



## LM-79-08 Test Report

For

**Antec Lighting Inc**

(Brand Name: )

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

**Model name(s):**

**AOK-190WiE-NV-LV2-XX-XX70-T302-P**

**Report Type:** Testing and Report According to IES LM-79-2008  
**Type of Luminaire:** Outdoor Pole/Arm-Mounted Area and Roadway Luminaires  
**Report Date:** 2019-03-20  
Ningbo TengLi Testing Co., Ltd  
**Prepared By:** 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 A2LA, or any agency of the Federal Government.



<b>1.1 Product Information:</b>		
Model Number	AOK-190WiE-NV-LV2-XX-XX70-T302-P	
Remark	The first "XX" can be "00" =no photocontrol or "PH"=photocontrol provided. The second "XX" could be 27/30/35/40/45/50/57 refers to CCT. This is multiple listed report, the Project Number of the original report is JAE190121-I-R1.	
Representative (Tested) Model	AOK-190WiE-NV-LV2-00-2770-T302-P	
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	LUXEON V Family	
Dimming	Dimmable	
Sample Number	JAE190121-I1	
Date of Receipt	Feb.23, 2019	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

<b>1.2 Rated Values:</b>	
Rated Voltage / Frequency	100-277Vac, 50/60Hz
Nominal Power	190W
Rated Initial Lamp Lumen	--
Declared CCT	2700K,3000K,3500K,4000K,4500K,5000K, 5700K



### 1.3 Test Specifications:

Test item	<ol style="list-style-type: none"> <li>1. Total Luminous Flux</li> <li>2. Luminous Distribution Intensity</li> <li>3. Luminous Efficacy</li> <li>4. Electrical Parameters</li> </ol>
Reference Standard	<ol style="list-style-type: none"> <li>1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products</li> <li>2. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems</li> </ol>
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  $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ , 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  $1\text{ }^{\circ}$  vertical intervals and  $22.5\text{ }^{\circ}$  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  $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ . 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)	
	2700K				
Power (W)	2700K	120V	185.7	N/A	N/A
		277V	185.3		
Power Factor	2700K	120V	0.9919	Pass	>= 0.9(-3%)
		277V	0.8902		
THD %	2700K	120V	5.70	Pass	<= 20(+5)
		277V	11.30		
Luminous Intensity Distribution	Zonal lumens in the 0-90 °		100	Pass	>=100(-1)
	Zonal lumens in the 80-90 °		0.6	Pass	<=10(+3)
Total Luminous	2700K	120V	22074	Pass	>=1000(-10%)
		277V	21837		
Luminous Efficacy	2700K	120V	118.87	Pass	Standard: >= 100(-3%) Premium: >= 120(-3%)
		277V	117.85		



**2.2 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2019-02-25	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	AOK-190WiE-NV-LV2-00-2770-T 302-P		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JAE190121-I	120.0	60	1.560	185.7	0.9919	5.70
1	277.0	60	0.7515	185.3	0.8902	11.30

**Photometric Measurement – Goniophotometer Method:**

Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	22074	21837
Luminous Efficacy (lm/W)	118.87	117.85
Zonal lumens in the 0-90 °	100	--
Zonal lumens in the 80-90 °	0.6	--
Beam Angle ( °)	104.8	--
Center Beam Candle Power (cd)	4639	--

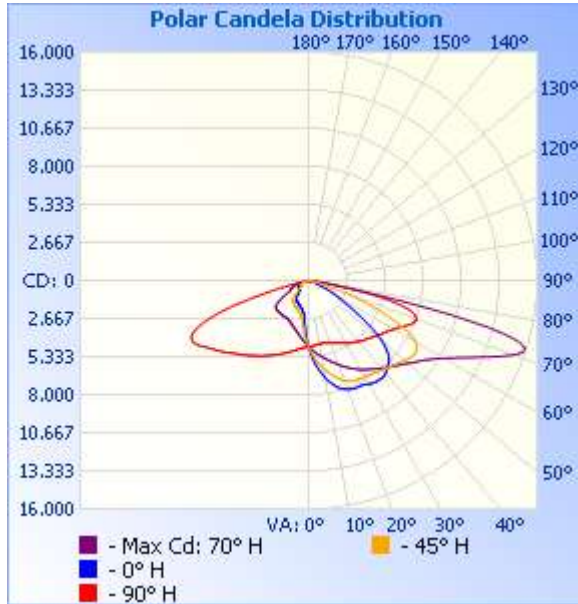


**Zonal Lumen Tabulation**

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	4,109.3	18.6%
0-40	7,371.3	33.4%
0-60	15,856.0	71.8%
60-90	6,217.5	28.2%
70-100	2,110.7	9.6%
90-120	0	0%
0-90	22,073.5	100%
90-180	0	0%
0-180	22,073.5	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	435.6	2.0%	90-100	0	0%
10-20	1,351.1	6.1%	100-110	0	0%
20-30	2,322.6	10.5%	110-120	0	0%
30-40	3,262.1	14.8%	120-130	0	0%
40-50	4,049.5	18.3%	130-140	0	0%
50-60	4,435.1	20.1%	140-150	0	0%
60-70	4,106.8	18.6%	150-160	0	0%
70-80	1,983.7	9.0%	160-170	0	0%
80-90	126.9	0.6%	170-180	0	0%

**Photometric Data**



**Illuminance at a Distance**

	Center Beam fc	Beam Width	
3.3ft	426.0 fc	3.5 ft	2.7 ft
6.6ft	106.5 fc	6.9 ft	5.4 ft
9.9ft	47.3 fc	10.4 ft	8.1 ft
13.2ft	26.6 fc	13.8 ft	10.7 ft
16.5ft	17.0 fc	17.3 ft	13.4 ft
19.8ft	11.8 fc	20.7 ft	16.1 ft

■ Vert. Spread: 55.3°  
■ Horiz. Spread: 44.3°

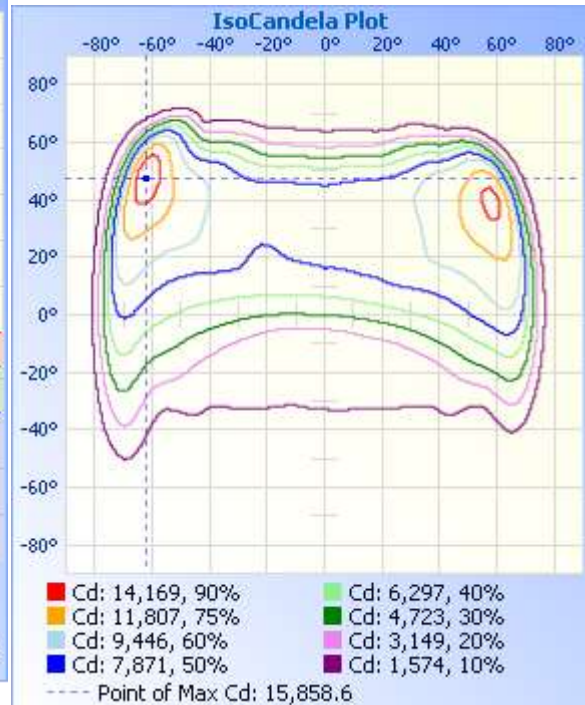
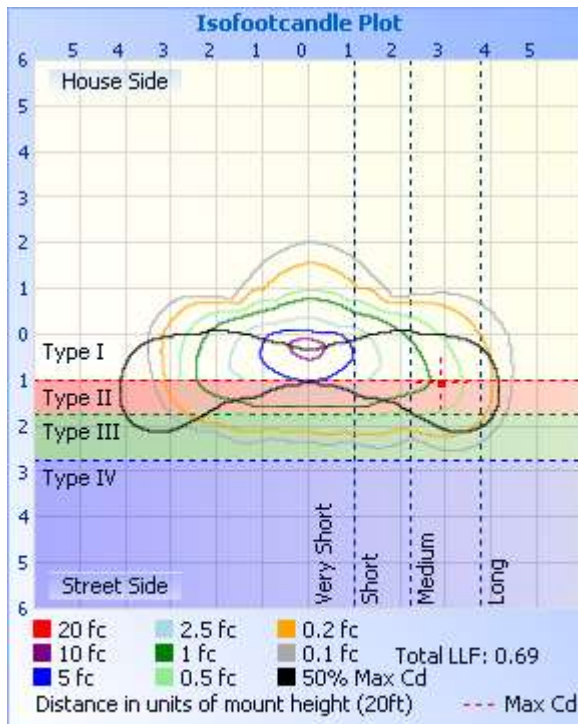




Table--1 UNIT: \*10ed

C (DEG) γ (DEG)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464
5	472	485	497	508	519	530	540	548	556	564	571	577	581	585	589	591	592	592	593
10	492	517	539	559	579	598	615	628	641	654	664	672	678	685	690	692	693	694	695
15	517	555	584	613	642	668	688	703	718	733	744	749	755	760	765	767	768	769	771
20	545	591	628	664	701	731	751	765	779	793	800	802	804	807	808	809	809	809	810
25	574	627	671	714	756	788	803	811	819	827	828	826	824	822	820	820	821	821	821
30	607	665	713	761	809	840	847	847	846	846	841	835	828	822	820	824	828	832	836
35	642	703	755	807	858	888	889	883	876	870	864	858	852	846	844	845	848	850	853
40	681	747	803	859	915	943	936	921	907	892	883	875	867	859	853	850	847	844	841
45	723	793	853	913	972	999	986	965	944	924	905	888	870	853	839	829	818	807	797
50	777	852	918	984	1050	1075	1053	1024	995	966	925	883	842	801	769	748	727	705	686
55	831	921	1003	1084	1164	1186	1142	1089	1038	986	900	811	722	634	575	545	516	488	459
60	900	1013	1117	1219	1320	1326	1229	1121	1016	911	791	668	545	422	349	325	303	281	259
65	903	1050	1192	1334	1472	1448	1253	1043	835	634	529	433	337	240	184	170	158	146	133
70	683	810	939	1074	1211	1181	971	741	508	279	222	180	136	90.7	67.1	65.2	64.8	64.1	63.6
75	226	228	222	217	215	199	169	134	94.5	53.6	49.3	47.5	45.8	43.6	42.5	42.0	41.6	41.1	40.6
80	26.3	31.2	33.1	34.6	35.7	34.8	32.2	29.2	25.8	22.1	22.8	23.7	24.6	25.5	25.5	24.9	24.3	23.6	22.8
85	0.78	1.10	1.44	1.80	2.15	2.54	3.01	3.50	3.97	4.46	5.27	6.11	6.94	7.75	8.18	8.22	8.21	8.18	8.10
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	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	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	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	0.00	0.00	0.00
110	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	0.00	0.00	0.00
115	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	0.00	0.00	0.00
120	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	0.00	0.00	0.00
125	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	0.00	0.00	0.00
130	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	0.00	0.00	0.00
135	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	0.00	0.00	0.00
140	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	0.00	0.00	0.00
145	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	0.00	0.00	0.00
150	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	0.00	0.00	0.00
155	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	0.00	0.00	0.00
160	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	0.00	0.00	0.00
165	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	0.00	0.00	0.00
170	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	0.00	0.00	0.00
175	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	0.00	0.00	0.00
180	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	0.00	0.00	0.00





Table--2 UNIT: \*10ed

C (DEG) y (DEG)	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185
0	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464
5	591	588	586	582	578	572	567	560	552	543	534	525	514	503	492	480	468	455	442
10	691	687	683	678	670	661	652	642	628	613	598	582	563	542	520	498	475	449	423
15	765	760	755	749	741	730	720	709	694	675	655	635	612	582	551	520	488	451	411
20	806	801	797	793	785	777	768	758	745	726	706	687	662	628	589	549	509	463	412
25	819	817	815	812	806	798	789	780	770	756	743	730	710	674	627	580	533	481	422
30	831	825	820	814	808	801	793	786	780	775	771	767	755	719	667	614	561	504	438
35	846	839	831	824	817	810	803	796	791	793	795	798	792	758	702	646	590	529	457
40	839	837	835	833	829	824	819	815	812	819	826	834	834	800	740	679	618	553	476
45	802	808	814	819	823	826	828	831	836	849	862	875	881	847	781	715	648	578	495
50	703	722	741	759	780	802	826	850	873	890	908	925	935	901	828	755	682	606	517
55	487	514	542	570	620	690	761	833	900	930	958	987	1008	975	893	810	726	640	540
60	282	305	327	352	421	534	647	760	867	930	993	1057	1113	1088	989	888	787	683	557
65	151	168	184	203	263	363	463	561	664	812	965	1122	1267	1272	1145	1014	882	747	591
70	67.2	70.7	74.1	79.1	112	171	230	288	363	636	921	1208	1480	1524	1346	1166	984	801	629
75	42.4	44.2	45.9	47.8	53.6	63.1	72.3	81.6	111	421	735	1043	1333	1374	1197	1015	840	677	525
80	24.7	26.6	28.4	30.2	31.6	32.4	33.1	33.8	36.6	77.6	116	150	181	202	213	224	235	245	189
85	9.37	10.6	11.8	13.0	13.6	13.8	13.9	14.0	14.5	18.7	22.8	26.4	29.7	30.0	27.7	25.3	22.6	19.7	16.5
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	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	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	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	0.00	0.00	0.00
110	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	0.00	0.00	0.00
115	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	0.00	0.00	0.00
120	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	0.00	0.00	0.00
125	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	0.00	0.00	0.00
130	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	0.00	0.00	0.00
135	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	0.00	0.00	0.00
140	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	0.00	0.00	0.00
145	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	0.00	0.00	0.00
150	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	0.00	0.00	0.00
155	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	0.00	0.00	0.00
160	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	0.00	0.00	0.00
165	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	0.00	0.00	0.00
170	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	0.00	0.00	0.00
175	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	0.00	0.00	0.00
180	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	0.00	0.00	0.00



Table--3 UNIT: \*10ed

C (DEG) γ (DEG)	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280
0	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464
5	429	417	405	393	381	369	358	349	340	332	324	318	314	311	309	307	304	308	311
10	396	370	346	324	303	282	262	251	244	238	231	226	224	223	222	221	220	222	225
15	370	330	298	275	256	238	221	211	207	204	201	199	197	197	197	197	197	199	201
20	361	310	269	246	232	218	206	197	194	191	188	186	185	185	185	185	185	187	189
25	363	304	255	229	218	207	197	189	185	182	179	176	174	174	174	173	173	175	177
30	372	306	250	220	210	200	190	182	177	173	169	166	164	163	163	163	163	164	165
35	385	313	249	216	205	194	184	175	169	164	158	154	151	150	150	149	149	150	150
40	398	321	251	213	201	189	176	165	155	144	134	125	118	115	112	109	106	106	106
45	412	329	252	208	189	170	152	134	122	111	101	90.5	85.2	84.2	83.5	82.8	82.1	81.6	81.1
50	427	337	252	197	167	137	107	81.0	78.7	77.8	77.0	76.4	76.5	77.4	78.3	79.2	80.2	78.5	76.9
55	440	339	242	181	151	122	92.7	67.6	68.0	69.3	70.7	72.1	73.5	74.8	76.1	77.4	78.7	76.5	74.4
60	430	303	181	115	99.1	84.9	71.4	60.2	61.3	63.0	64.7	66.4	68.5	70.7	72.9	75.2	77.4	74.2	70.9
65	435	278	128	55.3	53.2	52.7	52.3	52.2	54.0	55.9	57.8	59.7	60.9	61.6	62.3	63.0	63.7	61.7	59.6
70	458	287	123	43.2	42.3	42.4	42.7	42.9	43.2	43.4	43.6	43.8	43.6	43.2	42.8	42.4	42.1	40.9	39.8
75	379	236	98.7	31.8	30.4	30.1	29.8	29.4	28.3	27.1	25.9	24.8	23.5	22.4	21.1	20.0	18.9	18.6	18.3
80	136	86.5	40.6	18.4	17.0	16.4	15.7	14.9	12.6	10.1	7.61	5.17	3.67	2.85	2.08	1.29	0.50	0.76	1.01
85	13.1	10.0	7.21	5.57	4.86	4.18	3.52	2.86	2.20	1.59	1.01	0.45	0.17	0.12	0.08	0.04	0.00	0.01	0.02
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	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	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	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	0.00	0.00	0.00
110	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	0.00	0.00	0.00
115	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	0.00	0.00	0.00
120	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	0.00	0.00	0.00
125	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	0.00	0.00	0.00
130	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	0.00	0.00	0.00
135	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	0.00	0.00	0.00
140	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	0.00	0.00	0.00
145	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	0.00	0.00	0.00
150	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	0.00	0.00	0.00
155	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	0.00	0.00	0.00
160	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	0.00	0.00	0.00
165	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	0.00	0.00	0.00
170	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	0.00	0.00	0.00
175	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	0.00	0.00	0.00
180	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	0.00	0.00	0.00



Table--4

UNIT: \*10cd

C (DEG) γ (DEG)	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355		
0	464	464	464	464	464	464	464	464	464	464	464	464	464	464	464		
5	315	319	324	331	340	350	360	370	382	394	407	420	433	446	459		
10	227	230	235	242	252	262	272	287	310	335	360	385	411	438	465		
15	203	205	209	215	221	227	235	251	275	300	326	355	392	434	475		
20	191	193	197	202	207	213	219	235	256	278	300	331	378	434	489		
25	179	181	184	190	195	201	207	222	241	260	280	314	372	439	507		
30	167	168	171	177	183	189	195	210	228	246	265	305	373	451	529		
35	151	152	156	163	170	177	184	201	219	238	257	302	380	467	554		
40	107	108	114	126	139	152	166	186	207	228	250	301	390	487	584		
45	80.6	80.3	83.0	88.9	95.5	102	111	140	173	206	239	302	402	509	616		
50	75.3	73.8	72.5	71.6	70.7	69.9	70.7	104	144	184	225	299	414	535	656		
55	72.2	70.1	68.1	66.4	64.6	62.9	62.2	86.2	115	144	174	256	395	542	687		
60	67.7	64.5	61.8	59.8	57.9	55.9	54.2	57.8	62.6	68.0	75.5	163	341	528	714		
65	57.6	55.5	53.6	51.7	49.9	48.0	46.2	45.7	45.5	45.2	46.7	134	318	511	706		
70	38.6	37.5	36.7	36.3	35.8	35.4	34.9	34.7	34.5	34.4	35.1	100	237	382	530		
75	18.1	17.9	18.1	18.8	19.5	20.2	20.9	21.0	21.2	21.3	21.8	41.5	82.9	129	178		
80	1.21	1.43	2.09	3.45	4.87	6.29	7.69	8.02	8.24	8.46	8.72	10.5	14.1	18.5	23.5		
85	0.04	0.05	0.06	0.12	0.15	0.20	0.26	0.34	0.41	0.48	0.56	0.67	0.75	0.79	0.83		
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		
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		
100	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		
105	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		
110	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		
115	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		
120	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		
125	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		
130	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		
135	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		
140	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		
145	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		
150	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		
155	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		
160	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		
165	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		
170	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		
175	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		
180	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		



**2.4 Performance Assessment:**

Model name	CCT(K)	Total Luminous (lm)	Power (W)	Luminous Efficacy (lm/W)
AOK-190WiE-NV-LV2-00-2770-T302-P	2700K	22074	185.7	118.87
AOK-190WiE-NV-LV2-00-3070-T302-P	3000K	22198	185.7	119.54
AOK-190WiE-NV-LV2-00-3570-T302-P	3500K	22403	185.7	120.64
AOK-190WiE-NV-LV2-00-4070-T302-P	4000K	22606	185.7	121.73
AOK-190WiE-NV-LV2-00-4570-T302-P	4500K	22800	185.7	122.78
AOK-190WiE-NV-LV2-00-5070-T302-P	5000K	23003	185.7	123.87
AOK-190WiE-NV-LV2-00-5770-T302-P	5700K	23129	185.7	124.55

According to the test report JAE190121-A-R

Scaled Methodology Explanation:

18W 3000K eff / 18W 2700K eff = 132.02 / 131.29 = 1.0056  
 18W 3500K eff / 18W 2700K eff = 133.24 / 131.29 = 1.0149  
 18W 4000K eff / 18W 2700K eff = 134.45 / 131.29 = 1.0241  
 18W 4500K eff / 18W 2700K eff = 135.61 / 131.29 = 1.0329  
 18W 5000K eff / 18W 2700K eff = 136.82 / 131.29 = 1.0421  
 18W 5700K eff / 18W 2700K eff = 137.56 / 131.29 = 1.0478

3000K eff=2700K eff\*1.0056  
 3500K eff=2700K eff\*1.0149  
 4000K eff=2700K eff\*1.0241  
 4500K eff=2700K eff\*1.0329  
 5000K eff=2700K eff\*1.0421  
 5700K eff=2700K eff\*1.0478



### 3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-714	Goniophotometer system	Verified by D908S standard lamp	
ST-R-710	Standard Lamp	2019-02-12	2020-02-11
ST-R-711	Power Meter for Goniophotometer	2019-01-06	2020-01-05
Uncertainty: Photometric Measurement(Goniophotometer):1.62%			

#### 4. Product Photo



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