

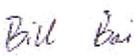
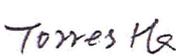


TEST REPORT

Kunde: <i>Client:</i>	AOK INDUSTRIAL COMPANY LIMITED
Adresse: <i>Address:</i>	1# Building, Sans Souci Technology Industrial Park, Shajin street, Shenzhen city, Guangdong Provice, China
Hersteller: <i>Manufacturer:</i>	AOK INDUSTRIAL COMPANY LIMITED
Adresse: <i>Address:</i>	1# Building, Sans Souci Technology Industrial Park, Shajin street, Shenzhen city, Guangdong Provice, China
Name der Marke: <i>Brand Name:</i>	AOK
Beschreibung des Produkts: <i>Product Description:</i>	LED Flood Light (Sport Light)
Modelle: <i>Models:</i>	AOK-580WiNS-NV-L5-00-4080-30-B
Bewertung: <i>Rating:</i>	100-277V~, 50/60Hz, 580W, IP66, ta:50°C, CCT: 4000K
Verfahren: <i>Method:</i>	According to requirement clause 12.4.1 of AS/NZS 60598.1: 2017+A1:2017; AS/NZS 60598.2.5:2018;(also reference IEC 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>
2021-01-05~2021-01-06	2021-01-27	Commission Test	ISTMT+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:  
Bill Bai/ 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.

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.



1. GENERAL INFORMATION

1.1 Product Information

Information of product:	
Product description	LED Flood Light (Sport Light)
Model Number	AOK-580WINS-NV-L5-00-4080-30-B
Rated Inputs	100-277V~, 50/60Hz
Rated Power	580W
Declared CCT.	4000K
LED Package, Array or Module	4S118P, 472pcs LED chip(s)
Date of Receipt Samples	2021-01-05
Quantity of Receipt Samples	1 unit
Information of LED chip:	
LED Chip Manufacturer	Lumileds
LED type	LED Package
Model of the LED chip(s)	L150-4080502400000
Forward voltage of the LED chip	23.5-26.5V
Forward current of the LED chip	200mA
ISTMT temperature of the LED chip	105°C
IES LM-80 Test Report	Report No.: S280e Issue Date: 2019-12-20 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: Measurement was conducted at a stable ambient temperature $50^{\circ}\text{C}\pm 1^{\circ}\text{C}$.

ISTMT was test conducted on the product with the lowest CCT.4000K and the max. power 580W.

Detail information for models covered in this report as below.

Model list:

+

Model No.	Rating	CCT
AOK-580WiNS-NV- L5-00-4080-30-B	100-277V~, 50/60Hz, 580W, IP66, ta:50°C,	4000K

LED specification:

Model/Series	Manufacturer	V _F (V)	I _F (mA)
L150-4080502400000	Lumileds	23.5-26.5V	200mA



1.2 Reference Standards or Methods

According to requirement clause 12.4.1 of AS/NZS 60598.1: 2017+A1:2017;

AS/NZS 60598.2.5:2018 (also reference IEC 60598-1)

IES LM-84-14: Measuring Luminous Flux and Color Maintenance of LED Lamps, Light Engines, and Luminaires---Annex A: measurement of in-situ conditions LED case temperature

1.3 Equipment list

Item	Equipment No.	Equipment	Manufacturer/Type/Series No	Cal.Date	Due Date
1	SLCS-S-004	Digital Power Meter	YOKOGAWA/ WT210 / 91L424211	2020.5.15	2021.5.14
2	SLCS-S-011	J Thermocouple	DE AO/J	2020.5.15	2021.5.14
3	SLCS-S-029	Temperature recorder	AGILENT/ 34970A	2020.5.15	2021.5.14

2. Test Result of ISTMT

2.1 Electrical data

Criteria Item	Result
Input voltage	230.0V
Input current	2.557A
Total power	588.8W
Power factor	0.99
Current on each LED module	48mA
Remark: There are 472 pcs LED chip(s) (4S118P) in models AOK-580WiNS-NV-L5-00-4080-30-B, That we are measurement the total current of driver output was 5600mA, and current on each parallel was 48mA (5600mA/118=48mA), Because in each series that the forward current on each LED chip(s) was equivalent, so forward current on each LED chip(s) was 48mA.	

2.2 Temperature data

Ambient Temperature, °C :	50±1°C	Relative Humidity, % :	65%	
Supply voltage:	230 Vac / 50 Hz	Type of thermocouples:	J	
Test Product Model	AOK-580WiNS-NV-L5-00-4080-30-B			
Test LED Model	L150-4080502400000			
Test LED Driver Model	EUD-600S740DV			
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	85.9	85.7	105



	@ TEMLED			
2	tc of LED driver	82.6	82.4	89
3	Ambient	50.2	50.0	--

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

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

Manufactured by	Lumileds		
LED Model	L150-4080502400000		
Number of LED light source tested	30 units		
Drive Current	200mA		
Case temperature	85°C	105°C	--
17000 hours lumen maintenance	95.55%	94.42%	--
17000 hours color maintenance ($\Delta u'v'$)	0.0046	0.0048	--

3.2 Lumen Maintenance Projection for luminaires

Criteria Item	Result
50000h at which to estimate lumen maintenance	85.60%
Drive current on each LED light source	48mA
Reported L ₈₀ lumen maintenance life	70000



TM-21 Inputs



Instructions

Yellow fields are completed by the user. Fields not used should be left blank. Cyan fields are calculated based on user entries.

First, enter a description of the LED light source tested. Then complete the fields labeled "LM-80 Testing Details". Test duration must be at least 6,000 hours. If only one case temperature data set is to be used (no interpolation), complete only "Tested case temperature 1". For only two case temperature data sets, complete 1 and 2.

Next, further to the right, in the corresponding box(es) for each tested case temperature, enter the test data along with the time (in hours) at which each measurement was taken. Data entered must be normalized then averaged measured data (per TM-21 sections 5.2.1 and 5.2.2). If case temperatures have different test durations, enter data up to the lowest of the test durations for all of the case temperatures.

Enter drive current, *in-situ* temperature data and the percentage of initial lumens to project to in the fields labeled "In-Situ Inputs".

Results can be tailored to estimate lumen maintenance at a specific time by entering a value (t) in the yellow field. A complete TM-21 report will appear on the next tab labeled "Report".

Description of LED Light Source Tested (manufacturer, model, catalog number)	
Lumileds	L150-4080502400000

LM-80 Testing Details	
Total number of units tested per case temperature:	20
Number of failures:	0
Number of units measured:	20
Test duration (hours):	17000
Tested drive current (mA):	200
Tested case temperature 1 (T _c ° C):	85
Tested case temperature 2 (T _c ° C):	105
Tested case temperature 3 (T _c ° C):	

In-Situ Inputs	
Drive current for each LED package/array/module (mA):	48
<i>In-situ</i> case temperature (T _c ° C):	85.7
Percentage of initial lumens to project to (e.g. for L ₇₀ , enter 70):	80

Results	
Time (t) at which to estimate lumen maintenance (hours):	50,000
Lumen maintenance at time (t) (%):	85.60%
Reported L80 (hours):	70,000

LM-80 Test Inputs

Test Data for 85° C Case Temperature		Test Data for 105° C Case Temperature		Tested Case Temperature 3	
Time (hours)	Lumen Maintenance (%)	Time (hours)	Lumen Maintenance (%)	Time (hours)	Lumen Maintenance (%)
1000	100.10%	1000	99.91%		
2000	99.82%	2000	99.60%		
3000	99.63%	3000	99.31%		
4000	99.38%	4000	99.00%		
5000	99.18%	5000	98.72%		
6000	98.90%	6000	98.42%		
7000	98.67%	7000	98.14%		
8000	98.39%	8000	97.82%		
9000	98.11%	9000	97.47%		
10000	97.80%	10000	97.11%		
11000	97.44%	11000	96.75%		
12000	97.05%	12000	96.32%		
13000	96.74%	13000	95.90%		
14000	96.44%	14000	95.51%		
15000	96.18%	15000	95.18%		
16000	95.87%	16000	94.80%		
17000	95.55%	17000	94.42%		



TM-21 Report

Table 1: Report at each LM-80 Test Condition			
Description of LED Light Source Tested (manufacturer, model, catalog number)	Lumileds L150-4080502400000		
Test Condition 1 - 85° C Case Temp	Test Condition 2 - 105° C Case Temp		
Sample size	20	20	Sample size
Number of failures	0	0	Number of failures
DUT drive current used in the test (mA)	200	200	DUT drive current used in the test (mA)
Test duration (hours)	17,000	17,000	Test duration (hours)
Test duration used for projection (hour to hour)	8,000 - 17,000	8,000 - 17,000	Test duration used for projection (hour to hour)
Tested case temperature (° C)	85	105	Tested case temperature (° C)
α	3.291E-06	3.977E-06	α
B	1.010	1.010	B
Reported L80(17k) (hours)	71,000	59,000	Reported L80(17k) (hours)

Table 2: Interpolation Report (projection based on <i>in-situ</i> temperature entered)	
T _{s1} (° C)	85.00
T _{s1} (K)	358.15
α ₁	3.291E-06
B ₁	1.010
T _{s2} (° C)	105.00
T _{s2} (K)	378.15
α ₂	3.977E-06
B ₂	1.010
E _a /k _B	1.28E+03
A	1.185E-04
B ₀	1.010
T _{si} (° C)	85.70
T _{si} (K)	358.85
α _i	3.314E-06
Reported L80(17k) at 85.7° C (hours)	70,000

4. Photos

4.1 Thermocouple contact photo of @TEM_{LED}

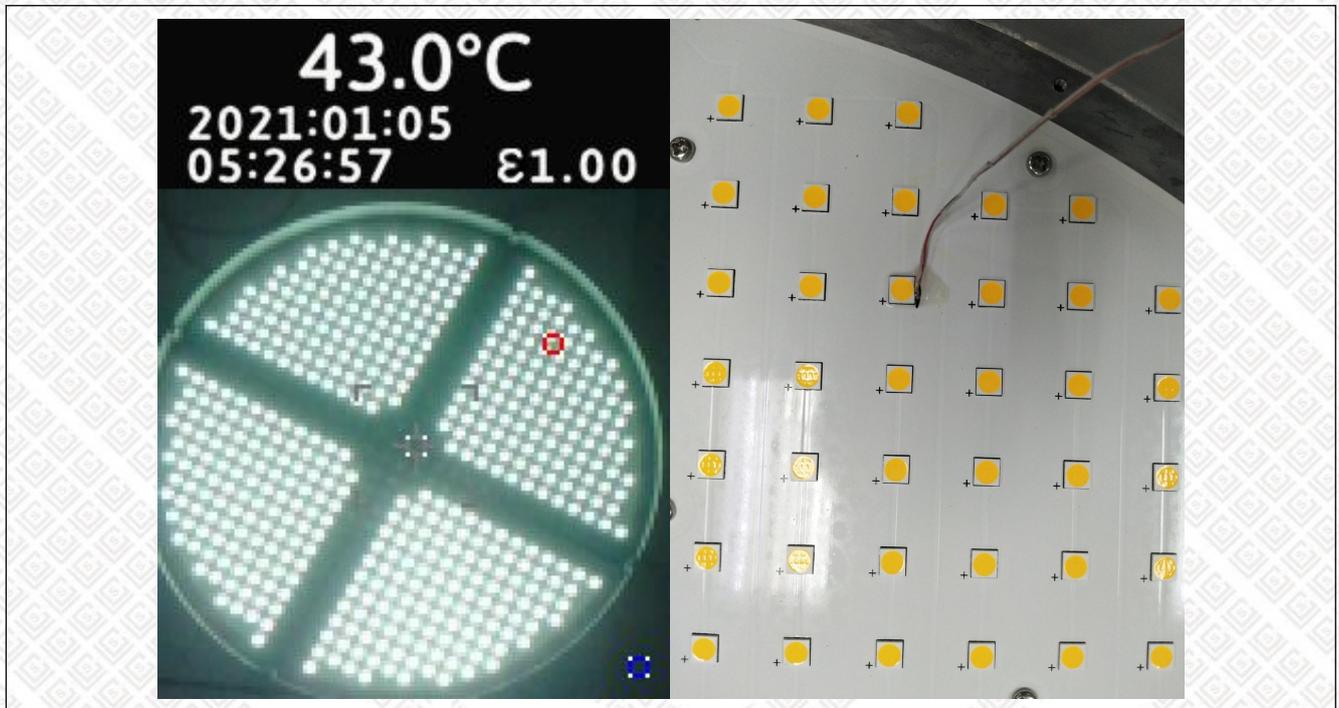


Photo 1

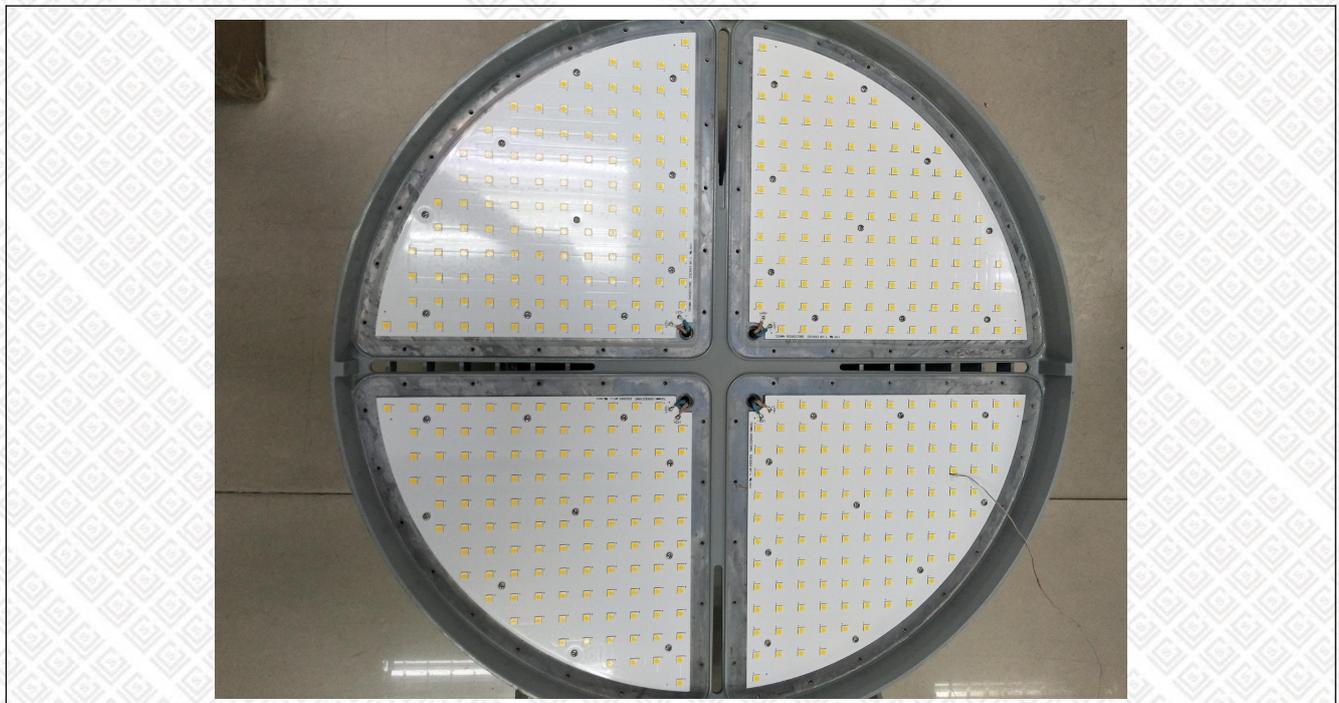


Photo 2



Photo 3

4.2 Product Photos



Photo 1



Photo 2



Photo 3 Label of the light

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