

Sensing is life

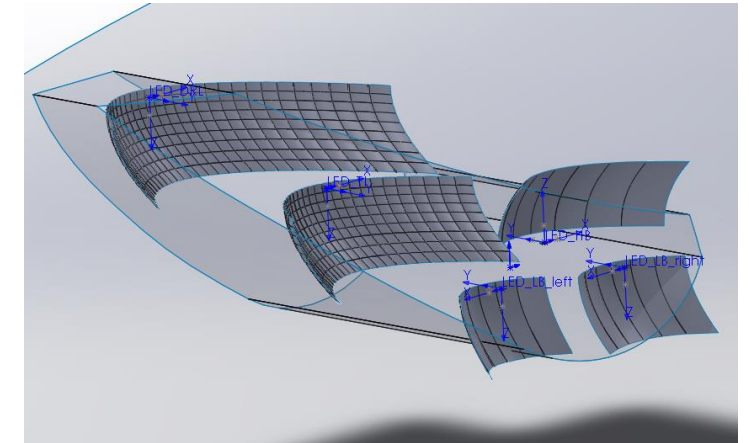
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Standard Low-Beam / High-Beam

Selection Guide

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2021/09

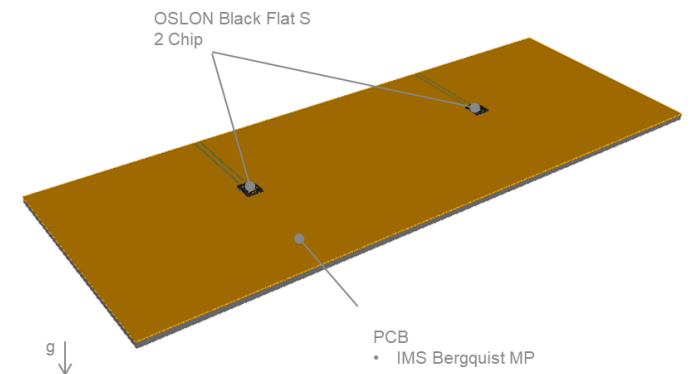
Standard Low-Beam / High-Beam



The LEDs in the standard low beam / high beam application guide enable a high LED penetration rate down to A-Segment. Due to a high electrical efficiency of the light sources, low thermal management efforts and the possibility to use low cost PCBs, a cost optimized system can be designed. By reducing the driving current while still keeping the required brightness even “Heatsinkless” headlamps become possible.

#DestinationTomorrow

#TheNewOsram



Standard Low-Beam / High-Beam

Recommended Products Overview

OSLON® Black Flat S



KW HHL532.TK
KW2 HIL532.TK
KW HJL531.TE
KW HKL531.TE
KW HLL531.TE

- 1mm² notchless chip
- Leadframe package
- High contrast >1:200
- Very low thermal resistance
- Less power consumption (CO₂)

OSLON® Black Flat X



KW HHL631.TK
KW2 HML631.TK
KW3 HNL631.TK
KW4 HPL631.TK
KW5 HQL631.TK

- 1mm² notchless chip
- Leadframe package
- High contrast >1:200
- Very low thermal resistance
- Less power consumption (CO₂)
- Highest lumen -> typ 460lm per chip @ 1000 mA

OSLON® Compact PL (Gen 2)



KW CELNM2.TK
KW2 CFLNM2.TK

- Narrow binning
- Color over angle improvement

OSLON® Boost HM



KW CELMM1.TG

- SMT ceramic based package (same as Compact PL)
- 1/2mm² high current chip
- Latest notchless chip technology for easier optical design
- 3 pad design with electrically isolated thermal pad
- Chip is designed for high ampacity of 3A per square millimeter
- Introduction of new color binning for better homogeneity
- Color over Angle improvement
- New mold compound for higher optical density

Standard Low-Beam / High-Beam

Recommended Products Benefits (1/2)

Customer Benefit USPs

OSLON® Black Flat S



- Highest performance (395lm/mm²@1A) offers the possibility to reduce heatsink size or remove it from the headlamp design
- Compatible with Al-metal core boards
- Good contrast for reflector design (Integrated shutter)
- High 2nd level reliability
- High robustness against harsh ambient conditions
- Improved solder pad geometry by matches CTEs
- Optimized Rth
- Chip position marking

OSLON® Black Flat X



- Highest lumen -> typ 460lm per chip @ 1000 mA
- Highest performance offers the possibility to reduce heatsink size or remove it from the headlamp design
- Compatible with Al-metal core boards
- High contrast >1:200 due to black package material and TiO₂ casting.
- Good contrast for reflector design
- High robustness against harsh ambient conditions
- Design-in one product family and get color and multi-chip devices
- Introduction of new color binning for better homogeneity
- Color over Angle improvement
- Optimized Leadframe design for better thermal management

Decision criteria

- Efficiency
- Headlamp system cost
- Contrast
- Long distance beam pattern
- Color homogeneity in light beam pattern
- Compatible with AL-metal core boards

- low power designs
- Tight binning scheme (.01)
- Reduced thermal resistance (.01)

Standard Low-Beam / High-Beam

Recommended Products Benefits (2/2)

Customer Benefit USPs

OSLON® Compact PL (Gen 2)



- Improved mechanical stability for good handling
- Halogen replacement capability
- New mold compound for higher optical density to optimize contrast and efficiency
- Data Matrix Code for better traceability

OSLON® Boost HM



- Highest luminance performance up to 260 cd/mm²
- An additional electrical isolated thermal pad separates the thermal management from the electrical circuit (3 pad design)
- Robust package supports good handling
- Chip is designed for high ampacity of 3A per square millimeter
- Introduction of new color binning for better homogeneity
- Color over Angle improvement
- New mold compound for higher optical density

Decision criteria

- UX:3 chip technology version
- Ceramic conversion platelet

- Realization of slim headlamp designs and usage of small lens components
- Realization of range extension ADB or standard high-beam
- Reliable and efficient thermal management of the headlamp system
- Reduce system costs by using same PCB layout for different applications e.g. low and high beam
- Precise positioning of optical components
- Efficacy increase to reduce power consumption
- Better homogeneity of color distribution

Standard Low-Beam / High-Beam

Recommended Products at a Glance

					
Product Name	KW HHL532.TK	KW2 HIL532.TK	KW HJL531.TE	KW HKL531.TE	KW HLL531.TE
Product Brand	OSLON® Black Flat S	OSLON® Black Flat S	OSLON® Black Flat S	OSLON® Black Flat S	OSLON® Black Flat S
Luminous Flux (typ.)	395 lm @ 1000mA	790 lm @ 1000mA	1050 lm @ 1000mA	1400 lm @ 1000mA	1750 lm @ 1000mA
Maximum Current	1500mA	1500mA	1500mA	1500mA	1500mA
Low Thermal Resistance R _{th JS real typ}	3.2 K/W	2.3 K/W	1.3 K/W	1.0 K/W	0.90 K/W
Color Binning	4L07M0	4L07M0	ebvFfcbB46	ebvFfcbB46	ebvFfcbB46
Package Dimensions	3.75mm x 3.75mm x 0.49mm	4.6mm x 3.75mm x 0.43mm	5.7mm x 3.75mm x 0.43mm	6.8mm x 3.75mm x 0.43mm	7.9mm x 3.75mm x 0.43mm
Number of Pads / Distance of Pads	3 / 0.35mm	4 / 0.25mm	5 / 0.25mm	6 / 0.25mm	7 / 0.25mm



Standard Low-Beam / High-Beam

Recommended Products at a Glance

					
Product Name	KW HHL631.TK	KW2 HML631.TK	KW3 HNL631.TK	KW4 HPL631.TK	KW5 HQL631.TK
Product Brand	OSLON® Black Flat X	OSLON® Black Flat X	OSLON® Black Flat X	OSLON® Black Flat X	OSLON® Black Flat X
Luminous Flux (typ.)	460 lm @ 1000mA	900 lm @ 1000mA	1350 lm @ 1000mA	1800 lm @ 1000mA	2250 lm @ 1000mA
Maximum Current	1500mA	1500mA	1500mA	1500mA	1500mA
Low Thermal Resistance R _{th JS real typ}	3.1 K/W	1.7 K/W	tbd	tbd	tbd
Color Binning	4M07L0	4M07L0	4M07L0	4M07L0	4M07L0
Package Dimensions	3.75mm x 3.75mm x 0.50mm	5.15mm x 3.75mm x 0.50mm	6.37mm x 3.75mm x 0.50mm	7.59mm x 3.75mm x 0.50mm	8.81mm x 3.75mm x 0.50mm
Number of Pads / Distance of Pads	3 / 0.35mm	4 / 0.31mm	5 / 0.31mm	6 / 0.31mm	7 / 0.31mm

Standard Low-Beam / High-Beam

Recommended Products at a Glance

		
Product Name	KW CELNM2.TK	KW2 CFLNM2.TK
Product Brand	OSLON® Compact PL (Gen 2)	OSLON® Compact PL (Gen 2)
Luminous Flux (typ.)	395 lm @ 1000mA	790 lm @ 1000mA
Maximum Current	1500mA	1500mA
Low Thermal Resistance R _{th JS real typ}	4.6 K/W	3.3 K/W
Color Binning	4L07M0	4L07M0
Package Dimensions	1.9 mm x 1.5 mm x 0.732mm	3.1mm x 2.46mm x 0.732mm
Number of Pads / Distance of Pads	3/ 0.27mm	4/ 0.30mm

Standard Low-Beam / High-Beam

Recommended Products at a Glance



Product Name	KW CELMM1.TG
Product Brand	OSLON® Boost HM
Luminous Flux (typ.)	430lm @ 1500mA
Maximum Current	1650mA
Low Thermal Resistance R_{th} <small>JS real typ</small>	6.7 K/W
Color Binning	4L07M0
Package Dimensions	1.9mm x 1.5mm x 0.73mm
Light Emitting Area	0.73mm x 0.73mm
Number of Pads / Distance of Pads	3 / 0.25mm