

# DATASHEET

## Myra Spot LED-module for miniature fixtures 1.9W 230lm



### Product description

- Spot module for circular fixtures
- High power LED for constant current
- Simple connection with 2-pin connector
- Easy mounting with thermally conductive adhesive
- Wide range of secondary optics

### Technical parameters

#### Electrical and optical <sup>1</sup>

CCT	Min. luminous flux [lm]			Typ. forward voltage [V]			Typ. power consumpt. [W]			Efficacy [lm/W]		
	350mA	500mA	700mA	350mA	500mA	700mA	350mA	500mA	700mA	350mA	500mA	700mA
2200K	108	149	200	2.83	2.87	2.92	0.99	1.44	2.05	109	104	98
2700K	103	142	190	2.71	2.75	2.80	0.95	1.38	1.96	108	103	97
3000K	103	142	190	2.71	2.75	2.80	0.95	1.38	1.96	108	103	97
4000K	114	157	210	2.79	2.81	2.80	0.95	1.38	1.96	120	114	107
5700K	124	172	230	2.66	2.70	2.75	0.93	1.35	1.92	133	127	119

<sup>1</sup> Flux values are presented at junction temperature  $T_j = 85^\circ\text{C}$ .  $T_j$  can be calculated, see section 'Junction Temperature'.

#### Photometric

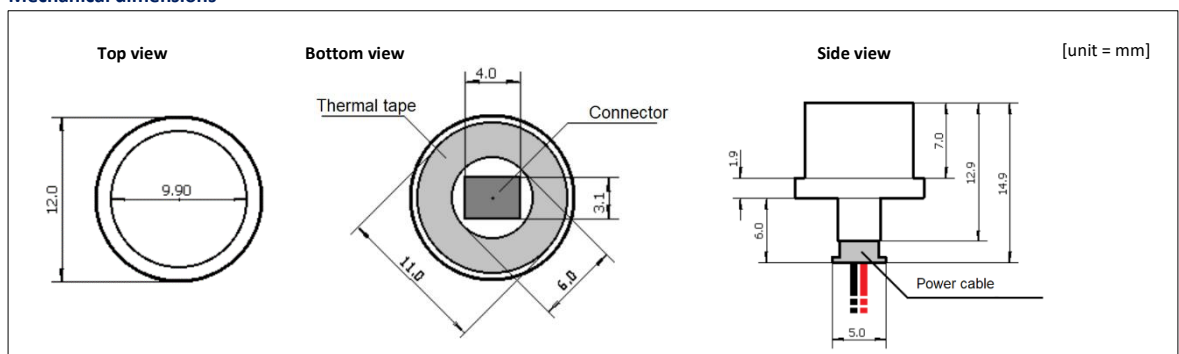
CCT	Colour consistency SDCM	Colour rendering index CRI	R9 value
2200K	3	> 80	-
2700K	3	> 90	> 50
3000K	3	> 90	> 50
4000K	3	> 90	> 50
5700K	3	> 90	> 50

#### Beam characteristics

Name	Digits in part # <sup>2</sup>	Angle [FWHM]	Type
No optics	No digits	120°	-
Real spot	N	18°	TIR Lens
Medium	M	24°	TIR Lens
Wide	W	31°	TIR Lens
Wide Wide	WW	36°	TIR Lens
Wide Wide Wide	WWW	45°	TIR Lens
Elliptic	E	19x48°	TIR Lens

<sup>2</sup> See chapter for Ordering data

#### Mechanical dimensions



# DATASHEET

## Handling

### Electrical supply

The Myra LED module must be connected to a constant current driver. Using constant voltage drivers will permanently damage the module. Myra has no built-in polarity protection device. This means that reversed voltages will damage the LED.

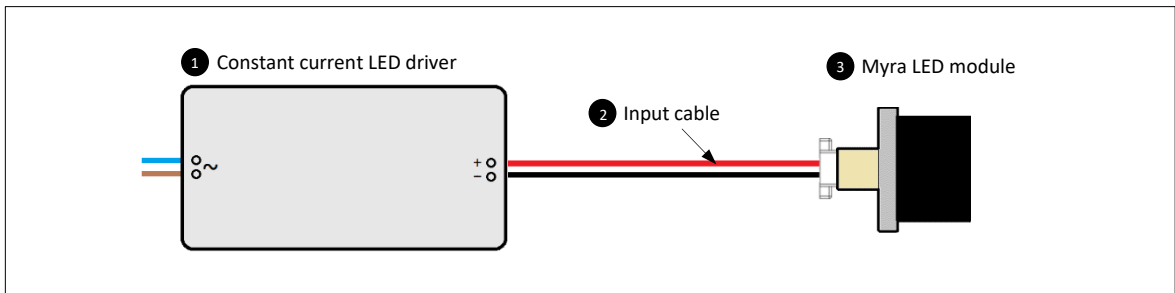
Myra modules are not protected against overvoltages, overcurrents, overloads or short-circuit currents. Safe and reliable operation can only be guaranteed in conjunction with a LED driver which complies with the relevant standards.

### Mounting

The back side of Myra is equipped with thermally conductive tape. After the protective film of the tape has been removed the module can be attached to a flat heat-dissipating surface. A light force should be used when pressing evenly on the module to remove air bubbles between tape and substrate and to make the adhesives stick properly to the heatsink. The surface should be cleaned with isopropanol to remove any grease before adhesion. **Note! Adhesion on powder coated surfaces might be very weak. Always attach to a clean metal surface.**

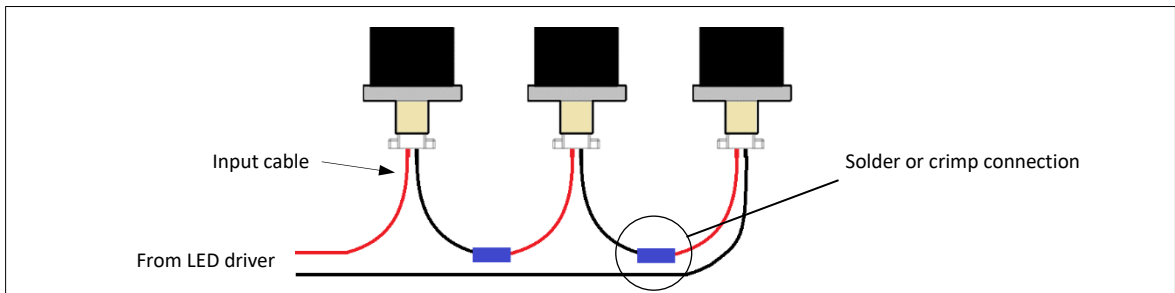
### Wiring

From the LED driver an input cable should be used to connect power to Myra. Red wire goes to positive output and black to negative. Driving only one Myra from a driver requires the driver to be capable of loads down to 2.8V.



### Wiring example

Serial connection is made by soldering or crimping the input cables together.



### Wiring types

Input cables are available as accessories. They are available in different lengths. See <https://lightronic.se/led-accessories/> for more information.

### Removal and recycling

If Myra is to be removed after it has been fitted with its adhesive tape there is always a risk of damaging the module, so be cautious. The removal is done by inserting the blade of a flat tool between its back side and the surface to which it is attached and slightly bending upwards. If the module survives the removal, a new tape can be attached, and the module can be re-used.

In order to recycle Myra it should be discarded at a recycling station in the bin for electronics.

### Technical data

LED type	LUXEON® Z ES
LED current, max	700mA
Board temperature at TC point, max	80°C
Reverse voltage, max	Reversed voltage not allowed
ESD sensitivity	>8kV (Class 3B HBM)
Thermal resistance Rthj,A	10°C/W
PCB material	MC PCB
Connector	1.0mm pitch WR-WTB

# DATASHEET

## Lifetime and thermal details

The lifetime of an LED module is defined by the time measured from when a certain number of LEDs is switched on and to the point when the percentage of its original lumen output has decreased to a certain level. It is most common to use L70B50 to represent the lifetime figure of an LED. The L value represents the remaining light level and the B value defines the quantity of the test objects that has failed. L70B50 means that 50% of the LEDs are below the 70% original light output.

Parameter	LED-current	Max temp at TC-point	Estimated lifetime
L70B50	1000mA *	80°C when using optics	>60 000 hours
L70B50	1000mA *	105°C without optics	>60 000 hours

\* Note: On Myra the current should not be more than 700mA.

To define the temperature of the module the power should be switched on long enough for the system to get a stable temperature, typically 60-90 minutes. Measurement can be done in two ways:

- Using a thermal logger with a thermocouple. The tip of the thermocouple should be glued to the TC point.
- Using a thermal imaging camera

**By using a thermocouple;** remove the secondary optics in order to measure the temperature at the TC point. The point is marked and located just below the LED. It is recommended to use a micro, AWG 40 or smaller, thermocouple in order to prevent light being absorbed by the sensor.

**By using a thermal imaging camera;** measurement should be done immediately after turning the LED off so that the emitting photons will not interfere with the sensor.

## Junction temperature

The junction temperature  $T_j$  can be calculated by this formula:

$T_j = T_c + P \times 8$  where  $T_c$  is the temperature at the TC-point and P is the electrical power that is fed to the LED.  $P = Vf \times If$ .

## Energy efficiency class

CCT	Classification
2200K	F
2700K	F
3000K	F
4000K	F
5700K	E

Energy efficiency class is defined at nom. LED current 700mA. At other currents the energy efficiency class might be another.

## Harmonizing standards

Standard	Description
IEC 62471	Photobiological safety of lamps and lamp systems
IEC 62778	Blue light hazards

## Ordering data

Part number	CCT	Qty per carton
SM1-MYR-22K8-xx	2200K	84 pcs
SM1-MYR-27K9-xx	2700K	84 pcs
SM1-MYR-30K9-xx	3000K	84 pcs
SM1-MYR-40K9-xx	4000K	84 pcs
SM1-MYR-57K9-xx	5700K	84 pcs

## Accessories

A table with examples of accessories available for Myra LED modules. More accessories can be found at <https://lightronic.se/led-accessories/>

Name	Part #	Specification	More information
Input cable	KAB-W-1.0-21-200	200 mm 2-pos, 1 connector, 1 open end, red-black	
Constant current driver 28W	AL20D-PH	200-900 mA CC, push-dim, 0-10V dim, DALI, 3V min output voltage	<a href="#">Drivers</a>

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