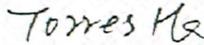
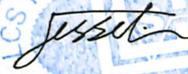




TEST REPORT

Kunde: <i>Client:</i>	AOK Industrial Company Limited		
Adresse: <i>Address:</i>	Building 1, Shengzuozhi Technology Industrial Park, Shajing Street, Shenzhen City, Guangdong Province, China		
Hersteller: <i>Manufacturer:</i>	AOK Industrial Company Limited		
Adresse: <i>Address:</i>	Building 1, Shengzuozhi Technology Industrial Park, Shajing Street, Shenzhen City, Guangdong Province, China		
Name der Marke: <i>Brand Name:</i>	 Quality, Honesty, Service and Innovation		
Beschreibung des Produkts: <i>Product Description:</i>	Solar Street Light		
Modelle: <i>Models:</i>	AOK-60WsE-NV-L5-00-3080-T301-A		
Bewertung: <i>Rating:</i>	DC24V, 60W		
Verfahren: <i>Method:</i>	According to requirement clause 12.4.1 of IEC 60598.1: 2014+A1:2017; IEC 60598.2.3:2002+A1:2011 (also reference EN 60598-1 or AS/NZS 60598-1)		
Prüfergebnis*: <i>Test result*:</i>	Pass		
Datum der Prüfung: <i>Date of Test:</i>	Datum der Emission: <i>Date of Issue:</i>	Klassifizierung: <i>Classification:</i>	Gegenstand der Prüfung: <i>Test item:</i>
2020-06-19~2020-07-30	2021-01-07	Commission Test	ISTMT Test and TM21 Test
Prüflabor (Testlabor) / Testing Laboratory: Shenzhen Southern LCS Compliance Testing Laboratory Ltd.			
Test von/Test by:	Check von/Check by:	Genehmigt von/Approved by:	
			
Lydia Luo/ Project Engineer	Torres He/ Director	Jesse Liu/ Manager	
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.			
<i>Remark: The duplication of this report or parts of it and its use for advertising purposes is only allowed with permission of the testing laboratory. This report contains the result of examination of the product sample submitted by the appliance. A general statement concerning the quality of the products from the series manufacturer cannot be derived therefore.</i>			



1. GENERAL INFORMATION

1.1 Product Information

Information of product:	
Product description	Solar Street Light
Model Number	AOK-60WsE-NV-L5-00-3080-T301-A
Rated Inputs	DC24V
Rated Power	60W
Declared CCT.	3000K
LED Package, Array or Module	3*(1S32P); 96pcs LED chip(s)
Date of Receipt Samples	2020-06-19
Quantity of Receipt Samples	1 unit
Information of LED chip:	
LED Chip Manufacturer	LUMILEDS
LED type	LUXEON 5050
Model of the LED chip(s)	L150-3080502400000
Forward voltage of the LED chip	23.5-24.5V
Forward current of the LED chip	60mA
ISTMT temperature of the LED chip	105°C
IES LM-80 Test Report	Report No.: S280e Issue Date: 2017-10-23 Tested and Prepared by: LUMILEDS.

**General remarks:**

“(See attachment#)” refers to additional information appended to the report.

“(See remark#)” refers to a remark appended to the report.

“(See appended table)” refers to a table appended to the report.

Throughout this report a comma (point) is used as the decimal separator.

Remark:

1. Measurement was conducted at a stable ambient temperature $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$.

Detail information for models covered in this report as below.

Model No.	Rating	CCT	Reported $L_{90}B_{10}$ lumen maintenance life
AOK-60WsE-NV-L5 -00-3080-T301-A	DC24V, 60W	3000K	≥ 100000 hours

Equipment list

Equipment No.	Equipment Name	Specification data	Cal. Date	Due Date
SLCS-S-004	Digital Power Meter	0-600Vac, 0-10kW, 0-20A	2020/05/15	2021/05/14
SLCS-S-011	J Thermocouple	0~300°C	2020/05/15	2021/05/14
SLCS-S-029	Temperature recorder	34970A	2020/05/15	2021/05/14



1.2 Reference Standards or Methods

The following standards are partly or totally used or referenced for test

Standard No.	Name
IES TM-21-11	The Estimation of Lumen Maintenance Life of LED
IES LM-80-08	Measuring Lumen Maintenance of LED Light Sources
Annex A of IES LM-84-14	Measuring Lumen Flux and Color Maintenance of LED lamps, Lighting Engines, and Luminaires

2. Test Result of ISTMT

2.1 Electrical data

Criteria Item	Result
Input voltage	24Vdc
Input current	2.5A
Total power	60.0W
Power factor	1.0
Current on each LED module	26.04mA
Remark: There are 96 pcs LED chip(s) (3*(1S32P)) in models AOK-60WsE-NV-L5-00-3080-T301-A, That we are measurement the total current of driver output was 2500mA, and current on each parallel was 26.04mA (2500mA/96=26.04mA), Because in each series that the forward current on each LED chip(s) was equivalent, so forward current on each LED chip(s) was 26.04mA.	

2.2 Temperature data

Ambient Temperature, °C :	25±1°C	Relative Humidity, % :	65%	
Supply voltage:	24Vdc	Type of thermocouples:	J	
Test Product Model	AOK-60WsE-NV-L5-00-3080-T301-A			
Test LED Model	L150-3080502400000			
Test LED Driver Model	N/A			
Number of Driver / Product	One Lamp with a power supply			
Test Duration	≥3.5Hours			
Item	Parts	Test Result (°C)	Revise to ta. (°C)	Limit (°C)
1	Measured maximum Temperature @ TEM _{LED}	65.7	65.5	105
2	Ambient	25.2	25.0	--



3. Lumen Maintenance Projection (IESNA TM-21-11 Method)

3.1 LM-80 report summary for LED chip(s)

Manufactured by	Lumileds		
LED Model	L150-3080502400000		
Number of LED light source tested	20 units		
Drive Current	60 mA		
Case temperature	70°C	85°C	105°C
17000 hours lumen maintenance	97.05°C	96.19°C	95.38°C
17000 hours color maintenance ($\Delta u'v'$)	0.0036	0.0038	0.0044

3.2 Temperature Interpolation

Test data from LM-80 report #S280e was referenced to calculate the lumen maintenance life according to IES TM-21-11

Projected from calculated $L_{90}B_{10}$: $L_{90}B_{10} > 48000$ hours

4.1 Thermocouple contact photo of @TEM_{LED}

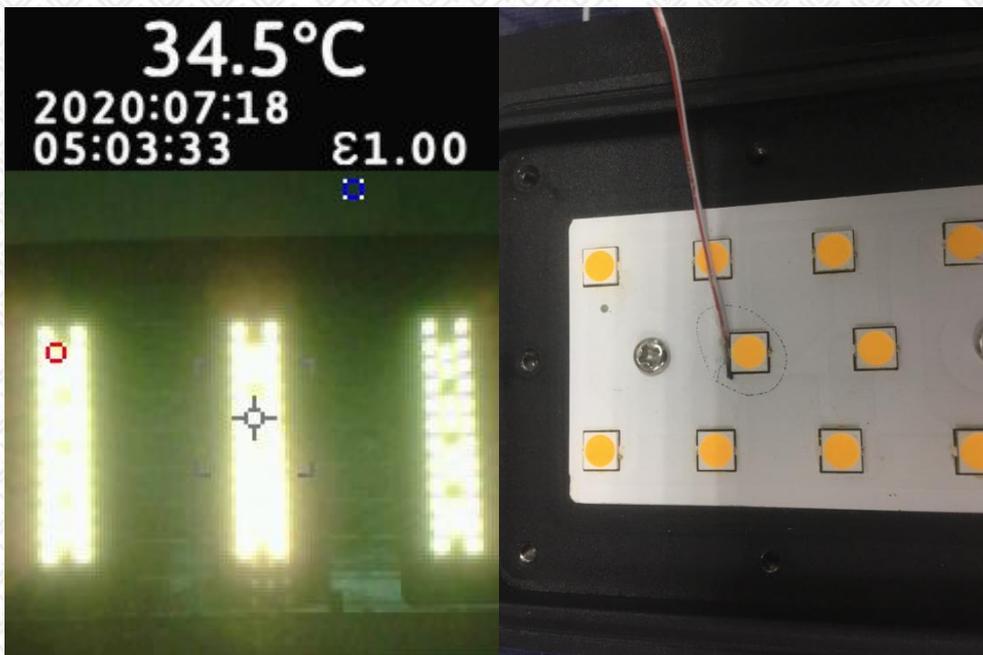


Figure 1

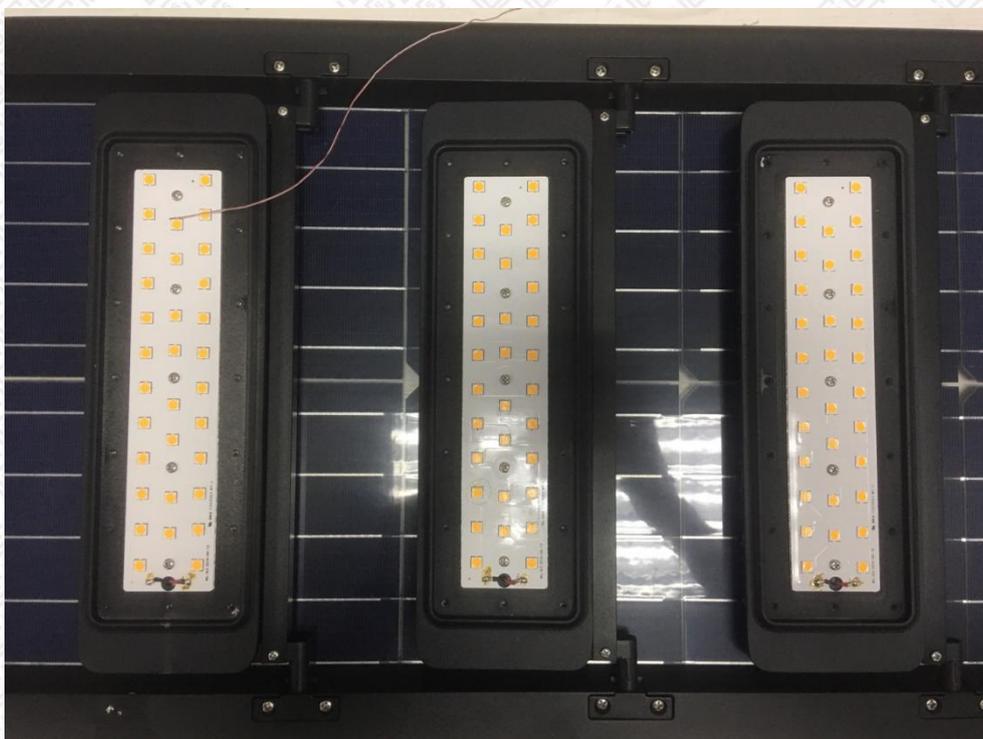


Figure 2

4.2 Product Photos



Figure 3 (General view)

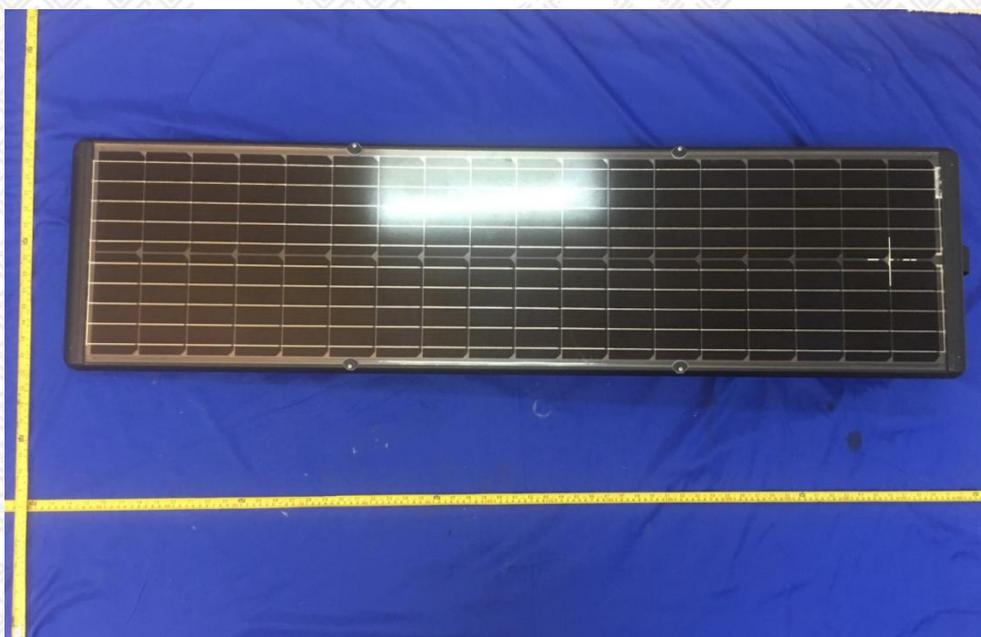


Figure 4 (General view)



Solar Street Light

Model:AOK-60WsE-NV-L5-00-3080-T301-A

Rating:DC24V, 60W

CCT: 3000K



AOK Industrial Company Limited

MADE IN CHINA

Figure 5 (Label of the light)

----- End of test report -----