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**(ISO 11553-1:2020, Safety of machinery — Laser processing machines —
Part 1: Laser safety requirements, IDT)**

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(ISO 11553-1:2020 «Safety of machinery — Laser processing machines. Part 1: Laser safety requirements», IDT).

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Safety of machinery. Laser processing machines. Part 1. Laser safety general requirements

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 ISO 3864 (all parts), Graphical symbols — Safety colours and safety signs (.
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 ISO 11145:2018, Optics and photonics — Lasers and laser-related equipment — Vocabulary and symbols
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 ISO 12100:2010, Safety of machinery — General principles for design — Risk assessment and risk
 reduction ()
 ISO 13849-1:2015, Safety of machinery — Safety-related parts of control systems — Part 1: General
 principles for design ()
 1.)

- ISO 13849-2:2012, Safety of machinery — Safety-related parts of control systems — Part 2: Validation ()
- ISO 13850:2012, Safety of machinery — Emergency stop — Principles for design ()
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- IEC 60825-4:2006, Safety of laser products — Part 4: Laser guards ()
- IEC 62061:2005, Safety of machinery — Functional safety of safety-related electrical, electronic and programmable electronic control systems ()

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- 60825-1:2014 60825-4:2006, 11145:2018, 12100:2010, -
- : http://www.iso.org/obp.;
- : http://www.electropedia.org/.
- 3.1 (beam delivery system): (« » -
60825-1:2014)
- [60825-4:2006/AMD 2:2011, G.2.1, — « » -
» « » « »]
- 3.2 (beam path component):
- [60825-1:2014, 3.16]
- 3.3 (beam shaping component):
- 3.4 (beam switching component):
- ()
- 3.5 (fibre optic cable):

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 3.6 - (fibre connector): - -

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3.7 (laser processing machine): , ()
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3.8 ; (hazard area, danger zone): -
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) — , — (-
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 60825-1:2014).

3.9 (process zone): < >

3.10 (location with controlled access): ,
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3.11 (location with restricted access): ,

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3.12
uncontrolled access):

(location with unrestricted and

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3.13

(automatic mode production):

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(setting mode):

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3.15

(manual intervention mode):

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3.16

(service mode):

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3.17

(operating mode selector switch):

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3.18 (modification):

3.19 (subassembly):

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3.20 (workpiece):

3.21 ; (maximum permissible exposure,):

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(400 1400) 60825-1:2014 ().

2 — 60825-1:2014 (),

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[60825-1:2014, 3.59,] 60825-

3.22 ; (nominal ocular hazard area, NOHA):

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[60825-1:2014, 3.64] 3.23 ; (foreseeable exposure limit, FEL):

[60825-4:2014, 3.4]

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12100:2010.

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5.3.1

5.3.2—5.3.4.

12100:2010.

5.3.2

5.3.2.1

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- , 60825-1:2014 12100:2010;
- ;
- (SRP/CS), 13849-1:2015.
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60825-4:2006.

5.3.2.2

12100:2010. (), 60825-1:2014

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12100:2010 60825-1:2014.

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5.3.3.2—5.3.3.5,

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12100:2010.

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60825-1:2014.

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60825-4:2006 (D);

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60825-4:2006 (D).

13849-1:2015)

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5.3.3.4

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13849-1:2015 / 62061:2005. (, -) (« » «lock-out/tagout») (,) / (SRP/CS), - 1;

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5.3.3	-				X	X		X		X		60825-1: 2014
5.3.2.3		X	X					X		X		60825-1:2014
5.3.3	,											
5.3.3.2	()							X				60825-4:2006 60825-1:2014
5.3.3.2	()			X	X	X						60825-4:2006 60825-1:2014
5.3.3.2	/ -	X		X	X							60825-4:2006 60825-1:2014
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5.3.4	-	X	X			X						60204-1:2016
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ISO 3864 (all parts)	IDT	ISO 3864-1—2013 « 1. »
ISO 11145:2018	MOD	58373—2019 (11145:2018) « »
ISO 12100:2010	IDT	ISO 12100—2013 « »
ISO 13849-1:2015	—	*
ISO 13849-2:2012	—	*
ISO 13850:2012	—	*
IEC 60204-1:2016	—	*
IEC 60825-1:2014	IDT	IEC 60825-1—2023 « 1. »
IEC 60825-4:2006	—	*1)
IEC 62061:2005	IDT	62061—2015 « - - »
<p>* — : - IDT — - MOD —</p>		

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- [13] EN 168:2001 Personal eye-protection — Non-optical test methods ()
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- [16] EN 171:2002 Personal eye-protection — Infrared filters — Transmittance requirements and recommended use ()
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- [22] EN 12198-3 Safety of machinery — Assessment and reduction of risks arising from radiation emitted by machinery — Part 3: Reduction of radiation by attenuation or screening (3:)

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