

LED SPOT CC

HELEN 50 COMFORT



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 Comfort

- HIGH EFFICIENCY LED REPLACEMENT FOR MR16 LAMP
- CONFIGURABLE PRODUCT: HOLDER AND LOCKING RING IN WHITE OR BLACK COLOUR
- NARROW COLOUR TOLERANCES: 2 STEP MACADAM
- DIE CAST ALUMINIUM HEAT SINK
- LUMINOUS FLUX: UP TO 1470 LM
- MADE IN ITALY



HELEN 50 Comfort

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: 2 SDCM

CRI 90

Type of protection: IP20

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

Lumen maintenance: L70/B50 > 100.000 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 2x0,35mm² type FLRYY-B black

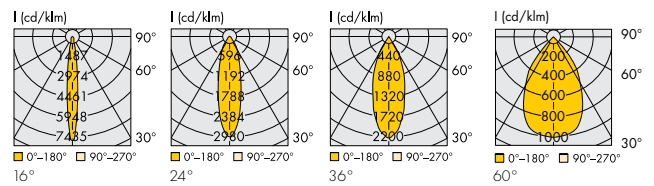
Red and Black wire insulated, length: 290mm. Stripped and tinned ends

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-C	-20	40	-20	75	-40	80	400

Operating Life

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

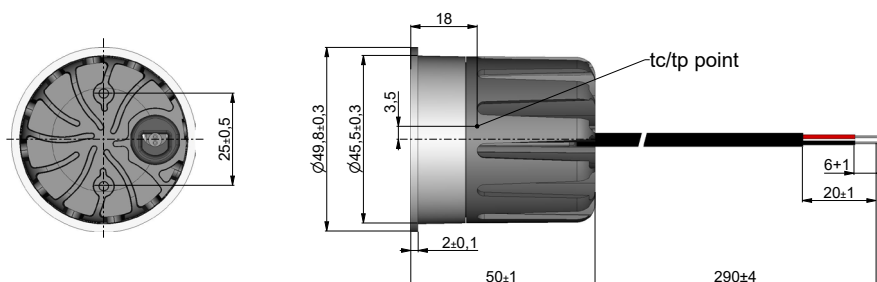
Lumen Maintenance	200 mA	250 mA	300 mA
L90/B10	>80.000	>85.000	>85.000
L80/B10	>100.000	>100.000	>100.000
L70/B10	>100.000	>100.000	>100.000

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-C	34.3	35.1	35.9	6.9	8.8	10.8

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_p = 70°C

Type HELEN 50 Comfort with Holder WHITE	Ref. No.		Correlated colour temp.* K	Typ. luminous flux** and typ. efficiency at						CRI R _a	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			
HELEN 50-C 2700 K CRI 90												
HELEN 50-C G1 L2 927 N Wx	574688	on req.	2700 (on BBL)	905	131	1110	126	1305	121	90	16°	6220
HELEN 50-C G1 L2 927 M Wx	574689	on req.	2700 (on BBL)	900	130	1105	126	1295	120	90	24°	4445
HELEN 50-C G1 L2 927 W Wx	574690	on req.	2700 (on BBL)	900	130	1105	126	1295	120	90	36°	2690
HELEN 50-C G1 L2 927 EW Wx	574691	on req.	2700 (on BBL)	945	137	1155	131	1355	125	90	60°	1305
HELEN 50-C 3000 K CRI 90												
HELEN 50-C G1 L2 930 N Wx	574692	611778	3000 (on BBL)	940	136	1155	131	1355	125	90	16°	6460
HELEN 50-C G1 L2 930 M Wx	574693	574699	3000 (on BBL)	935	136	1150	131	1345	125	90	24°	4620
HELEN 50-C G1 L2 930 W Wx	611777	574700	3000 (on BBL)	935	136	1145	130	1345	125	90	36°	2795
HELEN 50-C G1 L2 930 EW Wx	574694	574701	3000 (on BBL)	980	142	1200	136	1410	131	90	60°	1355
HELEN 50-C 4000 K CRI 90												
HELEN 50-C G1 L2 940 N Wx	574695	on req.	4000	980	142	1200	136	1415	131	90	16°	6745
HELEN 50-C G1 L2 940 M Wx	574696	on req.	4000	970	141	1190	135	1405	130	90	24°	4825
HELEN 50-C G1 L2 940 W Wx	574697	on req.	4000	970	141	1190	135	1405	130	90	36°	2920
HELEN 50-C G1 L2 940 EW Wx	574698	on req.	4000	1015	147	1245	141	1470	136	90	60°	1415

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

* Colour tolerance: 2 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_p = 70°C

Type HELEN 50 Comfort with Holder BLACK	Ref. No.		Correlated colour temp.* K	Typ. luminous flux** and efficiency at						CRI R _a	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			
HELEN 50-C 2700 K CRI 90												
HELEN 50-C G1 L2 927 N Bx	on req.	on req.	2700 (on BBL)	815	118	1000	114	1175	109	90	16°	5845
HELEN 50-C G1 L2 927 M Bx	on req.	on req.	2700 (on BBL)	785	114	965	110	1130	105	90	24°	4175
HELEN 50-C G1 L2 927 W Bx	on req.	on req.	2700 (on BBL)	800	116	980	111	1150	106	90	36°	2525
HELEN 50-C G1 L2 927 EW Bx	on req.	on req.	2700 (on BBL)	880	128	1075	122	1260	117	90	60°	1245
HELEN 50-C 3000 K CRI 90												
HELEN 50-C G1 L2 930 N Bx	574837	574841	3000 (on BBL)	850	123	1040	118	1220	113	90	16°	6070
HELEN 50-C G1 L2 930 M Bx	574838	574842	3000 (on BBL)	820	119	1005	114	1175	109	90	24°	4335
HELEN 50-C G1 L2 930 W Bx	574839	574843	3000 (on BBL)	830	120	1015	115	1195	111	90	36°	2620
HELEN 50-C G1 L2 930 EW Bx	574840	574844	3000 (on BBL)	915	133	1120	127	1315	122	90	60°	1290
HELEN 50-C 4000 K CRI 90												
HELEN 50-C G1 L2 940 N Bx	on req.	on req.	4000	885	128	1080	123	1275	118	90	16°	6340
HELEN 50-C G1 L2 940 M Bx	on req.	on req.	4000	850	123	1040	118	1230	114	90	24°	4530
HELEN 50-C G1 L2 940 W Bx	on req.	on req.	4000	860	125	1055	120	1250	116	90	36°	2740
HELEN 50-C G1 L2 940 EW Bx	on req.	on req.	4000	945	137	1160	132	1370	127	90	60°	1350

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

* Colour tolerance: 2 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

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HELEN 50 Comfort

Packaging unit

Type	Packaging unit pcs.	Box dimensions (LxWxH) mm	Weight single (g)	Gross weight packaging unit (g)
HELEN 50-C G1 L2	45	600x400x80	70	3645

EPREL information

HELEN 50-C is a containing product

Containing product HELEN 50-C Types	Light Source Types	EPREL Reg. No.	EE Class
HELEN 50-C G1 L2 927	L2C6-27902L02C0600	1959694	D
HELEN 50-C G1 L2 930	L2C6-30902L02C0600	1959695	D
HELEN 50-C G1 L2 940	L2C6-40902L02C0600	1959697	D

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). We will be happy to send you these conditions upon request.

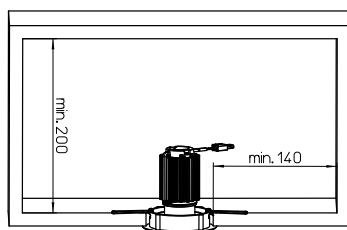
LED Constant Current Drivers

Please visit our homepage for details for suitable LED constant current drivers: www.vossloh-schwabe.com

General safety and installation instructions

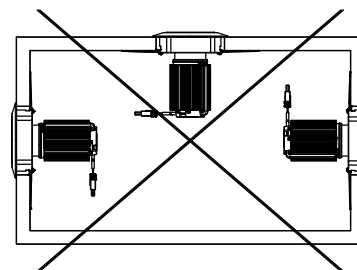
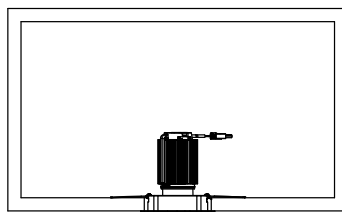
- VS product may only be installed and commissioned by authorised and fully qualified staff.
- These instructions must be carefully read before installing and commissioning the system, as this is the only way to ensure safe and correct handling.
- An external constant-current driver is required.
- Before 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




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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
 - 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)
L2C6-40902L02C0600	1016	1750

Applied Standards

EN 62031
LED modules for general lighting – Safety specifications

EN 62471-2
Photobiological safety of lamps and lamp systems

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