



Report No.: GZE151161-L

NVLAP LAB CODE 201011-0

LM-79-08 Test Report

For

AOK LED LIGHT COMPANY LIMITED

(Brand Name: AOK)

Building 1, St George's Science and Technology Industrial Park, Shajin Street, Shenzhen,
Guangdong Province, China Zip 518104

Outdoor Pole/Arm-mounted Area and Roadway Luminaires

Model name(s): AOK-265WiT-HV

Representative (Tested) Model: AOK-265WiT-HV(3000K)
AOK-265WiT-HV(5700K)

Model Different: All construction and rating are the same, except CCT

Test & Report By:

Johnson Sun

Engineer: Johnson Sun

Date: Feb.01,2016

Review By:

Tommy Liang

Manager: Tommy Liang

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

Laboratory: Standard-Tech Co. Ltd Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

Performance Assessment:

Model name	CCT(K)	Total Luminous (lm)	Power (W)	Luminous Efficacy (lm/W)
AOK-265WiT-HV(3000K)	3000	33450	263.9	126.75
AOK-265WiT-HV(3500K)	3500	33897 ^{*1}	265.1 ^{*2}	127.89 ^{*3}
AOK-265WiT-HV(4000K)	4000	34345 ^{*1}	265.1 ^{*2}	129.58 ^{*3}
AOK-265WiT-HV(4500K)	4500	34792 ^{*1}	265.1 ^{*2}	131.27 ^{*3}
AOK-265WiT-HV(5000K)	5000	35240 ^{*1}	265.1 ^{*2}	132.95 ^{*3}
AOK-265WiT-HV(5700K)	5700	35687	266.2	134.06

*1: This value is calculated and the calculation formula is as below:

$$33897 = (35687 - 33450) / 5 + 33450$$

$$34345 = (35687 - 33450) / 5 + 33897$$

$$34792 = (35687 - 33450) / 5 + 34345$$

$$35240 = (35687 - 33450) / 5 + 34792$$

*2: This value is calculated and the calculation formula is as below:

$$265.1 = (286.2 + 283.9) / 2$$

*3: This value is calculated and the calculation formula is as below:

$$127.89 = 33897 / 265.1$$

$$129.58 = 34345 / 265.1$$

$$131.27 = 34792 / 265.1$$

$$132.95 = 35240 / 265.1$$

U.S. Department of Energy

Lighting Facts™ Uniform LM-79 Reporting Template
Laboratory Information:

Name of Test Laboratory	Standard-Tech Co. Ltd
Date of Test Report	Feb.01,2016
Test Report No.	GZE151161-L
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	AOK LED LIGHT COMPANY LIMITED		
Brand Name	AOK		
Model Number	AOK-265WiT-HV(3000K)		
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		
Luminaire Aperture (for downlights)	--	in.	
Luminaire Length	--	mm	
Luminaires Width	--	mm	
Number of Units (modular products)	N/A	s	

Integrating Sphere
Goniophotometer
Electrical Measurements:

	Output	Output	
Input Wattage	--	263.9	W
Input Current	--	0.9598	A
Input Voltage (ac)	--	277.1	V
Power Factor	--	0.9923	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	33450	lm
Initial Lumen Efficacy	--	126.75	lm/w
Correlated color temperature / CCT	3047	--	K
Color rendering index / CRI	72.1	--	
R9 Value	0	--	
Duv	-0.0020	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)		9158	cd
Beam angle (if applicable)		96.1	°
Zonal lumens in the 0°-60° zone		89.2	%
Zonal lumens in the 60°-90° zone	-----	10.6	%
Zonal lumens in the 90°-120° zone		0	%
Zonal lumens in the 120°-180° zone		0.2	%

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Laboratory Information:

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Date of Test Report	Feb.01,2016
Test Report No.	GZE151161-L
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	AOK LED LIGHT COMPANY LIMITED		
Brand Name	AOK		
Model Number	AOK-265WiT-HV(5700K)		
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		
Luminaire Aperture (for downlights)	--	in.	
Luminaire Length	--	mm	
Luminaires Width	--	mm	
Number of Units (modular products)	N/A	s	

Integrating Sphere

Goniophotometer

Electrical Measurements:

Output

Output

Input Wattage	266.2	--	W
Input Current	0.9769	--	A
Input Voltage (ac)	277.0	--	V
Power Factor	0.9837	--	
Off-State Power	0	--	W

Photometric Characteristics

Total Initial Lumen Output	35687	--	lm
Initial Lumen Efficacy	134.06	--	lm/w
Correlated color temperature / CCT	6016	--	K
Color rendering index / CRI	76.8	--	
R9 Value	0	--	
Duv	-0.0017	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)			cd
Beam angle (if applicable)			°
Zonal lumens in the 0°-60° zone			%
Zonal lumens in the 60°-90° zone	-----	-----	%
Zonal lumens in the 90°-120° zone			%
Zonal lumens in the 120°-180° zone			%

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Test Specifications:	
Date of Receipt	: Dec.14,2015
Date of Test	: Jan.25,2016
Test item	: Total Luminous Flux, Luminous Distribution Intensity, Luminous Efficacy, Correlated Color Temperature, Color Rendering Index, Chromaticity Coordinate, Electrical parameters
Reference Standard	IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources CIE 15-2004 Technical Report Colorimetry IESNA LM-16-93 Practical Guide to Colorimetry of Light Source IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	QD25

Test Methods

1. Photometric and Electrical measurements – Light Distribution Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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 277 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.

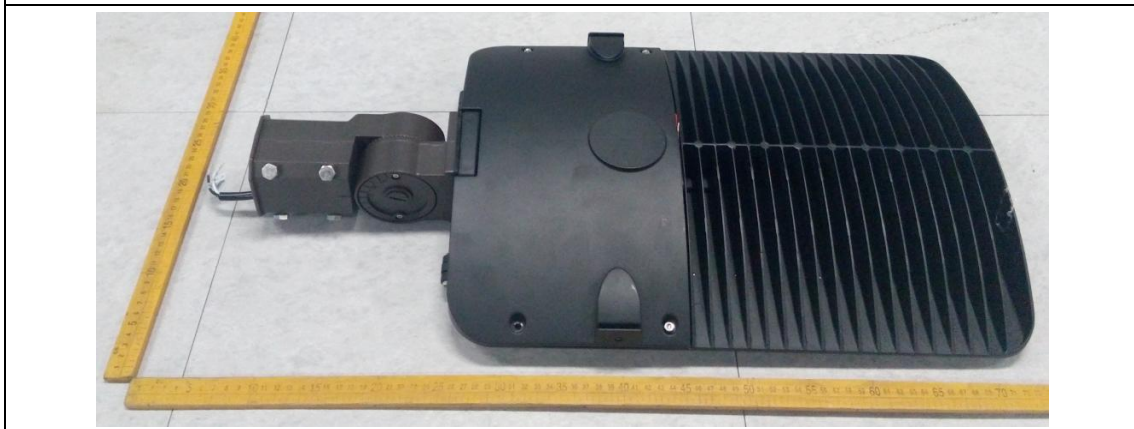
2. Photometric and Electrical Measurements – Integrating Sphere Method:

Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at 277 Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at least 5 nm intervals over the range of 380 to 780 nm.

1. Product Information:

Brand Name	AOK
Model Number	AOK-265WiT-HV
Luminaire Type	Outdoor Pole/Arm-mounted Area and Roadway Luminaires
Rated Voltage / Frequency	277~ 480Vac, 50/60Hz
Nominal Power	265W
Rated Initial Lamp Lumen	--
Declared CCT	3000K,3500K,4000K,4500K,5000K,5700K
LED Manufacturer	Philips Lumileds
LED Model	LUXEON 3030 2D
Sample Receipt Date	Dec.14,2015
Sample Number	GZE151161-L1(3000K),L2(5700K)

Photo



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2.1 Electrical, Photometric and Chromaticity Measurements <i>(Refer to Work Instruction QD25)</i>	IES LM-79 2008
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Test date	2016-01-30	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	AOK-265WiT-HV(3000K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE151161	277.1	60	0.9598	263.9	0.9923	5.99
-L1	480.0	60	0.5860	261.2	0.9286	8.63

Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	277.0	R1	69	R9	0
Frequency (Hz)	60	R2	83	R10	59
Color Rendering Index (CRI)	72.1	R3	93	R11	60
R9	0	R4	66	R12	48
CCT (K)	3047	R5	67	R13	71
Chromaticity (x, y)	x=0.4309 y=0.3971	R6	75	R14	96
Chromaticity (u', v')	u'=0.2497 v'=0.5177	R7	78	R15	63
Duv	-0.0020	R8	46	--	--

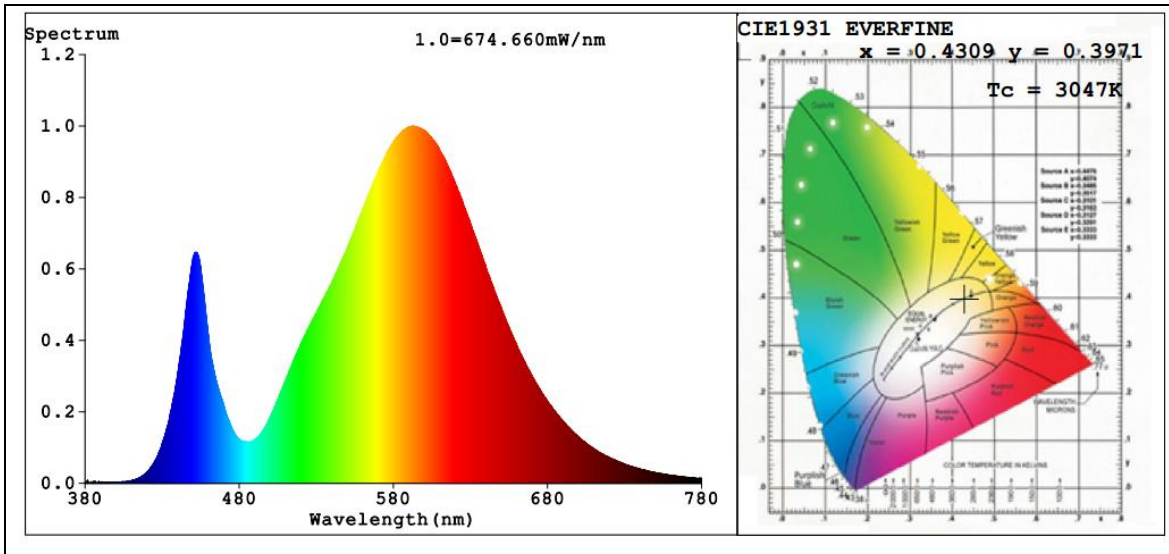
Goniophotometer Method:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	33450
Luminous Efficacy (lm/W)	126.75
Beam Angle°	96.1
Center Beam Candle Power (cd)	9158

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	480.0
Frequency (Hz)	60
Total Luminous (lm)	32895
Luminous Efficacy (lm/W)	125.94

Spectral Power Distribution & Chromaticity Diagram



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Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	7,884.6	23.6%
0-40	14,107.9	42.2%
0-60	29,838.9	89.2%
60-90	3,537.8	10.6%
70-100	1,186.2	3.5%
90-120	15.5	0%
0-90	33,376.7	99.8%
90-180	66.3	0.2%
0-180	33,443.0	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	863.5	2.6%	90-100	1.6	0%
10-20	2,551.2	7.6%	100-110	4.2	0%
20-30	4,469.9	13.4%	110-120	9.8	0%
30-40	6,223.3	18.6%	120-130	13.7	0%
40-50	8,292.6	24.8%	130-140	13.7	0%
50-60	7,438.4	22.2%	140-150	10.3	0%
60-70	2,353.2	7.0%	150-160	7.2	0%
70-80	997.7	3.0%	160-170	4.3	0%
80-90	186.9	0.6%	170-180	1.7	0%

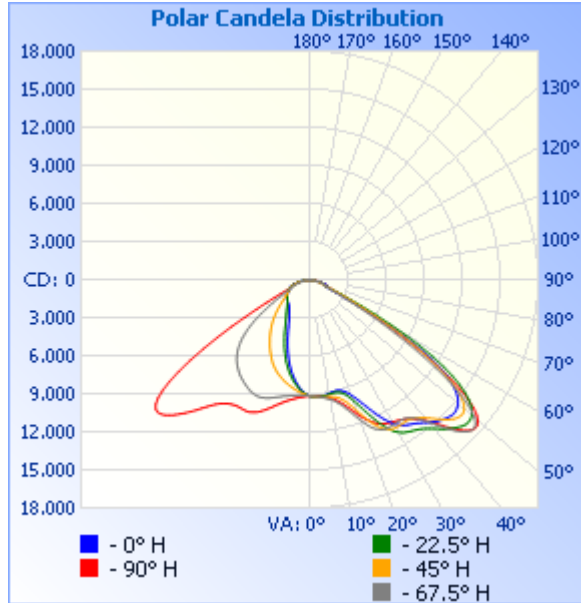
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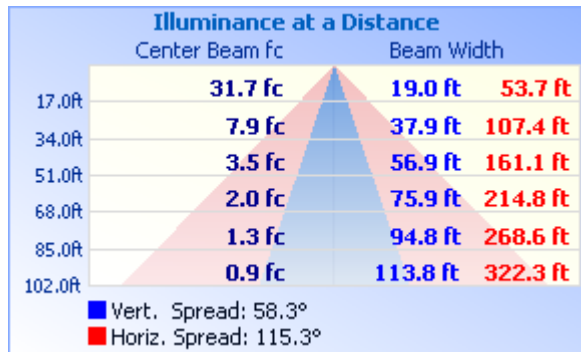
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Photometric Data



Illuminance Plots



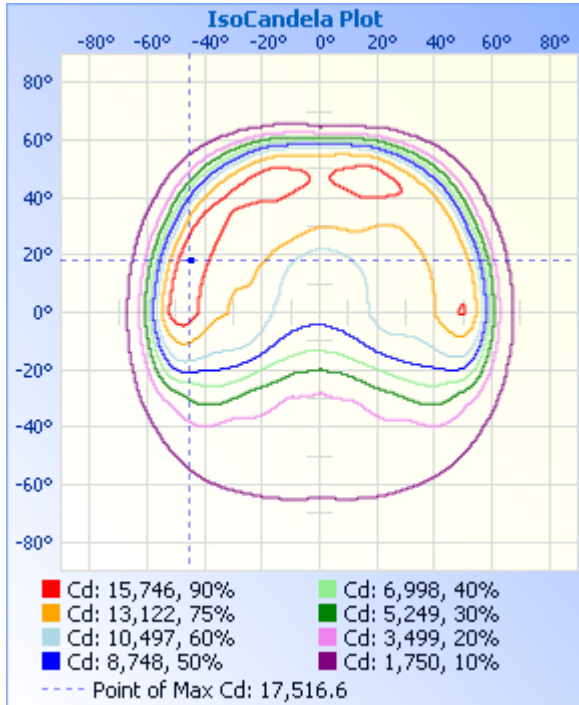
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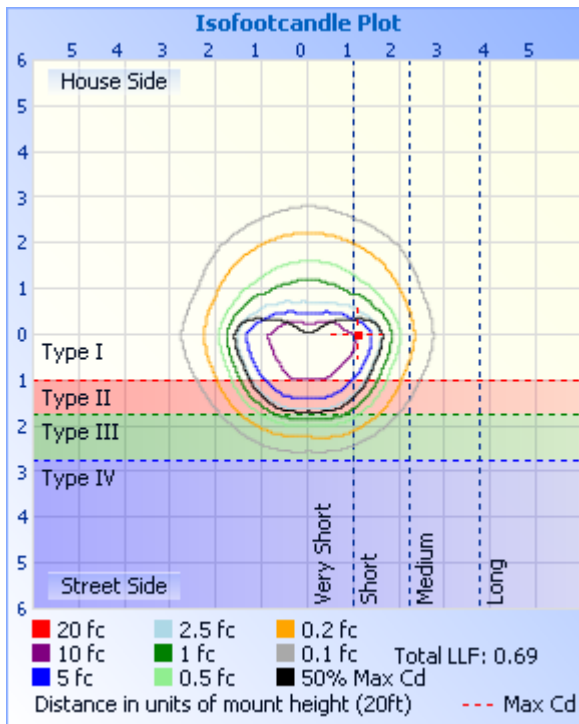
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ISOCANDELA DIAGRAM



ISOLUX DIAGRAM



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Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	9158	9158	9158	9158	9158	9158	9158	9158	9158	9158	9158	9158	9158	9158	9158	9158	9158
1	9212	9205	9194	9175	9147	9124	9104	9089	9085	9100	9119	9147	9176	9197	9207	9214	9212
2	9249	9236	9220	9196	9141	9096	9044	9004	8991	9025	9075	9140	9201	9238	9251	9255	9249
3	9265	9256	9241	9224	9145	9075	8980	8905	8882	8934	9022	9136	9233	9281	9292	9283	9265
4	9271	9264	9260	9255	9157	9057	8908	8791	8752	8822	8962	9138	9274	9330	9327	9298	9271
5	9266	9263	9277	9290	9179	9041	8830	8662	8604	8697	8897	9148	9319	9378	9356	9301	9266
6	9243	9250	9294	9334	9214	9032	8752	8522	8439	8560	8831	9169	9372	9428	9380	9294	9243
7	9211	9231	9310	9382	9256	9031	8667	8367	8261	8411	8764	9192	9433	9481	9397	9275	9211
8	9174	9204	9327	9440	9314	9040	8581	8201	8064	8255	8696	9219	9502	9534	9408	9250	9174
9	9129	9174	9345	9512	9383	9057	8496	8024	7855	8091	8625	9255	9578	9594	9417	9222	9129
10	9082	9149	9369	9591	9466	9078	8409	7842	7637	7915	8551	9292	9663	9659	9428	9190	9082
11	9039	9128	9404	9689	9562	9108	8321	7650	7411	7728	8476	9336	9759	9732	9443	9159	9039
12	9014	9116	9452	9811	9675	9144	8230	7450	7172	7537	8394	9384	9861	9816	9467	9136	9014
13	8998	9119	9523	9960	9812	9197	8137	7247	6928	7338	8310	9436	9978	9909	9503	9125	8998
14	9004	9145	9620	10137	9970	9260	8043	7030	6671	7129	8227	9502	10107	10017	9556	9141	9004
15	9035	9201	9749	10343	10146	9335	7953	6813	6410	6918	8143	9569	10246	10144	9628	9178	9035
16	9097	9296	9922	10586	10349	9420	7860	6586	6140	6699	8052	9640	10396	10287	9725	9251	9097
17	9189	9436	10138	10863	10576	9514	7764	6357	5867	6472	7963	9713	10551	10441	9851	9361	9189
18	9325	9629	10400	11169	10826	9617	7672	6123	5594	6245	7866	9786	10707	10596	10004	9509	9325
19	9497	9872	10707	11494	11081	9730	7573	5885	5326	6016	7760	9854	10856	10747	10187	9696	9497
20	9713	10167	11037	11819	11355	9849	7467	5646	5058	5786	7654	9922	11007	10893	10397	9928	9713
21	9966	10511	11393	12133	11616	9971	7357	5404	4807	5554	7542	9977	11144	11028	10629	10199	9966
22	10255	10889	11762	12426	11873	10081	7243	5168	4569	5325	7422	10022	11264	11147	10872	10504	10255
23	10578	11307	12136	12683	12102	10178	7121	4935	4337	5098	7300	10051	11362	11245	11121	10836	10578
24	10923	11730	12469	12883	12306	10266	6992	4711	4119	4877	7166	10059	11435	11312	11361	11176	10923
25	11294	12163	12770	13032	12484	10339	6857	4495	3923	4661	7018	10048	11480	11346	11583	11534	11294
26	11681	12583	13024	13134	12629	10393	6716	4286	3744	4458	6868	10022	11496	11349	11773	11889	11681
27	12065	12983	13227	13199	12742	10420	6567	4092	3584	4266	6715	9986	11495	11328	11927	12241	12065
28	12434	13342	13366	13215	12830	10427	6412	3912	3445	4086	6558	9937	11484	11287	12044	12561	12434

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29	12770	13643	13457	13211	12904	10413	6254	3754	3327	3919	6404	9877	11483	11247	12117	12839	12770
30	13062	13878	13494	13198	12967	10384	6096	3609	3228	3770	6250	9802	11495	11212	12156	13079	13062
31	13310	14057	13504	13189	13028	10333	5935	3480	3129	3632	6089	9732	11528	11193	12176	13273	13310
32	13517	14190	13490	13189	13095	10270	5778	3361	3031	3500	5926	9658	11584	11198	12196	13445	13517
33	13678	14293	13482	13201	13176	10189	5615	3259	2955	3382	5761	9571	11662	11246	12219	13585	13678
34	13799	14385	13484	13238	13271	10091	5455	3157	2887	3280	5603	9492	11768	11336	12260	13711	13799
35	13905	14474	13505	13318	13391	9987	5294	3054	2826	3178	5446	9405	11907	11476	12328	13849	13905
36	14024	14585	13555	13455	13541	9867	5131	2971	2768	3076	5285	9309	12084	11660	12432	14010	14024
37	14158	14725	13644	13659	13728	9732	4970	2894	2715	2987	5126	9208	12302	11892	12569	14206	14158
38	14325	14889	13777	13921	13956	9591	4807	2820	2667	2907	4966	9100	12565	12175	12738	14451	14325
39	14507	15101	13965	14266	14233	9430	4642	2751	2623	2832	4806	8988	12883	12506	12951	14726	14507
40	14680	15336	14199	14676	14571	9264	4477	2687	2585	2762	4638	8864	13236	12879	13194	15016	14680
41	14850	15575	14468	15142	14956	9080	4308	2626	2553	2698	4468	8735	13613	13265	13457	15310	14850
42	15007	15829	14755	15629	15414	8881	4139	2572	2524	2636	4297	8586	13993	13665	13734	15606	15007
43	15144	16068	15041	16105	15887	8673	3972	2521	2499	2579	4125	8426	14364	14057	14015	15899	15144
44	15268	16280	15328	16550	16348	8444	3807	2476	2473	2526	3954	8245	14716	14449	14298	16184	15268
45	15374	16464	15585	16939	16772	8210	3642	2435	2448	2479	3779	8050	15060	14811	14571	16449	15374
46	15465	16637	15798	17245	17125	7960	3482	2399	2425	2435	3611	7835	15370	15130	14819	16673	15465
47	15504	16769	15948	17430	17381	7685	3325	2367	2402	2395	3438	7594	15634	15367	15031	16831	15504
48	15480	16820	16037	17466	17517	7400	3168	2337	2378	2359	3274	7323	15815	15498	15191	16930	15480
49	15393	16786	16027	17325	17499	7093	3011	2310	2354	2324	3109	7023	15897	15492	15282	16961	15393
50	15250	16665	15901	16968	17305	6764	2865	2285	2329	2292	2946	6701	15840	15321	15276	16911	15250
51	15040	16458	15645	16419	16950	6412	2732	2260	2301	2263	2798	6350	15610	14976	15155	16762	15040
52	14747	16147	15247	15649	16377	6036	2609	2237	2271	2234	2659	5964	15178	14421	14889	16505	14747
53	14349	15706	14695	14670	15613	5653	2499	2214	2237	2206	2533	5555	14535	13634	14458	16091	14349
54	13843	15131	13975	13507	14646	5245	2400	2190	2201	2178	2419	5125	13670	12641	13841	15536	13843
55	13194	14422	13095	12185	13504	4832	2314	2164	2163	2150	2319	4676	12597	11468	13036	14805	13194
56	12391	13579	12063	10781	12203	4415	2240	2138	2126	2122	2233	4236	11351	10148	12036	13939	12391
57	11387	12600	10907	9336	10813	4007	2177	2110	2088	2092	2159	3804	9985	8774	10891	12875	11387
58	10122	11450	9678	7919	9376	3616	2122	2079	2044	2062	2094	3430	8573	7371	9616	11591	10122
59	8702	10149	8386	6590	7968	3278	2074	2048	1996	2029	2039	3056	7184	6064	8254	10111	8702

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60	7167	8736	7134	5398	6651	2940	2031	2011	1943	1993	1991	2684	5902	4892	6922	8500	7167
61	5657	7269	5913	4367	5462	2603	1989	1971	1878	1954	1945	2407	4766	3896	5657	6855	5657
62	4319	5843	4836	3509	4445	2350	1948	1927	1799	1912	1901	2181	3844	3119	4545	5338	4319
63	3208	4586	3887	2840	3763	2137	1906	1880	1749	1868	1856	1998	3103	2524	3600	4089	3208
64	2354	3538	3099	2330	3082	1960	1862	1830	1732	1820	1810	1848	2548	2082	2834	3097	2354
65	1759	2706	2472	1957	2408	1813	1811	1776	1724	1771	1759	1725	2147	1770	2263	2348	1759
66	1559	2085	2000	1687	2043	1688	1759	1718	1714	1717	1703	1618	1882	1625	1838	1822	1559
67	1368	1650	1658	1532	1785	1575	1700	1654	1701	1660	1646	1514	1712	1484	1621	1626	1368
68	1178	1448	1458	1379	1616	1465	1642	1585	1681	1596	1581	1412	1648	1343	1407	1436	1178
69	1162	1248	1258	1291	1500	1362	1577	1516	1649	1529	1513	1317	1585	1285	1193	1246	1162
70	1168	1210	1135	1238	1420	1262	1509	1452	1605	1465	1442	1219	1522	1238	1090	1264	1168
71	1295	1198	1027	1214	1348	1161	1438	1391	1548	1399	1372	1117	1480	1173	1004	1277	1295
72	1434	1175	932	1186	1283	1061	1365	1332	1475	1335	1299	1016	1427	1084	928	1272	1434
73	1357	1137	853	1104	1222	965	1289	1267	1390	1266	1226	923	1358	978	856	1240	1357
74	1159	1066	780	993	1152	878	1213	1196	1288	1195	1152	838	1259	873	790	1163	1159
75	930	959	714	880	1061	801	1135	1112	1184	1111	1075	763	1131	776	723	1053	930
76	759	846	651	773	953	734	1056	1031	1079	1029	997	698	992	684	648	928	759
77	628	738	582	675	837	674	970	945	974	943	907	640	848	593	568	783	628
78	514	607	511	583	721	619	869	857	871	853	802	588	710	509	488	621	514
79	411	477	442	500	616	567	746	767	768	760	678	538	591	431	416	473	411
80	329	362	380	427	526	516	588	674	666	666	528	485	490	369	353	350	329
81	274	267	323	361	444	460	458	582	561	567	407	427	392	317	291	252	274
82	230	192	266	305	362	408	381	486	458	465	331	372	300	268	228	179	230
83	188	136	209	256	294	353	305	387	355	357	260	314	252	220	172	125	188
84	140	92	160	206	245	288	227	283	253	252	199	251	210	171	126	83	140
85	88	60	117	158	202	221	164	191	159	159	141	189	172	127	88	54	88
86	40	34	77	111	160	159	110	110	72	82	89	131	128	85	53	27	40
87	7	12	41	66	108	98	62	32	10	17	45	77	77	46	21	7	7
88	2	2	10	21	25	17	14	7	5	6	11	8	7	6	3	2	2
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91	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	1
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179	18	17	19	15	16	16	16	17	17	17	18	19	16	16	18	17	18
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2.2 Electrical, Photometric and Chromaticity Measurements <i>(Refer to Work Instruction QD25)</i>	IES LM-79 2008
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Test date	2016-01-30	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	AOK-265WiT-HV(5700K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE151161	277.0	60	0.9769	266.2	0.9837	5.82
-L2	480.0	60	0.5935	263.5	0.9249	8.77

Sphere-Spectroradiometer Method:

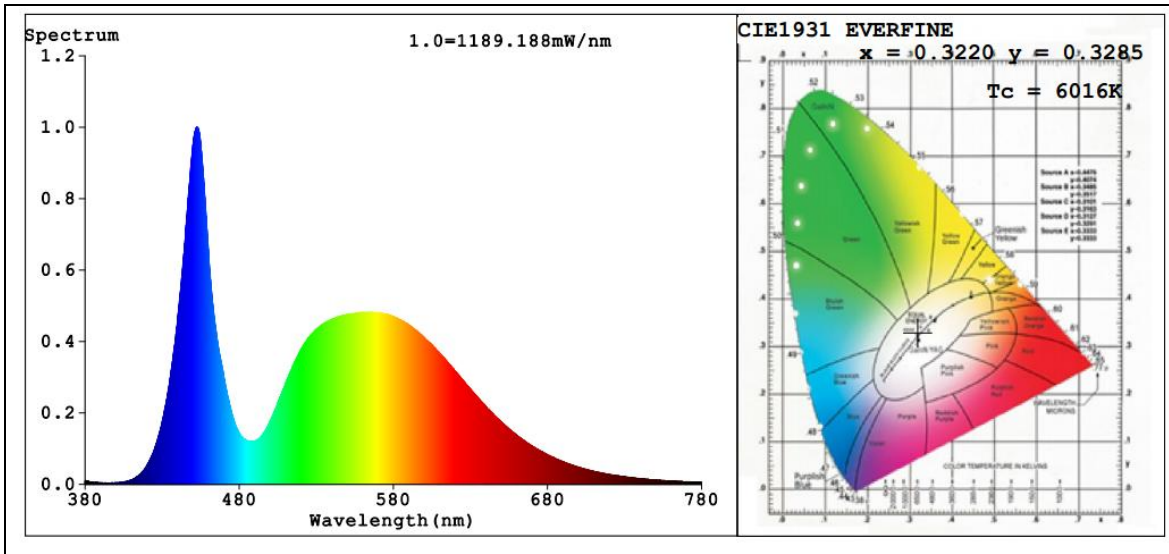
Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Color Rendering Index (CRI)	76.8
R9	0
CCT (K)	6016
Chromaticity (x, y)	x=0.3220 y=0.3285
Chromaticity (u', v')	u'=0.2045 v'=0.4695
Duv	-0.0017
Total Luminous (lm)	35687
Luminous Efficacy (lm/W)	134.06

Special Color Rendering Indices			
R1	76	R9	0
R2	81	R10	52
R3	82	R11	74
R4	77	R12	45
R5	76	R13	77
R6	72	R14	89
R7	85	R15	73
R8	66	--	--

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	480.0
Frequency (Hz)	60
Total Initial Lumen Output(lm)	35129
Initial Lumen Efficacy(lm/w)	133.32

Spectral Power Distribution & Chromaticity Diagram



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3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2015-07-01	2016-06-30
ST-R-331	Spectral analysis system HAAS-2000	2015-07-01	2016-06-30
D204	Standard Lamp	2015-07-01	2016-06-30
PF2010	Power Meter for Integrating Sphere	2015-07-01	2016-06-30
EE-09	Goniophotometer system	2015-07-01	2016-06-30
D908S	Standard Lamp	2015-07-01	2016-06-30
PF210	Power Meter for Goniophotometer	2015-07-01	2016-06-30
ST-R-181A	Temperature Tester	2015-07-01	2016-06-30
Uncertainty Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

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