

## LED MODULES

COMFORT COB GEN. 3  
1,000 LM TO 6,000 LM



## COMFORT COB GEN. 3 – RESIDENTIAL, RETAIL AND INDUSTRIAL LIGHTING

### Typical Applications

#### VCA3-126 / VCA3-128


- Integration in reflector luminaires
- Retail lighting
- Downlights

### Comfort COB Gen. 3

- **LONG SERVICE LIFETIME: 50,000 HOURS**
- **NARROW COLOUR TOLERANCES:  
3 STEP MACADAM (CRI 82/92)**
- **HIGHLY EFFICIENT: UP TO 200 LM/W**
- **SPECIAL COLOURS:  
FOOD (MEAT, MEAT VIVID & VBREAD)  
FASHION (PEARL WHITE, CLEAR WHITE)  
3000 K VIVID (CRI 96)**

## Comfort COB Gen. 3 – VCA3-126 and VCA3-128

### Technical Notes

- LED module for integration into luminaires 
- Dimensions: 19x19 mm
- Light emitting surface (LES): Ø 4,9 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 V	500 mA V	600 mA V	700 mA V	1050 mA V	350 mA W	500 mA W	600 mA W	700 mA W	1050 mA W
VCA3-126-xxx	33.2	34.3	34.7	35.3	–	11.6	17.2	20.8	24.7	–
VCA3-128-xxx	32.7	33.4	33.7	34.2	35.5	11.4	16.7	20.2	23.9	37.3

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

### 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
		$^{\circ}\text{C min.}$	$^{\circ}\text{C max.}$	at LES surface $^{\circ}\text{C max.}$	$^{\circ}\text{C min.}$	$^{\circ}\text{C max.}$	$^{\circ}\text{C min.}$	$^{\circ}\text{C max.}$	
VCA3-126-xxx	350	-40	+120	+170	-40	+40	-40	+105	1000
	500		+115						
	600		+110						
	700		+105						
VCA3-128-xxx	500	-40	+115	+170	-40	+40	-40	+105	1400
	600		+110						
	700		+110						
	1050		+95						

### Operating Life

at  $t_p = 65\text{ °C}$

Lumen maintenance	350 mA in hours	500 mA in hours	600 mA in hours	700 mA in hours	350 mA in hours	500 mA in hours	600 mA in hours	700 mA in hours	1050 mA in hours
	<b>VCA3-126-xxx (at <math>I_f</math>)</b>				<b>VCA3-128-xxx (at <math>I_f</math>)</b>				
L90/B10	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
L80/B10	> 55,000	> 55,000	> 55,000	55,000	> 55,000	> 55,000	> 55,000	> 55,000	> 55,000
L70/B10	> 55,000	> 55,000	> 55,000	> 55,000	> 55,000	> 55,000	> 55,000	> 55,000	> 55,000

Preliminary Lifetime Data

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

## Comfort COB Gen. 3 – VCA3-126 and VCA3-128

### Optical Characteristics

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

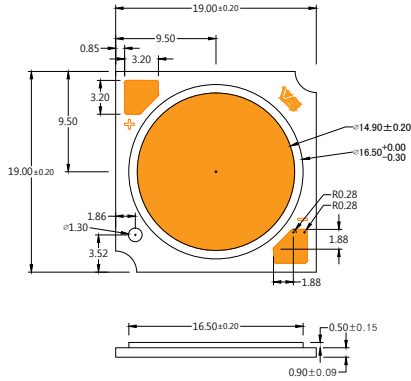
Type	Ref. No.	Colour	Correlated colour temperature* K	Typ. luminous flux** and efficiency at										Typ. beam angle °	Typ. CRI R <sub>a</sub>	Photometric code		
				350 mA		500 mA		600 mA		700 mA		1050 mA						
				lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W	lm	lm/W			
<b>VCA3-126 – CRI 80</b>																		
VCA3-126-827	<b>573408</b>	warm white	2700	2102	181	2912	170	3408	164	3917	159	–	–	120	82	827/369		
VCA3-126-830	<b>573409</b>	warm white	3000	2213	190	3065	179	3587	172	4123	167	–	–	120	82	830/369		
VCA3-126-830B	<b>573410</b>	warm white	3000 (below BBL)	2168	187	3004	175	3516	169	4040	163	–	–	120	82	830/369		
VCA3-126-831PW	<b>573411</b>	pearl white	3100	2213	190	3065	179	3587	172	4123	167	–	–	120	82	831/369		
VCA3-126-832CW	<b>573412</b>	clear white	3200	2217	191	3071	179	3594	173	4131	167	–	–	120	82	832/369		
VCA3-126-835	<b>573413</b>	neutral white	3500	2235	192	3096	181	3623	174	4164	169	–	–	120	82	835/369		
VCA3-126-840	<b>573414</b>	neutral white	4000	2279	196	3156	184	3694	177	4244	172	–	–	120	82	840/369		
VCA3-126-850	<b>573415</b>	cool white	5000	2323	200	3218	188	3766	181	4328	175	–	–	120	82	850/369		
VCA3-126-857	<b>573416</b>	cool white	5700	2301	198	3187	186	3730	179	4287	173	–	–	120	82	857/369		
<b>VCA3-126 – CRI 90</b>																		
VCA3-126-927	<b>573417</b>	warm white	2700	1732	149	2399	140	2808	135	3228	131	–	–	120	92	927/369		
VCA3-126-930	<b>573418</b>	warm white	3000 (below BBL)	1845	159	2556	149	2992	144	3438	139	–	–	120	92	930/369		
VCA3-126-931PW	<b>573419</b>	pearl white	3100	1809	156	2505	146	2931	141	3369	136	–	–	120	92	931/369		
VCA3-126-932CW	<b>573420</b>	clear white	3200	1818	156	2505	146	2931	141	3385	137	–	–	120	92	932/369		
VCA3-126-935	<b>573421</b>	neutral white	3500 (below BBL)	1864	160	2582	151	3020	145	3472	141	–	–	120	92	935/369		
VCA3-126-940	<b>573422</b>	neutral white	4000 (below BBL)	1900	164	2632	153	3081	148	3541	143	–	–	120	92	940/369		
<b>VCA3-128 – CRI 80</b>																		
VCA3-128-827	<b>573423</b>	warm white	2700	2129	186	2979	178	3526	174	4068	170	5812	156	120	82	827/369		
VCA3-128-830	<b>573424</b>	warm white	3000	2241	196	3136	188	3713	184	4282	179	6116	164	120	82	830/369		
VCA3-128-830B	<b>573425</b>	warm white	3000 (below BBL)	2196	192	3073	184	3637	180	4196	175	5993	161	120	82	830/369		
VCA3-128-831PW	<b>573426</b>	pearl white	3100	2241	196	3136	188	3713	184	4282	179	6116	164	120	82	831/369		
VCA3-128-832CW	<b>573427</b>	clear white	3200	2246	196	3142	188	3720	184	4290	179	6128	164	120	82	832/369		
VCA3-128-835	<b>573428</b>	neutral white	3500	2263	198	3167	190	3750	185	4325	181	6177	166	120	82	835/369		
VCA3-128-840	<b>573429</b>	neutral white	4000	2308	202	3229	193	3822	189	4409	184	6297	169	120	82	840/369		
VCA3-128-850	<b>573430</b>	cool white	5000	2353	206	3292	197	3897	193	4495	188	6421	172	120	82	850/369		
VCA3-128-857	<b>573431</b>	cool white	5700	2330	204	3260	195	3859	191	4452	186	6360	171	120	82	857/369		
<b>VCA3-128 – CRI 90</b>																		
VCA3-128-927	<b>573432</b>	warm white	2700	1754	153	2455	147	2906	144	3352	140	4789	128	120	92	927/369		
VCA3-128-930	<b>573433</b>	warm white	3000 (below BBL)	1869	163	2615	157	3096	153	3571	149	5101	137	120	92	930/369		
VCA3-128-930Vi	<b>573434</b>	warm white	3000 (vivid)	1608	140	2271	136	2713	134	3108	130	4513	121	120	96	930/369		
VCA3-128-931PW	<b>573435</b>	pearl white	3100	1832	160	2563	153	3035	150	3500	146	4999	134	120	92	931/369		
VCA3-128-932CW	<b>573436</b>	clear white	3200	1840	161	2575	154	3049	151	3516	147	5022	135	120	92	932/369		
VCA3-128-935	<b>573437</b>	neutral white	3500 (below BBL)	1887	165	2641	158	3126	155	3606	151	5151	138	120	92	935/369		
VCA3-128-940	<b>573438</b>	neutral white	4000 (below BBL)	1924	168	2693	161	3190	158	3677	154	5252	141	120	92	940/369		
VCA3-128-950	<b>573439</b>	cool white	5000	2018	179	2824	169	3343	165	3855	161	5507	148	120	92	950/369		
<b>VCA3-128 – FOOD</b>																		
VCA3-128-MP	<b>573440</b>	Meat "Pink"	2000 "pink effect"	1320	115	1847	111	2186	108	2522	105	3602	97	120	82	820/369		
VCA3-128-MVi	<b>573441</b>	Meat "Vivid"	3100 "meat vivid"	1376	120	1937	116	2306	114	2658	111	3861	104	120	88	831/369		
VCA3-128-VBread	<b>573442</b>	VBread	2500 "VBread"	1763	154	2482	149	2957	146	3401	142	4940	133	120	88	825/369		

\* Colour tolerance: 3 MacAdam | \*\* Production tolerance of luminous flux and efficiency:  $\pm 10\%$  | Min. CRI R<sub>a</sub>: > 80 at 8xx, > 90 at 9xx, > 94 at 930Vi

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

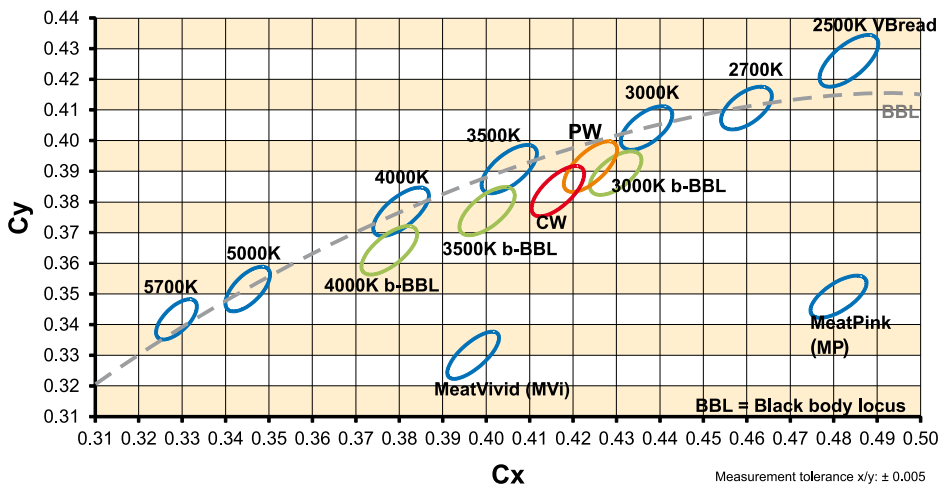
## Comfort COB Gen. 3

VCA3-126/128



The clearance and creepage distances are designed for operation with SELV drivers. Alternatively for fixing with LED holders the Comfort COB Gen. 3s can be fixed with screws. Then the wires must be soldered to the solder pads.

### Bins



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

## Comfort COB Gen. 3

### 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);  $U_{max.} \leq 60 V$
  - $I_{max.}$  (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:  $\pm 1 \%$
- 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](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: RG1
- Rating of photobiological safety acc. IEC 62471-7: BLH-B  
The modules can be used for all applications of Group BLH-B.

### 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.

### Applied Standards

- EN 62031  
LED modules for general lighting – Safety specifications



- EN 62471/TR 62778 and IEC 62471-7  
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](http://www.reflektor.com)
- ALMECO Group  
[www.almecogroup.com](http://www.almecogroup.com)
- Jordan Luxar GmbH & Co. KG  
[www.jordan-luxar.de](http://www.jordan-luxar.de)
- JORDAN REFLEKTOREN GmbH & Co. KG  
[www.jordan-reflektoren.de](http://www.jordan-reflektoren.de)
- LEDIL  
[www.ledil.com](http://www.ledil.com)

### Heat sinks with active cooling:

- AVC  
[www.avc-europa.de](http://www.avc-europa.de)
- Nuventix, Inc.  
[www.nuventix.com](http://www.nuventix.com)
- Sunon  
[www.sunon.com](http://www.sunon.com)
- MechaTronix  
[www.led-heatsink.com](http://www.led-heatsink.com)
- Colliance, Inc.  
[www.cooliance.eu](http://www.cooliance.eu)

### Heat sinks with passive cooling:

- AVC  
[www.avc-europa.de](http://www.avc-europa.de)
- Fischer Elektronik GmbH & Co. KG  
[www.fischerelektronik.de](http://www.fischerelektronik.de)
- Frigo Dynamics  
[www.frigodynamics.com](http://www.frigodynamics.com)
- MechaTronix  
[www.led-heatsink.com](http://www.led-heatsink.com)

## 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)