SLOVENSKI STANDARD
SIST EN 111101:2002

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Blank detail specification: Display storage tubes

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

Spécification particulière cadre: Tubes de visualisation à mémoire

Ta slovenski standard je istoveten z: **EN 111101:1991**

ICS:

31.100	Elektronke	Electronic tubes

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EUROPEAN STANDARD
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Descriptors: Quality, electronic components, tubes

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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 11101 Issue 1 1984 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

Ref. No. EN 111101:1991 E

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 specification has been formally approved by the CECC, and has been prepared for those countries taking part in the System who wish to issue national harmonized specifications for DISPLAY STORAGE TUBES. It should be read in conjunction with document CECC 00100: *Basic Rules* (1974).

At the date of printing of this document the member countries of the CECC are Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Preface

This blank detail specification was prepared by CECC Working Group 11: "Electro-optical devices".

It is a blank detail specification for display storage tubes relating to the sectional specification CECC 11100 and the generic specification CECC 11000.

The text of this specification was circulated to the CECC for voting in the document indicated below and was ratified by the President of the CECC for printing as a CECC Specification:

Document	Voting Date	Report on the Voting
CECC (Secretariat) 1080	December 1982	CECC (Secretariat) 1273

It is recognized 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 blank detail specification, the text should be published in the English and French versions only.

Contents

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 published, and, if applicable, the organization from whom the detail specification is available.

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

[3] The number and issue number of the CECC generic or sectional specification as relevant; also national reference if different.

[4] If different from the CECC number, the national number of the detail specification, date of issue and any further information required by the national system, together with any amendment numbers.

Identification of the component

[5] A short description of the type of component

[6] Information on typical construction (where applicable)

For [5] and [6] the text to be given in the detail specification should be suitable for an entry in CECC 00200 (QPL) and CECC 00300 (Library List).

[7] Outline drawing and/or reference to the relevant document for 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] Specification available from:	Page: of	CECC 11101-XXX [2]
ELECTRONIC COMPONENT OF ASSESSED QUALITY IN ACCORDANCE WITH [3]		[4]
DETAIL SPECIFICATION FOR:	DISPLAY STORAGE TUBES	[5]
DESCRIPTION and CONSTRUCTION	Method of focussing and deflection Dimensions of viewing screen Colour and persistence of display (see **2.3.1** of CECC 11000) Storage method (e.g. bistable) Writing speed	[6]
OUTLINE DRAWING [7] (Not for inspection purposes) Overall length; Faceplate dimensions; Neck diameter and length Base — Reference to IEC 67 or REFERENCE TO THE INSPECTION DRAWING	APPLICATIONS LEVEL OF QUALITY ASSESSMENT	[8]

DATA (Not for inspection purposes) [9]

Mechanical

Mounting position and accessories
Mass

Environmental (where applicable)

LIMITING VALUES (Absolute maximum rating system — IEC 134)	Symbol	Min.	Max.	Unit
Write gun				
Heater voltage	$V_{h\,(w)}$	[a]	[a]	V
Electrode voltages with respect to the write gun cathode				
Heater to cathode positive voltage	$V_{(h\text{-}k)\,(w)}$		[a]	V

Information about manufacturers who have components qualified to this detail specification is available in the current CECC 00200: Qualified Products List.

[a] Denotes that a value shall be inserted in the detail specification.

LIMITING VALUES *(contd.)*	Symbol	Min.	Max.	Unit
Write gun *(contd.)*				
Heater to cathode negative voltage	$V_{(k-h)\,(w)}$		a	V
Modulator electrode negative voltage	$V_{g1\,(w)}$		a	V
Grid 2 (b) voltage	$V_{g2\,(w)}$		a	V
etc. to:				
Grid n (b) voltage	$V_{gn\,(w)}$		a	V
Cathode mean current	$I_{k(mean)\,(w)}$		a	mA
Cathode peak current	$I_{k(peak)\,(w)}$		a	mA
Modulator electrode cathode circuit impedance			a	MΩ
Flood gun				
Heater voltage	$V_{h(f)}$	a	a	V
Electrode voltages with respect to the flood gun cathode				
Heater to cathode positive voltage	$V_{(h-k)\,(f)}$		a	V
Heater to cathode negative voltage	$V_{(k-h)\,(f)}$		a	V
Grid 1 voltage	$V_{g1\,(f)}$		a	V
etc. to:				
Grid n voltage	$V_{gn\,(f)}$		a	V
(The collector electrode is considered to be a grid)				
Viewing screen voltage	V_{sc}		a	kV
Backing electrode voltage	V_{be}		a	V
(Conditions for backing electrode voltage to be defined)				
Cathode current	$I_{k(f)}$		**	mA
Any limiting relationship between write gun and flood gun voltages				

[a] value to be inserted in the detail specification unless precluded by the tube design.
[b] function to be stated in the detail specification.

OPERATING CONDITIONS AND TYPICAL CHARACTERISTICS

(Specification writer to select from the following as required by the tube design).

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

V_{g1} = [1]V; V_{g2} = [1]V; V_{g3} = [1]V; V_{g4} = [1]V; Beam current = [1]μA; Electrode current = [1] μA (or electrodes as designated on Pages 4 and 5) PDA ratio = [1]

	Min.	Max.	Unit
Write gun heater current (at [a]V)			A
Flood gun heater current (at [a]V)			A
Viewing screen current		[a]	mA
Collector electrode current		[a]	mA
All remaining flood gun electrode currents		[a]	mA
X Deflection coefficient			V/cm
Y Deflection coefficient			V/cm
Write gun modulator cut-off voltage			V
Backing electrode manual erase voltage			V
Useful viewing screen dimensions			mm

[a] value/or values shall be inserted in the detail specification.

MARKING

ORDERING INFORMATION

RELATED DOCUMENTS

STRUCTURAL SIMILARITY

X-RADIATION

ADDITIONAL INFORMATION

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 11100 for the relevant test.

ALL REFERENCES TO CLAUSE NUMBERS ARE MADE WITH RESPECT TO CECC 11100 UNLESS OTHERWISE STATED.

General test conditions

All potentials are defined with respect to [2] unless stated otherwise.

Warm-up

Before starting any tests a warm-up period of[2] seconds minimum duration under the conditions given below shall be allowed.

Test conditions

The following conditions apply except when modified under "Conditions of test".

(The specification writer shall tabulate all appropriate electrode voltages for flood gun and write gun and state whether or not the screen voltage is to be removed in clearance and/or manual erase procedures).

[1] value/or values shall be inserted in the detail specification.
[2] To be completed in the detail specification.

Recorded values

Unless it is stated otherwise the flood-gun electrode voltages recorded in subgroup C1, **4.8.33** or **4.8.34** of CECC 11100 (as applicable), shall be used also for other tests.

Erasure pulses

When required the following shall be used:

t_p	f_p	t_r	t_f	droop	V_p
[a] to [a]	[a]	[a]	[a]	[a]	[a]
μs	p.p.s	μs	μs	%	V

where t_p = pulse duration (measured at 50 % of pulse amplitude)
f_p = pulse repetition frequency
t_r = pulse rise time (measured from 10 % to 90 % of pulse amplitude)
t_f = pulse fall time (measured from 90 % to 10 % of pulse amplitude)
V_p = pulse amplitude [ignoring spike (overshoot) or ripple]

droop is measured from 100 % of pulse amplitude ignoring any spike (or overshoot) or ripple.

[a] To be completed in the detail specification.

Display

The scanning conditions shall be specified. If a raster is used, it shall be in accordance with **4.5** of CECC 11000.

Write gun focus and deflection coils[3)]

Details or type designation to be given where applicable.

The specification shall include the following tests unless precluded by the tube design.

All tests are non-destructive	GROUP A Lot by lot			+ = To be given in detail specification	
Examination or test	**Ref.**	**Conditions of test**		**Inspection requirements**	
				Limits	**Levels**
					IL / **AQL**
Sub-group A1					100 %
— Visual inspection	**4.3**			See **4.3**	
— Quality of display	**4.8.10** and **4.8.43**			See Blemish Specification	
— Write-gun modulator electrode cut-off voltage	**4.8.38**		+	V	
or					
— Intensity modulator electrode cut-off voltage	**4.8.2**		+	V	
— Gas content coefficient	**4.8.1**		+		
— Write gun cathode emission	**4.8.3**		+	mA	
— Flood-gun modulator electrode cut-off	**4.8.35**		+	V	

NOTE 1 This voltage shall be recorded.

[3)] To be completed in the detail specification.