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Information technology — Digitally recorded media for information interchange and storage — 120 mm triple layer (100,0 Gbytes per disk) BD rewritable disk

Technologies de l'information — Supports enregistrés numériquement pour échange et stockage d'information — Disques BD réinscriptibles de 120 mm triple couche (100,0 Go par disque)

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Contents

Page

Foreword ... **ix**
Introduction ... **x**
1 Scope ... **1**
2 Normative references ... **1**
3 Terms and definitions ... **1**
4 Symbols and abbreviated terms ... **6**
5 Conformance ... **8**
5.1 Optical disk ... 8
5.2 Generating system ... 8
5.3 Receiving system ... 8
5.4 Compatibility statement ... 8
6 Conventions and notations ... **8**
6.1 Levels of grouping ... 8
6.2 Representation of numbers ... 8
6.3 Integer calculus ... 10
7 General description of disk ... **10**
8 General requirements ... **11**
8.1 Environments ... 11
8.1.1 Test environment ... 11
8.1.2 Operating environment ... 12
8.1.3 Storage environment ... 13
8.1.4 Transportation ... 14
8.2 Safety requirements ... 14
8.3 Flammability ... 14
9 Reference drive ... **15**
9.1 General ... 15
9.2 Measurement conditions ... 15
9.3 Optical system ... 15
9.4 Optical beam ... 16
9.5 HF read channel ... 16
9.6 Radial PP read channel ... 17
9.7 Disk clamping ... 17
9.8 Rotation of disk and measurement velocity ... 17
9.9 Normalized servo transfer function ... 18
9.10 Measurement velocities and reference servos for axial tracking ... 18
9.10.1 General ... 18
9.10.2 Reference servo for axial tracking for 1x measurement velocity ... 19
9.10.3 Reference servo for axial tracking for 2x measurement velocity ... 20
9.11 Measurement velocities and reference servos for radial tracking ... 21
9.11.1 General ... 21
9.11.2 Reference servo for radial tracking for 1x measurement velocity ... 21
9.11.3 Reference servo for radial tracking for 2x measurement velocity ... 23
10 Dimensional characteristics ... **24**
10.1 General ... 24
10.2 Disk reference planes and reference axis ... 24
10.3 Overall dimensions ... 26
10.4 First transition area ... 26
10.5 Protection ring ... 26
10.6 Clamping zone ... 26
10.7 Second transition area ... 27

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10.8 Information area ... 27
10.8.1 General ... 27
10.8.2 Subdivision of information zone on TL disk ... 28
10.9 Rim area ... 29

11 Mechanical characteristics ... 29
11.1 Mass ... 29
11.2 Moment of inertia ... 29
11.3 Dynamic imbalance ... 29
11.4 Axial runout ... 29
11.4.1 General ... 29
11.4.2 Residual axial tracking error for 1x measurement velocity ... 30
11.4.3 Residual axial tracking error for 2x measurement velocity ... 30
11.5 Radial runout ... 30
11.5.1 General ... 30
11.5.2 Residual radial tracking error for 1x measurement velocity ... 31
11.5.3 Residual radial tracking error for 2x measurement velocity ... 31
11.6 Durability of cover layer ... 31
11.6.1 Impact resistance of cover layer ... 31
11.6.2 Scratch resistance of cover layer ... 32
11.6.3 Repulsion of fingerprints by cover layer ... 32

12 Optical characteristics in information area ... 32
12.1 General ... 32
12.2 Refractive index of transmission stacks (TS) ... 32
12.3 Thickness of transmission stacks (TS) ... 32
12.4 Example of target thickness of spacer layers for TL disks ... 33
12.5 Reflectivity of recording layers ... 35
12.6 Birefringence ... 36
12.7 Angular deviation ... 36

13 Data format ... 37
13.1 General ... 37
13.2 Data frame ... 39
13.3 Error-detection code (EDC) ... 39
13.4 Scrambled data frame ... 40
13.5 Data block ... 40
13.6 LDC block ... 41
13.7 LDC code words ... 42
13.8 LDC cluster ... 43
13.8.1 General ... 43
13.8.2 First interleaving step ... 43
13.8.3 Second interleaving step ... 43
13.9 Addressing and control data ... 45
13.9.1 General ... 45
13.9.2 Address units ... 45
13.9.3 User control data ... 49
13.9.4 Byte/Bit assignment for user control data ... 50
13.10 Access block ... 52
13.11 BIS block ... 52
13.12 BIS code words ... 53
13.13 BIS cluster ... 54
13.14 ECC cluster ... 57
13.15 Recording frames ... 58
13.16 Physical cluster ... 59
13.17 17PP modulation for recordable data ... 59
13.17.1 General ... 59
13.17.2 Bit conversion rules ... 59
13.17.3 dc-control procedure ... 60
13.17.4 Frame sync ... 60

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13.18 Modulation and NRZI conversion 62

14 Physical data allocating and linking 62
14.1 General 62
14.2 Recording-unit block (RUB) 63
14.2.1 General 63
14.2.2 Data run-in 63
14.2.3 Data run-out 64
14.2.4 Guard_3 field 65
14.3 Locating data relative to wobble addresses 66
14.3.1 General 66
14.3.2 Start position shift (SPS) 66

15 Track format 68
15.1 General 68
15.2 Track shape 68
15.2.1 General 68
15.2.2 Groove geometry 69
15.3 Track path 69
15.4 Track pitch 70
15.4.1 Track pitch in BCA zone 70
15.4.2 Track pitch in embossed HFM areas 70
15.4.3 Track pitch in rewritable areas 70
15.4.4 Track pitch between embossed HFM area and rewritable area 70
15.5 Track layout of HFM grooves 70
15.5.1 General 70
15.5.2 Data format 71
15.5.3 Addressing and control data 72
15.5.4 Recording frames 76
15.6 Track layout of wobbled grooves 78
15.6.1 General 78
15.6.2 Modulation of wobbles 78
15.6.3 Wobble polarity 80
15.7 ADIP information 80
15.7.1 General 80
15.7.2 ADIP unit types 80
15.7.3 ADIP word structure 81
15.7.4 ADIP data structure 82
15.7.5 ADIP error correction 85
15.8 Disk information (DI) in ADIP aux frame 87
15.8.1 General 87
15.8.2 Error protection for disk-information (DI) aux frames 88
15.8.3 Disk-Information (DI) data structure 89

16 General description of information zone 139
16.1 General 139
16.2 Format of information zone 140

17 Layout of rewritable area of information zone 140
17.1 General 140
17.2 Physical sector numbering 144

18 Inner zone 145
18.1 General 145
18.2 Permanent information and control data (PIC) zone 148
18.2.1 General 148
18.2.2 Content of PIC zone 148
18.2.3 Emergency brake 149
18.3 Rewritable area of inner zone(s) 151
18.3.1 Protection zone 2 151
18.3.2 Buffer 151

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18.3.3 INFO 2/Reserved 8 151
18.3.4 INFO 2/Reserved 7 151
18.3.5 INFO 2/Reserved 6 152
18.3.6 INFO 2/Reserved 5 152
18.3.7 INFO 2/PAC 2 152
18.3.8 INFO 2/Reserved 152
18.3.9 INFO 2/DMA 2 152
18.3.10 INFO 2/Buffer 2 152
18.3.11 INFO 2/Control data 2 152
18.3.12 OPC/Test zone 152
18.3.13 Reserved 152
18.3.14 INFO 1/Buffer 1 153
18.3.15 INFO 1/Drive area (optional) 153
18.3.16 INFO 1/Reserved 3 154
18.3.17 INFO 1/Reserved 2 154
18.3.18 INFO 1/Reserved 1 154
18.3.19 INFO 1/DMA 1 154
18.3.20 INFO 1/Control Data 1 154
18.3.21 INFO 1/PAC 1 154
18.3.22 INFO 1/Reserved 155

19 Data zone 155

20 Outer zone(s) 155
20.1 General 155
20.2 INFO 3/Buffer 3 155
20.3 INFO 3/DMA 3 156
20.4 INFO 3/Control data 3 156
20.5 Angular buffer 156
20.6 INFO 4/DMA 4 156
20.7 INFO 4/Control data 4 156
20.8 INFO 4/Buffer 4 156
20.9 DCZ 0/Test zone, DCZ 1/Test zone and DCZ 2/Test zone 156
20.10 Protection zone 3 156

21 Physical-access control clusters 156
21.1 General 156
21.2 Layout of PAC zones 157
21.3 General structure of PAC clusters 157
21.4 Primary PAC cluster (mandatory) 161
21.5 Disk write-protect (DWP) PAC cluster (optional) 164
21.6 IS1 and IS2 PAC clusters 168

22 Disk management 169
22.1 General 169
22.2 Disk-management structure (DMS) 170
22.2.1 General 170

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22.2.2 Disk-definition structure (DDS) ... 171
22.2.3 Defect list (DFL) ... 174

23 Assignment of logical-sector numbers (LSNs) ... 179

24 Characteristics of grooved areas ... 180

25 Method of testing for grooved area ... 180
25.1 General ... 180
25.2 Environment ... 180
25.3 Reference drive ... 180
25.3.1 General ... 180
25.3.2 Read power ... 180
25.3.3 Read channels ... 180
25.3.4 Tracking requirements ... 181
25.3.5 Scanning velocities ... 181
25.4 Definition of signals ... 181
25.4.1 General ... 181
25.4.2 Push–pull signal ... 181
25.4.3 Wobble signal ... 182

26 Signals from HFM grooves ... 182
26.1 Push–pull polarity ... 182
26.2 Push–pull signal ... 183
26.3 Wobble signal ... 183
26.4 Jitter of HFM signal ... 183

27 Signals from wobbled grooves ... 183
27.1 Phase depth ... 183
27.2 Push–pull signal ... 183
27.3 Wobble signal ... 184
27.3.1 General ... 184
27.3.2 Measurement of I_{NWS} ... 184
27.3.3 Measurement of the wobble CNR ... 184
27.3.4 Measurement of harmonic distortion of wobble ... 184

28 Characteristics of recording layer ... 185

29 Method of testing for recording layer ... 185
29.1 General ... 185
29.2 Environment ... 185
29.3 Reference drive ... 185
29.3.1 General ... 185
29.3.2 Read power ... 185
29.3.3 Read channels ... 185
29.3.4 Tracking requirements ... 186
29.3.5 Scanning velocities ... 186
29.4 Write conditions ... 186
29.4.1 Write-pulse waveform ... 186
29.4.2 Write powers ... 186
29.4.3 Average power ... 187
29.4.4 Write conditions for i-MLSE measurement ... 187
29.4.5 Write conditions for cross-erase measurements ... 187
29.5 Definition of signals ... 187

30 Signals from recorded areas ... 188
30.1 HF signals ... 188
30.2 Modulated amplitude ... 188
30.3 Reflectivity-modulation product ... 189
30.4 Asymmetry ... 189
30.5 i-MLSE@DOW(n) ... 190
30.6 Cross-erase @ DOW(n)$_{XE}$ ... 190

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30.7 Read stability ... 190
31 Local defects ... 191
32 Characteristics of user data ... 191
33 Method of testing for user data ... 191
33.1 General ... 191
33.2 Environment ... 192
33.3 Reference drive ... 192
33.3.1 General ... 192
33.3.2 Read power ... 192
33.3.3 Read channels ... 192
33.3.4 Error correction ... 192
33.3.5 Tracking requirements ... 192
33.3.6 Scanning velocities ... 192
33.4 Error signals ... 192
33.4.1 Byte error ... 192
33.4.2 Burst error ... 192
33.4.3 Symbol error rate (SER) ... 193
33.4.4 Random symbol error rate (RSER) ... 193
34 Minimum quality of recorded information ... 194
34.1 General ... 194
34.2 Random symbol error rate (RSER) ... 194
34.3 Maximum burst errors ... 194
34.4 User-written data ... 194
35 Burst-cutting area (BCA) ... 194
Annex A (normative) **Thickness of transmission stacks (TSs) in case of multiple layers ... 196**
Annex B (normative) **Measurement of reflectivity ... 199**
Annex C (normative) **Measurement of scratch resistance of cover layer ... 205**
Annex D (normative) **Measurement of repulsion of grime of cover layer ... 207**
Annex E (normative) **Measurement of wobble amplitude ... 210**
Annex F (normative) **Write-pulse waveform for testing ... 215**
Annex G (normative) **Optimum power control (OPC) procedure for disk ... 222**
Annex H (normative) **HF signal pre-processing for integrated-maximum likelihood sequence error estimation (i-MLSE) measurements ... 225**
Annex I (normative) **Measurement procedures ... 237**
Annex J (informative) **Measurement of birefringence ... 249**
Annex K (informative) **Measurement of thickness of cover layer and spacer layer ... 251**
Annex L (informative) **Measurement of impact resistance of cover layer ... 254**
Annex M (informative) **Groove deviation and wobble amplitude ... 256**
Annex N (informative) **Guidelines for write pulse adjustment using L-SEAT edge-shift ... 258**
Bibliography ... 267

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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).

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 is 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 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 Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 23, *Digitally recorded media for information interchange and storage*.

This fourth edition cancels and replaces the third edition (ISO/IEC 30193:2020), which has been technically revised.

The main changes are as follows:

— The missing condition of pulse width regarding residual errors has been added.

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Introduction

In March 2002, the Blu-ray Disc Founders (BDF) came together to create optical-disk formats with large capacity and high-speed transfer rates that would be needed for recording and reproducing high-definition video content. This joint effort turned out to be fruitful and the first version of its Blu-ray Disc™[1)] Rewritable format Part 1 version 1.0, with cartridge, was issued in June 2002.

The Blu-ray Disc Association (BDA) issued version 2.1 of the Blu-ray Disc™ Rewritable format Part 1 in October 2005 and version 3.0, without cartridge, in June 2010.

To maintain compatibility of the removable medium in the market, a standard alone is not enough. It is necessary to check that the disks and devices can satisfy the specifications. The BDA also conducts verification activities for both disks and devices and has established more than 10 testing centers in Asia, Europe and the USA.

Blu-ray™ disks, players, recorders and PC drives/software based on BDA standards became popular all over the world. The BDA gave consumer applications the highest priority in the first few years. But it was known, of course, that international standardization would be required before many government entities and their contractors would be allowed to use Blu-ray Disc™. In January and February 2011, the chairs of ISO/IEC JTC 1/SC 23 and JIIMA (Japan Image and information Management Association) formally requested the BDA to consider international standardization. The reason for this was to enable the inclusion of writable BDs along with DVDs and CDs in an international standard specifying the test methods for the estimation of a lifetime of optical storage media for long-term data storage. In October 2011, the President of the BDA responded that the organization had decided to pursue international standardization for the basic physical formats for the recordable and rewritable Blu-ray™ Formats.

In December 2011, the BDA sent project proposals for international standardization of four formats to ISO/IEC JTC 1/SC 23 via the Japanese national body. They are 120 mm single layer (25,0 Gbytes per disk) and dual layer (50,0 Gbytes per disk) BD recordable disks, 120 mm single layer (25,0 Gbytes per disk) and dual layer (50,0 Gbytes per disk) BD rewritable disks, 120 mm triple layer (100,0 Gbytes per disk) and quadruple layer (128,0 Gbytes per disk) BD recordable disks and 120 mm triple layer (100,0 Gbytes per disk) BD rewritable disk.

This document specifies the mechanical, physical and optical characteristics of a 120 mm rewritable optical disk with a capacity of 100,0 Gbytes.

A few additional specifications are required in order to write and read video-recording applications, such as BDAV format which had been specified by the BDA for use on BD rewritable disks. These specifications, which are related to the BD application (BDAP), the file system or the content-protection system, are required for the disk, the generating system and the receiving system. For more information about the BDAP, the content-protection system and the additional requirements for the Blu-ray™ Format specifications, see http://www.blu-raydisc.info.

The International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) draw attention to the fact that it is claimed that compliance with this document may involve the use of a patent.

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The holder of this patent right has assured ISO and IEC that he/she is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with ISO and IEC. information may be obtained from the patent database available at www.iso.org/patents.

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1) Blu-ray™ and Blu-ray Disc™ are the trademark of products supplied by Blu-ray Disc Association. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO or IEC of the product named.

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Information technology — Digitally recorded media for information interchange and storage — 120 mm triple layer (100,0 Gbytes per disk) BD rewritable disk

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1 Scope

This document specifies the mechanical, physical and optical characteristics of a 120 mm rewritable optical disk with a capacity of 100,0 Gbytes. It specifies the quality of the recorded and unrecorded signals, the format of the data and the recording method, thereby allowing for information interchange by means of such disks. User data can be written, read and overwritten many times using a reversible method. This disk is identified as a BD rewritable disk.

This document specifies the following:

— the one disk type;

— the conditions for conformance;

— the environments in which the disk is to be operated and stored;

— the mechanical and physical characteristics of the disk, in order to provide mechanical interchange between data processing systems;

— the format of the information on the disk, including the physical disposition of the tracks and sectors;

— the error-correcting codes and the coding method used;

— the characteristics of the signals recorded on the disk, enabling data processing systems to read data from the disk.

This document provides for interchange of disks between disk drives. Together with a standard for volume and file structure, it provides for full data interchange between data processing systems.

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/IEC 646, *Information technology — ISO 7-bit coded character set for information interchange*

ISO 9352, *Plastics — Determination of resistance to wear by abrasive wheels*

IEC 60068-2-2, *Environmental testing — Part 2-2: Tests — Test B: Dry heat*

IEC 60068-2-30, *Environmental testing — Part 2-30: Tests — Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

IEC 60950-1, *Information technology equipment — Safety — Part 1: General requirements*

3 Terms and definitions

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

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