Elektrosvit
Svatobořice, a. s.

INSTALLATION AND MAINTENANCE INSTRUCTIONS
EXPLOSION-PROOF LUMINAIRE
ERIS LED

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Contents

1. Basic information

Name: ERIS LED

Type: 591 15 01n, 591 15 02n

II 3G Ex nR IIC T6...T5 Gc
II 3D Ex tc IIIC T80°C...T95°C Dc
IP66

II 3G Ex nR IIC T6 Gc

- **II** : Indicates equipment intended for use in environments other than methane atmospheres (for zones 1, 2).
- **3G** : The luminaire is intended for use in zones 2 (for explosive gas atmospheres).
- **Ex** : Marking that indicates that the device is approved for use in hazardous (explosive) environments.
- **nR** : Type of protection that means the device is "spark-proof" and has no hazardous parts that could cause an explosion.
- **IIC** : The device is intended for use in atmospheres containing gases of group IIC (the most dangerous, e.g. hydrogen, acetylene).
- **T6** : Temperature class that determines the maximum surface temperature of the luminaire that must not be exceeded. T5 means that the maximum surface temperature can be up to 100°C and T6 up to 85°C.
- **Gc** : Protection category for devices in zones 2, which means that the luminaire is designed for use in areas with a low risk of explosion.

II 3D Ex tc IIIC T80°C Dc

- **II** : As above, designation for equipment intended for zones 21 and 22 (for dusty atmospheres).
- **3D** : The luminaire is intended for use in zones 22 (for dust explosive atmospheres).
- **Ex tc** : The device is protected against dust explosion by means of dust-tight covers and structures (protection class " tc ").
- **IIIC** : The device is intended for use in atmospheres containing dust of class IIIC (e.g. combustible dust which may present an explosion hazard).
- **T80°C...T95°C** : Temperature class for dusty environments. T80 means that the maximum surface temperature of the device can reach 80°C and T95 means the maximum surface temperature can reach 95°C.
- **Dc** : Protection category for equipment in dust zones 22, which means that the equipment is intended for dust atmospheres with a low risk of explosion.

IP66 :

- **IP** : Degree of protection of the device against solid objects (e.g. dust) and water.
- **66** :
  - **6** means complete protection against dust, the device is dustproof.
  - **6** means protection against strong jets of water (including heavy rain or water jets), and the device is water resistant even in very harsh conditions.

The luminaire is certified for use in environments according to **ATEX** specifications for **zone 2** and **zone 22** , which indicates the presence of explosive gases, vapors or dust mixtures, in accordance with **ATEX standards** . The luminaire is designed to meet the requirements of directives and harmonized standards according to EU requirements , which is confirmed by the declaration of conformity.
The luminaire is ideal for installations in hazardous areas where a high level of safety and reliability is required. Typical applications include:

- **Industrial areas** : production and storage areas where flammable substances are handled (e.g. chemical, petrochemical or pharmaceutical plants).
- **Oil and gas facilities** : environments with the presence of flammable gases and vapors.
- **Mining industry** : areas where dust may occur (e.g. in cement plants or other industrial facilities other than mines).
- **Agricultural operations** : storage and handling of flammable dusty materials (e.g. grain, flour).

Usage restrictions:

- The luminaire must not be used outside the specified zones 2/22.
- Installation and maintenance must be carried out by qualified personnel who are familiar with ATEX requirements.
- Before using in new applications, it is necessary to check whether the luminaire is compatible with the specific environment.

2. Luminaire description

The body of the luminaire is made of aluminum alloy with low content of Mg, Ti and Zr. The light-transmitting part is made of durable tempered glass . The entire luminaire is sealed with a rubber seal, which is designed for very high temperatures. The luminaire uses terminals that ensure safe and spark-free connection of internal conductors and supply cables. The cable gland has a protection degree of IP68 at 10 bar and IP69K. It has an ATEX certificate and is made of high-quality stainless steel.

Compliance with the essential health and safety requirements is ensured by verifying compliance with:

ČSN EN IEC 60079-0:2018, ČSN EN 60079-15:2010, ČSN EN 60079-31:2014

The product complies with the standards ČSN EN IEC 60079-0:2018, ČSN EN IEC 60079-15:2019, ČSN EN 60079-31:2014 and the ATEX directive 2014/34/EU.

3. Luminaire description

TYPE	Power consumption	Voltage	Protection class	Current	Efficiency	Explosion-proof marking
591 15 01n	35W	198-264 V AC / 176-280 V DC / 50-60 Hz	AND	0.15A	0.97 cosϕ	II 3G Ex nR IIC T6...T5 Gc II 3D Ex tc IIIC T80°C...T95°C Dc
591 15 02n	25W			0.11A		
591 15 03n	15W			0.07A		

Type	Luminous flux	Efficiency	Beam angle	Color temperature	Color rendering index
591 15 01n	4,786 lumens	137 lm /W	120°	3000K , 4000K 5000K , 5700K 6000K , 6500K	>80
591 15 02n	3,533 lumens	140 lm/W			
591 15 03n	2 179 lm	143 lm/W			

Typ	Ta -40°C <> +50°C	Ta -40°C <> +60°C	Ta -40°C <> +70°C
591 15 01n T6/T80°C	100 000 h	X	X
591 15 01n T5/T95°C	100 000 h	65 000h	45 000h
591 15 02n T6/T80°C	100 000 h	X	X
591 15 02n T5/T95°C	100,000 hours	65,000h	45,000h
591 15 03n T6/T80°C	100,000 hours	X	X
591 15 03n T5/T95°C	100,000 hours	100,000h	65,000h

Maximum circuit breaker load and number of lights connected in series

Circuit breaker :	C10	C13	C16	C20	B10	B13	B16	B20	Inrush current	
Cross section conductors :	1.5 mm2	1.5 mm2	2.5 mm2	4mm2	1.5 mm2	1.5 mm2	2.5 mm2	4mm2	Imax	Time
Number of lights :	5	7	8	10	3	4	5	6	65 A	268 µs

4. Assembly and installation

The installation and electrical connection of the luminaire must be in accordance with the requirements of **the ČSN EN IEC 60079-14 standard** , which regulates the safety requirements for equipment used in areas with a risk of explosion.

1. **Fastening luminaires:**
   The luminaire can be fixed firmly to the ceiling, wall or structure. The luminaire can be mounted both with and without a bracket, as a pendant. It is necessary to make sure that the luminaire is correctly fixed and the luminaire is stable.

2. **Electric Connection:**
   Insert the power cable into the luminaire through the cable gland. Carefully strip the wires and insert them into the terminal block according to the markings on the terminal block:
   - Standard connection (L , N, PE) .
   - 3-phase connection where conductors L2 and L3 are continuous (L1, L2, L3 , N, PE).
   - DALI control connection (L, N, PE, DA/L, DA/N)

   When connecting, it is important to ensure that the wires are connected correctly and to secure them against loosening.

3. **Tightening Torque:**
   The tightening torque for the flange nuts is **3.0 Nm** . Make sure the nuts are tightened sufficiently to ensure a firm and secure connection.

5. Safety notice

- Before installing the luminaire, carefully read all the information provided in the instructions.
- It is necessary to follow general safety rules.
- No other spare parts than those listed in the instructions may be used in the luminaires!

- If the seals or glands are damaged, they must be replaced!
- If a luminaire that has been in operation is reopened, the seal on the luminaire's protective glass must be replaced!
- The manufacturer bears no responsibility for the consequences caused by any arbitrary intervention in the luminaire.
- The manufacturer assumes no liability for damage resulting from incorrect installation, maintenance or improper use.
- In the event of a malfunction, the device must be switched off immediately.

6. Lamp maintenance

In order for an ATEX-certified luminaire to function and be safe over time, it is essential to maintain it regularly. Maintenance must be carried out in accordance with the manufacturer's instructions and the applicable explosion protection standards. The following instructions apply to aluminium luminaires intended for use in environments with an increased risk of explosion.

1. Regularly check the condition of the luminaire

- **Checking the seals** : Make sure that the silicone seals that provide protection against dust and water are intact. If worn, the seals must be replaced. A damaged seal can compromise the explosion protection.
- **Glass inspection** : Regularly check that the glass part of the luminaire is undamaged (no cracks or chips). Damaged glass must be replaced immediately to avoid the risk of explosion or sparks.
- **Checking cable glands** : Cable glands made of stainless steel must be checked regularly for signs of wear or corrosion. The glands should be sealed and free of mechanical damage.

2. Electrical connection

- **Connection Check** : Verify that all terminals are securely tightened and that the wire connections comply with the requirements for safe connections in hazardous areas.
- **Checking the insulation materials** : Check that the wires are not damaged or worn. Damaged insulation can pose a risk to the correct functioning of the luminaire and the safety of the environment.

3. Cleanliness and maintenance

- When cleaning an explosion-proof luminaire, it is important to take care to prevent electrostatic charging, which can be dangerous in environments with explosive substances.
    - **Preparation:**
        - Use an antistatic wrist strap or mat.
        - Clean in a dry environment, ideally away from explosive areas.
    - **Selection of cleaning materials:**
        - Use antistatic cloths and cleaning agents suitable for electrostatic protection.
        - Avoid metal tools and rough materials.
    - **Cleaning procedure:**
        - Turn off the light and disconnect it from the power supply.
        - Gently clean the exterior surfaces of the fixture to avoid causing charging.

- **Completion:**
  - Make sure the light fixture is dry and clean before reconnecting.

4. Professional maintenance

- All maintenance activities must be carried out by qualified personnel who are familiar with safety regulations and requirements for explosive environments. In the event of any damage or suspected malfunction, the luminaire must be immediately taken out of service.

5. Check before each use

- Before each use of the luminaire, a visual inspection of all safety features, connections and seals must be carried out. Furthermore, check that the luminaire complies with the conditions of use specified in the technical description.

7. Spare parts

from the manufacturer available .

1. List of recommended spare parts

- **Tempered glass cover :** The durable glass cover No. 132.2552 is key to protecting the internal components from dust and impacts. The glass **is** tempered , which ensures its high resistance to mechanical damage and impacts .
- **Light sources** : Replacement LED modules that meet the luminaire specifications .
- **Seal** : Seal No. 451.5046 for glass covers and other parts of the luminaire is crucial for maintaining the required protection against dust, water and other contaminants.
- **Cable glands** : Cable glands No. 13166 (metal), No. 13144 (Plastic) which are ATEX certified are essential to ensure safety in explosive environments. These glands must be compatible with the requirements for explosive areas and provide protection against ignition.
- **Holder** : Lamp holder No. 338.2783 must be stable to ensure proper installation and long life of the lamp.

2. Selection of compatible parts

- **Exact specifications** : Spare parts must be used from the luminaire manufacturer. The use of incompatible parts may compromise the safety of the luminaire and void the warranty!
- **Hazardous Area Approvals** : Make sure that spare parts are certified for use in explosive or hazardous environments. However, no parts other than those approved by the manufacturer may be used!

3. Maintenance and parts replacement

- **Regular inspection** : For a long service life, it is important to regularly check the condition of the luminaire , such as seals, cables, tempered glass , brackets and cable glands . If you find any wear or damage, contact the manufacturer immediately .
- **Replacement of parts** : When replacing any part, proper procedure and all safety standards must be observed. Replacement should only be performed by a qualified person who has the appropriate training and approval from the luminaire manufacturer.

4. Availability and ordering of spare parts

- **Clear catalog : It** is recommended to have a catalog with spare parts available . and contact the manufacturer.

- **Availability throughout the life of the luminaire** : Our company ensures the availability of spare parts throughout the life of the luminaire.

8. Packaging, delivery, storage and accompanying documentation

To ensure safe and trouble-free delivery and use of the product, it is necessary to follow several basic principles regarding packaging, storage and accompanying documentation **.**

- **Product packaging :** The product must be adequately protected during transport from external influences such as impacts, blows or moisture penetration. For this, it is necessary to use suitable packaging that ensures mechanical protection and protection against moisture, thus minimizing the risk of damage during transport.
- **Product Delivery :** When delivering a product, it is important to ensure that it is in a fully functional and undamaged condition, ready for assembly and commissioning. Delivery must be in accordance with the agreed terms and on time.
- **Product Storage :** To maintain optimal product functionality, it is essential that the product is stored indoors with a maximum relative humidity of 75% and a temperature between 5°C and 30°C. The product should be protected from extreme temperature and humidity changes that could negatively affect its performance.
- **Accompanying documentation :** All necessary documentation must be available upon delivery of the product, which includes:
    - **Technical description** product, which describes its parameters and functions in detail.
    - **Assembly instructions** , which provide detailed instructions for safe and correct installation.
    - **Dimensional drawing** , which shows the key dimensions and location of individual product components for easier assembly.
    - **Certificate of quality and completeness** , which confirms that the product meets all required standards and is complete.
    - **Warranty certificate** , which sets out the conditions and warranty period for the product, including information on the possibilities of making a claim.

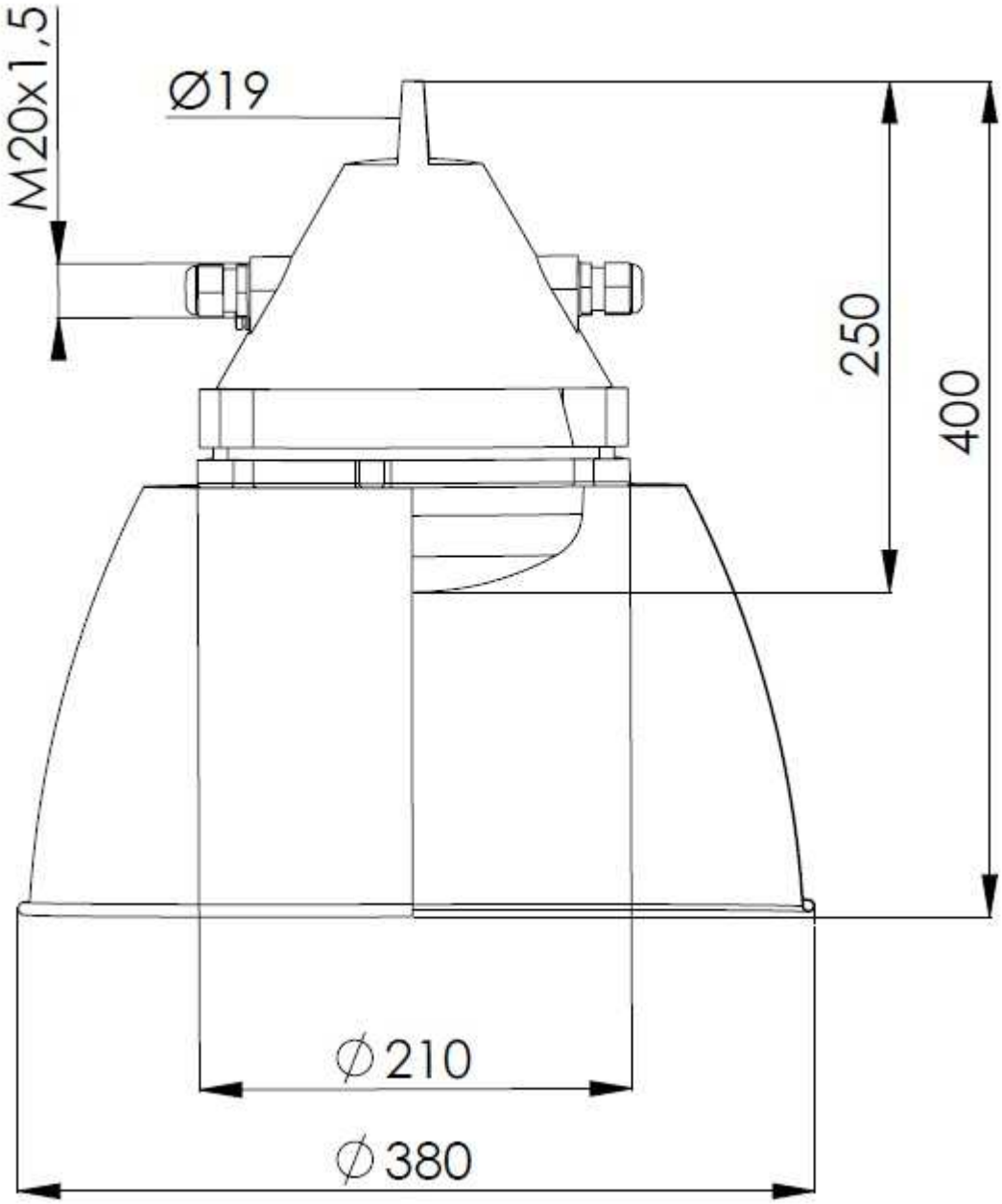
This set of rules and documents will ensure that the product is properly protected, stored and delivered in the appropriate condition, which is essential for its long-term and trouble-free functionality.

9. Special conditions of use

- **Ambient temperature:**
    - Type 591 15 01n, 591 15 02n, 591 15 03n for temperature class T6 and T80°C: from - 40°C to + 50°C
    - Type 591 15 01n, 591 15 02n, 591 15 03n for temperature class T5 and T95°C: from - 40°C to + 70°C

- **The luminaire is intended** for fixed installation and must be marked with the warning sign **"Caution - potential danger of electrostatic charging".**
- **The installation conditions** must be observed - see instructions.

10. Dimensional sketch



11. Configurator