Ningbo TengLi Testing Co., Ltd

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LM-79-08 Test Report

For

Antec Lighting Inc

(Brand Name: AOK)

Uniy C, 3979 E Guasti Road, Ontario, CA 91761

Model name(s): AOK-25WiP-NV-L3-XX-XX80-T5-D

Report Type:	Testing and Report According to IES LM-79-2008
Type of Luminaire:	Outdoor Pole/Arm-Mounted Area and Roadway Luminaires
Report Date:	2019-04-18
Prepared By:	Ningbo TengLi Testing Co., Ltd 2nd floor, Block B, Ningbo Testing and Certification Base, No. 66 Qingyi Road, Ningbo National Hi-Tech Zone, Ningbo, Zhejiang

Test & Report By:

Xeon Ren

Engineer: Xeon Ren

Review By:

Johnson Sun

Manager: Johnson Sun

Note: 1. The results contained in this report pertain only to the tested samples

2. This report does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

1.1 Product Information:		
Model Number	AOK-25WiP-NV-L3-XX-XX80-T5-D	
Remark	The first “XX” can be “00” for without sensor or “SN” for with sensor function or “PH” for Plug-In photocontrol The second“XX” represents different CCT as below: 30=3000K, 35=3500K, 40=4000K, 50=5000K, 57=5700K;	
Representative (Tested) Model	AOK-25WiP-NV-L3-00-3080-T5-D	
Model Difference	All construction and rating are the same, except CCT	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Pole/Arm-Mounted Area and Roadway Luminaires	
LED Manufacturer	LUMILEDS	
LED Model	3000K: L130-3080003000X21	
Dimming	Dimmable	
Sample Number	JAE180920-OTF1(3000K)	
Date of Receipt	2019-03-08	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

1.2 Rated Values:	
Rated Voltage / Frequency	100-277Vac, 50/60Hz
Nominal Power	25W
Rated Initial Lamp Lumen	--
Declared CCT	3000K, 3500K, 4000K, 5000K, 5700K;

1.3 Test Specifications:	
Test item	1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Electrical Parameters
Reference Standard	1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2015 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source 6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	QD25

1.4 Test Methods

1) Photometric and Light Distribution Measurement – Goniophotometer Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at 25℃ ±1℃, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1 °vertical intervals and 22.5 °horizontal intervals.

2) Electrical Measurements:

Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at 25 ºC ±1 ºC. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.

2.1 Summary of Test Result

Criteria Item	Measured Value			Compliance	Requirement (DLC V4.4)	
Power (W)	3000K	120V	25.97	**N/A**	**N/A**	
		277V	25.74			
Power Factor	3000K	120V	0.9855	Pass	>= 0.9(-3%)	
		277V	0.8787			
THD %	3000K	120V	3.53	Pass	<= 20(+5)	
		277V	12.01			
Luminous Intensity Distribution	Zonal lumens in the 0-90 °		99.8	Pass	>= 100(-1)	
	Zonal lumens in the 80-90 °		0.5	Pass	<= 10(+3)	
Total Luminous	3000K	120V	3436.0	Pass	>=1000(-10%)	
		277V	3429.4			
Luminous Efficacy	3000K	120V	132.31	Pass	Standard: >= 90(-3%)	Premium: >= 110(-3%)
		277V	133.23			

2.2 Electrical, Photometric and Chromaticity Measurements

Test date	2019-04-16	**Test Ambient:**	25.2 ℃
Test Orientation	As intended	**Stabilization Time (min)**	90
Model Number	AOK-25WiP-NV-L3-00-3080-T5-D		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JAE180920-OTF1	120.0	60	0.2196	25.97	0.9855	3.53
	277.0	60	0.1058	25.74	0.8787	12.01

Photometric Measurement – Goniophotometer Method:

Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	3436.0	3429.4
Luminous Efficacy (lm/W)	132.31	133.23
Zonal lumens in the 0-90 °	99.8	--
Zonal lumens in the 80-90 °	0.5	--
Beam Angle (°)	142.5	--
Center Beam Candle Power (cd)	539	--

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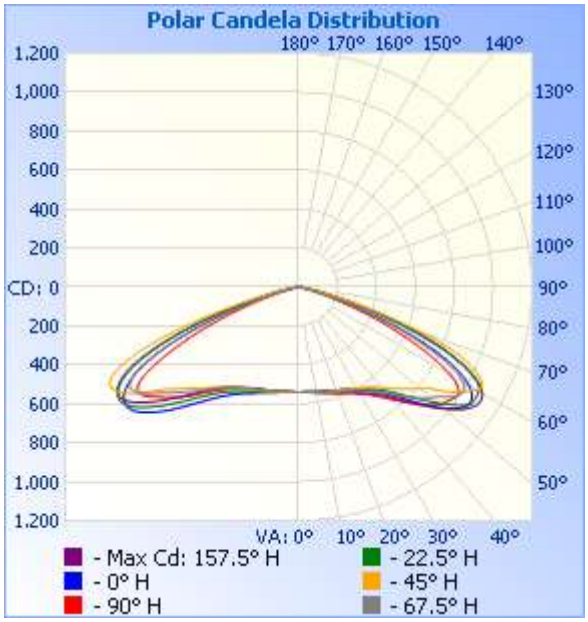
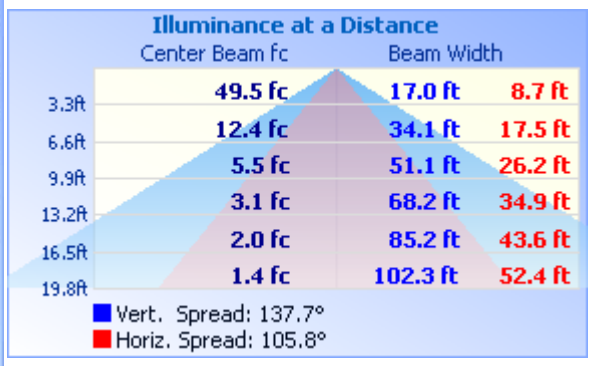
Zonal Lumen Tabulation

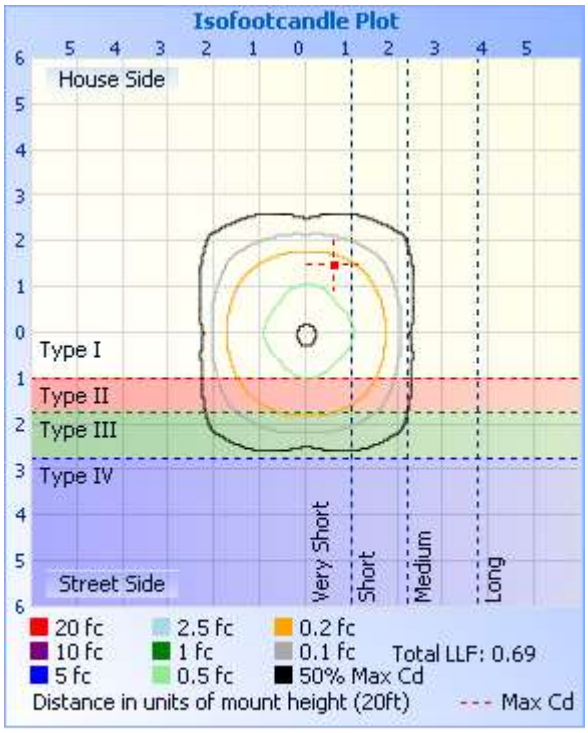
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	480.8	14%
0-40	889.2	25.9%
0-60	2,382.4	69.3%
60-90	1,046.8	30.5%
70-100	238.8	7%
90-120	4.6	0.1%
0-90	3,429.2	99.8%
90-180	6.5	0.2%
0-180	3,435.8	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	51.7	1.5%	90-100	2.7	0.1%
10-20	157.7	4.6%	100-110	1.1	0%
20-30	271.3	7.9%	110-120	0.8	0%
30-40	408.4	11.9%	120-130	0.6	0%
40-50	614.3	17.9%	130-140	0.5	0%
50-60	878.9	25.6%	140-150	0.5	0%
60-70	810.7	23.6%	150-160	0.2	0%
70-80	220.0	6.4%	160-170	0.1	0%
80-90	16.2	0.5%	170-180	0.0	0%

Photometric Data







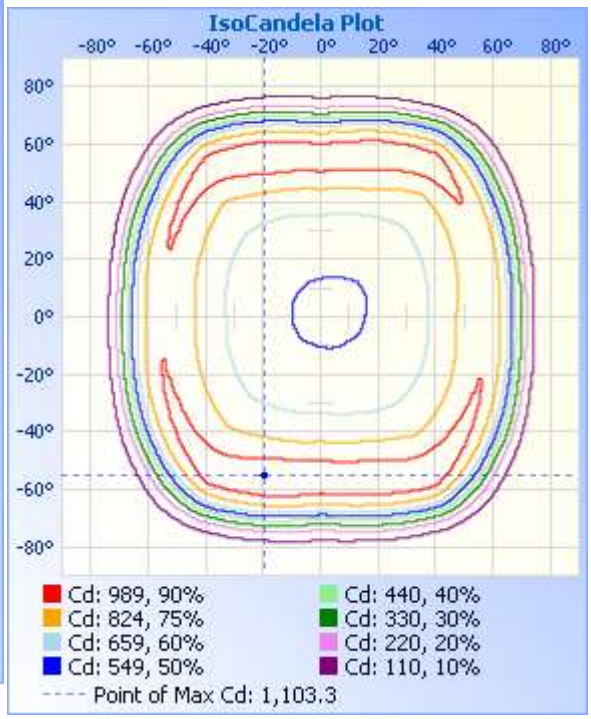


Table--1 UNIT: cd

γ (DEG) \ C (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5		
0	539	539	539	539	539	539	539	539	539	539	539	539	539	539	539	539		
5	538	537	537	538	539	539	541	541	542	542	542	542	542	541	541	539		
10	542	540	540	542	544	545	546	548	549	550	549	551	549	547	546	543		
15	550	546	546	549	551	553	555	558	561	562	561	562	561	558	555	551		
20	559	556	554	558	563	564	567	572	579	577	575	577	577	572	565	561		
25	575	568	564	572	581	579	580	590	601	596	591	596	600	590	579	575		
30	599	589	580	595	608	602	600	615	632	626	614	625	633	616	596	595		
35	636	618	603	628	649	637	627	653	680	666	648	669	683	657	624	629		
40	699	669	641	682	718	695	674	712	754	731	700	738	764	724	670	679		
45	789	735	692	773	829	792	738	797	849	813	770	843	878	825	732	754		
50	884	818	755	902	964	923	809	884	936	897	858	970	1001	952	813	842		
55	971	926	881	1029	1058	1053	936	976	985	984	951	1079	1074	1063	935	954		
60	927	979	1034	1076	1012	1067	1059	977	904	992	1060	1090	1020	1073	1071	1003		
65	627	766	1013	933	774	907	996	726	608	773	1016	930	799	912	1046	806		
70	288	379	680	572	388	550	656	365	285	400	693	587	427	570	717	414		
75	73.5	104	237	207	149	207	235	102	80.1	118	265	237	169	225	264	114		
80	17.4	20.7	46.0	56.8	50.2	58.0	51.9	23.6	20.8	27.8	62.7	73.1	63.4	67.6	58.0	24.5		
85	6.46	6.66	7.51	10.0	9.85	10.9	8.95	7.55	7.56	8.37	11.7	17.2	15.9	14.9	9.60	7.13		
90	3.93	3.56	3.22	3.14	3.29	3.38	3.58	4.26	4.66	4.37	3.87	3.84	3.64	3.56	3.49	4.00		
95	3.29	2.95	2.31	1.31	0.99	0.89	2.48	3.54	3.84	3.55	2.79	1.23	1.62	1.15	2.46	3.04		
100	1.90	1.63	0.80	1.84	1.64	1.94	0.74	1.88	2.11	1.84	0.70	2.06	1.72	1.95	0.47	1.34		
105	0.80	1.05	0.71	1.24	1.42	1.26	0.60	1.11	0.63	1.08	0.55	1.23	1.37	1.17	0.55	0.89		
110	0.77	1.18	1.23	0.71	0.74	0.69	0.80	1.21	0.93	1.24	0.86	0.66	0.68	0.69	0.74	1.10		
115	0.89	1.10	1.03	0.71	0.67	0.69	0.93	1.15	0.91	1.18	0.82	0.69	0.66	0.64	0.80	0.88		
120	0.82	0.74	0.66	0.77	0.66	0.67	0.66	0.69	0.68	0.65	0.52	0.69	0.66	0.62	0.74	0.63		
125	0.79	0.74	0.65	0.75	0.64	0.64	0.58	0.62	0.66	0.67	0.52	0.63	0.66	0.60	0.66	0.60		
130	0.77	0.74	0.61	0.66	0.63	0.61	0.57	0.66	0.69	0.74	0.52	0.48	0.66	0.49	0.59	0.70		
135	0.75	0.74	0.65	0.52	0.61	0.52	0.61	0.70	0.99	0.80	0.55	0.44	0.44	0.38	0.52	0.82		
140	1.23	1.04	0.69	0.44	0.57	0.41	0.65	0.93	1.51	1.24	0.66	0.36	0.40	0.34	0.64	1.13		
145	1.34	1.16	0.74	0.41	0.49	0.38	0.74	1.29	1.72	1.35	0.71	0.30	0.32	0.31	0.66	1.26		
150	1.35	1.14	0.47	0.37	0.40	0.35	0.41	1.32	1.32	1.32	0.66	0.17	0.19	0.17	0.28	1.06		
155	1.13	0.75	0.24	0.30	0.26	0.33	0.19	0.72	0.77	0.82	0.15	0.17	0.17	0.14	0.25	0.11		
160	0.36	0.30	0.24	0.17	0.16	0.28	0.19	0.14	0.16	0.08	0.17	0.18	0.15	0.25	0.29	0.18		
165	0.36	0.32	0.23	0.11	0.14	0.26	0.18	0.27	0.26	0.19	0.34	0.19	0.27	0.28	0.30	0.38		
170	0.36	0.37	0.23	0.27	0.16	0.27	0.17	0.32	0.28	0.24	0.38	0.20	0.30	0.29	0.38	0.41		
175	0.36	0.40	0.22	0.38	0.24	0.27	0.17	0.33	0.29	0.28	0.39	0.22	0.27	0.30	0.34	0.36		
180	0.38	0.38	0.22	0.33	0.27	0.27	0.16	0.33	0.30	0.36	0.38	0.22	0.27	0.25	0.27	0.19		

3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-702	2 meter Integrating Sphere	Verified by D204 standard lamp	
ST-R-701	Spectral analysis system HAAS-2000	Verified by D204 standard lamp	
ST-R-705	Standard Lamp	2019-02-07	2020-02-06
ST-R-704	Power Meter for Integrating Sphere	2019-01-06	2020-01-05
Uncertainty: Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K			

4. Product Photo

******** END OF REPORT ********