



Your professional LED-Solar-Lighting supplier.

# KLEIN-LED-SOLAR-SOLUTIONS KLS-SERIES

SHINES THE NIGHT AWAY  
WITH  
LIGHT AND SAFETY FOR EVERYONE



# Highlights

As we intend to provide a sophisticated and innovative product, we have spent a lot of time and enthusiasm in the development of our Klein-LED-Solar-Series.

In fact, our KLS-Series is the first LED-Solar-Series, which combines all elements (LEDs, PV-module and the battery pack) into a perfect product for a various applications.

The integrated intelligence is the key to this unique product assortment, ensuring minimized power consumption at a high level of luminosity, at the same time an outstanding durability of the components keeping the maintenance costs at a minimum.

It is a perfect solution for off-grid areas and areas with unstable power supply.

Our products are patent-registered.

# Components

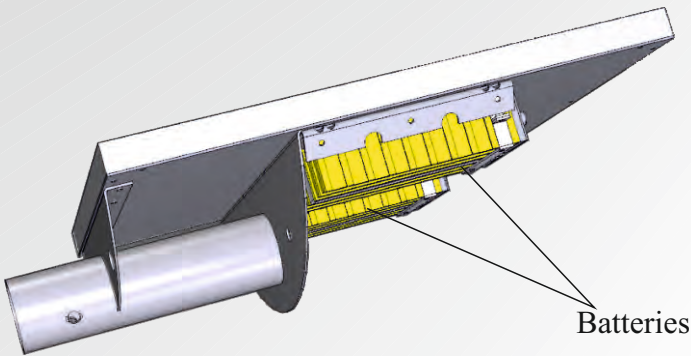
## LED modules

For best illumination results we use highly efficient LED-modules with a light color of 6500K +/- 300K. The **patented optics** bundles, focusses and multiplies the luminance of the light! So we can reach a luminous efficiency of 149 lm/W. The LEDs are rated as photobiological safety risk group 1 and have a lifespan up to 100.000 h. Our LED Modules are 100% insect friendly.



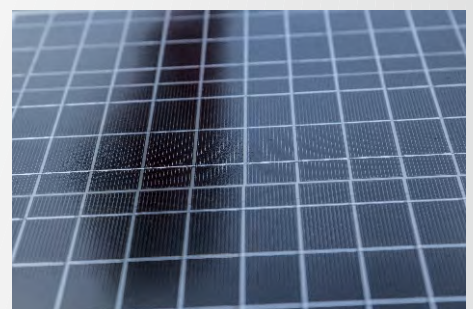
## Battery

Depending on your requirements, we equip our lighting systems with one, two or more highly durable LiFeYPO<sub>4</sub>-Batterys with a total power of 40 Ah each. This is enough power to illuminate at least several days even without solar radiation. It has a lifespan up to 13 years.



## Solar panel

For optimal charging results we use monocrystalline solar modules. They are TÜV certified and have a lifespan up to 25 years with an attenuation of less than 20%. Optionally, an additional module can be connected!





# STREETLIGHT KLSS c5M & x5M



c5M



x5M

## Advantages

- illumination of roadtypes S2 – S4 and ME5-ME6 according to DIN EN 13201 possible
- easy installation - no wiring necessary
- intelligent control, solar module and battery pack in one case
- 5 patented, highly efficient LED-Modules
- integrated charge controller and twilight switch
- customer-specific programming possible
- single batterie versions c5Ms & x5Ms
- optional an additional panel can be connected
- protected by patent

**Made in Germany!**

# STREETLIGHT

## KLSS c5M(s) & x5M(s)

MODEL NO.	KLSS x5Ms / c5MS	KLSS x5M / c5M
<b>BASIC DATA</b>		
LED	5 MODULYS each 1.5 Watt	5 MODULYS each 1.5 Watt
Solar panel	30 Watt monocrystalline	30 Watt monocrystalline
Battery	1 Battery with 40 Ah	2 Batteries each 40 Ah
<b>SETTING DATA</b>		
Install height	approx. 3-9 meters	approx. 3-9 meters
Solar charging	< 5 hours	< 10 hours
Lighting time (without solar radiation)	> 1 1/2 nights (à 12 h)	> 3 nights (a. 12 h)
Typ. Illuminance	up to 53 lx	up to 53 lx
Typ. lifetime	> 15 years	> 15 years
Protection	IP65	IP65
Material	stainless steel (V2A) and aluminium anodized	stainless steel (V2A) and aluminium anodized
Size	460x600x170mm	460x600x170mm
Work temperature	-30°C to +60°C	-30°C to +60°C
Humidity	15% up to 100%	15% up to 100%



# ADDITIONAL PANEL FOR KLSS s5M & c5M



AP

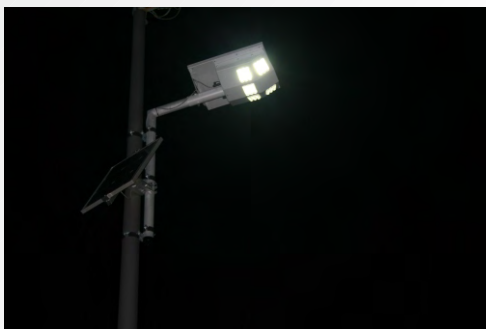
MODEL NO.	KLSS AP
BASIC DATA	
Solar panel	30 Watt monocrystalline
SETTING DATA	
Solar charging time	reduces the charging time by 40%
Typ. lifetime	> 15 years
Protection	IP65
Size[mm] (panel)	455x510x25mm
Work temperature	-30°C to +60°C
Humidity	15% up to 100%

# KLSA

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## KLEIN-LED-SOLAR-SOLUTIONS KLS-SERIES

# EXAMPLES FOR OUR KLSS x5M & AP IN OPERATION

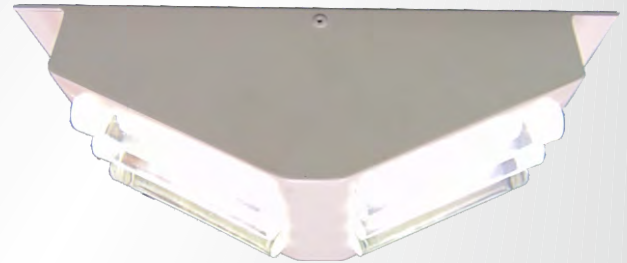


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[www.energielandschaft.de](http://www.energielandschaft.de)



# ILLUMINATION FOR BUS STOPS

## KLSS B2M



## Advantages

- illumination of all kinds of bus stops
- easy to install within 30 minutes due to plug-and-play-technology
- installation on flat roof or mast possible
- complies with ecodesign directive (EG) Nr. 245/2009
- intelligent control, solar module and battery pack in one standing
- 2 patented, highly efficient LED-Modules
- integrated charge controller and twilight switch
- customer-specific programming possible
- protected by patent

**Made in Germany**

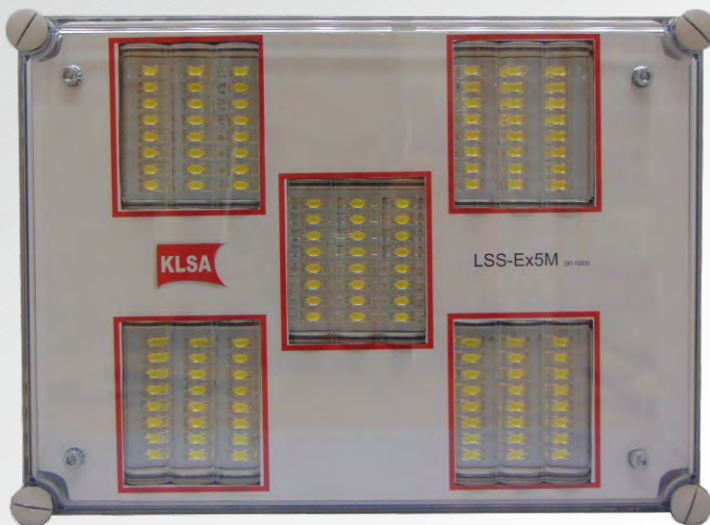


# ILLUMINATION FOR BUS STOPS KLSS B2M



MODEL NO.	KLSS b2M
BASIC DATA	
LED	2 MODULYS each 1.5 Watt
Solar panel	60 Watt monocrystalline
Battery	2 Batteries each 40 Ah
SETTING DATA	
Solar charging time	< 5 hours
Lighting time (without solar radiation)	> 8 days (à 12 h)
Typ. Illuminance	up to 80 lx
Typ- lifetime	>15 years
Protection	IP 65
Material	V2A / AL powder-coated galvanized steel
Size	910x520x510mm
Work temperature	-30 °C to +60 °C
Humidity	15% up to 100%

# ILLUMINATION FOR POTENTIAL EXPLOSIVE ATMOSPHERES KLSS ex5M



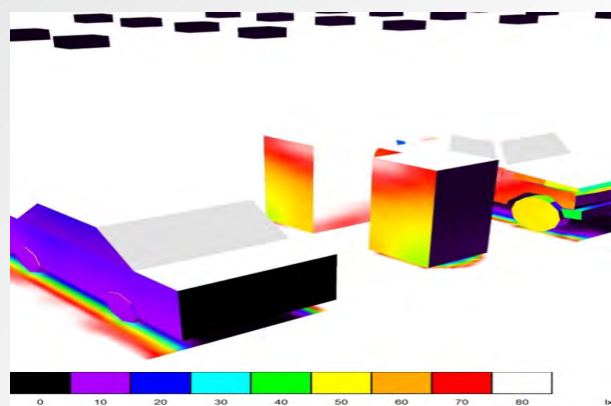
## Advantages

- illumination of gas stations and all other ex-areas
- complies with ecodesign directive (EG) Nr. 245/2009
- intelligent control, LEDs and battery pack in one case
- 5 patented, highly efficient LED-Modules
- integrated charge controller and twilight switch
- easy to install due to plug-and-play-technologie
- protected by patent

**Made in Germany**



# ILLUMINATION FOR POTENTIAL EXPLOSIVE ATMOSPHERES KLSS ex5M



MODEL NO.	KLSS ex5M
BASIC DATA	
LED	5 MODULYs each 1.5 Watt
Solar panel	30 Watt monocrystalline
Battery	2 Batteries each 40 Ah
SETTING DATA	
Installation height	approx. 3-9 meters
Solar charging time	< 10 hours
Lighting time	> 3 nights (each 12h) without solar radiation
Typ. Illuminance	up to 100 lx
Typ. lifetime	> 15 years
Protection	ex
Material	Polycarbonat box
Size	460x600x170mm
Work temperature	-30°C to +60°C
Humidity	15% up to 100%



# KLSA

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