
SPARK

PATH
LED
LIGHT



Operating Instructions

ASTEL
LIGHTING

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PREFACE

The SPARK series of modular outdoor light with built-in driver is designed to use the latest LED lighting technology.

The modular designed casing enables the selection of different light engines, heights and beams.

The SPARK series is available in modular sand-blasted and anodized aluminium casings with E6C0 finishing. The lighting is available in warm white, daylight white, cool white, red, green, blue, RGB or RGBW colors with 1, 2 or 3 high-power LEDs.

The most advanced engine with built-in microprocessor enables network connection and simple control of complete groups of single-color or multi-color lights through the complete rainbow spectrum by using optional momentary switch or optional DMX512 interfaces with built-in ASTEL protocol.

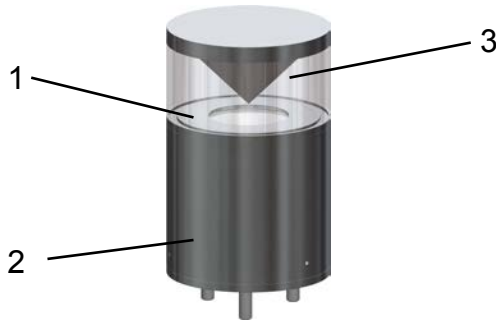
FEATURES

- Modular Aluminium Casing
- Sand-Blasting and Anodizing E6C0 Finishing
- 1, 2 or 3 High-Power LEDs Design
- Warm White, Daylight White, Cool White, Red, Green, Blue, Multi-Color RGB or Multi-Color RGBW Lighting
- High Grade PMMA or Polycarbonate Glass Optical Window
- Vacuum Metalized Reflector
- Remote Control
- Digital Dimming
- Built-in ASTEL Protocol for DMX512 Control
- Polarity Protection
- Transient Protection
- Thermal Protection
- Low Power Consumption
- Simple Installation

PRECAUTIONS

- The path light has to be installed and used in accordance with the instructions of this manual only.
- The power supply has to be disconnected before installation.
- Avoid using this unit near appliances generating strong magnetic fields.
- The optical window has to be cleaned with a mild soap or detergent and lukewarm water by using a soft cloth or sponge. Do not use abrasive or highly alkaline cleaners. Never scrape with razor blades or other sharp instruments. Benzene, leaded gasoline, acetone or carbon tetrachloride should never be used.
- Do turn power off immediately and refer servicing to qualified service personnel if the interior & exterior light does not operate normally following the operating instructions.

COMPONENTS



(1) Engine assembly

LED lighting assembly built-in sand-blasted anodized aluminium casing with different lighting color, power and beam options.



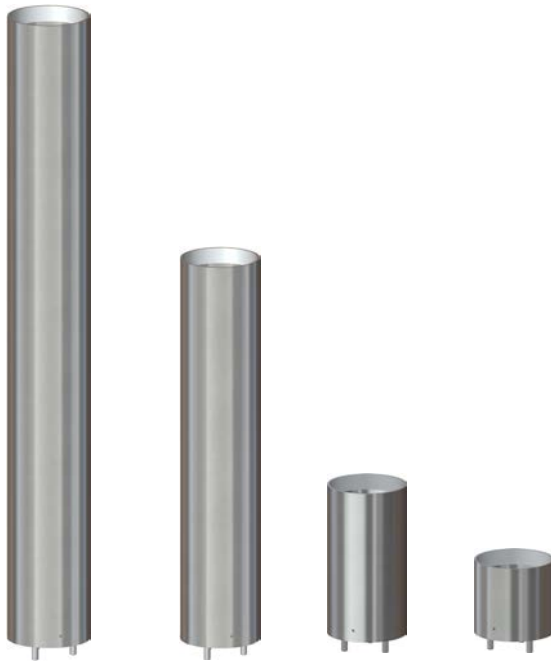
Code 1	Color of lighting
ENGWW	Warm White
ENGDW	Daylight White
ENGCW	Cool White
ENGR	Red
ENGG	Green
ENGB	Blue
ENGRGB	Red + Green + Blue
ENGRGBW	Red + Green + Blue + Warm White

Code 2	No. of LED
1	1 LED
2	2 LEDs
3	3 LEDs
4	3 High-Intensity LEDs
5	3 High-Intensity LEDs

Code 3	Beam
N	Narrow
M	Medium
W	Wide

(2) Tube assembly

Sand-blasted anodized aluminium tube assembly with diameter of 100 mm of different heights for fixing on flat surface or ground.



Code	Description
LTH90	90 mm tube height
LTH190	190 mm tube height
LTH490	490 mm tube height
LTH790	790 mm tube height
LTHCH	Customized tube height

(3) Beam assembly

Sand-blasted anodized aluminium assembly with high-grade PMMA glass optical window and different beams.



Code	Description
LBRD	High profile down-reflective beam 105 mm
LBRH	High profile side-reflective beam 105 mm
LBRL	Low profile side-reflective beam 60 mm
LBDB	Direct no-reflective beam 5 mm

ASSEMBLING AND INSTALLATION

The modular path LED light SPARK series consists of the following assemblies:

- Engine assembly
- Tube assembly
- Beam assembly

The assembling and installation have to be realized by qualified personnel.

The SPARK has to be assembled and fixed as shown in the drawing below:



- a) Insert the connection cable and fix the basic component of the Tube assembly to the prepared flat surface or ground by using of 3 fixing screws M8x60 with wallplugs.
- b) Push the tube to the basic component of the Tube assembly and fix it with 3 enclosed screws M5
- c) Connect the power supply and control wires
- d) Tighten the Engine assembly to the Beam assembly
- e) Tighten the jointed Engine assembly/Beam assembly to the fixed Tube assembly

Note:

- ***Do not overtighten the screws and threads as this can result in path light damage.***

Note:

- ***Do not cover the path light body with any kind of temperature isolating material. The path light is protected by a temperature sensor against over-heating. When the temperature of the path light exceeds 85°C the path light is automatically switched off.***

CONNECTION

The power supply has to be connected through the main switch (not included) with correct polarity and protected by a fuse (not included). The power supply voltage range has to be from 10 – 30 Vdc.

Note:

- ***The power supply has to be switched off before installation.***

The light engine has to be connected as described in the table below:

ENIGINE wire color	FUNCTION
Red	+ DC Power Supply
Black	GND Power Supply
Orange	+ Control
Brown	GND Control

For basic control of the light the CONTROL wire has to be connected through the momentary switch (not included) to the GND by using a 2-pole signal cable extension. (not included)

For DMX512 control optional LXU01 or LXU03 interface can be connected to the CONTROL wires by using a 2-pole signal cable (not included).

Note:

- ***When two or more lights are connected in the lighting system the control wires can be connected in parallel and all the lights then can be controlled by using only one momentary switch or LXU01 (LXU03) interface.***

Earthing

The path light has to be earthed by using a pre-tinned green wire with a yellow stripe a minimum of 8 AWG (8.36 mm²). The wire has to be connected to the path light by the help of one fixing screw M8x60

Synchronization

When more than one light is connected to the system the optional Synchronization Unit LSU08 is recommended to synchronize the colors of lighting at the Rainbow Color Spectrum mode of lighting. On the other case the colors of all installed lights would not be the same after few minutes or hours of operation in the Rainbow Color Spectrum mode.

If the multi-color RGB light is used only with one of the fixed color of lighting the synchronization is not necessary.

CONTROLS

Single-color warm white (ENGWW), daylight white (ENGDW), cool white (ENGCW), red (ENGR), green (ENGG) or blue (ENGB) models:

Control by momentary switch

Remote control by momentary switch can be used to turn-on and turn-off the light and to control the luminosity.

Turning on / off

Press the momentary switch momentary.

Dimming

When the light is on, press the momentary switch longer until the desired power is achieved.

Turning on minimum

When the light is off, press the momentary switch longer (e.g. one second or more) until the light is turned on at minimum power.

Set default

Press the momentary switch for min. 40 seconds or until the light is turned off.

DMX512 control

The network connection to control the light with the standard DMX512 protocol is enabled by using optional LXU01 or LXU03 interfaces.

Multi-color (ENGRGB) model:

Control by momentary switch

Remote control by momentary switch has to be used to turn-on and turn-off the light and to control the mode of lighting and luminosity.

When the light is turned-off the color or mode of lighting can be changed sequentially by pressing the momentary switch for 2 seconds:

ENGRGB Sequence of lighting
Custom Color
Full RGB
Cool White
Bluish White
Red
Green
Blue
Rainbow Color Spectrum

Turning on /off

Press the momentary switch shortly.

Changing the color or mode of lighting

When the light is turned-off press the momentary switch for 2 seconds.

Setting the Custom Color

At the selected Rainbow Color Spectrum mode press the momentary switch shortly to turn the light off. After that press the momentary switch for 5 seconds or until the light is switched to the selected color and then the Custom Color is set and selected.

Dimming

When the light is turned-on press the momentary switch until the desired illumination is achieved. By another pressing of the momentary switch the luminosity will increase to the maximum illumination.

Set default

Press the momentary switch for min. 40 seconds or until the light is turned off.

DMX512 control

The built-in ASTEL protocol enables the network connection to control the lights with the standard DMX512 protocol by using optional LXU01 or LXU03 interfaces.

Multi-color (ENGRGBW) model:

Control by momentary switch

Remote control by momentary switch has to be used to turn-on and turn-off the light and to control the mode of lighting and luminosity.

When the light is turned-off the color or mode of lighting can be changed sequentially by pressing the momentary switch for 2 seconds:

ENGRGBW Sequence of lighting
Custom Color
Full RGB
Cool White
Bluish White
Red
Green
Blue
White Color Spectrum
Custom White Color
Rainbow Color Spectrum

Turning on /off

Press the momentary switch shortly.

Changing the color or mode of lighting

When the light is turned-off press the momentary switch for 2 seconds.

Setting the Custom White Color

At the selected White Color Spectrum mode press the key-switch momentary to turn the light off. After that press the key switch for 5 seconds or until the light is switched to the selected white color and then the White Color is set and selected.

Setting the Custom Color

At the selected Rainbow Color Spectrum mode press the momentary switch shortly to turn the light off. After that press the momentary switch for 5 seconds or until the light is switched to the selected color and then the Custom Color is set and selected.

Dimming

When the light is turned-on press the momentary switch until the desired illumination is achieved. By another pressing of the momentary switch the luminosity will increase to the maximum illumination.

Set default

Press the momentary switch for min. 40 seconds or until the light is turned off.

DMX512 control

The built-in ASTEL protocol enables the network connection to control the lights with the standard DMX512 protocol by using optional LXU01 or LXU03 interfaces.

TECHNICAL SPECIFICATIONS

Engine assembly

Power supply	12 – 24 Vdc, max. 260 mA/12 Vdc or 135 mA/24 Vdc (1 LED) 12 – 24 Vdc, max. 500 mA/12 Vdc or 260 mA/24 Vdc (2 LEDs) 12 – 24 Vdc, max. 800 mA/12 Vdc or 420 mA/24 Vdc (3 LEDs) 12 – 24 Vdc, max. 950 mA/12 Vdc or 500 mA/24 Vdc (3 High-Int. LEDs) 15 – 24 Vdc, max. 1.200 mA/24 Vdc (3 High-Int. LEDs) 12 – 24 Vdc, max. 600 mA/12 Vdc or 300 mA/24 Vdc (RGB) (N) 12 – 24 Vdc, max. 650 mA/12 Vdc or 350 mA/24 Vdc (RGB) (M/W) 12 – 24 Vdc, max. 800 mA/12 Vdc or 400 mA/24 Vdc (RGBW) (N) 12 – 24 Vdc, max. 650 mA/12 Vdc or 350 mA/24 Vdc (RGBW) (M/W)
Beam angle	12°(N), 30°(M), 80°(W) (1 LED) 20°(N), 36°(M), 120°(W) (2 LEDs) 12°(N), 30°(M), 80°(W) (3 LEDs) 15°(N), 40°(M), 120°(W) (RGB) 15°(N), 40°(M), 120°(W) (RGBW)
Optical window	High-grade polycarbonate glass
Luminous flux (cool white)	max. 250 lm (1 LED) max. 500 lm (2 LEDs) max. 700 lm (3 LEDs) max. 1.400 lm (3 High-Intensity LEDs) max. 3.000 lm (3 High-Intensity LEDs) max. 190 lm (RGB) (N) max. 400 lm (RGB) (M/W) max. 330 lm (RGBW) (N) max. 550 lm (RGBW) (M/W)
Operating temperature	-10°C - +40°C
Casing	Anodized aluminium
Protection	IP 67
Dimensions	Ø86 x 68 mm (ordering code 2: 1, 2, 3, 4) Ø86 x 153 mm (ordering code 2: 5)
Weight	0.6 kg (ordering code 2: 1, 2, 3, 4) 1.7 kg (ordering code 2: 5)

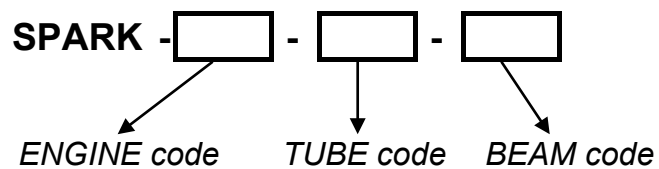
Tube assembly

Material	Anodized aluminium
Dimensions	Ø100 x 95 mm Ø100 x 195 mm Ø100 x 495 mm Ø100 x 795 mm Ø100 x C mm (customized)
Weight	0.6 kg (90) 0.9 kg (190) 1.7 kg (490) 2.4 kg (790)

Beam assembly

Material	Anodized aluminium and PMMA glass
Dimensions	Ø100 x 115 mm (LBRD)
	Ø100 x 115 mm (LBRH)
	Ø100 x 70 mm (LBRL)
	Ø100 x 7 mm (LBDB)
Weight	0.6 kg (LBRD)
	0.4 kg (LBRH)
	0.5 kg (LBRL)
	0.2 kg (LBDB)

The model specification:



DECLARATION OF CONFORMITY

according to IEC Guide 22 and EN 45014

Manufacturer's Name: ASTEL, Podjetje za projektiranje, proizvodnjo in trgovino, d.o.o.

Manufacturer's Address: Dutovlje 138
6221 Dutovlje
Slovenija

declares that the products

Item, Product Name and Model Number: 1. Path LED light SPARK series

conform to the following Product Specifications:

EMC: EN 55015:2006 + A1:2007
EN 61547:1995 + A1:2000 + A2:2009
EN 61547:2009

Safety: EN 60598-2-18:1995/A1:2012
EN 60529:1992+A2:2013

Supplementary Information:

The products herewith comply with the requirements of the following Directives and carry the CE-marking accordingly:

- the Low Voltage Directive 2014/35/EU
- the EMC Directive 2014/30/EU
- the RoHS Directive (EU) 2015/863

ASTEL d.o.o.
Dutovlje 138
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Slovenija

18th January, 2017

WARRANTY

1. The equipment manufactured by ASTEL d.o.o. is warranted to be free from defects in workmanship and materials under normal use and service.
2. This Warranty is in effect for of two years from the date of purchase by the user. Proof of purchase must be included, to establish that it is inside the warranty period.
3. This Warranty is transferrable and covers the product for the specified time period.
4. In case any part of the equipment proves to be defective, other than those parts excluded in paragraph 5 below, the owner should do the following:
 - (a) prepare a detailed written statement of the nature and circumstances of the defect, to the best of the Owner's knowledge, including the date of purchase, the place of purchase, the name and address of the installer, and the Purchaser's name, address and telephone number;
 - (b) the Owner should return the defective part or unit along with the statement referenced in the preceding paragraph to the warrantor, ASTEL d.o.o., or an authorized distributor, postage/shipping prepaid and at the expense of the Purchaser;
 - (c) if upon the Warrantor's or authorized distributor's examination, the defect is determined to result from defective material or workmanship, the equipment will be repaired or replaced at the Warrantor's option without charge, and returned to the Purchaser at the Warrantor's expense;
 - (d) no refund of the purchase price will be granted to the Purchaser, unless the Warrantor is unable to remedy the defect after having a reasonable number of opportunities to do so. Prior to refund of the purchase price, Purchaser must submit a statement in writing from a professional supplier that the installation instructions of the Operating Instructions manual have been complied with and that the defect remains;
 - (e) warranty service shall be performed only by the Warrantor, or an authorized distributor, and any attempt to remedy the defect by anyone else shall render this warranty void.
5. There shall be no warranty for defects or damages caused by faulty installation or hook-up, abuse or misuse of the equipment including exposure to excessive heat, salt or fresh water spray, or water immersion except for equipment specially designed as waterproof.
6. There shall be no responsibility or liability whatsoever on the part of the Warrantor or its employees and representatives for injury to any person or persons, or damage to property, loss of income or profit, or any other consequential or resulting damage or cost which may be claimed to have been incurred through the use or sale of the equipment, including any possible failure or malfunction of the equipment, or part thereof.

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