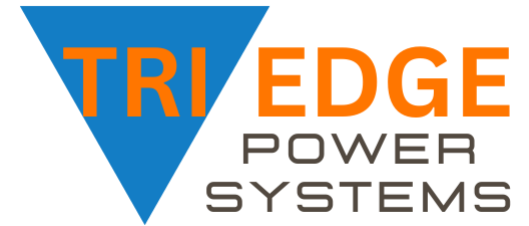


OSRAM Digital Systems

October 2024



It is my pleasure to formally introduce Triedge Power Systems, the newly appointed authorized distributor for Osram-Inventronics Signage and Backlighting LED and power supplies.

At Triedge Power, we are committed to delivering cutting-edge power solutions and lighting innovations that empower businesses and individuals alike. Our partnership with Osram, a global leader in lighting technology, reinforces our dedication to quality, sustainability, and innovation. Together, we aim to illuminate lives with energy-efficient, reliable, and future-ready lighting solutions tailored to diverse needs.

With Triedge Power and Osram, you're not just getting products – you're investing in a brighter, smarter, and more sustainable future.

Casina

Cinema

HOTEL

OSRAM Signage and Backlighting

inventronics

BACKLIGHTING

WHAT is backlighting?

OSRAM is providing perfect light systems for several applications in which surfaces like acryl glasses, textile foils or stretched vinyl are illuminated from the back.



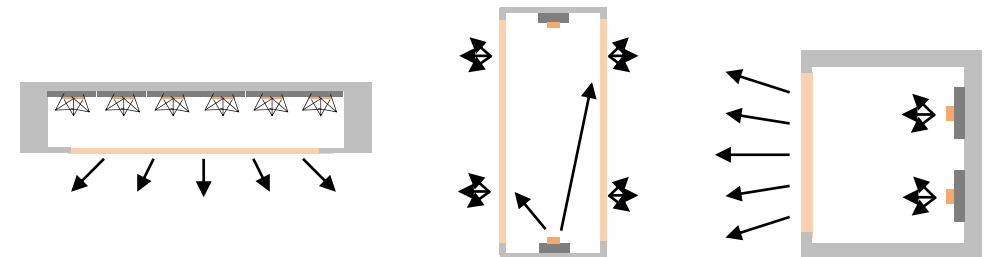
WHERE is backlighting used?

OSRAM backlighting (Signage) solutions can be used for:

- Lightboxes/Pylons,
- Channel letters,
- Indoor signaling,
- Billboards/ Wall washing
- Light Ceilings and decorative backlighting

WHICH options do you have?

OSRAM is offering solutions for direct backlighting (BackLED), Sidelighting (BoxLED) as well as backlighting for large areas (BackLED AREA).



Signage & Backlighting

Application possibilities

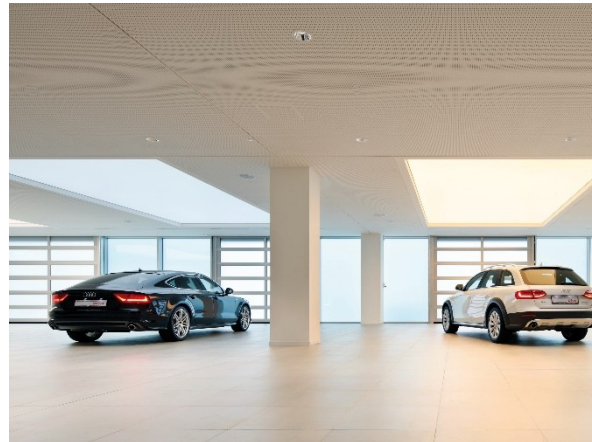


Create welcoming ambiances and **stage architectural highlights** with a high quality of light & with BackLED AREA even installation of large light ceilings is possible



Color consistent **LED modules connected with cables** allow a uniform illumination of logos, back- and side lighting applications as well as light ceilings

Adjust the color temperature easily according to your requirements with the BackLED Tunable White or BackLED RGBW



Choose from a wide selection of **matching OPTOTRONIC® drivers** and perfectly fitting mounting accessories





Think out of the box!

OSRAM BackLED series

inventronics

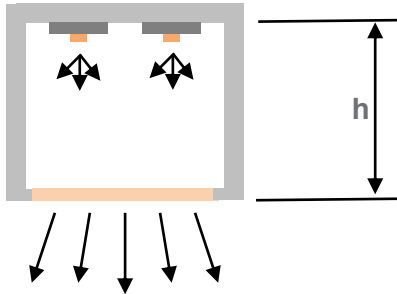
Backlighting Segmentation

Current Backlighting Portfolio

Module size and power



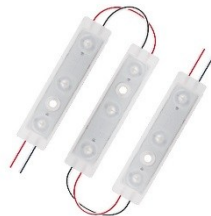
?



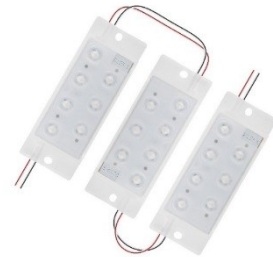
BackLED
S Plus



BackLED
M Plus



BackLED
L Plus



BackLED
XL Plus

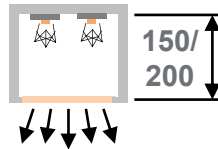
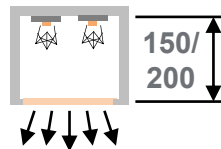
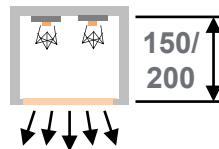
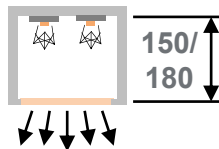
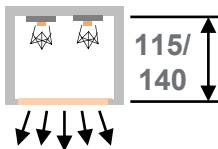
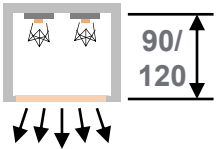
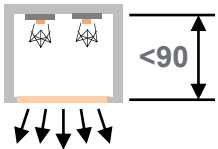


BackLED
TW Plus



BackLED
RGBW Plus

Suggested
depth (h)
for best
uniformity
[mm]*



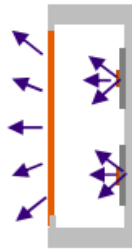
Gap on lower depths which are getting common.

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*: according to LED deSIGNer tool calculation: vinyl ceiling material having 50% transmittance, single layer, output of 600 cd/m²
Lower depths maybe achieved by increasing module density per square meter (more costs, more installation time, too high flux)

SIGNAGE System Solution

BackLED segmentation (Back-lit)



M1

Dynamic Light

BA-RGBW-PL-G2
134 x 35 x 13.5

154lm
2.84W

BA-TW-CP-G5
77.9 x 17.8 x 12.4

277lm
2W

CP – Core Product

BA-XL-CP-G5
77.9 x 17.8 x 12.4

277lm
2W

BA-L-CP-G5
44.7 x 17.8 x 12.1

160lm
1.2W

BA-M-HO-CP-G5
35.5 x 12.2 x 10.3

135lm
1W

BA-M-CP-G5
35.5 x 12.2 x 10.3

83lm
0.6W

BA-S-CP-G5
35.5 x 12.2 x 10.3

46lm
0.3W

- ✓ CCT 2700-6500K tunable
- ✓ RGBW 4-channel control
- ✓ **Dynamic Light effect**



M2

Light Box / Stretched ceiling

BA-Mini-M-CP-G4
28.9 x 8.4 x 6.2

79lm
0.72W

BA-Mini-S-CP-G4
14.9 x 8.4 x 6.2

39lm
0.36W

- ✓ Slim channel letters
- ✓ 3 SDCM, IP66
- ✓ **Ultra Compact Module**



M3

Light Box

BA-L-CX-G5
61 x 12.4 x 6.2

162lm
1.5W

BA-M-CX-G5
61 x 12.4 x 6.2

80lm
0.72W

BA-L-CB-G1
BA-L-HO-CB-G1
61 x 12.4 x 6.2

110 / 162lm
1 / 1.5W

BA-M-CB-G1
61 x 12.4 x 6.2

80lm
0.72W

BA-Linear-CB-G1
IP20&IP66

660~1495lm
6W/12W/14W

- ✓ Indoor/Outdoor Light Box
- ✓ 3 SDCM, IP66
- ✓ **Flat Ray Optics**



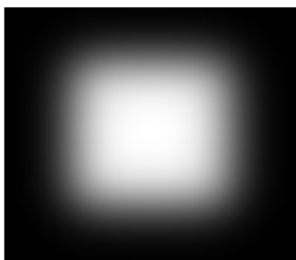
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CX – Core Xperience

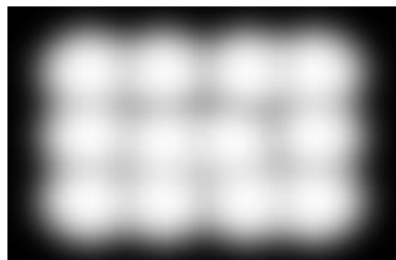
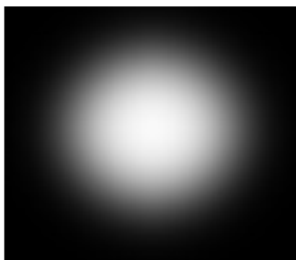
CB – Core Basic

BackLED® Optics Technology

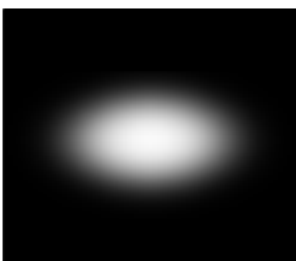
Optimal Design for Application



- ✓ **Premium feature** in BackLED® Plus and CP families
- ✓ Best uniformity in light boxes, stretched ceilings
- ✓ Inventronics patented technology
- ✓ **Depth : Pitch = 1 : 2 to 1 : 3**



- ✓ **Advanced feature** in BackLED® CX / Mini-M / TW - RGBW
- ✓ Optimal solution for light boxes, channel letters
- ✓ **Depth : Pitch = 1 : 1.5 to 1 : 2**

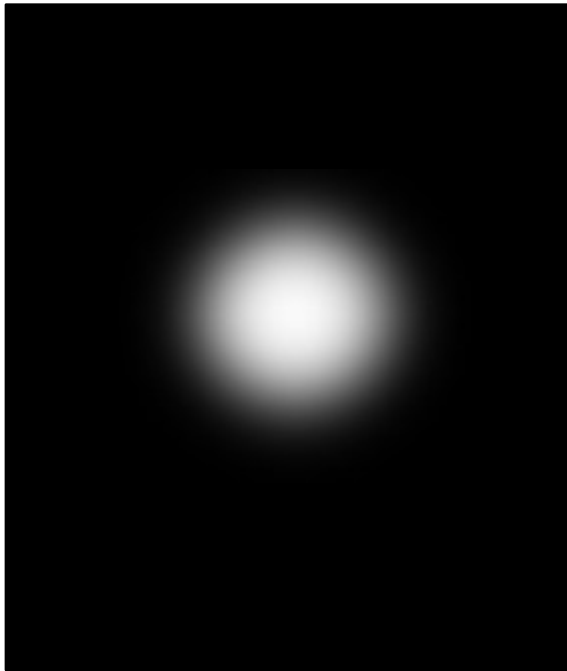


- ✓ **Smart feature** in BackLED® XS and Mini-S, compact modules
- ✓ Ideal oval optics for slim channel letters (width >9mm)
- ✓ **Depth : Pitch = 1 : 1.5 to 1 : 2**

OSRAM's Square Lens Technology

Innovation of Optics

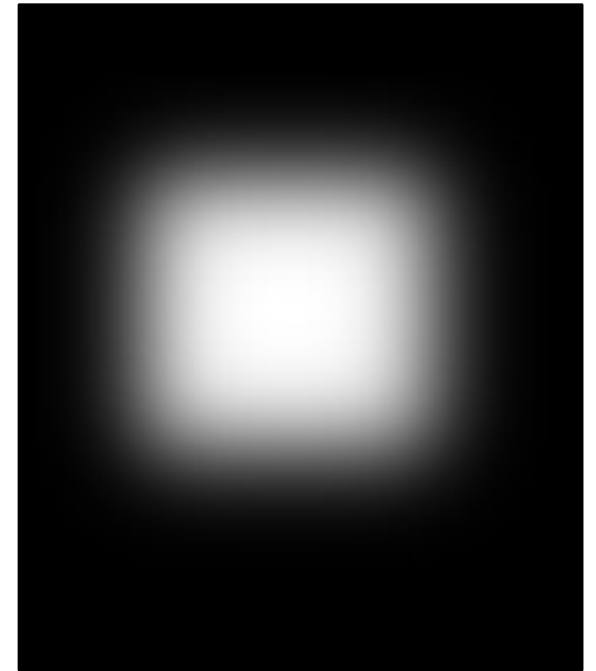
Light Spot with Different Lenses Distribution



Lambert (no lens)
120°



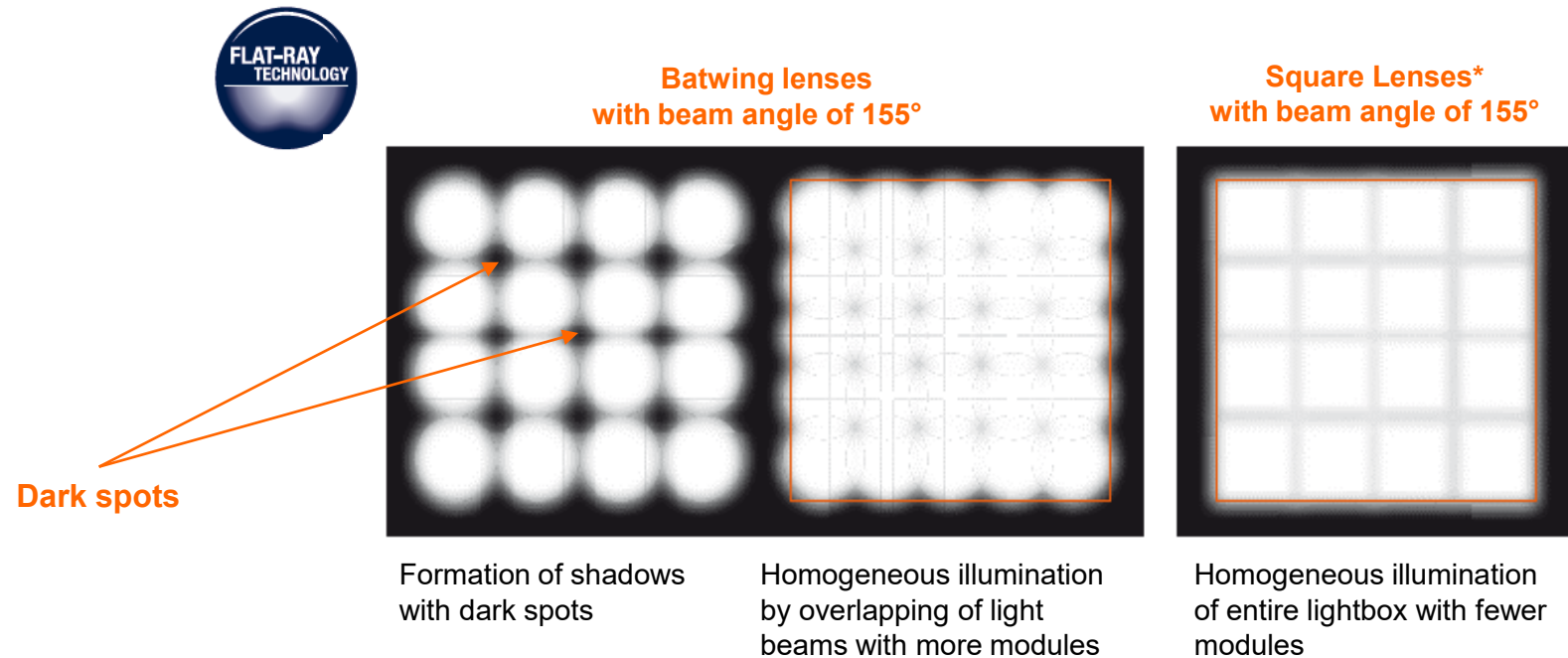
Batwing Lens
160°



OSRAM Square Lens*
155°

Innovated Optical Design

Comparison between Batwing Lens and Square Lens



Benefits of Square Lens:

- Better uniformity achieved
- Less modules needed
- Fit for slimmer applications

*: OSRAM Square Lens is a patented solution



OSRAM BoxLED series

inventronics

OSRAM

BoxLED® series
Application proposal



BoxLED L/M/XS CP G5

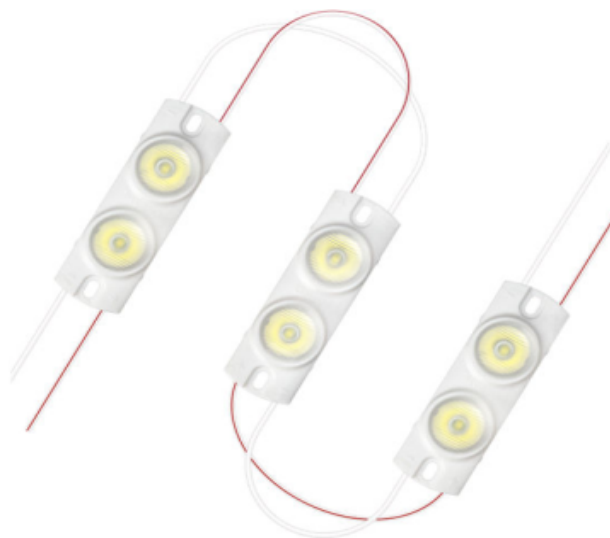
BoxLED L CP G5

- Beam angle **53 x 15°** (lenses inherited from G3 model)
- 650 lm/mod @ 6500K, 600 lm/mod @ 4000K (5 to 10% performance improvement)
- 6 W/mod – 10 modules per chain
- 12 V
- **3 SDCM** white consistency
- Module pitch of 450 mm – Module LED pitch of 90 mm
- IP66 overmoulded
- **50,000 h Lifetime L80B10** – 5y Guarantee
- Dimensions: 220 x 31 x 16 mm
- ENEC, CE



BoxLED M CP G5

- Beam angle **32 x 14°**
- 300 lm/mod @ 6500K, 300 lm/mod @ 4000K
- 3 W/mod – 32 modules per chain
- 24 V
- **3 SDCM** white consistency
- Module pitch of 300 mm
- IP66
- **50,000 h Lifetime L80B10** – 5y Guarantee
- Dimensions: 73 x 25 x 14,7 mm
- ENEC, CE, BIS



BoxLED XS CP G5

- Beam angle **34 x 12°**
- 140 lm/mod @ 6500K, 135 lm/mod @ 4000K (5% performance improvement target)
- 1,3 W/mod – 32 modules per chain
- 12 V
- **3 SDCM** white consistency
- Module pitch of 174 mm
- IP66
- **50,000 h Lifetime L80B10** – 5y OSRAM Guarantee
- Dimensions: 105 x 17,8 x 13,2 mm
- ENEC, CE, UL, BIS





BackLED AREA

inventronics

BackLED AREA

Consistent – seamless homogeneous light for large areas



5 Year
OSRAM
Guarantee

7 Year
OSRAM
System
Guarantee

Family / System

- Uniform backlighting for mid and high luminance areas in narrow depth conditions
- Suited for indoor applications
- Compatible with OSRAM 24V OT

Highlights

- Shapeable to fit various sizes and shapes
- Quick installation in large areas and low depths
- Installation time 4x faster than with Flex LED strips

Benefits

- Available in warm/ natural white and a TW version
- CRI > 90 for high-end applications
- Board size: 540 mm x 270 mm
- color consistency of < 3 SDCM



Backlighting Segmentation

New BackLED AREA G1



Finger board
same size as
PrevaLED AREA
540x270mm



BENEFITS:

- Uniform backlighting of mid and high luminance areas in low depths
- Good colour consistency of <3SDCM
- CRI>90 for high-end applications
- Reduced installation time compared to other light sources for backlighting low depth boxes
- Shapable with minimum scrap material to fit various sizes and shapes
- Long lifetime 70kh at max Tc
- Compatible with OT24V, DALI drivers, BLE controls.

First entry models

Product	Color	K	CRI	Voltage [V DC]	Luminous flux [Lm]	Power [W]*
BA-AR-G1 900 540x270 927	Warm White	2770	>90	24	900	9,0
BA-AR-G1 900 540x270 930	Warm White	3066	>90	24	920	9,0
BA-AR-G1 900 540x270 940	Natural White	4061	>90	24	950	8,6

Second step models

Product	Color	K	CRI	Voltage [V DC]	Luminous flux [Lm]*	Power [W]*
BA-AR-G1 900 540x270 TW	Warm White / Cool white	2700 / 6500	>90	24	900*	19

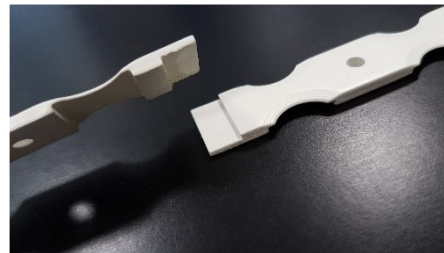
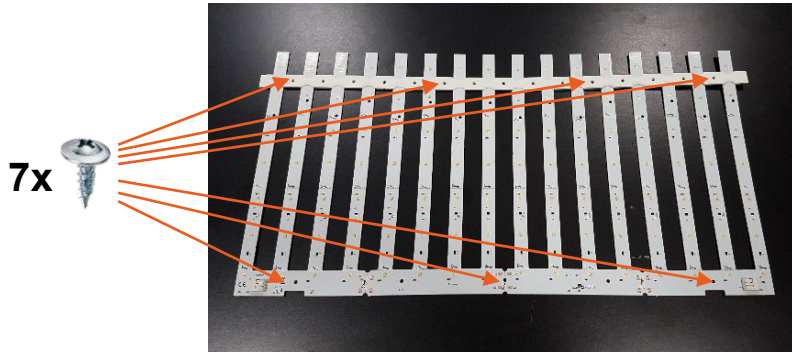
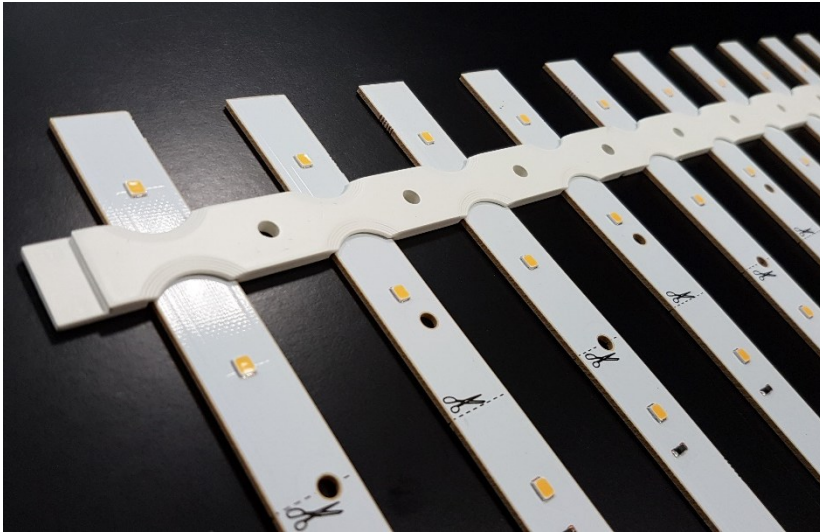
*: product to be driven with OSRAM DT8 (TW) / BLE drivers. DT8 or BLE TW methods provide flux uniformity across CCTs.

Time and money saver on installation

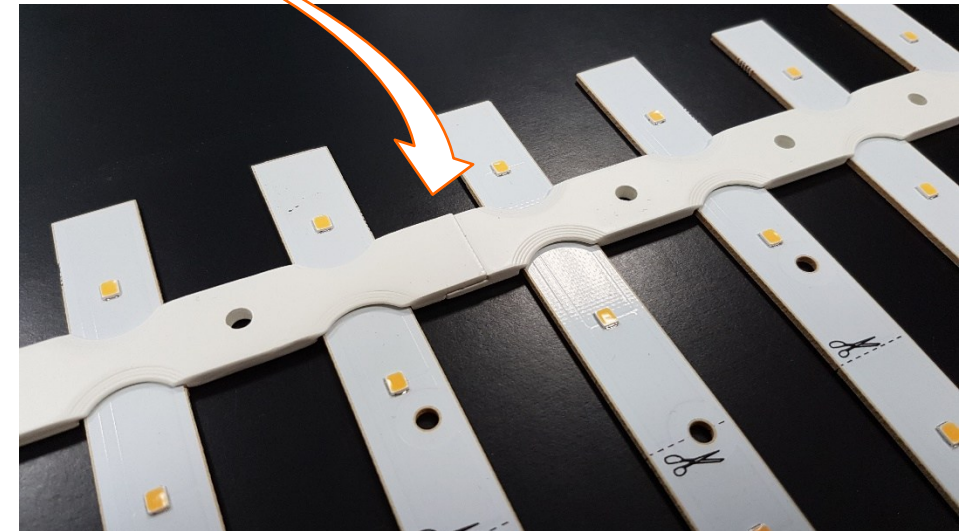
Installation suggestions (Accessories)

Save time on installation with the holding bracket

- No need to screw all fingers to the installation surface
- Only 7 screws per board necessary for quicker installation*
- Helps keeping the correct distance between fingers for perfect uniformity



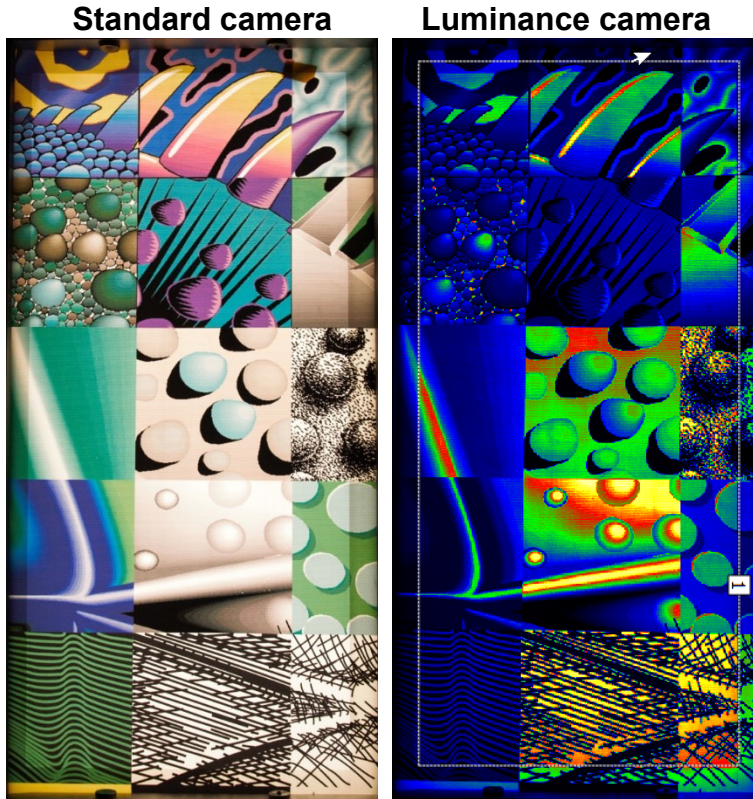
*: 7 screws suggested for a full board installation



The perfect uniformity

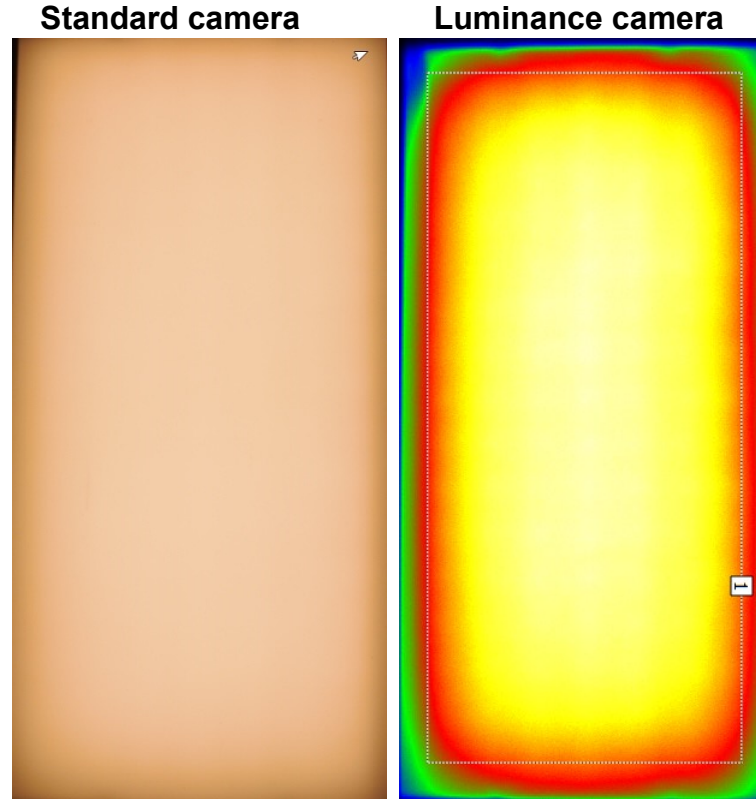
Installation test in different conditions

Box test with printed vinyl



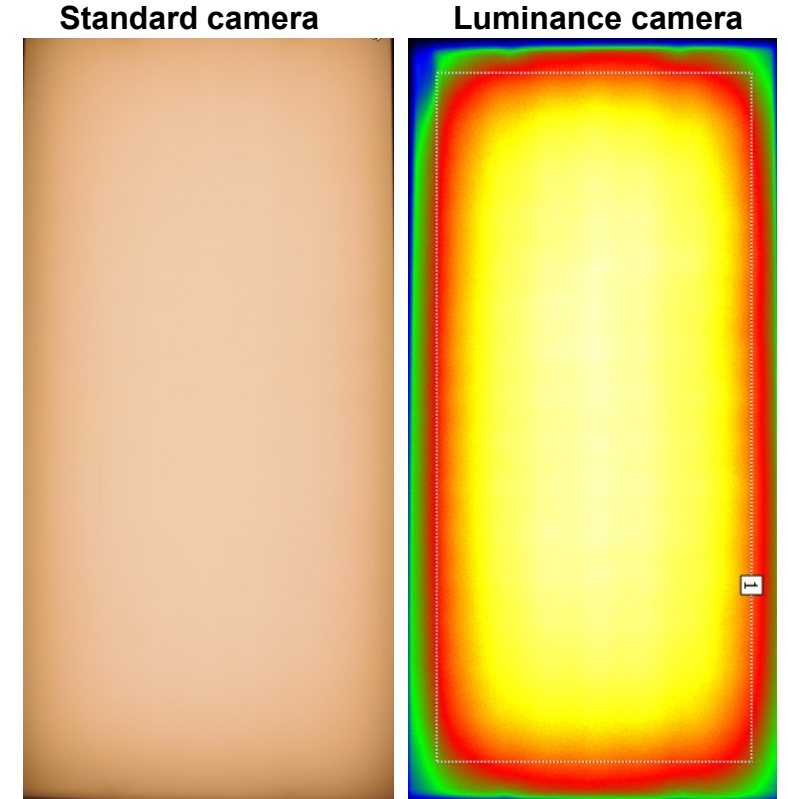
DEPTH OF 40mm

Box test with double layer vinyl & alu frame*



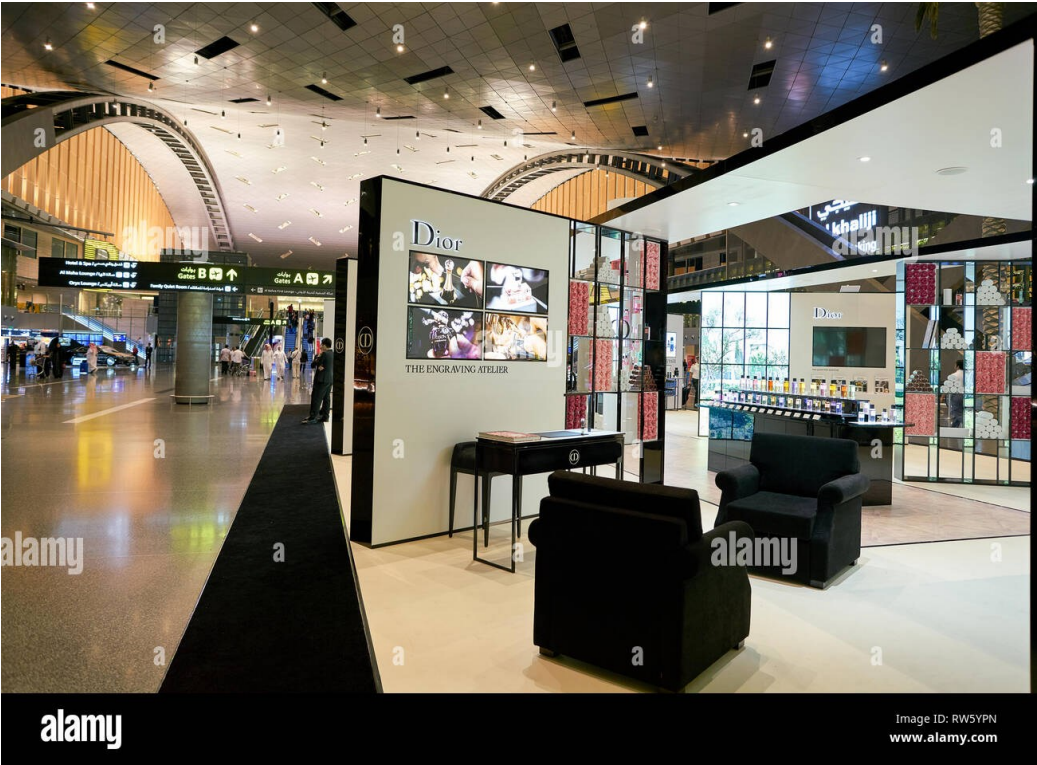
DEPTH OF 50mm

Box test with single layer vinyl and alu frame*

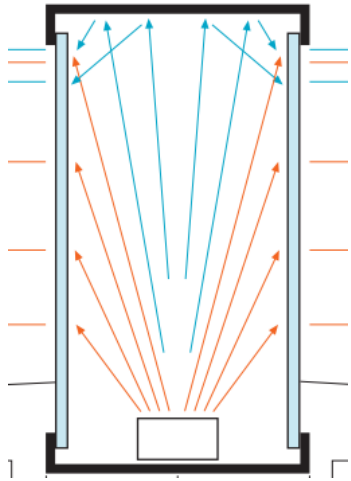


DEPTH OF 60mm

Qatar International Airport



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Muscat International Airport
Oman



Muscat International Airport
Oman



Muscat International Airport
Oman



Athens International Airport
Greece



Athens International Airport
Greece



Athens International Airport
Greece



Abu Dhabi International Airport
UAE



Thessaloniki Makedonia International Airport SKG



Έλεγχος Εισιτηρίων
Check-in

1 - 28



Προς Πύλες
To all gates



Έλεγχος Εισιτηρίων
Check-in

29 - 44



Thessaloniki Makedonia International Airport SKG



Stretch Diffuser, HD Print Eco

Nakheel Mall
DUBAI



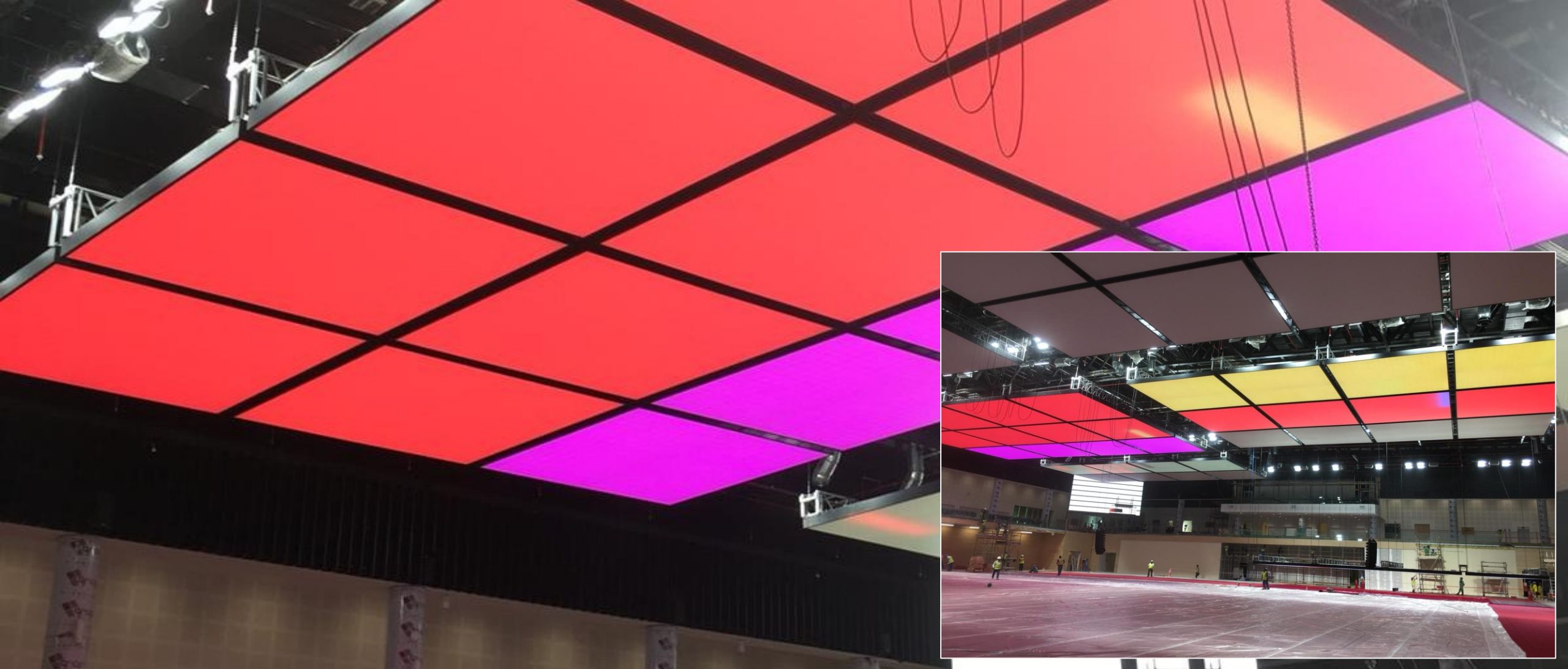
DOHA OASIS – CINEMA & THEME PARK



ALSO
K



DUBAI MALL FASHION AVENUE



Qatar University Sports Complex Hall – Doha, Qatar

Client: Qatar University
Lighting Design: La Casa
Completed: 2018

System Solution:



BackLED RGBW

Project Example: Backlighting on a facade

Debenhams Kuwait



Location:
Kuwait

Partner:
Bader Al Mulla

Architect:
Zebra Projects

Products used:
BackLED XL 865
OT 120 / P
Double layer glass w/frosted pattern



OSRAM OT drivers & dimmers

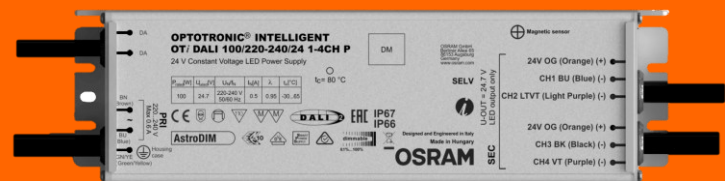
OPTOTRONIC® & ELEMENT Benefits

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OSRAM OPTOTRONIC® Constant Voltage Outdoor 24V LED Driver portfolio overview

DALI-2

Versatile: stunning installations in challenging conditions



ON/OFF

Untroubled: a reliable power source for lighting



DIM 1-10V

Robust and reliable: perfect for harsh environments



Wireless BLE

Future proof: a flexible way to control light



Why use OSRAM LED drivers?

Because we know how important illumination is: we want drive the light the best possible way.

OSRAM has been a lighting company for more than 100 years!
We are experts in light sources – our products are the best evidence of our skills.

OSRAM offers the best dimming performances

- Fluid flux of light from min to max (no steps nor overshoots).
- No visual disturbs like flashes, flickering, stroboscopic effect.
- The lowest possible minimum dimming to mix-up light colors smoother

OSRAM LED drivers care for the environment

- Maximize the performances
- Reduce the power consumption when in stand by
- All the used components are as “green” as technically possible

OSRAM LED drivers protect the installation

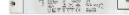
- From electrical surge
- From installer's mistake
(such as short circuits, sudden changes of temperature)

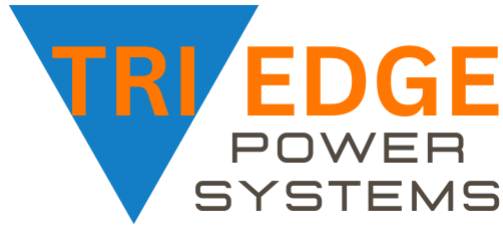
OSRAM LED drivers are reliable

- Our design is targeted to realizing long lasting devices
- Our Q-lab tests and stresses the design much beyond the limits we declare
- OSRAM performs severe aging tests
- OSRAM production provide on-off tests on any single device



Comprehensive Driver Portfolio – Constant Voltage

OTi DALI	OTi DALI Driver 24V  50/80/160 W 1/2/4 CH IP20	OTi DALI Driver Outdoor 24V  100/210 W 1-4 CH IP66/67	OTi DALI DIM 12-24-48V  240 W 1-4 CH IP20	✓ Dimming range 0.1...100% ✓ Up to 4 channels ✓ Long lasting and high reliability Safe Dimming SDT Technology DALI-2 5 years OSRAM Guarantee DIM to Dark <1%		
OT DIM	OT FIT PC 24 V  36/75/150 W Phase Cut IP20	OT 24V Driver 1-10V P  20 to 250 W IP66 & IP67	OT DIM 1-10V 12-24V  120 W IP20	✓ Dimming range up to 1...100% ✓ Range of products from 20 W to 250 W ✓ 50000 hours lifetime Phase Cut L,C Safe Dimming SDT Technology 5 years OSRAM Guarantee		
On/Off	OT SLIM 24V  30 to 250 W IP20	OT 12V P  15/300 W IP67	OT 24V P  20 to 250 W IP66 & IP67	OT FIT 24V P  80 to 300 W IP66 & IP67	ELEMENT 24V G2  30 to 180 W IP20	✓ Range of products from 15 W to 300 W ✓ Up to 50000 hours lifetime ✓ Up to IP66/67 rating 3 Year OSRAM Guarantee 5 years OSRAM Guarantee
Special Application	OTi BLE 24V  80 W 4 CH IP20	OT BLE DIM 12-24V  240 W 4 CH IP20	OT DMX RGBW DIM 12-24V  182 W 4 CH IP20	✓ 4 channels ✓ Dimming range up to 0...100% ✓ DMX or Bluetooth technology DIM to Warm Tunable White 5 years OSRAM Guarantee		



Thank you for taking the time to go through my presentation. I hope it provided valuable insights and sparked ideas for collaboration or further exploration. Please feel free to reach out with any questions or to continue the conversation. I look forward to hearing from you

Contact Information:

Anand Subramanian

Email: anand@triedgepower.com

Contact: - +971 566621727

www.triedgepower.com

Thank you for your attention!