

IEC 60825-1  
(Second edition – 2007)

Safety of laser products –  
Part 1: Equipment classification and requirements

CORRIGENDUM 1

3.37  
human access

In item b), instead of:

“...and a length of up to 100 mm...”

read:

“and a length of 100 mm...”

8.3 Classification rules

In the second sentence of Note 1 of item c), instead of:

“...a beam divergence in any plane of 1,5 mrad or less...”

read:

“...a beam divergence of 1,5 mrad or less...”

In item f) 3) b), instead of:

“For varying pulse widths or varying pulse durations.”

read:

“For varying pulse widths or varying pulse intervals.”

Table 4 – Accessible emission limits for Class 1 and Class 1M laser products and  $C_6 = 1$

In the final column for the wavelength range 400 nm to 500 nm, in the expression for the Class 1 and Class 1M accessible emission limit, instead of:

$3,9 \times 10^{-5} C W$

read:

$3,9 \times 10^{-5} C_3 W$

as follows:

$7 \times 10^{-4} t^{0,75} J$	$3,9 \times 10^{-3} J$	$3,9 \times 10^{-5} C_3 W$
	$3,9 \times 10^{-3} C_3 J$ and $c$ $3,9 \times 10^{-4} W$	

**Table 5**

*In the title of the table, instead of:*

Table 5 – Accessible emission limits for Class 1 laser products in the wavelength range from 400 nm to 1 400 nm (retinal hazard region): extended sources

*read:*

Table 5 – Accessible emission limits for Class 1 and Class 1M laser products in the wavelength range from 400 nm to 1 400 nm (retinal hazard region): extended sources

**Table 11 – Measurement aperture diameters and measurement distances for the default (simplified) evaluation**

*In the table header, the vertical line to the left of the Condition 3 header is misaligned with the vertical line for the rows below. Replace this header as follows:*

	<b>Condition 1</b> <i>applied to collimated beam where e.g. telescope or binoculars may increase the hazard</i>		<b>Condition 2</b> <i>applied to diverging beam where e.g. magnifying glasses, microscopes may increase the hazard</i>		<b>Condition 3</b> <i>applied to determine irradiation relevant for the unaided eye and for scanning beams</i>	
<b>Wavelength</b> nm	<b>Aperture stop</b> mm	<b>Distance</b> mm	<b>Aperture stop</b> mm	<b>Distance</b> mm	<b>Aperture stop/ limiting aperture</b> mm	<b>Distance</b> mm

**9.3.3 Evaluation condition for extended sources**

*In the first paragraph of item a), instead of:*

“... the aperture diameters as specified in Table 11...”

*read:*

“... the aperture diameters and minimum measuring distances as specified in Table 11...”

**Table A.3 – Maximum permissible exposure (MPE) of the skin to laser radiation**

*In the table, the vertical line for the wavelength region 400 nm to 1400 nm, 10<sup>-3</sup> s, should be fixed at 10<sup>-7</sup> s.*

*Thus, instead of:*

<b>Wave-length λ</b> nm	<b>Exposure time t</b> s					
	<b>&lt;10<sup>-9</sup></b>	<b>10<sup>-9</sup> to 10<sup>-7</sup></b>	<b>10<sup>-7</sup> to 10<sup>-3</sup></b>	<b>10<sup>-3</sup> to 10</b>	<b>10 to 10<sup>3</sup></b>	<b>10<sup>3</sup> to 3×10<sup>4</sup></b>
400 to 700	2×10 <sup>11</sup> W·m <sup>-2</sup>	200 J·m <sup>-2</sup>	1,1×10 <sup>4</sup> t <sup>0,25</sup> J·m <sup>-2</sup>	2 000 W·m <sup>-2</sup>		
700 to 1 400	2×10 <sup>11</sup> C <sub>4</sub> W·m <sup>-2</sup>	200 C <sub>4</sub> J·m <sup>-2</sup>	1,1×10 <sup>4</sup> C <sub>4</sub> t <sup>0,25</sup> J·m <sup>-2</sup>	2 000 C <sub>4</sub> W·m <sup>-2</sup>		

*read:*

Wave-length $\lambda$ nm	Exposure time $t$ s					
	$<10^{-9}$	$10^{-9}$ to $10^{-7}$	$10^{-7}$ to $10^{-3}$	$10^{-3}$ to 10	10 to $10^3$	$10^3$ to $3 \times 10^4$
400 to 700	$2 \times 10^{11} \text{ W} \cdot \text{m}^{-2}$	200 $\text{J} \cdot \text{m}^{-2}$	$1,1 \times 10^4 t^{0.25} \text{ J} \cdot \text{m}^{-2}$		2 000 $\text{W} \cdot \text{m}^{-2}$	
700 to 1 400	$2 \times 10^{11} \text{ C}_4 \text{ W} \cdot \text{m}^{-2}$	200 $\text{C}_4 \text{ J} \cdot \text{m}^{-2}$	$1,1 \times 10^4 \text{ C}_4 t^{0.25} \text{ J} \cdot \text{m}^{-2}$		2 000 $\text{C}_4 \text{ W} \cdot \text{m}^{-2}$	

### A.3 Repetitively pulsed or modulated lasers

In item c) 2), instead of:

“For varying pulse widths or varying pulse durations:”

read:

“For varying pulse widths or varying pulse intervals.”

### Figure B.1 – Flowchart guide for the classification of laser products from supplied output parameters

In the fifth row of the flowchart, in the box with the text beginning “Choose the smallest value of  $\text{AEL}_{\text{single}}$  and  $\text{AEL}_{\text{s.p.T}}$ ...”,

instead of:

“Choose the smallest value of  $\text{AEL}_{\text{single}}$  and  $\text{AEL}_{\text{s.p.T}}$  for comparison with the accessible emission level of a single pulse in box”

read:

“Choose the smallest value of  $\text{AEL}_{\text{single}}$  and  $\text{AEL}_{\text{s.p.T}}$  for comparison with the accessible emission level of a single pulse”

### B.3 Examples / Example B.3.1

In the second paragraph of the **Solution**, instead of:

“For Class 3B, Table 8 gives...”

read:

“For Class 3B, Table 9 gives...”