

BackLED RGBW Core Product G3

24 V Backlighting modules

SPECIFICATION DATASHEET

Product Description

BackLED RGBW CP G3 product family provides fancy dynamic coloured light for backlighting areas, ceilings, advertisement boxes and so on. Single monochrome LEDs and separated white LED allow the best conditions for both colour and white consistency.

Benefits

Upgraded flux output up to 258 lm per module.

Potted module technology to reach IP68

Modules can be cut and operated singularly

2 versions available:

- whole chain control with current regulator driven modules
- DMX512 single module addressability

Applications

Backlighting of medium and large light boxes, ceilings or areas.



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 8 LEDs
- LED module pitch 290 mm
- Compatible with OPTOTRONIC constant voltage drivers / dimmers
- White color consistency of 3 SDCM
- 6500K for brilliant pastel colours, 4000K, 3000K, 2700K, Amber available on request
- Special batwing 160° lens technology
- IP68 rating
- Lifetime L70B50 50,000 h @ max Tc 75°C
- 5 years warranty

TECHNICAL INFORMATION DATA FOR ENTIRE CHAIN

Product Name	Order Code [EAN10]	Control method	Voltage [V DC]	Power [W]	Lum. Flux [lm]*	Modules / chain
BA-RGBW-865-CP G3	6977078997393	4CH	24	58 (full RGBW)	5080 (full RGBW)	20
BA-RGBW-865-CP G3 DMX	6977078997645	DMX512		R - G - B - W 14,5 - 14,5 - 14,5 - 14,5	R - G - B - W 640 - 1760 - 420 - 2260	

*: Data measured @ Ta = 25°C, flux tolerance ± 7%, max observed flux deviation from first to last module on a whole chain fed with 24 V at cable connection point is < 8%

TECHNICAL OPERATING DATA FOR SINGLE MODULE

Product Name	W CCT [K]	CRI	Wavelength [nm]	Power [W]	Lum. Flux [lm] ¹⁾	Efficacy [lm/W]	Beam Angle
BA-RGBW-865-CP G3	6500	>80	R: 620-630	2.9 (full RGBW)	254 (full RGBW)	87.6 (W: 156)	160°
BA-RGBW-865-CP G3 DMX			G: 520-535 B: 465-475	R - G - B - W 0.73 - 0.73 - 0.73 - 0.73	R - G - B - W 32 - 88 - 21 - 113		

GENERAL DATA

Dimmable	Yes, 1...100%, via Pulse Width Modulation (PWM)
Binning	Single bin fine white, 3 SDCM – Single monochrome LEDs (no RGB LEDs)
Lifetime	up to 50,000 h (L70B50, @ Tc max 75°C)
Warranty	5 years ²⁾
Ingress protection	IP68 ³⁾
Adhesive tape on backside	Yes
Complementary systems	OPTOTRONIC CV drivers and dimmers, Inventronics LMS
Certifications	CE, ENEC, C-UR-US, BIS ⁴⁾

¹⁾: Values provided for standard 6500K version. 4000K and 3000K also available as MTO (MOQ applies).

²⁾: Five-year warranty is provided only when the module is installed according to provided guidelines.

³⁾: 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.

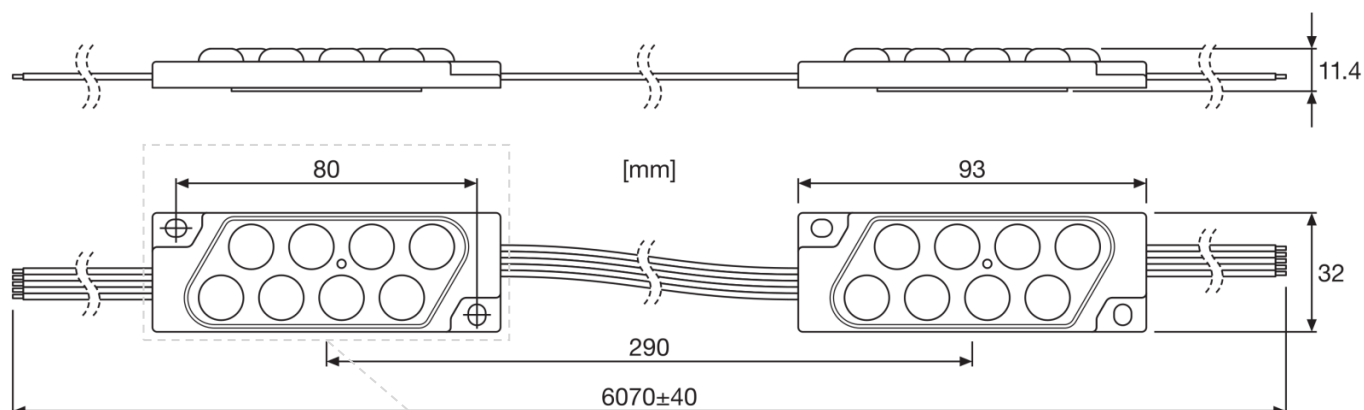
⁴⁾: When not printed on product label, they are under evaluation

OPERATING CONDITIONS

Operating ambient temperature Ta [°C]	-25 ... +60
Operating temperature Tc-Max (measured at Tc-Point) [°C]	-25 ... +75
Storage temperature [°C]	-40 ... +85
Voltage range [V DC]	23 ... 25 SELV

- 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 the exact location of the Tc-point see below image or product user instruction.

MECHANICAL DRAWINGS AND DIMENSIONS



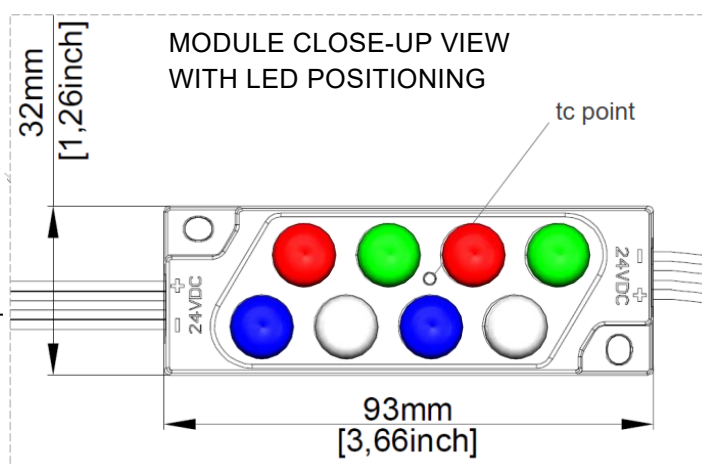
Modules per chain:
20 modules

Smallest operable unit:
1 module

Connection wires:
5x AWG20 – 0.5 mm²

A → DMX+
B → DMX-

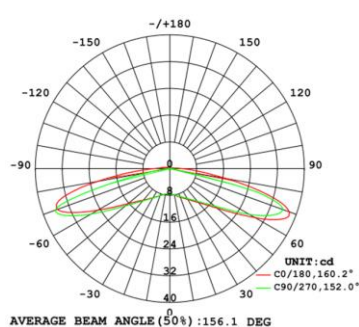
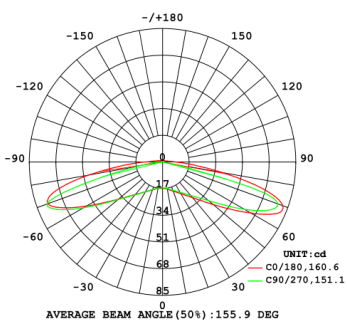
4CH	+
	R
	G
	B
	W
	+
DMX	A
	B
	PL/PO
	-



LIGHT DISTRIBUTION

RGBW full ON mode

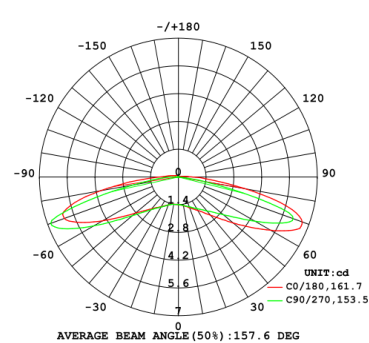
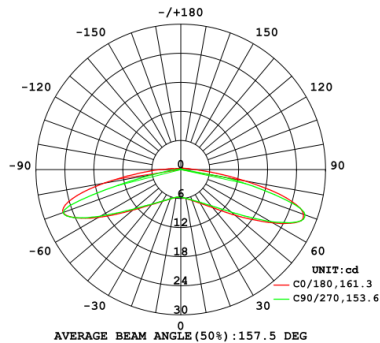
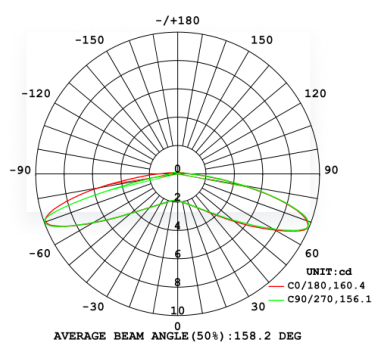
WHITE



RED

GREEN

BLUE



Declared average beam angle range (2Xθ1/2) = 160° ±8°

LAYOUT GUIDELINE

Product Name	Box depth [mm]	Module pitch [mm] with translucency material of:				Modules / m ² with translucency material of:			
Diffuser Type		Vinylic	Vinylic	Vinylic	Acrylic	Vinylic	Vinylic	Vinylic	Acrylic
Target Intensity		200Cd/m ²	400Cd/m ²	200Cd/m ²	200Cd/m ²	200Cd/m ²	400Cd/m ²	200Cd/m ²	200Cd/m ²
Translucency		41%	41%	50%	35%	41%	41%	50%	35%
BA-RGBW-CP G3	140	200X200	143X143	/	200X200	25	49	/	25
	170	200X200	143X143	200X200	200X200	25	49	25	25
	260	167X167	125X125	200X200	167X167	36	64	25	36

Suggestions based on high luminance requirement for box dimensions of 1 m x 1 m.

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 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. Contact Inventronics support team or your sales representative.

SAFETY AND USEFUL 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.
- Observe correct polarity! Incorrect polarity will lead to no light emission and may cause damage to the LED module.

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.

- 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® LED drivers, in order to ensure continuous safe operation, the input voltage at modules has to be 23...25 V.
- LED modules are dimmable by means of PWM (pulse width modulation). To control BA-RGBW-865-CP G3 modules, it is recommended using OPTOTRONIC® 24 V multichannel dimmable drivers or following INVENTRONICS constant voltage multichannel dimmers: OTi DALI DIM 1-4CH D, OT Wi DIM 5CH CA, OT DMX DIM 5CH.
- 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.
- The LED modules must not be operated in places which are directly exposed to atmospheric conditions. For outdoor applications, hence the LED module has to be protected by appropriate enclosures or covers. Operation in or under water is prohibited.

- 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-RGBW-865-CP G3	6977078997393	6977078997409	5
BA-RGBW-865-CP G3 DMX	6977078997645	6977078997652	5

* EAN 10: Ordering number per single sale unit bag

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

ACCESSORIES

Description	EAN10*	EAN40	S-UNIT** (pcs)
BA-MP-RGBW-G3-2M	6977770439450	6977770439467	50



SALES AND TECHNICAL SUPPORT

www.inventronicsglobal.com

STANDARDS

IEC/TR 62778
IEC/EN 61347-1
IEC/EN 60529
IEC/EN 62031
IEC/EN 60598-1
IEC/EN 61347-1
EN55015
EN 61547

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