SLOVENSKI STANDARD
SIST EN 120008:2002

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Blank detail specification: Light emitting diodes and infrared emitting diodes for fibre optic system or sub-system

Blank Detail Specification: Light emitting diodes and infrared emitting diodes for fibre optic system or sub-system

Vordruck für Bauartspezifikation: Leuchtdioden und infrarot emittierende Dioden für faseroptische Systeme und Untersysteme

Spécification particulière cadre: Diodes électroluminescentes, diodes émettrices en infrarouge pour systèmes et sous-systèmes à fibres optiques

Ta slovenski standard je istoveten z: **EN 120008:1993**

ICS:

31.260	Optoelektronika, laserska oprema	Optoelectronics. Laser equipment

SIST EN 120008:2002 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 120 008

April 1993

UDC

Supersedes CECC 20 008 Issue 1 : 1992

Descriptors: Quality, electronic components, light emitting diodes, infrared emitting diodes

English version

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This European Standard was approved by the CENELEC Electronic Components Committee (CECC) on 13 February 1993. 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

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

Ref. No. EN 120 008: 1993 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 acceptable in all member countries without further testing.

This European Standard was prepared by CECC WG 20, "Opto-Electronic Components and Liquid Crystal Devices".

The text of the draft based on document CECC 20 008 Issue 1 : 1992 was submitted to the formal vote for conversion to a European Standard; together with the voting report, circulated as document CECC(Secretariat)3291 it was approved by CECC as EN 120 008 on 13 February 1993.

The following dates were fixed:

-	latest date of announcement of the EN at national level	(doa)	**1994-03-08**
-	latest date of publication of an identical national standard	(dop)	**1994-09-08**
-	latest date of declaration of national standards obsolescence		**1994-09-08**
-	latest date of withdrawal of conflicting national standards	(dow)	**2004-03-08**

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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 **light emitting diodes and infrared emitting diodes for fibre optic system or sub-system.** It should be read in conjunction with the current regulations for the CECC System.

At the date of printing of this specification, 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, and copies of it can be obtained from the addresses shown on the blue fly sheet.

PREFACE

This blank detail specification (BDS) was prepared by CECC WG 20: "Semiconductor optoelectronic and liquid crystal devices".

It is based, wherever possible, on the Publications of the International Electrotechnical Commission.

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

Document	Date of Voting	Report on the Voting
CECC(Secretariat)2429	October 1991	CECC(Secretariat)2849

Note: The German text will be published as soon as it is available.

LIGHT EMITTING DIODES AND INFRARED EMITTING DIODES FOR FIBRE OPTIC SYSTEM OR SUB-SYSTEM

[Name (address) of responsible ONH (and possibly of body from which specification is available)] [1]	Page of	CECC 20 008 [2] [CECC detail specification number plus issue number and date]
ELECTRONIC COMPONENT OF ASSESSED QUALITY IN ACCORDANCE WITH : CECC 20 000, issue ... [and national references if different] [3]	[National number of detail specification [4] This box may not be used if National number includes CECC number]	

1. MECHANICAL DESCRIPTION [7]

Either outline references (code A) or base and case references (Codes B and C)
- from IEC 191-2
- national (if desired)

OUTLINE DRAWING AND CONNECTIONS
(Terminal connected to case, if any)
[Characteristics of the optical port of the device, defined in relation with its mechanical axis]

Information on output optical fibre (pigtail fibre) (see clause 9) :
. fibre type, core and cladding diameter and tolerances, numerical aperture
. coating (primary/secondary)
. structure, minimum length of the pigtail
. connector (where appropriate)]
[may be transferred to, or given with more details, in clause 9 of this specification]

MARKING : letters and figures/colour code
[see 2.5 of CECC 20 000 and/or clause 6 of this specification]

Polarity indication if special method is used.

DETAIL SPECIFICATION FOR [5]

[Type number(s) of relevant device(s) and, if appropriate structurally similar devices]

ORDERING INFORMATION :
see clause 7 of this specification

2. SHORT DESCRIPTION [6]

Light emitting diode/IR emitting diode
with/without pigtail
Type : Surface/Edge emitting
Semiconductor material : GaAs/GaAlAs/InP...
Encapsulation : metal/glass/plastic
Application : data transmission
Power at T_{amb} or T_{case}

[Some important quick reference data may be added]

3. LEVEL(S) OF QUALITY ASSESSMENT [8]

[if relevant]

4. LIMITING VALUES (Absolute maximum rating system) [9]

These apply per diode over the operating temperature range unless otherwise stated.

[X denotes that a value shall be inserted in the detail specification]

Clause CECC 20 008	[Repeat only clause numbers used, with text. Additional values, if any, shall be given at the appropriate place without clause number(s). Curves should preferably be given in clause 9 of this document.]	Symbol	Value min.	Value max.	Unit
4.1	Operating ambient or case temperature range	T_{amb} T_{case}	X X	X X	°C °C
4.2	Storage temperature range	T_{stg}	X	X	°C

Information about manufacturers who have components qualified to this detail specification is available in the current CECC 00 200: Qualified Products List.

Clause CECC 20 008	(continued)	Symbol	Value		Unit
			min.	max.	
4.3	Soldering temperature Soldering time and minimum distance to case shall be given [Recommended mounting conditions (temperature, duration ...) may be given in clause 9.1 of this document]	T_{sld}		X	°C
4.4	Junction temperature, for case-rated devices	$T_{(vj)}$		X	°C
4.5	Reverse voltage	V_R		X	V
4.6	Continuous forward current at ambient or case temperature of 25 °C. With temperature derating curve if necessary (see 9.2)	I_F		X	A
4.7	Peak forward current at ambient or case temperature of 25 °C, under specified pulse conditions, where appropriate	I_{FRM}		X	A
4.8	Total power dissipation at operating ambient or case temperature of 25 °C	$P_{(tot)}$		X	W
4.9	Minimum bending radius of pigtail at specified distance from case	r	X		mm
4.10	Shock			X	
4.11	Vibration			X	
4.12	Tensile strength along cable axis				
4.12.1	Untight structure : - Fibre tensile strength	F		X	N
or	- Cable tensile strength	F		X	N
4.12.2	Tight structure : - Cable tensile strength	F		X	N

5. ELECTRICAL AND OPTICAL CHARACTERISTICS

See clause [8] of this specification for inspection requirements (groups A and C)

[Signs between brackets correspond to characteristics given as "where appropriate" or as alternatives :

- Those characteristics marked "where appropriate" in this clause and in the inspection section shall either be ommitted or, if specified, shall then be measured.
- For equivalent characteristics given as alternatives, the choice should preferably be left open to allow the use of the same detail specification by different manufacturers or countries.

Repeat only clause numbers used, with text. Any additional characteristics to be given at appropriate place but without clause number.
When several devices are defined in the same detail specification, the relevant values should be given on successive lines, not repeating identical values.]

The value of specified forward current (d.c. and/or pulsed) shall be the same for all tests.

Clause CECC 20 008	Measured	Characteristics and conditions, at T_{amb} or T_{case} = 25 °C unless otherwise stated	Symbol	Value		Unit
				min.	max.	
5.1.1	A2b	Radiant power at the optical port and I_F specified	Φ_e	X	X	mW
5.1.2	C2b	Coefficient of the radiant power variation versus temperature	$\Delta\Phi_e$		X	mW/K
5.2.1	A3	Peak emission wavelength at the optical port and I_F specified	λ_p	X	X	nm
5.2.2	C2b	Coefficient of the peak emission wavelength variation versus temperature	$\alpha\lambda_p$		X	nm/K
5.3	A3	Spectral bandwidth at the optical port and I_F specified	$\Delta\lambda$		X	nm
5.4		Parasitic emission level at the optical port, outside the specified wavelength range and I_F specified (where appropriate)	$\Phi_{(ij)}$		X	µW
5.5	A3	Forward voltage at I_F specified	V_F		X	V
5.6	A3	Switching times at the optical port, I_F, duty cycle and pulse width specified :				
		- rise time	t_r		X	ns
		- fall time	t_f		X	ns
		- delay time (where appropriate)	t_d		X	ns
		or				
	A3	Cut-off frequency at the optical port I_F and m specified	f_c	X		MHz
5.7	C2a	Noise equivalent power at I_F, noise equivalent bandwidth and center frequency specified	NEP		X	W/Hz$^{1/2}$
5.8	A4	Misalignement angle between optical beam axis and specified mechanical axis *	$\Delta\theta$		X	degree

(continued on next page)

* For the devices without pigtail only.