



IBRP catalogue





ISCON - LED Illumination for Machine Vision

ISCON products feature high light intensity, a wide array of available models and sizes as well as excellent build quality. Thanks to many years of experience in the machine vision industry, ISCON provides consultancy in terms of selecting the best illuminator model. ISCON also ensures user safety by adhering to stringent standards concerning electrical device safety. In order to guarantee high light intensity and long operation time, ISCON illuminators exclusively use the highest quality LEDs. A durable aluminium casing ensures increased resistance to mechanical damage and fire protection. Beside the highest quality and safety, ISCON also ensures express order processing. To maintain high quality of our illuminators, each product is subjected to many hours of stress tests before being delivered to the customer. ISCON products are fully manufactured within the European Union and bear the CE certificate.

ISCON illuminators are designed to operate in industrial machine vision systems. Using the correct illuminator in a machine vision system allows any physical property of an object to be inspected, including size, shape or inscription. Thanks to high light intensity, ISCON illuminators perform excellently in vision systems with a short illumination time of the inspected object. A wide array of models, light colour and additional accessories ensures versatility of ISCON illuminators, which allows them to perform perfectly in all types of vision systems. At the client's request, it is possible to design and manufacture custom illuminators, tailored to specific requirements of a machine vision system.

Selecting the correct ISCON illuminator for a vision system ensures:

- ➔ maximising the contrast between the inspected object and the background
- ➔ stable operating conditions of the machine vision system
- ➔ minimising the impact of the surrounding ambient light.




Scope of services:

- ➔ consultancy in terms of selecting the correct illuminator model
- ➔ custom builds at the customer's request
- ➔ free equipment rental for testing in actual conditions
- ➔ technical documentation for products
- ➔ warranty service and technical support.

- Very high illumination efficiency
- Durable, aluminium casing
- Optional overdrive mode (quadruple light intensity)
- Option of installing auxiliary filters



Product specifications

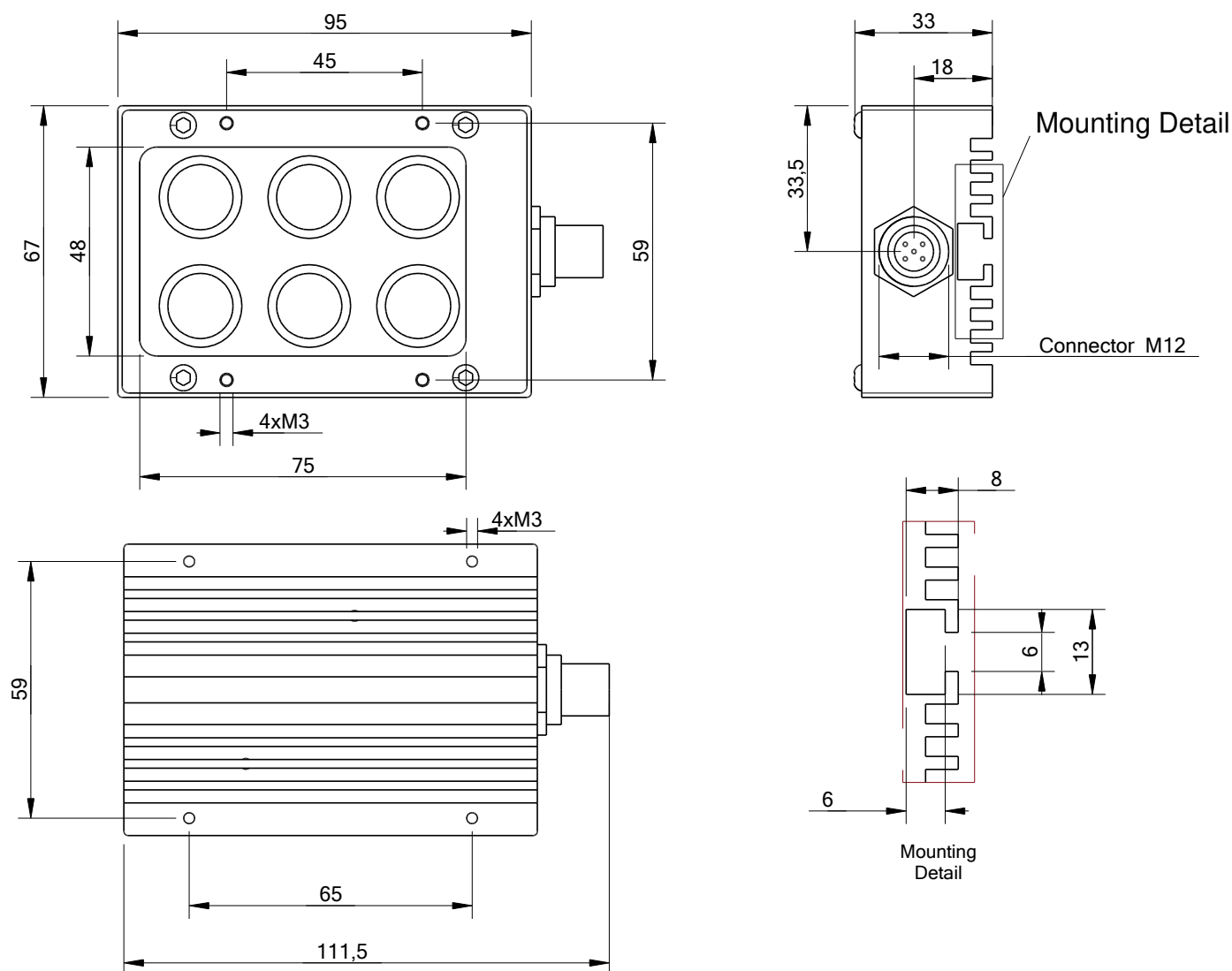
Supply voltage	24-30 VDC
Max current/max power without overdrive driver	0.4A/12W
Max current/max power with overdrive driver	1.5A/50W
Operating temperature	0-40 °C
Protection rating	IP40
Connector	M12, 5 pin
Cooling	Convection
Certificates	  
Casing	Anodised aluminium
Casing colour	Blue

LED wavelength

W (white)	R (red)	G (green)	B (blue)	IR (infrared)	UV (ultraviolet)*
CRI=75	620-650nm	520-540nm	460-480nm	850-865nm	390-410nm

*UV LED's lifespan - 1000 hours. Other wavelength LED's lifespan - 50000 hours.

Overview drawing IBRP



Tolerance of ± 0.5 mm applies to all of the dimensions given.

Basic references

	IBRP	IBRP with overdrive driver
Max current [A]	0.4	1.5
Maximum power[W]	12	50
Number of LED's	6	
LED color	W - white R - red G - green B - blue IR - infrared UV - ultraviolet	
Weight [kg]	0.3	
Lighting area's length [mm]	75	
Total length [mm]	95	
Lighting area's width [mm]	48	
Total width [mm]	67	
Height [mm]	33	

At the customer's request, illuminators can also be manufactured with custom dimensions.
In case of further questions please contact us at: iscon@iscon.pl.

Tolerance of ± 0.5 mm applies to all of the dimensions given.

Reference coding

IBRP	-	Type	-	Length	-	Light colour	-	Lens angle
		- Standard		90	95mm	W	white	15 ±15°
		0 Overdrive				R	red	25 ±25°
						G	green	40 ±40°
						B	blue	NL No Lens
						IR	infrared	
						UV	ultraviolet	

Example 1

IBRP-90-IR-NL - an illuminator without overdrive driver, length 95 mm, infrared light colour, no lens

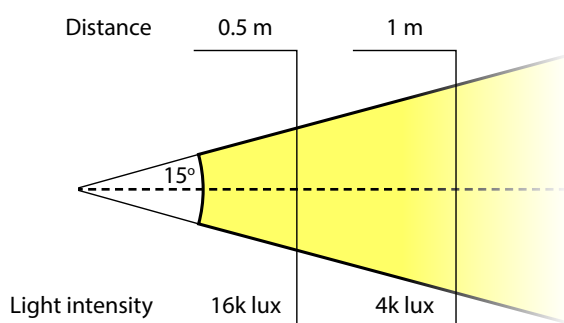
Example 2

IBRP-O-90-R-15 - an illuminator with overdrive driver, length 95 mm, red light colour, lens angle 15°

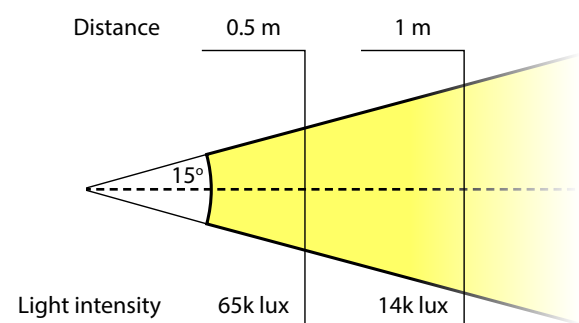
Lenses

Approximate lighting area [mm x mm]

				IBRP-X-90-XX-XX
Distance	0.5 meter	Lens angle	15°	341 x 314
			25°	541 x 514
			40°	913 x 886
	1 meter	Lens angle	15°	609 x 582
			25°	1007 x 980
			40°	1753 x 1726



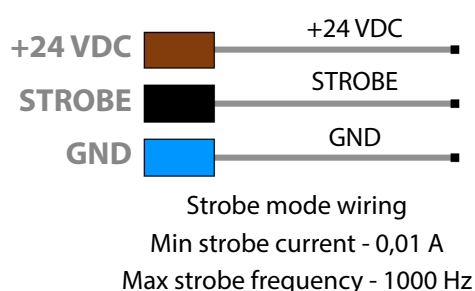
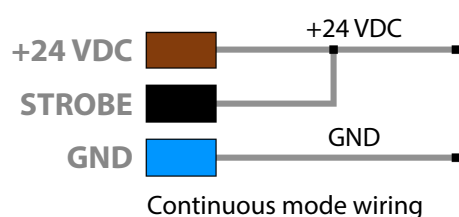
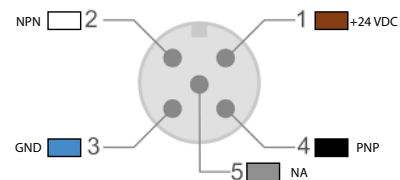
Approximate values measured with an illuminator
IBRP-90-W-15



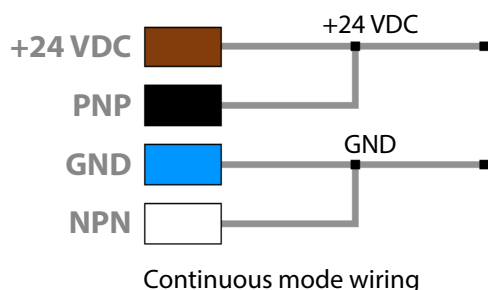
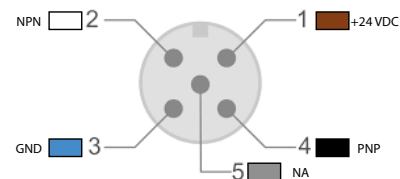
Approximate values measured with an illuminator
IBRP-90-W-15

Connection Diagrams

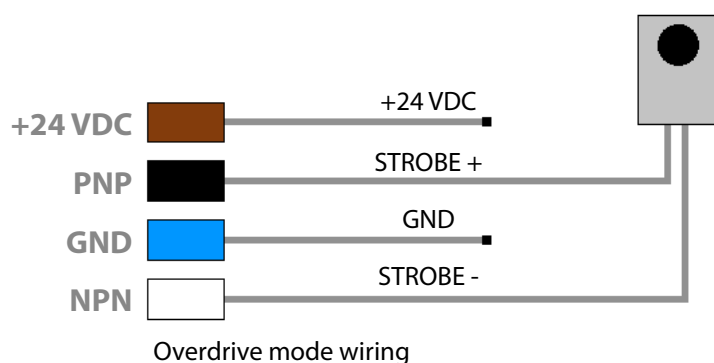
IBRP - illuminator without overdrive driver	
1 Brown (BN)	+24VDC
2 White (WH)	NA
3 Blue (BU)	GND
4 Black (BK)	STROBE
5 Gray (GR)	NA



IBRP-0 - illuminator with overdrive driver	
1 Brown (BN)	+24VDC
2 White (WH)	NPN Strobe-
3 Blue (BU)	GND
4 Black (BK)	PNP Strobe+
5 Gray (GR)	NA



When turning on wait for at least 1 second before capturing first image in continuous mode.

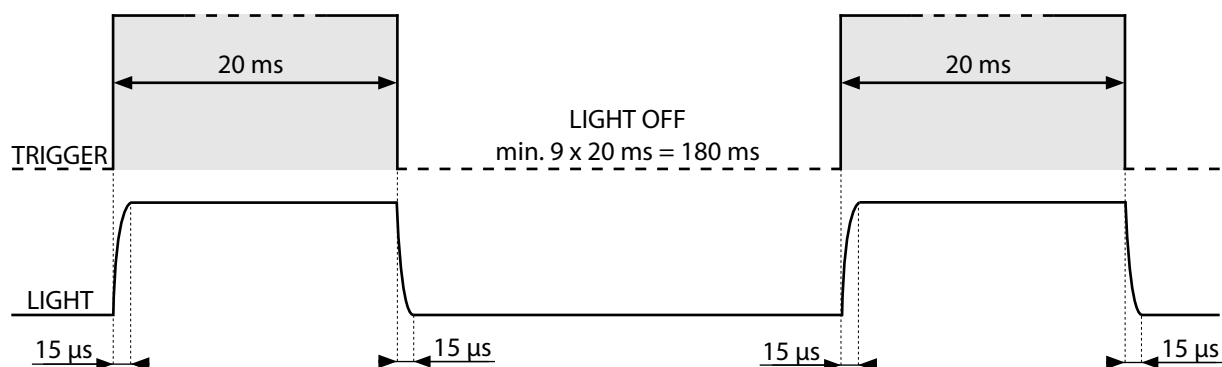
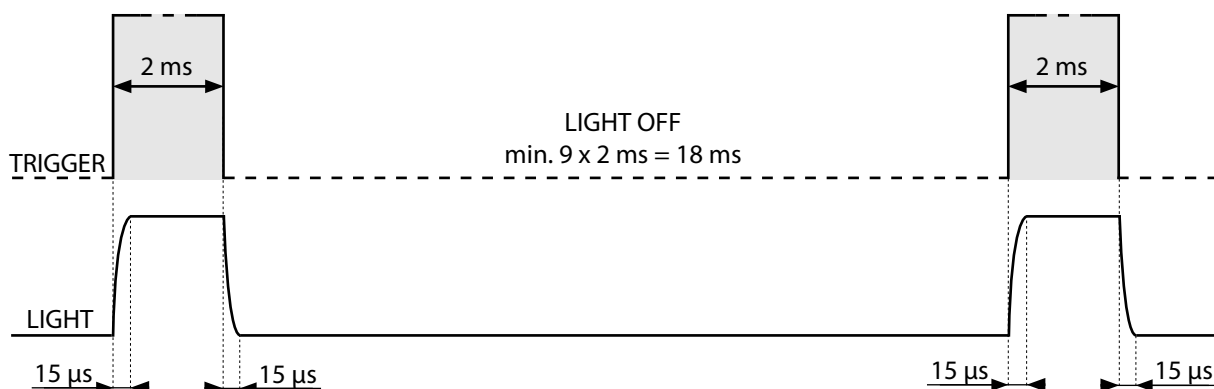


PNP voltage 5-24 VDC
Min strobe current 0,01 A
Max strobe frequency 1000 Hz
NPN voltage below 1 VDC

Control

TRIGGER - light control signal from controller or camera

LIGHT - illuminator's light intensity



Illuminator in overdrive mode is controlled by trigger input coming from external controller or camera. Rest time between consecutive trigger inputs must be at least 9 times longer than trigger time. During rest time any additional trigger inputs will be ignored.

Max trigger time in overdrive mode - 100 ms. In order to set longer trigger time than 100 ms connect an illuminator in continuous mode.

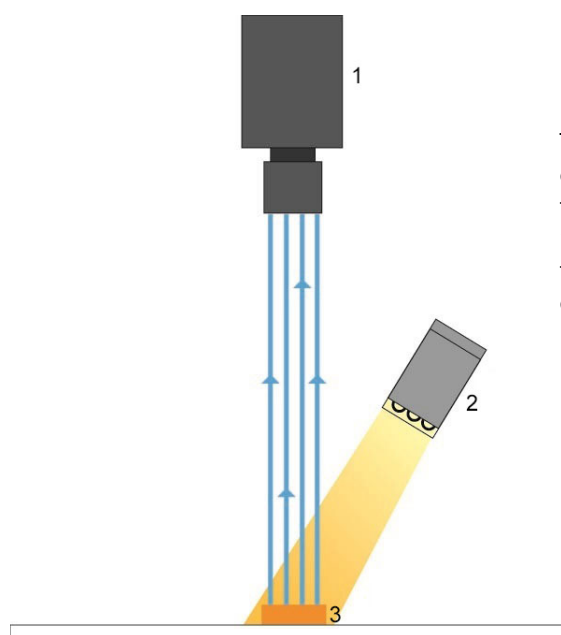
Max turn-on and turn-off delay - 15 μs.

Example:

Trigger time is set to 50 ms, so rest time must be longer than 450 ms ($9 \times 50 \text{ ms} = 450 \text{ ms}$).

Installation and Application

The illuminator can be installed from behind using T-slot. Use 8 mm T-slot bolts or bolt with a washer. It is possible to install the illuminator using four M3 holes, shown on overview drawing. It is recommended to mount the illuminator on the machine's metal structure, so that its largest surface is aligned with the structure in order to dissipate the most heat.

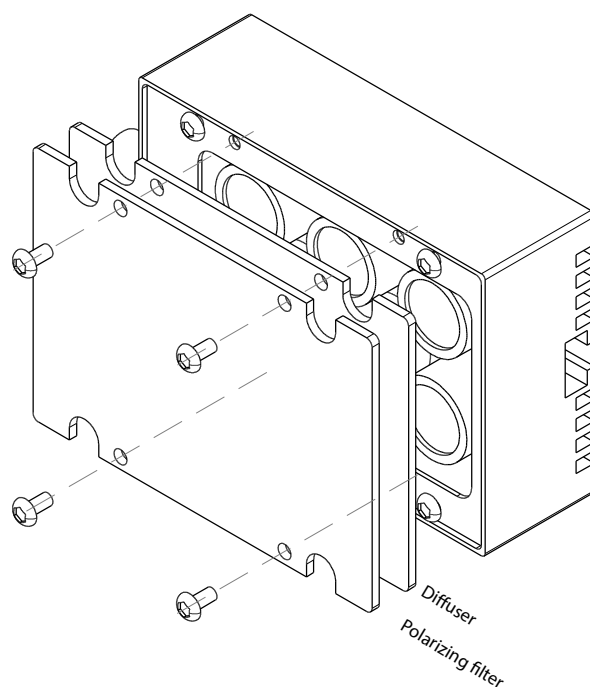


1 - Machine vision 2 - Illuminator 3 - Object













The drawing presents an exemplary application of the IBRP illuminator. It is essential that illuminators are set up at an angle (approx. 30-55 degrees) to the inspected part, so that the light is not reflected directly into the camera lens.

Accessories

Every IBRP illuminator is provided with transparent protective glass. It is possible to install polarizing filter or diffuser using four M3 screws, as shown on the picture. It is also possible to order additional 2 or 5 meter long cable with M12 connector.



Warnings

	The surface of the illuminator may be hot.	Do not touch during operation. HOT.
	Do not look directly into the light source.	Caution, LED radiation.
	Keep away from fire and high temperatures (above 40°C).	Keep away from fire.
	Do not touch the device with wet hands.	Risk of electric shock or short circuit.
	Do not wet clean the device or use a pressure washer.	Risk of electric shock or short circuit.
	Connecting incorrectly may cause damage to the device.	Connect according to the information on the device's casing.
	The device is designed for operation in a dry room environment.	Do not touch during operation. HOT.
	Do not alter, cut or connect additional cables.	Exclusively use the original cable.
	Incorrect usage may lead to device damage.	Installation and application exclusively in accordance with technical documentation.
		Connect the device only with the power source cut off.
	Do not dismantle the device or remove original factory-made components.	Disassembly and technical modifications are prohibited.
		Protect from fall damage, strong shocks or impact to the device casing.

WARRANTY TERMS AND CONDITIONS

All ISCON products are subject to a 24-month warranty starting from the purchase date.

The warranty is honoured under the following conditions:

- Presenting the purchase invoice as well as the device's serial number or sending the device to the ISCON company address.
- The device must not have been disassembled, modified or otherwise customised to the user's needs. Incorrect installation (drilling through the casing or installing using different screws and holes than the ones anticipated by the manufacturer) voids the warranty.
- The device is powered with a direct current voltage 24-30V. Providing a higher or lower voltage or an alternate current may damage the illuminator and is not covered by the warranty.
- The device is designed for operation inside a dry room environment. Using it outside of a closed room may lead to exposure to moisture followed by damage and is not covered by the warranty.
- The device should not be cleaned using: water, pressure washers, hot steam, mechanical components and chemical agents.
- The room in which the illuminator operates must not be air tight without any air exchange or ventilation.
- The ambient temperature must be within 5-40°C.



Contact

ISCON

RAKOSZYCKA 2i
55-300 ŚRODA ŚLĄSKA
POLAND

iscon@iscon.pl
+48 609 336 674

www.iscon.pl

