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-C

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-C	
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-C	
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-OTE1(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	25.96	**N/A**	**N/A**	
		277V	25.72			
Power Factor	3000K	120V	0.9845	Pass	>= 0.9(-3%)	
		277V	0.8771			
THD %	3000K	120V	4.27	Pass	<= 20(+5)	
		277V	12.22			
Luminous Intensity Distribution	Zonal lumens in the 0-90 °		99.9	Pass	>= 100(-1)	
	Zonal lumens in the 80-90 °		0.3	Pass	<= 10(+3)	
Total Luminous	3000K	120V	3415.6	Pass	>=1000(-10%)	
		277V	3400.7			
Luminous Efficacy	3000K	120V	131.57	Pass	Standard: >= 90(-3%)	Premium: >= 110(-3%)
		277V	132.22			

2.2 Electrical, Photometric and Chromaticity Measurements

Test date	2019-04-10	**Test Ambient:**	25.2 ℃
Test Orientation	As intended	**Stabilization Time (min)**	90
Model Number	AOK-25WiP-NV-L3-00-3080-T5-C		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JAE180920-OTE1	120.0	60	0.2197	25.96	0.9845	4.27
	277.0	60	0.1059	25.72	0.8771	12.22

Photometric Measurement – Goniophotometer Method:

Parameter	Result	
Test Voltage (V)	120.1	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	3415.6	3400.7
Luminous Efficacy (lm/W)	131.57	132.22
Zonal lumens in the 0-90 °	99.9	--
Zonal lumens in the 80-90 °	0.3	--
Beam Angle (°)	141.8	--
Center Beam Candle Power (cd)	530	--

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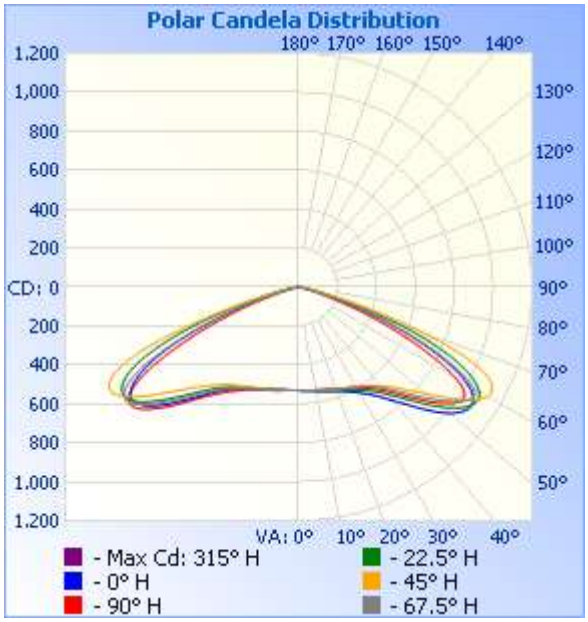
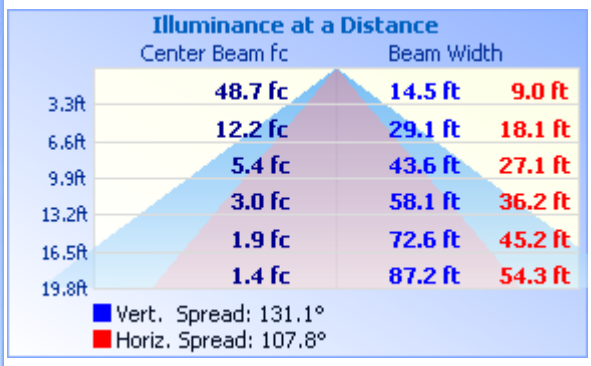
Zonal Lumen Tabulation

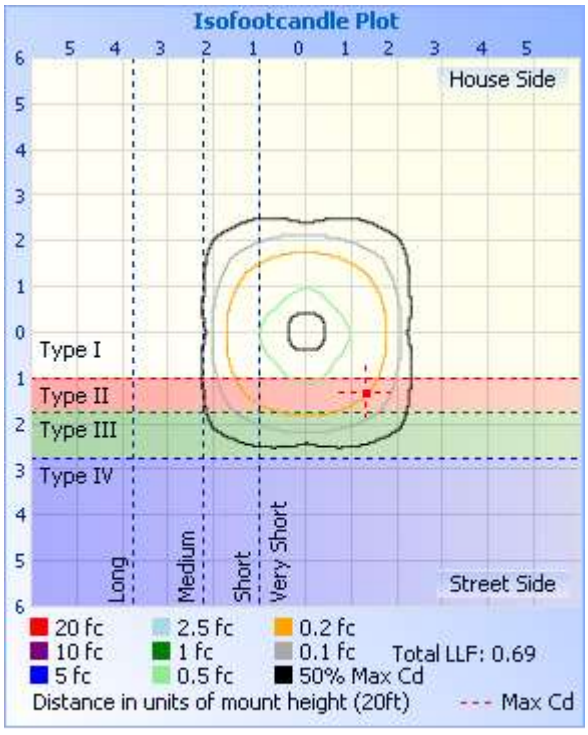
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	473.1	13.9%
0-40	875.6	25.6%
0-60	2,399.2	70.2%
60-90	1,014.3	29.7%
70-100	207.8	6.1%
90-120	0.8	0%
0-90	3,413.6	99.9%
90-180	1.9	0.1%
0-180	3,415.4	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	50.9	1.5%	90-100	0.0	0%
10-20	155.2	4.5%	100-110	0.3	0%
20-30	267.0	7.8%	110-120	0.5	0%
30-40	402.4	11.8%	120-130	0.4	0%
40-50	616.0	18.0%	130-140	0.3	0%
50-60	907.6	26.6%	140-150	0.2	0%
60-70	806.5	23.6%	150-160	0.1	0%
70-80	197.2	5.8%	160-170	0.1	0%
80-90	10.6	0.3%	170-180	0.0	0%

Photometric Data







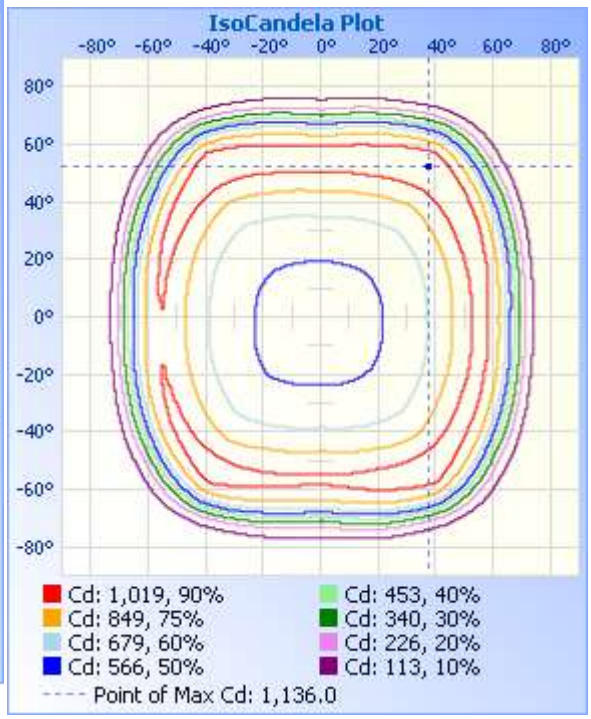


Table--1 UNIT: cd

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	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530		
5	531	533	534	534	534	533	532	531	531	530	530	530	530	530	530	531		
10	539	538	540	541	541	540	538	537	535	535	534	534	534	536	536	537		
15	548	547	549	552	552	550	547	545	543	542	541	542	543	542	544	547		
20	561	561	561	566	568	564	558	556	557	550	549	552	555	553	553	558		
25	581	579	576	586	591	583	571	571	573	565	559	567	573	569	568	576		
30	613	606	600	617	626	610	590	592	597	587	576	590	601	592	585	600		
35	659	646	634	660	679	651	619	620	634	616	601	623	642	626	612	637		
40	729	710	687	733	762	719	664	677	694	667	640	679	710	681	655	697		
45	839	810	770	840	878	823	737	768	794	751	703	772	817	773	723	793		
50	970	943	890	976	1006	956	852	892	922	868	804	898	944	898	830	921		
55	1054	1067	1035	1081	1075	1065	1002	1021	1019	994	947	1011	1028	1023	977	1042		
60	944	1052	1134	1074	1008	1071	1121	1039	930	1029	1070	1029	977	1050	1095	1023		
65	614	794	1057	894	742	889	1064	766	611	783	1037	864	744	903	1045	764		
70	270	382	677	527	372	529	674	366	266	372	663	516	374	558	676	366		
75	70.2	100	233	190	136	185	213	91.6	66.2	88.3	196	181	139	203	208	95.6		
80	14.7	20.9	47.7	52.3	45.6	49.9	42.4	18.4	13.7	17.8	31.2	49.7	47.5	55.4	35.2	20.5		
85	3.96	4.47	7.09	9.98	8.36	8.87	5.69	3.10	2.77	2.76	3.80	6.54	9.26	7.58	5.66	4.18		
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.20	0.00	0.00	0.00	0.19	0.06		
105	0.00	0.03	0.35	0.00	0.00	0.00	0.35	0.00	0.39	0.61	0.61	0.22	0.14	0.28	0.61	0.50		
110	0.33	0.32	0.45	0.35	0.22	0.33	0.42	0.30	0.77	0.80	0.58	0.42	0.41	0.41	0.61	0.77		
115	0.39	0.33	0.45	0.38	0.39	0.41	0.42	0.44	0.79	0.80	0.56	0.50	0.47	0.41	0.58	0.76		
120	0.44	0.33	0.46	0.41	0.44	0.41	0.43	0.47	0.76	0.80	0.44	0.57	0.47	0.41	0.50	0.58		
125	0.50	0.32	0.46	0.41	0.48	0.41	0.44	0.45	0.73	0.80	0.43	0.60	0.47	0.41	0.50	0.49		
130	0.50	0.32	0.47	0.40	0.45	0.41	0.45	0.42	0.66	0.80	0.42	0.47	0.47	0.34	0.43	0.44		
135	0.50	0.32	0.34	0.39	0.43	0.41	0.39	0.40	0.50	0.47	0.41	0.35	0.33	0.26	0.34	0.37		
140	0.47	0.31	0.29	0.36	0.41	0.33	0.37	0.34	0.39	0.34	0.39	0.33	0.25	0.14	0.32	0.25		
145	0.30	0.31	0.25	0.30	0.38	0.27	0.30	0.33	0.31	0.29	0.33	0.30	0.19	0.16	0.30	0.24		
150	0.08	0.27	0.23	0.25	0.30	0.22	0.25	0.28	0.27	0.17	0.32	0.27	0.18	0.15	0.28	0.23		
155	0.03	0.20	0.17	0.16	0.19	0.16	0.19	0.17	0.22	0.03	0.31	0.25	0.17	0.14	0.26	0.23		
160	0.03	0.20	0.17	0.17	0.16	0.16	0.18	0.19	0.22	0.08	0.30	0.28	0.18	0.14	0.23	0.23		
165	0.03	0.21	0.17	0.18	0.16	0.15	0.21	0.22	0.23	0.25	0.32	0.29	0.22	0.20	0.25	0.28		
170	0.16	0.25	0.17	0.19	0.15	0.14	0.24	0.25	0.25	0.35	0.42	0.33	0.29	0.22	0.25	0.33		
175	0.34	0.39	0.17	0.30	0.14	0.17	0.33	0.39	0.27	0.40	0.44	0.30	0.33	0.24	0.22	0.38		
180	0.33	0.42	0.17	0.33	0.14	0.17	0.33	0.41	0.28	0.33	0.42	0.17	0.30	0.14	0.17	0.33		

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 ********