INTERNATIONAL STANDARD

IEC 60874-19-1

QC 910005XX0001

First edition
1999-09

Connectors for optical fibres and cables –

Part 19-1:
Fibre optic patch cord connector type SC-PC (floating duplex) standard terminated on multimode fibre type A1a, A1b – Detail specification

Connecteurs pour fibres optiques et câbles –

Partie 19-1:
Connecteur pour câble de liaison de type SC-PC (duplex flottant) normalisé, terminé sur une fibre multimode de types A1a, A1b –
Spécification particulière

Reference number
IEC 60874-19-1:1999(E)

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For general terminology, readers are referred to IEC 60050: *International Electrotechnical Vocabulary* (IEV).

For graphical symbols, and letter symbols and signs approved by the IEC for general use, readers are referred to publications IEC 60027: *Letter symbols to be used in electrical technology*, IEC 60417: *Graphical symbols for use on equipment. Index, survey and compilation of the single sheets* and IEC 60617: *Graphical symbols for diagrams*.

* See web site address on title page.

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International Electrotechnical Commission 3, rue de Varembé Geneva, Switzerland
Telefax: +41 22 919 0300 e-mail: inmail@iec.ch IEC web site http://www.iec.ch

Commission Electrotechnique Internationale
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Международная Электротехническая Комиссия

PRICE CODE R

For price, see current catalogue

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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CONNECTORS FOR OPTICAL FIBRES AND CABLES –

Part 19-1: Fibre optic patch cord connector type SC-PC (floating duplex) standard terminated on multimode fibre type A1a, A1b – Detail specification

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
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International Standard IEC 60874-19-1 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

The text of this standard is based on the following documents:

FDIS	Report on voting
86B/1220/FDIS	86B/1256/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has not been drafted in complete accordance with the ISO/IEC Directives, Part 3.

The QC number that appears on the front cover of this publication is the specification number in the IEC Quality Assessment System for Electronic Components (IECQ).

The references to clauses or subclauses of IEC 60874-1 indicated in this part apply to the third edition of IEC 60874-1.

The committee has decided that the contents of this publication will remain unchanged until 2012. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

A bilingual version of this standard may be issued at a later date.

CONNECTORS FOR OPTICAL FIBRES AND CABLES

Part 14-9: Fibre optic patch cord connector type SC-PC (floating duplex) standard terminated on multimode fibre type B1 – Detail specification

NATIONAL STANDARDS ORGANIZATION:	**.....** **Date .....**

DETAIL SPECIFICATION IEC QC 910005XX0001

FIBRE OPTIC COMPONENT OF ASSESSED QUALITY IN ACCORDANCE WITH

- GENERIC SPECIFICATION: QC 910000 (IEC 60874-1)
- BLANK DETAIL SPECIFICATION: QC 910004 (IEC 60874-1-1)

CONNECTOR SET FOR OPTICAL FIBRES AND CABLES

CLASSIFICATION:

Type: Name: SC (floating duplex)

For use in datacom applications as specified in ISO/IEC International Standard 11801: Generic cabling for customer premises

Configuration: plug-adaptor-plug

Coupling: push-pull

Control dimensions:

– Plug: see figures 1, 2 and 3

– Adaptor: see IEC 60874-19-3

Arrangement: patchcord arrangement

Style: Fibre retention: as required

Cable retention: as required

Optical coupling: butting

Alignment: resilient sleeve alignment

Variants: see page 9

Climatic category: 10/60/4

Environmental category: 4

Assessment level: A

QUALIFICATION PROCEDURE: Fixed sample procedure

SAFETY WARNING: Take care when handling small diameter optical fibre to prevent puncturing the skin, especially in the eye area. Direct viewing of the end of an optical fibre when it is propagating energy is not recommended unless prior assurance is obtained as to the safe energy output level.

Applicable fibre cable information:	
Core diameter	In accordance with IEC 60793-2
Cladding diameter	In accordance with IEC 60793-2
Buffer diameter	(250 ± 15) µm, (500 ± 30) µm, (900 ± 50) µm
Tension member	Aramid strength member
Jacket outer diameter	As required per variant

Additional information
– Attenuation in random connection:
less than 0,75 dB
less than 0,35 dB (average)

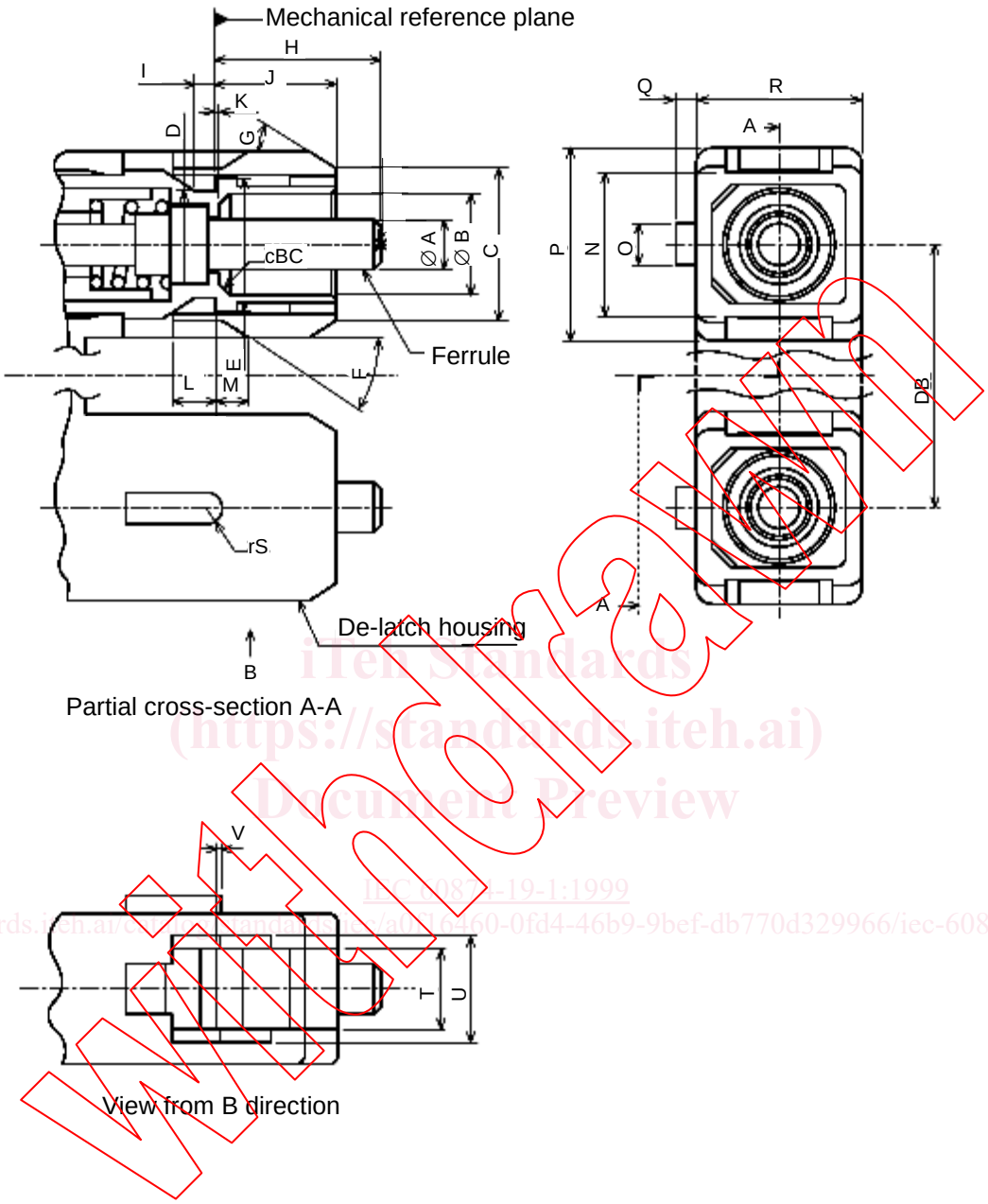


Figure 1 – Plug mating face dimensions

Reference	Dimensions		Notes
	Minimum	**Maximum**	
A	2,498 mm	2,500 mm	Diameter
B	4,80 mm	4,90 mm	
C	6,80 mm	7,40 mm	
D	4,90 mm	5,30 mm	
E	6,70 mm	6,80 mm	
F	19°	23°	
G	25°	35°	
H	7,15 mm	7,50 mm	1, 2
I	0,80 mm	1,20 mm	
J	5,30 mm	5,50 mm	
K	–0,10 mm	0,05 mm	3
L	2,11 mm	2,50 mm	
M	2,00 mm	2,80 mm	
N	6,60 mm	6,80 mm	
O	1,60 mm	1,80 mm	
P	8,89 mm	8,99 mm	
Q	0,80 mm	1,00 mm	
R	7,29 mm	7,39 mm	
rS	0,80 mm	0,90 mm	Radius
T	4,05 mm	4,15 mm	
U	5,40 mm	5,60 mm	
V	0 mm	0,50 mm	
cBC	0 mm	0,50 mm	Chamfer
DB	12,25 mm	13,15 mm	

NOTES

1 Ferrule compression force shall be from 7,8 N to 11,8 N, when the ferrule is compressed to a point where H is 7 mm ± 0,1 mm.

2 This value shows the dimension after the ferrule is polished and in the unmated condition.

3 The negative dimension refers that the position of the inside bottom plane is left-direction relative to the plane defined as X.

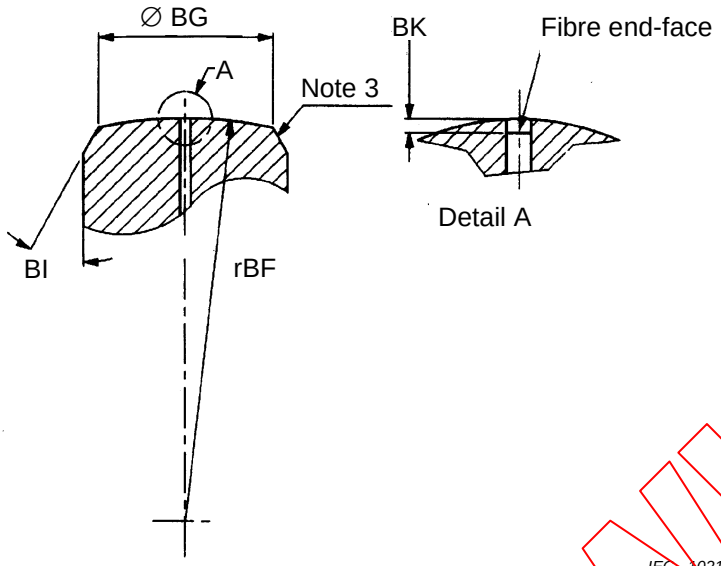
4 Where a tolerance of form is not specified, the limits of the dimensions for a feature control the form as well as the size.

5 Where interrelated features of size (features shown with a common axis or centre plane) have no geometric tolerance of location or run-out specified, the limits of the dimensions for a feature control the location tolerance as well as the size.

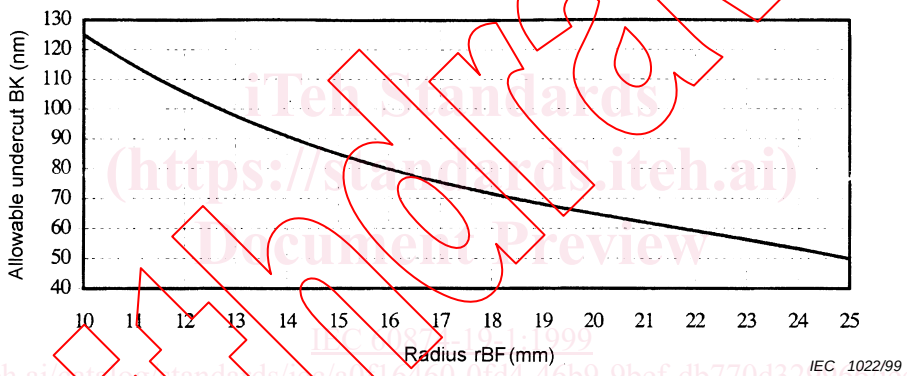
6 Where perpendicular features (features shown at right angles) have no geometric tolerance of orientation or run-out specified, the limits of the dimensions for a feature control the orientation tolerance as well as the size.

7 Plugs shall be capable of floating between the DB maximum and DB minimum.

Figure 1 – Plug mating face dimensions *(concluded)*



IEC 1021/99



IEC 1022/99

Reference	Dimensions mm		Notes
	Minimum	Maximum	
rBF	10,00 mm	25,00 mm	1, radius
BG	1,76 mm	2,26 mm	Diameter, 2
BG	1,90 mm	2,26 mm	Diameter, 2
BI	25°	35°	
BK	–0,0001	See graph	4, see curve

NOTES

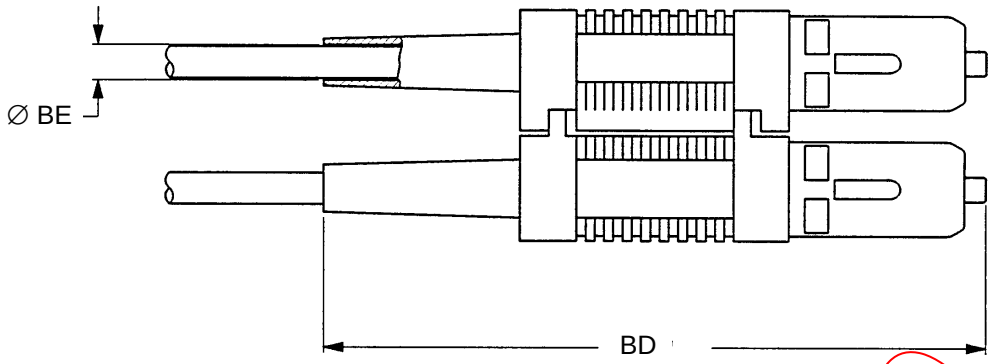
1 Eccentricity of a spherical polished ferrule endface is less than 50 µm.

2 This value is applicable for variants as per variant table on page 10.

3 Break edge.

4 The negative dimension refers to the fibre protrusion. Dimension BK shall be measured according to IEC 61300-3-23.

Figure 2 – Ferrule endface geometry after termination



IEC 1023/99

Reference	Dimensions mm		Notes
	Minimum	Maximum	
BD		60	
BE	2,20		1
BE	2,60		2
BE	2,90		3
BE	3,20		4

NOTES

1 This value is applicable to the variant number 1001 and 1002.

2 This value is applicable to the variant number 1003 and 1004.

3 This value is applicable to the variant number 1005 and 1006.

4 This value is applicable to the variant number 1007 and 1008.

Figure 3 – Plug dimension