

SOZELLA

Solar and hybrid post top luminaire



LOCALLY
manufactured

SOZELLA



IP 66

IK 08



Modern post top for off-grid and hybrid lighting applications

The SOZELLA solar post top luminaire provides a modern design with clean lines using state-of-the-art technology and is suitable for most urban lighting applications.

This solar luminaire is designed to operate independently of the electrical grid. It relies solely on solar energy for power, eliminating the need for external electricity sources or wiring infrastructure. This makes it highly suitable for remote locations, areas with unreliable power supply, or regions where grid connection is difficult or costly.

The lighting system is designed to be efficient and reliable, with low maintenance requirements and no electricity costs.

The luminaire is made of high-quality materials, such as ASA and die-cast aluminium, to ensure long-lasting durability and resistance to weather and other environmental factors. The design of the luminaire is very specific to enhance the harvesting of the sun for optimal charging of the battery.

In addition to its energy efficiency and durability, the SOZELLA post top luminaire is also a sustainable lighting solution that reduces carbon emissions and promotes a greener environment. This makes it an ideal choice for eco-conscious municipalities, businesses and homeowners who want to reduce their environmental impact while providing effective lighting for outdoor areas.

An optional AC-connected hybrid solution for shaded areas is available.

Key advantages

- Designed and manufactured in South Africa
- Optional hybrid solution for shaded areas
- Flexible LED engine configurations to cover a wide range of applications
- Low glare
- Pleasant visual appearance
- Designed to operate daily with an output of 11 hours to incorporate appropriate dimming profiles according to your needs and application, with optional movement sensor where applicable
- Sufficient autonomy to cater for up to two continuous overcast or rainy days, to continue its reliable night operation
- Specifically engineered for all geographical locations in Africa
- Hail- and corrosion-resistant solar module
- Circular economy 3-star rating
- Warranty up to 5 years
Terms and conditions apply



OFF-GRID
AREAS



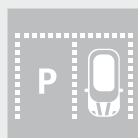
URBAN &
RESIDENTIAL
STREET



BIKE &
PEDESTRIAN
PATH



SQUARES &
PEDESTRIAN
AREA



CAR PARK



SHOPPING
CENTRE



SECURITY
LIGHTING



SPORT AREA



SERVICE
STATION

Characteristics

GENERAL INFORMATION

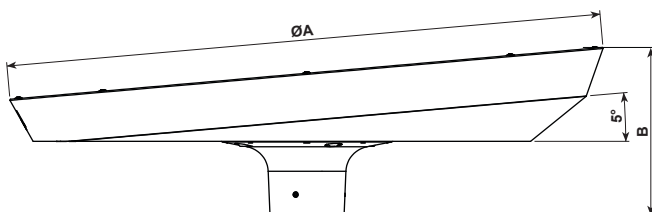
Recommended installation height	3m to 6m
Components included	Solar module Energy storage enclosure Energy storage unit Charge controller LED engine
Autonomy days	2 days
System operating voltage	12V DC
Geographical location	Designed and optimised for various locations

HOUSING AND FINISH

Housing	Top cover - Acrylonitrile styrene acrylate (ASA) Spigot - Marine grade high-pressure die-cast aluminium (EN 1706 AC-44300)
Protector	Polycarbonate
Housing finish	Black (RAL 9017), Textured finish
Tightness level	IP 66
Impact resistance	Polycarbonate: IK 10

DIMENSIONS AND MOUNTING

ØA (mm)	Ø754
B (mm)	213
Weight (kg)	10.4
Aerodynamic resistance (CxS) (m ²)	0.19
Standard mounting (mm)	Bottom-entry Ø76
Spigot length (mm)	≥ 80



SOLAR MODULE

Technology / Rated lifetime	Monocrystalline photovoltaic module: 25 years / 80%
Peak rated wattage	50W
Robustness	Hail and corrosion resistant (IK 08)

ENERGY STORAGE

Technology / Expected lifetime	Lithium: 5-8 years
Maintenance free	Yes

CHARGE CONTROLLER

Charge algorithm	Maximum Power Point Tracking (MPPT)
Rated lifetime	20 years
Integrated data logger	Yes: Up to 30 days
Integrated dawn/dusk switch	Yes

OPTICAL INFORMATION

LED colour temperature	4000K (Neutral white 740) 3000K (Warm white 730) (optional) 5700K (Cool white 757) (optional)
Colour rendering index (CRI)	≥ 70 (Neutral white 740) ≥ 70 (Warm white 730) (optional) ≥ 70 (Cool white 757) (optional)
Upward Light Output Ratio (ULOR)	0%

OPERATING CONDITIONS

Operating temperature range (Ta)	-20°C up to +40°C
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LIFETIME OF THE LEDS @ TQ 25°C

For all versions	50,000h - L80B10
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For options and accessories, please turn to page 11.

Performance



		Nominal flux (lm) ^(*)		Nominal efficacy (lm/W)	Photometry ^(**)
Luminaire	Model	Typical		Typical	
SOZELLA	Non-sensor version	290	2876	221	2900 4010
	Non-sensor version	320	3218	215	
	Sensor version	420	4236	212	
	Sensor version	460	4571	208	

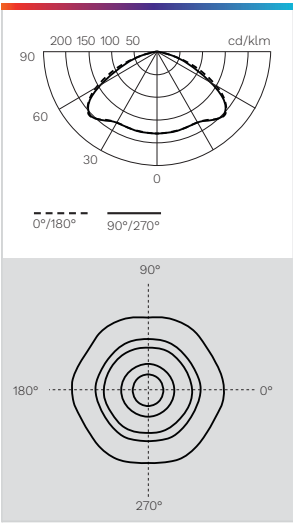
Tolerance on LED flux is ± 7% and on total luminaire power ± 5%

(*) The nominal flux is an indicative LED flux @ Ts 85°C based on LED manufacturer’s data. The real flux output of the luminaire depends on environmental conditions (e.g. temperature and pollution) and the optical efficiency of luminaire. The type of LED used is subject to change due to the ongoing rapid progress taking place in LED technology.

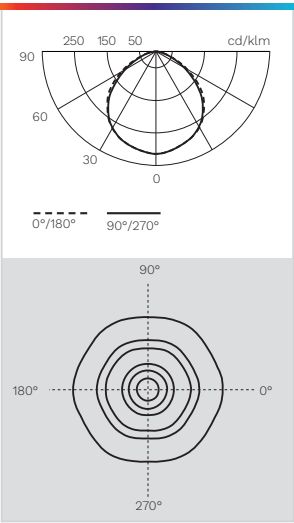
(**) Custom combinations of lenses/optics to suit the project are available on request.

Light Distributions

2900 optic



4010 optic



Key Features



Elegant design for a wide range of applications



Vandal-resistant material



Flexible LED engine configurations to cover a wide range of applications and optional integrated movement sensor



Integrated solar lighting solution for ease of installation, with the unit being rotatable to face the panel north

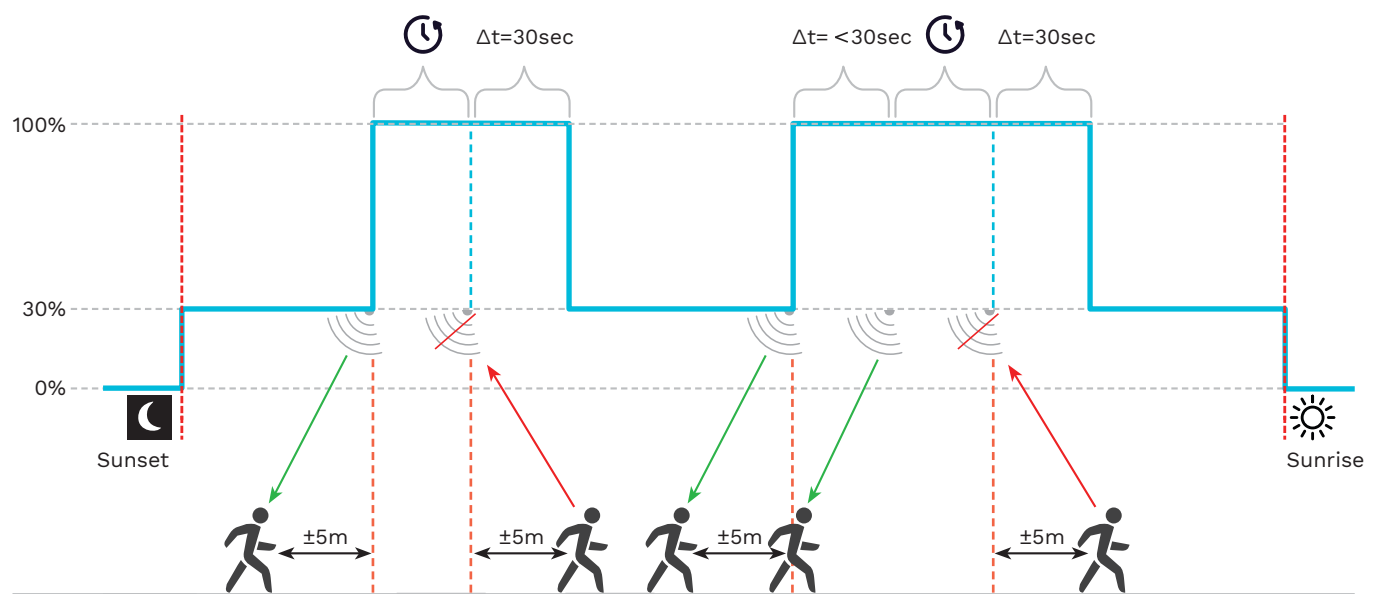
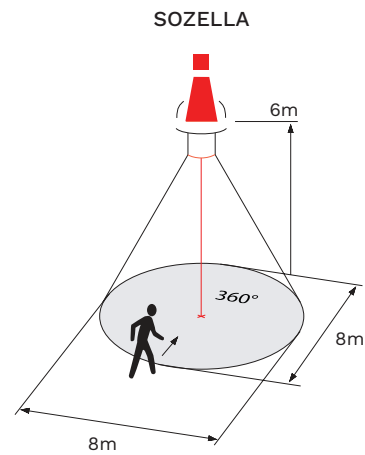


Clean lines allow for a pleasant visual appearance with no upward lighting



Run-off ridge to prevent dirt build up

Integrated Movement Sensor (optional)



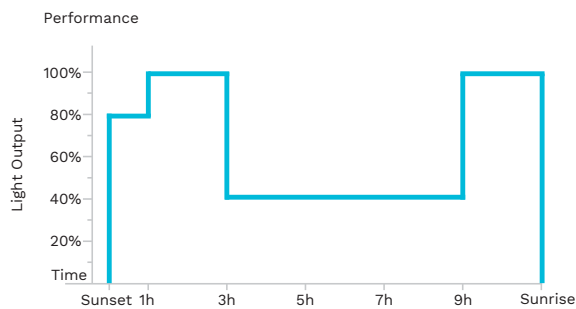
Upon presence detection the light ramps up to 100% light output.

If no presence is detected, the light output reduces back to its dim profile output. If, however, another presence has been detected within the 1-minute time frame, the light output will remain at 100% for another minute.

This feature offers the best economical solution whilst still maintaining high-performance lighting during times of operation.

Output for Non-Sensor Version

Power Consumption: 65% average



Construction Details

The unit consists of a high-pressure powder-coated die-cast aluminium base, a top cover made of ASA and a high-impact polycarbonate protector.

The top cover and solar panel is robustly constructed, weatherproof, hail-proof, corrosion proof and vandal resistant. The colour is moulded into the ASA material to ensure colour consistency over the lifetime of the product. Silicon gaskets are used to ensure the luminaire is sealed to IP 66, preventing dust and water ingress.

The spigot base manufactured from high-pressure die-cast aluminium, powder coated for added protection in the colour specified. The luminaire is secured to the pole by three M8 stainless steel grub screws.

All screws, bolts and metal parts are stainless steel or non-corrosive material.

Technical Definitions

Energy storage options



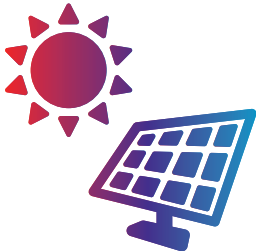
Lithium-ion

Lithium-ion based battery packs have the added advantage that they have a higher power density than lead, which means they have more available power for the same mass of a lead battery. This advantage, combined with the longer life expectancy and higher rate of depth of discharge (DOD), offering an attractive option for solar lighting applications, resulting in a longer battery lifetime. All Lithium-ion battery packs have an integrated Battery Management System (BMS) which monitors the health, charging and discharging of the battery pack. This safeguards the cells so that they are not over charged or discharged, maximising their lifetime.

Battery pack operating temperature: -20°C to +60°C

Please note: Energy storage units require special storage. Please consult us for more information.

Solar module



The solar panels are ISO and TÜV certified and carry a 10-year product warranty. Hail-resistant and corrosion-proof. Rated outputs on the panels are 90% minimum for the first 10 years and 80% minimum after 25 years. Panel outputs are designed to cater for all annual environmental conditions.

Charge controller



The MPPT charge controllers can harvest up to 30% more energy in clouded sky conditions compared to PWM charge controllers. The charge controllers have a load output connection that can be programmed to switch the luminaires off when the energy storage voltage drops to critical levels. This allows for the energy storage units to be protected from over discharge. The charge controllers have integrated temperature sensors that can compensate for thermal environmental changes when charging the energy storage units. The charge controllers use a 3-step charging process with all three charge levels programmable depending on the energy storage selected. We offer a 5-year warranty.

Optidim

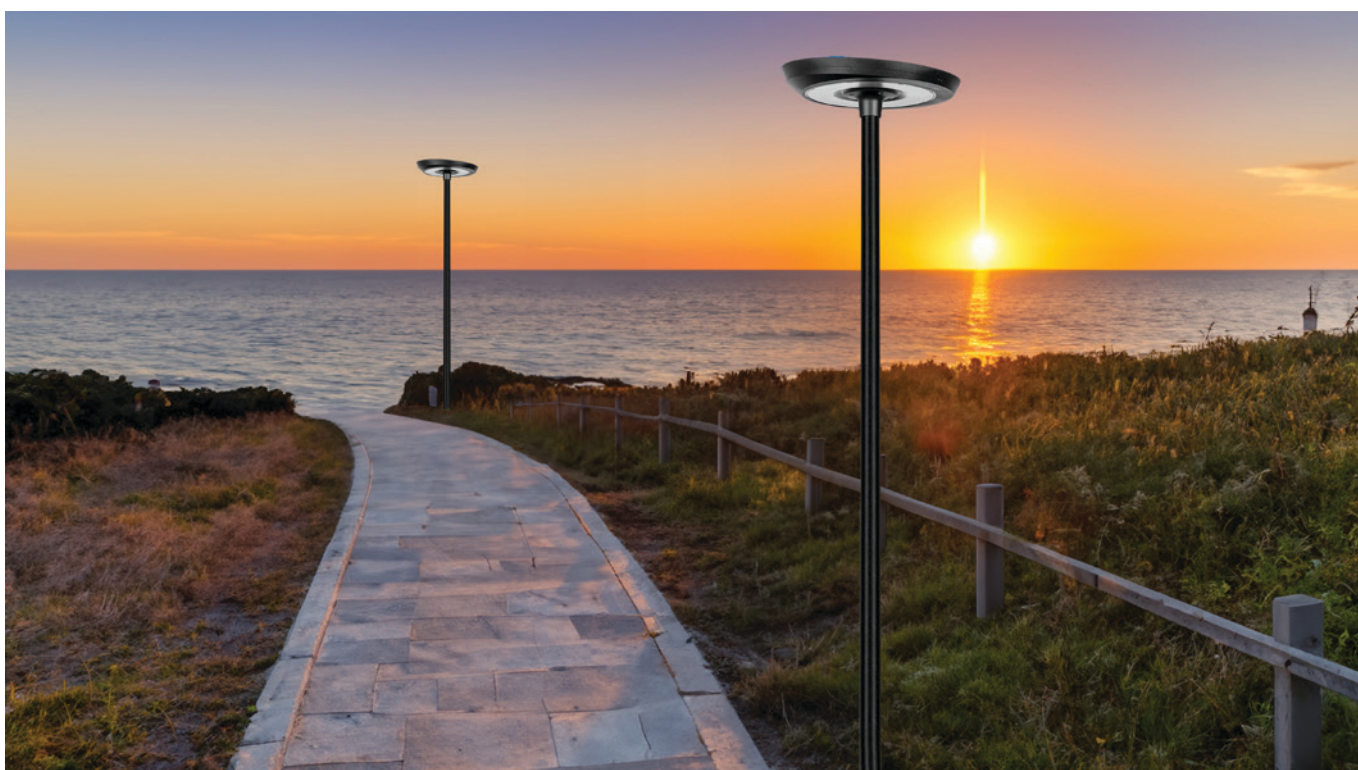


Intelligent luminaire drivers are programmed if required in the factory with complex dimming profiles. Up to 6 combinations of time intervals and light levels are possible. This feature does not require any extra wiring. The period between switching on and switching off is used to activate the preset dimming profile.

Autonomy Days







Autonomy Days refers to the number of nights/cycles a luminaire will continue to work without receiving a charge/being charged from the solar panel, due to adverse weather conditions. The number of autonomy days is aligned to the energy storage unit's depth of discharge resulting in sufficient capacity after a night/cycle.



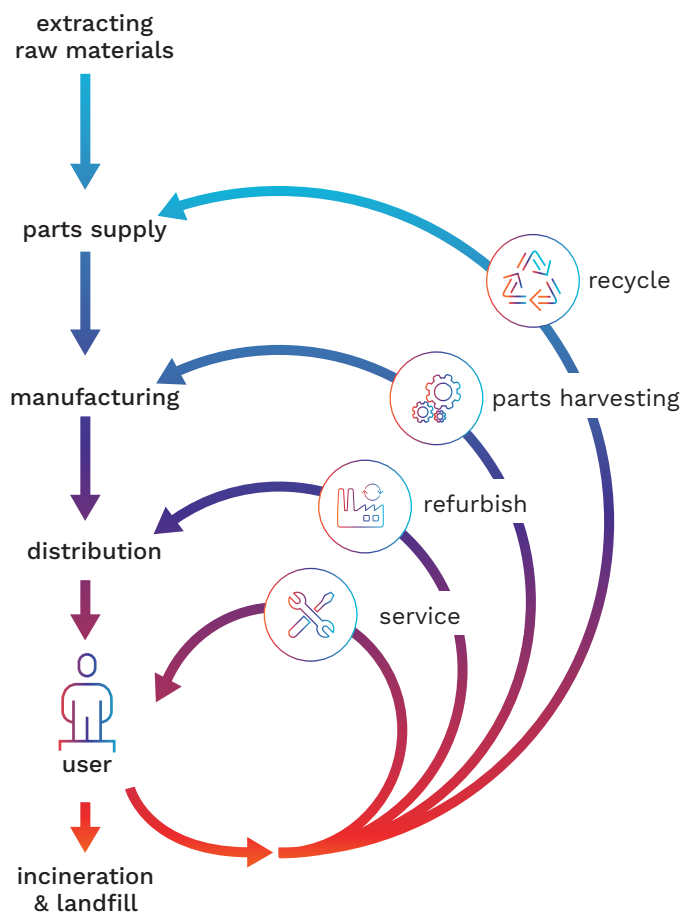
Configuration Matrix

Please note: Custom solutions could be considered and are subject to design approval at the time of the project.

		SOZELLA			
		290	320	420	460
Solar module rated at 25°C		50W	50W	50W	50W
Dim profile		Non-sensor version	Non-sensor version	Movement sensor	Movement sensor
Energy storage technology		18Ah	18Ah	18Ah	18Ah
Autonomy days		2	2	2	2
Geographical location					
Angola	Huambo	-	✓	-	✓
	Luanda	-	✓	-	✓
Botswana	Gaborone	-	✓	-	✓
	Shakawe	-	✓	-	✓
DRC	Kinshasa	-	✓	-	✓
	Lumbumbashi	-	✓	-	✓
eSwatini	Mbabane	-	✓	-	✓
Ivory Coast	Abidjan	-	✓	-	✓
Kenya	Nairobi	-	✓	-	✓
Malawi	Lilongwe	-	✓	-	✓
Mauritius	Agalea	-	✓	-	✓
Mozambique	Maputo	-	✓	-	✓
	Pemba	-	✓	-	✓
Namibia	Tsumeb	-	✓	-	✓
	Windhoek	-	✓	-	✓
Nigeria	Lagos	-	✓	-	✓
	Kaduna	-	✓	-	✓
Senegal	Dakar	-	✓	-	✓
South Africa	Cape Town	✓	-	✓	-
	Durban	✓	-	✓	-
	Gqeberha	✓	-	✓	-
	Kuruman	-	✓	-	✓
	Pretoria	-	✓	-	✓
	Thabazimbi	-	✓	-	✓
Tanzania	Dar Es Salaam	-	✓	-	✓
Zambia	Lusaka	-	✓	-	✓



Circularity concept



SOZELLA

Circularity focuses on reducing the environmental burden by valorising the flow of all materials. It is mainly defined in opposition to the traditional linear economy: take, make and dispose. In a circular economy, products are part of a value network where they will be used for as long as possible.


Then, depending on their characteristics, they can be reused, refurbished, upgraded or recycled.

BEKA Schröder takes circular economy into account, right from the offset. Before we start to design our products, we incorporate it into their DNA.

After a careful analysis of the potential circularity of our luminaires, we decided to introduce a “circular lighting” product label. This label acts as a circular indicator for our customers.

It clearly designates products that are optimised for circular economy through 12 objective criteria.

Circular highlights:

-  Materials with a high rate of recyclability
-  Not connected to the mains grid

Star rating:



It was designed to be cost-efficient



It was built to last but not with circular economy requirements



It was developed to meet most of circular economy requirements



It was developed to fully meet circular economy requirements

Ordering Information

Example:

SOZELLA 460 N 2900 BL OP-7 MS

ID	Model	LED Colour	Optic ⁽¹⁾	Colour Options	Other Options
SOZELLA	290	N Neutral White (4000K)	2900	BL Black (RAL9017), Textured finish	OP-7 Dimming profile 7 MS ⁽²⁾ Integrated movement sensor
	320		4010		
	420				
	460				

⁽¹⁾ Custom combinations of lenses/optics to suit the project are available on request.

⁽²⁾ Only for the 420 and 460 models.

Custom Options

Correlated colour temperature	3000K (Warm white 730)
	5700K (Cool white 757)
Hybrid solution	AC-connected hybrid solution for shaded areas



BEKA Schröder

Experts in lightability™

SABS
ISO 9001



www.beka-schreder.co.za

Designed and manufactured by BEKA Schröder (Pty) Ltd



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