



# Bringing light to life – LEDDriving® Driving & Working Lights

AM F-AFTM FIX | July 2019 | Munich

Light is OSRAM

**OSRAM**

The Market

OSRAM

# Market Strategy

## Competitor Analysis



Brand awareness: Automotive industry  
 Quality level: very high  
 Performance: high  
 Pricing: very high



Brand awareness: Product Specialists  
 Quality level: high  
 Performance: very high  
 Pricing: very high



Brand awareness: Regional/local  
 Quality level: low  
 Performance: low - medium  
 Pricing: low - medium

➡ Market is established



# Market Strategy

## Where do we position OSRAM?

Brand awareness

High

Low

Low

Quality level

High

OSRAM

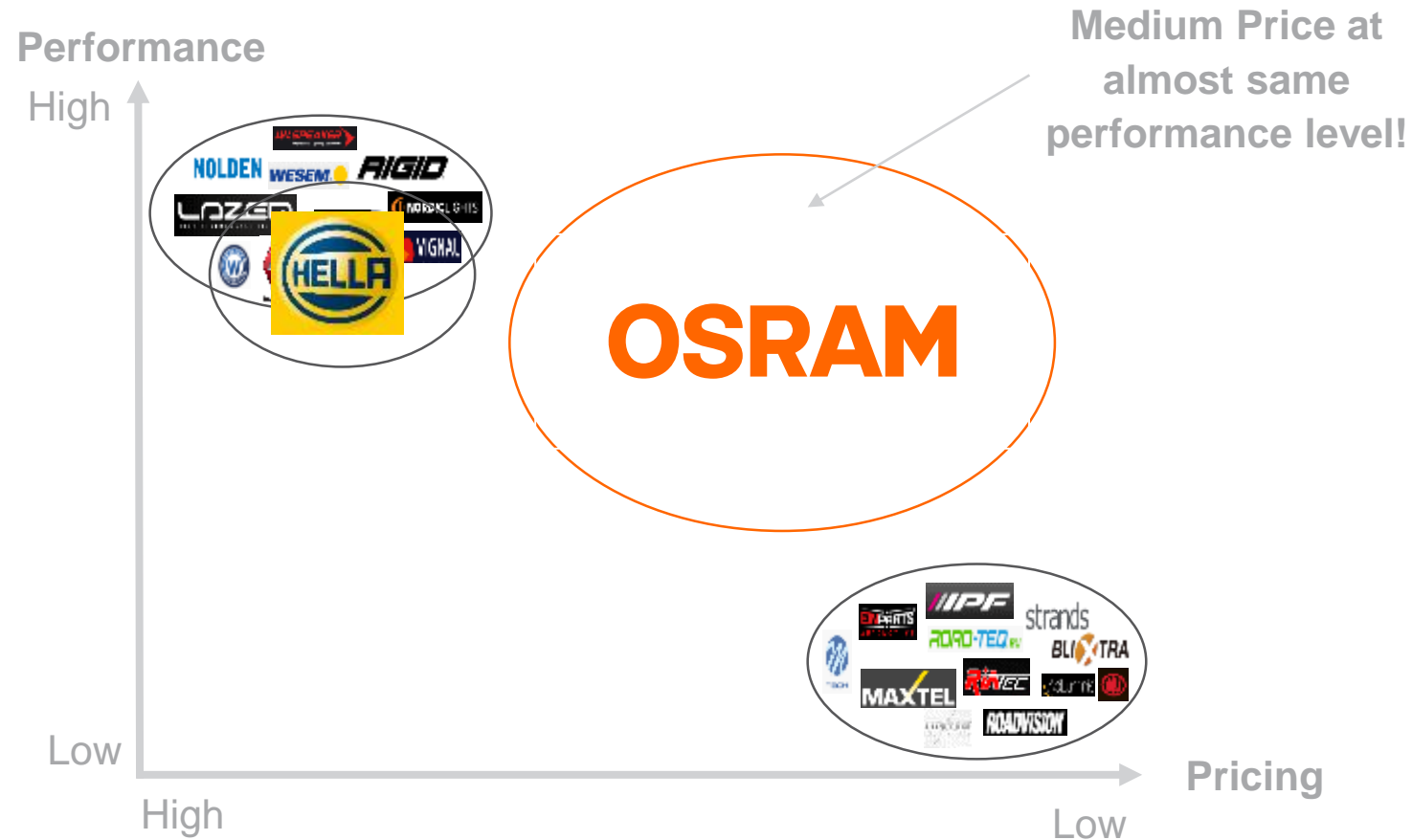


Very high brand awareness with high quality level!



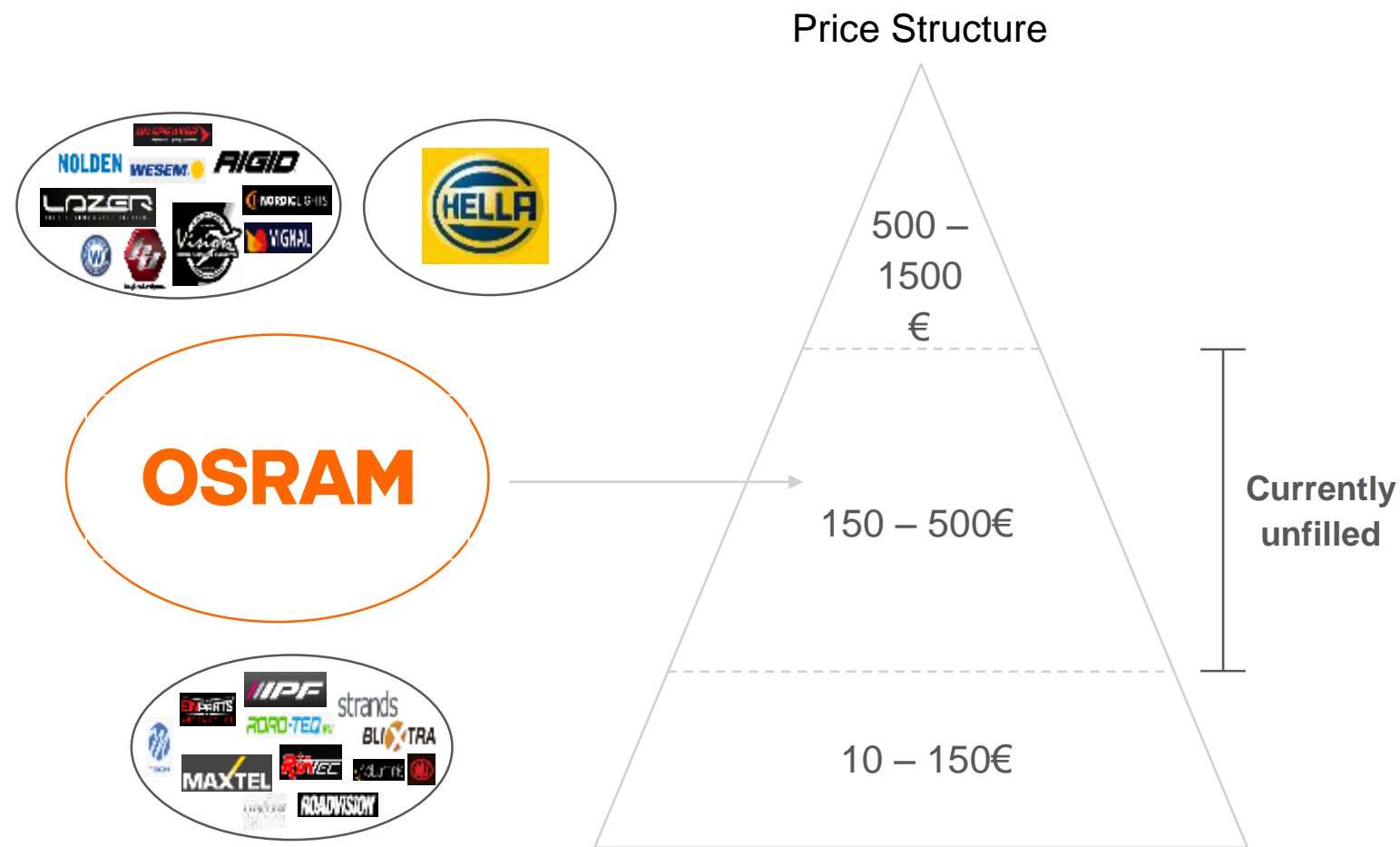
# Market Strategy

## Where do we position OSRAM?



# Market Strategy

## Pricing



# The Product Strategy



# Product Strategy

## LEDDriving® Driving & Working Lights

### Existing Lightbar Products on the Market

#### OUT

Standard plain DOT design

Seen again and again ...



### New LED Driving Lights powered by OSRAM

#### IN

**New** Driving light with a twist

With features for Day and Night:

Day – stylish accent light to enhance vehicle look

Night – full power of a quality off-road driving light

**New** Free-Form Curved reflector

Enhanced optical performance and reduced glare through indirect illumination



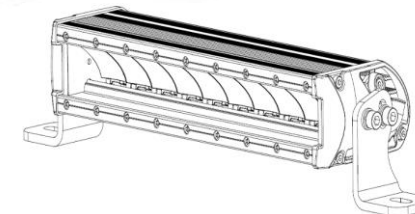
Linear homogeneous accent light



X shape homogeneous accent light



LEDs



LEDs directed towards the free-form curved reflector avoiding the direct light emission towards passing vehicle therefore reducing glare and discomfort

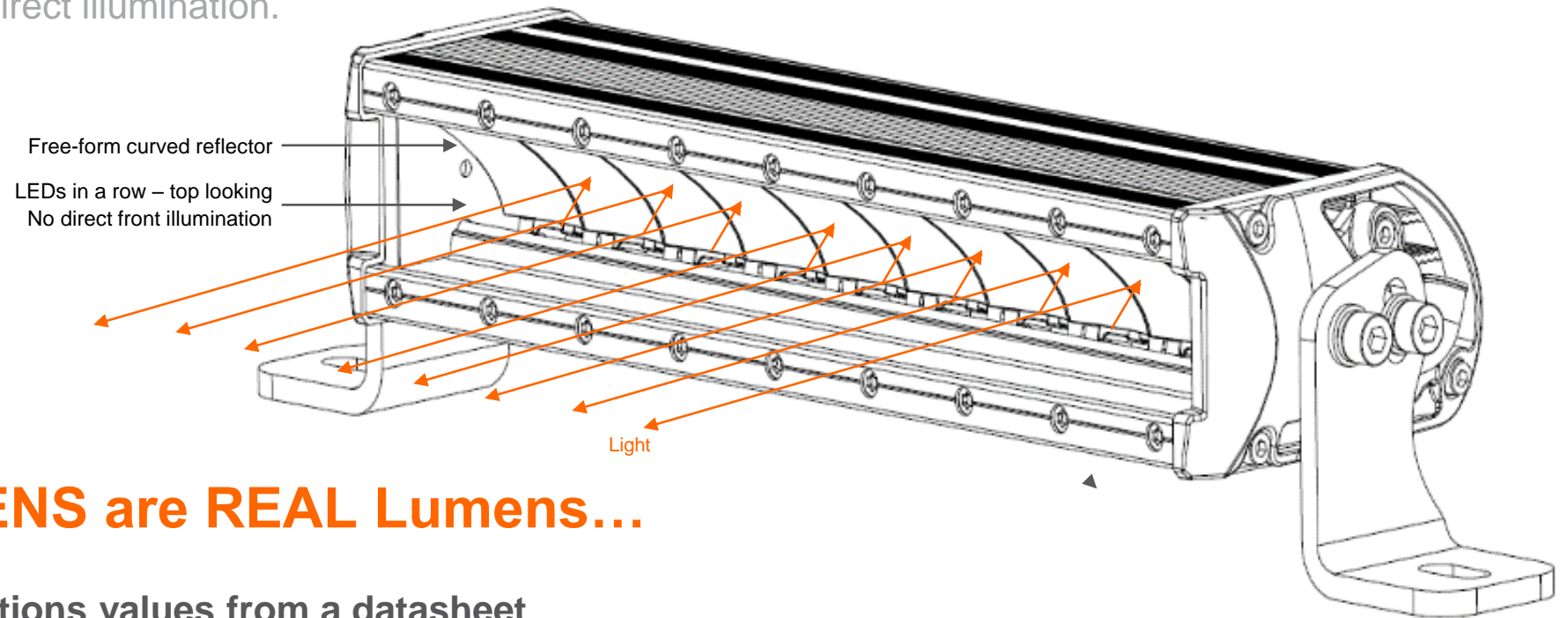


# Product Strategy

## USP's

### New Free-Form Curved reflector - Principle

Enhanced optical performance with OSRAM LEDs light directed first towards the specially designed reflector.  
Reduced glare through indirect illumination.



### OSRAM LUMENS are REAL Lumens...

- Not raw
- Not LEDs specifications values from a datasheet
- Not Cold (instant on)
- BUT what you really get out of the luminaire (so called HOT lumens)

# Definition Product Series

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## Multifunctional Series (MX):



With high beam and LED front positioning functionality, the OSRAM Multifunctional Series combines power with practicality

## Functional Series (FX):



Get a fully ECE compliant auxiliary high beam and choose between two high beam patterns for improved far- and near-field illumination

## Slim Series (SX):



Auxiliary high beam spotlights are designed with a slim and compact housing which allows for easy mounting

# Portfolio Overview

## LEDDriving® Driving & Working Lights

### LEDDriving®

#### Driving Lights (On-road)

##### Multifunction Series

1. Lightbar MX140-SP



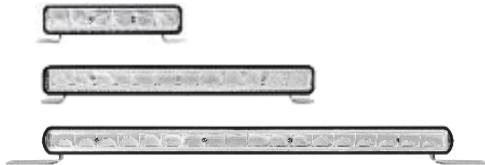
##### Functional Series

1. Lightbar FX250-SP
2. Lightbar FX250-CB
3. Lightbar FX500-SP
4. Lightbar FX500-CB



##### Slim Series

1. Lightbar SX180-SP
2. Lightbar SX300-SP
3. Lightbar SX500-SP



#### Working Lights (Off-road)

##### Multifunction Series

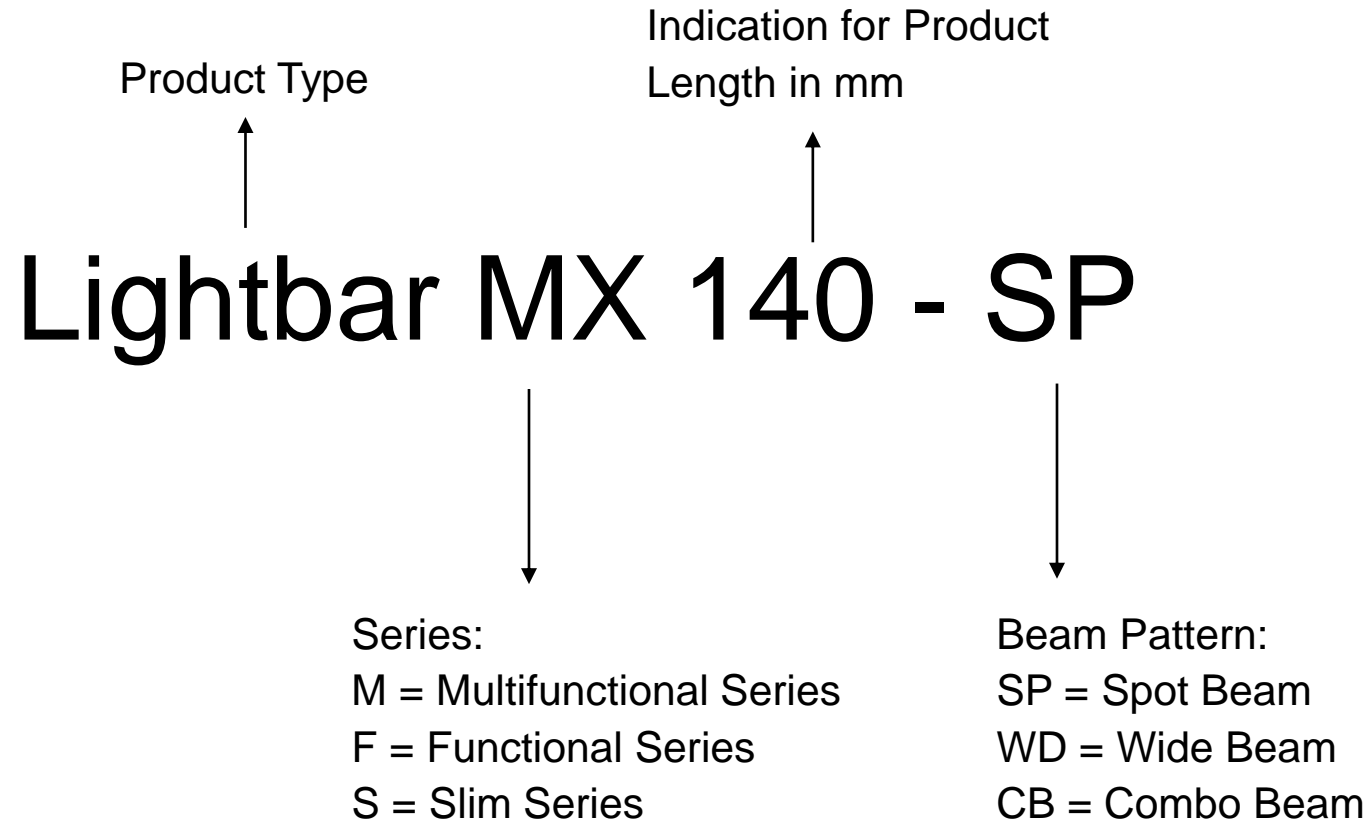
1. Cube MX85-SP
2. Cube MX85-WD
3. Lightbar MX140-WD



Sales channel:  
Trade & Retail

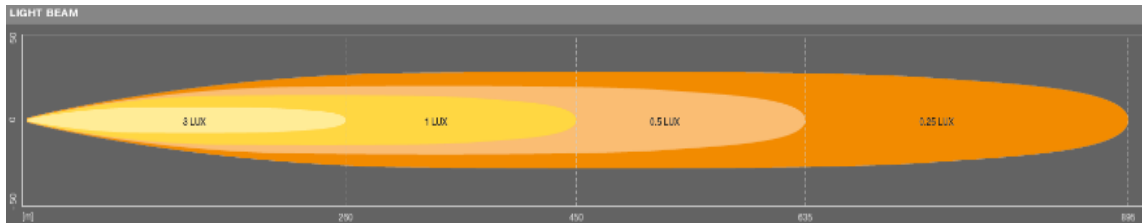
# Composition of the Product Name

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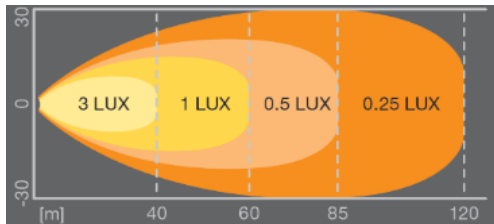


# Beam Pattern Comparison



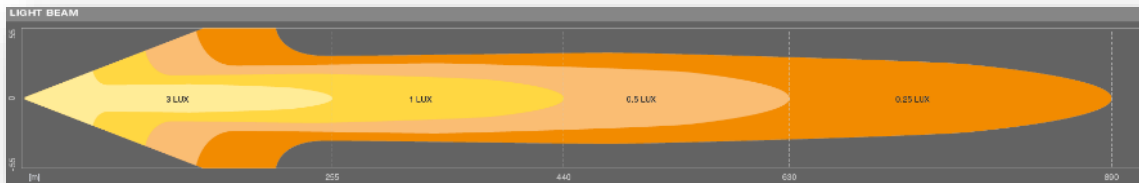
Spot Beam:

A spot beam pattern is meant for far field illumination. The reflector design bundles the light beam to a light spot in the far field around the vehicle



Wide Beam:

A wide beam pattern is meant for near field illumination. The reflector distributes the light widely in the near field around the vehicle



Combo Beam:

A combo beam pattern is meant for far field illumination as well as for near field illumination. The reflector combines spot and wide beam pattern in order to illuminate widely in the near field and to have a light spot in the far field around the vehicle

# The LED Working Light Portfolio



# Product Details – LEDDriving® Working Lights – Cube MX85-SP (Multifunctional)

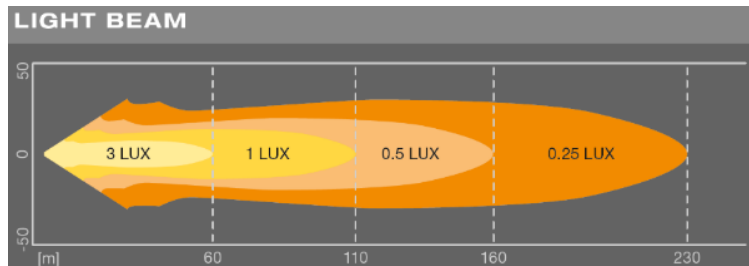


## Features

- 2 LED Lighting functions: working light & stylish X shape light
- Far field illumination: Up to 110m light beam with 13,5° beam angle
- Compact and robust: Unbreakable polycarbonate lens to endure heavy duty application, over and under voltage protection
- Integrated driver and thermal management system for a superior lifetime
- 4 high performance OSRAM LED's
- 5-year guarantee<sup>1)</sup>

## Technical Specifications LEDDL101-SP

- Light distance @ 1lx: ~110m
- Hot lumen: 1.250lm
- Color temperature: 6000K
- Beam angle: 13,5°
- Rated input power: 22/2W
- Input voltage: 12V
- IP Protection: IP67
- EMC/EMI: ECE R10
- Over voltage protection: up to 18V
- Polarity protection
- Cable length: 30cm
- Weight: 500g



## Fields of application

- 4x4
- ATV
- commercial/construction vehicles
- agriculture
- caravans

**RRP 99,99 €**



# Product Details – LEDDriving® Working Lights – Cube MX85-WD (Multifunctional)

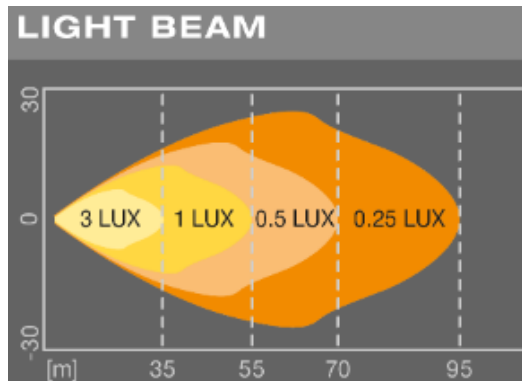


## Features

- 2 LED Lighting functions: working light & stylish X shape light
- Near field illumination: Up to 55m light beam with 43,5° beam angle
- Compact and robust: Unbreakable polycarbonate lens to endure heavy duty application, over and under voltage protection
- Integrated driver and thermal management system for a superior lifetime
- 4 high performance OSRAM LED's
- 5-year guarantee<sup>1)</sup>

## Technical Specifications LEDDL101-WD

- Light distance @ 1lx: ~55m
- Hot Lumen: 1.250lm
- Color temperature: 6000K
- Beam angle: 43,5°
- Rated input power: 22/2W
- Input voltage: 12V
- IP Protection: IP67
- EMC/EMI: ECE R10
- Over voltage protection: up to 18V
- Polarity protection
- Cable length: 30cm
- Weight: 500g



## Fields of application

- 4x4
- ATV
- commercial/construction vehicles
- agriculture
- caravans

**RRP 99,99 €**





# Product Details – LEDDriving® Working Lights – Lightbar MX140-WD (Multifunctional)

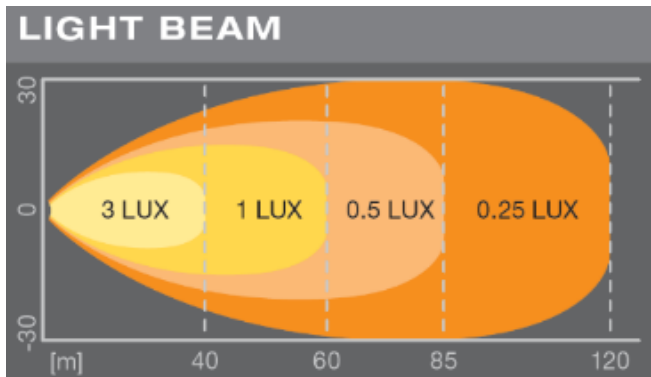


## Features

- 2 LED lighting functions: working light & accent light
- Near field illumination: Up to 60m light beam with 45° beam angle
- Compact and robust: Unbreakable polycarbonate lens to endure heavy duty application, over and under voltage protection
- Integrated driver and thermal management system for a superior lifetime
- 3 high performance OSRAM LED's
- 5-year guarantee<sup>1)</sup>

## Technical Specifications LEDDL102-WD

- Light distance @ 1lx: ~60m
- Hot Lumen: 2000lm
- Color temperature: 6000K
- Beam angle: 45°
- Rated input power: 30/2W
- Input voltage: 12/24V
- IP Protection: IP67
- EMC/EMI: ECE R10
- Polarity protection
- Cable length: 50cm
- Weight: 750g



## Fields of application

- 4x4
- ATV
- commercial/construction vehicles
- agriculture
- caravans

**RRP 129,99 €**



# The LED Driving Light Portfolio



# Product Details – LEDDriving® Driving Lights – Lightbar MX140-SP (Multifunctional)

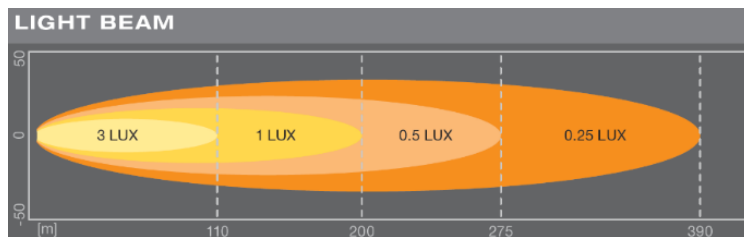


## Features

- 2 fully ECE compliant lighting functions: auxiliary high beam & front position light
- Increased road safety: Up to 200m light beam with 10° beam angle
- Compact and robust: Unbreakable polycarbonate lens to endure heavy duty application, over and under voltage protection
- Integrated driver and thermal management system for a superior lifetime
- 3 high performance OSRAM LED's
- 5-year guarantee<sup>1)</sup>

## Technical Specifications LEDDL102-SP

- Light distance @ 1lx: ~200m
- Hot Lumen: 2000lm
- Color temperature: 6000K
- Beam angle: 10°
- Rated input power: 30/2W
- Input voltage: 12/24V
- IP Protection: IP67
- ECE: R112 (ECE Ref. 10), ECE R7
- EMC/EMI: ECE R10
- Polarity protection
- Cable length: 50cm
- Weight: 750g



## Fields of application

- 4x4
- ATV
- commercial/construction vehicles
- agriculture
- caravans

## Legal information

Driving lights must be installed in pairs for 12/24 V-vehicles

**RRP 129,99 €**



# Product Details – LEDDriving® Driving Lights – Lightbar FX250-SP (Functional)

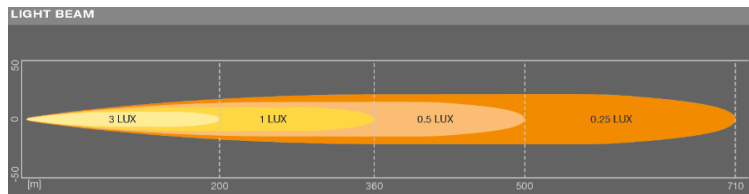


## Features

- Fully ECE compliant auxiliary high beam
- Spot beam pattern: improved far field illumination
- Increased road safety: Up to 360m light beam with 5° beam angle
- Compact and robust: Unbreakable polycarbonate lens to endure heavy duty application, over and under voltage protection
- Integrated driver and thermal management system for a superior lifetime
- 10 high performance OSRAM LED's
- 5-year guarantee<sup>1)</sup>

## Technical Specifications LEDDL103-SP

- Light distance @ 1lx: ~360m
- Hot Lumen: 2700lm
- Color temperature: 6000K
- Beam angle: 5°
- Rated input power: 35W
- Input voltage: 12/24V
- IP Protection: IP67
- ECE: R112 (ECE Ref. 37,5)
- EMC/EMI: ECE R10
- Polarity protection
- Cable length: 100cm
- Weight: 1450g



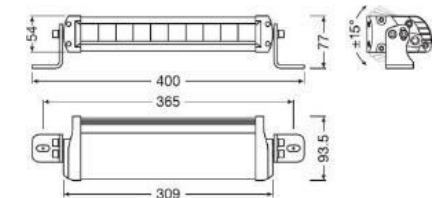
## Fields of application

- 4x4
- ATV
- commercial/construction vehicles
- agriculture
- caravans

## Legal information

Driving lights must be installed in pairs for 12/24 V-vehicles

RRP 179,99 €





# Product Details – LEDDriving® Driving Lights – Lightbar FX250-CB (Functional)

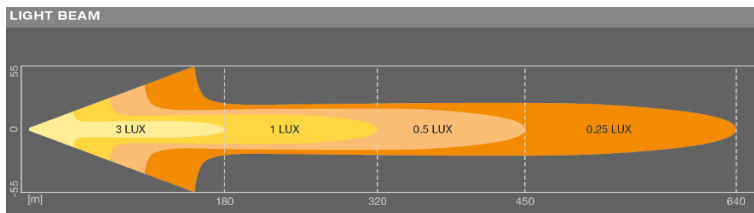


## Features

- Fully ECE compliant auxiliary high beam
- Combo beam pattern: combined near field & far field illumination
- Increased road safety: Up to 320m light beam with 5° beam angle
- Compact and robust: Unbreakable polycarbonate lens to endure heavy duty application, over and under voltage protection
- Integrated driver and thermal management system for a superior lifetime
- 10 high performance OSRAM LED's
- 5-year guarantee<sup>1)</sup>

## Technical Specifications LEDDL103-CB

- Light distance @ 1lx: ~320m
- Hot Lumen: 2700lm
- Color temperature: 6000K
- Beam angle: 5°
- Rated input power: 35W
- Input voltage: 12/24V
- IP Protection: IP67
- ECE: R112 (ECE Ref. 27,5)
- EMC/EMI: ECE R10
- Polarity protection
- Cable length: 100cm
- Weight: 1450g



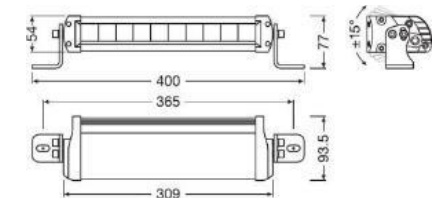
## Fields of application

- 4x4
- ATV
- commercial/construction vehicles
- agriculture
- caravans

## Legal information

Driving lights must be installed in pairs for 12/24 V-vehicles

**RRP 199,99 €**



# Product Details – LEDDriving® Driving Lights – Lightbar FX500-SP (Functional)

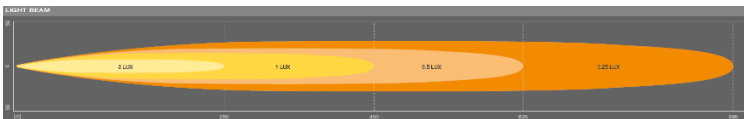


## Features

- Fully ECE compliant auxiliary high beam
- Spot beam pattern: improved far field illumination
- Increased road safety: Up to 450m light beam with 5° beam angle
- Compact and robust: Unbreakable polycarbonate lens to endure heavy duty application, over and under voltage protection
- Integrated driver and thermal management system for a superior lifetime
- 20 high performance OSRAM LED's
- 5-year guarantee<sup>1)</sup>

## Technical Specifications LEDDL104-SP

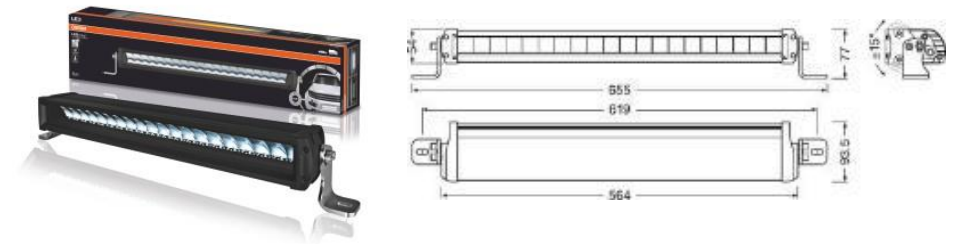
- Light distance @ 1lx: ~450m
- Hot Lumen: 5500lm
- Color temperature: 6000K
- Beam angle: 5°
- Rated input power: 36W
- Input voltage: 12/24V
- IP Protection: IP67
- ECE: R112 (ECE Ref. 45)
- EMC/EMI: ECE R10
- Polarity protection
- Cable length: 100cm
- Weight: 2250g



## Fields of application

- 4x4
- ATV
- commercial/construction vehicles
- agriculture
- caravans

**RRP 249,99 €**



## Legal information

Driving lights must be installed in pairs for 12/24 V-vehicles

# Product Details – LEDDriving® Driving Lights – Lightbar FX500-CB (Functional)

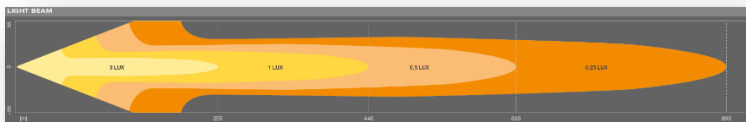


## Features

- Fully ECE compliant auxiliary high beam
- Combo beam pattern: combined near field & far field illumination
- Increased road safety: Up to 440m light beam with 5° beam angle
- Compact and robust: Unbreakable polycarbonate lens to endure heavy duty application, over and under voltage protection
- Integrated driver and thermal management system for a superior lifetime
- 20 high performance OSRAM LED's
- 5-year guarantee<sup>1)</sup>

## Technical Specifications LEDDL104-CB

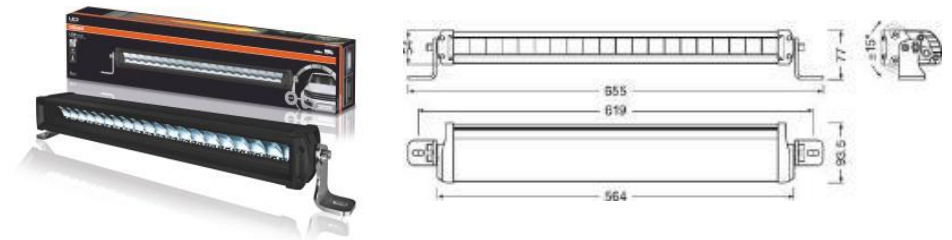
- Light distance @ 1lx: ~440m
- Hot Lumen: 5500lm
- Color temperature: 6000K
- Beam angle: 5°
- Rated input power: 68W
- Input voltage: 12/24V
- IP Protection: IP67
- ECE: R112 (ECE Ref. 45)
- EMC/EMI: ECE R10
- Polarity protection
- Cable length: 100cm
- Weight: 2250g



## Fields of application

- 4x4
- ATV
- commercial/construction vehicles
- agriculture
- caravans

**RRP 279,99 €**



## Legal information

Driving lights must be installed in pairs for 12/24 V-vehicles

# Product Details – LEDDriving® Driving Lights – Lightbar SX180-SP (Slim)

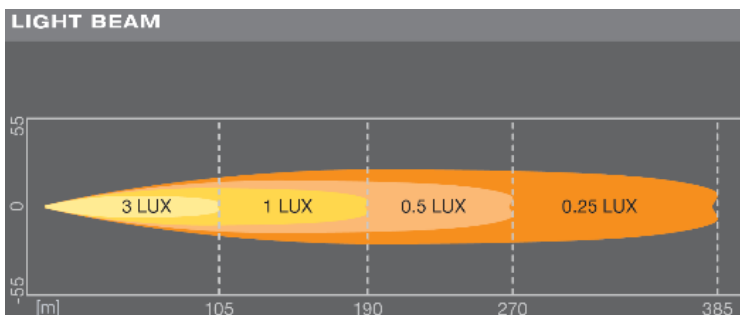


## Features

- Fully ECE compliant auxiliary high beam
- Increased road safety: Up to 190m light beam with 8° beam angle
- Multifunctional application: compact mounting dimensions
- Compact and robust: Unbreakable polycarbonate lens to endure heavy duty application, over and under voltage protection
- Integrated driver and thermal management system for a superior lifetime
- 6 high performance OSRAM LED's
- 5-year guarantee<sup>1)</sup>

## Technical Specifications LEDDL105-SP

- Hot Lumen: 1300lm
- Light distance @1lx: ~190m
- Color temperature: 6000K
- Beam angle: 8°
- Rated input power: 14W
- Input voltage: 12/24V
- Lifetime: 5.000h
- IP Protection: IP69K
- ECE: R112 (ECE Ref. 10)
- EMC/EMI: ECE R10
- Vibration certificate: IEC 60068-2-6
- Ambient temperature: -30° C to 60° C
- Cable length: 45cm
- Weight: 450g



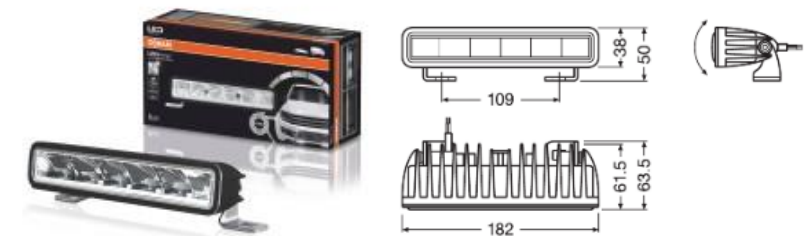
## Legal information

Driving lights must be installed in pairs for 12/24 V-vehicles

## Fields of application

- 4x4
- ATV
- commercial/construction vehicles
- agriculture
- caravans

**RRP 99,99 €**



<sup>1)</sup> Refer to [www.osram.com/am-guarantee](http://www.osram.com/am-guarantee) for precise conditions



# Product Details – LEDDriving® Driving Lights – Lightbar SX300-SP (Slim)

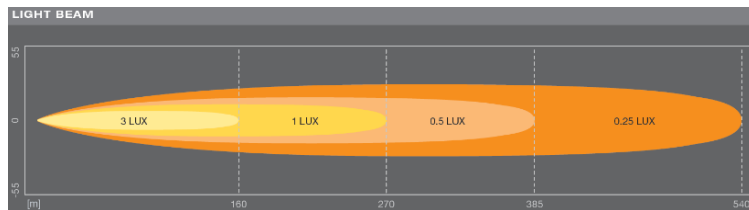


## Features

- Fully ECE compliant auxiliary high beam
- Increased road safety: Up to 270m light beam with 8° beam angle
- Multifunctional application: compact mounting dimensions
- Compact and robust: Unbreakable polycarbonate lens to endure heavy duty application, over and under voltage protection
- Integrated driver and thermal management system for a superior lifetime
- 12 high performance OSRAM LED's
- 5-year guarantee<sup>1)</sup>

## Technical Specifications LEDDL106-SP

- Light distance @ 1lx: ~270m
- Hot Lumen: 2600lm
- Color temperature: 6000K
- Beam angle: 8°
- Rated input power: 29W
- Input voltage: 12/24V
- Lifetime: 5.000h
- IP Protection: IP69K
- ECE: R112 (ECE Ref. 20)
- EMC/EMI: ECE R10
- Vibration certificate: IEC 60068-2-6
- Ambient temperature: -30° C to 60° C
- Cable length: 45cm
- Weight: 700g



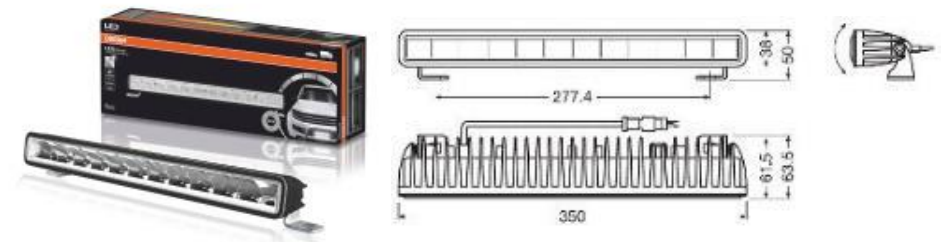
## Fields of application

- 4x4
- ATV
- commercial/construction vehicles
- agriculture
- caravans

## Legal information

Driving lights must be installed in pairs for 12/24 V-vehicles

**RRP 149,99 €**



<sup>1)</sup> Refer to [www.osram.com/am-guarantee](http://www.osram.com/am-guarantee) for precise conditions

# Product Details – LEDDriving® Driving Lights – Lightbar SX500-SP (Slim)

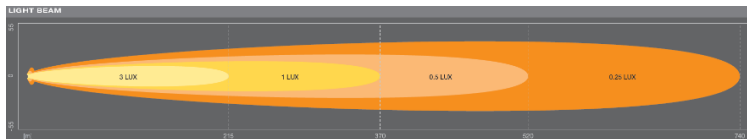


## Features

- Fully ECE compliant auxiliary high beam
- Increased road safety: Up to 370m light beam with 8° beam angle
- Multifunctional application: compact mounting dimensions
- Compact and robust: Unbreakable polycarbonate lens to endure heavy duty application, over and under voltage protection
- Integrated driver and thermal management system for a superior lifetime
- 18 high performance OSRAM LED's
- 5-year guarantee<sup>1)</sup>

## Technical Specifications LEDDL107-SP

- Light distance @ 1lx: ~370m
- Hot Lumen: 3900lm
- Color temperature: 6000K
- Beam angle: 8°
- Rated input power: 46W
- Input voltage: 12/24V
- Lifetime: 5.000h
- IP Protection: IP69K
- ECE: R112 (ECE Ref. 30)
- EMC/EMI: ECE R10
- Vibration certificate: IEC 60068-2-6
- Ambient temperature: -30° C to 60° C
- Cable length: 45cm
- Weight: 1200g



## Fields of application

- 4x4
- ATV
- commercial/construction vehicles
- agriculture
- caravans

**RRP 199,99 €**



## Legal information

Driving lights must be installed in pairs for 12/24 V-vehicles

# Product Details – LEDDriving® Driving Lights – Lightbar FX500-CB SM (Functional)

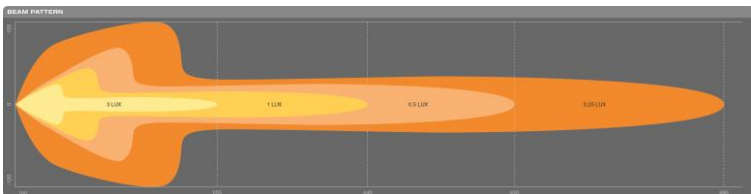


## Features

- Central single mount (SM) possible: double ECE certification
- No pairwise installation necessary: only 1 product needed
- Fully ECE compliant auxiliary high beam
- Combo (CB) beam pattern: combined near field & far field illumination
- Increased road safety: Up to 440m light beam with 5° beam angle
- 20 high performance LED's
- 5-year guarantee<sup>1)</sup>

## Technical Specifications LEDDL104-CB SM

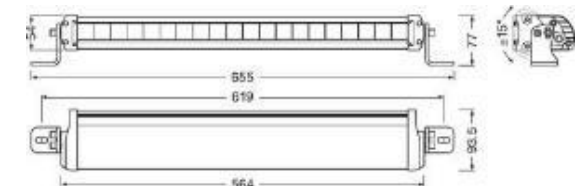
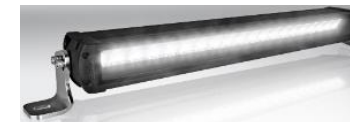
- Light distance @ 1lx: ~440m
- Hot Lumen: 5500lm
- Color temperature: 6000K
- Beam angle: 5°
- Rated input power: 68W
- Input voltage: 12/24V
- IP Protection: IP67
- ECE: R112 (ECE Ref. 25 + 25)
- EMC/EMI: ECE R10
- Polarity protection
- Cable length: 100cm
- Connector: Deutsch
- Weight: 2250g



## Fields of application

- cars
- trucks
- 4x4
- ATV
- commercial/construction vehicles
- agriculture
- caravans

**RRP 349,99 €**



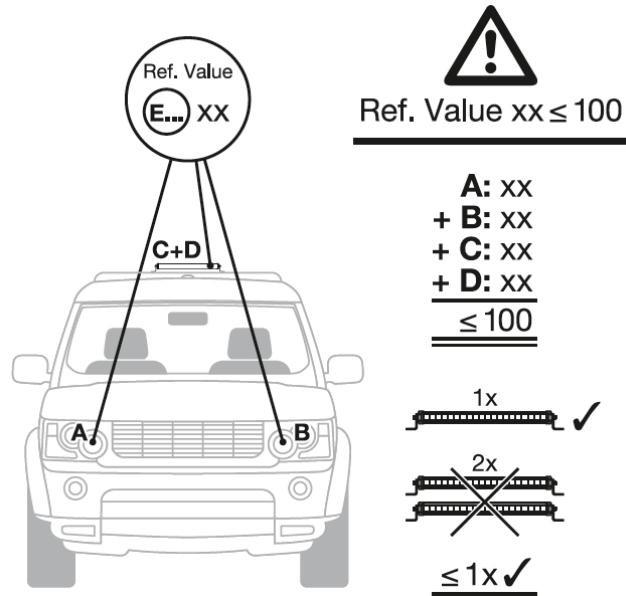
## Legal information

Single Mount – no pairwise installation necessary,  
due to two certified light sources

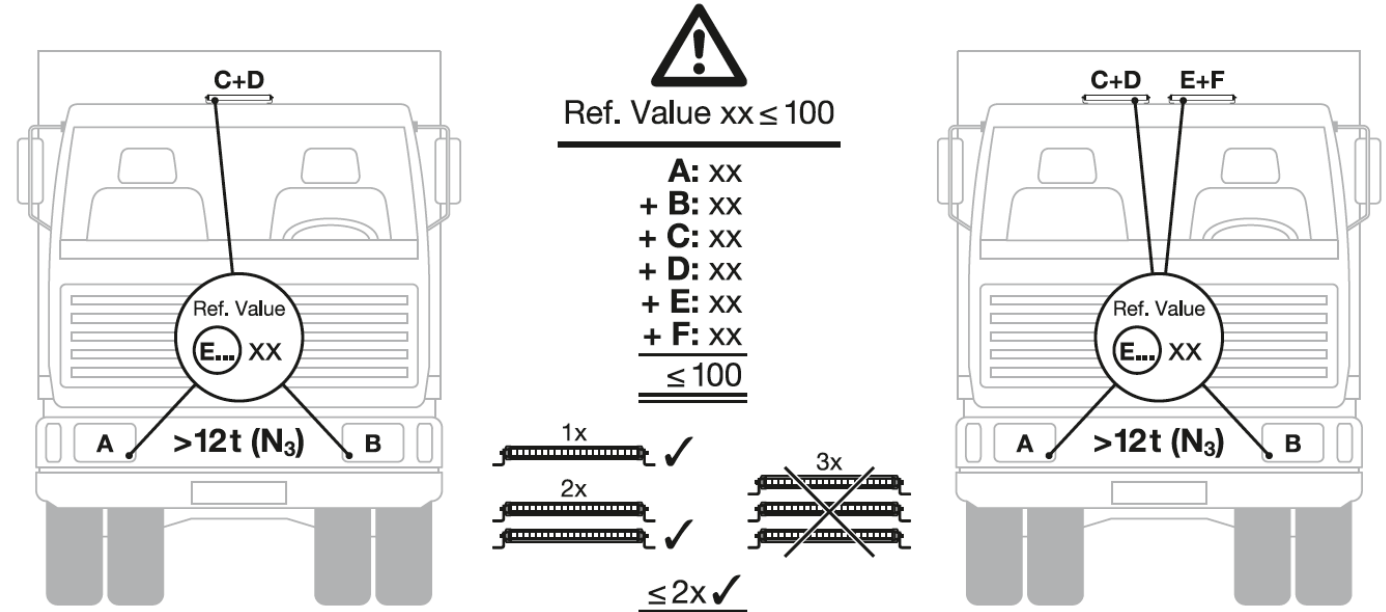
# LEDDriving® Driving Lights

## Mounting Regulations for Cars & Trucks: Ligthbar FX500-CB SM

### Mounting on Cars



### Mounting on Trucks



➤ The Ligthbar FX500-CB SM is legally seen as **2** additional **high beam lights**!

#### Advantages:

1. Customer doesn't have to buy 2 lightbars
2. Stylish, central & legal mounting possible
3. New mounting positions possible





The Quality





# Light is Quality – Competence in the fields of environmental simulation according to DIN EN ISO/IEC 17025



**Water Resistance**  
Highest IP-Protection Class IP69K



**Resistance to cold**  
Tested in cold temperature conditions



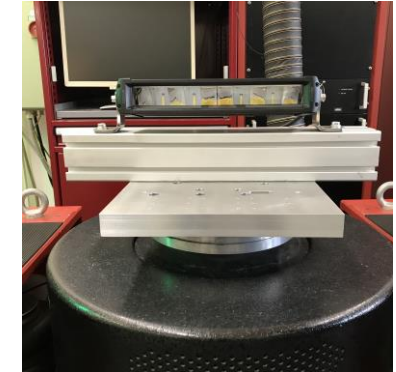
**Dust Resistance**  
Resistant to all kinds of dust particles



**Resistance to heat**  
Tested in hot temperature conditions

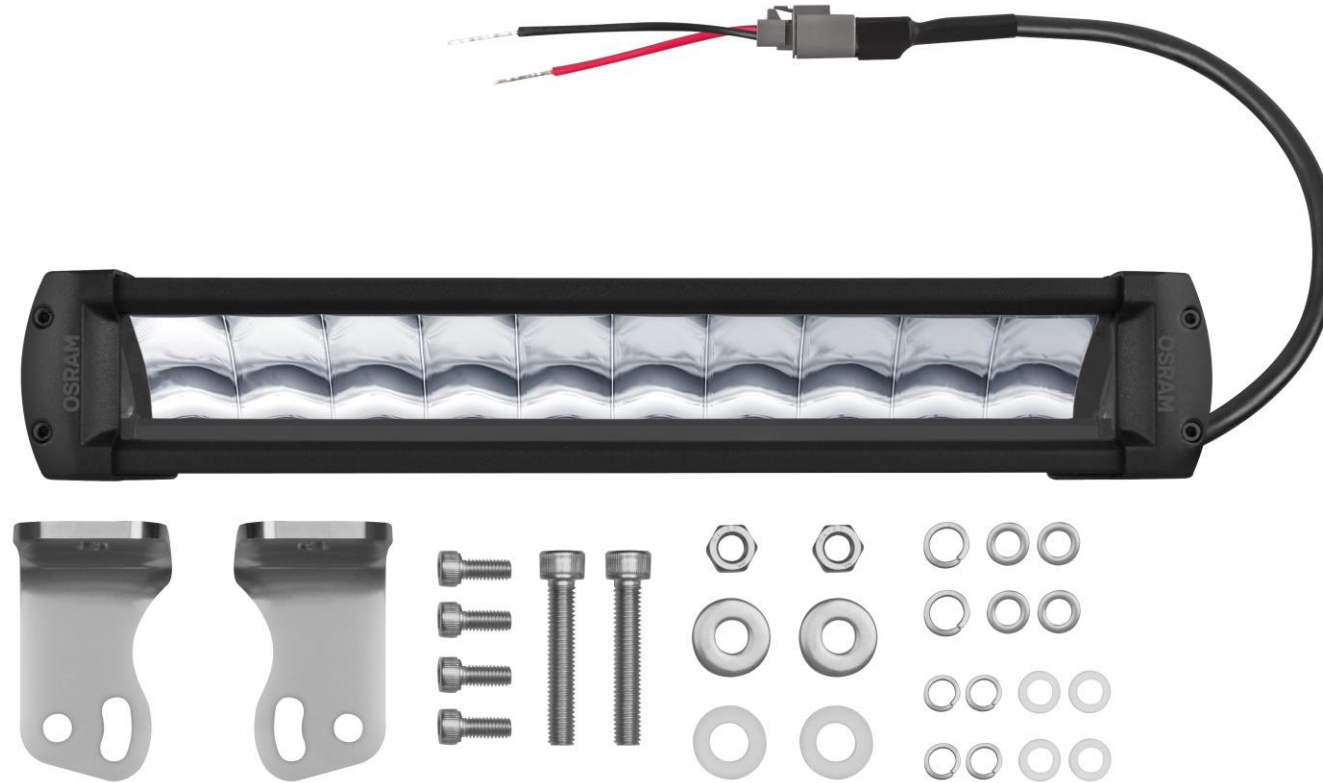


**Resistance to corrosion**



**Vibration and Shock**  
Shock resistance against heavy impacts

# The Mounting Regulations



# LEDDriving® Driving Lights

## Legal Situation in ECE Countries: ECE R112 | low & high beam regulation

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### Mounting on Cars

- Products need to be installed pairwise (national legislation may apply)
- A car must only have **4** high beam light sources (including the headlamps), which are directly wired
- Every high beam fixture has a reference number written on the housing or lense cover which corresponds to the candela value of the light source
- The reference numbers must not exceed the value of 100 per car (headlamps + additional high beam lights)
- No special mounting regulations on width and height

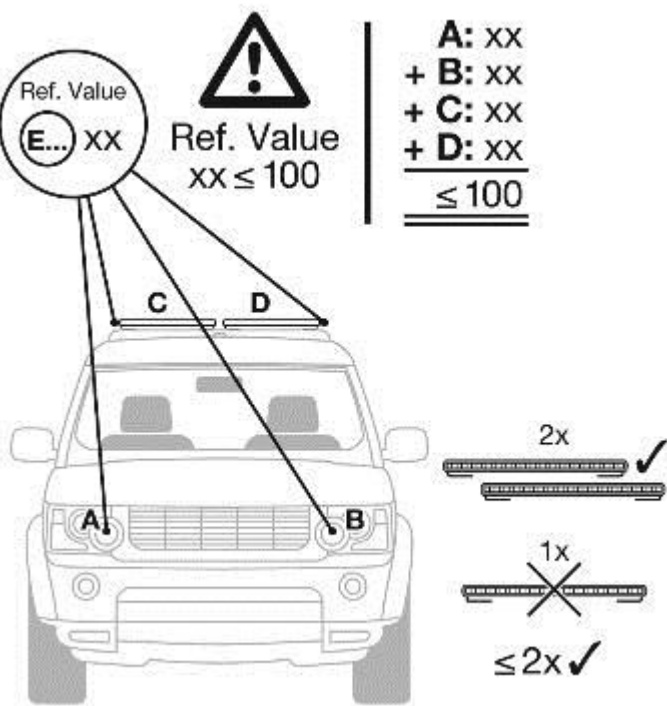
### Mounting on Trucks

- Products need to be installed pairwise (national legislation may apply)
- A truck must only have **6** high beam light sources (including the headlamps), which are directly wired
- Every high beam fixture has a reference number written on the housing or lense cover which corresponds to the Candela value of the light source
- The reference numbers must not exceed the value of 100 per truck (headlamps + additional high beam lights)
- No special mounting regulations on width and height

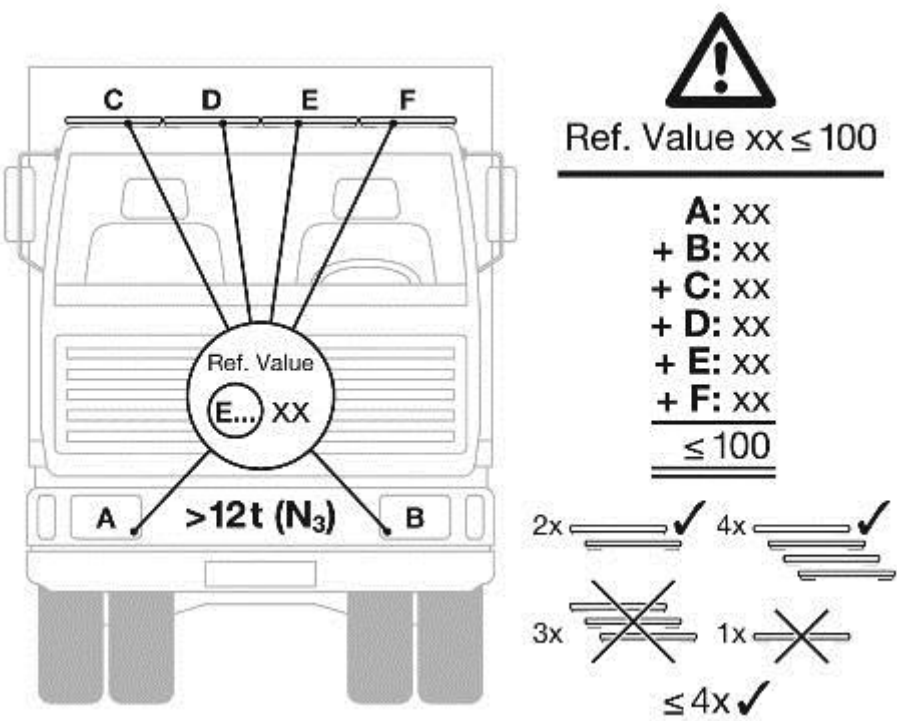
# LEDDriving® Driving Lights

## Mounting Regulations for Cars & Trucks: ECE R112

### Mounting on Cars



### Mounting on Trucks



### Products with ECE R112

Lightbar MX140-SP	
*ECE R7 also applies	
Lightbar FX250-SP	
Lightbar FX250-CB	
Lightbar FX500-SP	
Lightbar FX500-CB	
Lightbar SX180-SP	
Lightbar SX300-SP	
Lightbar SX500-SP	

# LEDDriving® Driving Lights

## Legal Situation in ECE Countries: ECE R7 | position light regulation

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### Mounting on Cars

- Products need to be installed pairwise (national legislation may apply)
- A car must only have **4** position lights (including the headlamps), which are directly wired
- Special mounting regulations on width and height apply (see next slide)

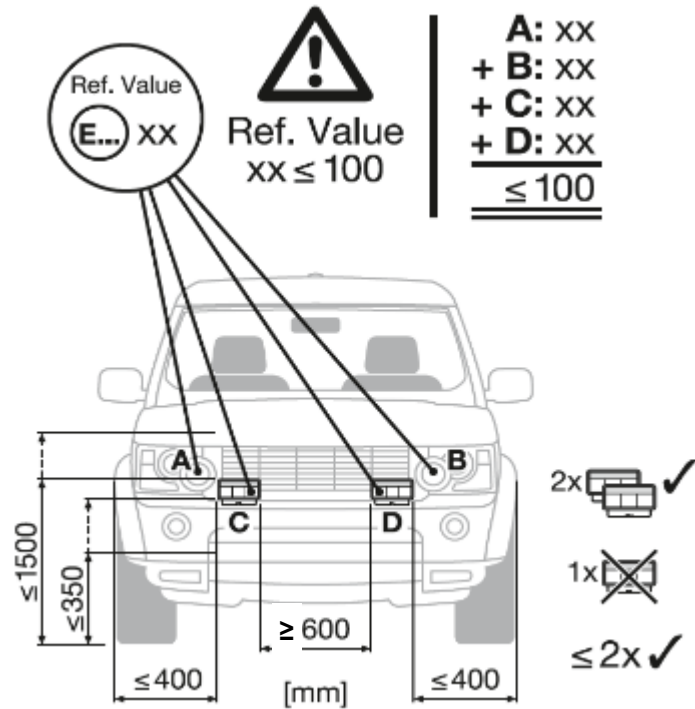
### Mounting on Trucks

- Products need to be installed pairwise (national legislation may apply)
- A truck must only have **4** position light (including the headlamps), which are directly wired
- Special mounting regulations on width and height apply (see next slide)

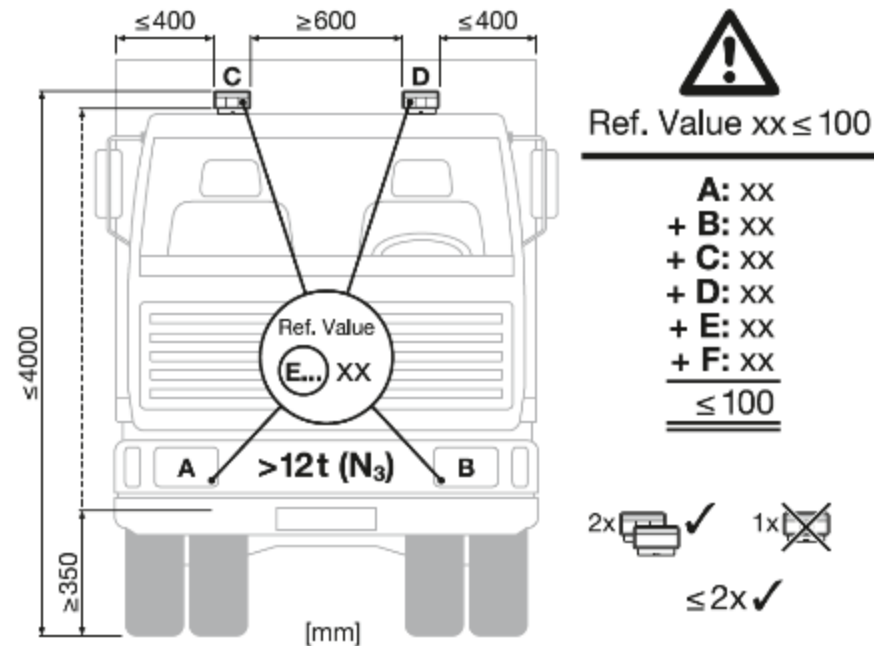


# Mounting Regulations for Cars & Trucks: ECE R7

## Mounting on Cars



## Mounting on Trucks



## Products with ECE R7

## Lightbar MX140-SP



# LEDDriving® Working Lights

## Legal Situation in Germany

### Arbeitsscheinwerfer

- Zusatzscheinwerfer, ohne ECE Zulassung, können als „offroad“ Arbeitsscheinwerfer, welche laut StVZO §52 (7), an jedem Fahrzeug erlaubt sind, verkauft werden
- Arbeitsscheinwerfer dürfen während der Fahrt nicht in Betrieb genommen werden (off-road only)

### Auszug StVZO §52 (7)

(7) Mehrspurige Fahrzeuge dürfen mit einer oder mehreren Leuchten zur Beleuchtung von Arbeitsgeräten und Arbeitsstellen (Arbeitsscheinwerfer) ausgerüstet sein. Arbeitsscheinwerfer dürfen nicht während der Fahrt benutzt werden. An Fahrzeugen, die dem Bau, der Unterhaltung oder der Reinigung von Straßen oder Anlagen im Straßenraum oder der Müllabfuhr dienen, dürfen Arbeitsscheinwerfer abweichend von Satz 2 auch während der Fahrt eingeschaltet sein, wenn die Fahrt zum Arbeitsvorgang gehört. Arbeitsscheinwerfer dürfen nur dann eingeschaltet werden, wenn sie andere Verkehrsteilnehmer nicht blenden.

### Produkte ohne ECE Zulassung

Cube MX85-SP	
Cube MX85-WD	
Lightbar MX140-WD	

# Find the right ECE-compliant product for your vehicle – ECE Reference Number overview

Product Category	Product Name	Product Reference	ECE Reference Number
LED working lights	LEDriving® CUBE MX85-WD	LEDDL101-WD	-
LED working lights	LEDriving® CUBE MX85-SP	LEDDL101-SP	-
LED working lights	LEDriving® LIGHTBAR MX140-WD	LEDDL102-WD	-
LED driving lights	LEDriving® LIGHTBAR MX140-SP	LEDDL102-SP	10
LED driving lights	LEDriving® LIGHTBAR FX250-SP	LEDDL103-SP	37.5
LED driving lights	LEDriving® LIGHTBAR FX250-CB	LEDDL103-CB	27,5
LED driving lights	LEDriving® LIGHTBAR FX500-SP	LEDDL104-SP	45
LED driving lights	LEDriving® LIGHTBAR FX500-CB	LEDDL104-CB	45
LED driving lights	LEDriving® LIGHTBAR SX180-SP	LEDDL105-SP	10
LED driving lights	LEDriving® LIGHTBAR SX300-SP	LEDDL106-SP	20
LED driving lights	LEDriving® LIGHTBAR SX500-SP	LEDDL107-SP	30

# The Portfolio Outlook

