
**Information technology — Digitally
recorded media for information
interchange and storage — 120 mm
Single Layer (25,0 Gbytes per disk)
and Dual Layer (50,0 Gbytes per disk)
BD Recordable disk**

*Technologies de l'information — Supports enregistrés
numériquement pour échange et stockage d'information — Disques
BD enregistrables de 120 mm simple couche (25,0 Go par disque) et
double couche (50,0 Go par disque)*





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Contents

Page

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

10.6	Clamping zone	24
10.7	Second transition area	24
10.8	Information area	24
10.8.1	General	24
10.8.2	Subdivision of information zone on SL disks	25
10.8.3	Subdivision of information zone on DL disks	25
10.9	Rim area	26
11	Mechanical characteristics	27
11.1	Mass	27
11.2	Moment of inertia	27
11.3	Dynamic imbalance	27
11.4	Axial run-out	27
11.4.1	General	27
11.4.2	Residual axial tracking error for 1x measurement velocity	27
11.4.3	Residual axial tracking error for 2x measurement velocity	28
11.4.4	Residual axial tracking error for 3x measurement velocity	28
11.5	Radial run-out	28
11.5.1	General	28
11.5.2	Residual radial tracking error for 1x measurement velocity on SL disks	29
11.5.3	Residual radial tracking error for 1x measurement velocity on DL disks	29
11.5.4	Residual radial tracking error for 2x measurement velocity on SL and DL disks	29
11.5.5	Residual radial tracking error for 3x measurement velocity on SL and DL disks	30
11.6	Durability of cover layer	30
11.6.1	Impact resistance of cover layer	30
11.6.2	Scratch resistance of cover layer	30
11.6.3	Repulsion of fingerprints by cover layer	30
12	Optical characteristics in information area	30
12.1	General	30
12.2	Refractive index of transmission stacks (TS)	31
12.3	Thickness of transmission stacks (TS)	31
12.3.1	Thickness of transmission stack of SL disks	31
12.3.2	Thickness of transmission stacks of DL disks	31
12.4	Reflectivity	32
12.4.1	Reflectivity of recording layer of SL disks	32
12.4.2	Reflectivity of recording layers of DL disks	33
12.5	Birefringence	33
12.6	Angular deviation	33
13	Data format	34
13.1	General	34
13.2	Data frame	37
13.3	Error detection code (EDC)	37
13.4	Scrambled data frame	37
13.5	Data block	38
13.6	LDC block	39
13.7	LDC code words	40
13.8	LDC cluster	41
13.8.1	General	41
13.8.2	First interleaving step	41
13.8.3	Second interleaving step	41
13.9	Addressing and control data	43
13.9.1	General	43
13.9.2	Address units	43
13.9.3	User control data	46
13.9.4	Byte/bit assignment for user control data	46
13.10	Access block	48
13.11	BIS block	48
13.12	BIS code words	49

13.13	BIS cluster	50
13.14	ECC cluster	53
13.15	Recording frames	54
13.16	Physical cluster	55
13.17	17PP modulation for recordable data	55
	13.17.1 General	55
	13.17.2 Bit conversion rules	55
	13.17.3 dc-control procedure	56
	13.17.4 Frame sync	56
13.18	Modulation and NRZI conversion	58
14	Physical data allocating and linking	58
14.1	General	58
14.2	Recording unit block (RUB)	59
	14.2.1 General	59
	14.2.2 Data run-in	59
	14.2.3 Data run-out	60
	14.2.4 Guard_3 field	61
14.3	Locating data relative to wobble addresses	62
15	Track format	62
15.1	General	62
15.2	Track shape	63
15.3	Track path	64
15.4	Track pitch	64
	15.4.1 Track pitch in BCA zone	64
	15.4.2 Track pitch in embossed HFM area	64
	15.4.3 Track pitch in recordable area(s)	65
	15.4.4 Track pitch between embossed HFM area and recordable area	65
15.5	Track layout of HFM groove	65
	15.5.1 General	65
	15.5.2 Data format	65
	15.5.3 Addressing and control data	66
	15.5.4 Recording frames	69
15.6	Track layout of wobbled groove(s)	71
	15.6.1 General	71
	15.6.2 Modulation of wobbles	72
	15.6.3 Wobble polarity	73
15.7	ADIP information	73
	15.7.1 General	73
	15.7.2 ADIP unit types	74
	15.7.3 ADIP word structure	75
	15.7.4 ADIP data structure	76
	15.7.5 ADIP error correction	78
15.8	Disk information in ADIP frame	80
	15.8.1 General	80
	15.8.2 Error protection for disk information aux frames	81
	15.8.3 Disk information data structure	82
16	General description of information zone	119
16.1	General	119
16.2	Format of information zone on single-layer disk	119
16.3	Format of information zone on dual-layer disk	119
17	Layout of recordable area of information zone	119
18	Inner zone	123
18.1	General	123
18.2	Permanent information and control data (PIC) zone	125
	18.2.1 General	125
	18.2.2 Content of PIC zone	125

	18.2.3	Emergency brake.....	126
18.3		Recordable area of inner zone 0.....	128
	18.3.1	Protection zone 2.....	128
	18.3.2	INFO 2/Reserved 8.....	128
	18.3.3	INFO 2/Reserved 7.....	128
	18.3.4	INFO 2/Reserved 6.....	128
	18.3.5	INFO 2/Reserved 5.....	129
	18.3.6	INFO 2/PAC 2.....	129
	18.3.7	INFO 2/DMA 2.....	129
	18.3.8	INFO 2/Control data 2.....	129
	18.3.9	INFO 2/Buffer 2.....	129
	18.3.10	OPC 0/Test zone.....	129
	18.3.11	Usage of OPC areas.....	129
	18.3.12	OPC 0/OPC 0 Buffer.....	131
	18.3.13	TDMA 0.....	131
	18.3.14	INFO 1/Pre-write area.....	131
	18.3.15	INFO 1/Drive area.....	131
	18.3.16	INFO 1/DMA 1.....	132
	18.3.17	INFO 1/Control data 1.....	132
	18.3.18	INFO 1/PAC 1.....	132
18.4		Recordable area of inner zone 1.....	132
	18.4.1	Buffer.....	132
	18.4.2	OPC 1.....	132
	18.4.3	Buffer.....	133
	18.4.4	INFO 2/Reserved 8.....	133
	18.4.5	INFO 2/Reserved 7.....	133
	18.4.6	INFO 2/Reserved 6.....	133
	18.4.7	INFO 2/Reserved 5.....	133
	18.4.8	INFO 2/PAC 2.....	133
	18.4.9	INFO 2/DMA 2.....	133
	18.4.10	INFO 2/Control data 2.....	133
	18.4.11	INFO 2/Buffer 2.....	133
	18.4.12	TDMA 1.....	133
	18.4.13	Reserved.....	134
	18.4.14	INFO 1/Pre-write area.....	134
	18.4.15	INFO 1/Drive area.....	134
	18.4.16	INFO 1/DMA 1.....	134
	18.4.17	INFO 1/Control data 1.....	134
	18.4.18	INFO 1/PAC 1.....	134
19		Data zone.....	134
20		Outer zone(s).....	134
	20.1	General.....	134
	20.2	Recordable area of outer zone(s).....	135
		20.2.1 INFO 3/Buffer 4.....	135
		20.2.2 INFO 3/DMA 3.....	135
		20.2.3 INFO 3/Control data 3.....	135
		20.2.4 Angular buffer.....	135
		20.2.5 INFO 4/DMA 4.....	136
		20.2.6 INFO 4/Control data 4.....	136
		20.2.7 INFO 4/Buffer 6.....	136
		20.2.8 DCZ 0/Test zone and DCZ 1 / Test zone.....	136
		20.2.9 Usage of DCZ area.....	136
		20.2.10 Protection zone 3.....	137
21		Physical access control clusters.....	137
	21.1	General.....	137
	21.2	Layout of PAC zones.....	138
	21.3	General structure of PAC clusters.....	138

21.4	IS1 and IS2 PAC clusters.....	142
22	Disk management.....	143
22.1	General.....	143
22.2	Recording management.....	143
22.2.1	General.....	143
22.2.2	Sequential recording mode (SRM).....	143
22.2.3	Recording user data in SRR.....	143
22.2.4	SRR status.....	144
22.2.5	Closing SRR.....	144
22.3	Temporary disk management areas (TDMA).....	144
22.3.1	General.....	144
22.3.2	TDMA access indicators.....	144
22.4	Disk management structure (DMS).....	145
22.4.1	General.....	145
22.4.2	Temporary disk management structure (TDMS).....	145
22.4.3	TDMS in sequential recording mode.....	146
22.4.4	Temporary disk definition structure (TDDS).....	146
22.4.5	Temporary defect list (TDFL).....	151
22.4.6	Sequential recording range information (SRRI).....	153
22.5	Unrecorded (blank) disk structure.....	155
22.5.1	General.....	155
22.5.2	Pre-recorded areas on unrecorded disk.....	155
22.5.3	Pre-recorded BCA.....	156
22.5.4	Pre-recorded INFO 2/Reserved 5, Reserved 8 and Pre-recorded INFO 1/ Pre-write area.....	156
22.5.5	Pre-recorded INFO 1/PAC 1 and Pre-recorded INFO 2/PAC 2.....	156
22.5.6	OPC 0/Test zone and OPC 1/Test zone.....	156
22.5.7	TDMA 0.....	157
22.5.8	Initialization of disk.....	157
22.6	Recorded (closed) disk structure.....	157
22.6.1	General.....	157
22.6.2	DMA zones.....	157
22.6.3	Disk management structures (DMS).....	158
23	Assignment of logical sector numbers (LSNs).....	159
24	Characteristics of grooved areas.....	160
25	Method of testing for grooved area.....	160
25.1	General.....	160
25.2	Environment.....	160
25.3	Reference drive.....	161
25.3.1	General.....	161
25.3.2	Read power.....	161
25.3.3	Read channels.....	161
25.3.4	Tracking requirements.....	161
25.3.5	Scanning velocities.....	161
25.4	Definition of signals.....	161
26	Signals from HFM groove.....	163
26.1	Push-pull polarity.....	163
26.2	Push-pull signal.....	163
26.3	Wobble signal.....	163
26.4	Jitter of HFM signal.....	163
27	Signals from wobbled groove(s).....	164
27.1	Phase depth.....	164
27.2	Push-pull signal.....	164
27.3	Wobble signal.....	165
27.3.1	General.....	165

27.3.2	Measurement of I_{NWS}	165
27.3.3	Measurement of wobble CNR	165
27.3.4	Measurement of harmonic distortion of wobble	165
27.4	HFM and wobbled groove transition requirements for LTH disks	166
28	Characteristics of recording layer	166
29	Method of testing for recording layer	166
29.1	General	166
29.2	Environment	166
29.3	Reference drive	166
29.3.1	General	166
29.3.2	Read power	166
29.3.3	Read channels	167
29.3.4	Tracking requirements	167
29.3.5	Scanning velocities	167
29.4	Write conditions	167
29.4.1	Write pulse waveform	167
29.4.2	Write powers	167
29.4.3	Write conditions for jitter measurement	168
29.5	Definition of signals	168
30	Signals from recorded areas	169
30.1	HF signals	169
30.2	Modulated amplitude	169
30.3	Reflectivity modulation product	170
30.4	Asymmetry	170
30.5	Jitter	171
30.6	Read stability	171
31	Local defects	172
32	Characteristics of user data	173
33	Method of testing for user data	173
33.1	General	173
33.2	Environment	173
33.3	Reference drive	173
33.3.1	General	173
33.3.2	Read power	173
33.3.3	Read channels	173
33.3.4	Error correction	173
33.3.5	Tracking requirements	174
33.3.6	Scanning velocities	174
33.4	Error signals	174
34	Minimum quality of recorded information	175
34.1	Symbol error rate	175
34.2	Maximum burst errors	175
34.3	User-written data	175
35	BCA	175
Annex A (normative)	Thickness of transmission stacks in case of multiple layers	177
Annex B (normative)	Measurement of reflectivity	179
Annex C (normative)	Measurement of scratch resistance of cover layer	182
Annex D (normative)	Measurement of repulsion of grime by cover layer	184
Annex E (normative)	Measurement of wobble amplitude	187
Annex F (normative)	Write pulse waveform for testing	192
Annex G (normative)	Optimum power control (OPC) procedure for disk	203

Annex H (normative) HF signal pre-processing for jitter measurements	207
Annex I (normative) Measurement procedure	215
Annex J (informative) Measurement of birefringence	222
Annex K (informative) Measurement of thickness of cover layer and spacer layer	224
Annex L (informative) Measurement of impact resistance of cover layer	227
Annex M (informative) Groove deviation and wobble amplitude	229
Bibliography	231

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).

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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 third edition cancels and replaces the second edition (ISO/IEC 30190:2016), which has been technically revised. It also incorporates the Amendment ISO/IEC 30190:2016/Amd 1:2019.

The main change compared to the previous edition is the addition of requirements for physical access control (PAC) and reserved area of BD application.

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.

Introduction

In March 2002, the Blu-ray Disc Founders, or BDF, came together to create optical-disk formats with the large capacity and high-speed transfer rates that would be needed for recording and reproducing high-definition video content.

The Blu-ray Disc Association (BDA) issued the first version of the Blu-ray Disc™ Recordable Format Part1 in October 2005, and Version 1.3 of the Blu-ray Disc™ Recordable Format Part1 in April 2008, which enabled the recording velocity up to 6x.

To keep the compatibility of the removable medium in the market, just to make a standard is not enough, and it is necessary to check that the disks and devices can satisfy the specifications. The BDA conducts verification activities for the 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 February and January 2011, the BDA was formally requested 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 test methods for the estimation of lifetime of optical storage media for long-term data storage. In October 2011, the BDA responded that it had decided to pursue international standardization for the basic physical formats for the Recordable and Rewritable Blu-ray™ Format.

In December 2011, the BDA sent project proposals for international standardization of four formats. 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 a 120 mm triple layer (100,0 Gbytes per disk) BD Rewritable disk.

A few additional specifications are required in order to write and read video-recording applications, such as the BDMV and BDAV formats, which have been specified by the BDA for use on BD recordable disks. These specifications, which are related to the BD application, the file systems or the content protection system, are required for the disk, the generating system and the receiving system¹⁾.

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.

ISO and IEC take no position concerning the evidence, validity and scope of this patent right.

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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NOTE Blu-ray™, Blu-ray Disc™ and the logos are trademarks of the Blu-ray Disc Association.

1) For more information of the BD application, the content-protection system and the additional requirements for the Blu-ray™ Format specifications, see <http://www.blu-raydisc.info>.

Information technology — Digitally recorded media for information interchange and storage — 120 mm Single Layer (25,0 Gbytes per disk) and Dual Layer (50,0 Gbytes per disk) BD Recordable disk

1 Scope

This document specifies mechanical, physical and optical characteristics of a 120 mm recordable optical disk with a capacity of 25,0 Gbytes or 50,0 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 once and read many times using a non-reversible method. This disk is identified as BD recordable disk.

This document specifies the following:

- three related but different types of this disk;
- the conditions for conformance;
- the environments in which the disk is to be operated and stored;
- the mechanical and physical characteristics of the disk, so as 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 9352, *Plastics — Determination of resistance to wear by abrasive wheels*

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

ISO/IEC 30193, *Information technology — Digitally recorded media for information interchange and storage — 120 mm Triple Layer (100,0 Gbytes per disk) BD Rewritable disk*

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*