, and in the relevant software.

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 516, *Photography — Camera shutters — Timing*

ISO 517, *Photography — Apertures and related properties pertaining to photographic lenses — Designations and measurements*

ISO 2720, *Photography — General purpose photographic exposure meters (photoelectric type) — Guide to product specification*

ISO 12232, *Photography — Digital still cameras — Determination of exposure index, ISO speed ratings, standard output sensitivity, and recommended exposure index*

ISO 12233, *Photography — Electronic still picture imaging — Resolution and spatial frequency responses*

ISO 14524, *Photography — Electronic still-picture cameras — Methods for measuring opto-electronic conversion functions (OECFs)*

ISO 15739, *Photography — Electronic still-picture imaging — Noise measurements*

ISO 15781, *Photography — Digital still cameras — Measuring shooting time lag, shutter release time lag, shooting rate, and start-up time*

ISO 17850, *Photography — Digital cameras — Geometric distortion (GD) measurements*

ISO 17957, *Photography — Digital cameras — Shading measurements*

ISO 19084, [1)]*Photography — Digital cameras — Chromatic displacement measurements*

IEC 61747-6:2003, *Liquid crystal and solid-state display devices — Part 6: Measuring methods for liquid crystal modules — Transmissive type*

3 Terms and definitions

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

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3.1
factory shipping conditions
factory shipping settings
factory shipping values
factory shipping mode
camera settings and parameters as configured by the manufacturer for shipping from the factory

3.2
image area
region of an image sensor in the focal plane that captures the part of the incident image and that corresponds to the output image data

3.3
output image
image created by a DSC through capture of an optical image by an image sensor followed by processing and then output through any communication means

3.4
primary notation
notation which describes feature name and value presented solely or most noticeably

3.5
ring pixel
light-sensitive pixels in the image sensor of a DSC, that are outside the image area and are used in the image processing

Note 1 to entry: Examples of image processing are demosaicing, noise reduction, and spatial filtering.

4 Definition set of the product specifications of DSCs

4.1 Basic requirements

This International Standard does not mandate the inclusion and reporting of any features but provides a reference on what presentation methods and written expressions should be used for particular features. The requirements for the definition, measurement, and presentation of the set of DSC features established in this International Standard are described below. Note well that the requirements do not specify numerical values for any features that DSCs shall achieve. There are features included in this International Standard with the paradoxical statement, "This International Standard does not cover this feature." These features are commonly found on many cameras. They are included for completeness and to explicitly recognize that these features are only specified at the discretion of the manufacturer.

a) When a feature is described on the product, in catalogues, or in other documents, the presentation method of the feature and its measured values shall comply with the following requirements:

   1) Features and their values with factory shipping settings or modes shall be presented as the primary notation of those features. The primary notation need not include the description of the setting and measurement conditions. When additional values with different settings are described, they shall include the details of the settings and measurement conditions.

   2) The descriptions of features and their values that are not available through factory shipping settings shall include the settings or modes that make these features available. Features available in multiple settings or modes shall be made available with the setting or mode that is assumed to be the most likely used and shall be presented if they affect the functionality.

   3) Features with no default parameters or modes in the factory shipping setting shall be assigned parameters or modes that are assumed to be the most likely used. They shall be presented if they affect the functionality.

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4) Exceptions to the priority on the factory shipping setting may be given to certain features defined in 4.2. They may be given when the above requirements are redundant or when the descriptions with the other settings, parameters, or modes give the users more accurate and definitive information.

b) For cameras with interchangeable lenses, the presentation of any features affected by the choice of lens shall include information that identifies the lens (for instance, the model name of lens, type of lens) attached to the camera and that produces, requires, or otherwise affects that feature. The choice of the lens used in the specification of the feature is left to the discretion of the manufacturer.

c) The reported numerical values of features shall be based on measurements using the actual camera and the standard methods of measurement and calculation. The values designed and verified by the manufacturer may be used when the feature does not have an established measurement and/or calculation method.

d) Variations in names and expressions for features in this fundamental set of features, such as customary names and company-used names, may be used unless

1) the standard explicitly requires a name or an expression;

2) a variation in a name or expression could cause confusion with the name or expression of any other feature in the set of features in this standard;

3) a variation in a name or an expression could cause a misunderstanding.

e) Specific requirements explicitly stated for any particular feature of this set shall have precedence over any of these basic requirements.

f) Regardless of the specified number of significant figures for each feature in the definition set, the number of decimal places may be omitted for integer values in the presentation.

EXAMPLE 4,0 times -> 4 times; 2,0 s -> 2 s; 2,0 m -> 2 m.

4.2 Definitions of specifications

4.2.1 General

Tables 1 to 7 specify the definition, the measurement, and the presentation of a set of fundamental features of DSCs.

In the International Standards for individual features developed by ISO or CIPA, detailed ways of indicating specifications and various characteristics are presented; however, they tend to be too complicated for descriptions in catalogues and other materials for general consumers. Therefore, Tables 1 to 7 give compact notations for individual features that are consistent with official standards and are presented with examples of notation.

The following are conventions used in Tables 1 to 7.

a) The notation {*xxx*} means that *xxx* may be omitted from the description.

b) The notation [*yyy* | *zzz*] means that either *yyy* or *zzz* may be used in the description.

c) The word “company” used in the “Specifications (Definitions)” column refers to any supplier of the DSC.

d) The phrase “depress the shutter button” refers to the operation of fully pressing the shutter button as well as any other general means for starting exposure.

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4.2.2 Optical system

Table 1 specifies the definition, the measurement, and the presentation of a set of features for optical systems.

Table 1 — Definitions of specifications and presentation method for optical system

No.	Features	Guidelines for specifications (definitions) and presentation	Remarks
1	available focal length {of the lens}	Range of distance along the optical axis between the secondary (rearmost) principal point and the available points of focus in image space when focusing on a subject at infinity Measurement method: Shall comply with ISO 517. Presentation examples: — 3,5 mm — 3,5 {mm} to 10,5 mm Presentation methods: — The value based on the design may be reported. — The value shall be given in units of mm. — The value shall be reported with two or more significant digits (by rounding off). — For cameras with zoom function, Regardless of the factory shipping values, the values available by zooming may be reported.	— A clear or accurate measurement method in product form has not been established for DSCs with built-in lens. — For commonly used lenses, shooting angle of view can be calculated by the formula: 2 × arctan[diagonal length of the image area/(2 × focal length of lens)].
2	available {35 mm film} equivalent focal length {of the lens}	Range of available focal length of a 35 mm film camera that has the same shooting angle of view as the lens for the DSC Method for converting the focal length of a DSC lens to 35 mm {film} equivalent focal length: 35 mm {film} equivalent focal length = focal length of DSC lens × [diagonal length of the image area of 35 mm film (43,27 mm)]/(diagonal length of the image area of the image sensor)	— "These items are an outline of the materials in B.2.1. The last provision of "Presentation methods" shall also apply. — Equating the shooting angle of view for the lens of the DSC with that of a 35 mm film camera, which has a 24 mm × 32 mm image area with a diagonal of 43,27 mm:

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Table 1 *(continued)*

No.	Features	Guidelines for specifications (definitions) and presentation	Remarks
		Presentation methods: — Diagonal length of the image area shall be used as the basis of conversion. — The value shall be given in units of mm. — The value shall be reported as a whole number. In the case that the value is larger than 100 mm, the value may be rounded off to two or more significant digits. — For cameras with a zoom function, regardless of the factory shipping values, the values available by zooming may be reported.	2 × arctan[diagonal length of a DSC image area/(2 × focal length of the lens of a DSC)] = 2 × arctan[diagonal length of a 35 mm film image area/(2 × equivalent focal length of the lens of a 35 mm film camera)] allows one to calculate the equivalent focal length for the lens of a DSC as: Equivalent focal length = Focal length of the lens of a DSC x (Diagonal length of a 35 mm film image area/Diagonal length of the DSC image area) where Diagonal length of a 35 mm film image area is 43,27 mm
3	available apertures {(f-numbers)}	Range of available apertures identified by their f-numbers (f/D), where f is the focal length of the lens and D is an available, effective aperture of the lens Presentation methods: — Presenting either the f-number of the fully open aperture alone or the range of available f-numbers (for a zoom lens) is acceptable. — When presenting a range of available apertures, the f-numbers for both the extreme wide angle of view and the extreme narrow (telephoto) angle of view shall be reported with the designations “(W)” and “(T)”, respectively. In addition, the minimum f-number for the fully open aperture across the entire range of angles of view (focal lengths) shall be reported with the designation “(Min)”. — When a neutral density filter has been used with the aperture, the equivalent f-number(s) may be reported with the designation “(ND)” or “(ND filter used)”. The equivalent f-number is the f-number of the aperture without the neutral density filter, which applies the same light value as the aperture with the neutral density filter does.	— The reporting of f-numbers for available apertures shall comply with ISO 517 as outlined to the left and the items listed under “Presentation methods”. — A clear or accurate measurement method in product form has not been established for DSCs with built-in lens.

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Table 1 *(continued)*

No.	Features	Guidelines for specifications (definitions) and presentation	Remarks
		— When the equivalent f-number is reported for Exif, designation "(Exif Equivalent)" shall be used. — When an f-number is reported that depends upon an unusual or particular feature of the DSC, the designation "(DSC-specific)" shall be used with a reporting of the dependent feature. Presentation examples: — F2,8 (W); F4,8 (T); F5,6 (Min) — F2,8 (W); 5,6 (Min); 4,8 (T) — F2,8 (W); F5,6 (T) (ND filter used)	
4	Zoom [ratio | magnification]	— If the camera has only an optical zoom function, select description (b). — If the camera has only a digital zoom function, select description (c). — If the camera has both functions, the optical zoom function shall be reported with higher priority. — Regardless of the factory shipping values, available values of zoom magnification may be reported.	
	(a) [total | combined] zoom [ratio | magnification]	Available, maximum combined magnifications of the optical zoom and the digital zoom Presentation methods: — The optical zoom magnification shall be reported conspicuously. — The number of significant digits to be reported shall be two or more (round the value to the nearest decimal). — Regardless of the factory shipping values, available values of zoom magnification may be reported. Presentation examples: — 3x optical zoom (12x total zoom magnification) — 3x optical zoom (12x total zoom magnification, 4x by digital zoom) — 3x optical zoom, 4x by digital zoom (12x total zoom magnification)	

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Table 1 *(continued)*

No.	Features	Guidelines for specifications (definitions) and presentation	Remarks
	(b) optical zoom [ratio | magnification]	Available ratios of focal length of the lens at the extreme wide angle of view (W) and the extreme narrow (telephoto) angle of view (T) Presentation methods: — The number of significant digits to be reported shall be two or more (round the value to the nearest decimal). — The details (for example, whether actual value or nominal value is used) of the focal length used in the calculation of optical zoom ratio are not specified. — Regardless of the factory shipping values, available values of zoom magnification may be reported. Presentation examples: — 3,8x — 5x	The measured "effective zoom ratio (by the ratio of the size of captured image)" at a measurable subject distance significantly differs from the real zoom ratio calculated from the real focal length for the subject at infinity, that is, at an extremely large distance.
	(c) digital zoom [ratio | magnification]	Available ratios of the length of the diagonal of the image area without digital zoom to that with full digital zoom Presentation methods: — The number of significant digits to be reported shall be two or more (round the value to the nearest decimal). — The term "shooting digital zoom" may be shortened to "digital zoom" (refer to the feature 60). — Regardless of the factory shipping values, available values of zoom magnification may be reported. Presentation examples: — 3,5x — 5x	
5	[focus | shooting] [range | distance]	Subject distance at which shooting results in an in-focus image of the subject The shortest shooting distance means the smallest subject distance that results in an in-focus image of the subject. The distance from the front surface of the lens or the distance from the effective image area of the image sensor shall be used. The manufacture may select either of the two distance, and which distance is selected shall be presented.	

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Table 1 *(continued)*

No.	Features	Guidelines for specifications (definitions) and presentation	Remarks
		Presentation methods: — For the AF mode, report the subject distances for which the AF function works, and for the MF mode, report the subject distances for which an in-focus image can manually be obtained at the most open aperture. — If the longest shooting distance is infinity, only the shortest shooting distance need be reported. — Regardless of the factory shipping values, available subject distance may be reported. The shooting mode (for example, macro mode) and/or the shooting conditions (for example, maximum wide-angle) that achieve the available subject distance shall be reported. — The conditions for the f-number of the lens are not specified, i.e. the shooting distance of any f-number can be reported. — The number of significant digits to be reported should be one or more for less than 1 m distance and two or more for 1 m or longer distance (round the value to the nearest decimal). Presentation examples: — 50 cm to ∞ (W); 1,5 m to ∞ (T) (from lens surface) — Shortest shooting distance 50 cm (W); 1,5 m (T) (from lens front) — 0,5 m to ∞ (W-end); 1,5 m to ∞ (T-end) (from effective image area) — 1 {cm} to 50 cm (W) (from lens surface when in macro mode)	
6	lens [construction | configuration]	The number of components, for instance, lenses, elements, or groups of lenses, in a compound lens Presentation method: Manufacturers may use any expression (conventional or otherwise) to describe their lens construction and configuration. Presentation examples: — 14 elements in 10 groups (3 aspherical lenses, 1 low dispersion lens) — 7 elements in 6 groups (1 double-side aspherical lens, 1 set of cemented lens)	

4.2.3 Camera control system

Table 2 specifies the definition, the measurement, and the presentation of a set of features for camera control systems.

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Table 2 — Definitions of specifications and presentation method for camera control system

No.	Features	Guidelines for specifications (definitions) and presentation	Remarks
7	shutter type	Type of shutter mechanism Presentation method: The common expressions or designations of the relevant company may be used. Presentation examples: — Electronic system along with the mechanical shutter — Focal-plane shutter	
8	available shutter speeds {(exposure times)}	Range of available shutter speeds {(exposure times)} Presentation methods: — Available shutter speeds shall be reported in seconds. — Shutter speeds produced by any mode other than by the factory setting mode may be reported together to the shutter speeds with the factory setting mode and they shall include a designation of that particular mode. — The available shutter speeds may be reported together to the shutter speeds with the factory setting mode. The available shutter speeds shall present a note that describes they are combined shutter speeds with all the available settings. Presentation examples: — 1 {second} to 1/2 000 second, 15 {seconds} to 1 s (long shutter mode) — 1/2 000 {second} to 8 seconds (automatic), 60 seconds at maximum (bulb mode) — 1 {second} to 1/1 500 second (automatic mode), 15 {second} to 1/1 500 second (throughout all shooting modes)	The reporting of available shutter speed shall comply with ISO 516 as outlined to the left and the items listed under “Presentation methods”.
9	[light | exposure] metering [system | mode]	Metering system and modes of exposure control Presentation methods: — The customary expressions or designations of the relevant company may be used, as long as such expressions or designations are defined in either a published standard or in the literature supplied by the company and shipped with the DSC. — Regardless of the factory shipping conditions, any metering system and modes used for available exposure control may be reported. Presentation examples: — TTL open-aperture metering — Centre-weighted metering — Spot metering — Multiple pattern metering — Evaluative metering	

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Table 2 *(continued)*

No.	Features	Guidelines for specifications (definitions) and presentation	Remarks
10	available exposure [mode | control]	Available exposure control system and modes Presentation methods: — The common expressions or designations of the relevant company may be used, as long as such expressions or designations are defined in either a published standard or in the literature supplied by the company and shipped with the DSC. — A description of this feature may be included in the feature 16 “shooting mode”. — Any available systems and modes of exposure control may be reported in addition to the factory shipping mode. Presentation examples: — Program AE — Shutter (speed) priority AE — Aperture priority AE — Manual exposure	
11	range of available effective subject brightness values	Range of subject brightness (luminance) that allows the user to shoot practically exposed image without using a flash The brightness value is the binary logarithm of a luminance representative of the scene, B, multiplied by a standard exposure time t_o of one second and divided by an exposure meter constant K_s in the range 10,6 cd s m^{-2} to 13,4 based on information in ISO 2720. $BV = \log_2(B\ t_o/K_s)$ Presentation methods: — The minimum and maximum luminances operationally available and the available increment(s) that determine intermediate adjustments shall be reported as brightness values with the prefix “BV”. — The DSC shall be set to the factory shipping conditions with flash trigger prohibited. If it is not possible to prohibit the flash from being triggered, the value should be evaluated with the subject at a distance that is too far for the flash beam to reach the subject. — The available range values may be reported together or in primacy to the value with the factory setting mode. The available range of values shall present a note that describes they are combined values with all the available settings. — If any value available in modes other than the factory shipping mode is also reported, the shooting mode to which the value applies shall also be reported. Presentation example: — BV3 to 13 (W), BV4 to 14 (T)	The definition of what constitutes a “practical exposure” is left to the discretion of the manufacturer.

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Table 2 *(continued)*

No.	Features	Guidelines for specifications (definitions) and presentation	Remarks
12	range of available exposure settings	Range of exposures controllable by available settings available of the lens aperture and of the shutter speed Presentation methods: — The extreme values of the available exposure settings (values) shall be reported as a sum of the binary logarithm of an f-number of the aperture and the binary logarithm of a shutter speed expressed in seconds; EV = AV + TV AV = $\log_2(\text{f-number})^2$ TV = $\log_2(t_0/t)$ = $-\log_2$(exposure time) Where t is the shutter speed expressed in seconds (= exposure time), t_0 is the nominal shutter speed: one-second, which cancels the units of time (seconds) of the shutter speed expressed in seconds. — The available range values may be reported together or in primacy to the value with the factory setting mode. The available range values shall present a note that describes they are combined values with all the available settings. — When exposure settings (values) produced by modes other than the factory shipping mode, are reported, the modes that produce those values shall also be reported. Presentation examples: — EV 6 to 16 (W), EV 7 to 17 (T) — EV 3 to 17 (W), EV 4 to 18 (T) (shooting mode: P)	
13	exposure compensation	Available range and step size of the exposure compensation feature Presentation methods: — The range of steps shall be reported as ± followed by the magnitude of the range in stops (powers of two) and followed by “stops” or “EV”. — The step size shall be in stops followed by “stop” or “EV” and the word “steps” all enclosed in parentheses. — When the DSC is not equipped with exposure compensation, the value shall be reported as “none” or as “0”. Presentation examples: — ±2 stops (1/3 stop steps) — ±2 EV (1/3 EV steps)	

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Table 2 *(continued)*

No.	Features	Guidelines for specifications (definitions) and presentation	Remarks
14	focus [system | mode | type]	Available system and modes of focus control Presentation methods: — The common expressions or designations of the relevant company may be used, as long as such expressions or designations are defined in either a published standard or in the literature supplied by the company and shipped with the DSC. — Regardless of the factory shipping conditions, any available system and modes of focus control may be reported. Presentation examples: — Central one-point AF — Multiple point AF (9 points) — 9-points AF — Manual focusing — One-shot AF — TTL phase difference detection system (Manual focusing, One-shot AF, Continuous AF)	
15	white balance [system | mode | control]	Available modes that control multiple DSC settings whose values are generally used to capture scenes in a particular type of light Presentation methods: — The names of any modes placed on the DSC by the manufacturer shall be used, as long as such expressions or designations are defined in either a published standard or in the literature supplied by the company and shipped with the DSC. — An explanation of any listed mode may be included. Presentation examples: — Auto, Fine, Cloudy, Fluorescent, Incandescent, Flash, Set mode, Manual — Pre-set (Sunlight, Cloudy, Fluorescent, Incandescent, Flash)	
16	[scene | shooting] [mode | controls]	Available modes that control multiple DSC settings whose values are generally used to capture a type of scene Presentation methods: — The names of any modes placed on the DSC by the manufacturer shall be used, as long as such expressions or designations are defined in either a published standard or in the literature supplied by the company and shipped with the DSC. — An explanation of any listed mode may be included. Presentation example: — Normal, Easy shooting, Macro, Portrait, Sports, Nightscape, Night-scene portrait, Fireworks, Snow, Starry sky	May be broadly interpreted to mean exposure control mode.

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Table 2 *(continued)*

No.	Features	Guidelines for specifications (definitions) and presentation	Remarks
17	blur suppression	Generic term for (1) image stabilization during exposure and aiming and (2) blur reduction during exposure The term "blur" may be replaced with other expressions such as "camera shake" or "subject motion", if necessary.	— If the feature may be classified as either (a) or (b) because the feature has the nature of both (a) and (b), the classification is left to the discretion of the relevant company. Nevertheless, image stabilization and blur reduction should not be confused as their technical aspects differ greatly. — Examples of the classification are presented in C.5.
	(a) image stabilizer	Image stabilization method of correction and/or suppression of blur (compromised definition) in the output image, which is caused by the motion of the DSC and/or by the motion of the subject, by employing the output of the blur detection means A technique is assumed to be a "motion blur reduction" system mentioned in (b) below if it only takes images in high-speed shutter mode by optimizing the exposure control program, even if it employs the output of a blur detection means, and if the technique does not show significant improvement in stabilized output images. Presentation methods: — The system name, mode, and other data shall be reported (if the camera is equipped with this function). — The system name, mode, and other data may follow the customary terms or designations of the relevant company. — Regardless of the factory shipping conditions, any image stabilizing mode available may be reported. Presentation examples: — Optical system — Electronic system — Hybrid system	(1) Optical system includes lens shift systems and image sensor shift systems (2) Electronic systems process images adaptively based on image displacement information detected from the difference in images by taking plural shots. Note that: Even if an image processing system processes images by taking plural shots, it is not considered to be an image stabilizing system without detecting blur information or does not perform adaptable processing in response to the blur information. (3) A hybrid system is a combination of optical and electronic systems.
	(b) blur reduction {mode}	Function or mode that reduces the blur (compromised definition) in output images, which is caused by either subject motion or DSC shake while shooting with long exposure times, through optimization in the exposure control program Independent description of this feature as a blur reduction function or mode is allowable, although this feature is a kind of exposure control mode or sensitivity control mode.	

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Table 2 *(continued)*

No.	Features	Guidelines for specifications (definitions) and presentation	Remarks
		Presentation methods: — Mode names, function names, and other descriptions may follow the customary terms or designations of the relevant company. — Any motion blur reduction mode available may be reported regardless of the factory shipping setting. Presentation examples: — Blur reduction mode — Blur reduction function	

4.2.4 Key components

Table 3 specifies the definition, the measurement, and the presentation of a set of features for key components.

Table 3 — Definitions of specifications and presentation method for key components

No.	Features	Guidelines for specifications (definitions) and presentation	Remarks
18	flash	Defines if a camera has a built-in flash or defines if an external auxiliary flash can be mounted Where a flash means a light source which emits a flash of light Presentation methods: — The common expressions or designations of the relevant company may be used, as long as such expressions or designations are defined in either a published standard or in the literature supplied by the company and shipped with the DSC. — If the camera accepts the mounting of an external flash, it is recommended to report examples of available flash units. Presentation example: — Built-in-flash: Auto, Auto/Red-Eye Reduction, Forced-On, OFF — External flash can be mounted	
19	{built-in} flash mode	Available flash modes Presentation methods: — The common expressions or designations of the relevant company may be used, as long as such expressions or designations are defined in either a published standard or in the literature supplied by the company and shipped with the DSC. — Regardless of the factory shipping conditions, applicable flash modes may be reported. Presentation example: — Auto, Forced flash, Suppressed flash, Automatic red eye reduction, Slow sync.	

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