

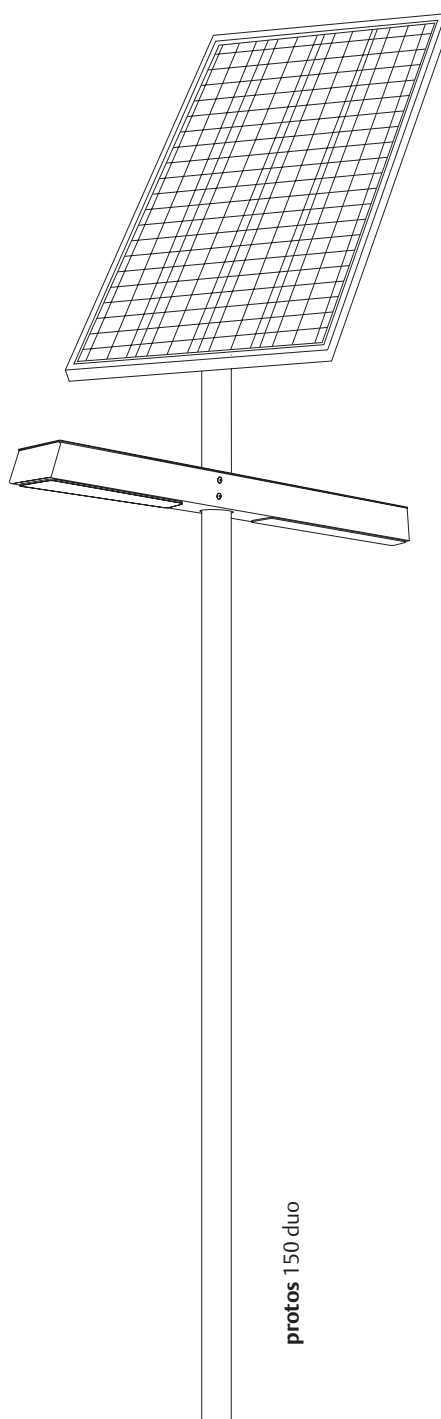
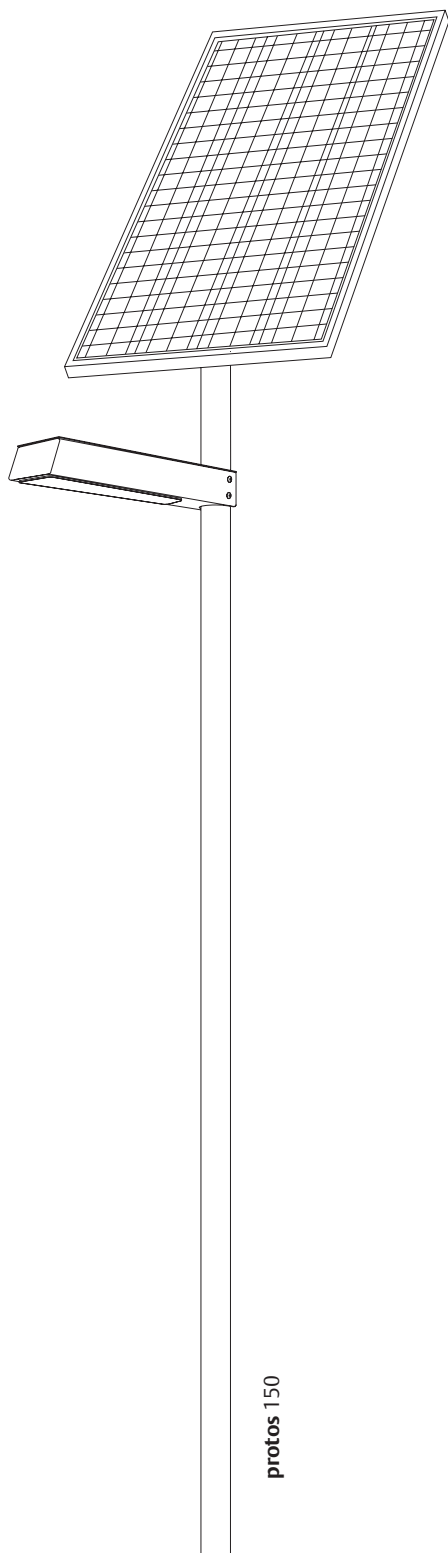
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**DATA SHEET V.1 | 2017**

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**protos150 | protos150 duo**

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# 1

## protos

### FUNCTIONAL SOLAR LAMP WITH APPEALING DESIGN

#### USAGE

It is „functional with appealing design“ and it is called protos. It is a self-sustaining, exterior solar LED lamp with various technical options. The energy supply is based on an efficient mono-crystalline photovoltaic module, the inclination of which can be adjusted. Intelligent controls with independent day- and night-time recognition enables different time programs. Given the short assembling and disassembling times, protos is excellently suitable as street lighting or for temporary usage wherever cordless lighting is required, such as construction sites, parking lots, access roads, outdoor events or company premises.

The high-efficiency LEDs and advanced optical components ensure impressive light distribution. protos meets the country-specific light-technical requirements of DIN 13201 for residential streets with low traffic, cycle paths and footpaths, parking lots and company premises.

#### FUNCTION

The integrated battery is charged during daytime by the efficient photovoltaic solar module. At nightfall, the LED light module is automatically activated.

The light output of a solar lamp is defined by the incident solar irradiation at the respective location, which is why the quality of the individual components and their optimum interaction play a decisive role.

The LiFePo<sub>4</sub> battery used in protos is shored in the ground together with the post so that an optimum, constant temperature is achieved. The long service life of the battery and efficient theft protection are the results.

# 2

## TECHNICAL DATA

### SOLAR MODULE

<b>Solarmodule</b>	mono- or poly-cristalline silicon cells
<b>Efficiency</b>	17%
<b>Module performance</b>	150 W
<b>Module dimensions</b>	1508 mm x 680 mm x 45 mm

### BATTERY (IN THE POLE)

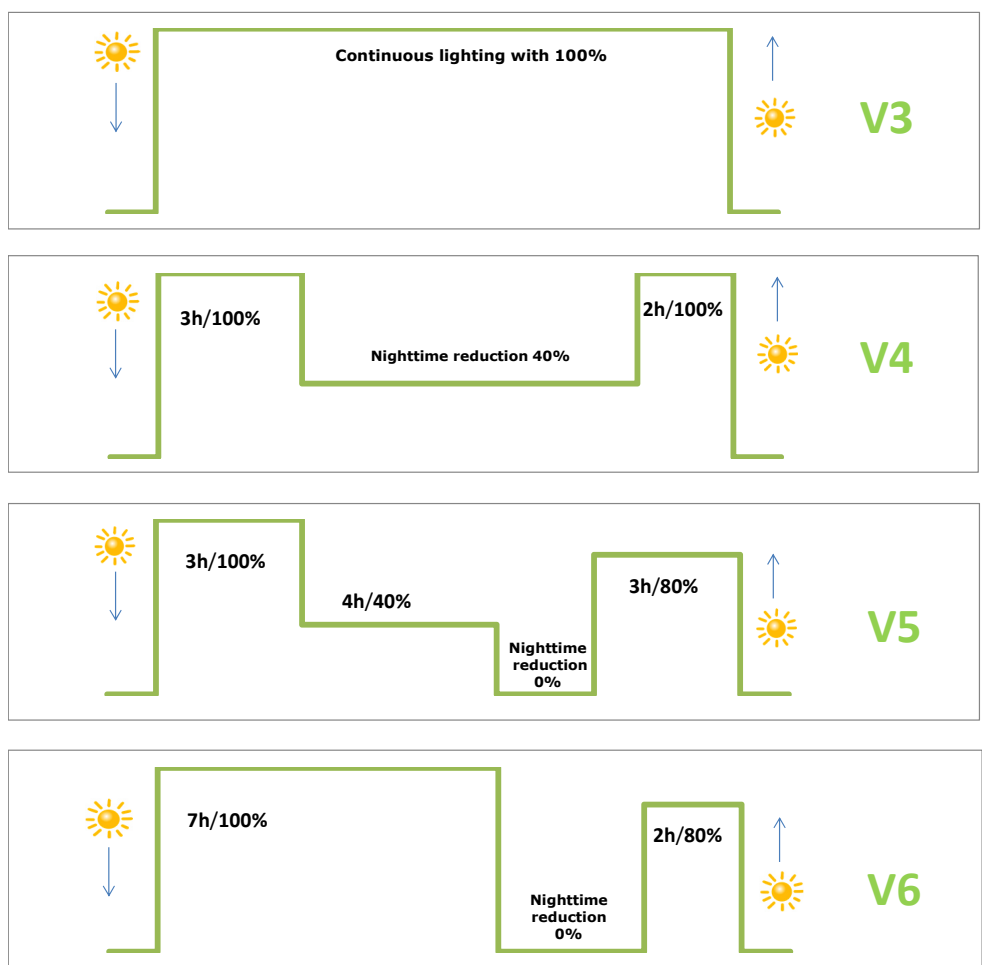
<b>Battery</b>	LiFePo4 / 12V 36Ah up to 66 Ah
<b>Operating temperature</b>	-20°C to +60°C
<b>Battery life</b>	Cycle stability 8 to 10 years

### LIGHTS

<b>Max. luminous flux</b>	8000lm (Bregenz site, 47 degrees latitude:1200lm)
<b>Efficiency</b>	max. 200lm/W
<b>LED module / max. watts</b>	100W
<b>Max. back-up time</b>	18 days (Bregenz site, 47 degrees latitude: 7 days) „Intelligent plus Modus“ 25 days (Bregenz site: 18 days)
<b>Colour temperature</b>	4000 K
<b>Optics   Light distribution</b>	situational
<b>Life of LED</b>	> 90000 h
<b>Protection class</b>	IP65
<b>Others</b>	insect neutral light

**ENERGY AND TIME MANAGEMENT**

**Standard factory setting V5**



## DIMENSIONS

<b>Total height from ground level</b>	depending on the position of the solar module approximately 5200 mm
<b>Height of light from ground level</b>	4900 mm
<b>Total length of the pole</b>	6300 mm
<b>Weight</b>	70 kg
<b>Length of the pole in the ground</b>	1200 mm
<b>Material pole</b>	galvanized and powder-coated steel „Sparkling iron effect dark“
<b>Solar module dimensions</b>	1508 mm x 680 mm x 45 mm
<b>Weight</b>	11.8 kg
<b>Light housing dimensions</b>	725 mm x 105 mm x 92 mm
<b>Weight</b>	2kg
<b>Wind load</b>	up to 90km/h

## MAINTENANCE CYCLES | WARRANTY

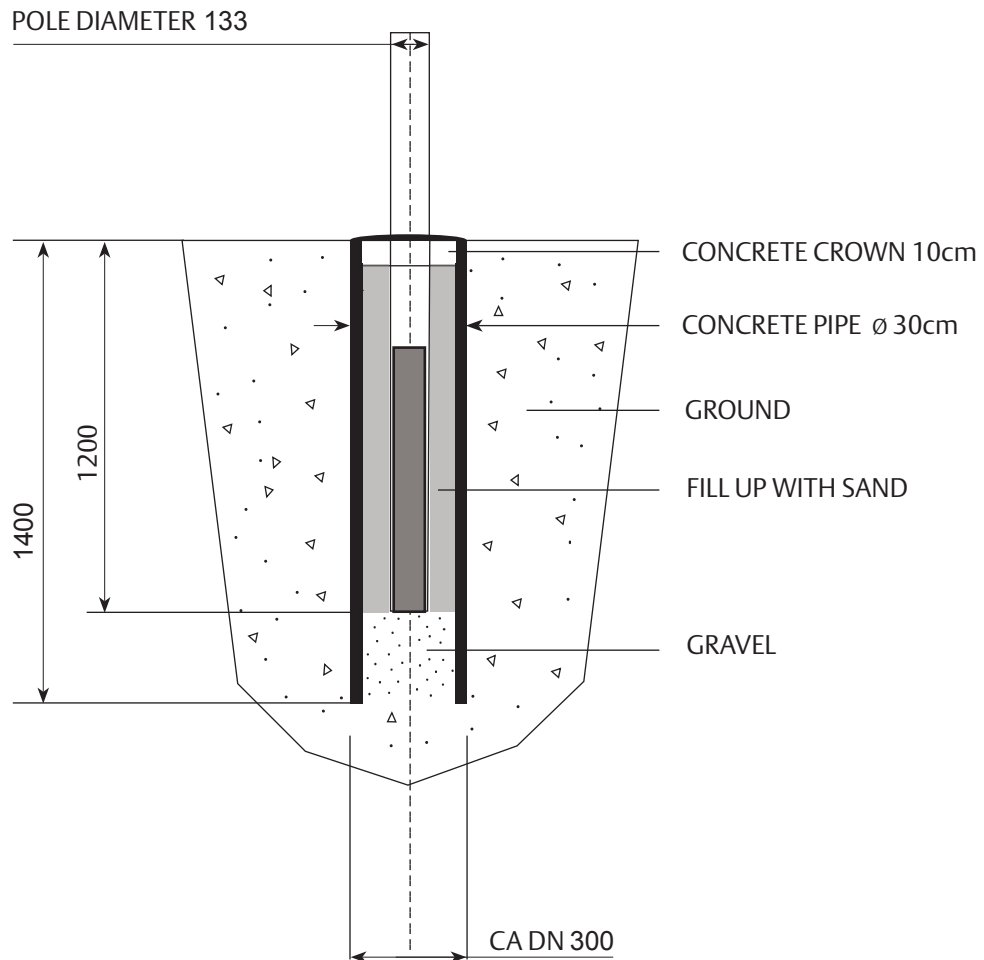
<b>Battery change recommended</b>	after 8 years
<b>LED change recommended</b>	after 12 years
<b>Material warranty</b>	2 years (incl. Battery)
<b>PV module warranty (the warranty period starts at the manufacturing date)</b>	2 years with 100 % product warranty 5 years warranty on 90 % minimum output 10 years warranty on 80% minimum output

(technical changes reserved)

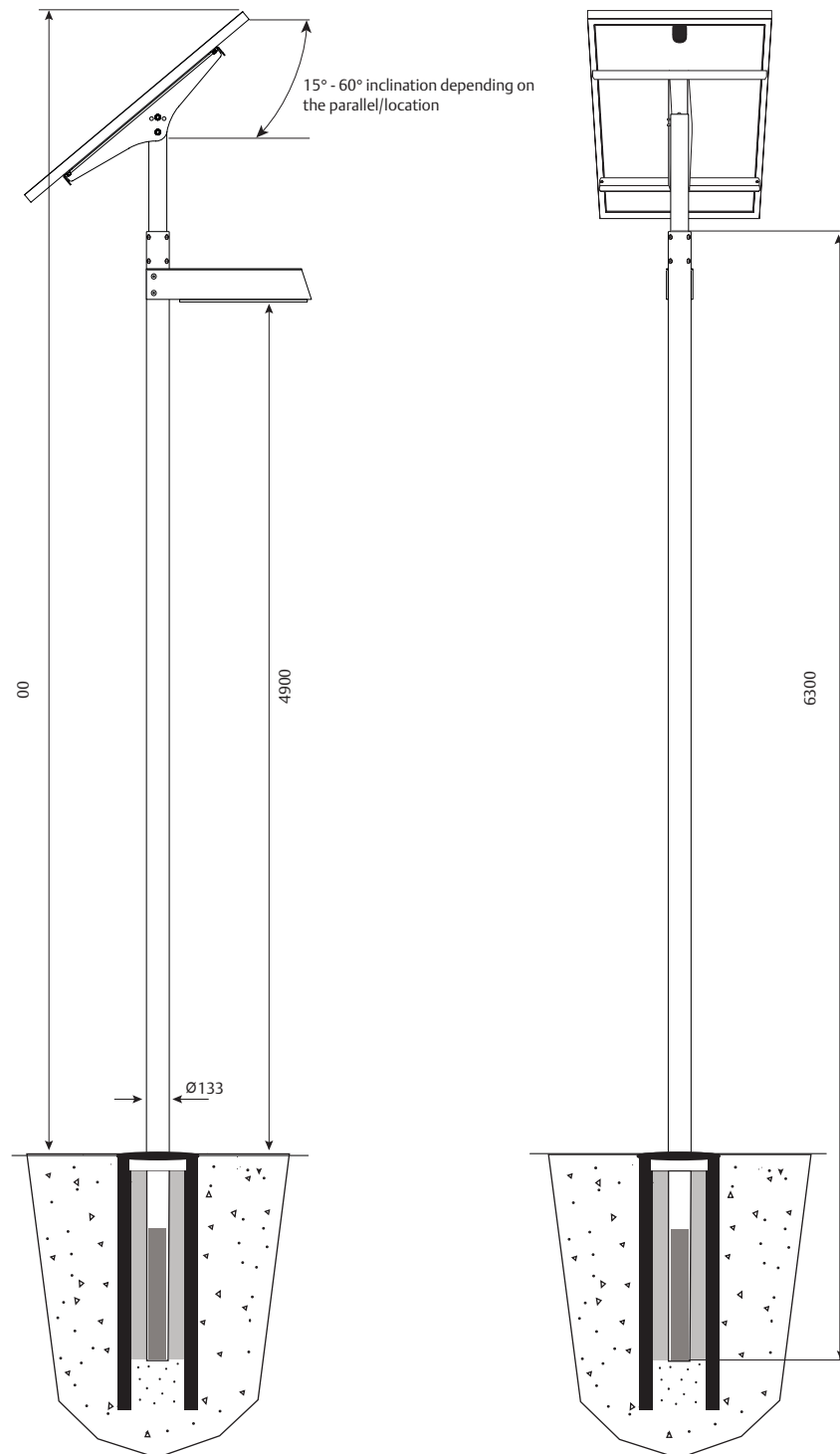
# 3

## OPTIONS FOR ASSEMBLY

OPTION 1 - PIPE FOUNDATION

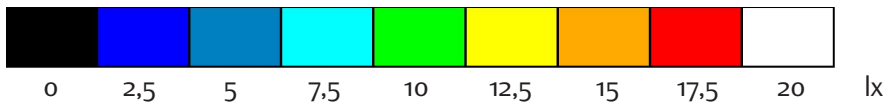
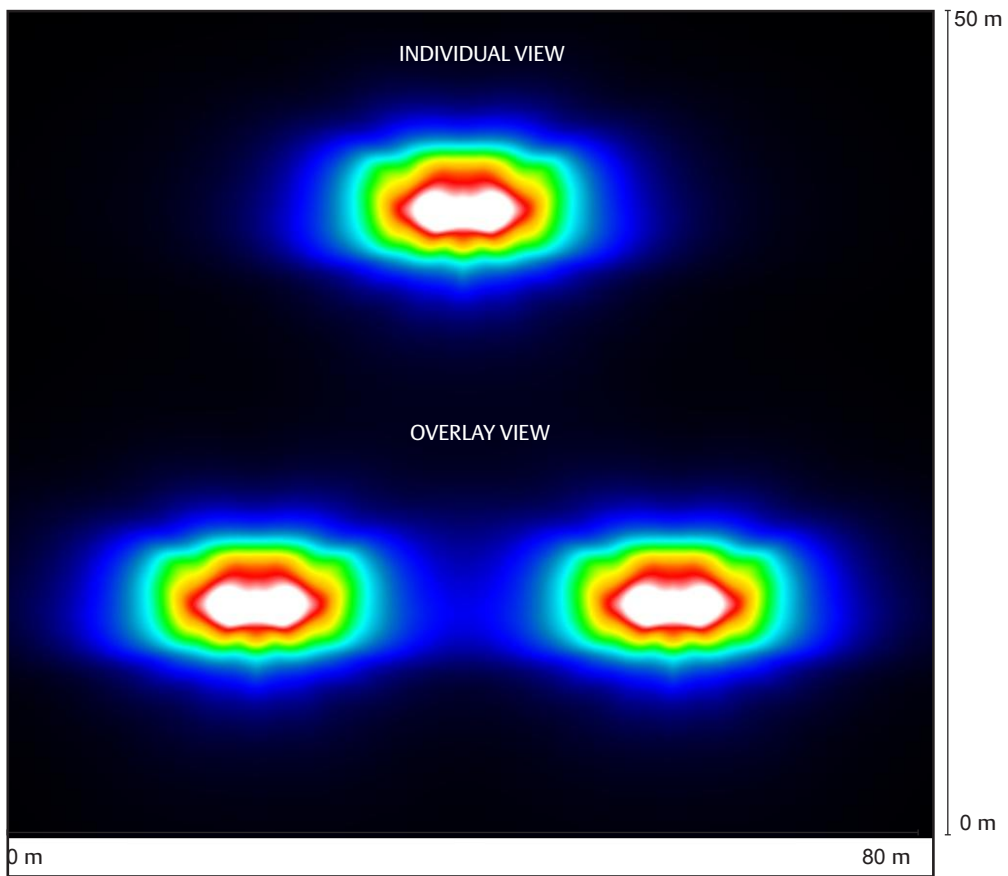


DIMENSIONS



DIALUX LIGHT DISTRIBUTION CURVE (LDC)

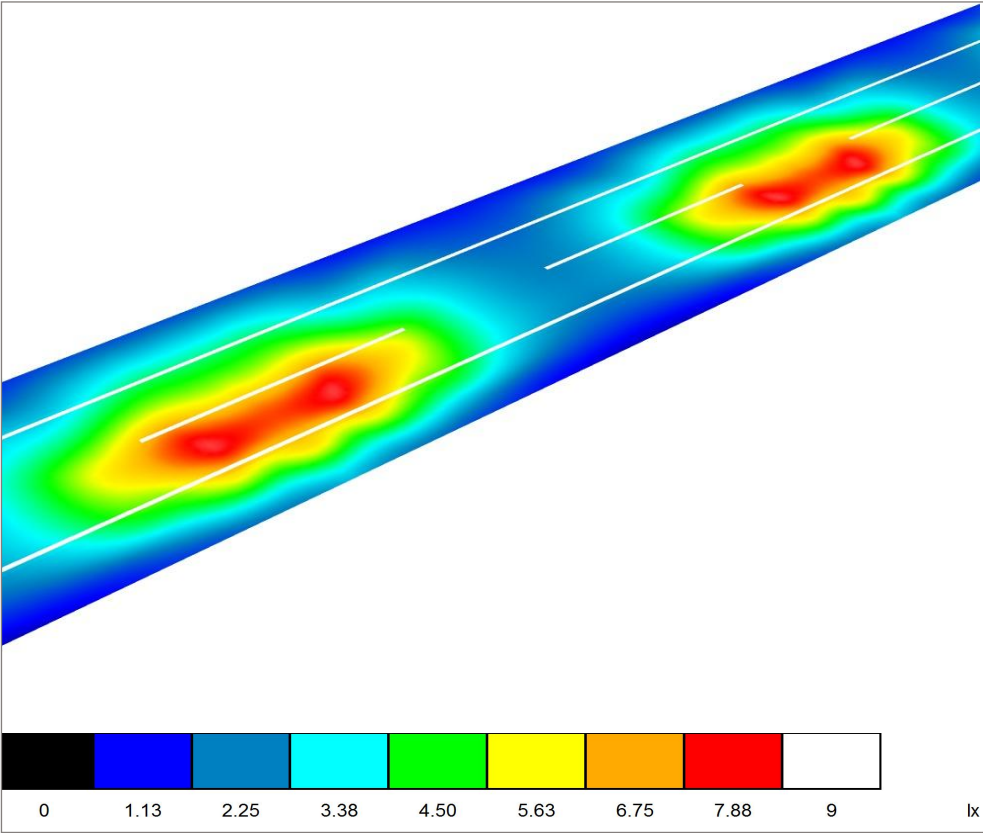
EXAMPLE: POLE DISTANCE 35M, LUMINOUS CURRENT 3000LM





LIGHTING PLANNING

EXAMPLE OF LIGHTING PLANNING:  
 ROAD 5M IN WIDTH, 30M SPACING BETWEEN LIGHTS



	$E_{av}$ [lx]	$E_{min}$ [lx]
<b>Calculated value</b>	4,30	2,16
<b>Value required to fulfil lighting class S6</b>	>2,00	>0,60
	<b>OK</b>	<b>OK</b>

