BEKA Schréder

Experts in lightability™

SOLARPOLE

Integrated LED solar lighting solution

LOCALLY manufactured

SOLARPOLE

Up to
IP 66

IK 10

Standard: Streetlight version

Optional: Pole Retrofit version

Optional: Post top version

The vertical aesthetic solar lighting solution for road and urban applications

The SOLARPOLE offers an integrated aesthetic option to fully suit your off-grid solar lighting requirements in outdoor residential and public applications. Combined with the ZIYA luminaire, the SOLARPOLE provides a reliable lighting solution for road applications with a high Ingress Protection level (IP 65) that withstands high ambient temperatures and vandalism (IK 10). The ZIYA range is a sustainable off-grid performer with a superior lumen/watt ratio.

The popular KAZELLE post top luminaire completes the offering for urban requirements with a minimalistic and modern look.

The SOLARPOLE Retrofit version is available as optional, enabling the system to fit over an existing Ø76mm pole (only suitable for Lithium battery option).

The cylindrical solar module is revolutionary. The vertical solar panels use a cylindrical module to achieve a better aesthetical design, as well as providing less wind resistance.

The photovoltaic process is optimized by the efficient vertical module with six pieces of slim mono-crystalline solar panel technology to maximise solar energy. To further maximise this we offer the best energy storage options and autonomy available on the market.

The Maximum Power Point Tracking (MPPT) charge controllers protect and optimize the system from any internal and external factors, like thermal environmental changes when charging the energy storage units.

The SOLARPOLE is your vertical solar lighting solution with latest innovation and technology.

Key advantages

- Designed and manufactured in South Africa
- Designed to operate reliably at a high light output over an 11 hour period
- It has sufficient autonomy to cater for up to three continuous overcast or rainy days, to continue its reliable night operation
- Cylindrical integrated solar components
- Optional Pole Retrofit version available for Ø76mm poles.
- Theft and vandal resistant
- Specifically engineered for high aesthetics and wind resistance
- Long life lithium (LifePO4) energy storage technology, offering up to 8 years battery lifetime
- Circular economy 3-star rating
- Warranty up to 5 years
  (Terms and conditions apply)

OFF-GRID AREAS | CAR PARKS | SQUARES & PEDESTRIAN AREAS | URBAN & RESIDENTIAL STREETS | BIKE & PEDESTRIAN PATHS | SECURITY LIGHTING | SERVICE STATION

Characteristics

GENERAL INFORMATION	
Recommended installation height	4.5m to 8m
Components included	Solar module Energy storage unit Charge controller Luminaire Solar PV pole
Autonomy days	2-3 days
System operating voltage	12V DC
Geographical location	Designed and optimised for various locations
Weight	Up to 140kg (including pole)
Wind speed rating	144km/h
Aerodynamic resistance (CxS)	0.107m^2

MATERIAL	
Brackets and fixation clamps	Hot-dipped galvanised mild steel
Solar module fixation	Cast aluminium
Solar module	Extruded aluminium
	Tempered glass
Pole	Hot-dipped galvanised graded steel

SOLAR MODULE	
Technology / Rated lifetime	Monocrystalline module: 25 years / 80%
Peak rated wattage	200W
Robustness	Hail and corrosion resistant

ENERGY STORAGE	
Technology / Expected lifetime	Lithium: 5-8 years
Weight per unit	Lithium: 5-8kg
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

LUMINAIRE		
Housing and finish		
Housing	ZIYA-E:	UV-stabilised, calcium-filled Polypropylene
	ZIYA-1:	Marine grade aluminium (EN 1706 AC-44300)
	KAZELLE:	Top cover - Acrylonitrile styrene acrylate (ASA) / Base and gear plate - Marine grade high-pressure die-cast aluminium (EN 1706 AC-44300)
Protector	ZIYA:	High-impact polycarbonate
	KAZELLE:	High-impact acrylic Polycarbonate (optional)
Housing finish	ZIYA-E:	Polypropylene (light grey)
	ZIYA-1:	Unpainted aluminium
	KAZELLE:	Black (RAL 9017), Textured finish
Tightness level	ZIYA:	IP 65
	KAZELLE:	IP 66
Impact resistance	ZIYA:	IK 10
	KAZELLE:	High-impact acrylic - IK 08 Polycarbonate - IK 10
Optical information		
LED colour temperature	All:	4000K (Neutral white 740)
	KAZELLE:	3000K (Warm white 730) (optional)
Colour rendering index (CRI)	All:	≥ 70 (Neutral white 740)
	KAZELLE:	≥ 70 (Warm white 730) (optional)
Upward Light Output Ratio (ULOR)	ZIYA:	≤ 1.5%
	KAZELLE:	≤ 1%
Operating conditions		
Operating temperature range (Ta)	ZIYA-E:	-20°C up to +35°C (*)
	ZIYA-1:	-20°C up to +40°C (*)
	KAZELLE:	-20°C up to +40°C

(*) Depending on the luminaire inclination and driving current. For more details, please contact us.

Lifetime of the LEDs @ tq 25°C		
For all versions	ZIYA:	60,000h - L70B10
	KAZELLE:	50,000h - L80B10

Performance

Luminaire	Number of LEDs	Driver Current (mA)	Nominal flux (lm) (*)	Power consumption (W)	Nominal efficacy (lm/W)	Luminaire output flux (lm)	Luminaire efficacy (lm/W)	Photometry (**)
			Typical	Typical	Typical	Typical	Typical	
ZIYA-E	40	600	4650	30	155	3940	131	5312 5313 5315
ZIYA-1	40	700	5340	36	148	4528	125	5312 5313 5315
	80	1000	7844	53	148	6651	125	
KAZELLE	120	500	4449	26	135	3559	139	2900 4010

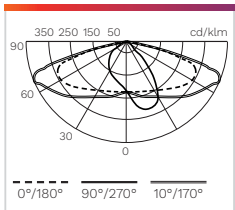
Tolerance on LED flux is ± 7% and on total luminaire power ± 5%

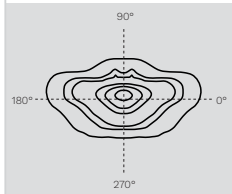
(*) The nominal flux is an indicative LED flux @ Ts 85°C based on LED manufacturer's data. The real flux output of the luminaire depends on environmental conditions (e.g. temperature and pollution) and the optical efficiency of luminaire. The type of LED used is subject to change due to the ongoing rapid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

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

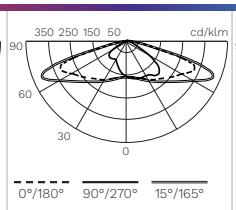
Light Distributions

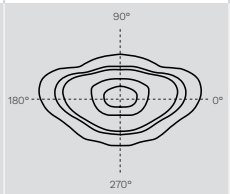
MID FLEX™ 2 5312 optic



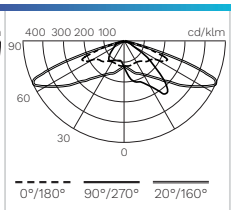


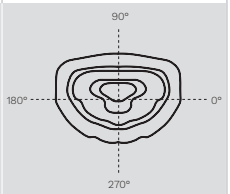
MID FLEX™ 2 5313 optic



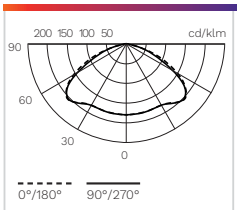


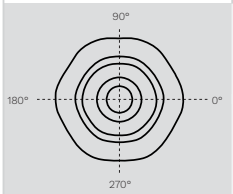
MID FLEX™ 2 5315 optic



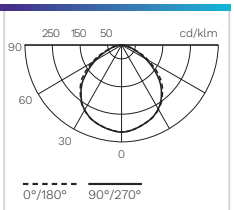


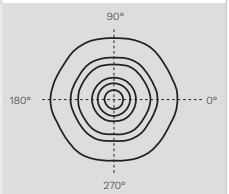
2900 optic
120 LED





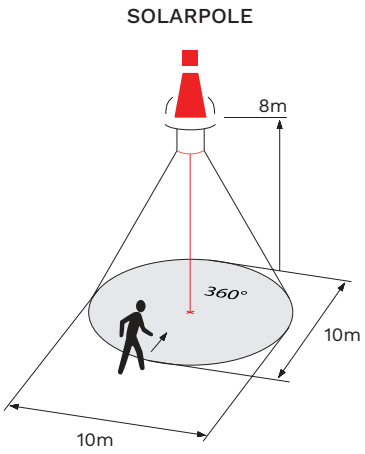
4010 optic
120 LED

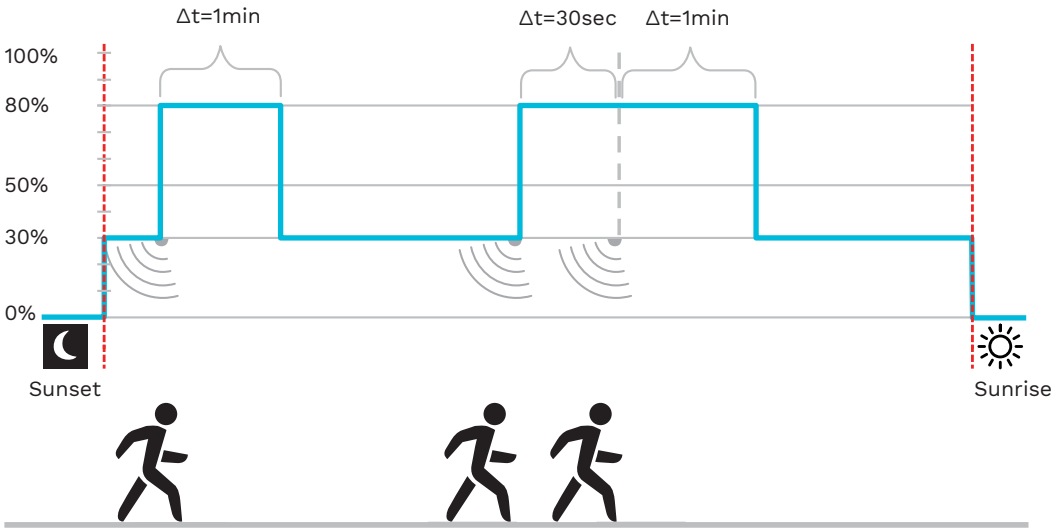




Custom combinations of lenses/optics to suit the project are available on request.

Integrated Motion Sensor (optional)





Upon presence detection the light ramps up to 80% light output.

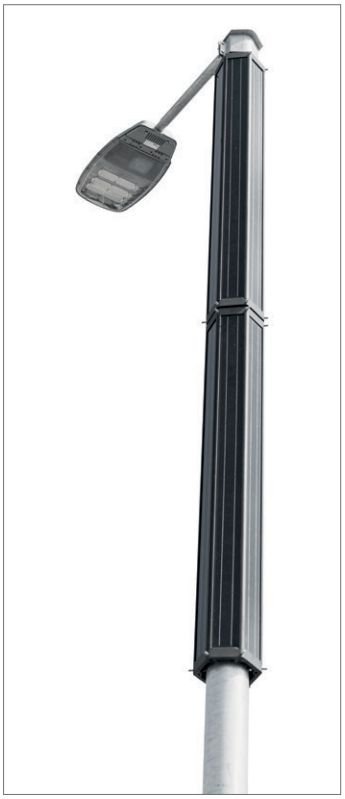
If no presence is detected, the light output reduces back to its dim profile output. If, however, another presence has been detected within the 1 minute time frame, the light output will remain at 80% for another minute.

This will not apply when the dimming profile is above 80%.

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

Key Features

Fully integrated solar pole system, including solar module, energy storage unit and luminaire.



Sleek aesthetical solar design due to the six-sided solar PV panels wrapped around the pole.

An optional Pole Retofit version is available, enabling the system to fit over an existing Ø76mm pole.

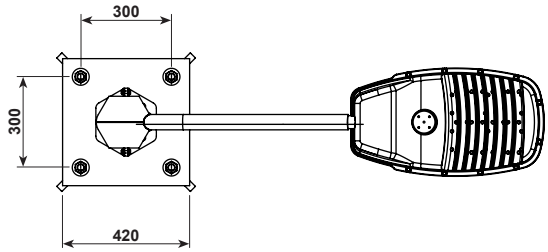
Highly efficient, performing and robust (IK10) LED street light luminaire (up to 53W - 148lm/W)

Available as decorative post top version - the KAZELLE is designed around the compactness of the LED engine, blending into your landscapes, whilst at the same time improving visual comfort for motorists, cyclists and pedestrians.

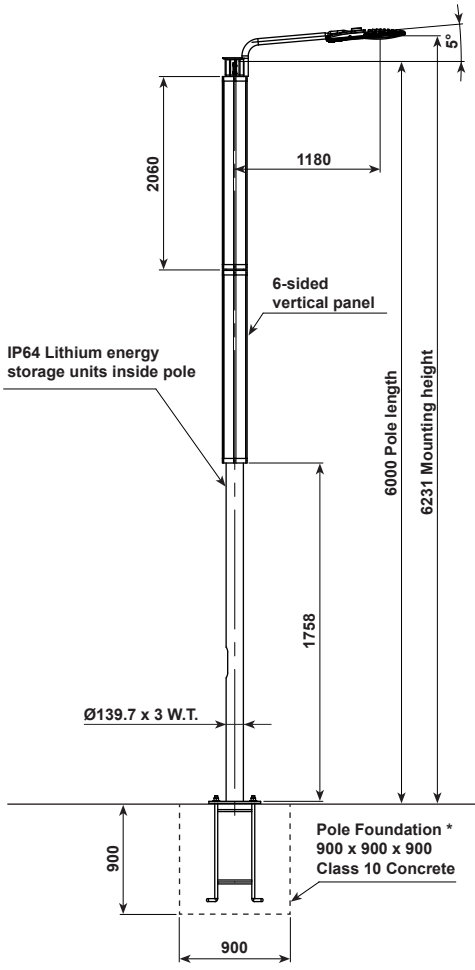
Dimensions in mm

Surface mount

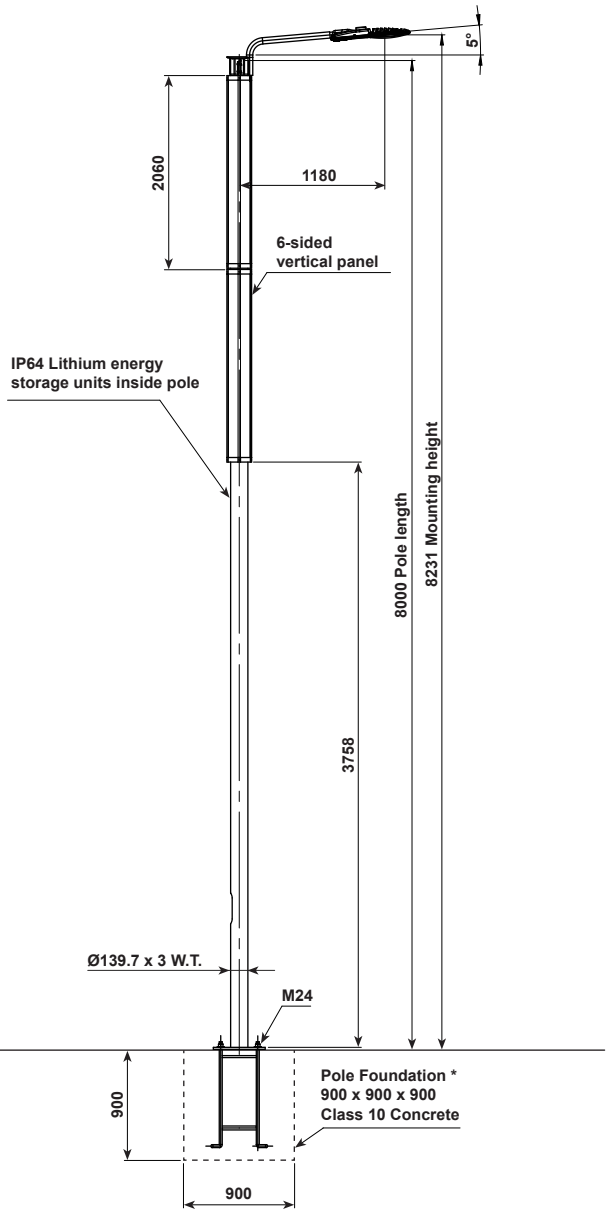
Base plate



6m surface mount solar pole



8m surface mount solar pole

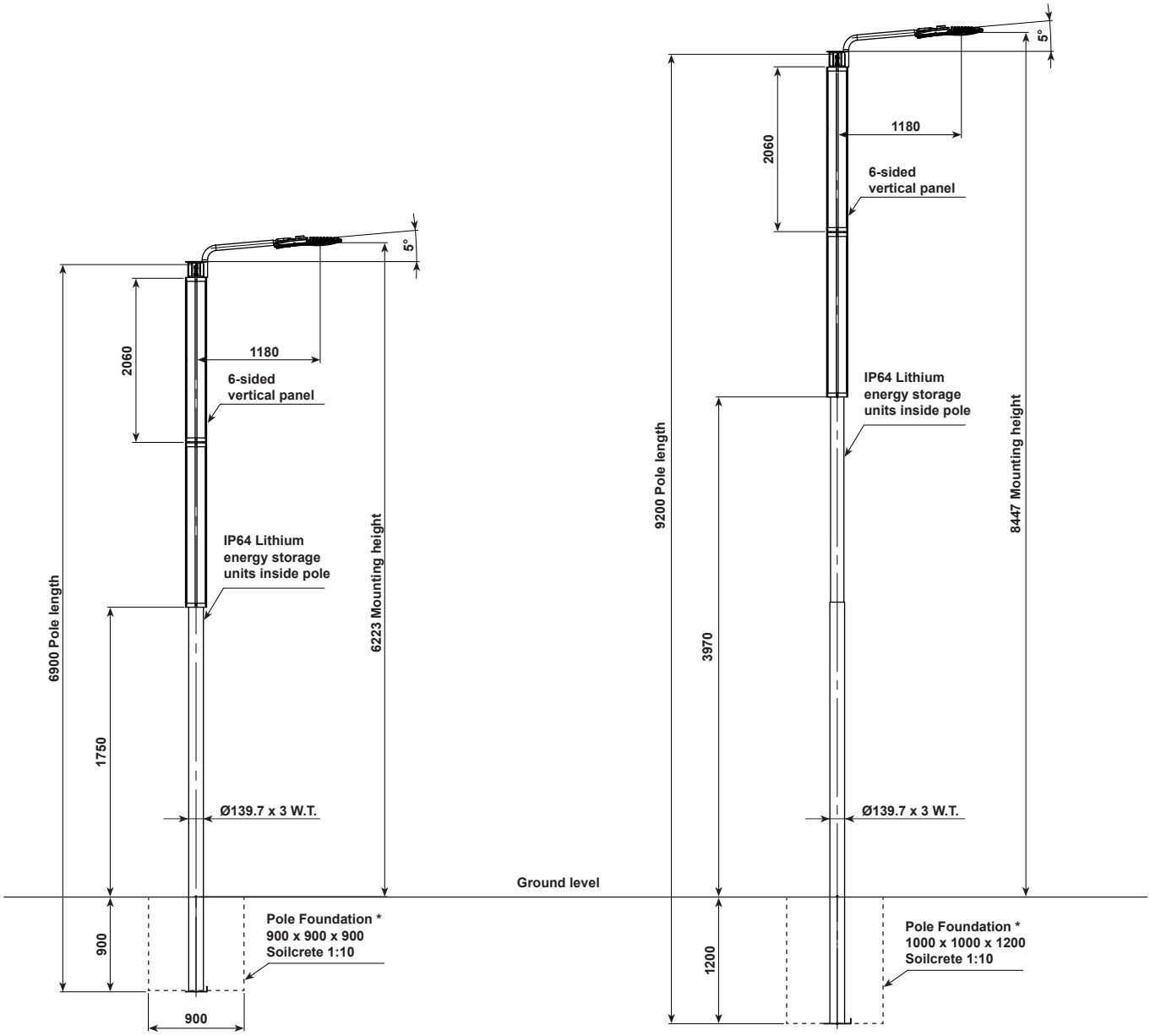


Please note:
*Only indicative, dependent on soil condition. Please contact us for suggested pole foundation specifications.

Buried

6m buried solar pole

8m buried solar pole

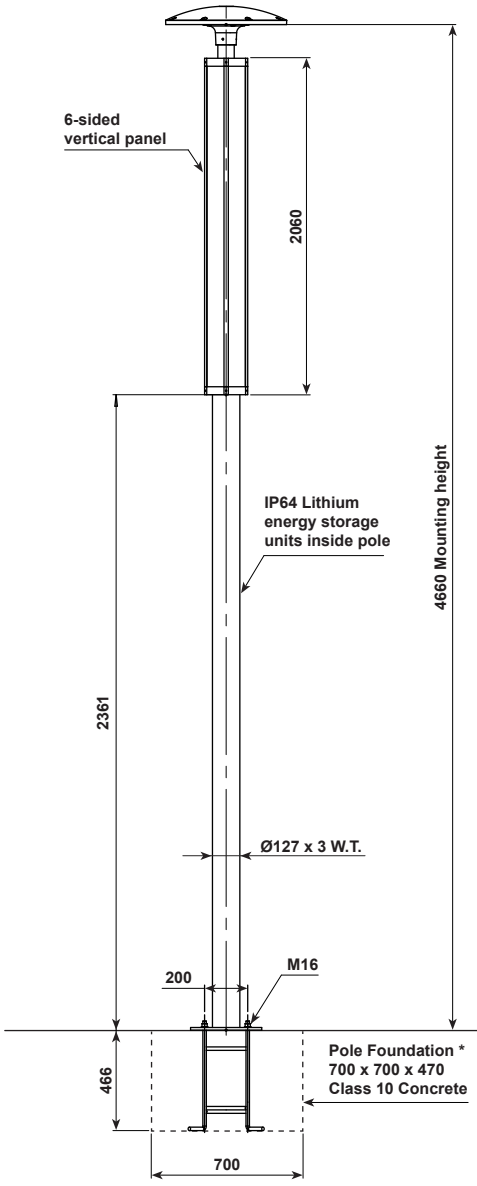


Please note:
*Only indicative, dependent on soil condition. After evaluating site conditions, please contact certified structural engineer.

For details about the Pole Retrofit version, please contact us.

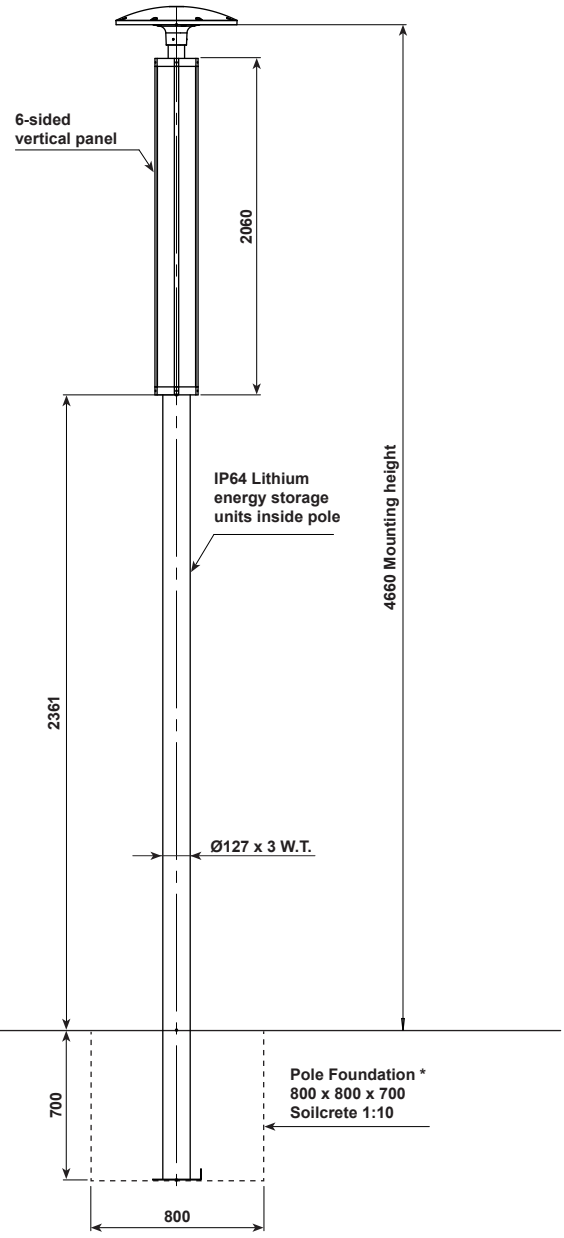
Surface mount

4.5m surface mount solar pole



Buried

4.5m buried solar pole



Please note:
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Technical Definitions

Energy storage options

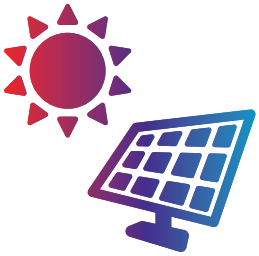
Lithium-ion

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. Our renowned Tier 1 branded cells ensure the highest quality product. In addition, 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 +50°C

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

Solar module



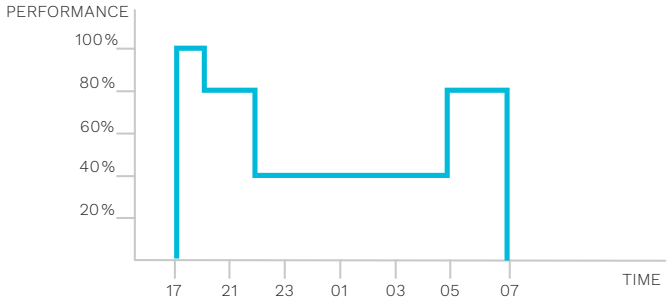
The solar panels are ISO and TÜV certified and carry a 10-year product warranty. Hail-resistant and corrosion-proof. Rated outputs on the panels are 90% minimum for the first 10 years and 80% minimum after 25 years. Panel outputs are designed to cater for all annual environmental conditions.

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.

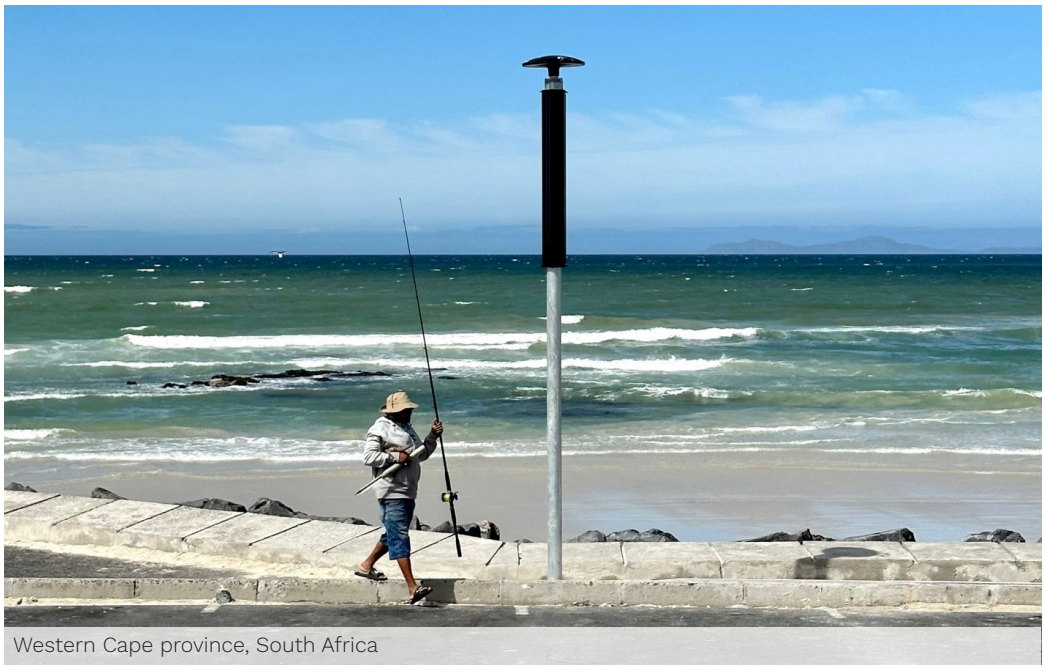
Optidim

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 overcast 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.



Western Cape province, South Africa

Configuration Matrix

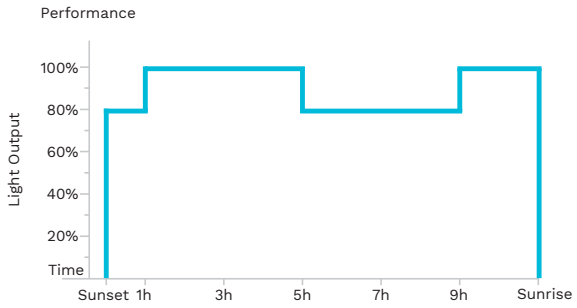
Please note: Custom solutions could be considered and are subject to design approval at the time of the project.

		ZIYA-E 4650lm 30W		ZIYA-1 5340lm 36W	ZIYA-1 7844lm 53W
Solar module rated at 25°C 		200W	400W	400W	400W
Optidim 		8	4	2	7
Energy storage technologies 		36Ah	72Ah	72Ah	72Ah
Autonomy days 		2	3	2	2
Geographical location					
Angola	Huambo	✓	✓	✓	✓
	Luanda	✓	✓	✓	✓
Botswana	Gaborone	✓	✓	✓	✓
	Shakawe	✓	✓	✓	✓
DRC	Lumbumbashi	✓	✓	✓	✓
	Kinshasa	✓	✓	✓	✓
eSwatini	Mbabane	✓	✓	✓	✓
Ivory Coast	Abidjan	✓	✓	✓	✓
Kenya	Nairobi	✓	✓	✓	✓
Malawi	Lilongwe	✓	✓	✓	✓
Mauritius	Agalea	✓	✓	✓	✓
Mozambique	Pemba	✓	✓	✓	✓
	Maputo	✓	✓	✓	✓
Namibia	Windhoek	✓	✓	✓	✓
	Tsumeb	✓	✓	✓	✓
Nigeria	Kaduna	✓	✓	✓	✓
	Lagos	✓	✓	✓	✓
Senegal	Dakar	✓	✓	✓	✓
South Africa	Cape Town	✓	✓	✓	✓
	Durban	✓	✓	✓	✓
	Gqeberha	✓	✓	✓	✓
	Kuruman	✓	✓	✓	✓
	Pretoria	✓	✓	✓	✓
	Thabazimbi	✓	✓	✓	✓
Tanzania	Dar Es Salaam	✓	✓	✓	✓
Zambia	Lusaka	✓	✓	✓	✓

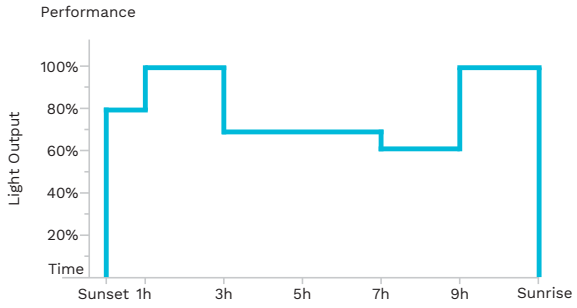
		KAZELLE 4449lm 26W
Solar module rated at 25°C 		200W
Optidim 		
Energy storage technologies 		 36Ah
Autonomy days 		2
Geographical location		
Angola	Huambo	✓
	Luanda	✓
Botswana	Gaborone	✓
	Shakawe	✓
DRC	Lumbumbashi	✓
	Kinshasa	✓
eSwatini	Mbabane	✓
Ivory Coast	Abidjan	✓
Kenya	Nairobi	✓
Malawi	Lilongwe	✓
Mauritius	Agalea	✓
Mozambique	Pemba	✓
	Maputo	✓
Namibia	Windhoek	✓
	Tsumeb	✓
Nigeria	Kaduna	✓
	Lagos	✓
Senegal	Dakar	✓
South Africa	Cape Town	✓
	Durban	✓
	Gqeberha	✓
	Kuruman	✓
	Pretoria	✓
	Thabazimbi	✓
Tanzania	Dar Es Salaam	✓
Zambia	Lusaka	✓

Optidim Profiles

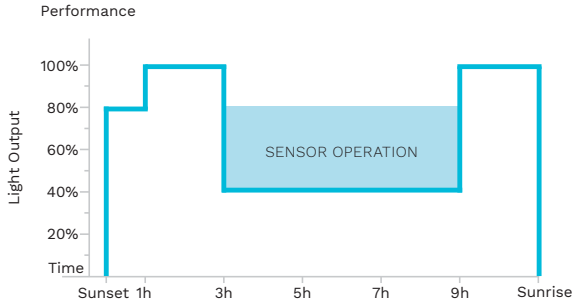
2 Power Consumption: 90% average



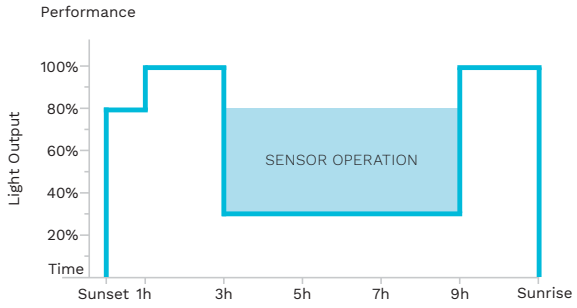
4 Power Consumption: 80% average



7 Power Consumption: 65% average

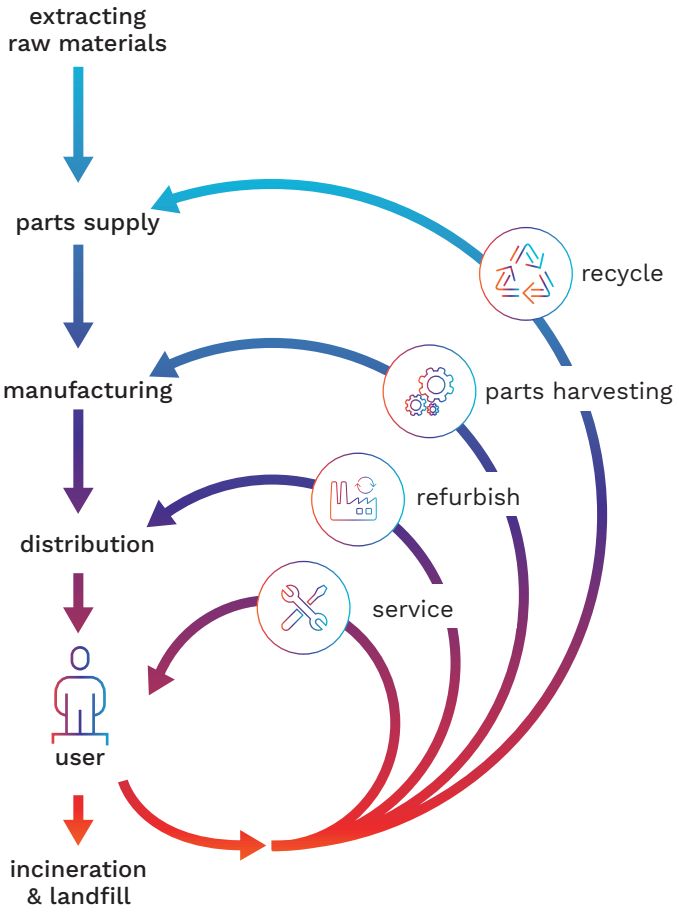


8 Power Consumption: 60% average



CIRCLELIGHT

Circularity concept



SOLARPOLE

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 Schréder 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:

- Equipped with a completely replaceable LED engine
- Materials with a high rate of recyclability

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

BEKA Schréder

Experts in lightability™

SABS ISO 9001

www.beka-schreder.co.za

Designed and manufactured by BEKA Schréder (Pty) Ltd

LOCALLY manufactured

2023-10