



**58244—  
2018/  
IEC/TR 60825-17:  
2015**

**17**

-

**(IEC/TR 60825-17:2015, IDT)**



2018

58244—2018

1 « » ( « « ») « - -  
 , 4

2 452 « -, -,  
 » , -

3 17 2018 . No 800- -

4 IEC/TR 80825-17:2015 « -  
 . 17. -  
 -  
 -  
 » (IEC/TR 60825-17:2015 «Safety of taser products — Part 17: Safety aspects for use of passive optical components and optical cables in high power optical fibre communication systems», IDT).  
 76 « (IEC). -

5

29 2015 . 162- « 26  
 ) « ( » 1 -  
 « », -  
 « ».  
 « ».  
 , -  
 -  
 (www.gosi.ru)

© . 2018

1	.....	1
2	.....	1
3	.....	1
4	.....	3
4.1	.....	3
4.2	.....	3
4.3	..... (APR).....	4
4.4	..... , .....	5
4.5	..... , .....	6
4.6	..... / .....	7
4.7	..... , .....	7
4.8	..... , , .....	8
4.9	..... ( ) .....	8
	.....	10
	.....	11







Safety of laser products. Part 17. Safety aspects for use of passive optical components and optical cables in high power optical fibre communication systems

— 201ft—04—01

1

« », (LEO)

2

6

( ).

IEC 60825-1:2014, Safety of laser products — Part 1: Equipment classification and requirements ( 1. )

IEC 60825-2:2004 IEC 60825-2:2004/AMD1:2006 IEC 60825-2:2004/AMD2:2010. Safety of laser products — Part 2: Safety of optical fibre communication systems (OFCS) ( 2. (OFCS)]

ITU-T Recommendation G.664. Optical safety procedures and requirements for optical transmission systems ( -T G.664. no )

3

3.1 : ALS (automatic laser shutdown. ALS): ( )

3.2 : APR (automatic power reduction. APR):

58244—2018

1 — « » (APR),

( ):  
 • (ALS);  
 - (APR);  
 • (APSO).

[ 3.3 : 60825-2:2004. 3.2J (controlled location):

[ 3.4 : 60825-2:2004. 3.13) (hazard level):

60825-1. 1 —

[ 3.5 : 60825-2:2004. 3.4. (high optical power): 500

( 4). 1 — 500

) 4 ( )

1 2 — 200 — . [1] [2].

3.6 (loss of continuity of an optical link):

3.7 - : OFCS (optical fibre communication system. OFCS):

[ 3.8 : 60825-2:2004. 3.18) (restricted location, location with restricted access):

[ 3.9 : 60825-2:2004, 3.14} (unrestricted location, location with unrestricted access):

[ : 60825-2:2004, 3.15}

4

4.1

8 ( 500 ) ( — )

4.2

, \*  
 -  
 , -  
 , ,  
 / 61292-4 ( 3):  
 - :  
 - , / :  
 - / ,  
 [4]—[12].  
 , -  
 , -  
 , -  
 , / 62547.  
 (Bigot-Astruc . et al.) (6) / 62547.  
 , -  
 , -  
 - G.657 60793-2-50. 6  
 ( . 2.5 [7] 4.5.3.2 / 62547:2013).  
 , 4.7.  
 / 62547.  
 (3).  
 (Bigot-Astruc . et al.) (6)  
 // 62547,

(Sikora et al) (8).

58244—2018

4.3

(APR)

APR

no APR

APR

(OFCS),

APR

APR-

500 FIT (

60825-2

).

1 —  
10® ».

60825-2

FIT

«

- G.664

(10/2012):

« APR

(

)

60825-2.

(OAS).  
(OSC)

OAS.

( OAS)

1 (

1

),

(

)

30

).

( APR

1 (

).

(

),

61292-4.

«

»

II.3

- G.664

(ALS)

APR

60825-2.

«

(APR)

» «

ALS\*.

4.4

OFCS

60825-2

OFCS

60825-2

[ . .  
60825-2)]

OFCS

8 OFCS

OFCS

OFCS

8

60825-2 / 61292-4.

8

60825-2.

/ 62547 / 62627-01.

:  
: «

»:

: « !

»;

: «

( )»:

: « . / 62547»;

/ : «

(

)

61300-3-35

»;

. / 62627-01

58244—2018

• : « -

60825-1 60825-2». -

» -

1 1 , -

4.5 , -

4.5.1 -

( , 1000 \* ) -

/

« » , -

SiO. « », -

/ 61292-4. 1,2 . -

» 1 / -

( ) -

1 — .2 Bi -

« » , -

/ ) / ( -

/ , -

2 — , -

4.5.2 , -

61300-3-35.

4.6

/

5V

(

4.7

4.7.1

8 OFCS,

/

4.7

)

(IVA)

4.7.2

( — )

(GRIN- ),

(2.5 1.25 )

11 44

( 2\* )







IEC 60793-2-50.	Optical fibres — Part 2-50: Product specifications — Sectional specification for class single-mode fibres ( 2-50. )
IEC 60794-1-1.	Optical fibre cables — Part 1-1: Generic specification — General ( 1-1. )
IEC/TR 61292-4,	Optical amplifiers — Part 4: Maximum permissible optical power for the damage-free and safe use of optical amplifiers, including Raman amplifiers ( 4. )
IEC 61300-2-14:2012,	Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 2-14: Tests— High optical power ( 2-14. )
IEC 61300-3-6.	Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 3-6: Examinations and measurements — Return loss ( 3-6. )
IEC 61300-3-34.	Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 3-34: Examinations and measurements — Attenuation of random mated connectors ( 3-34. )
IEC 61300-3-35.	Fibre optic interconnecting devices and passive components — Basic test and measurement procedures — Part 3-35: Examinations and measurements — Visual inspection of fibre optic connectors and fibre-stub transceivers ( 3-35. )
IEC 61753-1.	Fibre optic interconnecting devices and passive components performance standard — Part 1: General and guidance for performance standards ( 1. )
IEC 61754-4.	Fibre optic interconnecting devices and passive components — Fibre optic connector interfaces — Part 4: Type SC connector family ( 4. SC )
IEC/TR 62048.	Optical fibres — Reliability — Power law theory ( )
IEC 62074-1.	Fibre optic interconnecting devices and passive components — Fibre optic WDM devices — Part 1: Generic specification [ (WDM). 1. ]
IEC/TR 62547,	Guidelines for the measurement of high-power damage sensitivity of singlemode fibres to bends — Guidance for interpretation of results ( no )
IEC/TR 62627-01.	Fibre optic interconnecting devices and passive components — Part 01: Fibre optic connector cleaning methods ( 01. )

58244—2018

- IECZTR 62627-03-02. Fibre optic interconnecting devices and passive components — Part 03-02: Reliability — Report of high power transmission test of specified passive optical components ( 03-02. )
- IECZTR 62627-03-03. Fibre optic interconnecting devices and passive components — Part 03-03: Reliability — Report on high-power reliability for metal-doped optical fibre plug-style optical attenuators ( 03-03. )
- IECZTR 62627-03-04. Fibre optic interconnecting devices and passive components — Part 03-04: Reliability — Guideline for high power reliability of passive optical components ( 03-04. )
- ITU-T Recommendation 6.657. Characteristics of a bending-loss insensitive single-mode optical fibre and cable for the access network ( )
- (1) SIKORA E.S.R.. McCARTNEY D.J.. FARROW .. DAVEY R. Impact of high optical power on fibre reliability. Proc. SubOptic 2004. Monaco. March 29 —April 1.2004 ( )
  - (2) SIKORA E.S.R.. McCARTNEY D.J.. FARROW .. DAVEY R. Reduction in fibre reliability due to high optical power. Proc. ECOC'03. Tu.1.7.4 ( )
  - (3) SEO .. NISHIMURA N.. SHIINO .. YUGUCHI R.. SASAKI . Evaluation of high power endurance in optical fibre links. Furukawa Review. 24 (2003), p. 17—22 ( )
  - (4) WRIGHT J.V.. SIKORA E.S.R.. McCARTNEY D.J.. FARROW K.D. Improved understanding of fugh-power damage phenomena at fibre bends through analytical temperature mapping. SPIE 6193-21; Strasbourg. France. April 2006 ( )
  - (5) BIGOT-ASTRUC .. de MONTMORILLON LA. SILLARD . High-Power Resistance of Bend-Optimized Single Mode Fibres. Proc OFC'2006. San Diego. USA. Paper ref JWA2 ( )
  - (6) BIGOT-ASTRUC .. SILLARD .. GAUCHARD S.. LE ROUX . BRANDON . Analysts of coating temperature increase in fibres under high power and tight bending. Proc OFC'2006. Anahem, USA. Paper ref OFK4.pdf ( )
  - (7) KUYT Gerard. MATTHIJSSE Piet. GASCA Laurent, de MONTMORILLON Louis- Arwie, BERKERS Amie. DOORN Mijndert. NOTHOFER Klaus. WEISS Alexander. The Impact of New Bend-insensitive Single Mode Fibres on FTTH Connectivity and Cable Designs. Proc. of the 56th IWCS 2007, (paper 10-4) ( )
  - (8) SIKORA E.S.R.. MCCARTNEY D.J., WRIGHT J.V. The impact of coating ageing on the susceptibility to high power damage at fibre bends. Elect Letts. 43. 2007; Issue 4, p. 208—210 ( )
  - (9) PERCIVAL R.M.. SIKORA E.S.R.. WYATT R. Catastrophic damage and accelerated ageing in bent fibres caused by high optical powers. Electronics Letters; 36 (2000). p. 36—38 ( )
  - (10) DAVIS I.M.. GLAESEMANN G.S.. TEN S.. WINNINGHAM MJ. Optical Fibres Resilient to Faiure in Bending under High Power. ECOC'05 ( )
  - (11) CH1EN . .. CLARK DA. GLAESEMANN G.S. Coating failure of bent fibre under high power laser. IWCS. Proc of the 54th IWCS Focus. 2005. p. 373—379 ( )

- (12] GLAESEMANN G.S.. W1NNINGHAM M.J.. BICKHAM R.J. Single mode fibre (or high power applications with small bend radii. SPIE 6193-23; Strasbourg. France. April 2006 ( ) -
- (13] SHIBUYA .. NAGASE R.. TAKAHASHI .. KUBO D.. MATSUURA . OFC/NFOEC 2010 JThA60. High power reliability for plug style optical attenuators ( ) -
- (14] OITDA TP 04/SP-PD—2008, Technical paper on investigation /or high-power reliability for passive optical components (or optical communication application ( ) no -
- (15] OITDATP 08/ —2010. General information (or optical fibre fuse ( ) no -
- (16] OITDA TP 09/SP-PD—2010. Technical paper of investigation of high-power reliability for plug-style fixed optical attenuators ( ) no )

58244—2018

681.3:331.4:006.354

31.260

2: 26.11.22.130. 26.70.23.120

: , , , , , -

---

5—2018/65

. .  
. .  
. .  
. .

16. .2016.

02.11.2016.

60 \* 64 Vg.

. . . 2.33. - . . 2,10.

« . . . », 116419, . . . . 11.  
[www.juristzdal.ru](http://www.juristzdal.ru) [y-book@mailnj](mailto:y-book@mailnj)

« . . . »

117416 . . . . 31. . 2.  
[www.gostinfo.ru](http://www.gostinfo.ru) [info@gostinfo.ru](mailto:info@gostinfo.ru)