TEST REPORT

Kunde: *Client:*	AOK Industrial Company Limited
Adresse: *Address:*	Building 1, Shengzuozhi Technology Industrial Park, Shajing Street, Shenzhen City, Guangdong, P.R. China
Hersteller: *Manufacturer:*	AOK Industrial Company Limited
Adresse: *Address:*	Building 1, Shengzuozhi Technology Industrial Park, Shajing Street, Shenzhen City, Guangdong, P.R. China
Name der Marke: *Brand Name:*	AOK
Beschreibungdes Produkts: *Product Description:*	LED street light
Modelle: *Models:*	AOK-150WiL02-NV-L3-00-40
Bewertung: *Rating:*	120-277V, 50/60Hz,150W
Verfahren: *Method:*	According to requirement clause 12.4.1 of AS/NZS 60598.1: 2017+A1:2017; AS/NZS 60598.2.3:2015;(also reference IEC 60598-1)
Prüfergebnis*: *Test result*:*	Pass

Datum der Prüfung: *Date of Test:*	**Datum der Emission:** *Date of Issue:*	**Klassifizierung:** *Classification:*	**Gegenstand der Prüfung:** *Test item:*
2021/6/16	2021/9/8	Commission Test	ISTMT+TM21Test

Prüflabor (Testlabor) / Testing Laboratory:
Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

Test von/Test by:	**Check von**/Check by:	**Genehmigt von**/Approved by:
Biu 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 street light
Model Number	AOK-150WiL02-NV-L3-00-40
Rated Inputs	120-277V,50/60Hz
Rated Power	150W
Declared CCT.	4000K
LED Package, Array or Module	40P8S; 320pcs LED chip(s)
Date of Receipt Samples	2021/6/16
Quantity of Receipt Samples	1 unit
Information of LED chip:	
LED Chip Manufacturer	Lumileds
LED type	LUXEON 3030 2D
Model of the LED chip(s)	L130-4080003000W2C
Forward voltage of the LED chip	5.8~6.6V
Forward current of the LED chip	100mA
ISTMT temperature of the LED chip	85℃
IES LM-80 Test Report	Report Number: S211e Issue Date: 2017-10-17 Tested and Prepared By: Lumileds LLC.

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°C±1°C.
ISTMT was test conducted on the product with the lowest CCT.4000K and the max. power 150W.
Detail information for models covered in this report as below.

Model list:

Model No.	Rating	CCT
AOK-150WiL02-NV-L3-00-40	120-277V,50/60Hz,150W	4000K

LED specification:

Model/Series	Manufacturer	V_F (V)	I_F (mA)
L130-4080003000W2C	Lumileds	5.8~6.6V	100mA

1.2 Reference Standards or Methods

According to requirement clause 12.4.1 of AS/NZS 60598.1: 2017+A1:2017;
AS/NZS 60598.2.3:2015;(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	2021.5.13	2022.5.12
2	SLCS-S-011	J Thermocouple	DE AO/J	2021.5.14	2022.5.13
3	SLCS-S-029	Temperature recorder	AGILENT/ 34970A	2021.5.13	2022.5.12

2. Test Result of ISTMT

2.1 Electrical data

Criteria Item	**Result**
Input voltage	230V
Input current	0.662A
Total power	149.8W
Power factor	0.98
Current on each LED module	76.25mA
Remark: There are 320pcs LED chip(s) (40P8S) in models AOK-150WiL02-NV-L3-00-40,That we are measurement the total current of driver output was 3050mA, and current on each parallel was 76.25mA(3050mA/40=76.25mA), Because in each series that the forward current on each LED chip(s) was equivalent, so forward current on each LED chip(s) was 76.25mA.	

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-150WiL02-NV-L3-00-40		
Test LED Model	L130-4080003000W2C		
Test LED Driver Model	EUM-150S420MG		
Number of Driver / Product	One Lamp with a power supply		
Test Duration	≥3.5Hours		

Item	Parts	Test Result (℃)	Revise to ta. (℃)	Limit (℃)
1	Measured maximum Temperature @ TEMLED	80.3	80.0	85
2	tc of LED driver	81.4	81.1	90
3	Ambient	50.3	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	L130-4080003000W2C		
Number of LED light source tested	25units		
Drive Current	100mA		
Case temperature	85°C	--	--
15000 hours lumen maintenance	96.73%	--	--
15000 hours color maintenance (△u'v')	0.0041	--	--

3.2 Lumen Maintenance Projection for luminaires

Criteria Item	Result
30000h at which to estimate lumen maintenance	93.10%
Drive current on each LED light source	76.25mA
Reported L_{70} lumen maintenance life	>90000

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 L130-4080003000W2C

LM-80 Testing Details	
Total number of units tested per case temperature:	25
Number of failures:	0
Number of units measured:	25
Test duration (hours):	15000
Tested drive current (mA):	100
Tested case temperature 1 (T_c, ° C):	85
Tested case temperature 2 (T_c, ° C):	
Tested case temperature 3 (T_c, ° C):	

In-Situ Inputs

Drive current for each LED package/array/module (mA):	76.25
In-situ case temperature (T_c, ° C):	60
Percentage of initial lumens to project to (e.g. for L_{70}, enter 70):	70

Results

Time (t) at which to estimate lumen maintenance (hours):	30,000
Lumen maintenance at time (t) (%):	93.10%
Reported L70 (hours):	>90000

LM-80 Test Inputs

Test Data for 85° C Case Temperature		Tested Case Temperature 2		Tested Case Temperature 3	
Time (hours)	Lumen Maintenance (%)	Time (hours)	Lumen Maintenance (%)	Time (hours)	Lumen Maintenance (%)
1000	99.86%				
2000	99.68%				
3000	99.52%				
4000	99.37%				
5000	99.16%				
6000	98.93%				
7000	98.70%				
8000	98.48%				
9000	98.25%				
10000	97.98%				
11000	97.74%				
12000	97.45%				
13000	97.20%				
14000	97.00%				
15000	96.73%				

TM-21 Report

Table 1: Report at each LM-80 Test Condition

Description of LED Light Source Tested (manufacturer, model, catalog number)	Lumileds L130-4080003000W2C				
Test Condition 1 - 85° C Case Temp					
Sample size	25	Sample size	-	Sample size	-
Number of failures	0	Number of failures	-	Number of failures	-
DUT drive current used in the test (mA)	100	DUT drive current used in the test (mA)	-	DUT drive current used in the test (mA)	-
Test duration (hours)	15,000	Test duration (hours)	-	Test duration (hours)	-
Test duration used for projection (hour to hour)	7,000 - 15,000	Test duration used for projection (hour to hour)	-	Test duration used for projection (hour to hour)	-
Tested case temperature (° C)	85	Tested case temperature (° C)	-	Tested case temperature (° C)	-
α	2.550E-06	α	-	α	-
B	1.005	B	-	B	-
Reported L70(15k) (hours)	>90000	Reported L70(15k) (hours)	-	Reported L70(15k) (hours)	-

Table 2: Interpolation Report (projection based on *in-situ* temperature entered)

$T_{s,1}$ (° C)	85.00
$T_{s,1}$ (K)	358.15
α_1	2.550E-06
B_1	1.005
$T_{s,2}$ (° C)	-
$T_{s,2}$ (K)	-
α_2	-
B_2	-
E_a/k_b	-
A	-
B_0	1.005
$T_{s,i}$ (° C)	60.00
$T_{s,i}$ (K)	333.15
α_i	2.550E-06
Reported L70(15k) at 60° C (hours)	>90000

4. Photos

4.1 Thermocouple contact photo of @ TEM_{LED}

Photo 1

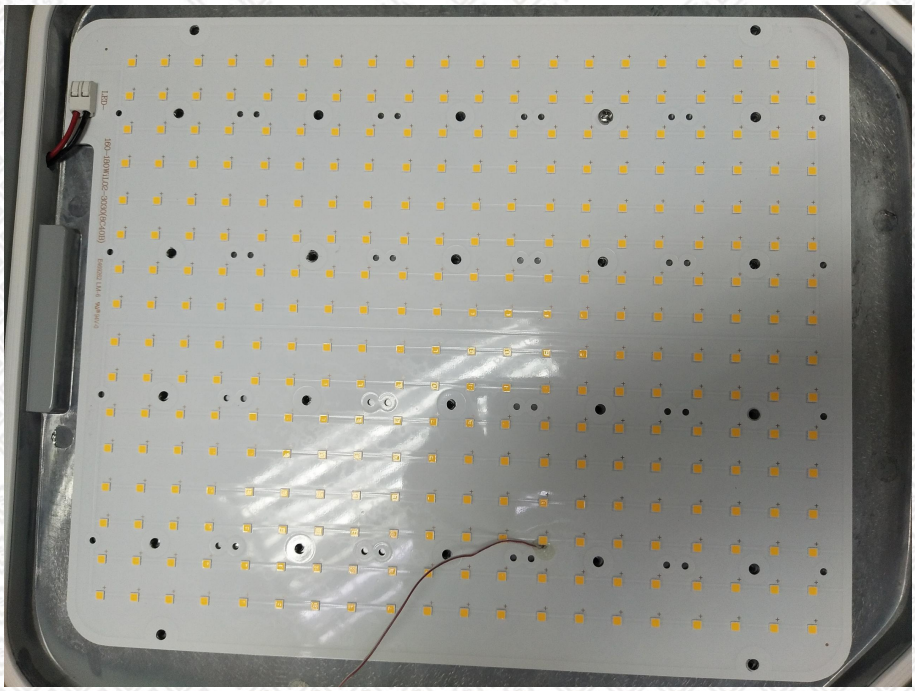

Photo 2

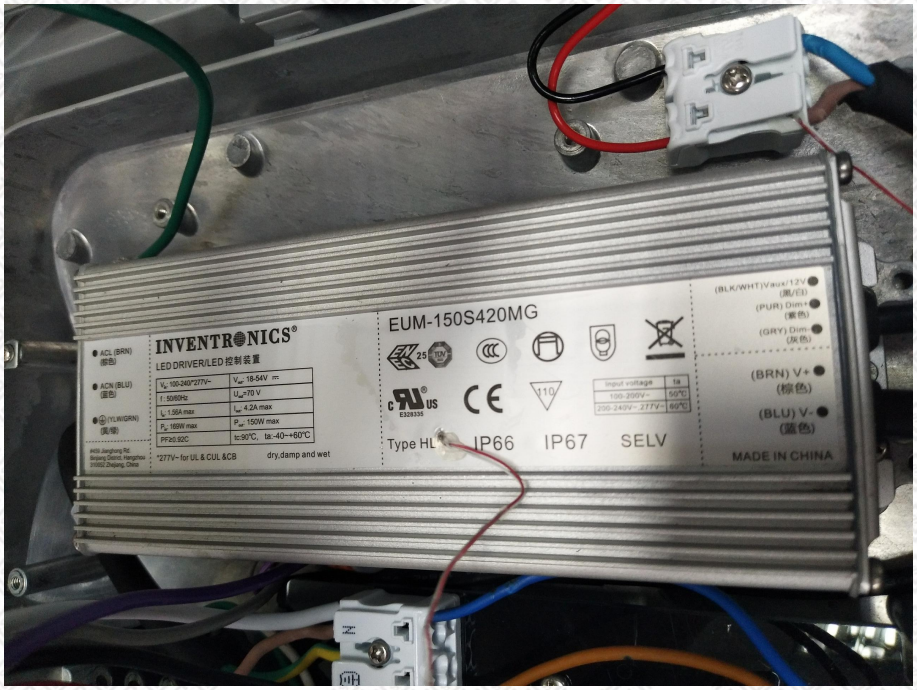
INVENTRONICS
LED DRIVER/LED 控制装置
EUM-150S420MG
Type HL
IP66
IP67
SELV
MADE IN CHINA
(BRN) V+
(BLU) V-

Photo 3

4.2 Product Photos

Photo 1

Photo 2

Photo 3 Label of the light

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