



Light is nature
LEDs for horticulture lighting

Light is OSRAM

OSRAM
Opto Semiconductors



Horticulture top lighting:
OSLON® family

Improve nature

To ensure food supply in the future, choose horticulture LED components from our cutting edge offering a spectrum of infinite possibilities. They enable photosyntheses and can influence the photomorphogenesis, so you can breed systematically. All because of our decades of lighting experience. We are here to help you improve nature. Start something bright.

OSCONIQ® and OSLON® families: Professional horticulture applications

OSCONIQ® and OSLON® families stand for mid and high power LEDs with high performance and long lifetime even in humid environments. With their small footprint very compact clustering of LEDs enables easy and efficient design for professional toplighting, interlighting and multi-

layer applications. Different ratios between deep blue, hyper red and far red can be achieved simply by varying the number of the respective LED components without any change of the PCB or luminaire design.

Advantages

Best in class LED portfolio for horticulture lighting applications. OSRAM Opto Semiconductors offers a complete mid and high power LED portfolio that perfectly suit for professional horticulture lighting applications.

Features

- Deep blue (450 nm) and hyper red (660 nm) to provide the light for the photosynthesis
- Far red (730 nm) to control the plant from germination to vegetative growth and flowering
- White to provide a human friendly working environment
- High energy efficacy in $\mu\text{mol}/\text{J}$
- High maximum driving current
- Low thermal resistance
- Different radiation angles – spot or wide illumination 80°, 120°, 150°
- High reliable packages with superior lifetime and corrosion stability
- Robust even in humid environment
- Additional colors like **Blue, True Green, Yellow, Red** are also available for special light recipes



Vertical farming: OSCONIQ® P 2226

| MID POWER COMPONENTS (0.3W) | | | | | | | | | | HIGH POWER COMPONENTS (1.0W) | | | | | | | | |
|---|-----------------|--------------------------|--------------------------|-----------|--------------------------|--------------------------|---------|----------------------------|----------------------------|--|--------------------------|--------------------------|-----------|--------------------------|--------------------------|-----------|--------------------------|--------------------------|
| PROFESSIONAL | | | | | | | | | | | | | | | | | | |
| | OSCONIQ® P 2226 | | | | | | | | | | | | | | | | | |
| | 2.2 mm x 2.6 mm | | | | | | | | | | | | | | | | | |
| | Deep blue | | | Hyper red | | | Far red | | | White | | | Deep blue | | | Hyper red | | |
| | 450 nm | | | 660 nm | | | 730 nm | | | 6,500 K, CRI 67 | | | 450 nm | | | 660 nm | | |
| | mW | $\mu\text{mol}/\text{s}$ | $\mu\text{mol}/\text{J}$ | mW | $\mu\text{mol}/\text{s}$ | $\mu\text{mol}/\text{J}$ | lm | $\mu\text{mol}/\text{s}^*$ | $\mu\text{mol}/\text{J}^*$ | mW | $\mu\text{mol}/\text{s}$ | $\mu\text{mol}/\text{J}$ | mW | $\mu\text{mol}/\text{s}$ | $\mu\text{mol}/\text{J}$ | mW | $\mu\text{mol}/\text{s}$ | $\mu\text{mol}/\text{J}$ |
| | 166 | 0.62 | 2.15 | 110 | 0.60 | 2.80 | 66 | 0.40 | 2.21 | 42 | 0.60 | 2.06 | 690 | 2.61 | 2.61 | 425 | 2.32 | 3.24 |
| The OSCONIQ® P 2226 is also available in additional colors (Blue, True Green, Yellow, Red) and white (CRI 70, CRI 80) | | | | | | | | | | The OSLON® SSL is also available in additional colors (Blue, True Green, Yellow, Red) and white (CRI 70, CRI 80) | | | | | | | | |

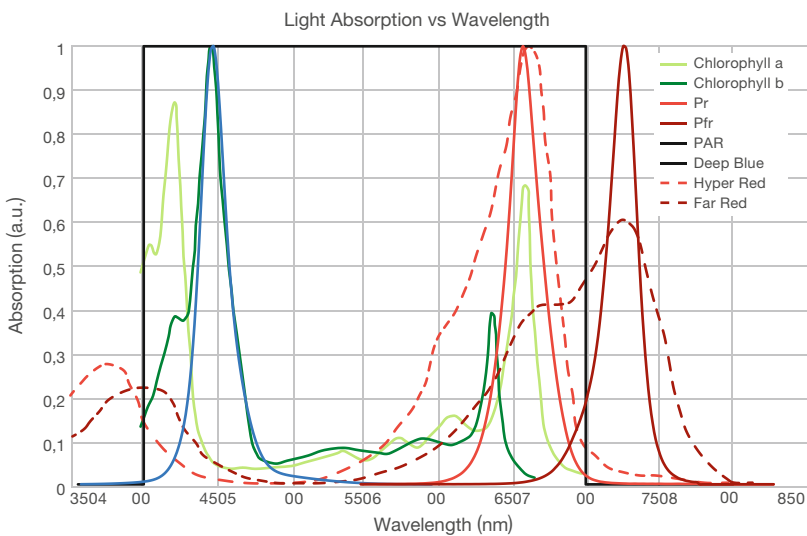
* Photon Flux 360-830nm



Multilayer cultivation: OSCONIQ® P 2226



Interlighting: OSCONIQ® P 2226



Applications

- Top lighting, inter lighting and multilayer cultivation
- Supplemental lighting and cultivation without natural daylight
- Photoperiodic lighting and photo-morphological control
- Urban farming and controlled environment farming
- Algae grow lights and agriculture lighting
- Lighting for plant maintenance at home

Each sort of plant needs it's own tailored Spectral Power Distribution (SPD) to achieve the best results. Our OSOLON® and OSCONIQ® portfolio provides the perfect illumination for all kind of plants and flowers.

| | | | | | | HIGH POWER COMPONENTS (2.0W) | | | | | | | | |
|---|---------|-----------------|-----|--------|--------|---|--------|--------|-----------|--------|--------|-----------------|--------|--------|
| | | | | | | | | | | | | | | |
| OSLON® SSL | | | | | | OSLON® Square | | | | | | | | |
| 3.0 mm x 3.0 mm | | | | | | 3.0 mm x 3.0 mm | | | | | | | | |
| Far red | | White | | | | Deep blue | | | Hyper red | | | White | | |
| 730 nm | | 5,000 K, CRI 70 | | | | 450 nm | | | 660 nm | | | 5,000 K, CRI 70 | | |
| mW | μmol/s* | μmol/J* | lm | μmol/s | μmol/J | mW | μmol/s | μmol/J | mW | μmol/s | μmol/J | lm | μmol/s | μmol/J |
| 270 | 1.77 | 2.41 | 144 | 2.04 | 1.98 | 1,392 | 5.23 | 2.57 | 905 | 4.96 | 3.30 | 314 | 4.44 | 2.20 |
| Available in additional colors (Blue, True Green, Yellow, Red) (CRI 70, CRI 80, CRI 90 from 2,500 K to 6,500 K) | | | | | | The OSOLON® Square is also available in additional white (CRI 70, CRI 80, CRI 90, CRI 95 from 2,400 K to 6,500 K) | | | | | | | | |

DURIS® S 5: Consumer horticulture applications

The DURIS® S 5 purple is offering exciting and efficient opportunities for innovative applications and designs. Thanks to OSRAM Opto Semiconductors' color innovation color we will be able to grow our own food inhouse with horticulture lighting for home applications. The purple color achieves state-of-art efficacy and brightness and with the standard footprint of 3.0 mm x 3.0 mm horticulture retrofit bulbs can be realized easily in cost efficient assembly.

Advantages

DURIS® S 5 is also available in seven color versions, offering exciting and efficient opportunities for innovative applications and designs. All these colors enable less LED usage and smaller PCB design, and thus lead to cost savings in assembly.

Features

- Best in class flux with hot/cold factor (85°C to 25°C)



Applications

- Consumer horticulture applications
- Horticulture retrofit bulb



| MID POWER COMPONENTS (0.3 W) | | | | | | | | | |
|---|-----------------|--------|--------|---------------|--------|--------|-----------------|--------|--------|
| CONSUMER | | | | | | | | | |
| | DURIS® S 5 | | | | | | | | |
| | 3.0 mm x 3.0 mm | | | | | | | | |
| | PC Purple | | | PC Lime white | | | White | | |
| | 450 nm & 650 nm | | | 570 nm | | | 4,000 K, CRI 70 | | |
| | mW | μmol/s | μmol/J | lm | μmol/s | μmol/J | lm | μmol/s | μmol/J |
| | 360 | 1.66 | 1.54 | 58 | 0.59 | 2.01 | 145 | 1.91 | 2.07 |
| The DURIS® S 5 is also available in a broad range of colors (Deep Blue, Blue, True Green, Amber, Red, PC True Green, PC Yellow, PC Amber, PC Red) as well as white (CRI 70, CRI 80, CRI 90 from 2,000 K to 6,500 K) | | | | | | | | | |

For more technical values, please visit our product pages www.osram-os.com



Horticulture Lighting on the Internet:
www.osram-os.com/horticulturelighting

For further information on the available products please visit our productcatalog at www.osram.com/general-lighting

LED Light for you Network
www.ledlightforyou.com



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