
**Information technology — Digitally
recorded media for information
interchange and storage — 120 mm
Triple Layer (100,0 Gbytes single
sided disk and 200,0 Gbytes double
sided disk) and Quadruple Layer
(128,0 Gbytes single sided disk) BD
Recordable disk**

*Technologies de l'information — Supports enregistrés
numériquement pour échange et stockage d'information — 120 mm
de couche triple (100,0 Go disque unique face et 200,0 Go disque
double face) et quadruple couche (128,0 Go disque unique face) sur
disque enregistrable BD*

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Foreword

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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/IEC JTC 1, *Information technology*, SC 23, *Digitally recorded media for information interchange and storage*.

This second edition cancels and replaces (ISO/IEC 30191: 2013), of which it constitutes a minor revision.

Introduction

In March 2002, 9 companies started BDF (Blu-ray Disc Founders) aiming for the creation of the Formats with large capacity and high speed transfer rate, that enable the recording and reproducing of the high definition video contents. In October 2004, more than 100 companies joined and BDF was changed to an open forum named BDA (Blu-ray Disc Association). In October 2005, BDA issued the first version of the Blu-ray Disc™ Recordable Format Part1 and in April 2008 Version 1.3 of Blu-ray Disc™ Recordable Format Part1 was issued, which enabled the Recording Velocity up to 6x. In June 2010, BDA issued Blu-ray Disc™ Recordable Format Part1 Version 2.0, which specifies the TL and QL of BD Recordable disk.

By the end of 2010, over 100 million Blu-ray Disc™ had already been shipped, and Blu-ray™ devices such as players, recorders, game consoles and PC drives were in use all over the world.

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.

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 of 2011, the chairs of ISO/IEC JTC 1/SC 23 and JIIMA (Japan Image & 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 test methods for the estimation of lifetime of optical storage media for long-term data storage. In October 2011, the President of the BDA responded that his organization had decided to pursue International Standard of the basic physical formats for the Recordable and Rewritable Blu-ray™ Formats.

In December of 2011, the BDA sent project proposals for the International standardization of four formats to ISO/IEC JTC 1/SC 23 via the Japan national body. In July of 2013, ISO/IEC published the four International standards. They are ISO/IEC 30190 - 120 mm Single Layer (25,0 Gbytes per disk) and Dual Layer (50,0 Gbytes per disk) BD Recordable disk, ISO/IEC 30192 - 120 mm Single Layer (25,0 Gbytes per disk) and Dual Layer (50,0 Gbytes per disk) BD Rewritable disk, ISO/IEC 30191 - 120 mm Triple Layer (100,0 Gbytes per disk) and Quadruple Layer (128,0 Gbytes per disk) BD Recordable disk and ISO/IEC 30193 - 120 mm Triple Layer (100,0 Gbytes per disk) BD Rewritable disk.

In July of 2014, the BDA developed a double sided Triple Layer BD Recordable disk of 200,0 Gbytes and revised Blu-ray Disc™ Recordable Format Part1 Version 2.0 to Version 2.1. In the same month, the BDA sent a project proposal to revise ISO/IEC 30191 to include the double sided Triple Layer BD Recordable disk to ISO/IEC JTC 1/SC 23 via the Japan national body. The revised edition of ISO/IEC 30191 includes the 120 mm Triple Layer (100,0 Gbytes single sided disk and 200,0 Gbytes double sided disk) and Quadruple Layer (128,0 Gbytes single sided disk) BD Recordable disk.

This International Standard specifies the mechanical, physical and optical characteristics of a 120 mm recordable optical disk with a capacity of 100,0 Gbytes, 128,0 Gbytes or 200,0 Gbytes.

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 Application, the file system or the Content-protection system, are required for the disk, the generating system and the receiving system. For more information of the Application, 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 patents.

ISO and IEC take no position concerning the evidence, validity and scope of these patent rights.

The holders of these patent rights have assumed ISO and IEC that they are willing to negotiate licenses under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statements of holders of these patent rights are registered with ISO and IEC. Information may be obtained from:

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ISO (<http://www.iso.org/patents>) and IEC (<http://patents.iec.ch>) maintain on-line databases of patents relevant to their standards. Users are encouraged to consult the databases for the most up to date information concerning patents.

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

Information technology — Digitally recorded media for Information interchange and storage — 120 mm Triple Layer (100,0 Gbytes single sided disk and 200,0 Gbytes double sided disk) and Quadruple Layer (128,0 Gbytes single sided disk) BD Recordable disk

1 Scope

This International Standard specifies the mechanical, physical and optical characteristics of a 120 mm recordable optical disk with a capacity of 100,0 Gbytes, 128,0 Gbytes or 200,0 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 International Standard specifies

- 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 the data from the disk.

This International Standard 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 Conformance

2.1 Optical disk

A claim of conformance with this International Standard shall specify the Type implemented. An optical disk shall be in conformance with this International Standard if it meets all mandatory requirements specified for its Type.

2.2 Generating system

A generating system shall be in conformance with this International Standard if the optical disk it generates is in accordance with 2.1.

2.3 Receiving system

A receiving system shall be in conformance with this International Standard if it is able to handle both a Type TL disk and a Type QL disk according to 2.1. Handling of a Type TL/D disk is optional for a receiving system. See Clause 7 for the Types of disk.

2.4 Compatibility statement

A claim of conformance by a Generating or Receiving system with this International Standard shall include a statement listing any other standards supported. This statement shall specify the numbers of the standards, the optical disk Types supported (where appropriate) and whether support includes reading only or both reading and writing.

3 Normative references

The following referenced documents are indispensable for the application 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*