
PLANTALUX

RECENT PROJECTS



We have been using horticulture LED COB lamps manufactured by Plantalux Sp. z o.o. for hydroponic lettuce cultivation in greenhouse since December 2017. We are pleased with the results we have achieved thanks to the installation of these new lamps. What is more, due to replacing HPS with LED lamps our electricity bills are 3 times smaller.

We recommend Plantalux Sp. z o.o. as a reliable horticulture LED lamps manufacturer.

Greenhouse owner from Eastern Poland

Hydroponic lettuce, 21.03.2018

LED COB HORTICULTURE LAMPS

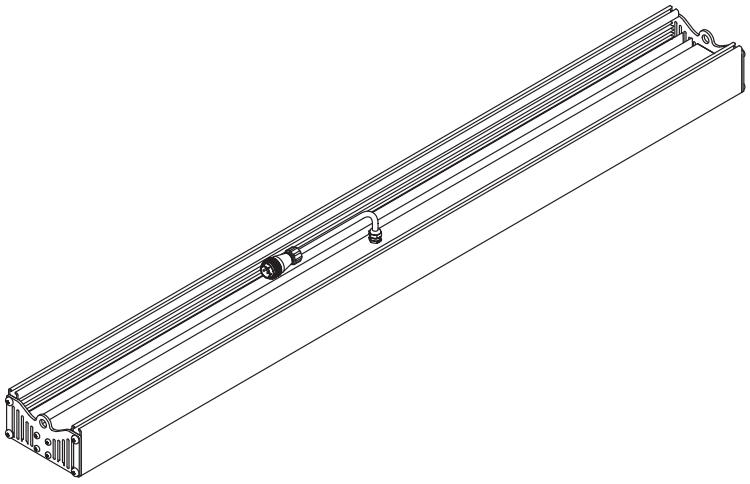
FX series



Specification

- lamp equipped with LED light source made in **COB** (Chip On Board) technology
- power consumption: 300W/ 600W
- **Power Factor: 0,98**
- beam angle: 120°
- ingress protection: **IP66***
- light source lifespan up to **100 000 hours** (approx. 11 years of constant lighting)
- modular structure - each element of the fixture can be replaced independently
- case made of anodized aluminum
- passive heat dissipation
- warranty: 5 years

3D view



Dimensions

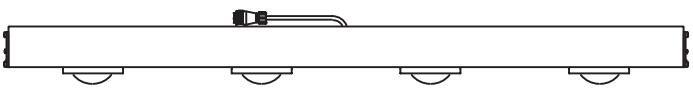
Version	Length	Width	Height	Weight
300 W	1013 mm	110 mm	84 mm	5,00 kg
600 W		280 mm		10,50 kg

MADE IN POLAND

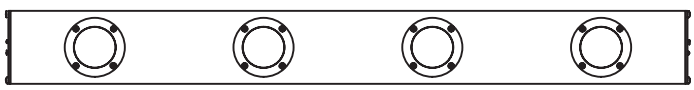
RoHS COMPLIANT

EAC CE

Side view



Bottom view

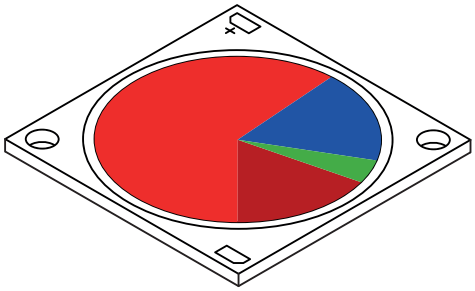


* - accounts for ingress protection of all electrical parts such as diode, driver, wires

LIGHT SPECTRUM

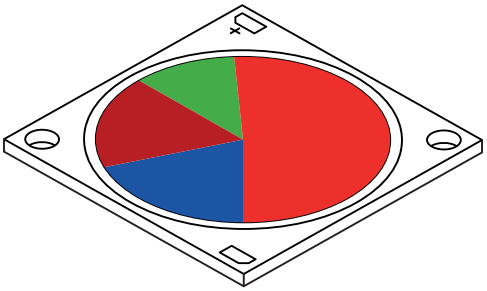
Our lamps use light sources of different spectrum so as to make sure that lighting conditions are appropriate for your cultivation. Below are four types of diodes of various wavelengths and of various total red to blue ratio. Each description displays a table presenting the spectrum divided into different wavelengths.

Strong Red



Plantalux Strong Red - LED COB of significantly high total red to blue ratio (87:13). Very high far red percentage that equals 20% of the entire spectrum. Such composition of wavelengths is ideal for the cultivation of vegetables, fruits and blooming flowers.

Range [nm]	**400 - 700** (PAR)	**700 - 800** (far red)	**600 - 700** (red)	**500 - 600** (green)	**400 - 500** (blue)	**380 - 400** (UV)
Percentage	80%	20%	65%	3%	12%	0%

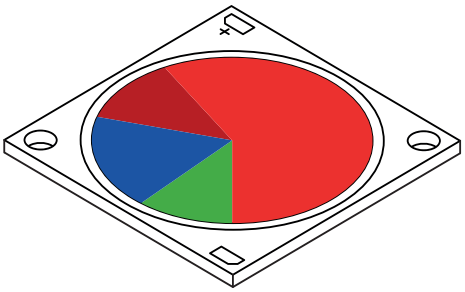


Double Blue

Plantalux Double Blue - LED COB of distinctly broader range of blue colour in the total spectrum. Such effect could be achieved by developing wavelength of double peak within 400 - 500 nm. Due to that total red to blue ratio has changed for the benefit of blue (75:25). Such mixture lets promote early stage of plant life especially in the vegetative phase. Appropriate mixture of wavelengths creates light suitable both for plants and human eyes – the CCT of this diode is approximately 5500 K.

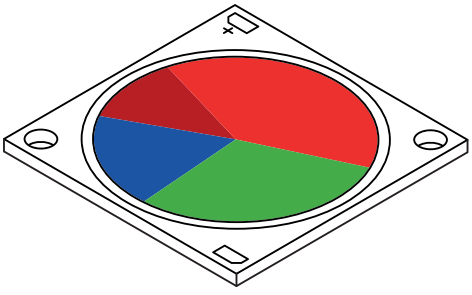
Range [nm]	**400 - 700** (PAR)	**700 - 800** (far red)	**600 - 700** (red)	**500 - 600** (green)	**400 - 500** (blue)	**380 - 400** (UV)
Percentage	85%	15%	52%	12%	22%	0%

Leafy



Plantalux Leafy - LED COB designed and developed under supervision of experienced leafy greens growers and international horticulture consulting company. Due to balanced ratio of various wavelengths and far red at 6% leafy greens are not only healthy but keep shelf life freshness much longer.

Range [nm]	**400 - 700** (PAR)	**700 - 800** (far red)	**600 - 700** (red)	**500 - 600** (green)	**400 - 500** (blue)	**380 - 400** (UV)
Percentage	94%	6%	64%	16%	15%	0%



Full Spectrum

Plantalux Full Spectrum - LED COB of very broad spectrum including additional 10% of far red. Created to fulfil balanced growth and at the same time being pleasant for human eyes. Useful especially in cultivation with limited access to natural light or its complete absence like in vertical and indoor farms.

Range [nm]	**400 - 700** (PAR)	**700 - 800** (far red)	**600 - 700** (red)	**500 - 600** (green)	**400 - 500** (blue)	**380 - 400** (UV)
Percentage	90%	10%	38%	37%	15%	0%

AWARDS

During each edition of Fruit and Vegetable Industry Fair, Prof. Pieniazek's Prize is awarded to companies significantly contributing to the development of horticulture. The jury awards products which are most innovative and beneficial for gardening, environment and society, reported by the Exhibitors and Sub-exhibitors. Plantalux has been awarded three years in a row (2018, 2019 and 2020) for its innovative horticulture LED lighting solutions.





CANNABIS AND HEMP
in greenhouse and indoor farms



> ***We have realized cannabis and hemp lighting projects both greenhouse and indoor in countries such as Canada, Germany, Israel, North Macedonia, Poland, Spain, Switzerland, Uruguay, USA.***

LED SMD HORTICULTURE LAMPS

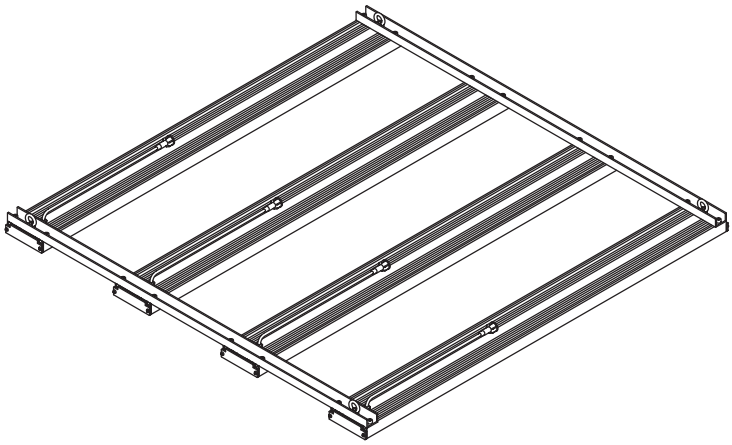
XX series



Specification

- lamp equipped with LED light source made in **SMD** (Surface-Mount Devices) technology
- power consumption: 650W
- **Power Factor: 0,98**
- beam angle: 120°
- ingress protection: **IP66***
- light source lifespan up to **80 000 hours** (approx. 9 years of constant lighting)
- modular structure - each element of the fixture can be replaced independently
- case made of anodized aluminum
- lamp equipped with diffuse glass for improved light distribution and uniformity
- passive heat dissipation
- warranty: 5 years

3D View

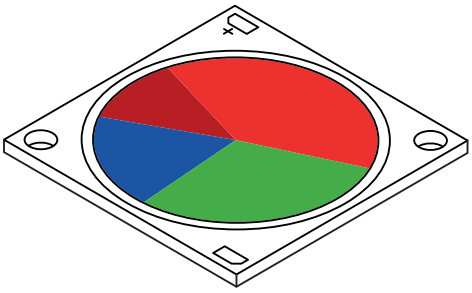


Dimensions

Version	Length	Width	Height	Weight
640 W	1015 mm	1000 mm	45 mm	12,00 kg

MADE IN POLAND

RoHS COMPLIANT



Full Spectrum

Plantalux Full Spectrum - LED SMD module of very broad spectrum including additional 10% of far red. Created to fulfil balanced growth and at the same time being pleasant for human eyes. Useful especially in cultivation with limited access to natural light or its complete absence like in vertical and indoor farms.

Range [nm]	**400 - 700** (PAR)	**700 - 800** (far red)	**600 - 700** (red)	**500 - 600** (green)	**400 - 500** (blue)	**380 - 400** (UV)
Percentage	90%	10%	38%	38%	14%	0%

* - accounts for ingress protection of all electrical parts such as diode, driver, wires

LED SMD HORTICULTURE LAMPS

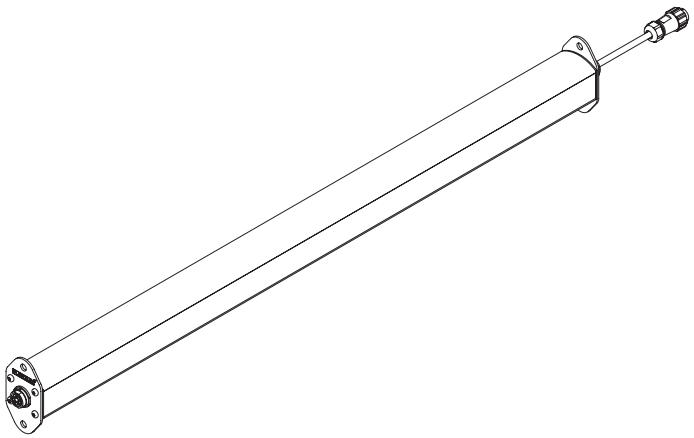
EY series



Specification

- lamp equipped with LED light source made in **SMD** (Surface-Mount Devices) technology
- power consumption: up to 60W
- **Power Factor: 0,98**
- beam angle: 120°
- ingress protection: **IP66***
- light source lifespan up to **80 000 hours** (approx. 9 years of constant lighting)
- modular structure - each element of the fixture can be replaced independently
- case made of anodized aluminum
- lamp equipped with diffuse glass for improved light distribution and uniformity
- passive heat dissipation
- warranty: 5 years

3D View

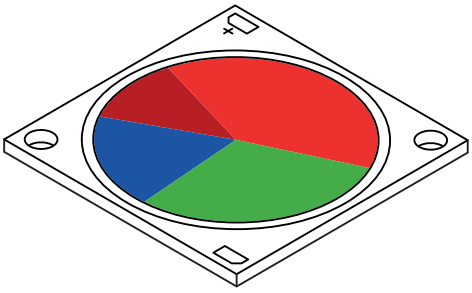


Dimensions

Version	Length	Width	Height	Weight
60 W	1048 mm	114 mm	63 mm	2,85 kg

MADE IN POLAND

RoHS COMPLIANT



Plantalux Red+Blue - LED SMD module dedicated for supplemental inter row lighting of vine crops such as tomato or cucumber.

Range [nm]	**400 - 700** (PAR)	**700 - 800** (far red)	**600 - 700** (red)	**500 - 600** (green)	**400 - 500** (blue)	**380 - 400** (UV)
Percentage	100%	0%	68%	4%	28%	0%

* - accounts for ingress protection of all electrical parts such as diode, driver, wires

INTER-ROW LIGHTING - PLANTALUX EY



Characteristics of modern inter-row LED lamps, allows them to be placed between plants. This is particularly important for vine crops densely planted, where the upper parts of the plant absorb most of the available light. This solution not only allows to easily prevent unwanted shading, but also increase the yield.

COOPERATION WITH SCIENCE



Since October 2019 we have been running completely new project with University of Life Science in Warsaw, Poland – growing tomato Tomiamru Muchoo in greenhouse in two different light strategies:

- *top lighting LED COB EX series,*
- *top lighting LED COB EX series combined with inter lighting LED SMD EY series.*

We encourage you to follow updates in this research on our website or using social media.

RESEARCH AND DEVELOPMENT

Abstract of research results conducted at University of Life Science in Lublin, Poland between October 2017 and February 2018 is presented below. During the study the influence of different lighting on tomato, cucumber and basil growth was examined. The research took place in a greenhouse and a darkroom (no sunlight).

Light	Chlorophyll A content [mg · g^{-1} wet weight]	Difference
Sunlight + LED	1,93	**22,15%**
Sunlight + HPS	1,58	
Light	**Chlorophyll B content [mg · g^{-1} wet weight]**	**Difference**
Sunlight + LED	0,53	**26,19%**
Sunlight + HPS	0,42	
Light	**Photosynthesis intensity [µmol CO^2 · m^{-2} · s^{-1}]**	**Difference**
Sunlight + LED	8,21	**20,03%**
Sunlight + HPS	6,84	

TOMATO IN GREENHOUSE

Content of both chlorophylls A and B were higher of 22,15% and 26,19% respectively in plants cultivated under Plantalux's horticulture lamps LED COB than under HPS.

Using LED lamps led to increased dynamics of the photosynthesis process. Its intensity in tomato leaves was higher of 20,03% compared to HPS lamps.

What is more, all above parameters were achieved with energy consumption lower of 67% compared to HPS lamps.

CUCUMBER IN GREENHOUSE

Yield of cucumber cultivated in greenhouse under Platanlux's horticulture LED COB lamps was higher of 73,33% than that under HPS lamps.

Average weight of cucumber was only slightly increased under LED lamps by 1,57%.

Number of cucumbers collected from a single plant that was 62,50% higher under LED compared to HPS.

All above parameters were achieved with energy consumption lower of 67% compared to HPS lamps.

Light	Cucumber yield [kg · plant^{-1}]	Difference
Sunlight + LED	1,04	**73,33%**
Sunlight + HPS	0,60	
Light	**Average cucumber weight [g]**	**Difference**
Sunlight + LED	82,22	**1,57%**
Sunlight + HPS	80,95	
Light	**Number of cucumbers from plant [pcs.]**	**Difference**
Sunlight + LED	13	**62,50%**
Sunlight + HPS	8	

Light	Wet weight [g · plant^{-1}]	Difference
LED	19,35	**21,77%**
HPS	15,89	
Light	**Dry weight [g · plant^{-1}]**	**Difference**
LED	2,18	**23,86%**
HPS	1,76	
Light	**Essential oil content**	**Difference**
LED	1,05%	**40,00%**
HPS	0,75%	

BASIL IN DARKROOM

Basil cultivated under Plantalux's horticulture LED COB lamps had wet weight increased by 21,77% in comparison to those under HPS lamps.

In case of dry weight that trend was kept – weight was increased by 23,86%.

Content of essential oils that are responsible for aroma was increased by 40% under LED compared to HPS.

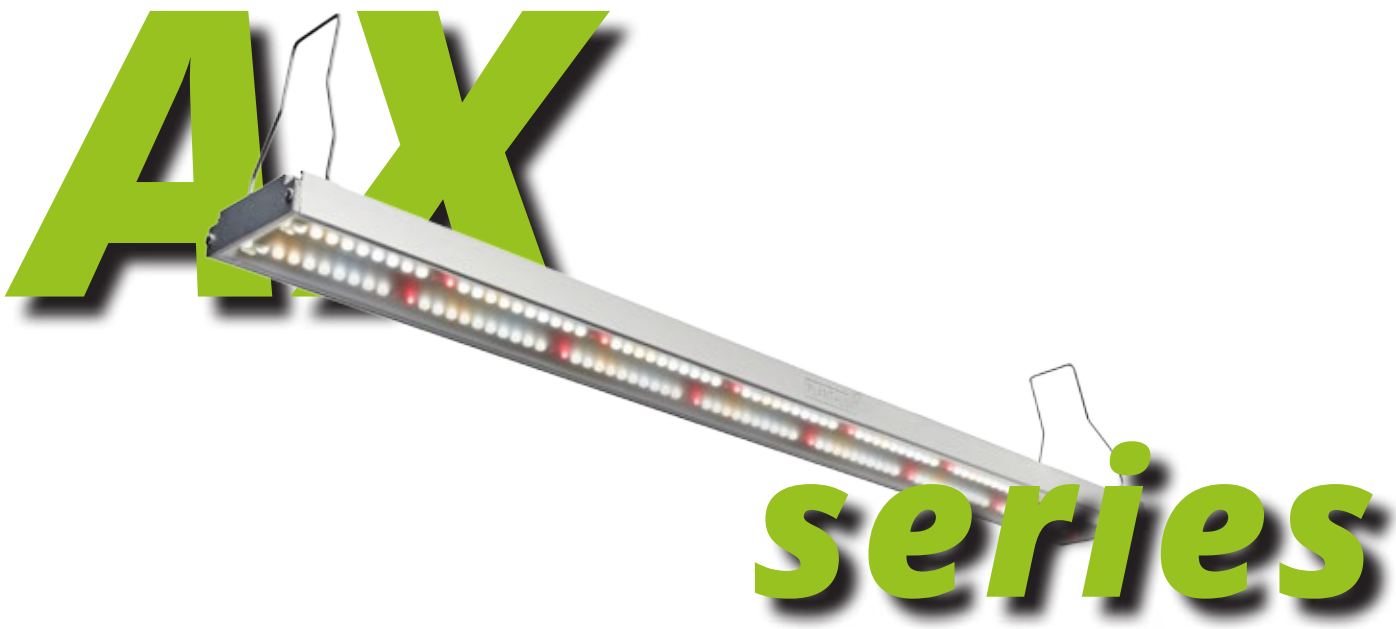
All above parameters were achieved with energy consumption lower of 67% compared to HPS lamps.



LEARN MORE

If you are interested in learning more about presented above abstract from research at University of Life Science in Lublin, Poland or other researches in which our horticulture LED COB lamps have been used just visit our website **www.plantalux.pl** or contact directly with our employees.

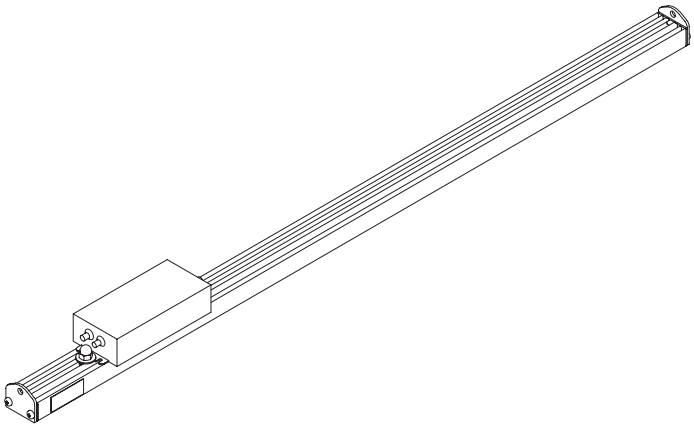
LED SMD HORTICULTURE LAMPS



Specification

- lamp equipped with LED light source made in **SMD** (Surface-Mount Devices) technology
- power consumption: up to 150W
- **Power Factor: 0,98**
- beam angle: 120°
- ingress protection: **IP66***
- light source lifespan up to **80 000 hours** (approx. 9 years of constant lighting)
- modular structure - each element of the fixture can be replaced independently
- case made of anodized aluminum
- lamp equipped with diffuse glass for improved light distribution and uniformity
- passive heat dissipation
- warranty: 5 years

3D view



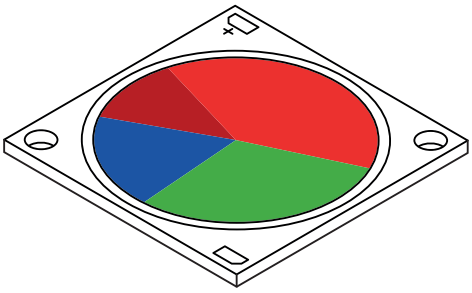
Dimensions

Version	Length	Width	Height	Weight
150 W	1000 mm	100 mm	25 mm	2,77 kg

MADE IN POLAND

RoHS COMPLIANT

EAC CE



Full Spectrum

Plantalux Full Spectrum - LED SMD module of very broad spectrum including additional 10% of far red. Created to fulfil balanced growth and at the same time being pleasant for human eyes. Useful especially in cultivation with limited access to natural light or its complete absence like in vertical and indoor farms.

Range [nm]	400 - 700 (PAR)	700 - 800 (far red)	600 - 700 (red)	500 - 600 (green)	400 - 500 (blue)	380 - 400 (UV)
Percentage	90%	10%	38%	38%	14%	0%

* - accounts for ingress protection of all electrical parts such as diode, driver, wires

LETTUCE & LEAFY LED COB



One of the key issues of using LED technology for lighting crops, is its ability to adjust the spectrum, to achieve favorable commercial values of a given plant.

Thanks to the LED COB Leafy spectrum, which has been developed jointly with world specialists engaged in the cultivation of lettuce, plants are characterized by much better growth and visual condition. Furthermore, lettuce stays fresh longer, even on the shop shelf.

RED NAOMI & STRONG RED LED COB



Our implementation was in greenhouse in Greater Poland province. Flowers were cultivated under supplemental LED COB Strong Red lamps from November 2018 up to March 2019. Previously used HPS lamps were replaced by 300W LED COB lamps, which resulted in decreasing lighting bills by 60%. What is more, greenhouse owner is happy because of stems thicker by 80% compared to HPS and better coloration of flowers. LED COB lamps were used 18h a day and temperature was kept at 22°C.

TOMATO & STRONG RED LED COB



The positive effect of including Far Red in the spectrum has been proven many times. According to research conducted by Wageningen University & Research in Netherlands it is possible to increase yield by 14% in tomato cultivation compared to control with no Far Red added.

CONTACT DETAILS



PLANTALUX



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PARTNERS WE WORK WITH

Hortica
Israel - https://hortica.io/

NATURA CRAFT
Canada - https://naturacraft.ca/

The Outlaw Seeds
Spain - https://www.theoutlawseeds.com/

AGUAS URUGUAY LTDA.
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