

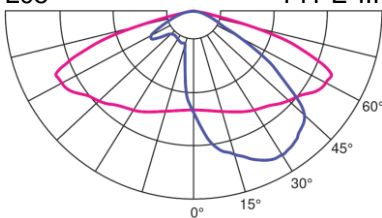
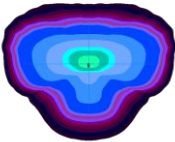


MICRO MARTIN Smooth Tool-less Eco
MRUSTE 048 740 L05 AA016 CBR NH1

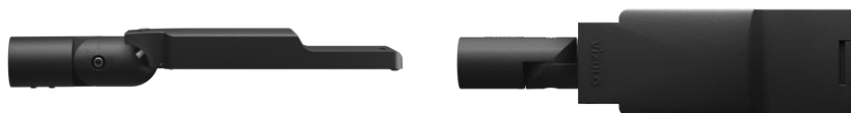


CE   RoHS

Color  RAL 9005

| | | |
|------------|----------------------------|---------------------|
| Electrical | Input power | 48 W |
| | Input voltage | 220 - 240 V |
| | Frequency | 50 - 60 Hz |
| | Power factor | 0.97 |
| Optical | Optic name | L05 |
| | Optic type | TYPE-III |
| | Luminous flux | 6867 lm ±10% |
| | Luminous efficacy | 143 lm/W |
| | Performance temperature Tq | +25 °C |
| | Color rendering index | >70 |
| | Color temperature | 4000 K |
| | Color tolerance | 5 SDCM |
| | ULOR | 0 |
| | LED quantity | 16 |
| Lifetime | Lumen depreciation | L90 after 100 000 h |
| | Warranty | 5 years |
| | Ambient temperature range | -40 ... +50 °C |
| Protection | Protection class | Class I |
| | Surge protection L-N | At least 10 kV |
| | Surge protection L/N-PE | At least 10 kV |
| | Ingress protection | IP66 |
| | Impact resistance | IK08 |
| | Increased corrosion | Powder coating |

| | | |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| | resistance | |
| Housing | Body material | Die-cast aluminium |
| | Cover material | Flat tempered glass |
| | Optic material | PMMA |
| | Color | RAL 9005 (jet black) |
| | Dimensions | 632 x 170 x 90 mm |
| | Max wind load area SCd | 0.04 m ² |
| | Mounting | Post top / side-entry, $\pm 90^\circ$, 60 mm |
| | LED module replaceability | Replaceable by a professional |
| | Driver replaceability | Replaceable by a professional |
| | Accessibility of electronic components | Tool-less |
| Controls | Dimming | No dimming |
| | | |
| Approvals | CE | Yes |
| | ENEC | Yes |
| | ENEC+ | Yes |
| | RoHS | Yes |
| Light distribution | <div> <div> L05 TYPE-III </div>   </div> | |
| | | |
| Dimensions |  | |
| | | |
| Product images |  | |
| | | |



RoHS DECLARATION OF CONFORMITY

Riga, 30.08.2023.

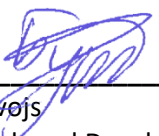
Internal reference No: RHSD-MRU-30082023-EN

We hereby declare that **Micro Martin** luminaire produced by VIZULO complies with the requirements of the 2011/65/EU directive, as well as its amendment 2015/863/EU published by the European Parliament and the Council.

The aforementioned documents regulate the restriction of the following substances:

1. Lead (Pb) – 0.1%
2. Mercury (Hg) – 0.1%
3. Cadmium (Cd) – 0.01%
4. Hexavalent chromium (Cr⁶⁺) – 0.1%
5. Polybrominated biphenyls (PBB) – 0.1%
6. Polybrominated diphenyl ether (PBDE) – 0.1%
7. Bis(2-ethylhexyl) phthalate (DEHP) – 0.1%
8. Butyl benzyl phthalate (BBP) – 0.1%
9. Dibutyl phthalate (DBP) – 0.1%
10. Diisobutyl phthalate (DIBP) – 0.1%

Authorized signature


Sergejs Burtovojis
Senior Research and Development Engineer



VIZULO SIA

Bukultu street 11, Riga
LV-1005

Certificate Number

AXTC23008-2

Project Number

AXTF21022 / AXTF21021

| EQUIPMENT UNDER TEST | Model | TEST SAMPLE REF |
|----------------------|------------------------------|-----------------|
| | Micro Martin - LED Luminaire | AXTF21021-4 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| MODIFICATIONS | None |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------|
| TESTS APPLIED | ISO / EN 60068-2-6:2008 ISO / EN 60068-2-27:2008 |
| Tests Conducted | 22/09/2020 to 21/05/21 |
| RESULT OF TEST | There was no noticeable deterioration or damage to the equipment during or as a result of the testing. See below for test details. |

| DETAILS OF APPLIED TESTS | | Sine Vibration Testing: |
|-----------------------------------------------------------------------------------------|--------------|-------------------------|
| The equipment was mounted to the vibration table and the following test levels applied: | | |
| Applied in each axis | Frequency | 10 to 55Hz |
| | Displacement | ±0.15mm |
| | No. Sweeps | 100 per axis |

| DETAILS OF APPLIED TESTS | | Sine Vibration Testing: |
|-----------------------------------------------------------------------------------------|-----------------------|-------------------------|
| The equipment was mounted to the vibration table and the following test levels applied: | | |
| Applied in each axis | Frequency | 5 to 25Hz |
| | Constant Acceleration | 0.5g |
| | Duration | 60 Minutes |

| DETAILS OF APPLIED TESTS | | Shock Testing: | Classical Shock |
|------------------------------------------------------------------------------------|-------------------|--------------------------------------------------|-----------------|
| The equipment was mounted to the test table and the following test levels applied: | | | |
| Applied in each axis | Peak Acceleration | 10 g | |
| | Pulse width | 11 ms | |
| | Pulse shape | Half Sine | |
| | Repetitions | 3 in both positive and negative going directions | |

The testing specified within the body of this document and any resultant observations, opinions and measurements refer only to the specific equipment stated above. Testing was carried out as detailed above in accordance with the contract. This certificate does not constitute a statement that the equipment is approved for any specific purpose only that the equipment stated above met the requirements agreed upon in the contract following completion of the test. The contents of this certificate shall not be reproduced, except in full, without the written approval of Axis Test Laboratories Ltd.

Approved By:



Date: 16 May 2023

Ian Howson
Laboratory Manager



2229996.54

**Endurance Test and Temperature Test
on Micro Martin Series Luminaires**

Arnhem, January 7, 2019

Author: L.N.H. Huynh
DEKRA Certification B.V.

On request of:

SIA VIZULO
Starta street 1
LV-1026 Riga
Latvia

Author : L.N.H. Huynh

9 pages 0 annexes

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1 INTRODUCTION

On request of SIA VIZULO, Riga, Latvia, an Endurance Test and Temperature Test was conducted on a representative model of the Micro Martin series street luminaires. The requirements as well as the method of testing and test equipment of the Endurance Test and Temperature Test are described in EN 60598-1:2015, 8th edition, Clause 12, and as detailed on the following pages.

2 TESTED PRODUCT AND TEST DESCRIPTION

Product overview:



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

Preparation of Endurance Test:

Before the endurance test was conducted, all screws that require operation during installation/servicing of the luminaire were tightened with 2/3 of the prescribed torque based by the screw size thread. This is necessary for products used for examination of ingress of water and/or dust (for IP classification higher than IP20).

The IP classification of this luminaire is IP66. For the information about the IP test, refer to examination report no. 2229996.53.

Endurance Test:

The luminaire was mounted as in normal use and placed in a room at 10°C higher as marked on the luminaire (50 °C + 10 °C = 60 °C). The luminaire was connected to a supply of 1,1 x maximum rated input voltage (1,1 x 240 V = 264 V), and operated according the following cycle:

21 hrs on and 3 hrs off.

Total duration of the test: 240 hrs.

Pass criteria Endurance Test:

During the endurance test, a thermal sensing device shall not operate.

After the endurance test, the product was visually checked for damage and deformation and if the label was still readable/attached to the product.

Preparation of Temperature Test:

All critical materials and components that require to be checked for temperatures were provided with thermocouples.

Temperature test:

The product was placed a test room (draught proof enclosure) having a stable temperature of 50 °C (based on the marked ambient temperature on the luminaire). During measurements the room temperature shall not vary more than ± 1 °C.

The following tests were conducted:

- Measurement 1 - 1,0 times the maximum input voltage (= 240 Vac)
- Measurement 2 – 1,06 times the maximum input voltage (= $1,06 \times 240V = 254,4$ Vac)

NOTE: for street luminaires/flood lights for outdoor use, 10°C shall be deducted from the temperatures measured for the effects of natural air movement which occur in the working environment of the luminaire.

Pass criteria Temperature Test:

No measured part/component shall overshoot its maximum allowed temperature by more than 5°C.

3 RESULTS/CONCLUSION

Endurance Test:

After the endurance test, there was no damage or deformation visible and the label was still readable / attached to the product.

Temperature Test:

The outcome of the temperature test showed that after recalculation of the measured temperatures, no part of the product and no component overshoots its maximum allowed temperature. See below table with measurements results.

| Measure point | @ 1,0 x Un (= 240 V) | @ 1,06 x Un (= 254,4 V) | Max. Allowed (°C) | Pass (Yes/No) |
|-------------------------|-------------------------|----------------------------|----------------------|-----------------|
| | °C | °C | | |
| Mains terminals | 65,1 (55,1) | 64,9 (54,9) | 90 | Yes |
| Mains Cable | 63,7 (53,7) | 63,7 (53,7) | 90 | Yes |
| TC Driver | 87,4 (77,4) | 87,2 (77,2) | 85 | Yes |
| TC LED Module | 94,3 (84,3) | 94,2 (84,2) | 100 | Yes |
| Terminals LED Module | 84,1 (74,1) | 84,0 (74,0) | 90 | Yes |
| LED lens | 103,3 (93,3) | 103,2 (93,3) | 90 | Yes |
| Output wire | 77,3 (67,3) | 77,2 (67,2) | 90 | Yes |
| Glass | 113,8 (103,8) | 113,8 (103,8) | 120 | Yes |
| Metal base | 86,7 (76,7) | 86,7 (76,7) | Indication only | Indication only |
| LED module near LED | 102,2 (92,2) | 102,1 (92,1) | 100 | Yes |
| Internal wiring (mains) | 67,7 (57,7) | 67,6 (57,6) | 90 | Yes |
| Ambient | 50 | 50 | - | - |

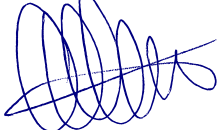
Values between brackets “()” are the corrected temperatures for an ambient temperature of 40°C due to natural airflow.

Test conducted by:



L.N.H. Huynh

Reviewed by:



Albert van der Veen

END OF EXAMINATION REPORT



2229996.53

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

Arnhem, January 7, 2019

Author: L.N.H. Huynh
DEKRA Certification B.V.

On request of:

SIA VIZULO
Starta street 1
LV-1026 Riga
Latvia

Author : L.N.H. Huynh

8 pages 0 annexes

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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

TEST REPORT No. 1/07.06.22./TM-11**SIA Baltic Research Center test report for projecting long term lumen maintenance of LED light sources**

| | |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Report reference No. | 1/07.06.22./TM-11 |
| Date of Issue | 08.06.2022. |
| Project Handler | Ingmārs Felcis |
| Testing Laboratory | SIA Baltic Research Center |
| Address | Gaujas iela 11, Rīga, LV-1026, Latvia |
| Client | SIA VIZULO |
| Client number | 1 |
| Address | Bukultu iela 11, Rīga, LV-1005, Latvia |
| Test specification | SIA Baltic Research Center test and calculation method is based on the requirements in the following standards: IES TM-21-11; ENERGY STAR® TM-21 Calculator, rev. 06.18.18 |
| TRF originated by | SIA Baltic Research Center, Ingmārs Felcis |
| Copyright blank test report | This report based on the content of the standard (see above). The test report considered selected clauses of the a.m. standard(s) and experience gained with product testing. It was prepared by SIA Baltic Research Center, takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context. |
| Number of pages (Report) | 6 |

Compiled and approved by:
Head of Laboratory, Ingmārs Felcis
(+signature)



| | |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test object ID | 10106202208 |
| Type of test object | LED street and territory luminaire |
| Trade mark | VIZULO MICRO MARTIN |
| Model and/or type reference | MRUE 075 730 L05 AA016 CSN NG1 |
| Rating(s) | AC: 230-240 V~, 50-60 Hz |
| Manufacturer | Same as above |
| Address | Same as above |
| Order Description | Test according to the test specification and for the following items: 1) In-situ temperature measurements test (ISTMT); 2) Temperature test of Tc point on the LED driver; 3) Lumen maintenance projection according to TM-21 |
| Date of order | 27.05.2022. |
| Date of receipt of test item | 31.05.2022. |
| Date(s) of performance of test | 07.06.2022. |
| Equipment used | AC power source T023; Digital power measuring device T024; Thermal chamber T022; Thermocouple Datalogger B010; |
| Lamp type | <input type="checkbox"/> Bare lamp <input checked="" type="checkbox"/> Cover lamp, no reflector <input type="checkbox"/> Lamp with reflector <input type="checkbox"/> Other: |
| Rated Voltage | 230-240 V~, 50-60 Hz |
| Rated Power | 75 W |

General remarks:

Throughout this report, a point is used as the decimal separator.

The test results presented in this report relate only to the object tested.

This report shall not be reproduced except on full without the written approval of the testing laboratory.

SIA Baltic Research Center is an accredited photometric, colorimetric and photobiological safety testing laboratory by LATAK (Latvian National Accreditation Bureau) acc. to EN 17025 using testing methods based on IESNA TM-21-11 standard.

Photo of the sample:



Model No.: MRUE 075 730 L05 AA016 CSN NG1

Test results

In-situ temperature measurements test (ISTMT)

Electrical Input Results

| | | | | | |
|----------------|--------------|---------------------------------|-------------|--------------|------|
| Input voltage: | 230V~, 50 Hz | Input current on LED: | 716 mA | Input power: | 75 W |
| Test time: | 420 minutes | Temperature stabilization time: | 120 minutes | | |

Temperature Results

| | |
|----------------------------------------------|------|
| Maximum temperature reached T_1 °C, LED | 64.1 |
| Maximum ambient temperature reached T_4 °C | 25.1 |

Test results

| | |
|---------------------------------------------------|--------------------|
| Reported lumen maintenance life | L90 > 60 000 hours |
| The time in hours when $L_{90}B_{50}$ is attained | 103 100 hours |
| The time in hours when $L_{90}B_{10}$ is attained | 103 100 hours |
| Estimate lumen maintenance at 60 000 h | L93 (93.69%) |
| Estimate lumen maintenance at 100 000 h | L90 (90.26%) |

Comments:

LED used in the luminaire – LUXEON 5050

Results refer to the same luminaire family with the same power or lower configuration.

The luminaire was tested as intended for use – luminous area facing downwards with a glass diffuser over the LED and driver area.

Lumen maintenance projection according to TM-21-11

[illegible]



TM-21 Report

Table 1: Report at each LM-80 Test Condition

| Description of LED Light Source Tested (manufacturer, model, catalog number) | | VIZULO SIA, MRUE 075 730 L05 AA016 CSN NG1 | | | |
|------------------------------------------------------------------------------|----------------|--------------------------------------------------|----------------|--------------------------------------------------|----------------|
| Test Condition 1 - 55°C Case Temp | | Test Condition 2 - 85°C Case Temp | | Test Condition 3 - 105°C Case Temp | |
| Sample size | 24 | Sample size | 24 | Sample size | 24 |
| Number of failures | 0 | Number of failures | 0 | Number of failures | 0 |
| DUT drive current used in the test (mA) | 750 | DUT drive current used in the test (mA) | 750 | DUT drive current used in the test (mA) | 750 |
| Test duration (hours) | 10 000 | Test duration (hours) | 10 000 | Test duration (hours) | 10 000 |
| Test duration used for projection (hour to hour) | 5,000 - 10,000 | Test duration used for projection (hour to hour) | 5,000 - 10,000 | Test duration used for projection (hour to hour) | 5,000 - 10,000 |
| Tested case temperature (°C) | 55 | Tested case temperature (°C) | 85 | Tested case temperature (°C) | 105 |
| α | 8.932E-07 | α | 1.024E-06 | α | 4.232E-06 |
| B | 0.998 | B | 0.983 | B | 0.984 |
| Reported L90(10k) (hours) | >60000 | Reported L90(10k) (hours) | >60000 | Reported L90(10k) (hours) | 21 000 |

Table 2: Interpolation Report (projection based on *in-situ* temperature entered)

| | |
|----------------------|-----------|
| $T_{s,1}$ (°C) | 55.00 |
| $T_{s,1}$ (K) | 328.15 |
| α_1 | 8.932E-07 |
| B_1 | 0.998 |
| $T_{s,2}$ (°C) | 85.00 |
| $T_{s,2}$ (K) | 358.15 |
| α_2 | 1.024E-06 |
| B_2 | 0.983 |
| E_a/k_b | 5.37E+02 |
| A | 4.584E-06 |
| B_0 | 0.991 |
| $T_{s,i}$ (°C) | 64.10 |
| $T_{s,i}$ (K) | 337.25 |
| α_i | 9.335E-07 |
| Reported L90(10k) at | >60000 |

| | |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Report Generated By: Head of laboratory Mr. Ingmars Felcis | Notes: TM-21-11 report based on 20211209_LUXEON 5050 Series incl Horticulture - 10000hrs 50-100-150-200mA 55-85-105C LM-80 Report for Vizulo |
| Company: SIA Baltic Research Center | |
| Date: 07.06.2022. | |

RAAD VOOR ACCREDITATIE

Dutch Accreditation Council RvA
PO Box 2768 NL-3500 GT Utrecht



The Dutch Accreditation Council RvA, by law appointed as
the national accreditation body for The Netherlands,
hereby declares that accreditation has been granted to:

DEKRA Certification B.V. Arnhem

The organisation has demonstrated to be able to generate technical valid results in a
competent way and work according to a management system.

This accreditation is based on an assessment against the requirements
as laid down in EN ISO/IEC 17025:2017.

The accreditation covers the activities as specified in the authorized
annex bearing the registration number.

The accreditation is valid provided that the organisation
continues to meet the requirements.

The accreditation with registration number:

L 022

is granted on 30 November 1990

This declaration is valid until

1 May 2026

The board of the Dutch Accreditation Council,
on its behalf,


mr. J.A.W.M. de Haas

EU DECLARATION OF CONFORMITY

Riga, 07.03.2019.

Internal reference No: DC-MRU-070319-EN

Manufacturer: VIZULO SIA, Starta street 1, Riga, LV-1026, Latvia
Product name: VIZULO MICRO MARTIN
Type: LED street luminaire
Model: MRU□ □□□ □□□ □□□ □□□ □□□ □□1 (see anex):
 220 ... 240 V, 5 ... 75 W, 2700 ... 6500 K, Class I, IP66, IK08
 MRU□ □□□ □□□ □□□ □□□ □□□ □□2 (see anex):
 220 ... 240 V, 5 ... 75 W, 2700 ... 6500 K, Class II, IP66, IK08

The product (range) is in conformity with the provisions:

1. Electromagnetic Compatibility Directive

EN 55015

EN 61547

EN 61000-3-2

EN 61000-3-3

EMC 2014/30/EU

Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
 Equipment for general lighting purposes - EMC immunity requirements
 Electromagnetic compatibility (EMC) - Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
 Electromagnetic compatibility (EMC) - Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection

2. Low Voltage Directive

EN 60598-1

EN 60598-2-3

EN 62031

EN 61347-1

EN 61347-2-13

EN 62384

EN 62493

LVD 2014/35/EU

Luminaires – General requirements and tests
 Luminaires – Particular requirements - Luminaires for road and street lighting
 LED modules for general lighting – Safety specifications
 Lamp controlgear – General and safety requirements
 Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules
 DC or AC supplied electronic control gear for LED modules - Performance requirements
 Assessment of lighting equipment related to human exposure to electromagnetic fields

3. Restriction of Hazardous Substances in Electrical and Electronic Equipment

EN 62321

ROHS 2011/65/EU

Electrotechnical products - Determination of levels of six regulated substances

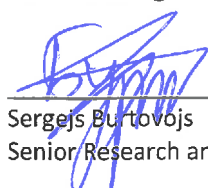
Other qualifications:

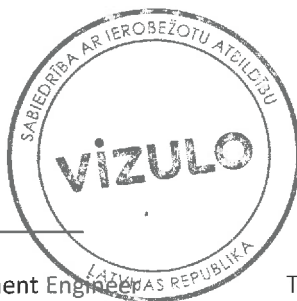
The management system of VIZULO SIA including the implementation meets the requirements of the standards:

ISO 9001:2015

ISO 14001:2015

Authorized signature


 Sergejs Burtovojs
 Senior Research and Development Engineer

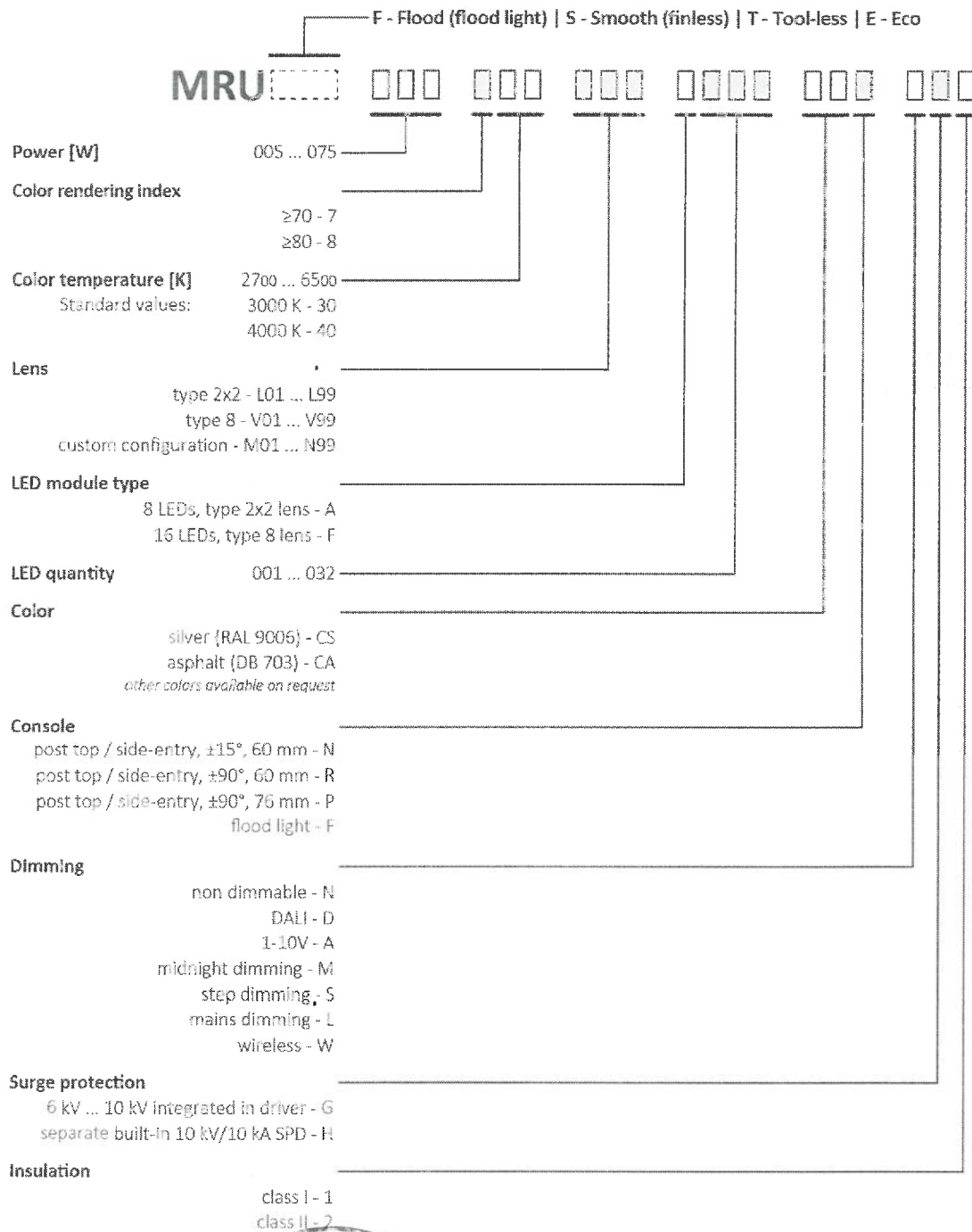


The CE marking was affixed in: 17

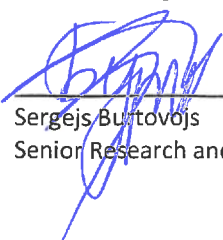


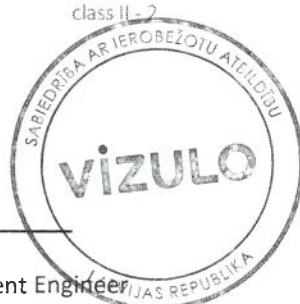
Annex

Models and description



Authorized signature


Sergejs Burtovojs
Senior Research and Development Engineer



EU DECLARATION OF CONFORMITY

Riga, 05.10.2021.

Internal reference No: DC-MRU-051021-EN

Manufacturer: VIZULO SIA, Bukultu street 11, Riga, LV-1005, Latvia
Product name: VIZULO MICRO MARTIN
Type: LED street luminaire
Model: MRU□ □□□ □□□ □□□□□ □□□ □□1 (see anex):
198 ... 264 V, 5 ... 75 W, 2700 ... 5700 K, Class I, IP66, IK08
MRU□ □□□ □□□ □□□□□ □□□ □□2 (see anex):
198 ... 264 V, 5 ... 75 W, 2700 ... 5700 K, Class II, IP66, IK08

The product (range) is in conformity with the provisions:

1. Electromagnetic Compatibility Directive
EN 55015

EN 61547
EN 61000-3-2

EN 61000-3-3

EMC 2014/30/EU

Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
Equipment for general lighting purposes - EMC immunity requirements
Electromagnetic compatibility (EMC) - Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
Electromagnetic compatibility (EMC) - Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection

2. Low Voltage Directive

EN 60598-1
EN 60598-2-3

EN 60598-2-5
EN 62031
EN 61347-1
EN 61347-2-13

EN 62384

EN 62493

LVD 2014/35/EU

Luminaires – General requirements and tests
Luminaires – Particular requirements - Luminaires for road and street lighting
Luminaires - Particular requirements - Floodlights
LED modules for general lighting – Safety specifications
Lamp controlgear – General and safety requirements
Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules
DC or AC supplied electronic control gear for LED modules - Performance requirements
Assessment of lighting equipment related to human exposure to electromagnetic fields

3. Restriction of Hazardous Substances in Electrical and Electronic Equipment
EN 62321


ROHS 2011/65/EU

Electrotechnical products - Determination of levels of six regulated substances

Other qualifications:

The management system of VIZULO SIA including the implementation meets the requirements of the standards:
ISO 9001:2015
ISO 14001:2015

Authorized signature


Sergejs Burtovojs
Senior Research and Development Engineer

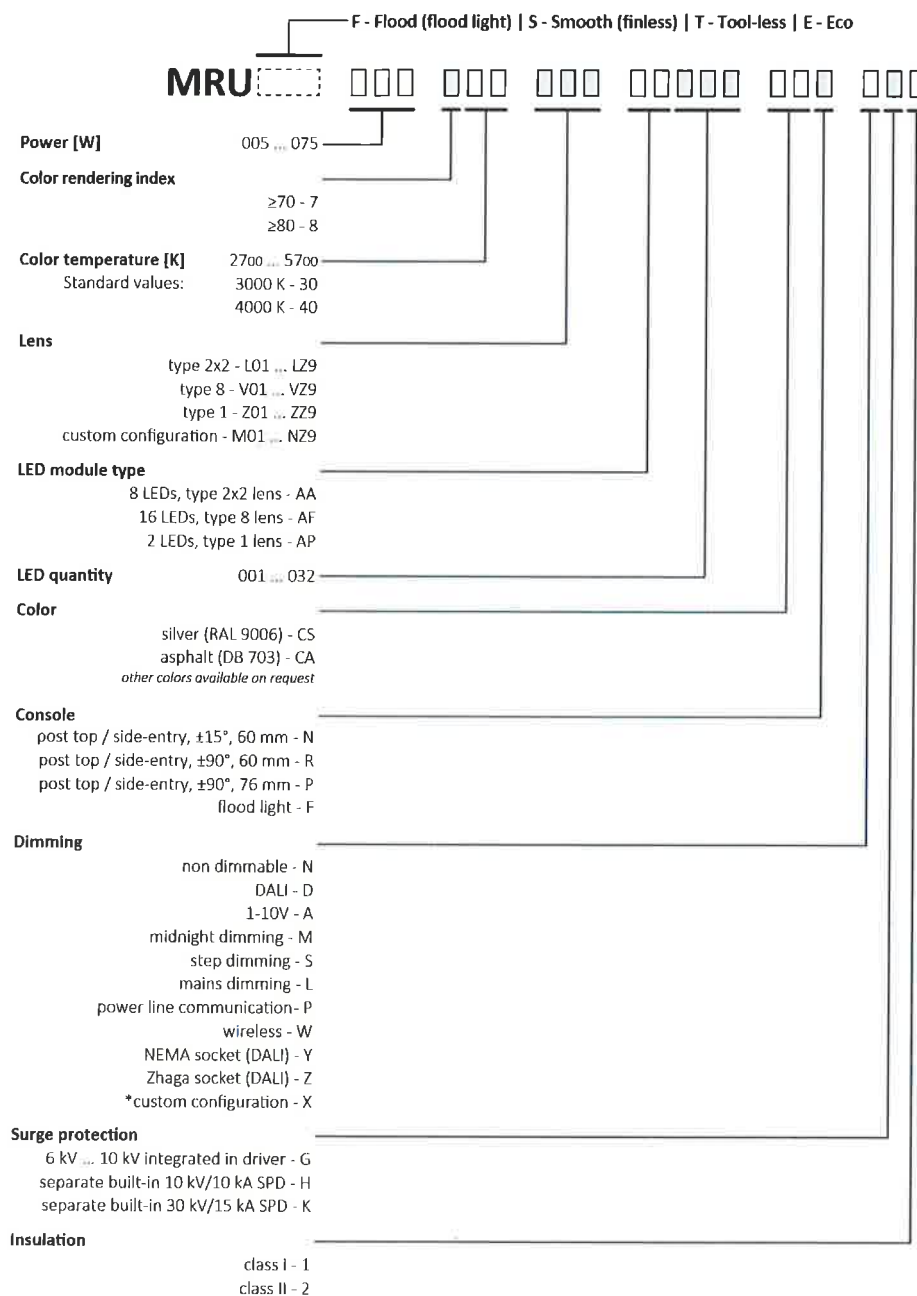


The CE marking was affixed in: 17



Annex

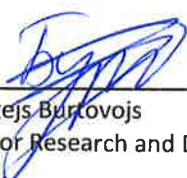
Models and description



***Custom configuration example:**

NEMA socket + Zhaga socket; NEMA socket + Zhaga socket + midnight dimming; etc.
Custom configuration information is available in order confirmation

Authorized signature



Sergejs Burtovojs
Senior Research and Development Engineer



CERTIFICATE

Issued to:
Applicant:
SIA VIZULO
Bukultu Str. 11
LV-1005 Riga, Latvia

Licensee:
SIA VIZULO
Bukultu Str. 11
LV-1005 Riga, Latvia

Product : Street lighting / Floodlight luminaire with LED light source
Trade name(s) : VIZULO
Type(s)/model(s) : Martin LED street luminaire

The product and any acceptable variation thereto as specified in the Annex to this certificate and the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:

- a type test according to EN IEC 60598-1:2021, EN IEC 60598-1:2021/A11:2022, EN 60598-2-3:2003, EN 60598-2-3:2003/A1:2011 and EN 60598-2-5:2015
- an inspection of the factory location according to CENELEC Operational Document CIG 021
- a DEKRA certification agreement with the number 2171759

DEKRA hereby grants the right to use the ENEC certification mark.

The ENEC certification mark may be applied to the product as specified in this certificate for the duration and under the conditions of the ENEC certification agreement.

This certificate is issued on 15 September 2023 and expires upon withdrawal of one of the above mentioned standards.

Certificate number: 71-129712

DEKRA Certification B.V.



B.T.M. Holtus
Managing Director



H.R.M. Barends
Certification Manager

© Integral publication of this certificate is allowed

ACCREDITED BY THE
DUTCH ACCREDITATION
COUNCIL



SPECIFICATION OF THE CERTIFIED PRODUCT**Product data**

| | |
|---------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product | : Street lighting / Floodlight luminaire with LED light source |
| Trade name(s) | : VIZULO |
| Type(s)/model(s) | : MRSy series and MRUy series |
| Model | : Martin LED street luminaire |
| Rated voltage/nature of supply | : 198 - 264 Vac |
| Rated frequency | : 50/60 Hz |
| Rated current | : For MRSy series: 30 - 630 mA For MRUy series: 30 - 500 mA |
| Rated power | : For MRSy: max. 145 W, dependent of ambient temperature (ta) For MRUy: max. 115 W, dependent of ambient temperature (ta) with ta: -40...+35 °C 5-145 W (for models starting with MRS) 5-130 W (for models starting with MRSS) 5-115 W (for models starting with MRU) 5-95 W (for models starting with MRUS) with ta: -40...+40 °C 5-140 W (for models starting with MRS) 5-120 W (for models starting with MRSS) 5-105 W (for models starting with MRU) 5-85 W (for models starting with MRUS) with ta: -40...+50 °C 5-120 W (for models starting with MRS) 5-100 W (for models starting with MRSS) 5-96 W (for models starting with MRU) 5-75 W (for models starting with MRUS) |
| Ambient temperature range | : ta = -40... +35/40/50 °C |
| Classification | : class I |
| Degree of protection against dust, moisture and solid objects | : IP66 |
| Degree of protection against external mechanical impact | : IK08 / IK09 / IK10 - dependent of configuration |

TESTS**Test requirements**

EN IEC 60598-1:2021
EN IEC 60598-1:2021/A11:2022
EN 60598-2-3:2003
EN 60598-2-3:2003/A1:2011
EN 60598-2-5:2015

Test result

The test results are laid down in DEKRA test file 227431400.

Additional information

additional information related to the product name

"y" version (F; S; E; T)

F= Flood

S = Smooth (finless)

E = Eco

T = Tool-less

"y" can blank or one or several of all above options.

For more details about the product name, refers to the test report.

Retinal blue light hazard:

Blue light hazard has been tested according to the IEC/TR 62778:2014 and EN 62471:2009 – photobiological safety.

These products were evaluated according IEC/TR 62778:2014 blue light hazard and comply with non-GLS Risk Group 1 (no labelling is required) except configurations with Osram Oslon Square LEDs which comply with non-GLS Risk Group 2 (labelling is required).

The threshold distance from RG2 to RG1 with Oslon Square LEDs for MRUy series is 2,72 m and for the MRSy series is 3,17 m.

The tested samples represent the worst-case configurations, RG1 and RG0 is also possible – for more details refer to the IEC/TR 62778:2014 and EN 62471:2009 test reports of the specific luminaire configuration.

The luminaire contains a LED module which is in compliance with EN 62031:2020+A11:2021 (tested as part of the appliance).

The Luminaires also fulfil the requirements of EN 62262:2002 and IEC/TR 62696:2011 with regard to protection provided by enclosures for electrical equipment against external mechanical impacts. Luminaires also fulfil the requirements IK08 / IK09 or IK10 depends on models configuration.

This certificate replaces certificates No. 71-119800 and 71-118540 REV.1 which we hereby declare invalid.

The list of components is laid down in test report 2274314.50.

Conclusion

The examination proved that all requirements were met.

Factory location

SIA Vizulo
Lauca Lejas
LV-3913 Iecava, Latvia