UKAS-S9-20A ALL IN ONE Solar Street Light Specification

General Specifications

Light Fixture

Luminaire input voltage	33V
Power consumption	30W
Lumen	4800 lumens
Color temperature	5500K
IES lighting type	Type II
Material	High pressure aluminum

Solar Panel

Rating Power	30W
Maximum Power Voltage	18V
Maximum Power Current	1.67A
Open Circuit Voltage	18V

Short Circuit Current	1.67A
Size	
Weight	

Battery

Battery type	Lithium Battery
Operating voltage	12V
Capacity	10 AH
Dimensions	
Expected life	800 times

Solar Charger

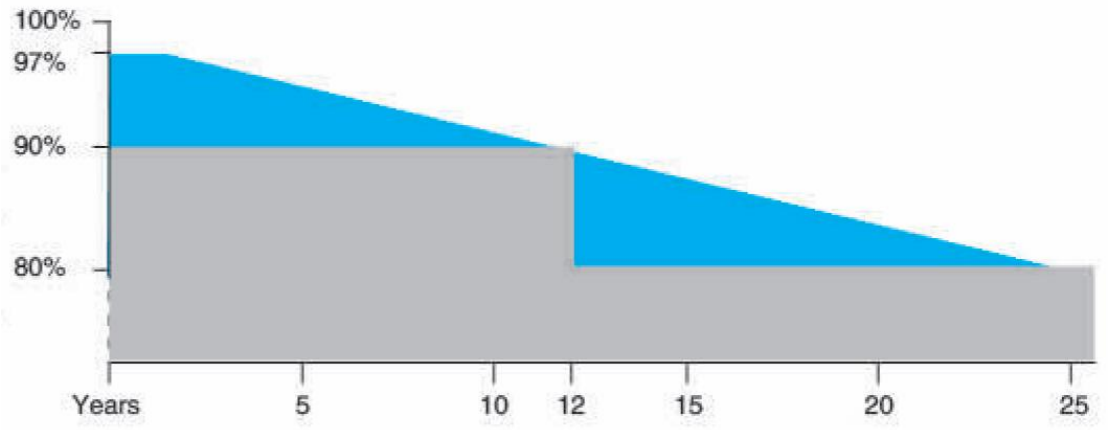
Operating Voltage Max. charge/ load	12 V
Night/day detection	2.5 V – 10 V
IP class	IP68

Luminaire

Luminaire input voltage	33V
Power consumption	20W
Lumen output	3600 lumens
LED type	Philips 3030, >150 lm/W
Color temperature	5500 K
IES lighting type	Type II
Material	High pressure aluminum
Lens	optical grade PMMA
IP class	IP 65
Insulation	Class I
Operating temperature	-30°C ~+50°C/ -22°F ~+122°F
CRI	≥70

1) Solar Panel

Poly-Crystalline solar cells
Highly resistant tempered glass
Multi layer EVA encapsulation with triple layer back sheet
25-year power output
warranty: 10 years
19.6% efficiency

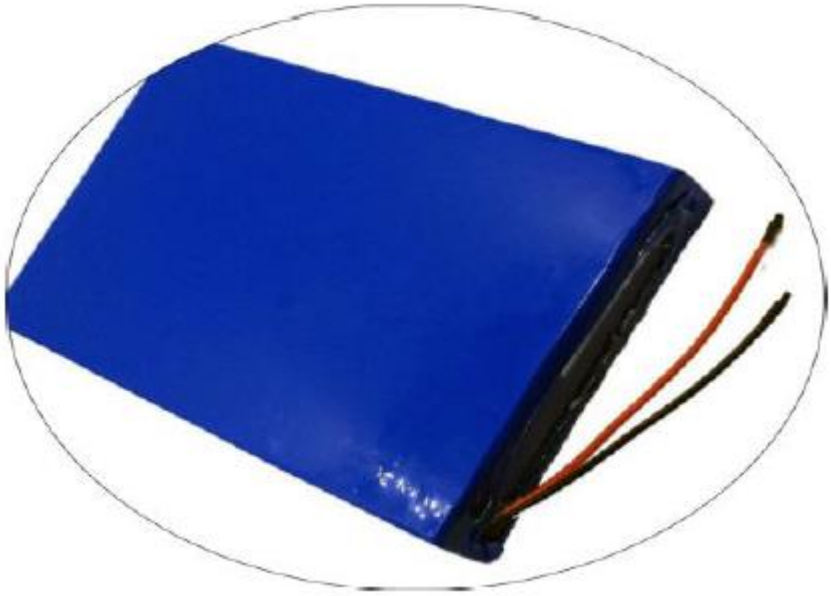


Solar Panel

Rating Power	30W
Production Tolerance	± 3%
Maximum Power Voltage	18V
Maximum Power Current	1.67A

Open Circuit Voltage	18V
Short Circuit Current	1.67A
Weight	
Dimensions	53*34cm
Frame	With Lamp Shell
Test Temperature	25°C / 77°F, 1000w/m², Air Mass 1.5
Junction box / Wiring	IP65 Junction box with 900mm cable with MC4 connectors

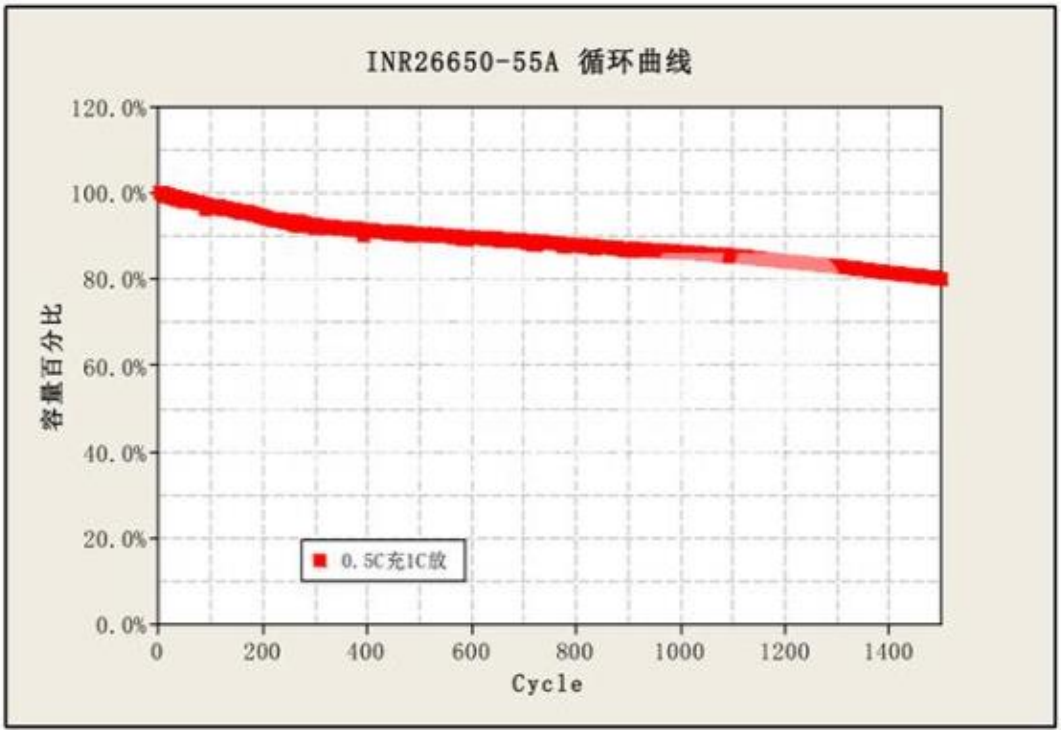
2) Battery



The most important part is the battery, the battery we use is the best Lithium battery, the number of cycles is the longest of all the technologies, 1000times.

Battery

Battery type	Lithium Battery
Operating voltage	12 V
Capacity	10AH
Dimensions	
Expected life	800 times
Operating temperature range	-40°C~60°C/ -40°F~140°F
Float charging voltage	12.5 VDC/ unit average at 25°C/ 77°F
Self-discharge	Valve Regulated Lead Acid can be stored for more than 6 months at 25°C/ 77°F. Self-discharge ratio less than 3% per month at 25°C/ 77°F. Please charge batteries before using



Rate	0.2C	0.5C	1C	2C	3C	5C
Capital(mAh)	5981.1	5778.1	5712	5798.4	5759.6	5191.3
Capital/0.2C	100%	96.60%	95.50%	96.90%	96.30%	86.80%
Rate	**0.2C**	**0.5C**	**1C**	**2C**	**3C**	**5C**
Temperature（℃）	28.8	33.2	38.1	45.6	54.9	65.2

3) Controller

Main Features

1. Features true MPPT functions, applicable to Polycrystalline, polycrystalline and amorphous silicon solar panels serially connected in various numbers, significantly improving the solar panels' energy utilization ratio.

2. Adopts the MPPT solar charging technology, with a max. Solar panel open-circuit voltage Voc ≤ 60V and a max. Solar panel power Pm ≤ 260W.

3. Features load boost constant-current output, able to directly power a maximum of 18 light bulbs in series, with a max. Load power Pled ≤ 120 W.

4. Adopts an improved charging algorithm that supports 12 V and 24 V lead-acid batteries and lithium batteries, and the user can set the operating modes for lead-acid batteries or lithium batteries accordingly.

5. Boasts a load triple-stage brightness adjustment and morning on design, with an operating duration adjustable from 0 to 15 hours and a power settable from 0 to 100%.

6. Features a system status log function, able to record a maximum of 7 days of system status, comprehensively and effectively monitoring the system's conditions.

7. Data communication adopts a multi-time two-way handshake protocol and a data compression algorithm, realizing precise and fast data transmission.

8. Features an intelligent power mode which can extend the battery life to its top limit by adjusting the load power automatically according to the remaining battery capacity.

9. True constant current rather than current-limiting control ensures smooth and stable output current, effectively reducing LED light attenuation and extending LED service life.

10. With an infrared remote control function, operations including setting parameters, reading status and viewing historical data can be conducted.

11. A metal case and an IP68 waterproof level enable the device to operate in various kinds of tough conditions.

12. An overheat protection function enables the device to scale down the load or shut off the load completely when its temperature exceeds a certain point.

13. A range of protection measures such as battery reverse-connection protection, LED short-circuit and open-circuit protection, etc., put the system under comprehensive and constant guard.

Parameter:

Model	GP-XM-120
Supported battery	lithium battery
Battery voltage	12V
Battery voltage range	7V~32V
Charge current	10A
Limited charge current	
Solar panel power	160W
Solar input voltage	16V~48V
Circuit efficiency	≤97%
Voc of solar panel	<60V
MPPT tracking efficiency	>99%
Limited Charge voltage	15.5V;×2/24V
Over voltage protection	17.0V;×2/24V
Over-discharge voltage	7.5V~15.5V;×2/24V
Max load power	120W
Output voltage	30V~60V

range	
Output current range	70~3960 mA
Output current accuracy	±5% or ±30mA
Light control voltage	5V~15V;×2/24V
Working temperature	-40℃~ +60℃
Weight	280g
Product dimension	100×82×20(mm)
Protection	1.IP68 degree; 2. PV and Battery reverse connection; 3. internal overheat; 4.PV over voltage, short circuit; 5.charge,discharge over load; 6.Anti converse charge at night; 7.TVS protection to PV. 8. Load short circuit, open circuit ; 9. Battery open circuit

4) Luminaire

Philips led bulbs are one of the best in the world & highly recommended for use on solar street lamps. The whole light works up to 120 lumen per watt.

Luminaire	
Luminaire input voltage	33V
Power consumption	20W
Lumen output	3600 lumens
LED type	Philips 3030, >150 lm/W
Color temperature	5500 K
IES lighting type	Type II
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Insulation	Class I
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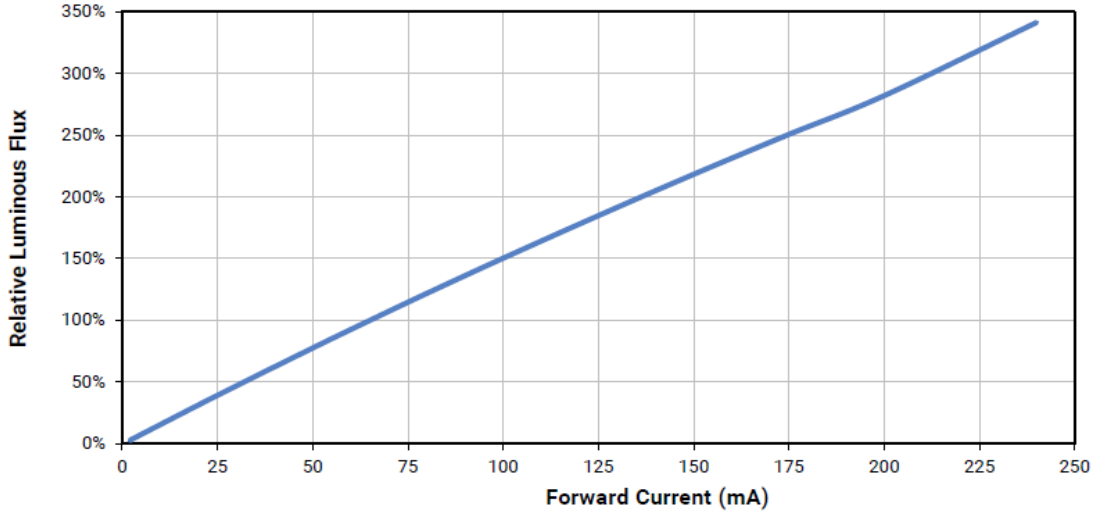
CRI	≥70

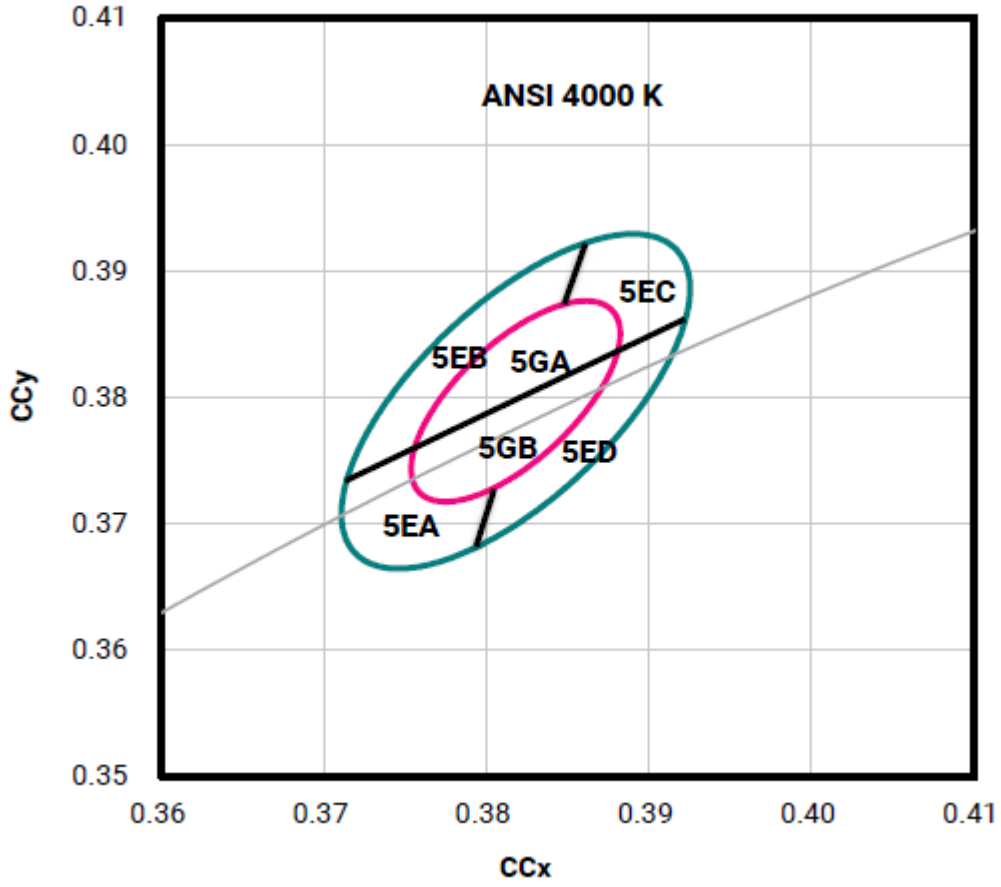
5) LED

• Industry- compatible size : 3.0 x 3.0 x 0.5 mm
• 3- V and 6- V configurations
• 6500 K - 2700 K ANSI CCTs available
• 70, 80 & 90 CRI available for all CCTs
• 5- step chromaticity bins aligned to Cree EasyWhite® bins
• RoHS and REACh compliant

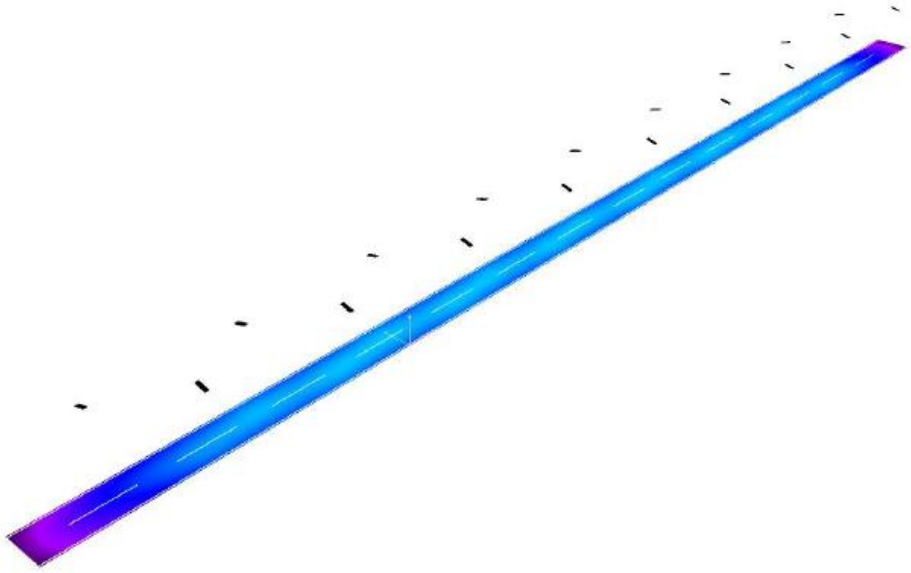
Specification

Power Class	Test Temperature	Test Current	Typical Forward Voltage	4000 K, 70 CRI	
				Typical Flux	Typical Efficacy
0.2 W	25 °C	65 mA	2.8 V	35.5 lm	195 LPW
1 W	25 °C	350 mA	3.2 V	156 lm	139 LPW
1 W	25 °C	150 mA	6.0 V	152 lm	169 LPW


Relative Luminous Flux
350%
300%
250%
200%
150%
100%
50%
0%
0
25
50
75
100
125
150
175
200
225
250
Forward Current (mA)

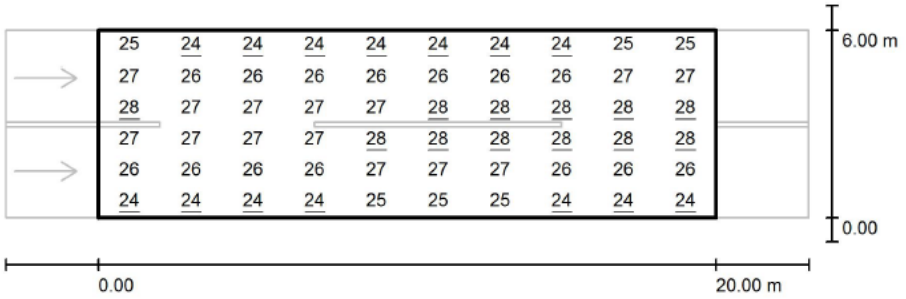

ANSI 4000 K
5EC
5EB
5GA
5GB
5ED
5EA
CCy
0.41
0.40
0.39
0.38
0.37
0.36
0.35
0.36
0.37
0.38
0.39
0.40
0.41
CCx

6) Dialux Design



Valuation Field Roadway 1
Length: 20.000 m, Width: 6.000 m
Grid: 10 x 6 Points
Accompanying Street Elements: Roadway 1.
tarmac: R3, q0: 0.070
Selected Lighting Class: ME4a (All lighting performance requirements are met.)

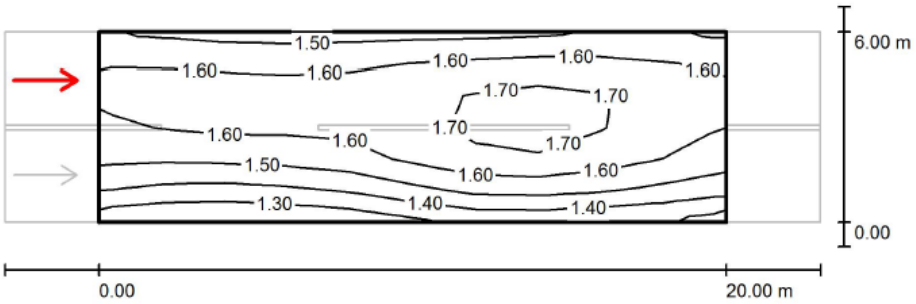
	L_{av} [cd/m²]	U0	Ul	TI [%]	SR
Calculated values:	1.57	0.81	0.90	3	0.75
Required values according to class:	≥ 0.75	≥ 0.40	≥ 0.60	≤ 15	≥ 0.50
Fulfilled/Not fulfilled:	✓	✓	✓	✓	✓



Values in Lux, Scale 1 : 186

Grid: 10 x 6 Points

E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u0	E_{min} / E_{max}
26	24	28	0.913	0.852



Values in Candela/m², Scale 1 : 186

Grid: 10 x 6 Points
Observer Position: (-60.000 m, 4.500 m, 1.500 m)
tarmac: R3, q0: 0.070

	L_{av} [cd/m²]	U0	UI	TI [%]
Calculated values:	1.57	0.81	0.96	3
Required values according to class ME4a:	≥ 0.75	≥ 0.40	≥ 0.60	≤ 15
Fulfilled/Not fulfilled:	✓	✓	✓	✓