

User Manual

Explosion-safe SpotLED
Type series AR-040



II 3 G Ex ec IIC T4 Gc
II 3 D Ex tc IIIC T135°C Dc



STANDARDS COMMITTEE MEMBER





1. Safety Instructions

The AR-040 SpotLED is an explosion-safe product suitable for use in hazardous areas with explosion hazard from flammable gases, vapors, mist and dust, classified as Zone 2 or Zone 22.

This manual must be read and understood for safe use of the SpotLED. All warnings and instructions must be followed.

- Installation must be carried out by personnel trained and qualified in explosion safety taking the instructions mentioned on the equipment and in this manual into consideration. Local regulations that apply to the installation must be followed.
- Connect this equipment to the direct current supply voltage for which it is designed.
- Isolate electrical power to the SpotLED before electrical installation.
- The transparent lens can be electrostatically charged. Only use a damp cloth to clean the lens. Do not use solvents.
- Either decommission the SpotLED or do not use it when it is damaged.
- During installation of the SpotLED national safety regulations must be observed.
- Only use the SpotLED under the environmental conditions for which it is specified. Deviating environmental conditions can contribute to damage to the equipment and may lead to possible danger to the life of the user.
- Do not use the SpotLED at temperatures deviating from the specified ambient temperature range.
- Follow all instructions written on the equipment and as mentioned in this manual.
- Repairs may only be carried out by the manufacturer or by a person appointed by the manufacturer.
- Modifications to the equipment or changes to the design are not permitted.
- The product may only be used for the function for which it is designed and shall be maintained in a good and clean condition.

If these instructions are not followed, the explosion safety of the equipment cannot be guaranteed. The equipment could then endanger the life of the user and could cause the ignition of an explosive atmosphere. Consequently, Artidor as the manufacturer will waive any responsibility.

2. Description

The SpotLED combines high-performance and energy-efficiency with state-of-the-art LED technology, making it suitable for a wide range of applications. The robust SpotLED can successfully be applied on construction sites, transport vehicles, forklifts, lathes, or milling machines, in gardens, or for the illumination of facades; SpotLED puts everything in the right light. The light output of the 12 Watt SpotLED is equivalent to that of a 75 Watt halogen spot.

The SpotLED is available with LED optics at an angle of 10° (spotlight), 38° (wide-angle light), or a combination of both (work light).

The cable has a standard length of 5 meters. Due to the stainless steel bracket and the large 155° rotation angle, the SpotLED is suitable for mounting against walls or sloping surfaces.

3. Characteristics

The characteristics of the SpotLED can be summarized as follows:

- Robust SpotLED with ingress protection level IP67
- Light source: 5 PowerLEDs, 3 Watt each
- 780 Lumen
- Coated aluminum housing, stainless steel bracket, powder coated
- Available in two different housing colors
- Obtainable in various beam angles with different optics
- Provided with a fixed cable
- Manufactured on the basis of the European Directive 2014/34/EU (ATEX 114)
- Suitable for use in gas and dust hazardous areas classified as zone 2 and 22
- Explosion safety category and protection degree against ignition applied:
II 3 G Ex ec IIC T4 Gc
II 3 D Ex tc IIIC T135° C Dc
- Protection degree against the ingress of water and dust IP67 according EN 60529
- Suitable for internal and external use
- Rotation angle from -50° to +105°

4. CE - Marking

The SpotLED complies to the European Directives for EMC and ATEX and integral to the Low Voltage Directive.

With regard to explosion safety the SpotLED has been designed and manufactured on the basis of the essential health and safety requirements of European Directive 2014/34/EU (ATEX 114) relating to Group II Category 3GD.

Harmonized European construction standards have been applied fulfilling the essential requirements of the directives.

For more details refer to section 6 "Technical data" or to the EU Declaration of Conformity on the last page of this manual.

5. Application

The explosion-safe SpotLED series AR-040 have been designed for and are suitable for use in hazardous classified areas due to flammable gases, vapors, mist, fibers and dust. Because they are explosion-safe and certified on the basis of Group II Category 3GD of the ATEX Directive they are suitable for use in the following types of zones in explosion hazardous areas:

- for combustible gases, vapors and mist: zone 2
- for combustible fibers and dust: zone 22

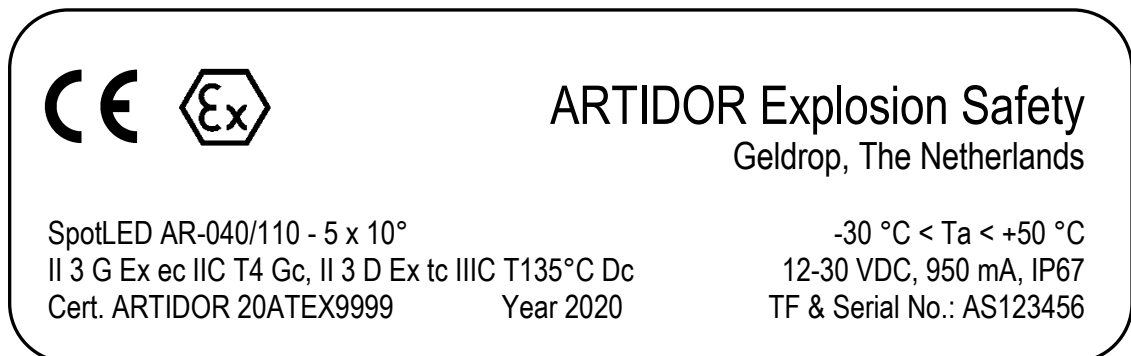
The parts used are all manufactured from corrosion resistant materials and are resistant to the effects of most common chemicals.

6. Technical Data

| | |
|------------------------------|---|
| Explosion safety category: | II 3GD |
| Protection against ignition: | Ex ec IIC T4 Gc, Ex tc IIIC T135°C Dc |
| Conformity: | European Directive 2014/34/EU (ATEX) and 2014/30/EU (EMC) |
| Standards applied: | EN 60079-0:2018, EN 60079-7:2015 / A1:2018 and EN 60079-31:2014 |
| Ambient temperature: | -30 °C to +50 °C |
| Material housing: | Die cast aluminum housing and stainless steel bracket coated in the same color. Polycarbonate impact-resistant safety glass |
| Dimensions (L x W x H): | 120 x 62 x 87 mm |
| Light source: | Cree 3 Watt PowerLEDs (5x), 780 Lumen |
| Light color: | Neutral white (~6700 K) |
| Power supply: | 12 - 30 VDC |
| Power consumption: | 500 mA @ 24 VDC, 950 mA @ 12 VDC |
| Ingress protection level: | IP67 according to EN 60529 |
| Beam angles: | 10° to 38° (depending on the optics used) |
| Rotation angle: | -50° to +105° |
| Light strength: | 780 Lumen |
| Circumstances of use: | Exterior and interior use |
| Electrical connection: | Fixed cable, length 5 meters (brown = +24 VDC, white = 0 V, green = ground / earth) |
| Weight: | 540 grams |

7. Marking and warning on the equipment

To the SpotLED the marking label as shown below will be attached.

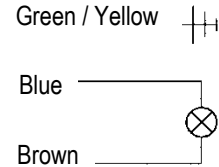


8. Installation instructions

- Installation of explosion-safe equipment such as this product must be carried out by personnel specially trained and qualified to do this, following the relevant requirements of the installation standard EN 60079-14.
- For the installation and use of this product the relevant safety regulations and also the generally recognized latest state of the technology apply.
- During assembly, care must be taken that the framework, screws and surface are strong enough to take the weight of the SpotLED.
- Isolate power from the electrical supply cable prior to installation.
- Mount the SpotLED on a metal frame or structure connected with ground (equipotential bonding).

- Install the connection cable and make sure that it is protected from mechanical and chemical influences.
- Connect the end of the cable in a proper way to an external connection box and ensure this is done professionally. The connection box is not supplied. Use a connection box that it is suitably protected for the (explosion hazard) classification of the surroundings in which it will be used.
- The connection cable has three cores for the following connections:

Green / yellow: Earth or equipotential bonding
 Blue: Neutral (-)
 Brown: Positive (+)



9. Maintenance

For the maintenance of the SpotLED the requirements as stated in EN 60079-17 apply.

If the SpotLED and the connection cable are no longer in good condition or are very dirty or damaged they must be repaired or cleaned immediately.

The power supply to the SpotLED must be switched off and may only be restored after the maintenance has been carried out and approved.

The advised maintenance cycles for the SpotLED depends on the specific use and must therefore be agreed upon with the user for the expected use.

10. Repair

Except for the transparent lens and the bracket, none of the parts of the SpotLED can be repaired or replaced. If repairs are carried out in an incompetent manner, the explosion-safety of the SpotLED can no longer be guaranteed. Therefore it is preferred that the SpotLED is returned to the manufacturer for repair.

11. Removal / re-use

The equipment can be completely processed as electronic waste. For processing regarding disposal or reuse of the product and its packaging, national disposal and environmental laws and legislation must be taken into consideration.

EU Declaration of Conformity

We

ARTIDOR Explosion Safety B.V.
Emopad 38, 5663 PB Geldrop, The Netherlands

herewith declare that the
Explosion-safe LED spot light type series

AR-040/*

labelled with the distinctive community mark including the code of the
protection degree against ignition and temperature class:

CE  II 3 G Ex ec IIC T4 Gc, II 3 D Ex tc IIIC T135°C Dc

produced under the ARTIDOR Quality Assurance system in accordance with
ISO 9001:2015 and annex VIII of Directive 2014/34/EU

is in conformity with the relevant Union harmonization legislation:

2014/30/EU
Concerning electromagnetic compatibility

2014/34/EU
Concerning equipment and protective systems intended
for use in potentially explosive atmospheres,

and that the following standards regarding explosion safety have been applied:

EN 60079-0:2018
EN 60079-7:2015 / A1:2018
EN 60079-31:2014

This declaration of conformity is issued under the sole responsibility of the manufacturer

Geldrop, 1 April 2020

Signed



M. Moolenaar
Managing Director and EX Authorized Person