



klein elektronik
GmbH —
Salmtal
www.klein-elektronik.de

KLSS-Series
KLSS x5M(s) & KLSS c5M(s)



Technical information V3.4_EN

Date: 10.04.2017

1 Introduction

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

In fact, our LSS is the first LED-Solar-Streetlight, which combines all elements (LEDs, PV-module and the battery pack) in one enclosure and is also able to illuminate according to EN 13201.

The integrated control, as well as the patented LED-modules, are the key to this unique product range, which impress with minimal power consumption and at the same time impressive illumination as well as a long service life.

Our products are a perfect solution for all untapped areas.

All our products are protected by patent.

2 Components

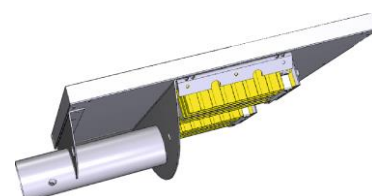
2.1 LED modules



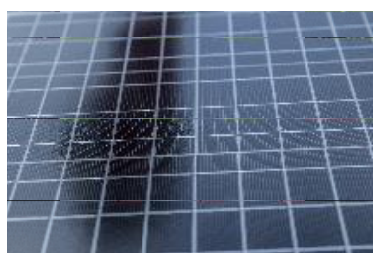
For best illumination results we use highly efficient LED-modules with a light color of 6500K +/- 300K. The patented optics bundles, focusses and multiplies the luminance of the light! So we can reach a luminous efficiency of 149 lm/W. The LEDs are rated as photobiological safety risk group 1 and have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

2.2 Battery

Depending on your requirements, we equip our lighting systems with one, two or more highly durable LiFeYPO₄-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.



2.3 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!

3 Technical data

3.1 Solar panel

Typ / power	monocrystalline / 30 Watt
Typ. lifetime	up to 10 years with 90% and up to 25 years with 80% powerloss.

3.2 Energy management

Charge controller	special developed an produced by KLSA
Light controll	optimized energy management – different light programs
Operating time	up to 10 days in bad weather
Installation	installed in the case

3.3 Battery

Typ	LiFeYPO ₄ (Lithium iron yttrium phosphate battery)
Capacity	c5M & x5M: 2 x 40Ah c5Ms & x5Ms: 1 x 40Ah
Installation	installed in the case
Typ. lifetime	13 years

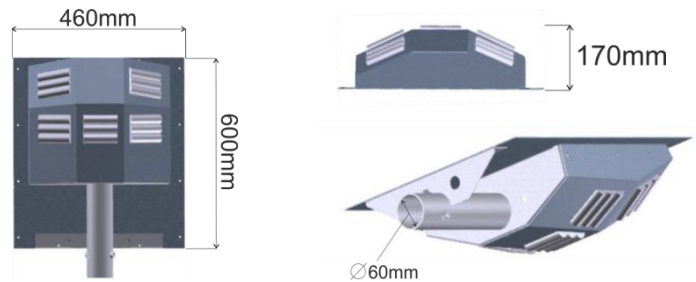
3.4 LED module

Typ	LED-Modul (protected by patent)
Efficiency	149 lm / Watt
Colour temperature	6500 K (nightadaptive view)
Typ. lifetime	approx. 100.000h
More	insect friendly conform to EG Nr. 245/2009

3.5 Case

Protection	IP65
Case	Stainless steel V2A / AL powder-coated standard: RAL 7003 (grey, customization possible)
Mast mounting	mast fixation 60mm Ø

Dimensions



Weight	approx. 13,5 kg
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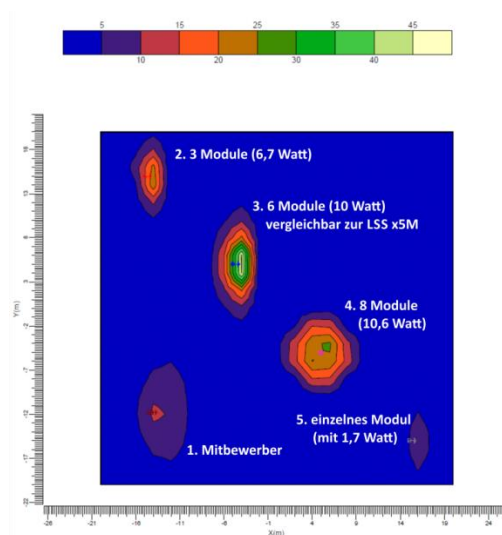
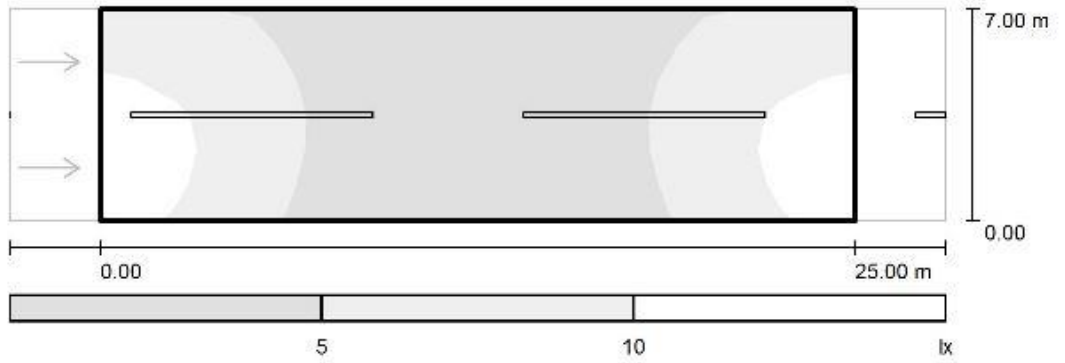
3.6 Instalation

Permissible ambient temperature	-40°C up to +60°C
Relative humidity (U air)	15% up to 90%
Max. altitude above sea level	2000m

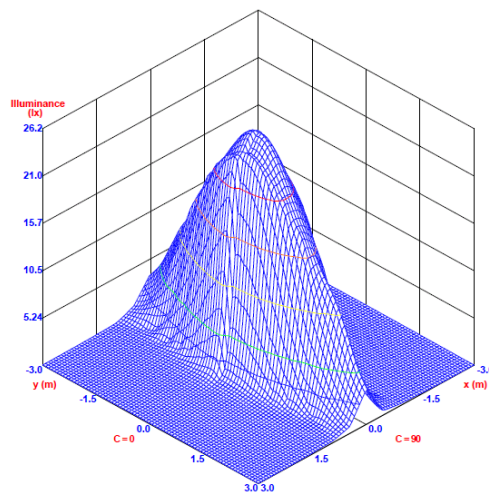
3.7 Guaranty and standards

Guaranty	2 years
Declaration of Conformity (CE)	yes
Standards	EN 62124:2005-10 EN 55015:2009-11 EN 61547:2010-03

4 Illumination



IsoLux 3D



5 Models



KLSS x5M(s)

BNR: 90-1056 (90-1055)



KLSS c5M(s)

BNR: 90-1056-B (90-1055-B)



Additional panel KLSS AP (optional)

BNR: 90-1057



**Your professional LED-Solar-Lighting supplier.
Made in Germany.**

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