

INTERNATIONAL STANDARD

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Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 20-100: Interface standard for LC connectors with protective housings related to IEC 61076-3-106

[IEC 61754-20-100:2012](#)

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Dispositifs d'interconnexion et composants passifs fibroniques – Interfaces de connecteurs à fibres optiques – Partie 20-100: Norme d'interface pour les connecteurs LC avec boîtiers de protection conformes à l'IEC 61076-3-106





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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC INTERCONNECTING DEVICES
AND PASSIVE COMPONENTS –
FIBRE OPTIC CONNECTOR INTERFACES –**

**Part 20-100: Interface standard for LC connectors
with protective housings related to IEC 61076-3-106**

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International Standard IEC 61754-20-100 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/3386/FDIS	86B/3434/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 been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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FIBRE OPTIC INTERCONNECTING DEVICES AND PASSIVE COMPONENTS – FIBRE OPTIC CONNECTOR INTERFACES –

Part 20-100: Interface standard for LC connectors with protective housings related to IEC 61076-3-106

1 Scope

This part of IEC 61754 covers connectors with protective housings. The housing is defined as variant 4 in IEC 61076-3-106:2006. These connectors use a push-pull coupling mechanism.

To connect the fibres inside the housing the LC interface is used as described in IEC 61754-20:2002.

The fully assembled variants (connectors) described in this document incorporate fixed and free connectors.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-581, *International Electrotechnical Vocabulary (IEV) – Chapter 581: Electromechanical components for electronic equipment*

IEC 60050-731, *International Electrotechnical Vocabulary (IEV) – Chapter 731: Optical fibre communication*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 61076-3-106:2006, *Connectors for electronic equipment – Product requirements – Part 3-106: Rectangular connectors – Protective housings for use with 8-way shielded and unshielded connectors for frequencies up to 600 MHz for industrial environments incorporating the 60603-7 series interface*

IEC 61754-20:2002, *Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 20: Type LC connector family*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-581 and IEC 60050-731 apply.

4 Description

The industrial connectors referenced in this International Standard are composed of LC-connectors according to IEC 61754-20:2002 in an IP65 and IP67 plug to receptacle interface according to IEC 60529. The intermateability is defined by the interface of the

LC-connector within the protective housing. For further details, see IEC 61754-20:2002 and IEC 61706-3-106 variant 04.

The connector housing according to IEC 61076-3-106:2006 variant 04 provides a push-pull adaptor connector interface. Inside the housing two LC connectors may be mounted to provide a duplex connection.

Dimensions are given in millimetres; drawings are shown in first angle projection. The shape of connectors may deviate from those shapes given in the following pictures as long as the specified dimensions are not influenced.

5 Interfaces

5.1 General

Connector interfaces are in accordance with IEC 61754-20:2002. This standard contains the following standard interfaces:

- Interface 11-1: duplex free plug (cable side) connector interface – PC
- Interface 11-2: duplex fixed adaptor (device side) connector interface – PC
- Interface 11-3: duplex active device receptacle interface
- Interface 11-4: duplex free plug connector interface – APC 8 °
- Interface 11-5: duplex fixed connector (adaptor) interface – APC 8 °
- Interface 11-6: duplex free plug connector interface – Large Core
- Interface 11-7: duplex fixed connector (adaptor) interface – Large Core

Table 1 shows plug to adaptor/receptacle intermateability.

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Table 1 – Plug to Adaptor/Receptacle intermateability

Plugs	Adaptors/Active device receptacle interfaces			
	61754-20-100-2	61754-20-100-3	61754-20-100-5	61754-20-100-7
Interface 61754-20-100-1	Mate	Mate	Not mate	Not mate
Interface 61754-20-100-4	Not mate	Mate	Mate	Not mate
Interface 61754-20-100-6	Not mate	Mate	Not mate	Mate

Table 2 shows LC plug to free duplex plug intermateability.

Table 2 – Plug to Plug intermateability

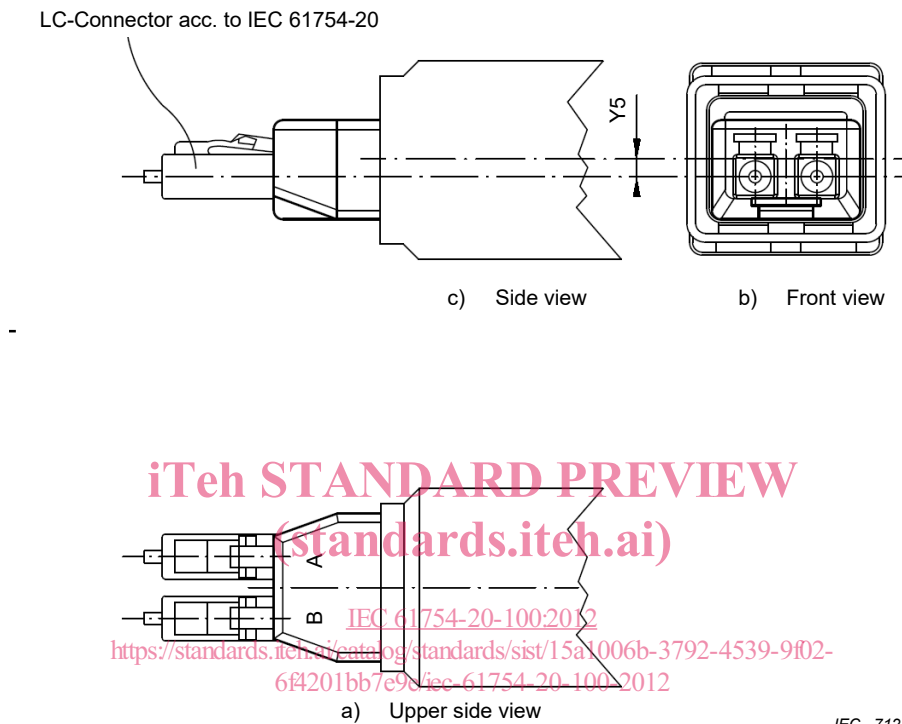
Plug (end face condition) ^a	Plug (end face condition) ^a		
	61754-20-100-1	61754-20-100-4	61754-20-100-6
Interface 61754-20-1 (PC simplex)	Mate	Not mate	Not mate
Interface 61754-20-4 (PC duplex)	Mate	Not mate	Not mate
Interface 61754-20-7 (APC simplex)	Not mate	Mate	Not mate
Interface 61754-20-8 (APC duplex)	Not mate	Mate	Not mate
Interface 61754-20:2002-simplex large core	Not mate	Not mate	Mate
Interface 61754-20-6 duplex large core	Not mate	Not mate	Mate

^a See 61754-20:2002 for plug end face conditions of PC and APC 8 °.

5.2 Industrial IEC 61754-20-100, free duplex plug connector

The "free" connector, as shown in Figure 1, is a duplex LC plug connector within a rectangular protective push-pull housing.

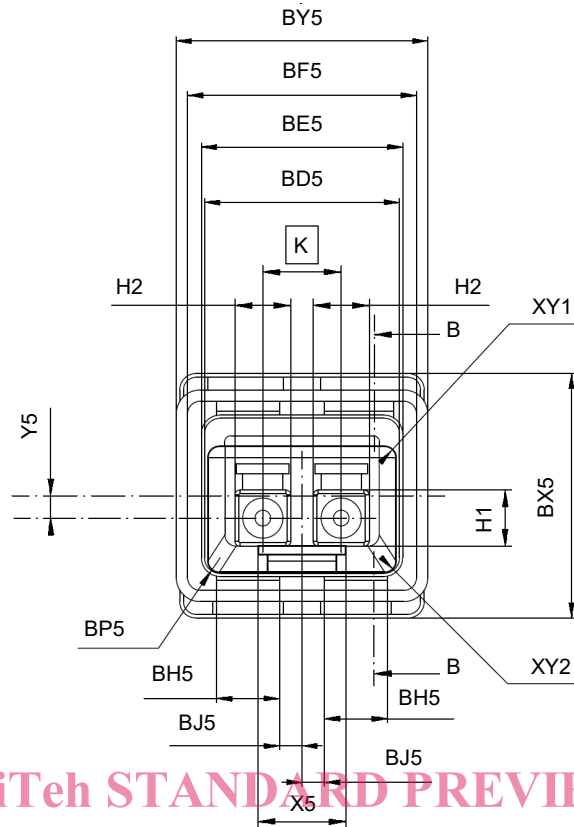
First angle projection



Key

For dimensions see Table 3

Figure 1 – Free connector



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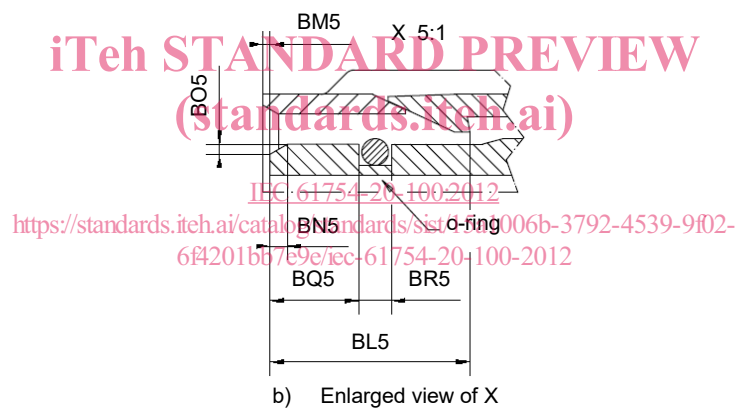
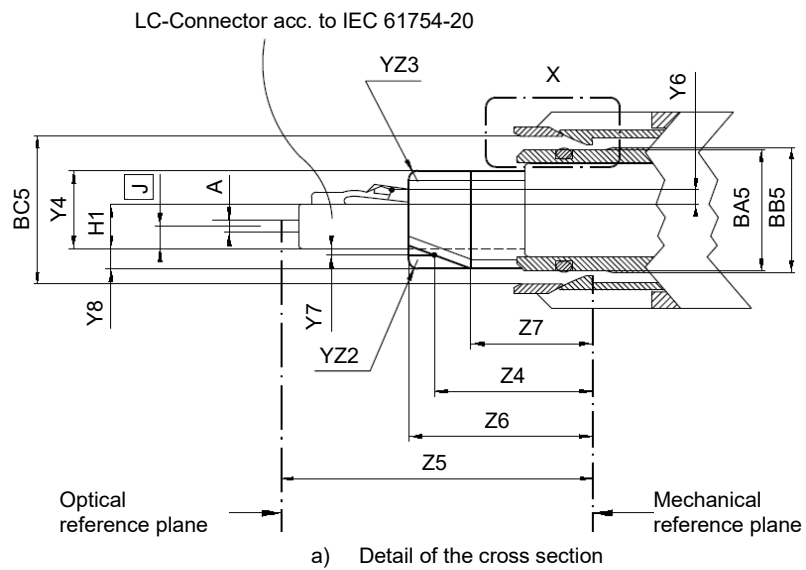
Key

For dimensions see Table 3

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Figure 2 – Details of the front view

Figure 3 shows a cross section B – B.



IEC 714/12

NOTE For dimensions values of variant 04 free connector see IEC 61076-3-106:2006.

Key

For dimensions see Table 3

Figure 3 – Cross section B – B

Table 3 – Dimensions for free connector

Dimension	Minimum mm	Nominal mm	Maximum mm	Notes
BA5	12,34	12,37	12,40	a
BB5	12,83	12,86	12,89	a
BC5	15,10	15,15	15,20	a
BD5	15,64	15,67	15,70	a
BE5	16,11	16,14	16,17	a
BF5	18,20	18,25	18,30	a
BH5	4,95	5,00	5,05	a
BJ5	1,75	1,80	1,85	a
BL5	7,75	7,80	7,85	a
BM5	0,10	0,20	0,30	a
BN5	0,70	0,80	0,90	a
BO5	0,70	0,75	0,80	a
BP5	Radius 1,22	Radius 1,25	Radius 1,28	a
BQ5	3,90	4,00	4,10	a
BR5	1,70	1,75	1,80	a
BX5	20,05	20,10	20,15	a
BY5	19,70	19,85	20,00	a
A	-	-	-	b Diameter, Grade, Table 1b
H1	4,42	4,52	4,52	b
H2	4,42	4,52	4,52	b
J		H1/2		b Basic dimension
K		6,25		b Basic dimension
X5	-	-	6,60	Bottom shroud nose
Y4	-	-	7,98	Shrouds
Y5	1,58	1,74	1,90	Distance from ferrules centre lines to plug centre line
Y6	-	-	1,85	Lever locking height
Y7	-	-	0,67	Bottom shroud
Y8	-	-	1,87	Bottom shroud
YZ2	(Radius 0,90)	-	-	radius on bottom shroud nose(optional)
YZ3	Radius 0,90	-	-	radii on top shroud
Z4	-	-	16,28	Bottom shroud
Z5	31,76	31,93	32,10	c Distance from ferrules optical reference plane to hood latching hooks (mechanical reference plane)