SLOVENSKI STANDARD
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Blank detail specification: Image converter and image intensifier tubes

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Vordruck für Bauartspezifikation: Eine deutsche Version liegt zur Zeit nicht vor

Spécification particulière cadre: Tubes convertisseurs d'image et tubes intensificateurs d'image

Ta slovenski standard je istoveten z: **EN 112001:1991**

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31.120	Elektronske prikazovalne naprave	Electronic display devices

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EUROPEAN STANDARD

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Spécification Particulière Cadre: Tubes convertisseurs d'image et tubes intensificateurs d'image

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This European Standard was approved by the CENELEC Electronic Components Committee (CECC) on 20 November 1991. The text of this standard consists of the text of CECC 12001 Issue 1 1980 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and United Kingdom. The membership of the CECC is identical, with the exception of the national electrotechnical committees of Greece, Iceland and Luxembourg.

CECC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B-1050 Brussels

Foreword

The CENELEC Electronic Components Committee (CECC) is composed of those member countries of the European Committee for Electronical 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 recognised 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 IMAGE CONVERTER AND IMAGE INTENSIFIER TUBES. It should be read in conjunction with document CECC 00100: *Basic Rules* (1974).

Preface

This blank detail specification was proposed by CECC Working Group 11: "ELECTRO-OPTICAL DEVICES".

It is a blank detail specification for image converter and image intensifier tubes relating to the generic specification printed as CECC 12000.

The text of this specification was circulated to the CECC, for voting, in document CECC(Secretariat)381 in July 1975, and following ratification of the Report on the Voting in CECC(Secretariat)555 in December 1976 was approved by the CECC Management Committee for printing as a CECC Specification.

It is recognised that the layout proposed cannot be applied to all detail specifications based on this document.

The CECC Management Committee at its meeting in Copenhagen in March 1979 decided that as the German National Authorized Institution would not be implementing the requirements of this CECC generic specification, the text should be published in the English and French versions only.

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Key for page 4

The numbers between square brackets on page 4 correspond to the following indications which should be given:

Identification of the detail specification

[1] The name of the National Standards Organization under whose authority the detail specification is drafted

[2] The CECC Symbol and the number allotted to the national detail specification by the CECC General Secretariat

[3] The number and issue number of the national generic and sectional specifications

[4] The national number of the detail specification, date of issue and any further information required by the national system, together with any amendment numbers if issued.

Identification of the component

[5] A short description of the type of component

[6] Information on typical construction (where applicable)

[7] Outline drawing and/or reference to the relevant document outlines

[8] Application or group of applications covered (see note below)

[9] Reference data on the most important properties, to allow comparison between the various component types.

NOTE When a device is so designed that it can satisfy several applications, this should be stated in the detail specification, in which case the characteristics and inspection requirements relevant to these applications should be met simultaneously (these may appear in different columns of a detail specification or in different detail specifications, as the case may be).

[1]	page: of:	[2] CECC 12001 – XXX
ELECTRONIC COMPONENT OF ASSESSED QUALITY IN ACCORDANCE WITH: [3]		[4]

DETAIL SPECIFICATION FOR: IMAGE CONVERTER TUBE or IMAGE INTENSIFIER TUBE [5]

DESCRIPTION and CONSTRUCTION

Number of stages
Type of stages (state if channel multiplier)
Integral or non-integral power supply
Windows (fibre optic or plain)
Overall gain
Phosphor colour and persistence
Photocathode type
Useful photocathode diameter
Useful screen diameter
Magnification

[6]

OUTLINE DRAWING SHOWING: [7] (not for inspection purposes) Overall length Diameter Terminal identification Positions of photocathode and screen Optical axes	[8] APPLICATION(S) LEVEL OF QUALITY ASSESSMENT

[9]

DATA (not for inspection purposes)

Mechanical

Mounting position and accessories

Mass (weight)[a]

Environmental (where appropriate)

Limiting values (absolute maximum rating system — IEC 134)

	Min.	Max.	Unit
Instantaneous input supply voltage(s)		[a]	V
Continuous input supply voltage(s)		[a]	V
Supply frequency(ies) for tubes with a.c. input	[a]	[a]	Hz
Photocathode illuminance/irradiance[a]		[a]	[a]
Storage temperature	[a]	[a]	°C
Storage temperature of specified duration (short term)	[a]	[a]	°C
Operating temperature of specified duration (ambient, short term)	[a]	[a]	°C

See the relevant Qualified Products List for availability of components qualified under this detail specification.

[a] denotes that a value or unit shall be inserted in the detail specification unless precluded by the design of the tube.

Operating conditions and characteristics

When the tube is operated under the conditions given below, the characteristic values which follow them are attainable:

— Operating supply voltage(s)[a]

— Supply frequency(ies) for tubes with a.c. input[a]

— Ambient temperature[a] °C

	Min.	Max.	Unit
— Gain	a		a
— Photocathode luminous sensitivity or absolute spectral sensitivity at specified wavelengths	a		a
— Resolution	a		lp/mm
— Equivalent background input (EBI)		a	a
— Magnification	a	a	

[a] denotes that a value or unit shall be inserted in the detail specification unless precluded by the design of the tube.

Marking See **2.4** of CECC 12000.

Ordering Information

Related documents

Structural similarity

X-radiation (if applicable)

Additional information

— Tube discharge procedure (if applicable)

Test conditions and inspection requirements

These are given in the following tables. The test conditions to be used shall be specified in the detail specification as required for a given type, in line with the requirements given in CECC 12000 for the relevant test.

All references to clause numbers are made with respect to CECC 12000, unless otherwise stated.

GROUP A — Lot by lot

Overall test conditions (except when modified under "Conditions of test").

Supply voltage(s)[a]
Frequency of supply voltage(s) for tubes with a.c. input[a]
Ambient temperature[a] °C ± [a] °C

Test equipment (See **4.3** of CECC 12000)
Focusing system for magnetically focused tubes

All potentials with respect to[a]

All tests are non-destructive — AQL: given in %

Inspection or Test	Reference CECC 12000	Conditions of test	Inspection requirements				
			Min	Max	Units	IL	AQL
SUB-GROUP A1						100 %	
— Visual inspection	**4.4**	As specified		**4.4**			
— Photocathode sensitivity	**4.6.1**	As specified	[a]		[a]		
— Equivalent background input (EBI)	**4.6.2**	As specified		[a]	[a]		
— Gain	**4.6.3**	As specified	[a]		[a]		
— Output luminance uniformity	**4.6.5**	As specified	**4.6.5**				
— Resolution	**4.6.12**	As specified	**4.6.12**				
— Gas test	**4.6.14**	As specified	**4.6.14**				
— Spurious output	**4.6.15**	As specified	**4.6.15**				
— Blemishes	**4.6.16**	As specified	See blemish specification (Appendix B)				

[a] denotes that a value or unit shall be inserted in the detail specification unless precluded by the design of the tube.

GROUP B — Lot by lot

General test conditions — as for Group A

Only tests marked D are destructive. — AQL: given in %

Inspection or Test	Reference CECC 12000	Conditions of test	Inspection requirements				
			Min	Max	Units	IL	AQL
— Dimensions, major	**4.5**	See **4.5**	See inspection drawing (Appendix A)			S4	4,0

If the specification writer includes additional tests which are destructive tests, these shall be marked (D).

GROUP C — Periodic

General test conditions — as for Group A

Only tests marked D are destructive. AQL: given in %

Inspection or Test	Reference CECC 12000	Conditions of test	Inspection requirements				
			Min	Max	Units	IL	AQL
SUB GROUP C1	Periodicity up to three months						
— Detail dimensions	4.5	See 4.5	See inspection drawing (Appendix A)			1	4,0
— Useful photocathode diameter	4.6.19	As specified	4.6.19				
If the detail specification includes additional tests which are destructive tests, these shall be marked (D).							

GROUP D — Qualification approval only

General test conditions — as for Group A

Only tests marked (D) are destructive

The sample size and acceptance criteria are given in **3.3** and **3.4**.

Inspection or Test	Reference CECC 12000	Conditions of test	Inspection requirements				
			Min	Max	Units	IL	AQL
— Image alignment	4.6.9	As specified		[a]	mm	See **3.3** and **3.4**.	
— Magnification	4.6.17	As specified	[a]	[a]	—		
— Magnification distortion	4.6.18	As specified		[a]	%		
— "S" distortion	4.6.21	As specified		[a]	deg		
— Operating endurance (D)	4.9.3	Operating conditions[a] Switched or continuous Operating hours[a] or total number of cycles (if switched)					
— Post endurance tests							
1) Gain	4.6.3	As in A1	[a]		[a]		
2) Equivalent background input	4.6.2	As in A1		[a]	[a]		
3) Gas test	4.6.14	As in A1	4.6.14				
If the detail specification includes additional tests which are destructive tests, these shall be marked (D).							

[a] denotes that a value or unit shall be inserted in the detail specification unless precluded by the design of the tube.