

COLLECTION OF IECEx / ExTAG DECISION

Standard: IEC 60079-0 7 th edition	Clauses: 21.1 26.4.2	Draft Decision Sheet: ExTAG/540B /CD
Subject: Impact test	Key words: <ul style="list-style-type: none"> • Ex Equipment • Smartphone • Tablet • Luminaire • Impact test 	Date: January 2020
Status of document: Approved		Originator of proposal: PTB
		TC/SC involved: TC31 WG22

Background

In the 7th edition of IEC 60079-0, modifications have been made to the impact values in Table 15 (formally Table 13 in the 6th Edition). The impact requirements for luminaires have been relocated to Table 15 from clause 21.1 and the following highlighted new definitions have been added to the table.

Table 15 – Tests for resistance to impact

Equipment grouping	Drop height $h \pm 0,01$ with $1 \pm 0,01$ kg mass m			
	Group I		Group II or III	
	High	Low	High	Low
Risk of mechanical danger				
a) Enclosures and external accessible parts of enclosures (other than light-transmitting parts)	2	0,7	0,7 ^d	0,4 ^{b d}
b) Guards, protective covers, fan hoods, cable glands	2	0,7	0,7	0,4 ^b
c) Light-transmitting parts of portable or transportable luminaires or handlights which have a surface area of 5 000 mm ² or less and which are protected by an independent protruding rim with a minimum height of 2 mm ^c	0,7	0,4	0,4	^b
d) Light-transmitting parts of portable or transportable luminaires or handlights without guard or light transmitting part which have a surface area of greater than 5 000 mm ²	2	0,7	0,7	^b
e) Light-transmitting parts without guard	0,7	0,4	0,4 ^d	0,2 ^{b d}
f) Light-transmitting parts with guard having individual openings from 625 mm ² to 2 500 mm ² ; (tested without guard) ^a	0,4	0,2	0,2	0,1 ^b

^a A guard for light-transmitting parts having individual openings from 625 mm² to 2 500 mm² reduces the risk of impact, but does not prevent impact. These requirements are also applicable to fixed, transportable, or portable luminaires.

^b Group II or Group III, portable or transportable luminaires or handlights, shall only be tested for risk of mechanical danger "high"

^c A protruding rim which is part of the enclosure and not part of the light transmitting part reduces the risk of impact, but does not prevent impact.

^d Where a part of the equipment (such as a non-metallic overlay of a touch pad) serves multiple functions, such as a light-transmitting area and also as part of the enclosure, the function covering the largest area is used to determine which risk of mechanical danger row is applied.

The highlighted requirements have been copied from IEC 60079-7:2015 Table 14 without mentioning in the table “The significance of the changes between IEC Standard, IEC 60079-0, Edition 6 (2011) and IEC 60079-0, Edition 7 (2017)”.

Copying this requirement into IEC 60079-0 is a major technical change, because this is now applicable to all Type of Protection portable luminaires and not to those in Type of Protection Ex e only.

Question

Is a smartphone or a tablet containing a LED to support a camera function considered a luminaire in the sense of IEC 60079-0?

Answer

Where there is no “torch” or “flashlight” function, or if the function cannot be enabled, a smartphone or a tablet containing a LED to support a camera function is a portable or transportable Ex Equipment, as the integral LED has only an auxiliary function and where the main function of the equipment is not to be a luminaire. Thus, it is not considered as a portable or transportable luminaire and the impact requirements for luminaires, such as footnote b of table 15, are not applicable.

However, where the LED can serve as a “torch” or “flashlight”, or when the function can be enabled, the requirements for portable luminaires or handlights, such as footnote b of table 15, are applicable to the LED part only.