VISIOTRONIX

The neXt Electronics Vision

LED Illuminators
BL2 Series



Revision EN2610

2026

www.visiotronix.com

BL2 SERIES

Industrial LED Backlights with integrated drivers



Luminous Homogeneity: A high-density LED matrix provides exceptional light uniformity, essential for high-precision sub-pixel edge detection and measurements.

Thermal Management: Proprietary HTTM technology facilitates superior heat dissipation, extending component lifespan and ensuring stable intensity during continuous operation.

Mechanical Integration: The anodized aluminum housing features a flush top surface and bottom mounting to minimize the overall installation footprint.

Integrated Power Regulation: Internal drivers stabilize LED output and support PWM modulation for precise brightness control via standard 24 Vdc signals.

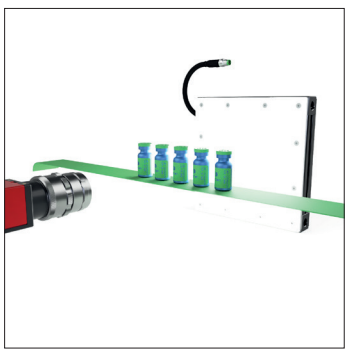
Industrial Connectivity: An M8 connector on a 100mm flexible pigtail allows for secure, vibration-resistant installation even in constrained spaces.

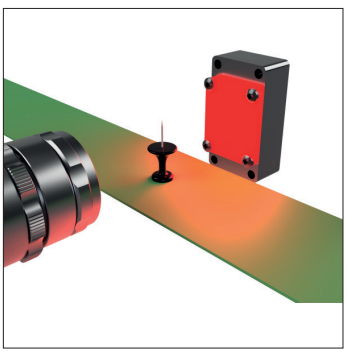
Applications

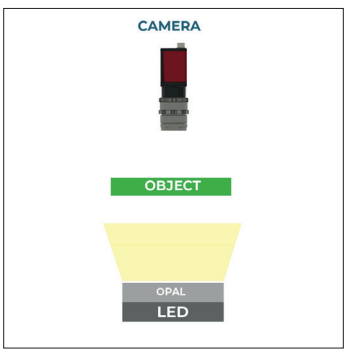
- High-precision dimensional measurement.
- Profile and shape detection.
- Sub-pixel edge analysis.
- Clear container fill-level monitoring.
- High-speed object counting.
- Surface defect detection.
- Automated optical inspection (AOI).
- Label and marking verification.
- Robot-guided pick and place.
- Pharmaceutical packaging quality control.

Key Features

- High-intensity LED matrix providing superior homogeneity for industrial backlighting applications.
- Advanced HTTM technology for efficient thermal dissipation and long-term performance stability.
- Compact anodized aluminum housing with flush top surface and bottom mounting points.
- Integrated driver supporting 24 Vdc input and precise PWM brightness modulation.
- Robust M8 3-pin connector featuring a vibration-resistant locking ring mechanism.
- Industrial 24 Vdc remote control compatibility for seamless automated system integration.
- Rigorous 48-hour operational burn-in testing to ensure maximum field reliability.







VISIOTRONIX by RODER SRL
Oglianico (TO) Italy - Tel. +39 0124 34301 - www.visiotronix.com

Composition of the product identification code

The code in orange are to be filled in according to the desired configuration

PL	–	BL2	–	YYYYYY	–	XXX	–	A	0	0	0	0	0
				Emission area dimensions in mm		Color							

Emission area

Highlighted models are from normal production - Others are on request and may have longer production times

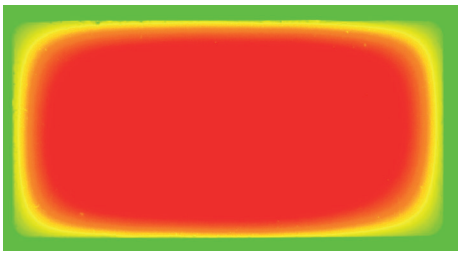
Length emissione area - mm (order code)					
50 x 50 (050050)	50 x 100 (050100)	50 x 150 (050150)	50 x 200 (050200)	50 x 250 (050250)	50 x 300 (050300)
100 x 100 (100100)	100 x 150 (100150)	100 x 200 (100200)	100 x 250 (100250)	100 x 300 (100300)	
150 x 150 (150150)	150 x 200 (150200)	150 x 250 (150250)	150 x 300 (150300)		
200 x 200 (200200)	200 x 250 (200250)	200 x 300 (200300			
250 x 250 (250250)	250 x 300 (250300)				
300 x 300 (300300)					

Color

Other LED models on request

WHI : Neutral White 5000K
INF : Infrared 850 nm
BLU : Blue 470 nm (on request)
RED : Red 625 nm (on request)

LED emission



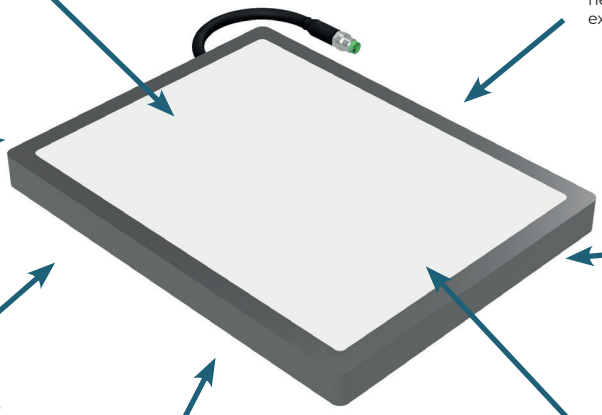
Reference 80 x 40 LED backlight

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Why choose a BL2 series illuminator ?

High density LED matrix
High density LED matrix with integrated lens for creating a direct and homogeneous light beam. The LED array is kept regular through a special fixturing mask that ensures its uniformity of LED mounting spacing.

Industrial connector
Connector with threaded fastening for easy assembly and quick disconnection in case of maintenance. The cable is fixed through a flexible grommet to ensure a small bending radius.



Aluminium enclosure
Black anodised aluminium enclosure. The use of aluminium ensures high heat dissipation from the LEDs and excellent mechanical robustness.

48H-Test certificate
Each illuminator undergoes a 48-hour test cycle and a test certificate is issued with the product. This procedure ensures high quality of the product delivered to the client.

Reverse polarity protection
The internal circuits are protected against reverse polarity of the supply voltage. Protection takes action in case of incorrect connection of power cables.

MCCD internal current source driver
The BL2 series of illuminators integrates the LED current regulators. The automatic current control system allows for a high homogeneity and stability of the light emission.

Very high efficiency and high intensity LEDs
Use of the latest generation of high-brightness, low-power LEDs. The LEDs used in the BL2 series have a built-in lens, have state-of-the-art features, and are produced by the world's largest LED manufacturer.

Industrial design
The entire BL2 family is designed for industrial use on vision systems or optical test benches. The target customer for this product family is either the industrial machine manufacturer or the vision system integrator.

HTTM© Technology
Use of HTTM technology for high heat dissipation produced by LEDs. A special material layer is used inside the illuminator for contact between the LEDs and the housing.

Main features common to the BL2 family

Features	Value
Supply voltage	24 Vdc +/- 5%
IP rating / temperature	IP40; operating temperature 0 - 50 °C
Electrical connection	M8 3-pin connector with threaded ring nut; pig-tail cable approx. 100 mm
Control and driver	MCCD driver; ON/OFF or PWM control up to 100 kHz; reverse polarity protection
Mounting and structure	Bottom-side fixing, no side brackets; 17.5 mm thick; anodised aluminium block
Certifications and testing	CE, RoHS; made by RODER in Italy (ISO 9001); 48-hour test with certificate

The BL2 series illuminators are designed to be easily integrated into various vision systems and to offer a low-cost, highly customizable lighting solution.

High brightness in a small space : the BL2 series consists of a matrix of high-density, high-brightness LEDs. The BL2 series illuminators are used in confined spaces, where direct, high-intensity illumination is required. The BL2 series is designed for system integrators and OEMs who need to integrate the illuminator into a machine or custom devices.

MCCD Technology : The BL2 series of illuminators integrates the MCCD technology (Multi Constant Current Driver). The automatic current control system allows for a high homogeneity and stability of the light emission

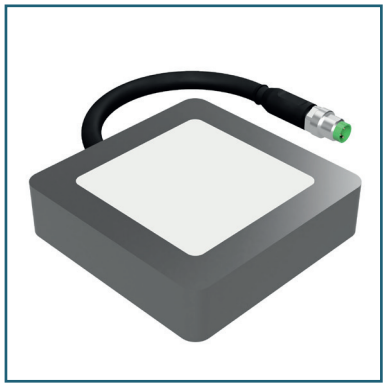
HTTM© Technology : use of HTTM© technology (High Thermal Transmission Material) to dissipate the heat generated by LEDs. Proper heat dissipation enables the light sources and control electronics to maintain optimum working conditions. A special material layer is used inside the illuminator for contact between the LEDs and the housing. In this way, the temperature of the LEDs is kept constant, the brightness is stable over time, and the LED has a longer service life.

Typical configuration



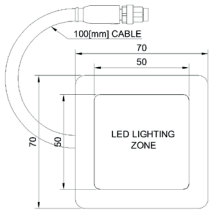
Backlight
The BL2 series of illuminators can be used to design backlights applications

BL2 series - standard models

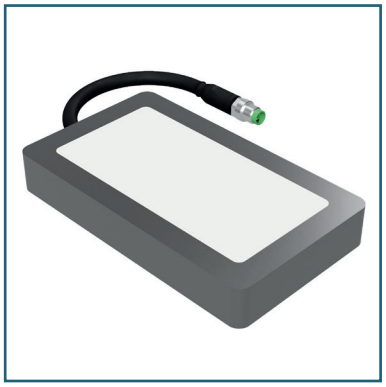


BL2 50 x 50

Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
14-02-34	PL-BL2-050050-WHI-A00000	50 x 50	WHI	0.12A @24vdc	36	1
14-02-44	PL-BL2-050050-INF-A00000	50 x 50	INF	0.09A @24vdc	36	1

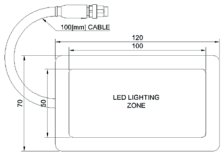






BL2 50 x 100

Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
14-04-70	PL-BL2-050100-WHI-A00000	50 x 100	WHI	0.24A @24vdc	72	1
14-04-89	PL-BL2-050100-INF-A00000	50 x 100	INF	0.18A @24vdc	72	1

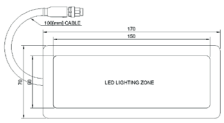






BL2 50 x 150

Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
10-17-05	PL-BL2-050150-WHI-A00000	50 x 150	WHI	0.36A @24vdc	108	1
10-17-06	PL-BL2-050150-INF-A00000	50 x 150	INF	0.27A @24vdc	108	1

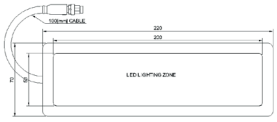






BL2 50 x 200

Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
14-05-44	PL-BL2-050200-WHI-A00000	50 x 200	WHI	0.48A @24vdc	144	1
14-05-57	PL-BL2-050200-INF-A00000	50 x 200	INF	0.36A @24vdc	144	1



BL2 series - standard models



BL2 50 x 250

Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
10-17-07	PL-BL2-050250-WHI-A00000	50 x 250	WHI	0.6A @24vdc	180	1
10-17-08	PL-BL2-050250-INF-A00000	50 x 250	INF	0.45A @24vdc	180	1





BL2 50 x 300

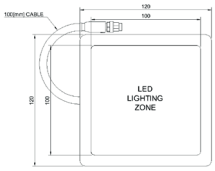
Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
14-00-47	PL-BL2-050300-WHI-A00000	50 x 300	WHI	0.72A @24vdc	216	1
14-00-60	PL-BL2-050300-INF-A00000	50 x 300	INF	0.54A @24vdc	216	1





BL2 100 x 100

Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
14-02-35	PL-BL2-100100-WHI-A00000	100 x 100	WHI	0.48A @24vdc	144	1
14-02-51	PL-BL2-100100-INF-A00000	100 x 100	INF	0.36A @24vdc	144	1

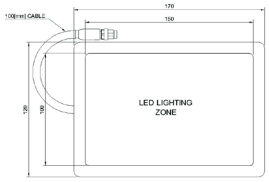


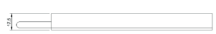




BL2 100 x 150

Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
10-17-09	PL-BL2-100150-WHI-A00000	100 x 150	WHI	0.72A @24vdc	216	1
10-17-10	PL-BL2-100150-INF-A00000	100 x 150	INF	0.54A @24vdc	216	1



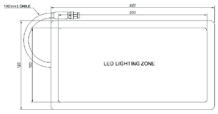


BL2 series - standard models



BL2 100 x 200

Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
14-04-90	PL-BL2-100200-WHI-A00000	100 x 200	WHI	0.96A @24vdc	288	1
14-05-06	PL-BL2-100200-INF-A00000	100 x 200	INF	0.72A @24vdc	288	1





BL2 100 x 250

Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
10-17-11	PL-BL2-100250-WHI-A00000	100 x 250	WHI	1.2A @24vdc	360	1
10-17-12	PL-BL2-100250-INF-A00000	100 x 250	INF	0.9A @24vdc	360	1

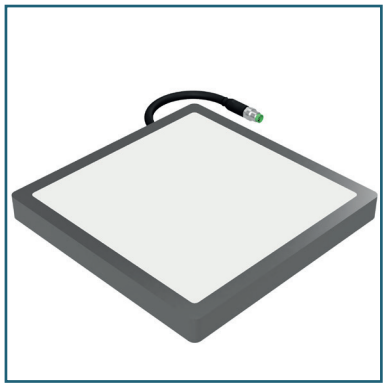




BL2 100 x 300

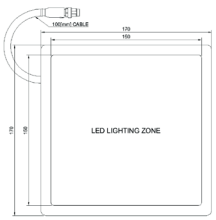
Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
14-05-58	PL-BL2-100300-WHI-A00000	100 x 300	WHI	1.44A @24vdc	432	1
14-00-13	PL-BL2-100300-INF-A00000	100 x 300	INF	1.08A @24vdc	432	1





BL2 150 x 150

Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
10-17-13	PL-BL2-150150-WHI-A00000	150 x 150	WHI	1.08A @24vdc	324	1
10-17-14	PL-BL2-150150-INF-A00000	150 x 150	INF	0.81A @24vdc	324	1

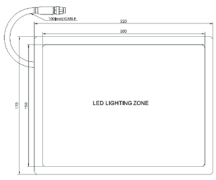


BL2 series - standard models



BL2 150 x 200

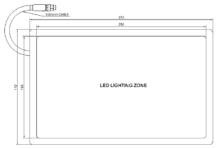
Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
10-17-15	PL-BL2-150200-WHI-A00000	150 x 200	WHI	1.44A @24vdc	432	1
10-17-16	PL-BL2-150200-INF-A00000	150 x 200	INF	1.08A @24vdc	432	1





BL2 150 x 250

Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
10-17-17	PL-BL2-150250-WHI-A00000	150 x 250	WHI	1.8A @24vdc	540	1
10-17-18	PL-BL2-150250-INF-A00000	150 x 250	INF	1.35A @24vdc	540	1

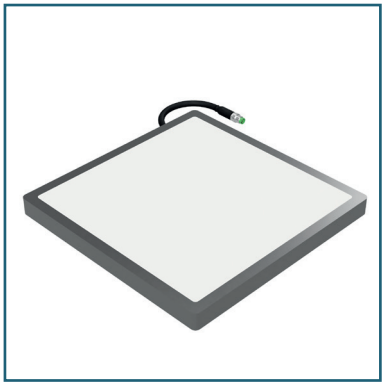




BL2 150 x 300

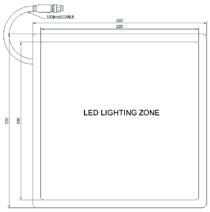
Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
10-17-19	PL-BL2-150300-WHI-A00000	150 x 300	WHI	2.16A @24vdc	648	1
10-17-20	PL-BL2-150300-INF-A00000	150 x 300	INF	1.62A @24vdc	648	1





BL2 200 x 200

Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
14-00-61	PL-BL2-200200-WHI-A00000	200 x 200	WHI	1.92A @24vdc	576	1
14-02-27	PL-BL2-200200-INF-A00000	200 x 200	INF	1.44A @24vdc	576	1

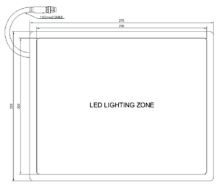


BL2 series - standard models



BL2 200 x 250

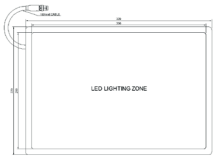
Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
10-17-21	PL-BL2-200250-WHI-A00000	200 x 250	WHI	2.4A @24vdc	720	1
10-17-22	PL-BL2-200250-INF-A00000	200 x 250	INF	1.8A @24vdc	720	1

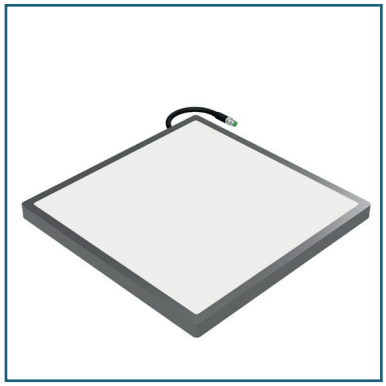




BL2 200 x 300

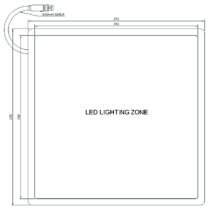
Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
14-02-28	PL-BL2-200300-WHI-A00000	200 x 300	WHI	2.88A @24vdc	864	1
14-02-29	PL-BL2-200300-INF-A00000	200 x 300	INF	2.16A @24vdc	864	1

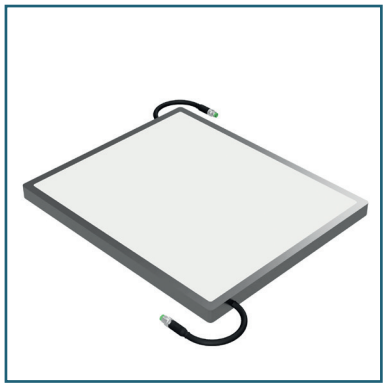




BL2 250 x 250

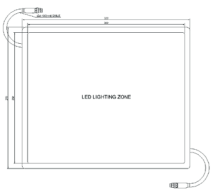
Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
10-17-23	PL-BL2-250250-WHI-A00000	250 x 250	WHI	3A @24vdc	900	2
10-17-24	PL-BL2-250250-INF-A00000	250 x 250	INF	2.25A @24vdc	900	2



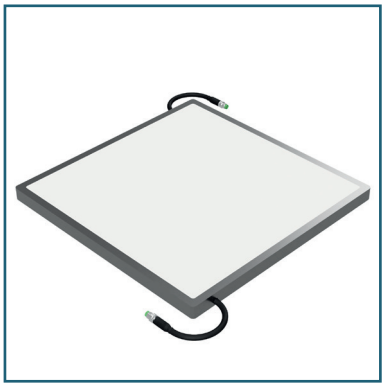


BL2 250 x 300

Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
10-17-25	PL-BL2-250300-WHI-A00000	250 x 300	WHI	3.6A @24vdc	1080	2
10-17-26	PL-BL2-250300-INF-A00000	250 x 300	INF	2.7A @24vdc	1080	2

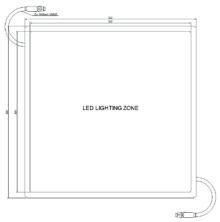


BL2 series - standard models



BL2 300 x 300

Item Code	Product Code	Light emitting	Color	Consumption	N. LEDs	N. Cables
14-02-52	PL-BL2-300300-WHI-A00000	300 x 300	WHI	4.32A @24vdc	1296	2
14-02-53	PL-BL2-300300-INF-A00000	300 x 300	INF	3.24A @24vdc	1296	2



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