LED MODULES

COMFORT COB HIGH INTENSITY 500 LM TO 700 LM

COMFORT COB HIGH INTENSITY – RESIDENTIAL LIGHTING

Typical Applications

VCA042

- Integration in reflector luminaires
- Residential lighting
- Furniture lighting

Comfort COB High Intensity

- **LONG SERVICE LIFETIME**
- **NARROW COLOUR TOLERANCES: 3 STEP MACADAM**
- **HIGH COLOUR RENDERING INDEX: >90**
- **VERY SMALL LES (LIGHT EMITTING SURFACE): Ø = 4 MM**

LIGHTING SOLUTIONS

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Comfort COB – up to 700 lm

Technical Notes

- LED module for integration into luminaires
- Dimensions: 13.5x13.5 mm
- Light emitting surface (LES): Ø 4 mm
- Use of external LED constant current driver

Electrical Characteristics

at t_p = 65 °C

Type	Typ. voltage DC			Typ. power consumption		
	100 mA	150 mA	200 mA	100 mA	150 mA = Ir*	200 mA
	V	V	V	W	W	W
VCA042-xxx	33,2	34,1	34,9	3,3	5,1	7,0

Voltage and power tolerance: ±10 % | * Ir = rated current
Typ. power consumption at Ir = Energy consumption in on-mode (kWh/1 000h) = On-mode power (Pon)

Maximum Ratings

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

Type	Operating current	Operation temperature range at t_c point		at LES surface	Ambient temperature range		Storage temperature range		Max. allowed repetitive peak current
	mA	°C min.	°C max.	°C max.	°C min.	°C max.	°C min.	°C max.	mA
VCA042-xxx	100	–40	+110	+ 140	- 40	+40	–40	+105	300
	150		+100						
	200		+90						

Operating Life (in hrs.)

at t_p = 65 °C

Lumen maintenance	VCA042-xxx 100mA	150mA	200mA
L90/B10	15.000	15.000	15.000
L80/B10	35.000	35.000	35.000
L70/B10	65.000	65.000	65.000

survival factor: 0.98
lumen maintenance factor: 0.96

Optical Characteristics

at t_p = 65 °C

Type	**Ref. No.**	Colour	Correlated colour temperature*	Typ. luminous flux** and efficiency at 100mA		150mA = I_r***		200mA		Typ. beam angle	min. CRI	min. R9	Photometric code	EE Class at I_r
			K	lm	lm/W	lm	lm/W	lm	lm/W	°	R_a			
VCA042-927	**571733**	warm white	2700	365	110	515	101	650	93	120	90	48	927/369	F
VCA042-930B	**571734**	warm white	3000 (below BBL)	380	115	535	105	675	97	120	90	48	930/369	F
VCA042-935B	**571735**	warm white	3500 (below BBL)	405	122	570	111	715	102	120	90	48	935/369	F
VCA042-940B	**571736**	neutral white	4000 (below BBL)	415	125	590	115	740	106	120	90	48	940/369	F

* Colour tolerance: 3 MacAdam | ** Production tolerance of luminous flux and efficiency: ± 10 % | *** I_r = rated current
Typical luminous fulx at rated current (Ir) = Useful luminous flux (Φ use)

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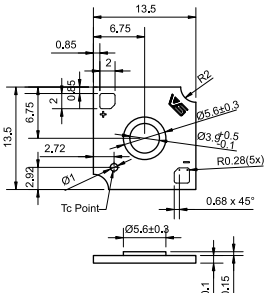
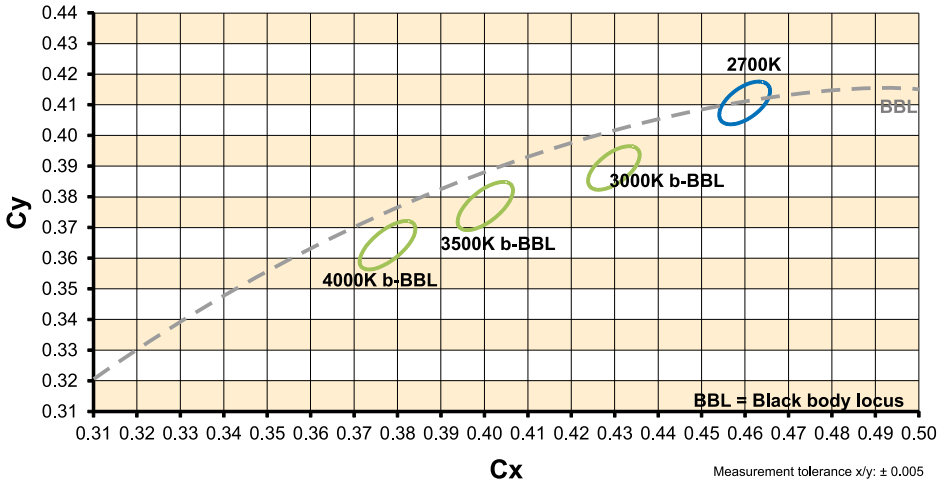
Comfort COB High Intensity

VCA042



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

Bins



Chromaticity coordinates (x and y)

Type	X	Y
VCA042-927	0.4599	0.4106
VCA042-930B	0.4298	0.3894
VCA042-935B	0.4002	0.377
VCA042-940B	0.3777	0.3667

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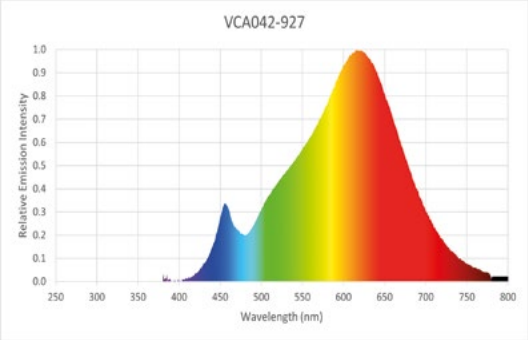
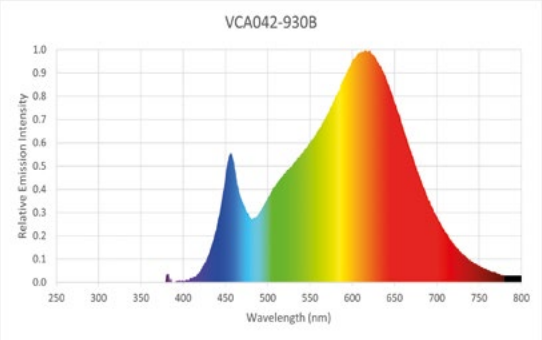
Spectral power distribution for VCA042

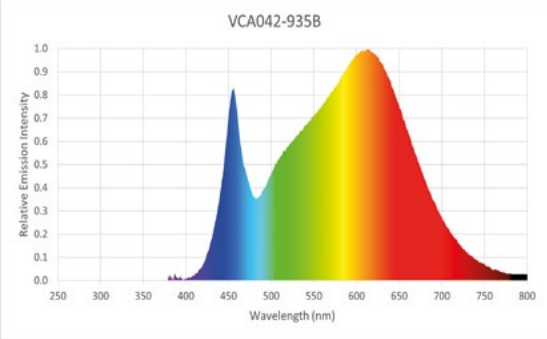
927 – 2700K



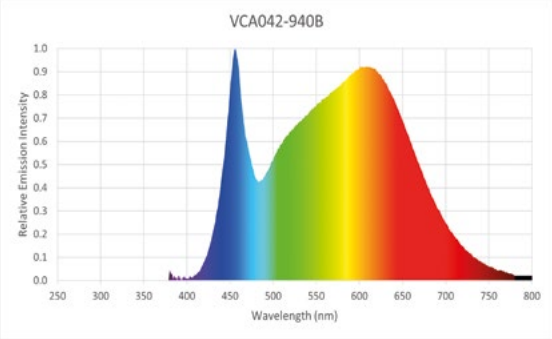
930B – 3000K



935B – 3500K



940B – 4000K



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Comfort COB

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: ± 7 %
  - voltage: ± 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

- 3 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.

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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
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