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Photography — Digital still cameras — Battery life measurement

Photographie — Caméras numériques — Mesurage de la durée de vie de la batterie

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Contents

Page

Foreword	iv
Introduction.....	v
1 Scope	1
2 Terms and definitions.....	1
3 Measurement method	1
3.1 General	1
3.2 Battery	2
3.3 Recording media.....	2
3.4 Camera settings	2
3.4.1 Image quality mode.....	2
3.4.2 Number of recorded pixels.....	2
3.5 Measurement conditions.....	2
3.5.1 Subject distance	2
3.5.2 Subject to be shot and brightness	2
3.5.3 Operating environment.....	2
3.6 Required actions.....	2
3.6.1 Flash usage	2
3.6.2 Motor driven optical zoom operation	2
3.6.3 Picture monitor mode.....	2
3.6.4 Handling when the recording medium is full.....	3
3.6.5 Handling of playback mode.....	3
3.6.6 Shooting intervals.....	3
3.6.7 Power off	3
3.7 End-of-test criteria	3
3.8 Measurement flowchart.....	3
4 Reporting the results of battery life.....	5
4.1 General rule.....	5
4.2 Battery	5
4.3 Recording media.....	5
4.4 Function-setting and shooting mode	5
Annex A (informative) Example Description	6
A.1 Example 1	6
A.2 Example 2	6
A.3 Example 3	6
A.4 Example 4	6
A.5 Example 5	6
Annex B (normative) Additional information	7
B.1 General	7
B.2 Definition of digital camera battery life	7
B.3 Measurement results	7
B.4 Full charge status of secondary batteries	7
B.5 Variations in measurement data due to battery differences.....	7
B.6 End-of-test criteria and picture monitor mode	8
B.7 Handling of power off time.....	8
Bibliography.....	9

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.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO 20087 was prepared by Technical Committee ISO/TC 42, *Photography*.

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Introduction

For digital cameras, long battery life is one of the important features. The Camera & Imaging Products Association (CIPA) defined a CIPA standard “Procedure for Measuring Digital Still Camera Battery Consumption” for specifying a standard measurement procedure. The procedure gives useful information on battery life to end-users for making a selection from a variety of digital cameras.

This international standard is based on the CIPA standard mentioned above and it is referenced in Bibliography. The standardized measurement procedure primarily includes high power-consuming functions such as image display on picture monitor, use of flash, and zoom and retractable lens movement.

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Photography — Digital cameras — Battery life measurement

1 Scope

This Standard applies to consumer-use digital still cameras (hereinafter referred to as “DSC”).

2 Terms and definitions

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

2.1

number of shots

number of pictures shot by a digital camera under the conditions stipulated in the measurement procedure in this standard.

3 Measurement method

3.1 General

- a) All the still-photography functions shall be utilized to their full extent when the measurement is conducted. The functions which have nothing to do with taking still photography (e.g. audio- and movie-recording functions) need not be activated during the measurement.
- b) The camera's function-setting parameters, except those defined in this international standard, shall be identical to factory shipping settings. If the measurement is conducted with the parameters different from the factory shipping settings, such settings parameters shall be reported along with the measurement results. If certain setting parameter are not defined by the factory shipping settings (see Annex B), the measurement shall be conducted using the settings which are most likely employed by the users of the applicable cameras, and information which can identify such setting parameters shall be reported along with the measurement data.
- c) Some of the functions whose test conditions are defined in this standard may be ignored if a camera to be measured is not equipped with those functions.

Summarized priorities for the above a), b) and c) are as follows:

- 1) The measurement conditions of the standard procedure which are listed in 3.2-3.8.
- 2) Function-setting parameters which are not listed in 3.2-3.8 shall be identical to the factory shipping settings.
- 3) If any parameters which cannot be defined by the factory shipping settings, such parameters shall be set to ones which are assumed to be employed most likely by the users of the applicable cameras.
- d) If the power level is not fully determined by the factory shipping setting, the measurement shall be made to have the highest power demand.

3.2 Battery

- a) Battery type is not specified for the measurement, but information that can identify the battery shall be reported along with the measurement results.
- b) When using a primary battery, a new battery shall be used. When using a secondary battery (rechargeable battery), the battery shall be fully charged (see Annex B).

3.3 Recording media

Not specified, but information that can identify the recording media shall be reported along with the measurement results.

3.4 Camera settings

3.4.1 Image quality mode

The factory shipping mode shall be used.

3.4.2 Number of recorded pixels

The factory shipping mode shall be used.

3.5 Measurement conditions

3.5.1 Subject distance

Not specified.

3.5.2 Subject to be shot and brightness

Subject to be shot is not specified. The subject brightness shall be within the range of the camera's AE system, if automatic exposure (AE) is used.

3.5.3 Operating environment

Measurements shall be made at (23 ± 2) °C and relative humidity $(50 \pm 20)\%$.

3.6 Required actions

3.6.1 Flash usage

Full flash shall be used for one of every two shots. For the other shot, the flash shall not be used. (Any given shooting condition for the full illumination flash may be used.)

3.6.2 Motor driven optical zoom operation

The motor driven optical zoom lens shall be moved either from the TELE end to the WIDE end, or from the WIDE end to the TELE end before every picture is taken,. The zoom lens may be moved either as TELE → WIDE → TELE, or as WIDE → TELE → WIDE with every two shots. Nothing is specified on its movement during the measurement other than the motor driven optical zoom operation.

3.6.3 Picture monitor mode

- a) The picture monitor shall be turned on at all times used as the electric viewfinder during the measurement. If the picture monitor turns off automatically during the measurement, or if it automatically shifts into other

display modes, it shall immediately be turned back into the viewfinder mode either by an automatic or manual operation (except replacing batteries or power cycling), and the test shall be continued. For cameras equipped with two or more picture monitors, the test can be conducted with only the most power consuming one turned on at all times.

- b) If the picture monitor is equipped with an illumination function (e.g. backlight), the illumination shall be lit for the duration of the test. If the brightness or the contrast of the monitor is adjustable, the adjustable parameter shall be set at the factory shipping setting when the measurement is made.

NOTE See Annex B

3.6.4 Handling when the recording medium is full

The files in the medium shall be deleted immediately with the function in the camera, or the medium shall be replaced with an empty one. If replacement is to be done, tester shall minimize the influence on the battery life with the replacement. For example, tester shall replace the medium when the power is off. It is acceptable to delete files or replace the medium before it becomes full.

3.6.5 Handling of playback mode

Nothing is specified regarding the playback mode including automatic playback (the function for displaying images automatically immediately after they are shot).

3.6.6 Shooting intervals

The first shot shall be made 30 seconds after the power is turned on. During that 30-second period, the flash mode setting, zoom operation and other preparations setting for shooting shall be made. Thereafter, shooting shall be made at a rate of one picture every 30 seconds. If 30 seconds is not sufficient for initialization, or if the camera is not ready for shooting in 30 seconds after a shot, shooting shall be made immediately when the camera becomes ready.

3.6.7 Power off

Power shall be turned off after 10th picture has been shot and processed. The interval before the next power-on shall be enough time not to affect battery life (i.e. so that any additional off time will not change the measurement results).

NOTE See Annex B

3.7 End-of-test criteria

The measurement shall be finished when the first low-battery shutdown occurs, or when any function related to still photography stops working without low-battery shutdown.

However, if the function can be reactivated automatically or manually (except replacing batteries or power cycling), the function shall be reactivated immediately and the test shall be continued.

NOTE See Annex B

3.8 Measurement flowchart

The measurement may follow the flowchart in Figure 1.