TEST REPORT

For

#AOK LED Light Company Limited

#1/F of 1#Building, East Block of 3/F of Building 1,And 2/F of Building 4, ST George’s Science and Technology Industrial Park, Northside of Xinyu Road,Xiangshan Community, Xianqiao Street Baoan District,518000 Shenzhen, Guangdong, CHINA

#Model Number: AOK-800WiSF-HV-S5-00-5070-30-P

Report Type:	Elevated Temperature Electrical and Photometric tests in accordance with IES LM-82-12: Characterization of LED Light Engines and LED Lamps for Electrical and Photometric Properties as a Function of Temperature
Reviewed By:	Hexy He
Report Number:	DG3220519-21533E-10
Test Date:	2022-05-28
Report Date:	2022-06-07
Approved by:	Blake Zhang / EE Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 5/F(B-West) -7/F, the 3rd Phase of Wan Li Industrial Building D, Shihua Road, Futian Free Trade Zone Shenzhen, Guangdong, China. Tel: +86-755-33320018 Fax: +86-755-33320008
Test Facility:	Test facility was located at No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

1. Description of SSL Product under Test#

General Information:

One test sample was in good condition and received on 2022-05-19, and used for testing.

Model Tested:	AOK-800WiSF-HV-S5-00-5070-30-P
Manufacturer:	AOK LED Light Company Limited
Address:	1/F of 1#Building, East Block of 3/F of Building 1,And 2/F of Building 4, ST George ' s Science and Technology Industrial Park, Northside of Xinyu Road,Xiangshan Community, Xianqiao Street Baoan District,518000 Shenzhen, Guangdong, CHINA
Product Designation:	LED street lighting
Burning Time Before Test:	0 hours(for new products)

Rated Values:

Rated Voltage/Frequency:	180-528VAC 60Hz
Rated Power:	800W
$T_{b,1}$:	$T_{b,0}$+25°C
$T_{b,2}$:	$T_{b,0}$+8°C

2. Standards Used

- IESNA LM-82-12 Characterization of LED Light Engines and LED Lamps for Electrical and Photometric Properties as a Function of Temperature

3. Description of Test Equipment

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
1.5m temperature integrating sphere	SENSING	SPR-600	S09008	2021-09-27	2022-09-26
High-precision rapid spectral analysis system	EVERFINE	HAAS-2000	M112048CA1361125	2021-09-27	2022-09-26
Digital power meter	YOKOGAWA	WT310	13398	2022-01-05	2023-01-04
Programmable Precision DC Power Supply	EVERFINE	WY5015	11060010	2022-01-05	2023-01-04
thermometer	SENSING	NA	NA	2022-02-14	2023-02-13
Standard Light Source	EVERFINE	D204	N/A	2021-10-15	2022-10-14
Precision frequency power supply	ALL Power	APW-105N	970613	2022-01-05	2023-01-04
Multimeter	FLUKE	17B	1573 1328	2021-09-23	2022-09-22
Hybrid Recorder	YOKOGAWA	DR240	10#	2022-01-05	2023-01-04
AC POWER SUPPLY	HengPu	HPA 1103	0003394	2022-01-05	2023-01-04

4. TEST RESULT

4.1 Room Temperature Initial Measurement

Photometric and Electrical Measurements at Ambient Temperature T_A=25°C	
ELECTRICAL	
Input Voltage (Volts AC):	220
Input Current (A AC):	3.57
Input Power (Watts), P_i:	782.4
Power Factor:	0.996
PHOTOMETRIC	
Total Integrated Flux (Lumens), Φ_i:	117837
Correlated Color Temp (K), CCT_i:	5162
Color Rendering Index (CRI):	73.5
Lumens/Watt:	150.61
Duv:	9.60E-04
Chromaticity Ordinate x_i:	0.3408
Chromaticity Ordinate y_i:	0.3501
Chromaticity Ordinate u'_i:	0.2091
Chromaticity Ordinate v'_i:	0.4833
$T_{b,l}$ (°C):	84.2
$T_{d,i.}$ (°C):	66.3

4.2 Room Temperature Calibration Measurement

Photometric and Electrical Measurements at $T_{b,0}$= $T_{b,i}$	
ELECTRICAL	
Input Voltage (Volts AC):	220
Input Current (A AC):	3.57
Input Power (Watts), P_0:	782.5
Power Factor:	0.9962
PHOTOMETRIC	
Total Integrated Flux (Lumens) , Φ_0:	117808
Correlated Color Temp (K) , CCT_0:	5164
Color Rendering Index (CRI):	73.6
Lumens/Watt:	150.55
Duv:	9.20E-04
Chromaticity Ordinate x_0:	0.3408
Chromaticity Ordinate y_0:	0.3499
Chromaticity Ordinate u'_0:	0.2091
Chromaticity Ordinate v'_0:	0.4832
CORRECTION FACTORS	
C_{power} (C_{power} =P_i / P_0):	0.9999
C_{flux} (C_{flux}=Φ_i /Φ_0):	1.0002
Δ_x (Δ_x= x_i - x_0):	0.0000
Δ_y ($\Delta_{u'}$= y_i - y_0):	0.0002
$\Delta_{u'}$ (Δ_x= u'_i - u'_0):	0.0000
$\Delta_{v'}$ ($\Delta_{u'}$= v'_i - v'_0):	0.0001
Δ_{CCT} (Δ_{CCT}= CCT_i - CCT_0):	-2
T_A (°C):	25.4
$T_{b,0}$ (°C):	84.1
$T_{d,0.}$ (°C):	66.2

4.3 Measurement at Temperature $T_{b,0}$ + 25°C

Photometric and Electrical Measurements at $T_{b,1}$= $T_{b,0}$+ 25°C	
ELECTRICAL	
Input Voltage (Volts AC):	220
Input Current (A AC):	3.557
Input Power (Watts), P_1:	779.2
Power Factor:	0.9957
PHOTOMETRIC	
Total Integrated Flux (Lumens) , Φ_1:	111001
Correlated Color Temp (K) , CCT_1:	5233
Color Rendering Index (CRI):	74.4
Lumens/Watt:	142.46
Duv:	6.87E-04
Chromaticity Ordinate x_1:	0.3390
Chromaticity Ordinate y_1:	0.3480
Chromaticity Ordinate u'_1:	0.2087
Chromaticity Ordinate v'_1:	0.4820
CORRECTED VALUE	
P (P= C_{power} P_1):	779.1004
Φ (Φ=C_{flux} Φ_1):	111028.32
x (x= x_1 + Δ_x):	0.3390
y (y= y_1 + Δ_y):	0.3482
u' (u'= u'_1 + $\Delta_{u'}$):	0.2087
v' (v' = v'_1 + $\Delta_{v'}$):	0.4821
CCT (CCT = CCT_1 + Δ_{CCT}):	5231
T_A (°C):	62.1
$T_{b,1}$ (°C):	109.0
$T_{d,1}$ (°C):	83.6

4.4 Measurement at Temperature $T_{b,0}$+8°C

Photometric and Electrical Measurements at $T_{b,2}=T_{b,0}$+8°C	
ELECTRICAL	
Input Voltage (Volts AC):	220
Input Current (A AC):	3.562
Input Power (Watts), $\boldsymbol{P_2}$:	780.6
Power Factor:	0.996
PHOTOMETRIC	
Total Integrated Flux (Lumens) , $\boldsymbol{\Phi_2}$:	115418
Correlated Color Temp (K) , $\boldsymbol{CCT}_2$:	5184
Color Rendering Index (CRI):	73.8
Lumens/Watt:	147.86
Duv:	7.80E-04
Chromaticity Ordinate $\boldsymbol{x_2}$:	0.3402
Chromaticity Ordinate $\boldsymbol{y_2}$:	0.3492
Chromaticity Ordinate $\boldsymbol{u'_2}$:	0.2090
Chromaticity Ordinate $\boldsymbol{v'_2}$:	0.4828
CORRECTED VALUE	
P (P= C_{power} P_2):	780.5002
Φ (Φ=C_{flux} Φ_2):	115446.41
x (x= x_2 + Δ_x):	0.3402
y (y= y_2 + Δ_y):	0.3494
u' (u'= u'_2 + $\Delta_{u'}$):	0.2090
v' (v' = v'_2 + $\Delta_{v'}$):	0.4829
CCT (CCT = CCT_2 + Δ_{CCT}):	5182
T_A (°C):	38.2
$T_{b,2}$ (°C):	92.1
$T_{d,2}$ (°C):	72.3

5. Test Method

5.1 SEASONING

For the purposes of characterizing the UUT with respect to temperature, the UUT does not require seasoning.

3.2 STABILIZATION

Before all photometric measurements are taken at any given temperature, the UUT shall be operated long enough to reach stabilization and temperature equilibrium. The time required for stabilization depends on the UUT. It should be judged that stability is reached when the variation (maximum – minimum) of at least 3 readings of the light output and electrical power over a period of 30 min, taken 15 minutes apart, is less than 0.5 %, and the readings shall not be increasing or decreasing monotonically. The stabilization time used for each UUT shall be recorded.

3.3 UNCERTAINTY STATEMENT

The uncertainty of the light output (luminous flux) measurements is U=2.6% (K=2), at the 95% confidence level. The uncertainty of the correlated color temperature measurements is U=24K (K=2), at the 95% confidence level. The uncertainty of the CRI is U=2.5(K=2), at the 95% confidence level.

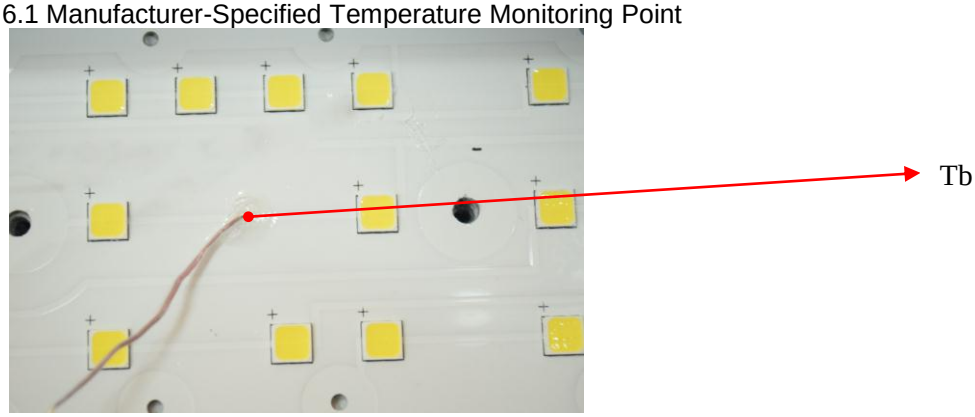
The uncertainty of power meter AC current U=0.16 % of rdg, AC Voltage U=0.18% of rdg, Power U=0.14%) (K=2), at the 95% confidence level.

Remark:

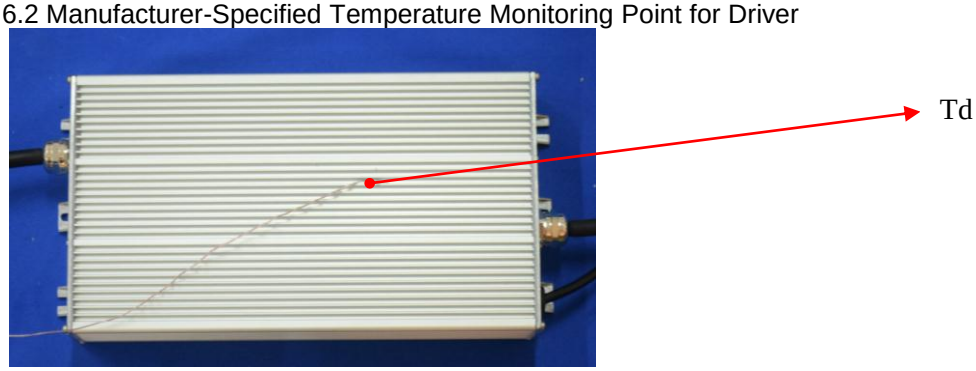
1. 0 hour season, Pre-heating the lamp for 45 minutes at least;
2. Ambient: 65%RH.
3. Test temperature (see test data)

6. Temperature Monitoring Point

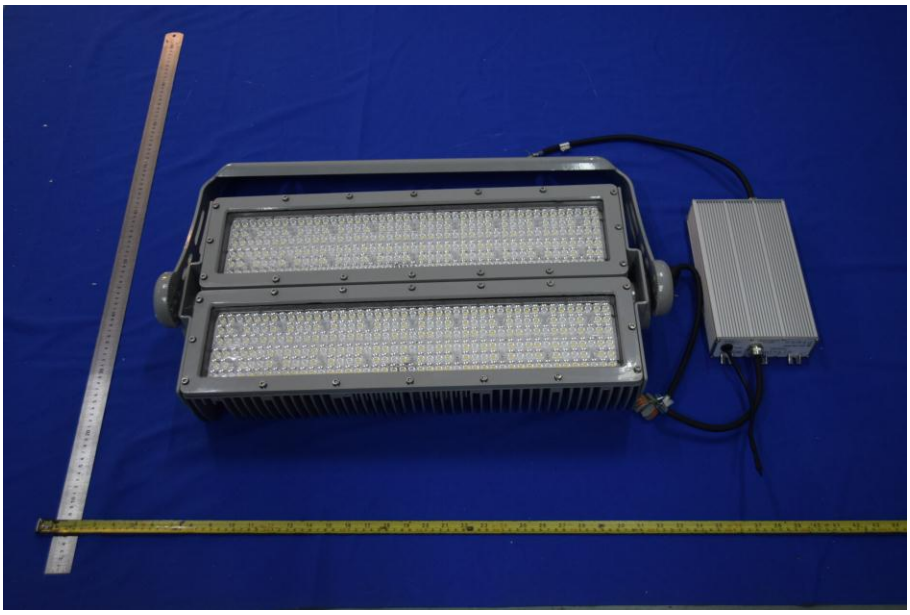
6.1 Manufacturer-Specified Temperature Monitoring Point

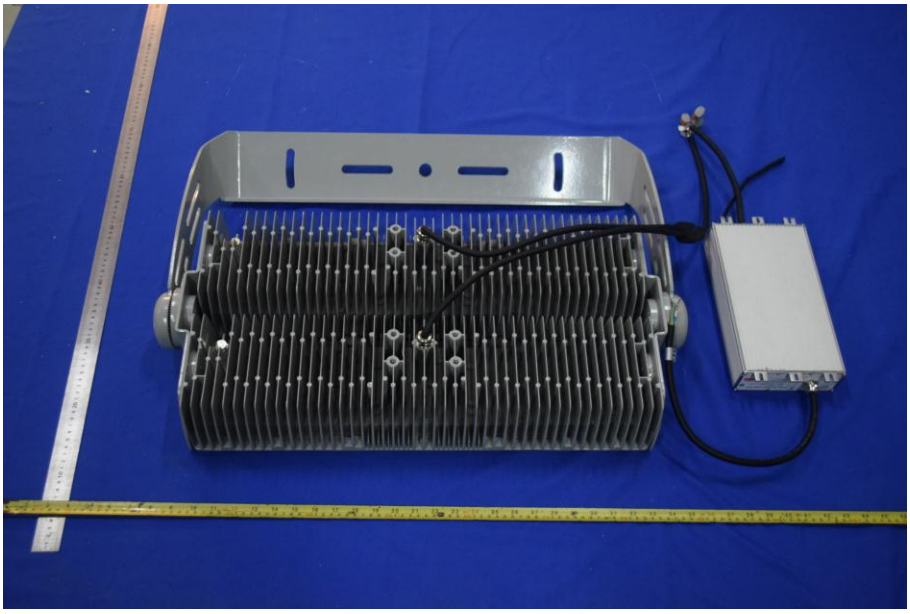


6.2 Manufacturer-Specified Temperature Monitoring Point for Driver



Attachment A – EUT PHOTO





Directions

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3. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
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