



**SLOVENSKI STANDARD**  
**SIST EN 188201:1999**

**01-maj-1999**

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**Family Specification: A1a graded index multimode optical fibres**

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Familienspezifikation: Mehrmoden-Lichtwellenleiter - Kategorie A1a

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**ICS:**

33.180.10 ~~33.180.10~~ Fibres and cables

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**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 188201**

September 1995

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ICS 33.180.10

Descriptors: Quality, electronic components, optical fibres

English version

**Family Specification:  
A1a graded index multimode optical fibres**

(n'existe pas encore en français)

Familienspezifikation:  
Mehrmoden-Lichtwellenleiter  
Kategorie A1a

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**CENELEC**

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

This European Standard was prepared by Working Group CLC/TC CECC/WG 28.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 188201 on 1995-07-04.

This standard completes the Sectional Specification published as EN 188200.

The following dates were fixed:

- latest date by which the EN has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 1996-07-15
  - latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 1997-07-15
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## 1. Introduction

Definitions and test methods are given in EN 188000, Generic Specification: Optical Fibres, and in EN 188200, Sectional Specification: A1 category graded index multimode fibres.

## 2. Dimensions

The dimensions of A1a (50/125  $\mu\text{m}$ ) graded index multimode fibres are given in Table I and Table II.

**Table I - Coating dimensions**

Parameter	Values	Units
Primary coating diameter	245 $\pm$ 10	$\mu\text{m}$
Primary coating non-circularity	$\leq$ 6	%
Cladding/primary coating concentricity error	$\leq$ 12,5	$\mu\text{m}$

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**Table II - Glass dimensions**

Parameter	Values	Units
Core diameter	50 $\pm$ 3	$\mu\text{m}$
Core non-circularity	$\leq$ 6	%
Core/cladding concentricity error	$\leq$ 3	$\mu\text{m}$
Cladding diameter	125 $\pm$ 2	$\mu\text{m}$
Cladding non-circularity	$\leq$ 2	%

## 3. Optical Parameters

The optical parameters of A1a (50/125  $\mu\text{m}$ ) graded index multimode fibres (attenuation, modal bandwidth and numerical aperture) are given in Table III. Ranges of possible attenuation and bandwidth values are suggested at both 850 nm and 1300 nm. The actual values at both wavelengths (or just at one of these wavelengths) are to be agreed between user and manufacturer.

Note: Multimode fibres can in general be optimized in bandwidth either for 850 nm or 1300 nm or between these wavelengths, depending on the refractive index profile parameter,  $g$  (see clause 1.4.1 in EN 188000), see figure 1. Due to this optimization it is practically impossible to produce fibres at extreme high bandwidths at both 850 nm and 1300 nm, like 800 MHz.km at 850 nm and also 1500 MHz.km at 1300 nm.

Table III - Optical parameters

Parameter	Values	Values	Units
Wavelength	850	1300	nm
Attenuation (maximum)	2,4 to 2,7	0,6 to 1,0	dB/km
Modal bandwidth (minimum)	200 to 800	400 to 1500	MHz.km
Numerical aperture	0,20 ± 0,02		

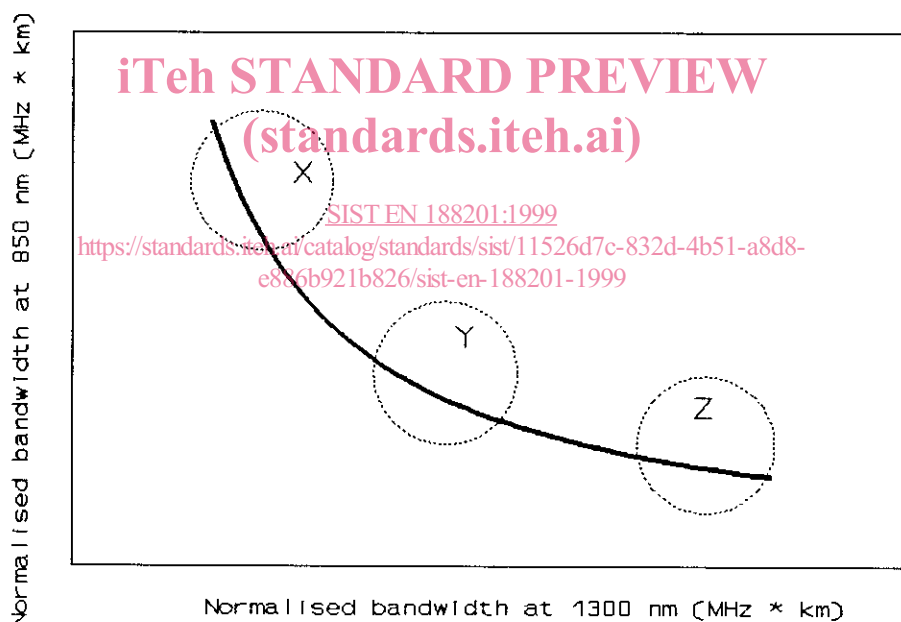


Figure 1. Possible relation between the bandwidth at 850 nm and at 1300 nm for A1a multi-mode fibres. The indicated regions correspond to bandwidth optimization at either 850 nm (region X), or at 1300 nm (region Z) or between these wavelengths (region Y).