

INTERNATIONAL STANDARD

IEC 61965

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Mechanical safety of cathode ray tubes

Sécurité mécanique des tubes cathodiques

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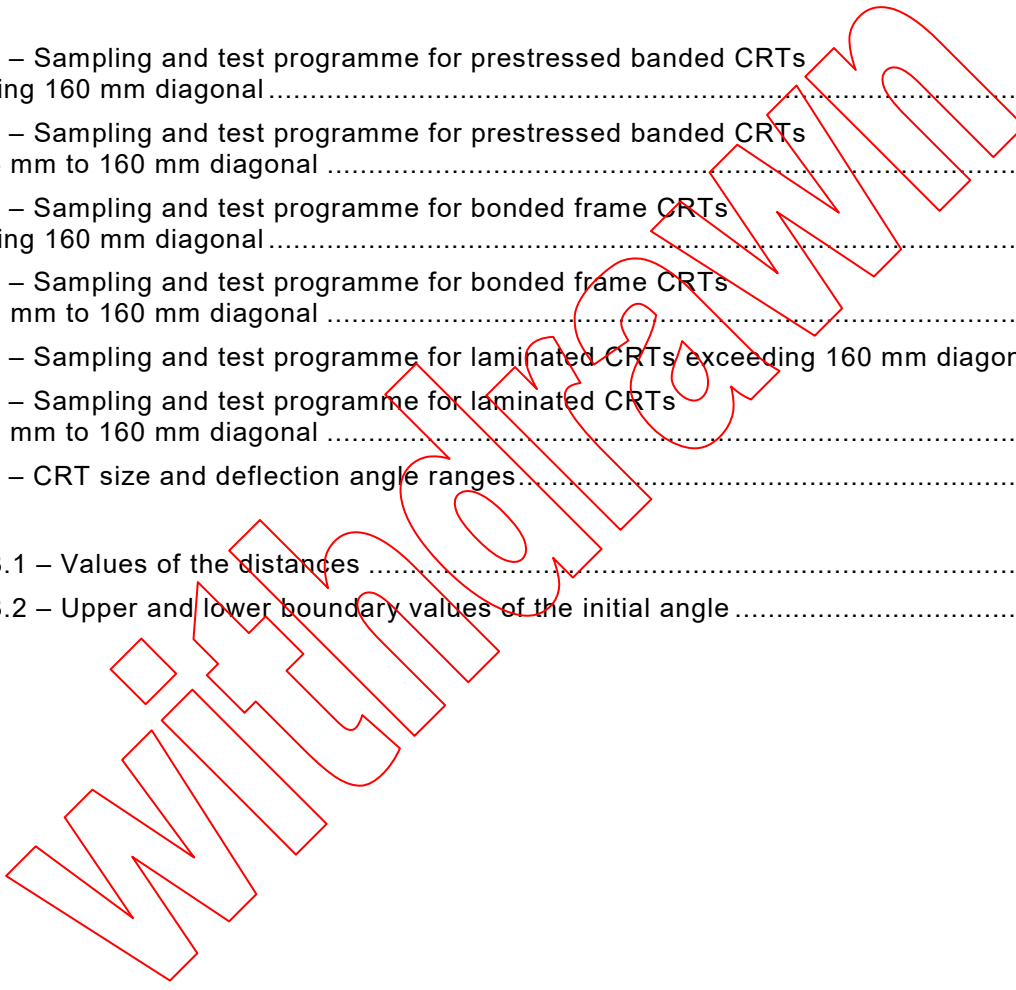
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MECHANICAL SAFETY OF CATHODE RAY TUBES

FOREWORD

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International Standard IEC 61965 has been prepared by IEC technical committee 39: Electronic tubes.

The text of this standard is based on the following documents:

FDIS	Report on voting
39/252/FDIS	39/255/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

Annexes A and B are for information only.

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition; or
- amended.

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

This International Standard sets forth test methods and limits for cathode ray tubes (CRTs). Hitherto, the only IEC standard for the mechanical safety of CRTs has been contained within clause 18 of the equipment standard IEC 60065. Whereas that standard has been accepted and used by many countries, many others have not been able to implement its requirements because of differing local needs. This new standard aims to provide the basis for wider acceptance and use, and reflects the current IEC policy of producing separate component standards to which equipment standards can refer.

Many years of experience had been built up in the use of both the IEC 60065 test and the other commonly used national alternatives. During the development of this new standard, extensive test programmes and ballistic and statistical calculations were carried out to verify that the requirements of the standard give protection for users of CRTs when the tubes are mounted in the equipment for which they are intended. This was also done to ensure that the new standard maintains the stringent requirements of both IEC 60065 and the alternative tests in common use. These tests and calculations also confirmed

- a) the acceptability of one standard ball for the mechanical strength test, and
- b) the need for the implosion test where it is not always possible to induce rapid devacuation using the ball impact test.

As the impact tests in this standard are overstress tests, only the effect of rapid devacuation is evaluated and not subsequent relaxation of mechanical stresses in the CRT from the implosion protection system.

MECHANICAL SAFETY OF CATHODE RAY TUBES

1 Scope

This International Standard is applicable to cathode ray tubes and cathode ray tube assemblies (hereinafter referred to as CRTs) which are intended for use as components in apparatus and which have integral protection with respect to the effects of implosion.

These requirements apply to CRTs intended for use in apparatus including electrical and electronic measuring and testing equipment, information technology equipment, medical equipment, telephone equipment, television equipment and other similar electronic apparatus.

This standard is intended to apply only to those CRTs in which the face of the CRT forms part of the enclosure for the apparatus. The test methods do not apply to CRTs which are protected by separate safety screens.

A CRT covered by this standard is intended to be installed in an enclosure designed both to protect the rear of the CRT against mechanical or other damage under normal conditions of operation and to protect the user against particles expelled in a backwards direction from the CRT face in the event of implosion.

This standard contains requirements for CRTs of 76 mm diagonal and larger that incorporate implosion protection systems providing protection against the hazards of particles expelled forwards beyond the face. There is no intended protection against particles expelled in other directions.

Compliance is tested by subjecting CRTs to the test procedures and criteria which are given in clauses 8 (large CRTs) and 9 (small CRTs) of this standard. The definitions of large and small CRTs are given in clause 3.

NOTE This set of requirements replaces the current requirements for the mechanical safety of cathode ray tubes (CRTs) as described in IEC 60065 (clause 18), which will be modified accordingly.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60065:1998, *Audio, video and similar electronic apparatus – Safety requirements*

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*
Amendment 1 (1992)

IEC 60216-1, *Guide for the determination of thermal endurance properties of electrical insulating materials. Part 1: General guidelines for ageing procedures and evaluation of test results*