
**Information technology — Data
interchange on 120 mm and 80 mm
optical disk using +R DL format —
Capacity: 8,55 Gbytes and 2,66 Gbytes
per side (recording speed up to 16X)**

*Technologies de l'information — Échange de données sur disque
optique de 120 mm et 80 mm utilisant le format +R DL —
Capacité: 8,55 Go et 2,66 Go par face (vitesse d'enregistrement
inférieure ou égale à 16X)*

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 25434 was prepared by Ecma International (as ECMA-364) and was adopted, under a special “fast-track procedure”, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

This third edition cancels and replaces the second edition (ISO/IEC 25434:2007), which has been technically revised.

Introduction

Ecma Technical Committee TC31 was established in 1984 for the standardization of Optical Disks and Optical Disk Cartridges (ODC). Since its establishment, the Committee has made major contributions to ISO/IEC toward the development of International Standards for 80 mm, 90 mm, 120 mm, 300 mm, and 356 mm media. Numerous standards have been developed by TC31 and published by Ecma, almost all of which have also been adopted by ISO/IEC under the fast-track procedure as International Standards.

In July 2004 a group of companies proposed to TC31 to develop a standard for 120 mm dual layer recordable optical disks using the WORM recording technology and based on the DVD – Read-Only standard (ISO/IEC 16448), the +RW format (ISO/IEC 17341) and the +R format (ISO/IEC 17344). TC31 adopted this project and started the work that has resulted in the adoption of ISO/IEC 25434.

This International Standard specifies two Types of recordable optical disks, one (Type S9) making use of recording on only a single side of the disk and yielding a nominal capacity of 8,55 or 2,66 Gbytes per disk and the other (Type D18) making use of recording on both sides of the disk and yielding a nominal capacity of 17,1 or 5,32 Gbytes per disk.

In October 2005 a proposal was made to TC31 to update ISO/IEC 25434 for recording speeds up to eight times the Reference velocity. TC31 adopted this project which resulted in the adoption of ISO/IEC 25434:2007.

In February 2007 a proposal was made to TC31 to update ISO/IEC 25434 for recording speeds up to 16 times the Reference velocity.

This International Standard, taken together with a standard for volume and file structure, such as, for instance, developed in Ecma Technical Committee TC15, provides the requirements for information interchange between systems.

Information technology — Data interchange on 120 mm and 80 mm optical disk using +R DL format — Capacity: 8,55 Gbytes and 2,66 Gbytes per side (recording speed up to 16X)

1 Scope

This International Standard specifies the mechanical, physical and optical characteristics of 120 mm recordable optical disks with capacities of 8,55 Gbytes and 17,1 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. The data can be written once and read many times using a non-reversible method. These disks are identified as +R DL.

This International Standard also specifies 80 mm disks with capacities of 2,66 Gbytes and 5,32 Gbytes. These disks have the same characteristics as the 120 mm disks, except for some parameters related to the smaller dimensions. All parameters unique for the 80 mm disks are specified in Annex A.

This International Standard specifies the following:

- two related but different Types of this disk (see Clause 7);
- the conditions for conformance;
- the environments in which the disk is to be tested, operated and stored;
- the mechanical, physical and dimensional 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;
- the characteristics of the signals recorded on the disk, thus enabling data processing systems to read the data from the disk.

This International Standard provides for the interchange of disks between optical 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 is in conformance with this International Standard if it meets all mandatory requirements specified for its Type.

2.2 Generating system

A generating system is 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 is in conformance with this International Standard if it is able to handle both Types of optical disk according to 2.1.

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 4873:1991, *Information technology — ISO 8-bit code for information interchange — Structure and rules for implementation*

ISO/IEC 16448:2002, *Information technology — 120 mm DVD — Read-only disk*

ECMA-287 (2002), *Safety of electronic equipment*

NOTE Unauthorized copying and/or redistribution of video data that is recorded in the DVD+R/+RW Video Format can be prevented by applying the Video Content Protection System as referred to in Annex P.