



# Big Dutchman®



## **LED lighting**

Highly efficient and durable – developed specifically for your poultry house

# LED lamps for the ideal lighting concept

LED lamps designed by Big Dutchman are of a high quality and have been developed specifically for challenging environmental situations in livestock buildings to meet the

needs of your flock. Big Dutchman differentiates between lighting inside the aviary or enriched colony system on the one hand and the general illumination of the house on the

other, and can offer an extensive range of LED lamps for both applications. Let the Big Dutchman experts advise you with a detailed consultation.

## BD LED

### Very energy-saving, high quality, proven a million times over

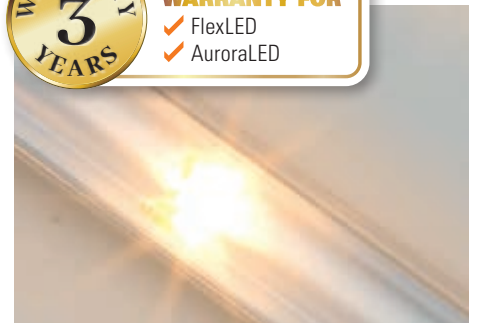
Due to the many advantages of LED lamps, their use in poultry houses has been the standard for quite some time. Big Dutchman recognised this trend early on and continues to improve its LED lamps to meet the specific requirements in poultry houses. Lighting in poultry houses must not only withstand the

conditions in the house, but also be able to meet the birds' needs, or more specifically, their eyes' needs. Big Dutchman started replacing conventional light bulbs with LED bulbs in 2011. This replacement was mainly triggered by the energy-saving potential of LED lamps. In 2014,

Big Dutchman launched the FlexLED tube lamp, which has been very successful in the past ten years. Big Dutchman vouches for the best quality, including a three-year warranty for all FlexLED and AuroraLED lamps.



- ✓ use of brand LEDs (Osram) and other brand components;
- ✓ a series number (QR code) on each lamp or component for full traceability;
- ✓ certified ammonia resistance and protection rating;
- ✓ functional testing of each lamp including tolerance measuring.



## Big Dutchman test centre

### For the customers' benefit

Big Dutchman's internal test centre is equipped with a special environmental test chamber. In this chamber, LED lamps can be exposed to extreme temperatures ranging from -40 °C to +180 °C. The humidity can also

be adjusted: from 0 to 100 per cent. The tests give Big Dutchman and you the security of knowing that the LED lamps work just as well in Siberia as they do in the desert! Exposing the lamps to very high temperatures over a

longer time simulates the ageing process. This is important information for the reliable determination of the lamps' actual service life.



Environmental test chamber



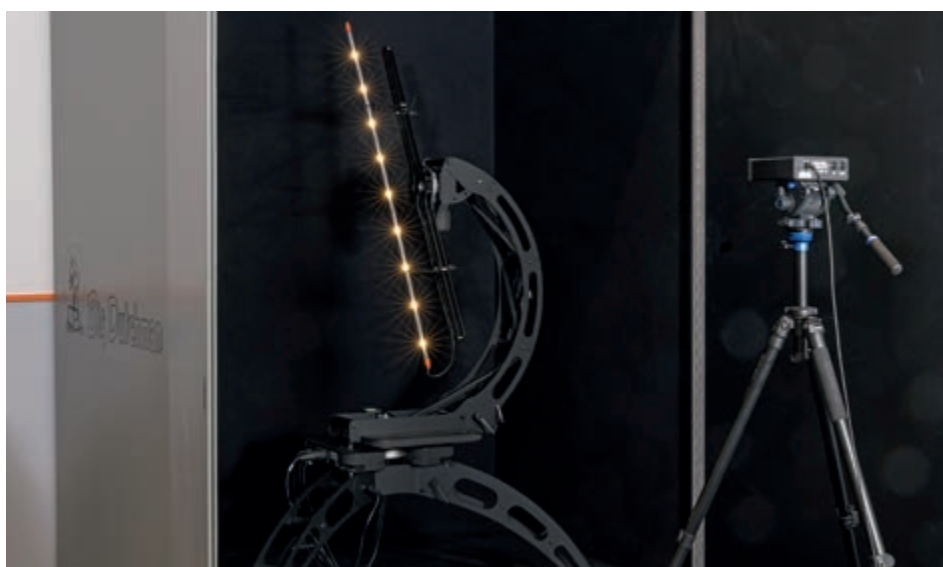
AuroraLED ceiling lamp, tested under temperatures of -25 °C



Use of an infrared camera

Big Dutchman has invested in a special measuring instrument, a goniometer, to be able to carry out specific calculations regarding lighting parameters. This instrument can determine the beam angle, optical spectrum, colour temperature, and more parameters of the Big Dutchman LED lamps. The values are recorded in a data sheet. Big Dutchman then prepares a DIALux report to determine the ideal type, number and position of LED lamps for each house individually. The tool also creates 3D drawings.

If a customer is planning to apply for subsidies, such a test report is a sure way of proving the possible energy savings.



Goniometer: testing the FlexLED lamp



Preparation of the ideal lighting concept for your needs

Together, on site, you and Big Dutchman can define the ideal lighting concept for your house. The only information needed are your house dimensions and the required lux value. The software promptly calculates how many lamps must be installed at which location. It can also compare different LED lamps. This offer is free of charge and guarantees that only the number of LED lamps that is actually required will be installed.

## BD Lux

### Mobile light meter: handy and cost-efficient



BD Lux can check the light distribution in your house, in addition to determining other parameters. The light meter measures important photometric values such as:

- ✓ illuminance in lux
- ✓ colour temperature in Kelvin
- ✓ flicker frequency in Hz
- ✓ colour rendering index (CRI)

The luxmeter is operated using the smartphone app BD Lux, which is available both in the Apple and the Google appstore, where it can be downloaded for free. The determined values are summarised in a report, which can be exported directly via e-mail.



A photograph of a large group of white chickens in a modern poultry house. The chickens are standing on a floor covered with straw and feathers. In the background, there are metal cages and a grid ceiling with lights.

# **The bestseller**

**Easy installation, flexible use**



Designed by

BIG DUTCHMAN

A large flock of white chickens is shown in a modern poultry house. The chickens are standing on a floor covered with straw and feathers. The ceiling is made of a wire mesh structure, and there are several rows of LED lights installed along the ceiling. The overall scene is brightly lit, highlighting the white feathers of the chickens and the metallic structure of the house.

# FlexLED



# FlexLED and FlexLED 2-channel

## Flexible tube lamps

FlexLED and FlexLED 2-channel are innovative LED tube lamps which can be used very flexibly. Be it aviaries or enriched colony systems, there are almost no boundaries for these lamps. The main cable runs through the entire house (outside of the bird area) without any plug connections and thus ensures that

the entire power remains in the main line. Retrofitting additional FlexLED tube lamps is also very simple. Due to the plug & play principle, the tube lamps can be installed in any position. In addition, all connections are completely waterproof. FlexLED 2-channel allows you to switch

between warm white and red light or mixed light. This switch requires the same two-core main ribbon cable. Red light can be helpful to prevent feather pecking, especially when keeping layers in aviary systems.



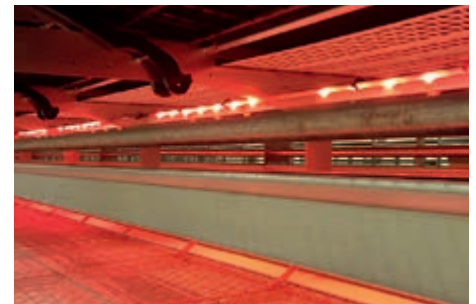
Use of FlexLED to light the litter area below a layer aviary



FlexLED 2-channel with warm white light



FlexLED 2-channel with red/white light



FlexLED 2-channel with red light

## Advantages FlexLED series

- ✓ 0 to 100 per cent dimming;
- ✓ even light distribution;
- ✓ zero flickering even at low light intensities;
- ✓ use of brand LEDs (Osram);
- ✓ 48 V DC safety extra-low voltage;
- ✓ plug & play principle for quick, easy and flexible installation;
- ✓ continuous main cable that prevents contact resistance caused by plug-in connections;
- ✓ excellent value for money;
- ✓ available in different lengths;
- ✓ resistant to high-pressure washing.



Use of FlexLED in a rearing house

## FlexLED HO

### Efficient and economic illumination of ceilings and aisles

FlexLED HO (high output) is another innovative LED tube lamp. This lamp is equipped with four times as many LEDs as FlexLED, with the corresponding increased light output. FlexLED HO is also wired without plugs.

The FlexLED HO lamp has the following additional benefits:

- ✓ only a quarter of lamps required compared with the standard FlexLED lamp;

- ✓ optimised light distribution, especially with low ceilings;
- ✓ cost savings of up to 40 per cent compared to FlexLED, depending on the area of use.



Use of FlexLED HO in a broiler house



FlexLED

FlexLED HO

## FlexLED bulb

### Flexible 360° aisle lighting

FlexLED bulb is the ideal lamp to replace your conventional light bulbs. It can be dimmed between 0 and 100 per cent and is just as easy to install as all other FlexLED lamps. A special feature is the lamp's housing, which is made from a heat-conducting plastic material. This material ensures perfect cooling of the LED lamp. Other benefits of FlexLED bulb include:

- ✓ very efficient at 103 lm/W;

- ✓ available with different LED boards;
- ✓ resistant to a high number of chemicals;
- ✓ resistant to high temperatures;
- ✓ resistant to shocks;
- ✓ very low weight;
- ✓ rapid installation;
- ✓ compatible with all other FlexLED lamps.



FlexLED bulb: perfect aisle lighting

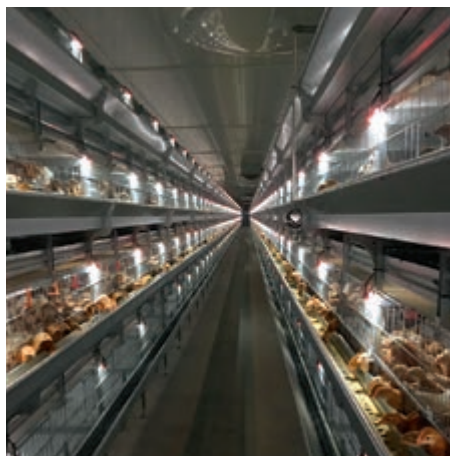
## FlexLED eco

### Compact LED lamp

FlexLED eco is a small LED lamp with an output similar to a 25-watt bulb. In addition to the standard version, Big Dutchman offers a transparent option. FlexLED eco standard produces a directed light beam, ideal to illuminate a feed pan, for example. The light from FlexLED eco transparent is dispersed in all directions, making this lamp a great solution for the area below the aviary. The installation process is the same as with the other FlexLED lamps.

FlexLED eco has the following additional benefits:

- ✓ can easily be retrofitted into any existing system;
- ✓ requires very little space.



Use of FlexLED eco in a rearing house



FlexLED eco transparent

FlexLED eco standard



## FlexLED glo

### LED lamp inside the feed pan

FlexLED glo is a very small LED lamp that is installed in the central cylinder of the feed pan. The installation process is just as easy as that for the other FlexLED lamps.

FlexLED glo makes it easier for broilers to find feed, especially for the chicks during the first few days in the house. This ensures an ideal start for the young birds.



Use of FlexLED glo in a broiler house

## OneLite/DuoLite

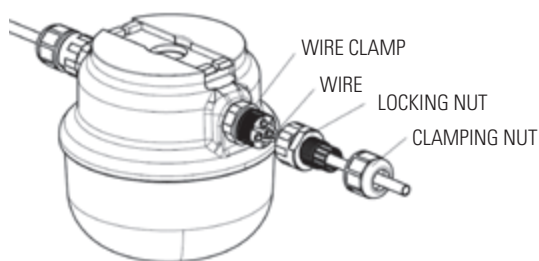
### LED lamps for broiler houses and for aisle lighting in aviary houses

**OneLite** and **DuoLite** are LED lamps from Big Dutchman that are available as a 1-channel version (warm white light, 3000 K) or as a 2-channel version (warm white/red light or warm white/blue light). The lamps are a good option not only for broiler houses, but also for layer houses.

OneLite and DuoLite will save you time and money during installation. Adjustments for the structural conditions on site can be easily made.



### Clamp connection without screws for quick and easy wiring



- ✓ use of standard cables;
- ✓ flexible length;
- ✓ lamp cannot be opened;
- ✓ watertight;
- ✓ flame-retardant.

### ADVANTAGES

- ✓ infinitely variable dimming from 0 to 100 per cent;
- ✓ zero flickering;
- ✓ wide beam angle of 187°;
- ✓ high reliability;
- ✓ quick, easy and safe installation;
- ✓ easy replacement of individual lamps at any time;
- ✓ resistant to high-pressure washing.



Use of OneLite in an aviary house for laying hens



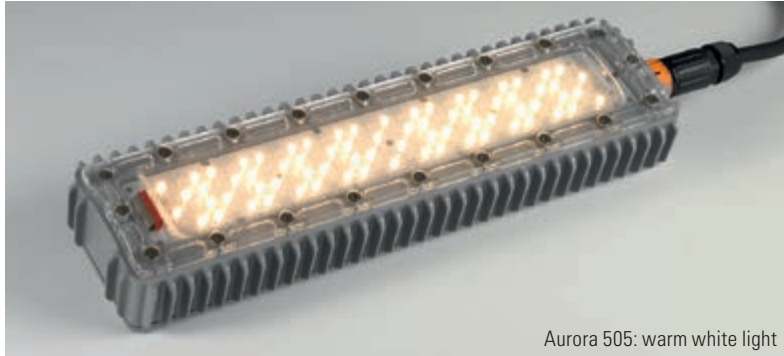
# AuroraLED

## Professional LED panel light

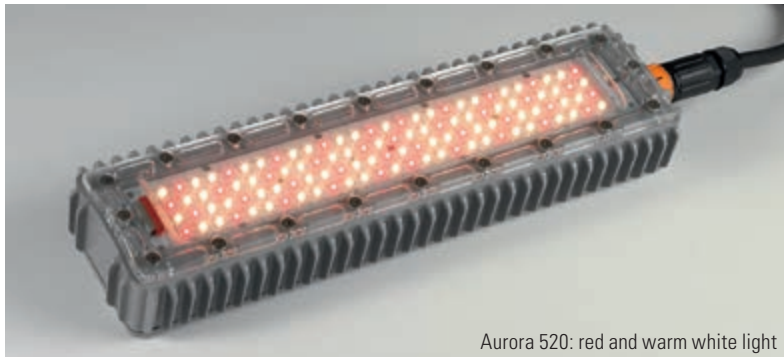
A customised lighting concept significantly contributes to the success of your farm. The innovative AuroraLED panel light evenly illuminates all areas of a livestock building. Big Dutchman offers the 1-channel or 2-channel

AuroraLED lamp as an exclusive brand product of the highest quality. AuroraLED can be used for multiple purposes due to the LED technology and a wide optical spectrum. The AuroraLED panel light is available with

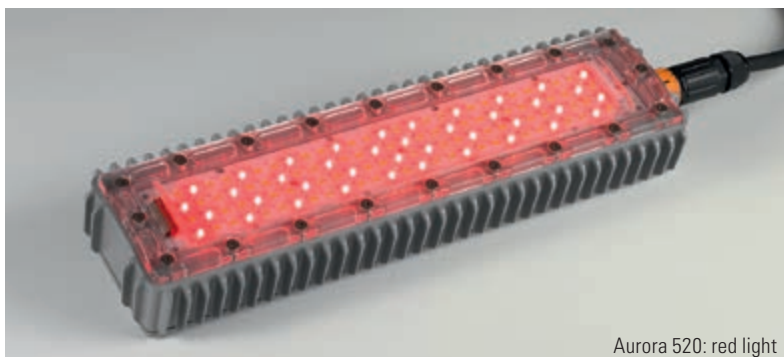
different LED boards. These boards can be exchanged on site without a service technician, even after installation is complete. The following combinations of luminous colours are possible:



Aurora 505: warm white light



Aurora 520: red and warm white light



Aurora 520: red light

AuroraLED	Optics	Light
<b>Aurora 500</b>	lens optics	warm white & cool white
<b>Aurora 505</b>	lens optics	warm white
<b>Aurora 510</b>	lens optics	blue & warm white
<b>Aurora 520</b>	lens optics	red & warm white
<b>Aurora 530</b>	lens optics	full spectrum
<b>Aurora 540</b>	batwing	warm white



Use of AuroraLED in an aviary house



Use of AuroraLED in a broiler house

## ADVANTAGES

- ✓ energy-saving LED illumination;
- ✓ digital light control: each lamp has its own address and can be controlled individually;
- ✓ fast, easy and safe installation: up to 80 per cent of time savings due to the plug & play principle;
- ✓ zero flickering even at low light intensities;
- ✓ wide optical spectrum, infinitely variable;
- ✓ multi-channel lamp, e.g. to simulate sunrise and sunset;
- ✓ modular design consisting of a power supply unit, an LED driver and LED lamps;
- ✓ rugged, watertight aluminium housing with an exterior heat sink for optimum cooling up to an ambient temperature of +45 °C;
- ✓ use of different optics (depending on the application) for ideal and efficient lighting;
- ✓ long service life, low maintenance requirements, resistant to high-pressure washing, IP 69K protection rating;
- ✓ can be installed on walls, ceilings and sandwich panels or attached to tubes.

## Aurora 540

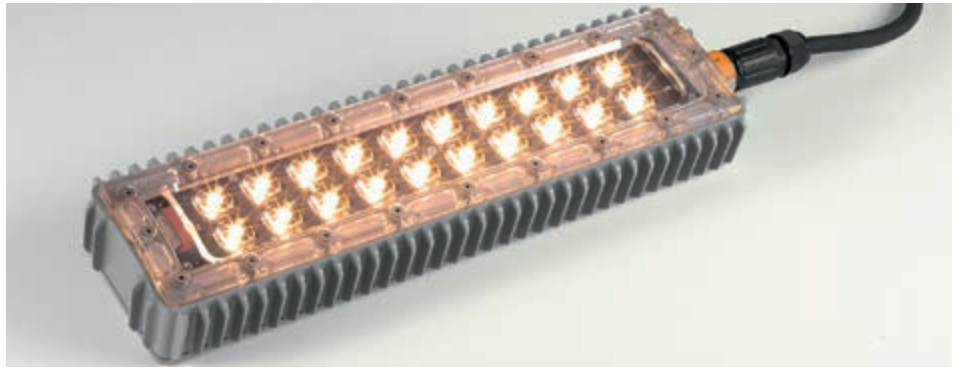
**With batwing optics: lots of light, small investment!**

The main feature of Aurora 540 is its special batwing optics: the way the light is distributed mimics the profile of batwings. The rectangular shape of light distribution and the wide beam angle ensure even illumination.

Additional benefits:

- ✓ emits light in a wide range: the beam angle is 141°;
- ✓ has a 30 per cent higher light output than the standard AuroraLED lamp;
- ✓ distributes light very evenly.

Aurora 540 is, therefore, a cost-efficient alternative for houses with low ceilings. However, it is only available with one colour temperature of either 3000 K or 5000 K.



Aurora 540: an entire row of lamps can be saved in low houses due to the batwing optics

## Moisture-proof LED lamp

**Dimmable and also available as LED retrofit kit**

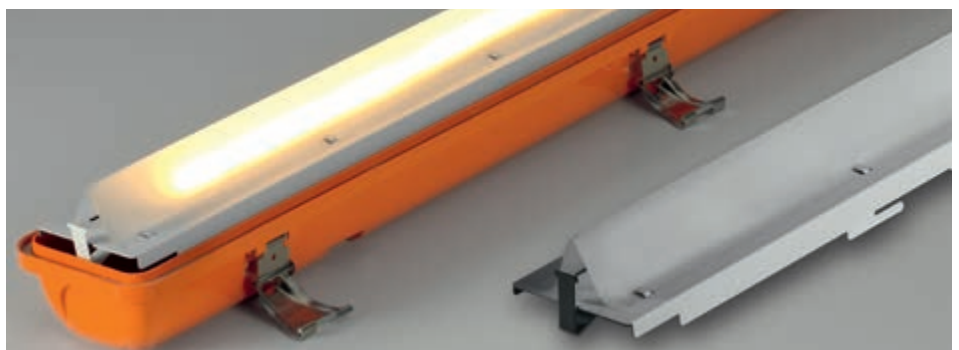
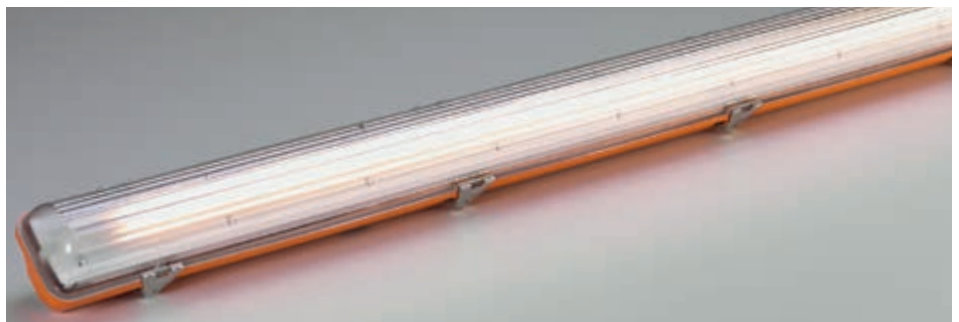
The new moisture-proof LED lamp from Big Dutchman is a damp-proof luminaire which saves energy, can be dimmed infinitely

variably between 1 and 100 per cent and has a long service life. Using the LED retrofit kit, you can turn your old moisture-proof lamps

into innovative LED lighting in next to no time.

### ADVANTAGES

- ✓ up to 50 per cent lower energy costs compared with conventional moisture-proof lamps;
- ✓ zero flickering;
- ✓ infinitely variable dimming between 1 and 100 per cent due to integrated control gears;
- ✓ optimal light distribution because of a new V-shape;
- ✓ resistant to ammonia;
- ✓ no control cabinet conversion necessary;
- ✓ the clever LED retrofit kit fits most conventional moisture-proof lamps;
- ✓ no new wiring required when replacing the old moisture-proof lamps due to identical five-core cables;
- ✓ available in two lengths: 1275/ 1575 mm;
- ✓ clips made from stainless steel to close the lamp.



Moisture-proof LED lamp with exchangeable LED board



# HELIOS

## Versatile LED panel light

The robust LED panel light HELIOS evenly illuminates all areas of your livestock building.

HELIOS is also well-suited for use in pig houses because it is resistant to ammonia. A replacement also makes sense in service rooms where old lighting technology is still installed. Another great application for HELIOS is its use in a winter garden (covered area).



Even and energy-saving illumination of the winter garden, especially in the dark season of the year

## ADVANTAGES

- ✓ lens optics for even light distribution;
- ✓ robust housing made from aluminium;
- ✓ zero flickering;
- ✓ resistant to ammonia;
- ✓ replacement of LED driver and LED board possible due to modular design;
- ✓ long service life;
- ✓ resistant to high-pressure washing;
- ✓ excellent value for money;
- ✓ cable already attached for reduced installation costs.

## Light control box 105

### Modular system, ideal for customisation!

The BD light control box 105 is equipped with a coloured 5-inch touchscreen and used for automatic light regulation of any type of lamp. It can control up to twelve light sequences (e.g. sunrise and sunset), which can be configured individually for nine light groups (nine houses). Additionally, four outside and sixteen inside sensors can be connected. The housing has an IP 54 protection rating and is thus protected against water. The control box can be retrofitted easily as a stand-alone version, even for non-BD lighting systems.

Customised lighting programs can be saved via an integrated USB interface and also easily be transferred to other light control boxes (copy & paste). In addition to the stand-alone version, Big Dutchman also has a unit for installation in the control cabinet on offer.



## Important functions

- ✓ **customised light programs** are based on light curves that can be set up individually beforehand;
- ✓ **simulation of sunrise and sunset** using brightness and colour temperature;
- ✓ **light level during the inspection rounds:** a special light that can be turned on at the touch of a button. After a defined time, the standard lighting program is reactivated;
- ✓ **recording of energy consumption:** an electricity meter can be connected to the light control box via digital input;
- ✓ additionally, up to **nine time switches** can be controlled.

# Overview of the technical data of the Big Dutchman LED lamps

		FlexLED	FlexLED 2-channel	FlexLED HO	FlexLED bulb	FlexLED eco	FlexLED glo
<b>Areas of use</b>		<i>in the bird area</i>	<i>in the bird area</i>	<i>in the bird area and for ceiling and wall lighting</i>	<i>in the aisle</i>	<i>in the bird area</i>	<i>in the feed pan</i>
<b>Supply voltage</b>	V	48 VDC	48 VDC	48 VDC	48 VDC	48 VDC	48 VDC
<b>Power</b>	W	2.9	6.7	3.5–14	6.3	2	1
<b>Light output</b>	lm	300–450	500	450–1800	650	130–190	100
<b>Efficiency</b>	lm/W	>130	74	>130	103	95	100
<b>Frequency</b>	Hz	∞	>500	∞	∞	∞	∞
<b>Colour temperature</b>	K	3000	3000	3000	3000	3000	3000
<b>Beam angle</b>	°	138	110	138	151	110–150	360
<b>Dimming</b>	%	✓ 0–100	✓ 0–100	✓ 0–100	✓ 0–100	✓ 0–100	✓ 0–100
<b>Zero flickering</b>		✓	✓	✓	✓	✓	✓
<b>Protection rating</b>	IP	69 K	69 K	69 K	69 K	69 K	67
<b>Service life</b>	hours	50 000	50 000	50 000	50 000	50 000	50 000
<b>Temperature range</b>	°C	-10 – +50	-10 – +50	-10 – +50	-10 – +40	-10 – +40	-10 – +40
<b>Certifications</b>		CE, UL	CE	CE, UL	CE	CE	CE, UL
<b>Height / width / length</b>	mm	11 x 22 x 1130-2230	11 x 22 x 1800	11 x 22 x 450-1800	70 x 70 x 100	16 x 16 x 60	12 x 12
<b>Weight</b>	g	250–350	280	250–350	120	15	100
<b>Material</b>		PMMA*	PMMA*	PMMA*	PMMA*	PMMA*	silicone

		OneLite/ DuoLite	AuroraLED 500-530	AuroraLED 540	Moisture-proof LED lamp	HELIOS
<b>Areas of use</b>		<i>for ceiling and wall lighting</i>	<i>for ceiling and wall lighting</i>	<i>for ceiling and wall lighting</i>	<i>for ceiling and wall lighting</i>	<i>for ceiling and wall lighting</i>
<b>Supply voltage</b>	V, Hz	48 VDC/230 VAC 50 Hz	100–240 VAC 50/60 Hz	100–240 VAC 50/60 Hz	100–240 VAC 50 Hz	100–240 VAC 50/60 Hz
<b>Power</b>	W	12.5	32.5	47	27–36	45
<b>Light output</b>	lm	1495	4100	5200	2900–3700	5100
<b>Efficiency</b>	lm/W	120	127	110	107–103	134
<b>Frequency</b>	Hz	∞	∞	∞	∞	∞
<b>Colour temperature</b>	K	3000	2700–5000	3000/5000	2800	4000
<b>Beam angle</b>	°	187	105–140	141	135	120
<b>Dimming</b>	%	✓ 0–100	✓ 0–100	✓ 0–100	✓ 1–100	no
<b>Zero flickering</b>		✓	✓	✓	✓	✓
<b>Protection rating</b>	IP	69 K	69 K	69 K	65	69 K
<b>Service life</b>	hours	50 000	> 50 000	50 000	50 000	> 50 000
<b>Temperature range</b>	°C	-10 – +40	-20 – +50	-20 – +45	-20 – +35	-20 – +40
<b>Certifications</b>		CE, UL	CE, UL	CE	CE	CE
<b>Height / width / length</b>	mm	117 x 125 x 183	438.5 x 121.5 x 82.5	438.5 x 112 x 82.5	110 x 110 x 1274/1574	383.5 x 84 x 69
<b>Weight</b>	g	315	2000	2000	2500	2000
<b>Material</b>		PC	aluminium, PMMA*	aluminium, PMMA*	aluminium, ABS	aluminium, PMMA*

\* PMMA = polymethyl methacrylate



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