

# LED SPOT CC

HELEN 50 EASY



## CONFIGURABLE LED SPOT FOR TYPICAL MR16 REPLACEMENT

One of the main characteristics of this LED spot is its flexibility. The modularity of this LED spot allows to combine different locking rings, lenses and holders in order to get the expected result.

Moreover, the product has been designed to assure an easy and fast access to the light source.

### Typical applications for LED Spot

Integration in luminaires

- Residential lighting
- Retail lighting
- Hospitality lighting
- Museum lighting



### HELEN 50 Easy

- HIGH EFFICIENCY LED REPLACEMENT FOR MR16 LAMP
- CONFIGURABLE PRODUCT: HOLDER AND LOCKING RING IN WHITE OR BLACK COLOUR
- NARROW COLOUR TOLERANCES: 3 STEP MACADAM
- DIE CAST ALUMINIUM HEAT SINK
- LUMINOUS FLUX: UP TO 1145 LM
- MADE IN ITALY



## HELEN 50 Easy

### Technical notes

Heatsink: die cast aluminium with powder coating (black colour)

Lens: PMMA Ø35 mm

Locking Ring: PA white or black colour

COB pcb material: aluminium

Holder: PC reflective white or black

Colour accuracy initially: 3 SDCM

CRI 92

Type of protection: IP20

Max. operating temperature at  $T_p$  point: 75°C at 300mA

Lumen maintenance: L70/B50 > 55.000 hrs at 70°C (300mA) at  $T_p$  point

Temperatures are affected by end-product integration

has to be verified by the luminaire manufacturer

Leads: Cable round 2x0,35mm<sup>2</sup> type FLRYY-B black

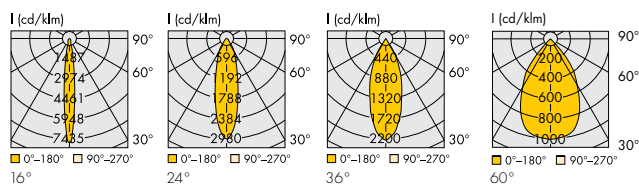
Red and Black wire insulated, length: 290mm. Stripped and tinned ends

with integrated cord grip

Possible fixation through 2,9 x 9,5 screws

Weight: 70 g

Shipping unit & MOQ: 45 pcs



### Maximum ratings

Exceeding the maximum ratings can lead to reduction of service life or destruction of the LED spot

Type	Ambient temperature ( $T_a$ )		Operation temperature at $T_p$ point with max current		Storage temperature		Max. allowed repetitive peak current mA
	°C min	°C max	°C min	°C max	°C min	°C max	
HELEN 50-E	-20	40	-20	75	-40	80	400

### Operating Life

at  $T_p = 70^\circ\text{C}$  (in hours)

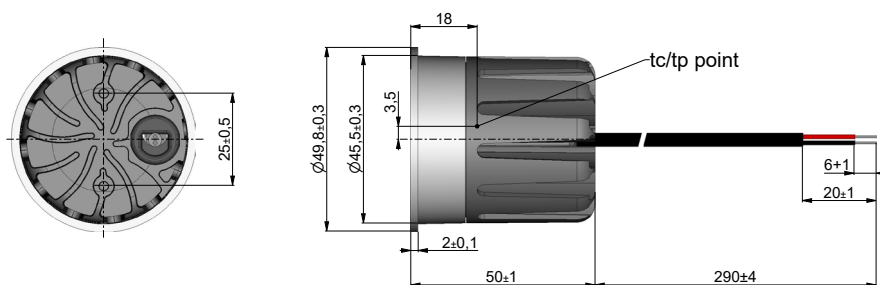
Lumen Maintenance	200 mA	250 mA	300 mA
L90/B10	26.000	26.000	26.000
L80/B10	> 55.000	> 55.000	> 55.000
L70/B10	> 55.000	> 55.000	> 55.000

### Electrical characteristics

Type	Typ. voltage DC			Typ. power consumption		
	200 mA V	250 mA V	300 mA V	200 mA W	250 mA W	300 mA W
HELEN 50-E	33,7	34,4	35,0	6,7	8,6	10,5

Voltage and power tolerance:  $\pm 10\%$  | \* Rated values

### Drawing



The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

## Optical Characteristics

at T<sub>p</sub> = 70°C

Type HELEN 50 Easy with <b>Holder WHITE</b>	Ref. No.		Correlated colour temp.* K	Typ. luminous flux** and typ. efficiency at						CRI R <sub>a</sub>	Beam angle °	Peak of intensity at maximum current Candela
	with Locking Ring white	with Locking Ring black		200 mA		250 mA		300 mA				
				lm	lm/W	lm	lm/W	lm	lm/W			
<b>HELEN 50-E 2700 K CRI 92</b>												
HELEN 50-E G1 V2 927 N Wx	<b>574666</b>	<b>on req.</b>	2700	720	107	870	101	1005	96	92	16°	4800
HELEN 50-E G1 V2 927 M Wx	<b>574667</b>	<b>on req.</b>	2700	715	107	865	101	1000	95	92	24°	3440
HELEN 50-E G1 V2 927 W Wx	<b>574668</b>	<b>on req.</b>	2700	715	107	865	101	1000	95	92	36°	2080
HELEN 50-E G1 V2 927 EW Wx	<b>574669</b>	<b>on req.</b>	2700	750	112	905	105	1045	100	92	60°	1010
<b>HELEN 50-E 3000 K CRI 92</b>												
HELEN 50-E G1 V2 930 N Wx	<b>574670</b>	<b>574678</b>	3000 (b BBL)	770	115	925	108	1070	102	92	16°	5100
HELEN 50-E G1 V2 930 M Wx	<b>574671</b>	<b>574679</b>	3000 (b BBL)	765	114	920	107	1065	101	92	24°	3660
HELEN 50-E G1 V2 930 W Wx	<b>574672</b>	<b>574680</b>	3000 (b BBL)	765	114	920	107	1060	101	92	36°	2200
HELEN 50-E G1 V2 930 EW Wx	<b>574673</b>	<b>574681</b>	3000 (b BBL)	800	119	965	112	1115	106	92	60°	1070
<b>HELEN 50-E 4000 K CRI 92</b>												
HELEN 50-E G1 V2 940 N Wx	<b>574674</b>	<b>on req.</b>	4000 (b BBL)	790	118	955	111	1100	105	92	16°	5240
HELEN 50-E G1 V2 940 M Wx	<b>574675</b>	<b>on req.</b>	4000 (b BBL)	785	117	950	110	1095	104	92	24°	3760
HELEN 50-E G1 V2 940 W Wx	<b>574676</b>	<b>on req.</b>	4000 (b BBL)	785	117	945	110	1095	104	92	36°	2275
HELEN 50-E G1 V2 940 EW Wx	<b>574677</b>	<b>on req.</b>	4000 (b BBL)	825	123	990	115	1145	109	92	60°	1100

where "x" could be "W" for White locking ring or "B" for Black locking ring

\* Colour tolerance: 3 MacAdam | \*\* Production tolerance of luminous flux and efficiency: ± 10% | Min. CRI Ra: > 90 at 9xx

NOTE : The data above refers to configurations featuring a white holder and white locking ring. For configurations with black locking ring a 3% reduction in luminous flux must be taken into account

## Optical Characteristics

at T<sub>p</sub> = 70°C

Type HELEN 50 Easy with <b>Holder BLACK</b>	Ref. No.		Correlated colour temp.* K	Typ. luminous flux** and efficiency at						CRI R <sub>a</sub>	Beam angle °	Peak of intensity at maximum current Candela
	with Locking Ring white	with Locking Ring black		200 mA		250 mA		300 mA				
				lm	lm/W	lm	lm/W	lm	lm/W			
<b>HELEN 50-E 2700 K CRI 92</b>												
HELEN 50-E G1 V2 927 N Bx	<b>on req.</b>	<b>on req.</b>	2700	645	96	780	91	900	86	92	16°	4495
HELEN 50-E G1 V2 927 M Bx	<b>on req.</b>	<b>on req.</b>	2700	620	93	750	87	870	83	92	24°	3210
HELEN 50-E G1 V2 927 W Bx	<b>on req.</b>	<b>on req.</b>	2700	635	95	765	89	885	84	92	36°	1950
HELEN 50-E G1 V2 927 EW Bx	<b>on req.</b>	<b>on req.</b>	2700	695	104	835	97	965	92	92	60°	955
<b>HELEN 50-E 3000 K CRI 92</b>												
HELEN 50-E G1 V2 930 N Bx	<b>574829</b>	<b>574833</b>	3000 (b BBL)	690	103	830	97	960	91	92	16°	4775
HELEN 50-E G1 V2 930 M Bx	<b>574830</b>	<b>574834</b>	3000 (b BBL)	665	99	800	93	925	88	92	24°	3410
HELEN 50-E G1 V2 930 W Bx	<b>574831</b>	<b>574835</b>	3000 (b BBL)	680	101	815	95	940	90	92	36°	2060
HELEN 50-E G1 V2 930 EW Bx	<b>574832</b>	<b>574836</b>	3000 (b BBL)	740	110	895	104	1030	98	92	60°	1010
<b>HELEN 50-E 4000 K CRI 92</b>												
HELEN 50-E G1 V2 940 N Bx	<b>on req.</b>	<b>on req.</b>	4000 (b BBL)	710	106	855	99	985	94	92	16°	4910
HELEN 50-E G1 V2 940 M Bx	<b>on req.</b>	<b>on req.</b>	4000 (b BBL)	680	101	825	96	950	90	92	24°	3505
HELEN 50-E G1 V2 940 W Bx	<b>on req.</b>	<b>on req.</b>	4000 (b BBL)	695	104	835	97	970	92	92	36°	2135
HELEN 50-E G1 V2 940 EW Bx	<b>on req.</b>	<b>on req.</b>	4000 (b BBL)	765	114	915	106	1060	101	92	60°	1040

where "x" could be "W" for White locking ring or "B" for Black locking ring

\* Colour tolerance: 3 MacAdam | \*\* Production tolerance of luminous flux and efficiency: ± 10% | Min. CRI Ra: > 90 at 9xx

NOTE : The data above refers to configurations featuring a white holder and white locking ring. For configurations with black locking ring a 3% reduction in luminous flux must be taken into account

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

## HELEN 50 Easy

### Packaging unit

Type	Packaging unit pcs.	Box dimensions (LxWxH) mm	Weight single (g)	Gross weight packaging unit (g)
HELEN 50-E G1 V2	45	600x400x80	70	3645

### EPREL information

HELEN 50-E is a containing product

Containing product HELEN 50-E Types	Light Source Types	EPREL Reg. No.	EE Class
HELEN 50-E G1 V2 927	VCA2-122-927	857214	F
HELEN 50-E G1 V2 930	VCA2-122-930	857215	F
HELEN 50-E G1 V2 940	VCA2-122-940	857224	F

### Product guarantee

- 5 years
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage ([www.vossloh-schwabe.com](http://www.vossloh-schwabe.com)). We will be happy to send you these conditions upon request.

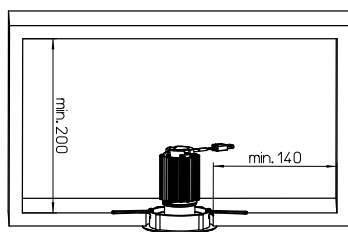
## LED Constant Current Drivers

Please visit our homepage for details for suitable LED constant current drivers: [www.vossloh-schwabe.com](http://www.vossloh-schwabe.com)

### General safety and installation instructions

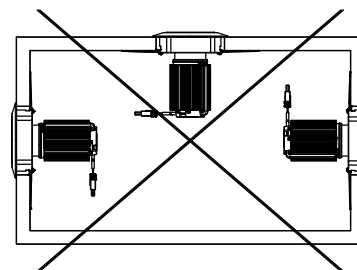
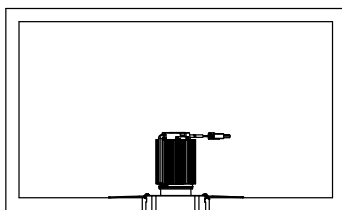
- VS product may only be installed and commissioned by authorised and fully qualified staff.
- These instructions must be carefully read before installing and commissioning the system, as this is the only way to ensure safe and correct handling.
- An external constant-current driver is required.
- Before any work is carried out on the equipment, it must be disconnected from the mains.
- All valid safety and accident-prevention regulations must be observed.
- The products should never be inexpertly opened. Repairs may only be undertaken by the manufacturer.

### Built-in



### Correct position

OK



The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

## Assembly and Safety Information

Installation must be carried out under observation of the relevant regulations and standards. The LED modules are designed for operation within a casing or luminaire. Safety regulations acc. to EN 60598 has to be observed. Installation must be carried out in a voltage-free state (i.e. disconnection from the mains).

- Mains frequency: 0 Hz
- LED built-in modules must not be subjected to any undue mechanical stress, e. g.:
  - handle LED modules carefully
  - avoid shear and compressive forces onto the optics during handling and installation
  - do not carry or move the LED engines by using the wires
  - do not cover the lens with any object or dust
- When installing/screwing the module into a luminaire, please ensure that the cables are not squeezed between luminaire and LED engine.
- The LED engine must not be used in hermetically sealed casings.
- Safe operation only possible by the use of external constant current sources ( $I_{max}$ , see table "Electrical Characteristics").
- Operation is dependent on constant current drivers that should provide the following protective measures:
  - short-circuit protection
  - overload protection
  - overheating protection
  - SELV;  $U_{max} \leq 60\text{ V}$
  - $I_{max}$  must not be exceeded
- Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- The maximum output of the power supply must be observed.
- For optimal load of used constant current driver the modules can only be connected in series. The quantity of LED modules is limited by the sum of forward voltage and the capacity of used constant current driver. Safety regulations acc. to EN 60598 has to be observed if the sum of forward voltage exceed the permitted touchable value.
- A parallel connection of the LED engines is not allowed.
- Measurement tolerances:
  - luminous flux:  $\pm 10\%$
  - voltage:  $\pm 3\%$
  - CRI:  $\pm 1\%$
- Maximum allowed number of switching cycles: 15,000
- Please ensure standard ESD (electrostatic discharge) protection measures are employed when handling and installing LED modules. Electrostatic discharge can damage LEDs.
- To ensure problem-free operation, the specified maximum temperature at the  $t_c$  and  $t_p$  point (see "Operating Life") must be observed (measured in accordance with EN 60598-1). To satisfy this point, it is necessary to put measures in place to ensure any heat is dissipated from the LED engine to the environment.

- To ensure good thermal behaviour take care about "general safety and installation instructions".
- In the event of outdoor applications or applications in damp locations, care must be taken to protect LED assembly modules against humidity, splashes and jets of water. Any corrosion damage resulting from humidity or contact with condensation will not be recognised as a defect or manufacturing fault. LED assembly modules are not specially protected against foreign bodies or dust. Depending on the type of application, further protection must be ensured to prevent dust and foreign bodies from entering.
- Operating LED modules in the presence of certain chemical substances or in chemically enriched (aggressive) environments can impair module functionality or even cause total module failure. Detailed information can be found in our "Chemical Incompatibility" PDF on our website [www.vossloh-schwabe.com](http://www.vossloh-schwabe.com)
- The photobiological safety of the LED modules must be classified into risk groups in accordance with EN 62471



Rating in accordance with IEC / TR 62778  
For Risk Group 2:

The luminaire should be positioned so that prolonged staring into the luminaire at a distance closer than 1.95m is not expected.

The following LED modules are in risk group 1:

Up to 4000 K

LED module type	Max. allowed luminous flux per module (lm)	For higher luminous flux: E threshold to RG1 (lx)
VCA2-122	1128	1464

### Applied Standards

EN 62031  
LED modules for general lighting – Safety specifications

EN 62471-2  
Photobiological safety of lamps and lamp systems

The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.