

LED MODULES

COMFORT COB HE
2000 LM TO 9000 LM
CRI > 90



COMFORT COB HE – RESIDENTIAL, RETAIL AND INDUSTRIAL LIGHTING

Typical Applications

VCAHE1-125/127/1212/1214


- Integration in reflector luminaires
- Retail lighting
- Downlights
- Production halls
- Warehouses

Comfort COB HE

- **LONG SERVICE LIFETIME: 90,000 HOURS**
- **NARROW COLOUR TOLERANCES:
2 STEP MACADAM**
- **HIGHLY EFFICIENT AT HIGH CRI:
UP TO 182 LM/W AT CRI > 90**
- **SPECIAL COLOUR FOR FASHION: PEARL WHITE**

Comfort COB HE VCAHE1-125 and VCAHE1-127

Technical Notes

- LED module for integration into luminaires 
- Dimensions: 19x19 mm
- Light emitting surface (LES): Ø 14 mm
- Use of external LED constant current driver



Electrical Characteristics

at $t_p = 65\text{ °C}$

Type	Typ. voltage DC				Typ. power consumption			
	350 mA *	500 mA	700 mA	1050 mA	350 mA	500 mA	700 mA	1050 mA
	V	V	V	V	W	W	W	W
VCAHE1-125-xxx	33.5	34.6	35.9	–	11.7	17.3	25.1	–
VCAHE1-127-xxx	32.8	33.6	34.5	36.1	11.5	16.8	24.2	37.9

Voltage and power tolerance: $\pm 5\%$ | * Rated values

$I_n = 350\text{ mA}$ for VCAHE1-125-xxx; $I_n = 500\text{ mA}$ for VCAHE1-127-xxx

Maximum Ratings

Exceeding the maximum ratings can lead to reduction of service life or destruction of the modules.

Type	Operating current mA	Operation temperature range at t_c point		Ambient temperature range		Storage temperature range		Max. allowed repetitive peak current mA
		$^{\circ}\text{C min.}$	$^{\circ}\text{C max.}$	$^{\circ}\text{C min.}$	$^{\circ}\text{C max.}$	$^{\circ}\text{C min.}$	$^{\circ}\text{C max.}$	
VCAHE1-125-xxx	350	–20	+95	–20	+40	–40	+95	900
	500							
	> 675	–20	+85					
	700							
VCAHE1-127-xxx	< 500	–20	+95	–25	+40	–40	+95	1260
	700							
	> 945	–20	+85					
	1050							

Operating Life

at $t_p = 65\text{ °C}$

Lumen maintenance	VCAHE1-125-xxx			VCAHE1-127-xxx		
	$\leq 450\text{ mA}$ in hours	500 mA in hours	700 mA in hours	$\leq 630\text{ mA}$ in hours	700 mA in hours	1050 mA in hours
L90/B10	53,000	28,000	28,000	53,000	28,000	28,000
L80/B10	> 90,000	87,000	87,000	> 90,000	87,000	87,000
L70/B10	> 90,000	> 90,000	> 90,000	> 90,000	> 90,000	> 90,000

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

Comfort COB HE – VCAHE1-125 and VCAHE1-127

Optical Characteristics

at $t_p = 65\text{ °C}$


Type	Ref. No.	Colour	Correlated colour temperature* K	Typ. luminous flux** and efficiency at								Typ. beam angle °	Typ. CRI R _a	Photometric code
				350 mA		500 mA		700 mA		1050 mA				
				lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W			
VCAHE1-125 – CRI 90														
VCAHE1-125-927	572724	warm white	2700K	1999	170	2763	160	3705	148	-	-	120	>90	927/269
VCAHE1-125-930B	572725	warm white	3000K (below BBL)	2009	171	2777	161	3724	148	-	-	120	>90	930/269
VCAHE1-125-931PW	572726	PearlWhite	3100K (PearlWhite)	2040	174	2819	163	3781	151	-	-	120	>90	931/269
VCAHE1-125-935B	572727	neutral white	3500K (below BBL)	2026	173	2801	162	3756	150	-	-	120	>90	935/269
VCAHE1-125-940B	572728	neutral white	4000K (below BBL)	2049	175	2832	164	3797	151	-	-	120	>90	940/269
VCAHE1-127 – CRI 90														
VCAHE1-127-927	572729	warm white	2700K	2038	177	2845	169	3863	160	5490	145	120	>90	927/269
VCAHE1-127-930B	572730	warm white	3000K (below BBL)	2054	179	2868	171	3894	161	5534	146	120	>90	930/269
VCAHE1-127-931PW	572731	PearlWhite	3100K (PearlWhite)	2086	182	2912	173	3953	163	5618	148	120	>90	931/269
VCAHE1-127-935B	572732	neutral white	3500K (below BBL)	2072	180	2893	172	3928	162	5582	147	120	>90	935/269
VCAHE1-127-940B	572733	neutral white	4000K (below BBL)	2089	182	2916	174	3959	164	5627	148	120	>90	940/269

* Colour tolerance: 2 MacAdam | ** Production tolerance of luminous flux and efficiency: ± 10 % | Min. CRI R_a: > 90 at 9xx
 I_n = 350 mA for VCAHE1-125-xxx; I_n = 500 mA for VCAHE1-127-xxx

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

Comfort COB HE VCAHE1-1212 and VCAHE1-1214

Technical Notes

- LED module for integration into luminaires 
- Dimensions: 28x28 mm
- Light emitting surface (LES): Ø 19 mm, Ø 23 mm
- Use of external LED constant current driver



Electrical Characteristics

at $t_p = 65^\circ\text{C}$

Type	Typ. voltage DC				Typ. power consumption			
	700 mA V	1050 mA * V	1400 mA V	1700 mA V	700 mA W	1050 mA W	1400 mA W	1700 mA W
VCAHE1-1212-xxxx	33.3	34.3	35.2	35.9	23.3	36.0	49.3	61.1
VCAHE1-1214-xxxx	32.6	33.6	34.5	35.3	22.8	35.3	48.4	60.0

Voltage and power tolerance: $\pm 5\%$ | * Rated values

$I_n = 1050\text{ mA}$

Maximum Ratings

Exceeding the maximum ratings can lead to reduction of service life or destruction of the modules.

Type	Operating current mA	Operation temperature range at t_c point		Ambient temperature range		Storage temperature range		Max. allowed repetitive peak current mA
		$^\circ\text{C min.}$	$^\circ\text{C max.}$	$^\circ\text{C min.}$	$^\circ\text{C max.}$	$^\circ\text{C min.}$	$^\circ\text{C max.}$	
VCAHE1-1212-xxxx	700	-20	+95	-20	+40	-40	+95	2160
	1050							
	1400							
	1700							
VCAHE1-1214-xxxx	700	-20	+95	-20	+40	-40	+95	2520
	1050							
	1400							
	1700							

Operating Life

at $t_p = 65^\circ\text{C}$

Lumen maintenance	VCAHE1-1212-xxxx			VCAHE1-1214-xxxx		
	$\leq 1080\text{ mA}$ in hours	1400 mA in hours	1700 mA in hours	$\leq 1260\text{ mA}$ in hours	1400 mA in hours	1700 mA in hours
L90/B10	53,000	28,000	28,000	53,000	28,000	28,000
L80/B10	> 90,000	87,000	87,000	> 90,000	87,000	87,000
L70/B10	> 90,000	> 90,000	> 90,000	> 90,000	> 90,000	> 90,000

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

Comfort COB HE – VCAHE1-1212 and VCAHE1-1214

Optical Characteristics

at $t_p = 65\text{ °C}$

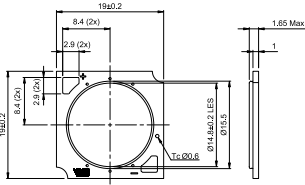
Type	Ref. No.	Colour	Correlated colour temperature* K	Typ. luminous flux** and efficiency at								Typ. beam angle (°)	Typ. CRI R_g	Photo-metric code
				700 mA		1050 mA		1400 mA		1700 mA				
				lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W			
VCAHE1-1212 – CRI 90														
VCAHE1-1212-927	572734	warm white	2700K	4065	175	5905	164	7627	155	9018	148	120	>90	927/269
VCAHE1-1212-930B	572735	warm white	3000K (below BBL)	4086	175	5935	165	7666	156	9064	148	120	>90	930/269
VCAHE1-1212-931PW	572736	PearlWhite	3100K (PearlWhite)	4148	178	6025	168	7782	158	9202	151	120	>90	931/269
VCAHE1-1212-935B	572737	neutral white	3500K (below BBL)	4125	177	5993	167	7740	157	9152	150	120	>90	935/269
VCAHE1-1212-940B	572738	neutral white	4000K (below BBL)	4166	179	6052	168	7816	159	9242	151	120	>90	940/269
VCAHE1-1214 – CRI 90														
VCAHE1-1214-927	572739	warm white	2700K	4078	179	5927	168	7664	158	9079	151	120	>90	927/269
VCAHE1-1214-930B	572740	warm white	3000K (below BBL)	4099	180	5957	169	7703	159	9126	152	120	>90	930/269
VCAHE1-1214-931PW	572741	PearlWhite	3100K (PearlWhite)	4161	182	6048	171	7821	162	9265	154	120	>90	931/269
VCAHE1-1214-935B	572742	neutral white	3500K (below BBL)	4138	181	6015	171	7778	161	9214	153	120	>90	935/269
VCAHE1-1214-940B	572743	neutral white	4000K (below BBL)	4179	183	6074	172	7855	162	9305	155	120	>90	940/269

* Colour tolerance: 3 MacAdam | ** Production tolerance of luminous flux and efficiency: $\pm 10\%$ | Min. CRI R_g : > 90 at 9xx
 $I_n = 1050\text{ mA}$

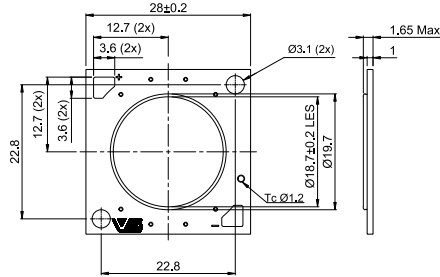
The values contained in this data sheet can change due to technical innovations. Any such changes will be made without separate notification.

Comfort COB HE

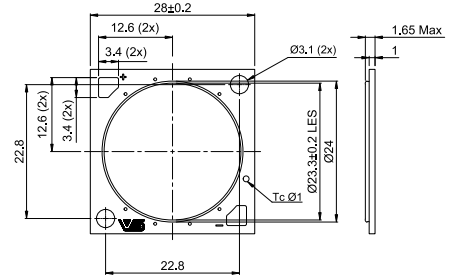
VCAHE1-125/127



VCAHE1-1212

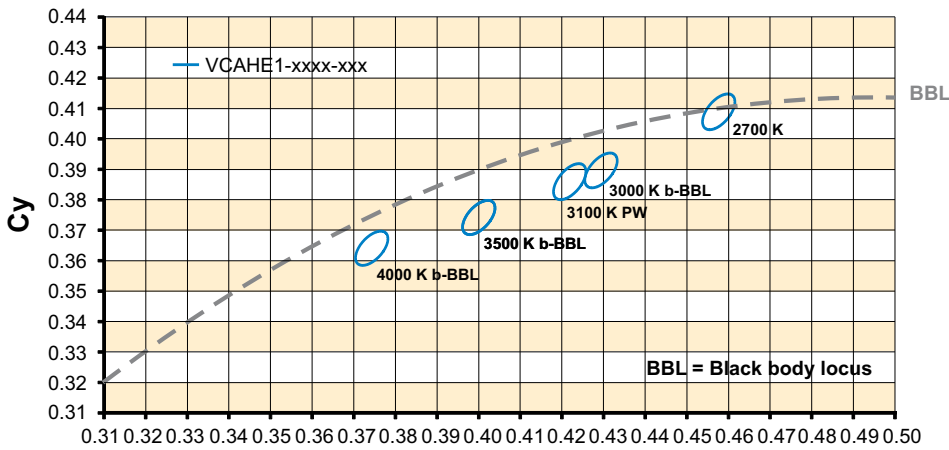


VCAHE1-1214



The clearance and creepage distances are designed for operation with SELV drivers. Alternatively for fixing with LED holders the Comfort COB HE can be fixed with screws. Then the wires must be soldered to the solder pads.

Bins



Measurement tolerances x/y: ± 0,005

Initial data, pulsed test conditions, T_c = 65°C, at rated I_f

For x/y-Data at different temperature, please contact your VS sales representative.

For long term LM80-data please contact your VS sales representative.

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

Comfort COB HE

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. Installation must be carried out in a voltage-free state (i.e. disconnection from the mains). The following advice must be observed; non-observance can result in the destruction of the LED assembly modules, fire and/or other hazards.

- ESD (electrostatic discharge) protection measures must be observed when handling and installing the LED modules. See VS's application notes on ESD protection.
- LED assembly modules must not be subjected to any undue mechanical stress, e. g.:
 - do not treat as bulk cargo
 - avoid shear and compressive forces during handling and installation
 - do not damage circuit paths
 - do not touch the yellow phosphorus layer
- The module must be fixed onto a thermally conductive surface.
- Safe operation only possible by the use of external constant current sources (I_{max} , see table "Electrical Characteristics").
- Operation only with power supply units that feature the following protection:
 - Short-circuit protection
 - Overload protection
 - Overheating protection
 - SELV (Safety Extra Low Voltage); $U_{max.} \leq 60\text{ V}$
 - $I_{max.}$ (see table "Maximum Ratings") must not be exceeded.
- When operating devices will be selected care has been taken to ensure that the maximum values (see table "Maximum Ratings") will not be exceeded.
- Please ensure the correct polarity of the leads prior to commissioning. Reversed polarity can destroy the modules.
- Safety regulations acc. to EN 60598 (or further standards) has to be observed if the maximum output voltage exceed the permitted touchable value.
- Measurement tolerances:
 - luminous flux: $\pm 7\%$
 - voltage: $\pm 3\%$
 - CRI: ± 1
- Maximum allowed number of switching cycles: 15,000
- A parallel connection of the modules is not allowed.
- To ensure problem-free operation, the specified maximum temperature at the t_c point (see "Operating Life") must be observed (and measured in accordance with EN 60598-1). To satisfy this point, it may be necessary to put measures in place to ensure any heat is dissipated from the PCB to the environment.
- 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. Such conditions may occur e.g. in industry and street environments. 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:
Risk Group 1



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.

Applied Standards

- EN 62031
LED modules for general lighting – Safety specifications



- EN 62471
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.

Accessories

Reflectors:

- ACL-Lichttechnik GmbH
www.reflektor.com
- ALMECO Group
www.almecogroup.com
- Jordan Luxar GmbH & Co. KG
www.jordan-luxar.de
- JORDAN REFLEKTOREN GmbH & Co. KG
www.jordan-reflektoren.de
- LEDIL
www.ledil.com

Heat sinks with active cooling:

- AVC
www.avc-europa.de
- Nuventix, Inc.
www.nuventix.com
- Sunon
www.sunon.com
- MechaTronix
www.led-heatsink.com
- Colliance, Inc.
www.cooliance.eu

Heat sinks with passive cooling:

- AVC
www.avc-europa.de
- Fischer Elektronik GmbH & Co. KG
www.fischerelektronik.de
- Frigo Dynamics
www.frigodynamics.com
- MechaTronix
www.led-heatsink.com

LED Constant Current Drivers

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

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