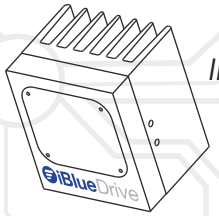
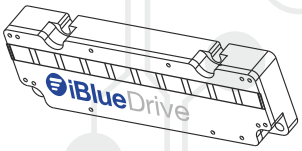
DCM SISTEMES

EN

iBlueDrive lighting systems quickguide



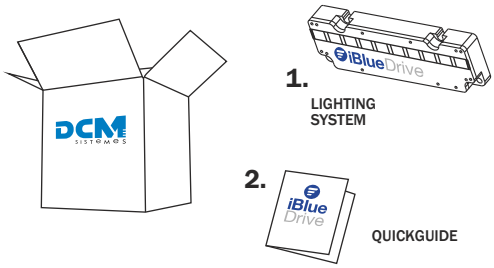


iBlueDrive TECHNOLOGY

Doc No.M033B20

CONTENT

From DCM SISTEMES box, you will get the following items:



Please, before connecting DCM SISTEMES lighting systems, make sure:

- The **Serial Number (S/N)*** of your product corresponds with the number in the packing list.

  **Consult S/N placement on the product label information below.*

- **Assure you have all the material required** to connect and use DCM SISTEMES lighting systems. In some of them, you will need supplementary items such as a power cable, a power supply source or a strobe controller, none of them included.

Note: Accessories are sold apart so that the customer has no obligation in purchasing them with each new lamp.

- Consult our technical engineers for more information.

SAFETY INSTRUCTIONS *Before use*

Read carefully all the following instructions to ensure safe, before and while operating with your lighting system:

- Follow all warning instructions marked on the product label with the following symbols *(See extended info below)*:

- Consider work area environment specifications. Using the product under any other conditions may damage it.

Environmental Conditions	
Max. Operating humidity	*85% non-condensing*
Operating temperature	*0 - 40ºC*
Storage temperature	*0 - 60ºC*
Housing material	*Black anodized aluminium*

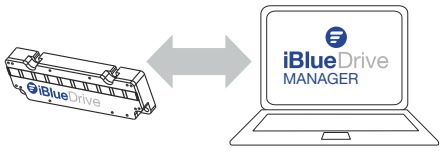
- Keep work area clean and dry. Avoid placing the lighting system in a location subject to: high humidity, high temperature or excessive dust.
- For an efficient use of LED lights, provide air flow for heat dissipation, only turn light on during imaging and use the light with the light level as low as possible. **Excessive heat can decrease radiant quantity and speeds degeneration.**
- Designed for artificial machine vision. Not designed for those applications that would imply human life risks.
- Be careful not to touch the lamp after use, it may be very hot.
- Do NOT use lighting systems for works other than those for which they are designed for.
- Keep this instruction guide for future reference.
- Be sure to keep the equipment **out of reach of children.**

iBLUEDRIVE SPECIAL FEATURES

- Automatic working modes: strobe, powered, continuous or dimming mode.
- Easy wiring. Only 3 terminals
- Direct connection to camera or trigger signal.
- No configuration needed, preset to shutter speeds of up to 47 pulses per second (pps).
- Shutter speed up to 5000pps *(requires setting with control software)*.
- Easy dimming control.
- Dynamic blinking **LED indicator**: Informs about status and working temperature.

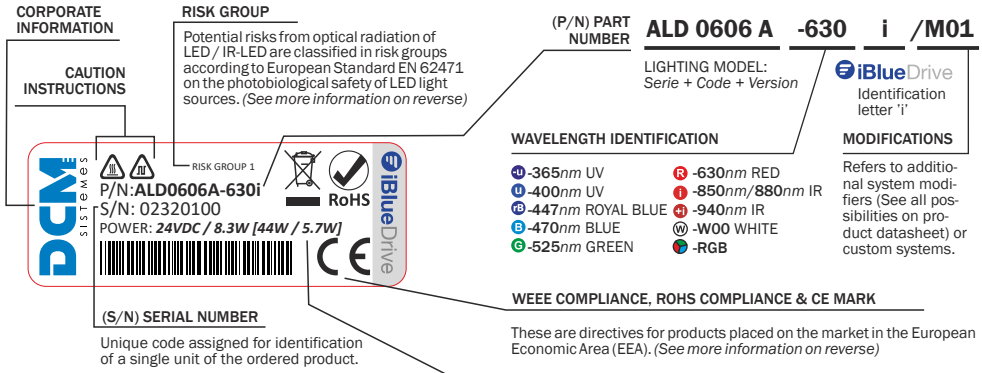
  - Shorter 'time ON' blinking: ***lamp is cold.***
  - Longer 'time ON' blinking: ***lamp is warm.***
  - Permanently ON, without blinking: ***error or overheated.***

- **PC Software communication** *(requires additional hardware):* All information at your fingertips. Input voltage, driver and LED working temperature, triggering mode, serial number, etc. **Full configurable offline and online**. Set power output, pulse width, delays, etc.



PRODUCT LABEL INFORMATION

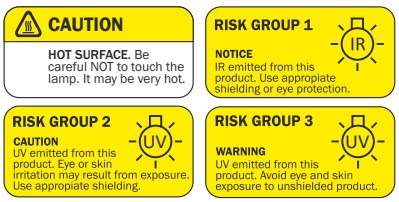
CAUTION: ***This is a label model that contains example of information. Please, DO NOT consider it as valid information.***



Pay attention only to the values of the desired working mode, and refer to the working conditions on the section below.

Note: Power average (P_{avg}) would be the maximum power (P_{max}) multiplied by the actual duty cycle (D)
$P_{avg} = P_{max} \times D$

On the product label, you may be referred by caution symbols to other labels with important information. **Follow the instructions on them. NOT doing it can cause serious damage:**

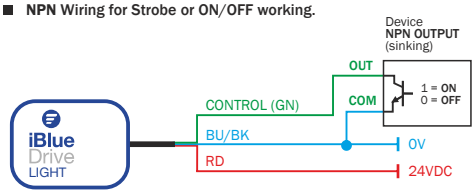


ELECTRICAL SPECIFICATIONS

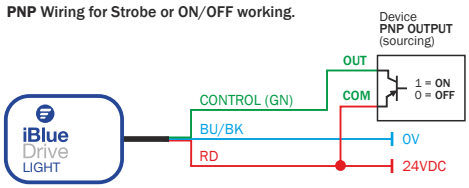
- Power supply:
  - Operating voltage **24VDC +/- 8%**
  - Max. Consumption: See light device label.
  - Typical standby consumption: **350mW**
  - Standby consumption : **<720mW**
- Wiring: **150mm cable with 3 contacts female circular connector** *(VCC series cable required)*.
- *Operating temperature:* **0-40ºC.**
- *Storage temperature:* **0-60ºC.**
- Voltage at control terminal with terminal free (Vcz) = **5V**
- Max.Voltage at control terminal = **30V**
- Minimum voltage at control terminal to **turn OFF the light (Vcoff) = 2V6**
- Maximum voltage at control terminal to **turn ON the light (VCon) = 1V6**
- Turn ON delay regarding to control signal: **< 60µs** *(usually 35µs)*
- Preprogramed turn ON delay time in continuous mode = **21ms**
- Preprogramed time to switch the device from powered mode to continuous mode **after 16s ON**.

iBLUEDRIVE WIRING

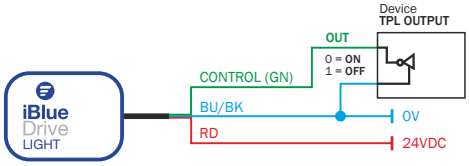
- **NPN Wiring for Strobe or ON/OFF working.**



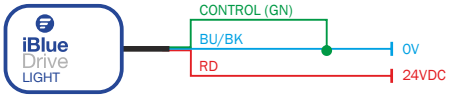
- **PNP Wiring for Strobe or ON/OFF working.**



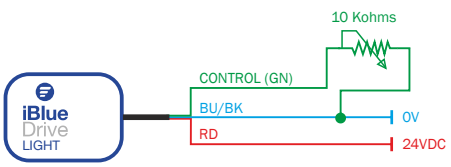
- **TTL Wiring for Strobe or ON/OFF working.**



- **Wiring for continuous mode working.**



- **Wiring for continuous dimming mode.**



DECLARATION OF CONFORMITY

DCM SISTEMES, declares under our responsibility the conformity of the following DCM Standard lights sources for machine vision Model Numbers/Series:

ALB, ALD, ALS, ALU, ALW, AUB, BKC, BKK, BKL, BKM, BKN, DKL, DOL, DOM, DTL, PLA, PLC, PLD, PLU, PLX, PRA, PRC, PRD, PRF, PRH, PRL, PRK, PRY, SAC, SAL, SAR, SAX,

are in conformity with the following European Directives:
- Low voltage directive (LVD): 2014/35/EU
- Electromagnetic compatibility directive (EMC): 2014/30/EU
- Restriction of Hazardous Substances (RoHS): 2011/65/EU
- Waste electrical and electronic equipment directive (WEEE): 2012/19/UE

The light sources are designed for use with a nominal voltage of 24V. The conformity of the designated product(s) with the provisions of the European Directives is given by the compliance with the following European Standard(s) or other specifications.
If not elsewhere/otherwise indicated the edition/amendment as referenced below applies:
- EN 62471:2008
- EN 61000-3-3:2013
- EN 55015:2013
- EN 61547:2009
- EN 61000-3-2:2006 + A1:2009 + A2:2009

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Engineering Manager

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QC Manager

DCM SISTEMES C.I.F.: B-96902531
DESENVOLUPAMENT ENGINYERIA I CONECTIVITAT SISTEMES S.L.

Valencia, January 2021.

WARRANTY CONDITIONS*

The Manufacturer's Guarantee is a separate, additional guarantee which does not affect the consumer's legal rights and is specifically issued for the customer and the appliance which it accompanies.
The Manufacturer's Guarantee is valid for **two years** from the date of receipt of the appliance, and covers all repairs which may be carried out by the Official Technical Assistance Service.
In the cases covered by this guarantee, the holder will be entitled to the repair of any original flaws or defects free of charge. If the repairs carried out are not satisfactory, and the appliance is not in optimum condition for the use for which it is intended, the holder of the guarantee shall be entitled to replacement of the appliance acquired by another of identical characteristics. The replacement appliance will be covered by the remaining guarantee on the original appliance.

EXCLUSIONS FROM THE GUARANTEE.
The following are excluded from this Guarantee. In these cases the total repair cost will correspond to the user:
a) Breakdown caused by improper use of the appliance by the consumer
b) Breakdown caused by unforeseeable circumstances, force major. (atmospheric or geological conditions) or natural disaster.
c) Interventions deriving from improper installation or lack of maintenance.
d) Periodical maintenance operations carried out on the product.
e) Wear or deterioration of the appliance caused by use.

CANCELLATION OF THE GUARANTEE.
This Guarantee shall be null and void and without effect if the appliance has been interfered with, modified or repaired by any unauthorized person or technical service other than the Official Technical Assistance Service.

Very important: to benefit from this guarantee, it is absolutely essential for the user to provide the authorized technical service with an official receipt giving evidence of the date of purchase. All our service technicians carry the corresponding identification accrediting them as Official Brand Technicians. It is in your own interest to ask to see this identification. Consult your distributor or check in the enclosed documentation for the address of the nearest technical service. This Guarantee shall only be valid within the European Union and shall refer exclusively to the appliance referred to and supplied by DCM SISTEMES. In other countries, the guarantee shall be issued in accordance with the laws in force in each case.

***Special conditions might be applied to customized lighting systems.**

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Illustrations used in this guide may differ from actual products.

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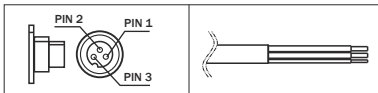
CONNECTION & WORKING CONDITIONS

CAUTION
For your own safety, ensure the power is off before connecting.

For connection, **iBlueDrive** needs a **three poles VCC Series cable** *(non included, order separately).* Consult wiring on the left.



+ 3 poles CABLE **VCC SERIES** *(on request)*		**Terminal function**
RD	PIN 1	POWER
BU/BK	PIN 2	GROUND
GN	PIN 3	CONTROL

The necessary values for powering each lamp are specified on the product label according to the following:

TENSION / **Max. POWER (W)** for Powered mode
In brackets [Max. Power (W) for strobe mode / Max. Power (W) for continuous mode]

CAUTION
The iBlueDrive device (type 'i') can work in continuous, powered or strobe mode depending on the usage. Assure you refer to the correct values of each mode. Consult above.

CAUTION
Additional thermal dissipation may be required in powered or continuous modes.

iBlueDrive configuration presets & Absolute working conditions:

SERIES	FACTORY SETTINGS		ABSOLUTE WORKING CONDITIONS			
			STROBE		POWERED	
	T_{strobe}	PPS* $_{max.}$	$T_{max.}$	$D_{max.}$	$T_{max.}$	$D_{max.}$
ALB, AUB, PLA, PLX, PRC, PRK	4.2mS	47hz	20mS	1/5	16S	1/2
ALD, ALS, BKL, DKL, PLD, PRA, PRD, PRH, PRY	2mS	47hz	2mS	1/10	16S	1/2
ALU, ALW, BKC, DOM, PLU, SAC, SAL, SAX	2mS	47hz	2mS	1/10	–	–

***PPS** = Pulse Per Second*

CLEANING & MAINTENANCE

DCM SISTEMES lighting systems have been designed to operate over a long period of time with a minimum of maintenance. Continuous satisfactory operation depends upon care and regular cleaning.

CAUTION
Ensure the power is off before cleaning or other maintenance operations.

CAUTION
Do NOT use any harsh or abrasive cleaners.

- Remove regularly dust from the outside of the lighting system by using a soft dry cloth. Be careful not to scratch the surface.
- Before using any cleaners (*NOT recommended*), please test the results on the bottom of the device.
- Axial lighting systems require special care in cleaning the beamsplitter to avoid scratching. Use for this aim a glass cloth.
- Handle with care when transporting.

DOM SERIES
Special care is needed in DOM Series. Before performing any maintenance on them, take into account the following instructions:

- The painting inside needs to be cleaned with a soft damp cloth with isopropyl alcohol.
- Inside dome, LEDs are not covered with any additional protection. Be careful not to touch them cause they are very fragile and this could provoke damage on them.

STANDARD COMPLIANCES

DCM SISTEMES lighting systems comply all standards described below for guaranteeing you the good quality of our products.

EC Marking - European Conformity
This is a mandatory conformity mark for products placed on the market in the European Economic Area (EEA). With the CE marking on a product, the manufacturer ensures that the product conforms with the essential requirements of the applicable EC directives.

Waste Electrical & Electronic Equipment Directive
This symbol indicates that this product shall not be treated as household waste. Instead it shall be handed over to the appropriate collection point for the recycling and recovery of electrical and electronic equipment. This recycling of materials will help to conserve natural resources.

Restriction of Hazardous Substances Directive
This directive restricts the use of six hazardous materials in the manufacture of various types of electronic and electrical equipment. It is closely linked with the Waste Electrical and Electronic Equipment Directive (WEEE) and is part of a legislative initiative to solve the problem of huge amounts of toxic e-waste.

International Protection Rating
IP Code classifies and rates the degrees of protection provided against the intrusion of solid objects (including body parts like hands and fingers), dust, accidental contact, and water in mechanical casings and with electrical enclosures.

LED SAFETY - *Classification of risk groups*

Measurements have shown that state-of-the-art high-performance LEDs reach no higher than risk group 2, due to aversion response to bright light.

Potential risks arising from optical radiation of LED / IR-LED may also be evaluated and classified (according to DIN EN62471 "Photo-biological safety of lamps and lamp systems") by the luminaire manufacturers as classification of potential risks arising from optical radiation sources.

Risk groups according to EN62471

	Exempt Risk Group	*Risk Group 1*	*Risk Group 2*	*Risk Group 3*
Risk of photobiological damage	None	Low	Moderate	High
Risk of photochemical retinal damage LB	2.8h	100s	0.25s	<0.25s
Risk of thermal retinal damage LR	10s	10s	0.25s	<0.25s

For the photobiological parameters (e.g. risk of photochemical retinal damage) of each risk group, wavelength-weighted emission limits have been defined as a basis for classification.

The individual risk groups are defined as follows:
(See on the product label)

Exempt Risk Group	Luminaires present no photobiological hazard.
Risk Group 1	Luminaires present no hazard due to normal behavioural limitations on exposure.
Risk Group 2	Luminaires present no hazard due to the aversion response to bright light sources or due to thermal discomfort.
Risk Group 3	Luminaires present a hazard even for brief exposure. Use in general lighting service is not allowed.

According to European Standard EN62471 on the photobiological safety of LED light sources, special care needs to be taken to ensure that LED based illumination installations will not cause harm to the operator. LED lighting safety procedures are based on the intensity, duration and wavelength.

Note: Specific consideration should be given to the frequency of any pulsed or strobed illumination, as this could produce adverse medical reactions in certain circumstances.

UV - ULTRAVIOLET LED LIGHTS

Special care is needed when the wavelength of the product corresponds to UV radiation in the UV-A range (365 to 400nm).

Ultraviolet light emitting diodes could be mounted onto our products. Even though the radiation is invisible, LED emit high-intensity UV radiation when the illumination power supply is turned ON. UV radiation in the UV-A range may result in an adverse influence on human eyes and skin.

Do NOT allow ordinary workers to install and perform maintenance work on the product.

Wear UV eye protector, a long-sleeved shirt and gloves in order to protect your eyes and your skin from UV radiation.

When the illumination power supply turned ON, wear a UV eye protector to protect your eyes from the UV radiation. Keep in mind that the UV eye protector may not work properly if the wavelength of the radiation is not within the range of wavelength protection. In addition, wear a long-sleeved shirt and gloves so that the bare skin will not be exposed to UV radiation.

VISION CONSULTANCY
MAKING THE UNSEEN VISIBLE

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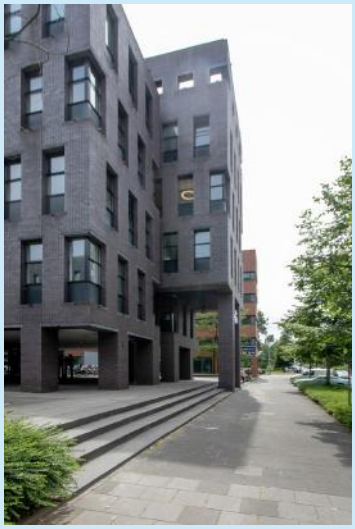
Our vision experts are happy to help you.

Natascha Overhof

Christian Crompvoets



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