

SZG552 all-in-one solar led street light



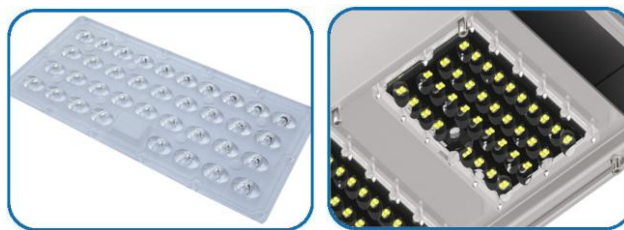
Applications:

- urban main roads, secondary roads
- county, township, town, village road
- economic development zone and high-tech park road
- industrial and mining plant road
- tourist attractions
- resort road
- park, parking roads
- villas and high-end residential roads

Description of performances:

❖ Ultra-bright 3030 led chip

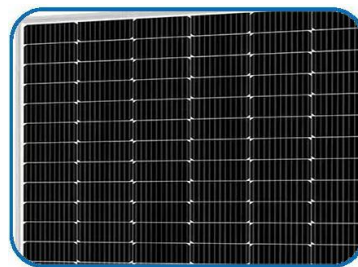
- led chip luminous efficiency: 260 lm/W
- light efficacy of luminaire: 220 lm/W
- Energy efficiency rating: Class 1
- Energy saving rate: 60%
- The thermal resistance is only 3°C and 75% lower
- average service life: ≥100,000 hours



3030 modular lens

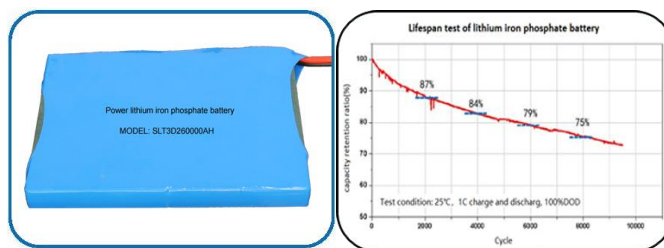
❖ High efficiency mono solar panel

- high efficiency mono solar wafers
- solar conversion efficiency: 23%-24%
- wafer specification: 182*182 mm
- lifespan: ≥25 years
- Average attenuation speed: 0.6%
- 25 years maximum output power attenuation: 15%



❖ Low temperature powerful lithium iron phosphate battery

- Adopt low temperature powerful lithium iron phosphate battery which can discharge at -25°C reliably.
- cycle life: ≥3000 cycles for more than 8 years' use
- capacity of grade A new cell (32700): ≥6000mAh
- Less than 3mΩ internal resistance can reduce internal energy loss and offer high current discharge.
- High temperature discharge efficiency is over 95%.
- Low temperature discharge efficiency is about 70%.
- free of cobalt and other heavy metals
- no fire, no explosion, absolutely safe and reliable





❖ Intelligent solar controller

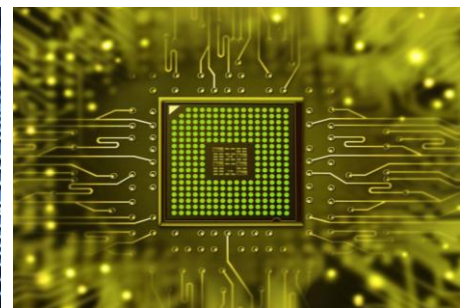
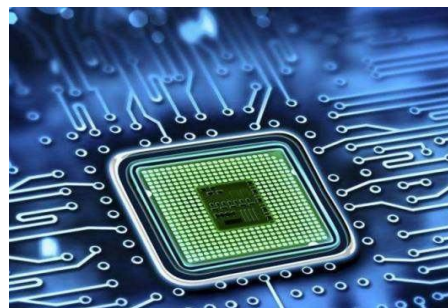
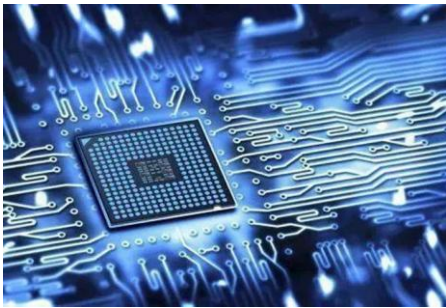
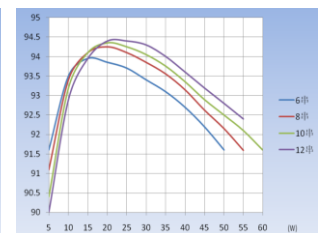
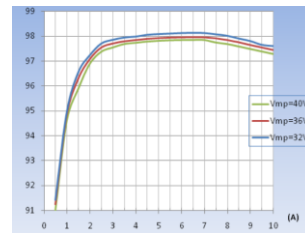
- adopting MPPT technology to track the maximum power of solar panel
- MPPT efficiency: $\geq 99.9\%$
- charge conversion efficiency: $\geq 98.5\%$ (MPPT)
 $\geq 94.5\%$ (PWM)
- constant current drive efficiency: $\geq 96\%$ (MPPT)
 $\geq 95\%$ (PWM)
- IPT(intelligent power technology) can adjust the optimal power according to the weather conditions of the next 7 days and the remaining energy of the battery to ensure 365 days' lighting every day
- control mode: light control, time control, motion sensor
- 2.4G remote controller optional
- The solar controller is built in the shell of lamp for easy installation and maintenance.



MPPT controller



PWM controller



Intelligent power technology

According to the weather conditions of the next 7 days and the remaining energy of the battery, the power of the light can be adjusted to the optimal value through automatic calculation and scientific evaluation under the premise of ensuring the illumination to meet lighting for 365 days and extend cycle life of battery.

Single monitoring and balanced charging Technology:

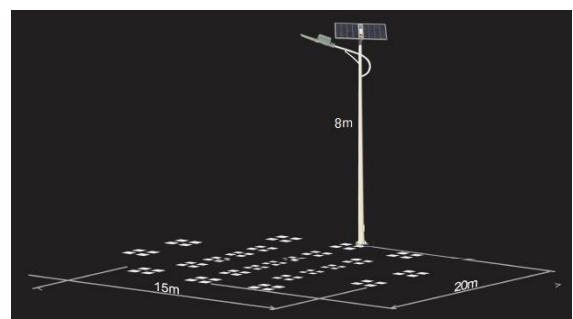
Through monitoring the voltage and current of the single cell in real time and optimizing the calculation, solar controller outputs the optimal charging voltage and current to reach the balanced charging for each cell which will prolong lifespan of battery.

Automatic alarm technology:

Collecting the output voltage and current of solar panel, the voltage and current of battery and led modular in real time by intelligent chip, the working state of each part is detected and judged, and the fault alarm occurs automatically. Through different indicator lights, it is convenient for maintenance personnel to judge the problem intuitively and quickly.

❖ Microwave sensor

The microwave sensor detects the movement of humans or other objects, such as cars, by emitting high-frequency radio waves. When human movement or other moving objects are detected, the microwave sensor is triggered, and the brightness of the lights reaches 100%. If no human movement or other moving objects are detected within a set delay time, the microwave sensor is triggered to turn off, and the brightness of the lights becomes dimmer, thereby extending the lighting time and saving energy.



Technical parameters:

Model & power	SZG552H-20W	SZG552H-30W	SZG552H-40W	SZG552H-50W	SZG552H-60W
Luminous efficiency for led chip (lm/W)	260	260	260	260	260
Light efficacy for luminaire (lm/W)	220	220	220	220	220
Energy efficiency rating	Class 1	Class 1	Class 1	Class 1	Class 1
Energy saving rate	60%	60%	60%	60%	60%
Luminous flux of luminaire (lm)	4400±5%	6600±5%	8800±5%	11000±5%	13200±5%
Correlated color temperature (K)	3000-6000K	3000-6000K	3000-6000K	3000-6000K	3000-6000K
Color rendering index (Ra)	≥75Ra	≥75Ra	≥75Ra	≥75Ra	≥75Ra
Beam angle (°)	140°*70°	140°*70°	140°*70°	140°*70°	140°*70°
LED lifespan (h)	≥100000	≥100000	≥100000	≥100000	≥100000
Type of battery	LFP battery	LFP battery	LFP battery	LFP battery	LFP battery
Capacity of battery (Wh)	220	360	530	620	710
Lifespan of battery (cycle)	≥3000	≥3000	≥3000	≥3000	≥3000
Charging time (h)	6-7	6-7	6-7	6-7	6-7
Dark sky requirement	custom made	custom made	custom made	custom made	custom made
Lighting mode	30%(normal) /100%(activated)	30%(normal) /100%(activated)	30%(normal) /100%(activated)	30%(normal) /100%(activated)	30%(normal) /100%(activated)
Mono solar panel (W)	30	55	70	90	110
Material of shell	aluminum alloy	aluminum alloy	aluminum alloy	aluminum alloy	aluminum alloy
Lighting time per day (h/day)	12	12	12	12	12
Continuous rainy day (day)	2-3	2-3	2-3	2-3	2-3
Discharge temperature (°C)	-25°C - +60°C	-25°C - +60°C	-25°C - +60°C	-25°C - +60°C	-25°C - +60°C
Charging temperature (°C)	-10°C - +55°C	-10°C - +55°C	-10°C - +55°C	-10°C - +55°C	-10°C - +55°C
IP protection	IP66	IP66	IP66	IP66	IP66
Dimension (mm)	550*377*252	948*377*252	1195*377*252	1148*463.5*252	1188*463.5*252
Weight (kg)	13	15	17	21.5	24.5
Diameter of mounting pipe (mm)	φ 60	φ 60	φ 60	φ 60	φ 60
Recommended mounting height (m)	4-6	6-7	7-8	8-9	9-10
Warranty (year)	5 years	5 years	5 years	5 years	5 years

Note: 1. According to GB 30255-2026: the luminous efficacy of Class 1 energy-efficient luminaire is 170-180 lm/W; for Class 2, it is 145-155 lm/W; and for Class 3, it is 100-110 lm/W.

2. Energy saving rate is compared with the conventional luminaire of class 3 energy efficiency rating.



Road lighting simulation calculation:

1. Power of luminaire: 60W

- 1) Road width: 20m
- 2) Pole height: 10m
- 3) Pole spacing: 35m
- 4) Lighting class: ME3a

60w-P0LE SPACE35m w20mH10m / Photometric Results



Light loss factor: 0.90

Scale 1:294

Calculation Field List

- 1 Valuation Field Roadway 2
Length: 35.000 m, Width: 10.000 m
Grid: 12 x 9 Points
Accompanying Street Elements: Roadway 2.
tarmac: R3, q0: 0.070
Selected Lighting Class: ME3a

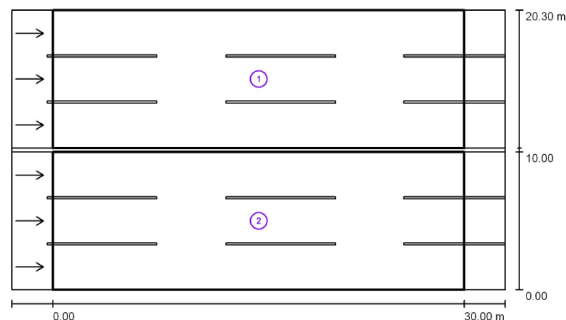
(All lighting performance requirements are met.)

	L_{av} [cd/m ²]	U0	UI	TI [%]	SR
Calculated values:	1.16	0.61	0.72	6	0.80
Required values according to class:	≥ 1.00	≥ 0.40	≥ 0.70	≤ 15	≥ 0.50
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓

2. Power of luminaire: 50W

- 1) Road width: 20m
- 2) Pole height: 9m
- 3) Pole spacing: 30m
- 4) Lighting class: ME3a

50w-P0LE SPACE30m w20mH9m / Photometric Results



Light loss factor: 0.90

Scale 1:258

Calculation Field List

- 1 Valuation Field Roadway 2
Length: 30.000 m, Width: 10.000 m
Grid: 10 x 9 Points
Accompanying Street Elements: Roadway 2.
tarmac: R3, q0: 0.070
Selected Lighting Class: ME3a

(All lighting performance requirements are met.)

	L_{av} [cd/m ²]	U0	UI	TI [%]	SR
Calculated values:	1.18	0.51	0.74	7	0.78
Required values according to class:	≥ 1.00	≥ 0.40	≥ 0.70	≤ 15	≥ 0.50
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓