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Degree of protection provided by enclosures against external mechanical impacts, acc. IK10 requirements on Blackbird Series Luminaires

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1 INTRODUCTION

On request of SIA VIZULO, Riga, Latvia, an IK10 test was conducted on different housing parts of a representative model of the Blackbird series, street- and floodlight luminaires.

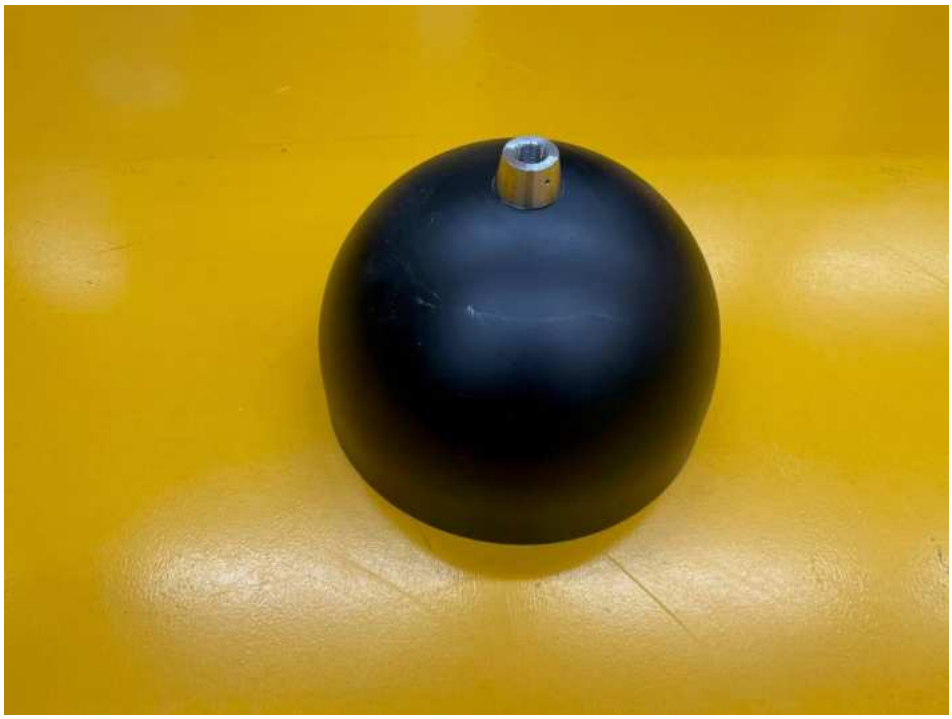
All the series of luminaire were tested for IK10.

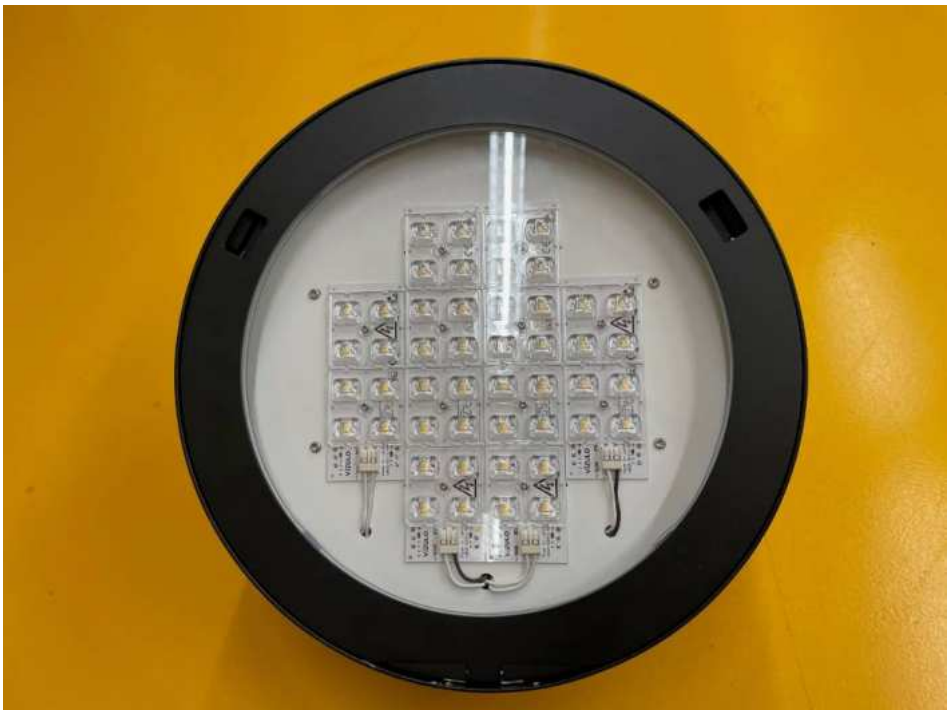
Test results in this test report are representative for all models in Blackbird product family

The requirements as well as the method of testing and test equipment of the IK10 test are described in EN 62262:2002 and IEC/TR 62696:2011 standards and as detailed on the following pages.

2 TESTED PRODUCT AND TEST DESCRIPTION

Product overview





Figs. 1 and 2 – Front side and bottom side of Blackbird toolless model BBAT 085 730 L01 AB048 CB NG1

Figs. 3 and 4 – Front side and top side of Blackbird suspended mounted, model BBA 100 730 L05 BL024 CS NG1

The luminaire was supported by a wooden surface and subjected by 5 single impacts on the following luminaire parts:

- Aluminum housing (weakest spot)
- Glass cover

Three single impacts shall be conducted on the same location. The other two single impacts may be on a different location on the subjected surface/area.

The wire mounted (suspended mounted) luminaire was tested also with IK08. Details shown below.

4.2 Characteristic group numerals of the IK code and their meanings

Each characteristic group numeral represents an impact energy value as shown in table 1.

Table 1 – Relation between IK code and impact energy

IK code	IK00	IK01	IK02	IK03	IK04	IK05	IK06	IK07	IK08	IK09	IK10
Impact energy, J	*	0,14	0,2	0,35	0,5	0,7	1	2	5	10	20
* Not protected according to this standard.											
NOTE 1 When higher impact energy is required, the value of 50 J is recommended.											
NOTE 2 A characteristic group numeral of two figures has been chosen to avoid confusion with some national standards which used a single numeral for a specific impact energy.											

5.2 Height of fall

To produce impacts of the required severity, the striking element shall be released from a height depending on the equivalent mass of the pendulum, according to Table 2.

Table 2 – Height of fall

Energy J	0,14	0,2		(0,3)	0,35	(0,4)	0,5		0,7	1	2	5	10	20	50
Equivalent mass kg	0,25	(0,2)	0,25	(0,2)	0,25	(0,2)	(0,2)	0,25	0,25	0,25	0,5	1,7	5	5	10
Height of fall mm ± 1 %	56	(100)	80	(150)	140	(200)	(250)	200	280	400	400	300	200	400	500
NOTE 1 Figures in brackets appear in previous IEC 60068-2 standards; although no longer recommended, they may be used for historic consistency.															
NOTE 2 In this part of IEC 60068, the energy, J, is calculated taking the standard acceleration due to the earth's gravity (g_n), rounded up to the nearest whole number, that is 10 m/s^2.															

Pass criteria:

After the test, the enclosure shall show no cracks or deformation and shall not affect the normal function of the equipment, reduce the insulation and/or creepage distances or reduce the specified degree of protection against access to hazardous parts below the permitted values. Superficial damage, such as removal of paint, breaking of cooling ribs or of similar parts, or depression of small dimensions can be ignored.

3 RESULTS/CONCLUSION

After the test there was no damage or deformation visible on the enclosure and the glass cover of the Blackbird series Street Luminaire. The degree of protection and the integrity of the enclosure was still intact.

The product passed the test and complies with the specified requirements for IK10.

Test conducted by:

A Pomp

Reviewed by:

L.H.N Huynh

END OF EXAMINATION REPORT