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Magnétrons

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Magnetrons

This European Standard was approved by the CENELEC Electronic Components Committee (CECC) on 14 January 1992. The text of this standard consists of the text of CECC 36 000 Issue 1 1977 of the corresponding CECC Specification. CENELEC members are bound to comply with CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the General Secretariat of the CECC or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CECC General Secretariat has the same status as the official versions.

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CECC

CENELEC Electronic Components Committee
Comité des Composants Electroniques du CENELEC
CENELEC Komitee für Bauelemente der Elektronik
General Secretariat: Gartenstr. 179, D- 6000 Frankfurt/Main 70

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FOREWORD

The CENELEC Electronic Components Committee (CECC) is composed of those member countries of the European Committee for Electrotechnical Standardization (CENELEC) who wish to take part in a harmonized System for electronic components of assessed quality.

The object of the System is to facilitate international trade by the harmonization of the specifications and quality assessment procedures for electronic components, and by the grant of an internationally recognized Mark, or Certificate, of Conformity. The components produced under the System are thereby accepted by all member countries without further testing.

This document has been formally approved by the CECC, and has been prepared for those member countries taking part in the System who wish to issue national harmonized specifications for MAGNETRONS. It should be read in conjunction with document CECC 00 100: Basic Rules (1974).

At the date of printing of this document, the member countries of the CECC are Belgium, Denmark, Germany, France, Ireland, Italy, the Netherlands, Norway, Sweden, Switzerland and the United Kingdom, and copies of it can be obtained from the National Committees of the CENELEC in these countries.

PREFACE

This generic specification was prepared by CECC Working Group 13: Microwave Tubes".

In accordance with the requirements of document CECC 00 100 it is based, wherever possible, on the Recommendations of the International Electrotechnical Commission and in particular on IEC Publication 235: Measurement of the electrical properties of microwave tubes.

The text of this specification was circulated to the CECC for voting in the documents below and was formally approved by the CECC for printing as a CECC Specification.

Document	Voting date
CECC(Secretariat)318	10 April 1975
CECC(Secretariat)432	27 December 1975
CECC(Secretariat)483	1 July 1976

This specification will be supplemented by blank detail specifications specific to each sub-family of magnetrons.

SECTION 1 - SCOPE

This document relates to pulsed and cw magnetrons.

SECTION 2 - GENERAL

2.1 Order of precedence

Where any discrepancies occur for any reason, documents shall rank in the following order of authority:

- the detail specification
- the generic specification
- the rules of procedure of document CECC 00 100 or any other international (for example IEC) documents to which reference is made.

NOTE: The same order of precedence shall apply to equivalent national documents.

2.2 Related documents

ISO 1000	(1973)	SI units and recommendations for the use of their multiples and of certain other units.
IEC 27		Letter symbols to be used in electrical technology.
-1	(1971)	Part 1. General.
-1A	(1976)	First supplement to Publication 27-1 (1971).
IEC 50	-	International Electrotechnical Vocabulary.
IEC 68	-	Basic environmental testing procedures. (See CECC 00 006.)
IEC 117	-	Recommended graphical symbols.
IEC 134	(1961)	Rating systems for electronic tubes and valves and analogous semiconductor devices.
IEC 151		Measurements of the electrical properties of electronic tubes.
-1	(1963)	Part 1. Measurement of electrode current.
-2	(1963)	Part 2. Measurement of heater or filament current.
-13	(1966)	Part 13. Methods of measurement of emission current from hot cathodes for high-vacuum electronic tubes and valves.
-15	(1967)	Part 15. Methods of measurement of spurious and unwanted electrode currents.

IEC 235		Measurement of the electrical properties of microwave tubes.
-1	(1972)	Part 1. Terminology.
-1A	(1975)	First supplement to Publication 235-1 (1972).
-2	(1972)	Part 2. General measurements.
-2A	(1974)	First supplement to Publication 235-2 (1972).
-2B	(1975)	Second supplement to Publication 235-2 (1972).
-2C	(1976)	Third supplement to Publication 235-2 (1972).
-2D	(1976)	Fourth supplement to Publication 235-2 (1972).
-4	(1972)	Part 4. Magnetrons.
-4A	(1975)	First supplement to Publication 235-4 (1972).
IEC 410	(1973)	Sampling plans and procedures for inspection by attributes. (See CECC 00 007.)
CECC 00 100	(1974)	Basic Rules.
CECC 00 107	(1974)	RP 7 : Quality assessment procedures.
CECC 00 006	(1973)	Basic specification: Environmental test procedures.
CECC 00 007	(1973)	Basic specification: Sampling plans and procedures for inspection by attributes.

2.3 Units, symbols and terminology

Units, graphical symbols, letter symbols and terminology shall, whenever possible, be taken from the following documents:

ISO 1000	SI units and recommendations for the use of their multiples and certain other units.
IEC 27	Letter symbols to be used in electrical technology.
IEC 50	International Electrotechnical Vocabulary.
IEC 117	Recommended graphical symbols
IEC 235-1	Measurement of the electrical properties of microwave tubes: Terminology

Where further units, symbols and termonology are required they shall be derived in accordance with the principles of the documents listed above.

2.4 Standard and preferred values

Not applicable.

2.5 Marking

The following shall be marked on the tube in the following order of precedence as space permits. All this information, except the terminal marking, shall appear on the primary pack:

- terminal identification (where this is not shown on the outline drawing) and where appropriate, any special operating conditions
- type designation
- date code and/or factory identification code
- manufacturer's name or trade mark
- mark of conformity unless a certificate of conformity is used.

The use of potentially hazardous material in the construction of the tubes, or other hazards associated with the operation of the tube, shall be indicated according to national requirements.

SECTION 3 - QUALITY ASSESSMENT PROCEDURES

3.1 Primary stage of manufacture

This is the process of joining together of all piece parts.

The sub-contracting of this process and/or all subsequent processes is prohibited.
(See § 7.2.2 of CECC 00 107.)

3.2 Structural similarity

When simultaneous or successive production is proceeding on several types of tubes having common features, those common features may be sampled from the complete range. Admissible common features and associated tests include the following:

Tube outline:	dimensions
Envelope and terminations:	robustness of terminations, climatic tests
Heater:	current and voltage.

3.3 Qualification approval procedure

The detail specification shall indicate whether procedure 1 or 2 is to be followed, together with the necessary details:

Procedure 1 — A single schedule which gives the grouping of tests and the sample size together with the permissible number of defectives, or,

Procedure 2 — The use of quality conformance inspection whereby three consecutive lots are subject to lot-by-lot inspection and one lot (drawn from the three) subjected to periodic inspection.

In procedure 1, each group shall contain five specimens unless otherwise prescribed in the detail specification.

In procedure 2, samples shall be taken from the lots in accordance with IEC 410. Normal inspection shall be used but, where the sample size would give acceptance on zero defectives, additional specimens shall be taken to meet the sample size required to give acceptance on one defective.

3.4 Quality conformance inspection

The test schedule, inspection levels and AQL s shall be prescribed in the blank detail specification. The period over which production lots may be aggregated to form an inspection lot shall not exceed three months.

3.5 Resubmission of rejected lots

Lots rejected in the quality conformance inspections as a result of sampling procedure may be resubmitted after reworking and/or retesting all items for the particular defect(s) by the manufacturer and eliminating the non conforming items.

3.6 Certified test records

Where certified test records are prescribed in the relevant detail specification, the following information shall be the minimum:

Results of the endurance tests showing the total number and nature of defectives found and, where required by the detail specification, initial, intermediate and final values of those characteristics required for the determination of end points.

3.7 Delayed delivery

Tubes held for a period exceeding twelve months after having passed quality conformance inspection shall be re-examined before delivery. This re-examination shall consist of repeating the requirements prescribed for Group A1 inspection in the relevant detail specification.