

BackLED M Core Product G5

12 V Backlighting modules

SPECIFICATION DATASHEET

Product Description

BackLED M CP G5 family delivers the best performance and optical effect for reliable outdoor advertising light box and channel letter designs.

Benefits

Upgraded flux output up to 83 lm.
Uniform light pattern design for 60-200 mm light-box depth.
Back-side injection technology for optimal protection.



Applications

Signage boxes, channel letters, luminous areas and ceilings.



Approvals



When not printed on product label, they are under evaluation.

Product Features

- LED chain comprising 40 LED modules connected by flexible cables
- Each LED module contains 2 LEDs
- LED module pitch variable between 60 ~ 200 mm
- Compatible with OPTOTRONIC constant voltage drivers / dimmers
- Color consistency of 3 SDCM
- Patented Square Lens technology
- Wide CCT and color options available
- IP66 rating
- Lifetime L80B10 50,000 h @ Tc 70°C
- 5 years warranty

TECHNICAL INFORMATION DATA FOR ENTIRE CHAIN

Product Name	Order Code [EAN10]	Color	CCT [K]	Voltage [V DC]	Power [W]	Lum. Flux [lm]	Modules per chain
BA-M-CP-810-12-G5	6937186123251	Ultra-Cool White	10000	12	24	3067	40
BA-M-CP-880-12-G5	6937186123558	Cool White	8000	12	24	3067	40
BA-M-CP-871-12-G5	6937186123497	Cool White	7100	12	24	3067	40
BA-M-CP-865-12-G5	6937186123435	Cool White	6500	12	24	3333	40
BA-M-CP-840-12-G5	6937186123374	Neutral White	4000	12	24	3200	40
BA-M-CP-830-12-G5	6937186123312	Warm White	3000	12	24	3200	40

TECHNICAL OPERATING DATA FOR SINGLE MODULE

Product Name	CCT [K]	CRI	Power [W]	Flux Output [lm]	Efficacy [lm/W]	Beam Angle [° FWHM]
BA-M-CP-810-12-G5	10000	>80	0.6	77	128	155
BA-M-CP-880-12-G5	8000	>80	0.6	77	128	155
BA-M-CP-871-12-G5	7100	>80	0.6	77	128	155
BA-M-CP-865-12-G5	6500	>80	0.6	83	138	155
BA-M-CP-840-12-G5	4000	>80	0.6	80	133	155
BA-M-CP-830-12-G5	3000	>80	0.6	80	133	155

GENERAL

Dimmable	Yes 1%...100%, via Pulse Width Modulation (PWM)
Binning	Single bin fine white, 3 SDCM
Lifetime	up to 50,000 h (L80B10, @ T _c max)
Warranty	5 years ¹⁾
Ingress protection	IP66 ²⁾
Adhesive tape on backside	3M
Complementary systems	BackLED Mounting Profile, OPTOTRONIC CV drivers and dimmers, INVENTRONICS LMS
Certifications	CE, ENEC, UL, BIS ³⁾

¹⁾: Five-year warranty is provided only when the module is installed with proper screws or other suggested installation methods (e.g. mounting profile) on back plane.

²⁾: The LED modules must not be operated in places which are directly exposed to atmospheric conditions. For outdoor applications, hence the LED module must be protected by appropriate sealed enclosures or covers. Operation in or under water is prohibited.

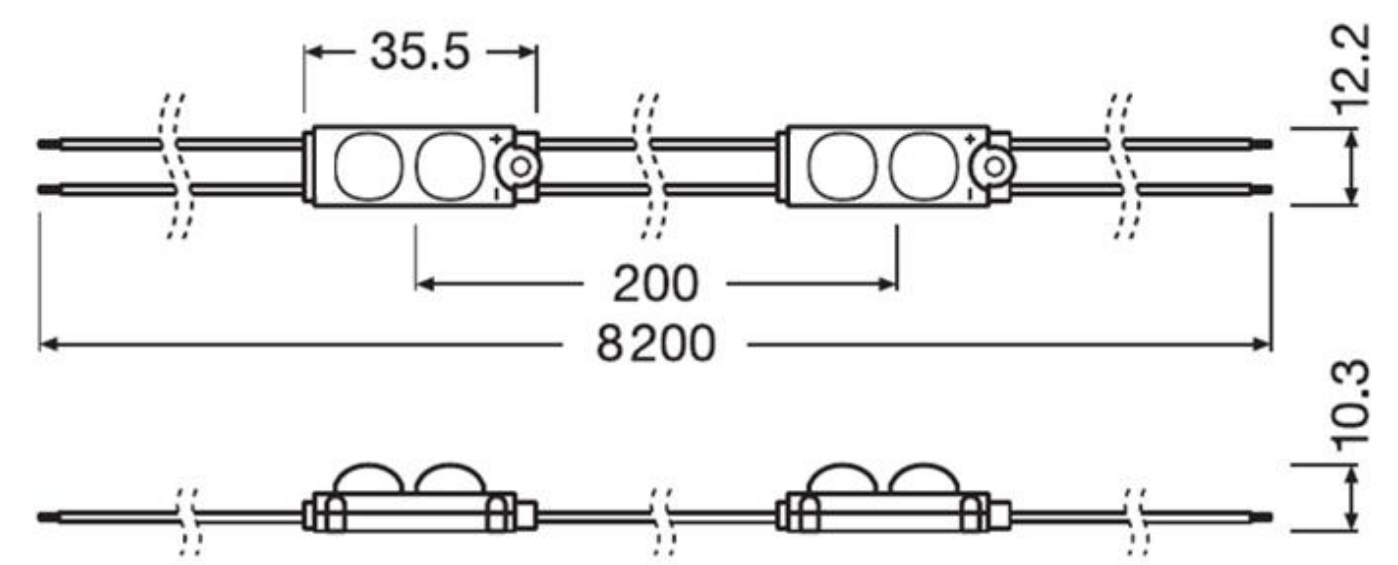
³⁾: When not printed on product label, they are under evaluation

OPERATING CONDITIONS

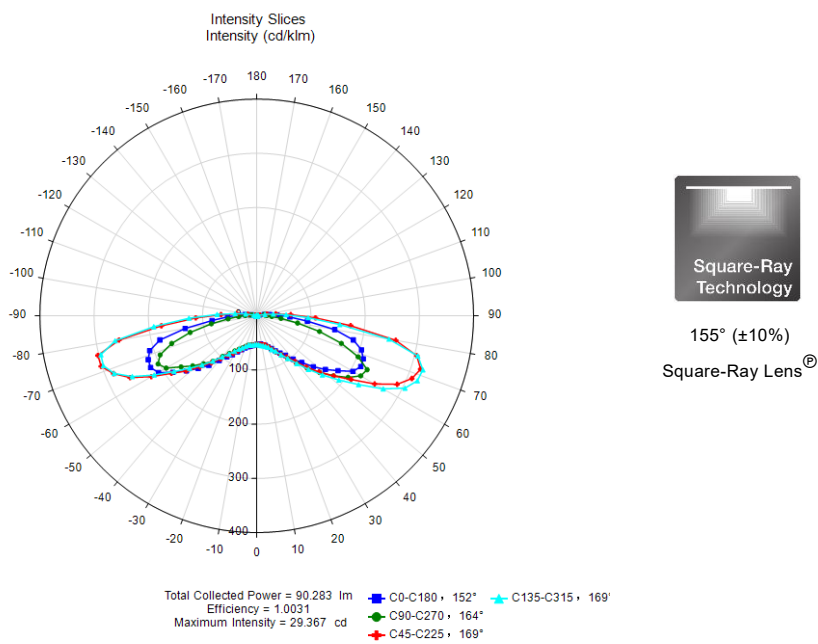
BA-M-CP-8xx-12-G5	
Operating temperature T _c -Max (measured at T _c -Point) [°C]	-25...+70
Storage temperature [°C]	-25...+85
Voltage range [V DC]	12.1...12.9
Reverse voltage protection [V DC]	13 max

- Exceeding maximum ratings for operating and storage temperature will reduce the expected lifetime or destroy the LED modules.
- Exceeding maximum ratings for operating voltage will cause hazardous overload and will likely destroy the LED modules.
- The temperature of the LED modules must be measured at the T_c-point according to EN60598-1 in a thermally constant status with a temperature sensor or a temperature sensitive label. For exact location of the T_c-point see product user instruction.

MECHANICAL DRAWINGS AND DIMENSIONS



LIGHT DISTRIBUTION



LAYOUT GUIDELINE

Product Name	Box depth [mm]	Module pitch [mm] with translucency material of:			Modules / m ² with translucency material of:		
Diffuser Type		Vinylic	Acrylic	Acrylic	Vinylic	Acrylic	Acrylic
Target Intensity		900Cd/m ²	600Cd/m ²	1000Cd/m ²	900Cd/m ²	600Cd/m ²	1000Cd/m ²
Translucency		41%	35%	45%	41%	35%	45%
BA-M-CP-8xx-12-G5	80	83x100	83x125	83x100	120	96	120
	100	71x111	83x125	71x111	126	96	126
	150	71x100	71x125	71x100	140	112	140

Suggestions based on high luminance requirement.

This guideline is only an approximation. The actual luminance and uniformity results can deviate due to many different application parameters, e.g. including but not limited to reflection of box inner surface, overall box/letter dimensions, optical parameters of the light emitting surface, ... etc.

INVENTRONICS suggests testing the module performance in your eventual project design to make sure of brightness, uniformity and final colour appearance.

INVENTRONICS professional team is available for final layouting suggestions.

ACCESSORIES



This product is compatible with following accessories

Description	Product Name	EAN10	EAN40
Click & Play mounting profile	BA-MP-SM-G5-2M	6937186140524	6937186140531 (50pcs)
Click&Play cable clip	BA-CLIP-SM-G5	6937186140586 (50pcs)	6937186140593

SAFETY INFORMATION

- The LED module itself and all its components must not be mechanically stressed.
- Assembly must not damage or destroy conducting paths on the circuit board.
- To avoid mechanical damage, the LED modules should be attached securely to the intended substrate. Heavy vibration should be avoided.
- Once modules are glued by means of their tapes on the application surface, modules must not be removed and re-located. This would lead to mechanical stress and IP rate may not be granted as well as lifetime.
- Installation of LED modules (with power supplies) needs to be made with regard to all applicable electrical and safety standards.

The LED module incorporates no protection against short circuits, overload or overheating.

In order to drive LED-Modules safely, it is absolutely necessary to operate them with an electronically stabilized power supply protecting against short circuits, overload and overheating.

OPTOTRONIC® electronic control gear complies to all relevant standards and guarantees safe operation.

For dimming applications attention should be paid to specific references in "OPTOTRONIC® Technical Guide".

To also ease the luminaire/installation approval, electronic control gear for LED or LED modules must carry the CE mark.

In Europe LED modules declaration of conformity must include the following standards:

CE: IEC/TR 62778, IEC/EN 61347-1, IEC/EN 60529, IEC/EN 62031, IEC/EN 60598-1, IEC/EN 61347-1, IEC/EN 61547, IEC/TR 62778.

Please see the relevant application guides for more detailed information.

- Observe correct polarity! Incorrect polarity will lead to no light emission and may cause damage of the LED module.
- Parallel connection is highly recommended as safe electrical operation mode. Serial connection is not recommended. Unbalanced voltage drop can cause hazardous overload and damage the LED module.
- Electrical contact is achieved with the contact cables.
- Cutting within the chain is only allowed between the wiring of the modules.
- Pay attention to ESD steps when mounting the module.

- When using power supplies other than OPTOTRONIC®, in order to ensure continuous safe operation, the input voltage at modules has to be 12.1...12.9 V.
- LED modules are dimmable by means of PWM (pulse width modulation). It is recommended using OPTOTRONIC® 12 V dimmable drivers or following constant voltage dimmers: OPTOTRONIC® OT DIM, OTi DALI DIM 1-4CH D, OT BLE DIM.
- The LED modules must not be operated in places which are directly exposed to atmospheric conditions. For outdoor applications, hence the LED modules have to be protected by appropriate sealed enclosures or covers. Operation in or under water is prohibited.
- Each LED module is equipped with a pre-mounted double-sided adhesive tape which allows optional or additional mounting aid. Due to varying properties of adherents and multiple external influences during the operation of the modules, INVENTRONICS assumes no liability and provides no guarantee for a permanent adherence of the modules to the surface. INVENTRONICS recommends fixation of the modules by means of suitable screws or compatible INVENTRONICS mounting profile.
- To ensure uniform illumination, a reflective matt white surface is generally recommended for all internal frame walls and back panels of light boxes.
- This product is considered to be a "containing product" in the sense of Regulations (EU) 2019/2020 and (EU) 2019/2015.
- Tolerances of the reported values, are according to LED Modules Performance standard IEC/EN 62717
- In general, the replacement of the contained light sources without permanent damage to the product with the use of common available tools is possible in the final application when they can be dismantled from the installation environment and substituted for the necessary number of light sources restoring its full electrical/mechanical/thermal/optical functionality by means of a professional installer.
- Dismantling of light sources from containing products at end of life: Containing products with light sources which are scalable in length can be cut to the length of the contained light source and if applicable mechanically detached from protective and/or optical covers. Containing products shall be separated from building material and/or from other additional mounting accessories by means of a professional installer. Separate control gear and light sources must be disposed of at certified disposal companies in accordance with Directive 2012/19/EU (WEEE) in the EU and with Waste Electrical and Electronic Equipment (WEEE) Regulations 2013 in the UK. For this purpose, collection points for recycling centers and take-back systems (CRSO) are available from retailers or private disposal companies, which accept separate control gear and light sources free of charge. In this way, raw materials are conserved and materials are recycled.

ORDERING CODES

Description	EAN10*	EAN40	S-UNIT** (pcs)
BA-M-CP-810-12-G5	6937186123251	6937186123268	30
BA-M-CP-880-12-G5	6937186123558	6937186123565	30
BA-M-CP-871-12-G5	6937186123497	6937186123503	30
BA-M-CP-865-12-G5	6937186123435	6937186123442	30
BA-M-CP-840-12-G5	6937186123374	6937186123381	30
BA-M-CP-830-12-G5	6937186123312	6937186123329	30

* EAN 10: Ordering number per single sale unit bag

** S-Unit: Chain (EAN10) number per shipping unit (EAN40)

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