



Report No.: GZE151161-A

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

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

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

Test & Report By:

Jack Luo

Engineer: Jack Luo

Date: Dec.30,2015

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(3000K)	3000	31892	261.8	121.82
AOK-265WiT(3500K)	3500	32319 ^{*1}	263.6 ^{*2}	122.63 ^{*3}
AOK-265WiT(4000K)	4000	32745 ^{*1}	263.6 ^{*2}	124.25 ^{*3}
AOK-265WiT(4500K)	4500	33172 ^{*1}	263.6 ^{*2}	125.87 ^{*3}
AOK-265WiT(5000K)	5000	33598 ^{*1}	263.6 ^{*2}	127.48 ^{*3}
AOK-265WiT(5700K)	5700	34025	265.3	128.25

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

$$32319 = (34025 - 31892) / 5 + 31892$$

$$34025 = (34025 - 31892) / 5 + 32319$$

$$33172 = (34025 - 31892) / 5 + 34025$$

$$33598 = (34025 - 31892) / 5 + 33172$$

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

$$263.6 = (265.3 + 261.8) / 2$$

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

$$122.63 = 32319 / 263.6$$

$$124.25 = 32745 / 263.6$$

$$125.87 = 33172 / 263.6$$

$$127.48 = 33598 / 263.6$$

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	Dec.30,2015
Test Report No.	GZE151161-A
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	AOK LED LIGHT COMPANY LIMITED		
Brand Name	AOK		
Model Number	AOK-265WiT(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	--	261.8	W
Input Current	--	2.190	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9960	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	31892	lm
Initial Lumen Efficacy	--	121.82	lm/w
Correlated color temperature / CCT	3028	--	K
Color rendering index / CRI	72.1	--	
R9 Value	0	--	
Duv	-0.0013	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)	-----	8824	cd
Beam angle (if applicable)		95.1	°
Zonal lumens in the 0°-60° zone		89.5	%
Zonal lumens in the 60°-90° zone		10.3	%
Zonal lumens in the 90°-120° zone		0	%
Zonal lumens in the 120°-180° zone		0.2	%

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Laboratory Information:

Name of Test Laboratory	Standard-Tech Co. Ltd
Date of Test Report	Dec.30,2015
Test Report No.	GZE151161-A
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	AOK LED LIGHT COMPANY LIMITED		
Brand Name	AOK		
Model Number	AOK-265WiT(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	265.3	--	W
Input Current	2.218	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9970	--	
Off-State Power	0	--	W

Photometric Characteristics

Total Initial Lumen Output	34025	--	lm
Initial Lumen Efficacy	128.25	--	lm/w
Correlated color temperature / CCT	5755	--	K
Color rendering index / CRI	75.4	--	
R9 Value	0	--	
Duv	-0.0003	--	
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	: Dec.14,2015
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 120 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 120 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
Luminaire Type	Outdoor Pole/Arm-mounted Area and Roadway Luminaires
Rated Voltage / Frequency	100~ 240/277Vac, 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-A1(3000K),A2(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	2015-12-14	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	AOK-265WiT(3000K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE151161	120.0	60	2.190	261.8	0.9960	5.41
-A1	277.0	60	0.9801	254.0	0.9355	8.96

Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	69	R9	0
Frequency (Hz)	60	R2	83	R10	59
Color Rendering Index (CRI)	72.1	R3	93	R11	60
R9	0	R4	67	R12	48
CCT (K)	3028	R5	67	R13	71
Chromaticity (x, y)	x=0.4331 y=0.3996	R6	75	R14	96
Chromaticity (u', v')	u'=0.2500 v'=0.5190	R7	78	R15	62
Duv	-0.0013	R8	46	--	--

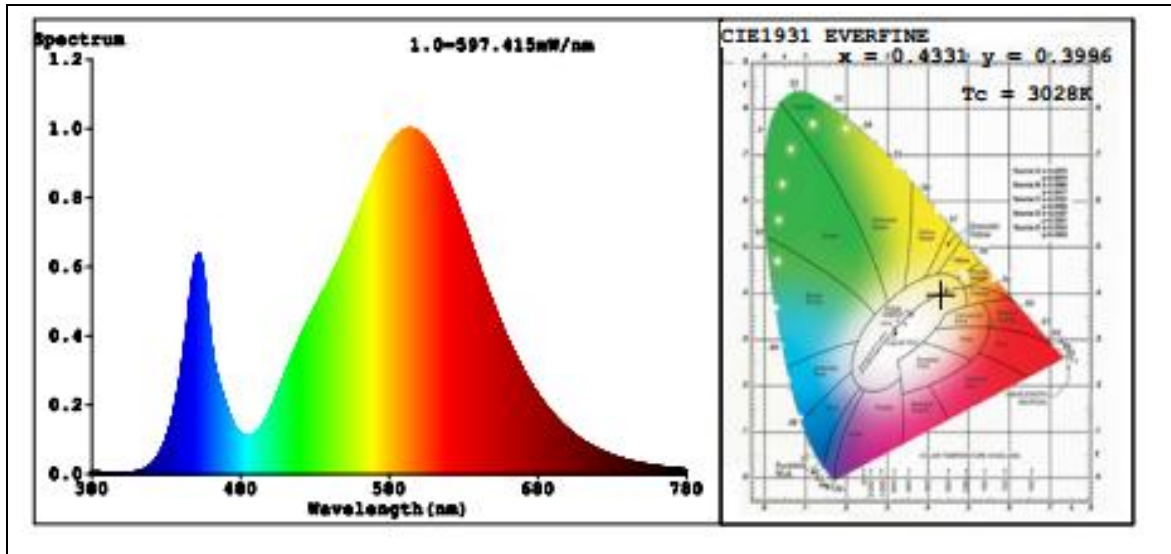
Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.1
Frequency (Hz)	60
Total Luminous (lm)	31892
Luminous Efficacy (lm/W)	121.82
Beam Angle°	95.1
Center Beam Candle Power (cd)	8824

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	31130
Luminous Efficacy (lm/W)	122.56

Spectral Power Distribution & Chromaticity Diagram



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Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	8,002.7	25.1%
0-40	14,155.8	44.4%
0-60	28,551.3	89.5%
60-90	3,279.8	10.3%
70-100	1,169.5	3.7%
90-120	14.1	0%
0-90	31,831.0	99.8%
90-180	63.0	0.2%
0-180	31,894.0	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	837.0	2.6%	90-100	1.9	0%
10-20	2,579.2	8.1%	100-110	3.6	0%
20-30	4,586.5	14.4%	110-120	8.6	0%
30-40	6,153.1	19.3%	120-130	12.5	0%
40-50	7,939.9	24.9%	130-140	13.0	0%
50-60	6,455.6	20.2%	140-150	10.3	0%
60-70	2,112.1	6.6%	150-160	7.1	0%
70-80	979.8	3.1%	160-170	4.2	0%
80-90	187.8	0.6%	170-180	1.7	0%

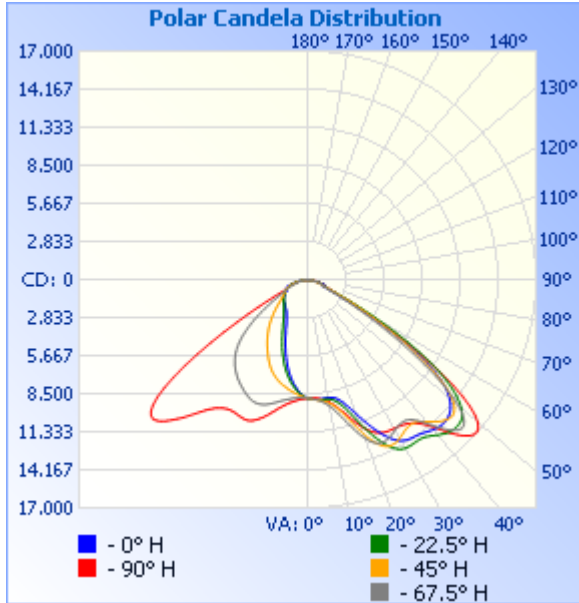
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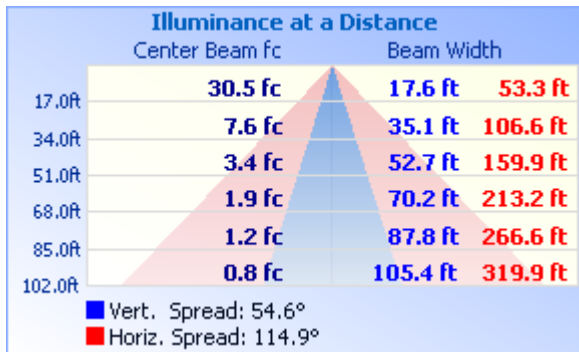
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Photometric Data



Illuminance Plots



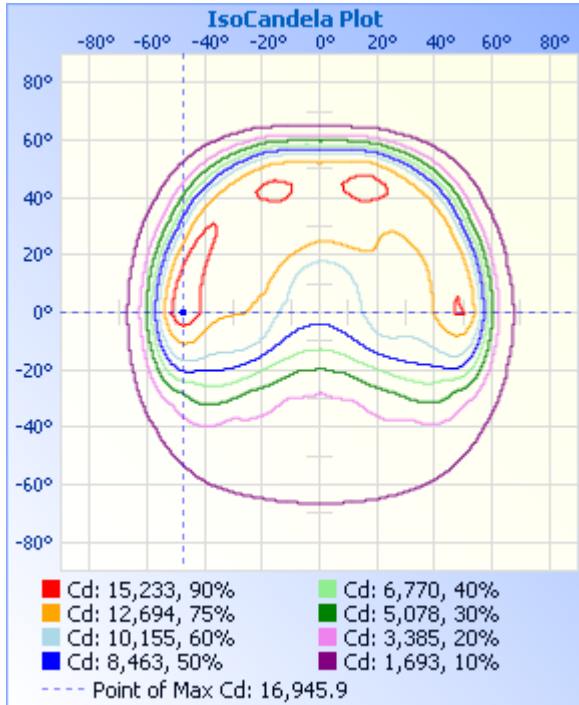
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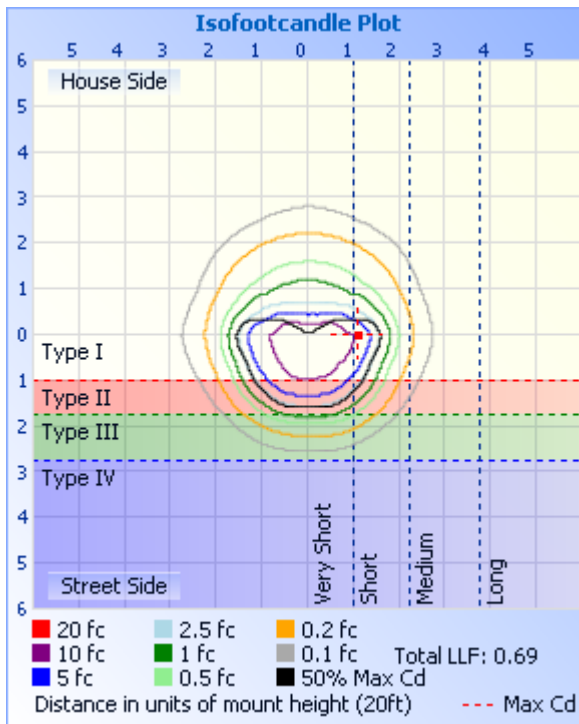
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ISOCANDELA DIAGRAM



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	8824	8824	8824	8824	8824	8824	8824	8824	8824	8824	8824	8824	8824	8824	8824	8824	8824
1	8878	8873	8861	8841	8812	8796	8773	8756	8752	8763	8784	8813	8843	8860	8874	8877	8878
2	8915	8909	8894	8866	8809	8771	8717	8673	8660	8684	8736	8805	8872	8905	8919	8918	8915
3	8938	8936	8926	8898	8818	8755	8659	8576	8550	8592	8686	8804	8907	8952	8962	8947	8938
4	8949	8954	8961	8944	8838	8745	8595	8467	8419	8483	8631	8812	8951	9003	9001	8966	8949
5	8951	8964	8998	9003	8871	8739	8529	8345	8271	8360	8574	8828	9006	9055	9038	8977	8951
6	8943	8972	9043	9079	8918	8742	8459	8207	8106	8225	8517	8856	9074	9117	9073	8981	8943
7	8931	8977	9094	9172	8979	8751	8386	8059	7932	8082	8459	8895	9152	9184	9107	8983	8931
8	8918	8985	9156	9286	9053	8775	8310	7900	7739	7932	8400	8943	9241	9259	9142	8982	8918
9	8907	9000	9231	9421	9142	8808	8234	7732	7538	7770	8336	9000	9342	9346	9186	8982	8907
10	8907	9030	9330	9583	9256	8856	8157	7554	7322	7600	8271	9065	9454	9449	9243	8993	8907
11	8925	9078	9454	9777	9392	8916	8079	7366	7097	7417	8205	9137	9577	9570	9320	9021	8925
12	8969	9157	9613	10005	9551	8988	7999	7174	6864	7231	8137	9214	9716	9714	9414	9073	8969
13	9045	9271	9815	10270	9738	9072	7923	6972	6624	7034	8068	9297	9872	9872	9534	9159	9045
14	9154	9428	10058	10564	9954	9170	7843	6761	6370	6829	7996	9385	10042	10049	9684	9281	9154
15	9304	9632	10349	10888	10191	9278	7762	6547	6118	6622	7920	9480	10224	10245	9859	9439	9304
16	9497	9889	10681	11232	10452	9398	7681	6324	5855	6404	7837	9576	10411	10448	10067	9644	9497
17	9738	10201	11041	11583	10735	9529	7598	6099	5588	6184	7748	9670	10597	10656	10302	9891	9738
18	10019	10559	11426	11943	11025	9668	7505	5869	5327	5961	7651	9752	10774	10855	10563	10180	10019
19	10338	10959	11825	12283	11317	9804	7407	5638	5067	5738	7552	9823	10938	11038	10844	10505	10338
20	10682	11391	12221	12595	11603	9938	7305	5406	4817	5510	7444	9883	11086	11213	11142	10854	10682
21	11043	11830	12600	12860	11861	10065	7197	5175	4578	5281	7329	9922	11213	11362	11440	11220	11043
22	11418	12268	12948	13065	12092	10175	7087	4950	4352	5062	7205	9943	11311	11475	11723	11591	11418
23	11794	12695	13256	13213	12294	10267	6964	4727	4139	4847	7067	9946	11376	11547	11975	11962	11794
24	12158	13094	13503	13301	12451	10337	6834	4517	3944	4641	6925	9928	11402	11576	12190	12320	12158
25	12515	13463	13679	13335	12574	10385	6697	4317	3770	4445	6771	9888	11396	11560	12359	12652	12515
26	12854	13787	13788	13315	12668	10413	6551	4128	3608	4255	6617	9826	11373	11505	12476	12962	12854
27	13168	14053	13824	13255	12725	10416	6403	3951	3468	4082	6462	9757	11339	11427	12538	13236	13168
28	13434	14267	13807	13168	12765	10397	6252	3790	3343	3918	6301	9680	11304	11341	12556	13462	13434

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29	13665	14414	13750	13066	12785	10355	6098	3643	3242	3769	6149	9602	11279	11269	12536	13637	13665
30	13831	14495	13655	12957	12802	10299	5939	3512	3140	3631	5994	9509	11273	11207	12486	13758	13831
31	13959	14524	13548	12862	12824	10219	5781	3393	3040	3505	5834	9416	11293	11169	12428	13841	13959
32	14044	14526	13439	12788	12857	10125	5625	3294	2964	3389	5677	9327	11338	11163	12380	13907	14044
33	14096	14515	13344	12738	12909	10021	5467	3195	2897	3283	5519	9235	11414	11199	12346	13957	14096
34	14124	14505	13274	12734	12980	9902	5309	3097	2838	3190	5367	9129	11515	11269	12342	14017	14124
35	14155	14514	13238	12781	13070	9779	5144	2999	2785	3097	5215	9027	11661	11390	12374	14103	14155
36	14205	14560	13245	12889	13203	9646	4987	2922	2735	3005	5060	8919	11838	11558	12455	14224	14205
37	14283	14641	13303	13067	13377	9497	4826	2852	2691	2929	4905	8799	12059	11786	12572	14389	14283
38	14376	14764	13416	13328	13601	9337	4666	2788	2650	2857	4747	8681	12330	12066	12726	14593	14376
39	14473	14922	13576	13666	13887	9168	4504	2727	2612	2790	4592	8550	12655	12386	12917	14816	14473
40	14569	15087	13775	14059	14236	8990	4339	2670	2578	2727	4424	8414	13016	12723	13121	15038	14569
41	14651	15238	13993	14471	14654	8794	4178	2616	2549	2670	4264	8263	13398	13081	13342	15254	14651
42	14710	15390	14214	14883	15130	8586	4015	2566	2522	2617	4102	8108	13783	13453	13572	15454	14710
43	14720	15508	14415	15263	15604	8368	3855	2520	2498	2566	3940	7933	14148	13822	13800	15629	14720
44	14704	15562	14584	15584	16047	8147	3698	2478	2473	2520	3774	7744	14515	14156	14021	15781	14704
45	14665	15581	14704	15821	16429	7907	3537	2439	2448	2476	3609	7531	14867	14450	14210	15900	14665
46	14602	15583	14775	15942	16727	7649	3385	2405	2423	2435	3452	7295	15163	14662	14363	15967	14602
47	14485	15549	14778	15899	16905	7370	3237	2372	2398	2397	3297	7036	15380	14767	14452	15955	14485
48	14313	15441	14685	15687	16946	7080	3090	2342	2372	2362	3143	6758	15481	14737	14462	15868	14313
49	14081	15238	14480	15286	16825	6778	2942	2313	2345	2329	2989	6447	15439	14542	14371	15706	14081
50	13792	14944	14150	14714	16531	6452	2812	2286	2316	2298	2849	6118	15223	14157	14167	15468	13792
51	13444	14551	13700	13934	16037	6107	2691	2260	2286	2267	2720	5767	14808	13566	13826	15116	13444
52	13000	14069	13119	13001	15334	5742	2577	2233	2251	2237	2601	5389	14182	12772	13340	14664	13000
53	12457	13486	12408	11947	14442	5356	2476	2207	2214	2208	2492	4998	13362	11814	12696	14087	12457
54	11744	12794	11580	10779	13377	4973	2385	2181	2175	2178	2395	4599	12337	10702	11909	13359	11744
55	10908	11968	10660	9593	12174	4578	2304	2152	2134	2147	2308	4212	11160	9500	10978	12491	10908
56	9843	11020	9665	8381	10856	4194	2232	2123	2093	2116	2231	3830	9887	8269	9936	11432	9843
57	8746	9960	8636	7226	9525	3812	2169	2092	2054	2084	2160	3492	8593	7035	8816	10240	8746
58	7536	8827	7592	6136	8210	3475	2113	2061	2010	2050	2098	3155	7334	5896	7673	8945	7536
59	6342	7640	6564	5152	6961	3137	2061	2025	1963	2015	2042	2817	6138	4873	6523	7596	6342

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60	5276	6494	5597	4301	5843	2801	2015	1989	1911	1977	1992	2552	5086	4001	5465	6307	5276
61	4297	5396	4694	3561	4833	2529	1970	1946	1849	1936	1944	2313	4169	3271	4491	5123	4297
62	3423	4428	3889	2952	4113	2292	1926	1902	1781	1893	1898	2117	3428	2683	3678	4123	3423
63	2630	3568	3197	2454	3393	2090	1881	1855	1734	1848	1850	1951	2833	2222	2975	3254	2630
64	1998	2839	2615	2065	2682	1921	1833	1805	1715	1800	1800	1813	2369	1876	2423	2550	1998
65	1723	2251	2145	1773	2250	1778	1782	1753	1705	1750	1746	1697	2033	1697	1979	2006	1723
66	1458	1794	1784	1618	1931	1655	1725	1696	1695	1697	1688	1592	1802	1521	1649	1610	1458
67	1193	1596	1589	1464	1709	1543	1667	1636	1682	1641	1628	1491	1710	1346	1451	1425	1193
68	1168	1398	1394	1311	1556	1435	1607	1571	1663	1579	1564	1393	1618	1265	1252	1240	1168
69	1155	1200	1198	1233	1457	1332	1542	1505	1634	1514	1494	1296	1527	1212	1135	1207	1155
70	1159	1170	1092	1181	1386	1236	1474	1443	1594	1451	1423	1197	1488	1165	1046	1219	1159
71	1270	1157	1002	1154	1327	1137	1403	1382	1542	1387	1352	1096	1445	1103	973	1221	1270
72	1368	1139	923	1119	1271	1040	1332	1324	1475	1323	1280	999	1391	1021	903	1216	1368
73	1317	1106	853	1041	1214	948	1257	1259	1393	1255	1206	909	1320	927	837	1178	1317
74	1140	1035	786	943	1146	864	1181	1190	1297	1186	1132	829	1221	832	775	1101	1140
75	925	936	723	844	1056	790	1106	1110	1197	1103	1056	757	1100	747	712	996	925
76	751	832	664	750	949	724	1028	1030	1095	1022	977	692	963	662	641	884	751
77	619	735	594	662	829	665	945	946	993	937	888	636	824	577	563	753	619
78	508	605	524	577	714	610	848	857	894	847	786	585	688	499	487	595	508
79	408	475	454	498	607	560	729	766	795	756	665	536	574	425	416	455	408
80	327	361	390	428	516	510	584	675	695	661	523	484	471	365	353	338	327
81	272	267	332	365	433	456	463	582	591	565	412	426	378	313	292	247	272
82	229	193	273	310	352	404	381	486	486	462	335	372	297	266	230	177	229
83	183	136	215	260	287	351	308	384	380	358	263	314	249	219	174	122	183
84	135	92	165	211	240	288	229	280	274	254	201	254	208	171	127	82	135
85	85	59	119	161	198	224	168	188	169	159	143	192	170	126	88	52	85
86	37	33	78	114	158	163	113	107	77	83	91	135	127	84	53	26	37
87	6	11	41	69	109	103	64	33	11	18	46	79	74	45	21	6	6
88	2	2	10	22	28	22	17	6	5	5	10	7	6	5	2	2	2
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90	2	1	2	2	19	1	1	3	1	2	1	1	2	1	1	2	2

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91	2	1	2	1	15	1	1	2	1	2	1	1	2	1	2	1	2
92	2	2	2	1	10	1	1	2	1	2	1	1	2	1	2	1	2
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94	2	2	2	1	1	1	1	1	1	1	1	1	2	1	2	2	2
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102	2	2	2	2	3	2	2	2	2	2	2	2	3	2	2	2	2
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111	3	3	3	5	9	7	8	8	7	8	8	8	13	6	3	3	3
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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	2015-12-14	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	AOK-265WiT(5700K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE151161	120.0	60	2.218	265.3	0.9970	5.52
-A2	277.0	60	1.0103	260.6	0.9312	9.04

Sphere-Spectroradiometer Method:

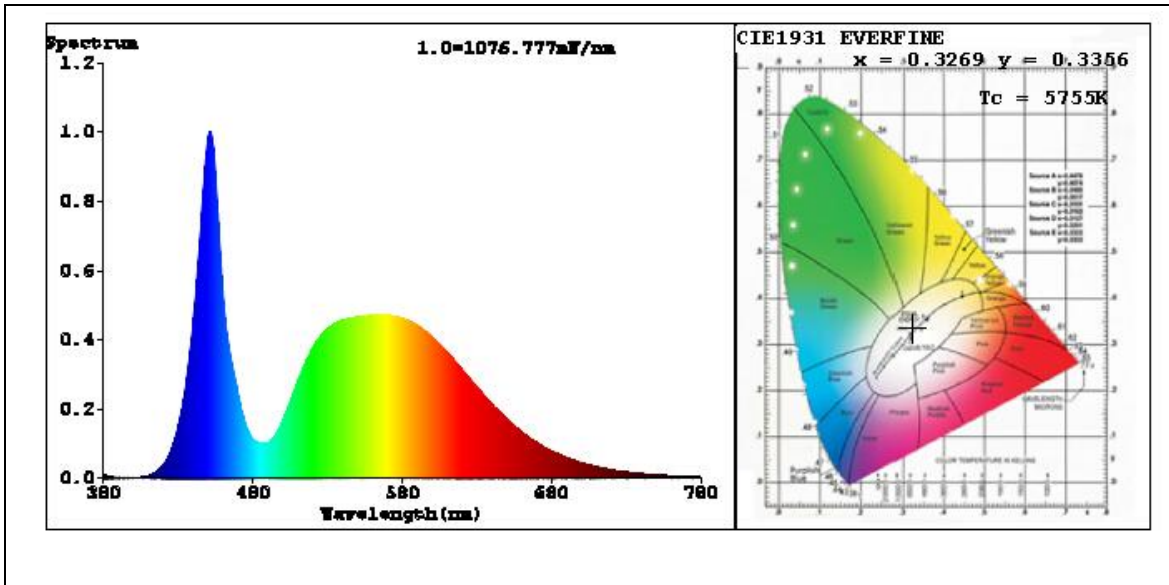
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	75.4
R9	0
CCT (K)	5755
Chromaticity (x, y)	x=0.3269 y=0.3356
Chromaticity (u', v')	u'=0.2051 v'=0.4739
Duv	-0.0003
Total Luminous (lm)	34025
Luminous Efficacy (lm/W)	128.25

Special Color Rendering Indices			
R1	74	R9	0
R2	80	R10	49
R3	81	R11	73
R4	76	R12	43
R5	75	R13	75
R6	71	R14	89
R7	84	R15	71
R8	64	--	--

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Initial Lumen Output(lm)	33185
Initial Lumen Efficacy(lm/w)	127.34

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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