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Degree of protection against ingress dust or solid objects, according the IP66 test requirements on Micro Martin series street lighting luminaires

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On request of:

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TABLE OF CONTENTS

	page
TABLE OF CONTENTS	3
1 INTRODUCTION.....	4
2 TESTED PRODUCT AND TEST DESCRIPTION.....	5
3 RESULTS/CONCLUSION.....	8

1 INTRODUCTION

On request of SIA VUZULO, Riga, Latvia, an IP66 test was conducted on a representative model of the Micro Martin series street lighting luminaires. The requirements as well as the method of testing and test equipment of the IP66 test are described in EN 60598-1:2015 + A1:2018, and as detailed on the following pages.

The IP66 test was conducted on model MRUFS 050 740 V04 F032 CBFS HD2 (class II version), representative for entire Micro Martin series. An endurance test was conducted upfront followed by the IP66 test.

2 TESTED PRODUCT AND TEST DESCRIPTION

Product overview:



Figs. 1 and 2 – Front side and top side of Micro Martin street lighting luminaire

IP66 denotes:

- IP6X = Dust tight.
- IPX6 = Powerful Jet Proof tight.

Preparation and tests:

Before the below tests were conducted the luminaire was subjected to an endurance test as described in section 12 of EN 60598-1.

In case the product holds screws in parts which are to be operated by the user (e.g. for lamp replacement, supply connection, etc), these were tightened with a torque of 2/3 of full torque.

IP6X:

The luminaire was mounted as in normal use and connected to the supply for at least two hrs to heat up.

After that, the luminaire was placed in the dust cabinet and during the first minute of circulation of the dust the product was still connected to the supply. Then the product was disconnected from the supply and subjected to circulating dust for total duration of 3 hrs.

IPX6:

Directly after the IP6X test the luminaire was cleaned (most of dust was removed from the luminaire) and connected to the supply for at least 2 hrs to heat up.

After that, the luminaire was disconnected from the supply and immediately sprayed with a powerful jet set to 100 l/min. for three minutes with the appropriate nozzle. After the test, the luminaire was carefully dried and opened of visual check. Before it was opened, a dielectric voltage-withstand test was conducted at 2000 V + 4 x U_{in} (U_{in} = maximum input voltage or maximum output voltage of the LED driver, whichever is higher), as required for Class II luminaires.

Pass criteria:

For IP6X:

No entry of dust allowed into the luminaire enclosure, connection compartment, light source compartment, etc.

For IPX6:

No entry of water allowed in the luminaire enclosure, connection compartment, light source compartment, etc. that is in contact with live parts or components or where it can accumulate and cause a dangerous situation over time.

No flash-over or breakdown shall occur during the dielectric voltage-withstand test at $2000\text{ V} + 4 \times U_{\text{in}}$ (U_{in} = maximum input voltage or maximum output voltage of the LED driver, whichever is higher)

3 RESULTS/CONCLUSION

After the test there was no dust or water found in the luminaire housing, connection compartment, light source compartment, etc. No flash-over or breakdown occur during the dielectric voltage-withstand test.

The product passed the test and complies with the specified requirements for IP66.

Test conducted by:



L.N.H. Huynh

Reviewed by:



Albert van der Veen

END OF EXAMINATION REPORT