

BackLED M Core Xperience G5

12 V Backlighting modules

SPECIFICATION DATASHEET

Product Description

BackLED M CX G5 family provides high light output flux and optical effect for reliable outdoor advertising light box or channel letter design.

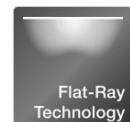


Benefits

Upgraded flux output up to 80 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 20 LED modules connected by flexible cables
- Each LED module contains 3 LEDs
- LED module pitch variable between 60 ~ 200 mm
- Compatible with OPTOTRONIC constant voltage drivers / dimmers
- Color consistency of 3 SDCM
- Flat-Ray technology
- Wide CCT and color options available
- IP66 rating
- Lifetime L70B50 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-CX-810-G5	6937186123251	Ultra-Cool white	10000	12	14.4	1360	20
BA-M-CX-880-G5	6937186123558	Cool White	8000	12	14.4	1360	20
BA-M-CX-871-G5	6937186123497	Cool White	8000	12	14.4	1360	20
BA-M-CX-865-G5	6937186123435	Cool White	6500	12	14.4	1600	20
BA-M-CX-840-G5	6937186123374	Neutral White	4000	12	14.4	1530	20
BA-M-CX-830-G5	6937186123312	Warm White	3000	12	14.4	1360	20

TECHNICAL OPERATING DATA FOR SINGLE MODULE

Product Name	CCT [K]	CRI	Power [W]	Flux Output [lm]	Efficacy [lm/W]	Beam Angle [° FWHM]
BA-M-CX-810-G5	10000	>80	0.72	68	95	160
BA-M-CX-880-G5	8000	>80	0.72	68	95	160
BA-M-CX-871-G5	7100	>80	0.72	68	95	160
BA-M-CX-865-G5	6500	>80	0.72	80	110	160
BA-M-CX-840-G5	4000	>80	0.72	76.5	106	160
BA-M-CX-830-G5	3000	>80	0.72	68	95	160

GENERAL

Dimmable	Yes 1%...100%, via Pulse Width Modulation (PWM)
Binning	Single bin fine white, 3 SDCM
Lifetime	up to 50,000 h (L70B50, @ Tc max)
Warranty	5 years ¹⁾
Ingress protection	IP66 ²⁾
Adhesive tape on backside	Yes
Complementary systems	OPTOTRONIC CV drivers and dimmers
Certifications	CE, CB, ENEC, UKCA, 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.

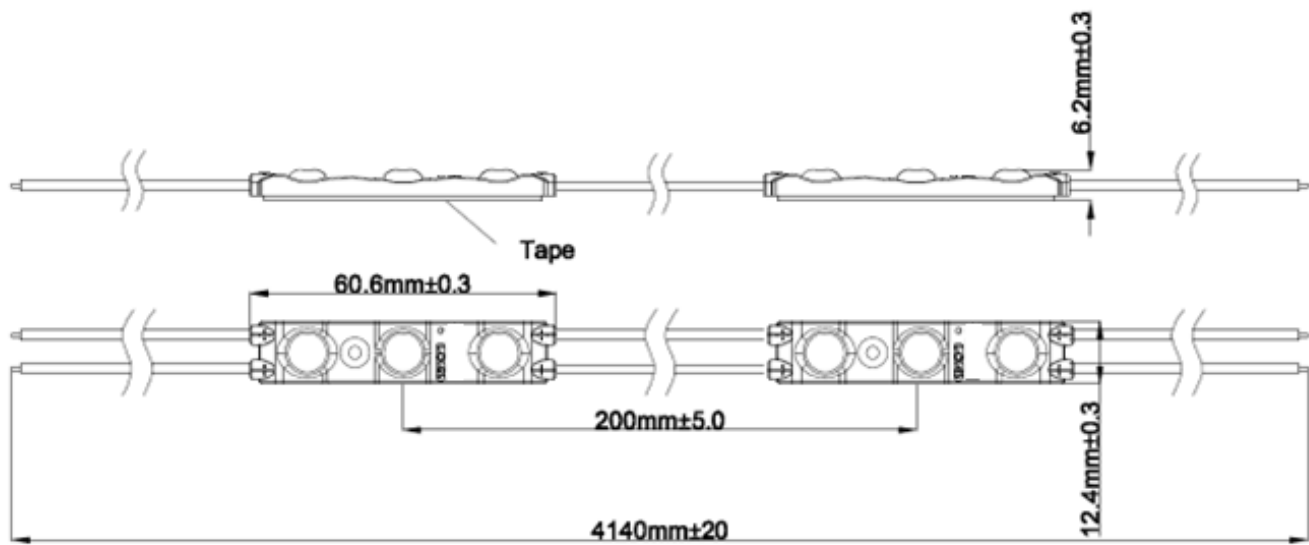
³⁾: When not printed on product label, they are under evaluation

OPERATING CONDITIONS

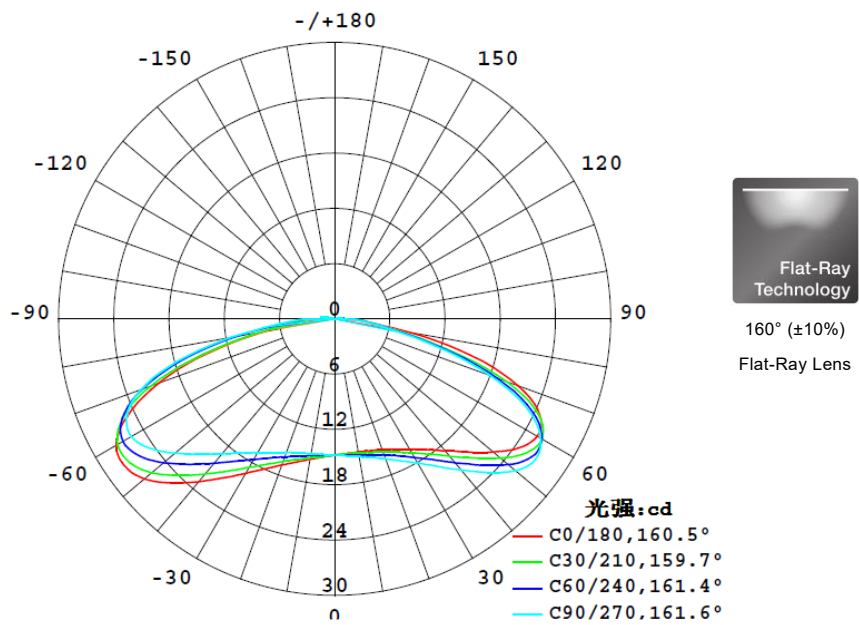
Operating temperature Tc-Max (measured at Tc-Point) [°C]	-25 ... +70
Storage temperature [°C]	-25 ... +85
Voltage range [V DC]	12 ... 13 SELV
Reverse voltage protection [V DC]	13 max (no light emission)

- 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 Tc-point according to EN60598-1 in a thermally constant status with a temperature sensor or a temperature sensitive label. For exact location of the Tc-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		Vynilic	Acrylic	Acrylic	Vynilic	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-CX-8xx-G5	100	63x111	71x125	63x111	144	112	144
	150	59x111	67x125	59x111	153	120	153
	200	59x100	71x111	59x100	170	126	170

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. Check

<https://www.invetronicsglobal.com/ds/tools/LEDdeSIGNer.jsp> free online layouting tool or contact INVENTRONICS signage support team or your sales representative. LEDdeSIGNer online tool is constantly updated but recently launched modules may not be immediately available.

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 INVENTRONICS 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 INVENTRONICS OPTOTRONIC®, in order to ensure continuous safe operation, the input voltage at modules has to be 12...13 V.
- LED modules are dimmable by means of PWM (pulse width modulation). It is recommended using OPTOTRONIC® 12 V drivers and following INVENTRONICS 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 centres 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-CX-810-G5	6937186123251	6937186123268	60
BA-M-CX-880-G5	6937186123558	6937186123565	60
BA-M-CX-871-G5	6937186123497	6937186123503	60
BA-M-CX-865-G5	6937186123435	6937186123442	60
BA-M-CX-840-G5	6937186123374	6937186123381	60
BA-M-CX-830-G5	6937186123312	6937186123329	60

* EAN 10: Ordering number per single sale unit bag

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

SALES AND TECHNICAL SUPPORT

www.invetronicsglobal.com

Invetronics S.r.l

Via Castagnole 65/A:

Parking 31-33

31100 Treviso

Italy

www.invetronicsglobal.com

invetronics