



Report No.: STD150803NB-H-R

LM-79-08 Test Report

For

CEA GROUP INTERNATIONAL CO.,LTD

(Brand Name: CEA/EAEC)

Sanjiali Industrial Zone Zhucheng Road Panshi North baixiang Yueqing Zhejiang China

Outdoor Full-Cutoff Wall-mounted Area Luminaires

Model name(s): LWP5-30

Representative (Tested) Model: LWP5-30(3000K)
LWP5-30(5700K)

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

Test & Report By:

Peeta Cao

Engineer: Peeta Cao

Date: Dec.24,2015

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-C/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>

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.24,2015
Test Report No.	STD150803NB-H
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	CEA GROUP INTERNATIONAL CO.,LTD	
Brand Name	CEA/EAEC	
Model Number	LWP5-30(3000K)	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Full-Cutoff Wall-mounted Area 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	--	31.91	W
Input Current	--	0.2677	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9933	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	2808.7	lm
Initial Lumen Efficacy	--	88.01	lm/w
Correlated color temperature / CCT	3179	--	K
Color rendering index / CRI	70.3	--	
R9 Value	0	--	
Duv	0.0025	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)	-----	1048	cd
Beam angle (if applicable)		109.8	°
Zonal lumens in the 0 °-60 °zone		83.9	%
Zonal lumens in the 60 °-90 °zone		16.1	%
Zonal lumens in the 90 °-120 °zone		0	%
Zonal lumens in the 120 °-180 °zone		0	%

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

Report Format Number STD/QR4909-C/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>

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.24,2015
Test Report No.	STD150803NB-H
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	CEA GROUP INTERNATIONAL CO.,LTD	
Brand Name	CEA/EAEC	
Model Number	LWP5-30(5700K)	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Full-Cutoff Wall-mounted Area 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	32.21	--	W
Input Current	0.2704	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9928	--	
Off-State Power	0	--	W

Photometric Characteristics

Total Initial Lumen Output	2946	--	lm
Initial Lumen Efficacy	91.46	--	lm/w
Correlated color temperature / CCT	5767	--	K
Color rendering index / CRI	75.1	--	
R9 Value	0	--	
Duv	-0.0021	--	
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			%

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

Report Format Number STD/QR4909-C/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>

Test Specifications:	
Date of Receipt	: Oct.18,2015
Date of Test	: Oct.25,2015
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.

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-C/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>

1. Product Information:

Brand Name	CEA/EAEC
Model Number	LWP5-30
Luminaire Type	Outdoor Full-Cutoff Wall-mounted Area Luminaires
Rated Voltage / Frequency	100~277Vac, 50/60Hz
Nominal Power	30W
Rated Initial Lamp Lumen	--
Declared CCT	3000K,3500K,4000K,4500K,5000K,5700K
LED Manufacturer	Chuang Te LED
LED Model	CT-5730
Sample Receipt Date	Oct.18,2015
Sample Number	STD150803NB-H1(3000K),H2(5700K)

Photo


2.1 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
--	-----------------------

Test date	2015-10-25	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LWP5-30(3000K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD150803	120.0	60	0.2677	31.91	0.9933	11.33
NB-H1	277.0	60	0.1248	31.73	0.9178	14.74

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	70.3
R9	0
CCT (K)	3179
Chromaticity (x, y)	x=0.4280 y=0.4069
Chromaticity (u', v')	u'=0.2436 v'=0.5212
Duv	0.0025

Special Color Rendering Indices			
R1	66	R9	0
R2	78	R10	48
R3	89	R11	62
R4	68	R12	41
R5	65	R13	67
R6	72	R14	93
R7	79	R15	59
R8	45	--	--

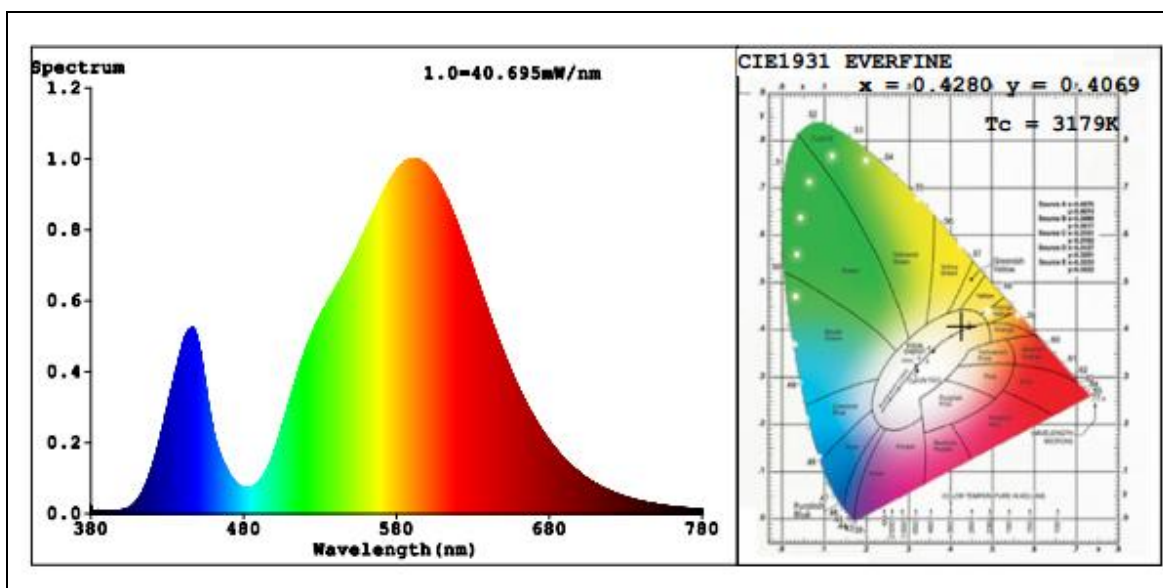
Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	2808.7
Luminous Efficacy (lm/W)	88.01
Beam Angle °	109.8
Center Beam Candle Power (cd)	1048

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	2779.8
Luminous Efficacy (lm/W)	87.61

Spectral Power Distribution & Chromaticity Diagram



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

Report Format Number STD/QR4909-C/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>

Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	818.1	29.1%
0-40	1,346.1	47.9%
0-60	2,356.5	83.9%
60-90	451.2	16.1%
70-100	145.1	5.2%
90-120	0.0	0%
0-90	2,807.7	100%
90-180	0.7	0%
0-180	2,808.4	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	99.0	3.5%	90-100	0	0%
10-20	284.5	10.1%	100-110	0.0	0%
20-30	434.6	15.5%	110-120	0.0	0%
30-40	527.9	18.8%	120-130	0.0	0%
40-50	544.3	19.4%	130-140	0.1	0%
50-60	466.1	16.6%	140-150	0.2	0%
60-70	306.1	10.9%	150-160	0.2	0%
70-80	128.8	4.6%	160-170	0.2	0%
80-90	16.3	0.6%	170-180	0.1	0%

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-C/2

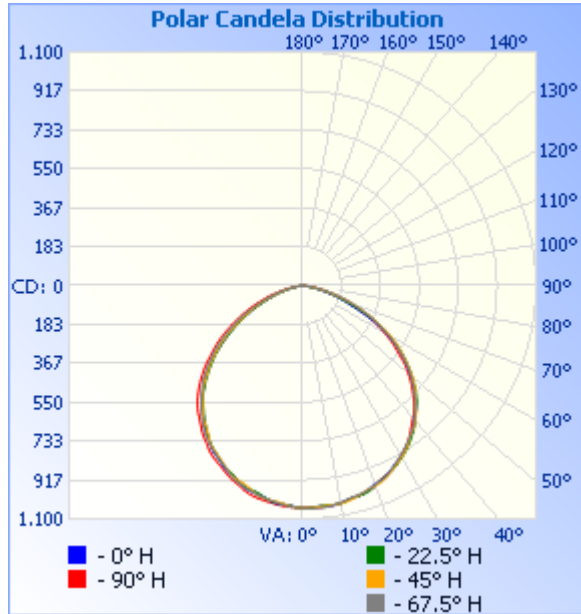
Address: Standard-Tech Building, No.6 Guanhong Road,Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320

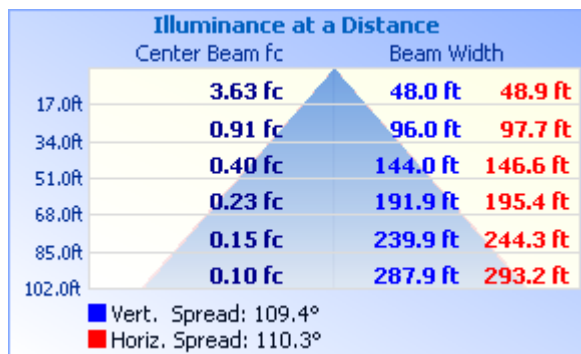
Fax: 8620-32290422

<http://www.standard-tech.com>

Photometric Data



Illuminance Plots



Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-C/2

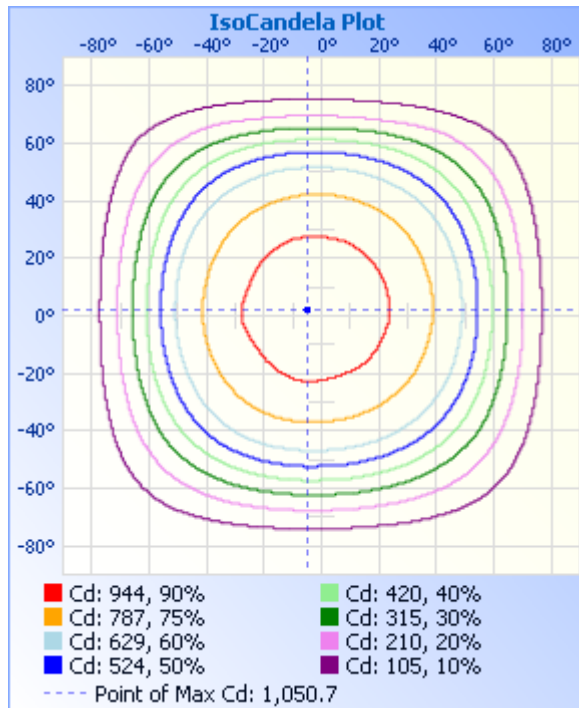
Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320

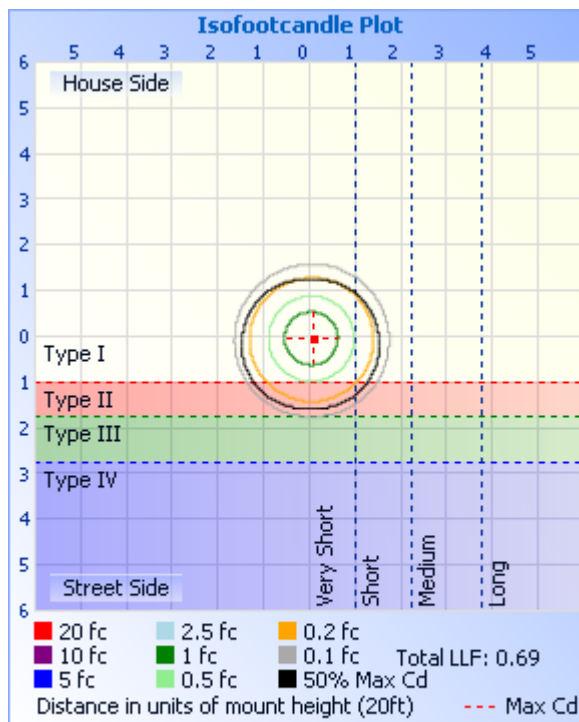
Fax: 8620-32290422

<http://www.standard-tech.com>

ISOCANDELA DIAGRAM



ISOLUX DIAGRAM



Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-C/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>

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	1048	1048	1048	1048	1048	1048	1048	1048	1048	1048	1048	1048	1048	1048	1048	1048	1048
1	1049	1049	1048	1049	1048	1048	1048	1047	1045	1047	1046	1047	1047	1047	1046	1048	1049
2	1048	1048	1048	1049	1046	1046	1048	1046	1043	1044	1045	1046	1046	1046	1044	1047	1048
3	1045	1046	1047	1050	1047	1045	1046	1043	1039	1040	1041	1044	1045	1044	1041	1044	1045
4	1043	1043	1045	1051	1048	1046	1044	1040	1036	1036	1036	1041	1044	1042	1038	1042	1043
5	1044	1041	1043	1050	1048	1046	1042	1039	1034	1034	1032	1038	1042	1040	1036	1042	1044
6	1045	1042	1043	1050	1048	1044	1041	1039	1034	1032	1028	1034	1040	1036	1035	1041	1045
7	1046	1042	1043	1048	1046	1040	1038	1039	1033	1030	1024	1028	1037	1032	1032	1041	1046
8	1045	1042	1043	1044	1044	1035	1034	1036	1029	1027	1023	1025	1034	1028	1028	1040	1045
9	1044	1042	1043	1041	1041	1030	1030	1033	1023	1022	1022	1022	1032	1024	1025	1038	1044
10	1041	1041	1042	1037	1038	1027	1027	1027	1016	1015	1020	1018	1029	1020	1023	1036	1041
11	1036	1038	1041	1033	1035	1024	1023	1021	1009	1008	1016	1015	1026	1016	1021	1032	1036
12	1030	1033	1037	1028	1032	1021	1019	1016	1005	1001	1010	1010	1023	1013	1019	1027	1030
13	1028	1029	1033	1025	1027	1017	1014	1010	1002	995	1002	1005	1019	1009	1016	1022	1028
14	1026	1026	1028	1022	1025	1012	1007	1005	999	992	993	999	1015	1007	1010	1019	1026
15	1025	1025	1023	1019	1023	1008	999	1001	995	990	983	995	1010	1004	1004	1018	1025
16	1022	1024	1017	1016	1021	1004	991	997	989	987	976	991	1002	998	998	1016	1022
17	1016	1022	1012	1013	1018	1000	985	992	981	981	970	985	993	992	994	1013	1016
18	1008	1017	1007	1010	1014	996	980	985	970	973	966	977	985	985	990	1009	1008
19	1001	1011	1004	1004	1008	990	975	977	961	962	962	971	979	977	986	1002	1001
20	996	1002	1002	998	1000	984	970	967	954	951	957	963	972	972	983	994	996
21	992	993	1000	993	993	977	964	959	949	943	950	953	965	966	979	986	992
22	988	988	996	989	985	971	959	954	944	937	940	941	956	960	974	978	988
23	983	983	990	984	979	964	953	948	936	930	928	930	947	953	967	973	983
24	976	977	983	978	975	956	945	941	925	922	917	921	938	945	959	968	976
25	968	972	975	969	969	946	935	932	915	913	906	912	930	937	948	962	968
26	960	965	965	959	962	936	925	921	905	902	898	904	923	927	938	955	960
27	950	959	957	950	955	928	915	909	898	891	889	895	915	917	928	946	950
28	943	951	948	941	948	919	907	897	890	882	881	887	907	907	920	936	943
29	937	943	940	932	939	909	900	887	880	873	874	878	897	897	914	926	937

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-C/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>

30	931	935	932	923	930	900	890	880	867	863	864	869	887	888	907	919	931
31	923	927	925	914	920	891	878	871	853	852	852	859	874	879	899	911	923
32	912	918	915	905	909	881	866	859	840	839	836	849	863	870	888	902	912
33	901	908	904	895	899	871	853	844	829	824	821	839	853	861	875	894	901
34	889	898	892	886	887	860	840	830	818	811	809	827	842	851	862	883	889
35	881	887	879	876	875	849	829	819	806	798	798	813	830	839	851	870	881
36	871	875	869	865	862	837	821	809	791	786	789	799	816	827	840	856	871
37	861	863	859	855	848	826	812	797	775	772	776	786	802	815	829	844	861
38	849	852	851	845	834	815	801	783	761	757	763	772	791	803	819	833	849
39	835	840	840	834	822	804	788	766	750	742	747	757	780	790	807	822	835
40	822	826	828	820	810	790	774	751	739	729	733	744	768	775	795	809	822
41	809	811	814	805	798	776	757	737	725	717	719	729	755	762	782	795	809
42	798	797	799	789	785	760	740	722	709	702	706	712	741	748	769	781	798
43	785	784	783	775	771	744	724	705	691	685	690	696	726	733	754	767	785
44	770	773	767	762	755	728	708	687	672	665	673	681	709	715	737	754	770
45	754	760	753	749	739	713	691	670	655	648	656	668	693	700	721	741	754
46	737	746	740	733	722	700	673	654	637	630	637	654	676	686	706	726	737
47	721	729	727	717	706	683	657	638	621	611	618	638	658	672	690	710	721
48	706	711	711	699	689	665	641	620	603	593	600	619	640	655	674	692	706
49	688	693	695	684	671	645	623	600	585	575	583	599	622	637	658	672	688
50	670	676	678	669	654	626	605	580	565	557	565	579	603	619	640	653	670
51	650	658	659	651	636	606	587	562	544	538	544	560	583	602	621	635	650
52	632	639	640	633	617	586	569	544	522	517	523	542	562	584	602	617	632
53	613	620	621	613	595	567	550	524	499	497	504	524	542	566	583	599	613
54	594	602	602	593	572	547	528	502	477	476	485	505	523	547	565	580	594
55	575	583	582	572	550	529	505	479	455	455	465	486	504	527	546	561	575
56	556	562	563	551	530	509	482	456	434	432	443	466	485	506	526	541	556
57	534	542	544	530	511	486	460	433	414	409	420	444	466	485	504	519	534
58	511	521	524	510	491	464	437	410	393	388	399	422	444	464	482	499	511
59	487	498	504	489	470	441	415	388	371	367	377	401	422	442	462	478	487
60	462	475	482	467	449	421	394	367	351	348	356	381	402	422	442	456	462
61	438	452	459	446	426	401	372	345	330	328	335	361	381	404	421	433	438

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-C/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>

62	415	429	435	424	405	381	350	325	309	307	314	342	360	386	399	410	415
63	389	405	410	404	383	359	328	305	289	287	295	323	339	367	377	387	389
64	359	381	386	382	362	338	307	284	269	268	276	303	319	347	356	363	359
65	329	353	364	361	340	316	287	264	250	248	258	282	301	326	334	337	329
66	301	324	341	339	318	294	267	244	232	228	240	260	283	306	313	309	301
67	275	296	319	318	297	274	248	225	214	210	222	240	264	284	292	280	275
68	251	269	297	296	277	254	228	207	196	192	204	221	244	263	271	252	251
69	230	243	275	274	257	234	209	189	178	176	186	203	225	242	250	227	230
70	211	222	254	253	238	214	191	172	161	159	169	185	207	223	229	206	211
71	193	203	231	233	219	195	173	155	144	144	153	169	189	204	207	187	193
72	173	185	208	215	201	177	156	139	128	129	138	152	172	186	185	170	173
73	153	165	185	195	182	160	139	123	112	114	124	137	155	168	163	153	153
74	133	146	163	176	164	143	124	108	98	101	109	122	139	151	143	136	133
75	115	127	143	158	146	127	109	94	85	88	96	108	123	135	124	118	115
76	98	109	125	140	129	111	95	81	73	75	83	94	108	120	109	101	98
77	83	92	109	122	114	97	82	69	61	64	72	82	94	105	94	85	83
78	69	76	94	108	98	84	70	57	50	53	61	71	81	92	81	70	69
79	56	63	79	93	84	71	59	47	40	43	50	60	69	79	68	58	56
80	42	49	64	79	71	60	48	36	32	33	41	49	58	67	54	45	42
81	31	36	50	65	59	49	38	28	24	26	32	40	47	55	42	33	31
82	21	26	39	52	47	38	29	21	17	19	24	31	37	43	33	24	21
83	13	16	27	39	37	30	21	14	12	12	16	23	28	32	22	15	13
84	5	9	18	29	28	21	13	9	7	7	10	16	20	23	15	7	5
85	0	2	10	20	19	14	8	4	3	3	5	10	13	15	8	2	0
86	0	0	3	12	12	8	3	2	2	2	2	4	7	8	2	0	0
87	0	0	0	5	6	3	1	1	2	2	0	1	2	2	0	0	0
88	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0
89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-C/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>

94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-C/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>

126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
142	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
143	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
144	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0
145	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0
146	0	0	0	0	1	1	0	1	1	1	1	0	0	0	0	0	0
147	0	0	0	0	1	0	0	1	1	1	1	0	0	0	0	0	0
148	0	0	0	0	1	0	0	1	1	1	1	1	0	0	0	0	0
149	0	0	0	0	1	1	0	1	1	1	1	1	0	0	0	0	0
150	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
151	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
152	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
153	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
154	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
155	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
156	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
157	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-C/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>

158	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
159	1	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	1
160	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
161	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
162	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
163	1	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	1
164	1	0	0	0	1	1	1	1	1	1	1	1	0	0	0	1	1
165	1	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1
166	1	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1
167	1	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1
168	1	0	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1
169	1	1	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1
170	1	1	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1
171	1	1	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1
172	1	1	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1
173	1	1	0	0	1	1	1	1	1	1	1	1	0	0	1	1	1
174	1	1	1	0	1	1	1	1	1	1	1	1	0	0	1	1	1
175	1	1	1	0	1	1	1	1	1	1	1	1	0	0	1	1	1
176	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1
177	1	1	1	0	1	1	1	1	1	1	1	1	0	0	1	1	1
178	1	1	1	1	1	0	1	1	1	1	1	1	0	0	1	1	1
179	1	1	1	1	1	0	0	1	1	1	1	1	0	0	1	1	1
180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

2.3 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction QD25)

IES LM-79 2008

Test date	2015-10-25	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LWP5-30(5700K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD150803	120.0	60	0.2704	32.21	0.9928	11.29
NB-H2	277.0	60	0.1265	32.17	0.9155	14.92

Sphere-Spectroradiometer Method:

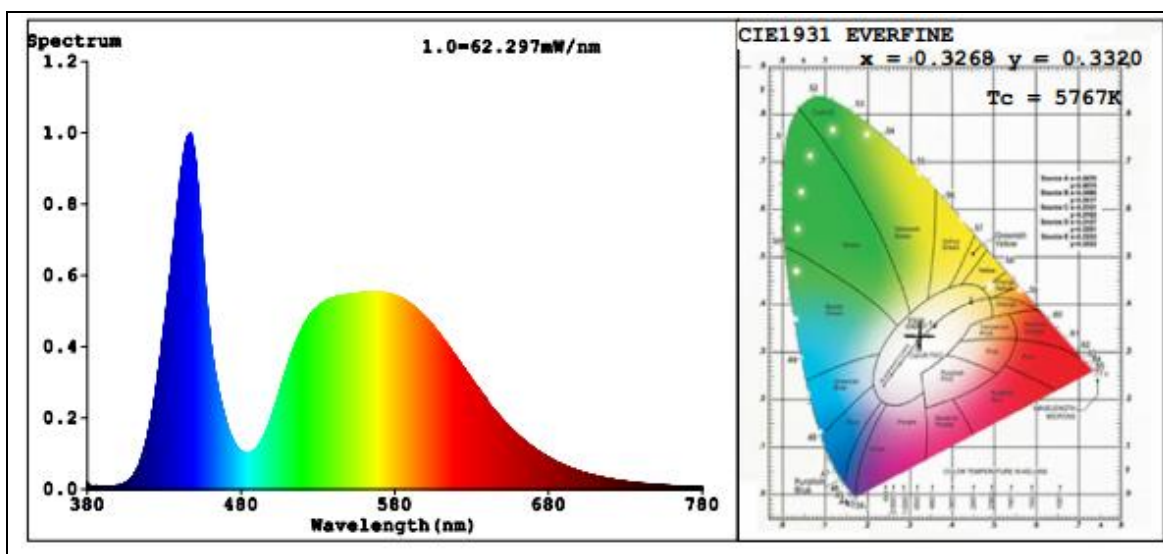
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	75.1
R9	0
CCT (K)	5767
Chromaticity (x, y)	x=0.3268 y=0.3320
Chromaticity (u', v')	u'=0.2065 v'=0.4720
Duv	-0.0021
Total Initial Lumen Output(lm)	2946
Initial Lumen Efficacy(lm/w)	91.46

Special Color Rendering Indices			
R1	74	R9	0
R2	78	R10	41
R3	78	R11	76
R4	78	R12	48
R5	79	R13	73
R6	69	R14	86
R7	82	R15	69
R8	63	--	--

Sphere-Spectroradiometer Method for 277V:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Initial Lumen Output(lm)	2934
Initial Lumen Efficacy(lm/w)	91.20

Spectral Power Distribution & Chromaticity Diagram



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

Report Format Number STD/QR4909-C/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>

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%			

******* END OF DATASHEET PACKAGE *******