



Report No.: GZE141009-F

NVLAP LAB CODE 201011-0

LM-79-08 Test Report

For

SHENZHEN OKT LIGHTING CO.,LTD

(Brand Name: OKT LIGHTING)

NO.2076 Jincheng Rd,Shajing Town, Bao'an District, Shenzhen, China.

2X4 Luminaires for Ambient Lighting of Interior Commercial Spaces

Model name(s): TR24-DH-XXE

Representative (Tested) Model: TR24-DH-40E
TR24-DH-50E

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

Test & Report By:

Sean Zhuo

Engineer: Sean Zhuo

Date: Oct.29,2014

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: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, 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	Oct.29,2014
Test Report No.	GZE141009-F
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	SHENZHEN OKT LIGHTING CO.,LTD	
Brand Name	OKT LIGHTING	
Model Number	TR24-DH-40E	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	2X4 Luminaires for Ambient Lighting of Interior Commercial Spaces	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	

Electrical Measurements:	Integrating Sphere Output	Goniophotometer Output
---------------------------------	--------------------------------------	-----------------------------------

Input Wattage	--	64.56	W
Input Current	--	0.5441	A
Input Voltage (ac)	--	120.1	V
Power Factor	--	0.9879	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	7010.3	lm
Initial Lumen Efficacy	--	108.58	lm/w
Correlated color temperature / CCT	4035	--	K
Color rendering index / CRI	84.1	--	
R9 Value	12	--	
Duv	0.0005	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)		3440	cd
Beam angle (if applicable)		84.7	°
Zonal lumens in the 0°-60° zone		85.7	%
Zonal lumens in the 60°-90° zone	-----	14.2	%
Zonal lumens in the 90°-120° zone		0	%
Zonal lumens in the 120°-180° zone		0.1	%

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

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, 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	Oct.29,2014
Test Report No.	GZE141009-F
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	SHENZHEN OKT LIGHTING CO.,LTD	
Brand Name	OKT LIGHTING	
Model Number	TR24-DH-50E	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	2X4 Luminaires for Ambient Lighting of Interior Commercial Spaces	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	

Electrical Measurements:	Integrating Sphere Output	Goniophotometer Output
---------------------------------	--------------------------------------	-----------------------------------

Input Wattage	64.08	--	W
Input Current	0.5392	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9903	--	
Off-State Power	0	--	W

Photometric Characteristics

Total Initial Lumen Output	7228	--	lm
Initial Lumen Efficacy	112.80	--	lm/w
Correlated color temperature / CCT	5008	--	K
Color rendering index / CRI	82.4	--	
R9 Value	3	--	
Duv	0.0038	--	
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-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

Test Specifications:	
Date of Receipt	: Oct.27,2014
Date of Test	: Oct.28,2014
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-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

1. Product Information:

Brand Name	OKT LIGHTING
Model Number	TR24-DH-XXE
Luminaire Type	2X4 Luminaires for Ambient Lighting of Interior Commercial Spaces
Rated Voltage / Frequency	100 ~ 277 Vac, 50/60 Hz
Nominal Power	65W
Rated Initial Lamp Lumen	--
Declared CCT	4000K,4500K,5000K
LED Manufacturer	Guangzhou Hongli Opto-Electronic Co., Ltd.
LED Model	HL-A-2835DW-S1-08-HR3
Sample Receipt Date	Oct.27,2014
Sample Number	141009-11(4000K),-12(5000K)

Photo



Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

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

Test date	2014-10-28	Test Ambient:	25.0 ° C
Test Orientation	As Intended	Stabilization Time (min)	90
Model Number	TR24-DH-40E		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
141009-11	120.1	60	0.5441	64.56	0.9879	11.38
	277.0	60	0.2510	64.83	0.9324	17.99

Sphere-Spectroradiometer Method:

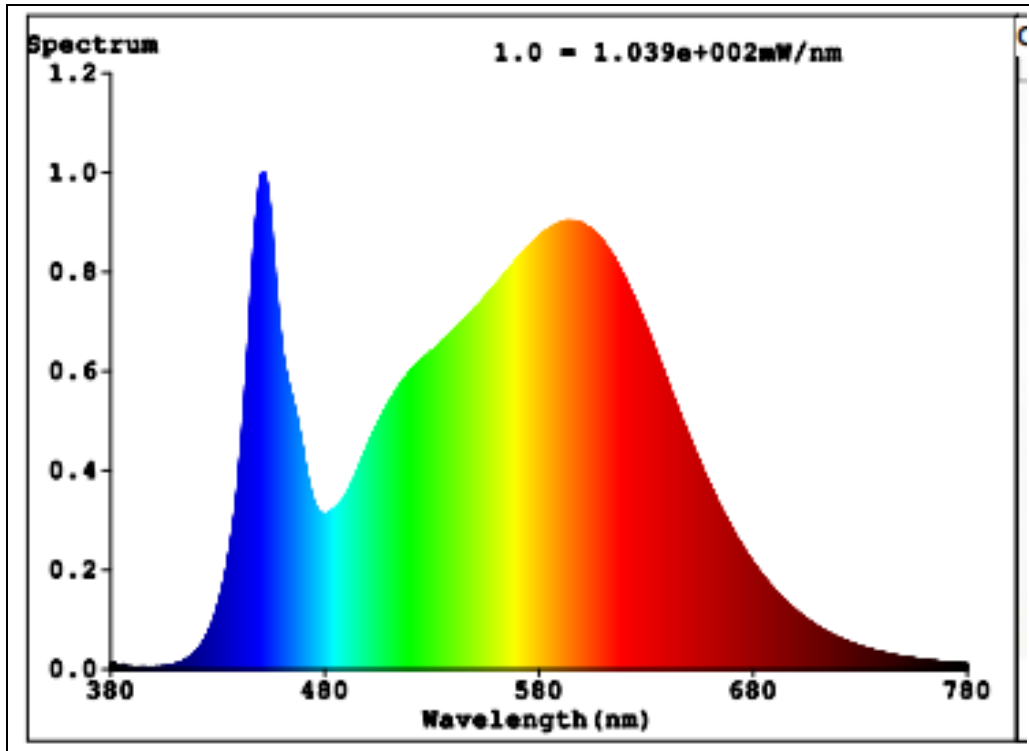
Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	82	R9	12
Frequency (Hz)	60	R2	91	R10	78
Color Rendering Index (CRI)	84.1	R3	96	R11	81
R9	12	R4	82	R12	64
CCT (K)	4035	R5	82	R13	85
Chromaticity (x, y)	x=0.3792 y=0.3770	R6	87	R14	98
Chromaticity (u', v')	u'=0.2242 v'=0.5015	R7	86	R15	77
Duv	0.0005	R8	66	--	--

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.1
Frequency (Hz)	60
Total Luminous (lm)	7010.3
Luminous Efficacy (lm/W)	108.58
Beam Angle°	84.7
Center Beam Candle Power (cd)	3440
S/MH(C0/180)	1.04
S/MH(C90/270)	1.25

Spectral Power Distribution

Spectral Power Distribution:



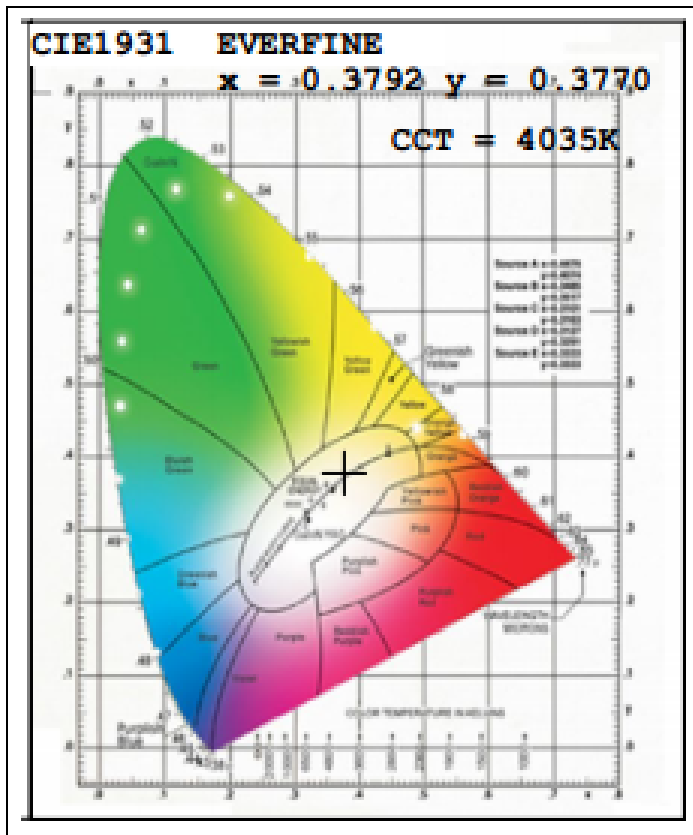
Laboratory: Standard-Tech Co. Ltd Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

Chromaticity Diagram



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

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320

Fax: 8620-32290422

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

Zonal Lumen Tabulation

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Luminaire
0-30	2,562.6	60.5%	36.6%
0-40	3,940.4	93%	56.2%
0-60	6,007.9	141.8%	85.7%
60-90	997.3	23.5%	14.2%
70-100	401.9	9.5%	5.7%
90-120	0.9	0%	0%
0-90	7,005.2	165.4%	99.9%
90-180	4.6	0.1%	0.1%
0-180	7,009.8	165.5%	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	322.3	4.6%	90-100	0.3	0%
10-20	922.4	13.2%	100-110	0.3	0%
20-30	1,317.9	18.8%	110-120	0.3	0%
30-40	1,377.9	19.7%	120-130	0.4	0%
40-50	1,182.5	16.9%	130-140	0.7	0%
50-60	885.0	12.6%	140-150	0.9	0%
60-70	595.7	8.5%	150-160	0.9	0%
70-80	325.3	4.6%	160-170	0.7	0%
80-90	76.3	1.1%	170-180	0.2	0%

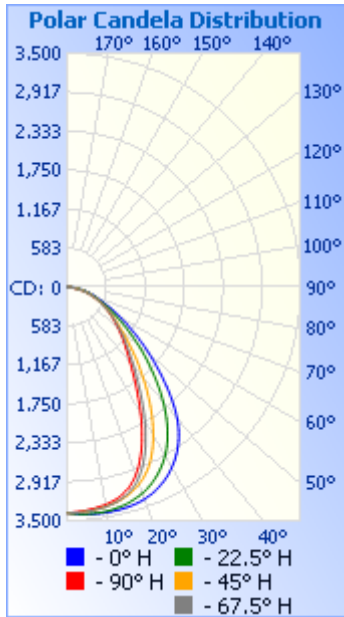
Laboratory: Standard-Tech Co. Ltd Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

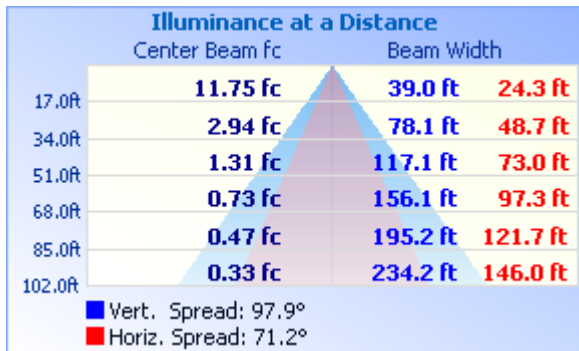
Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

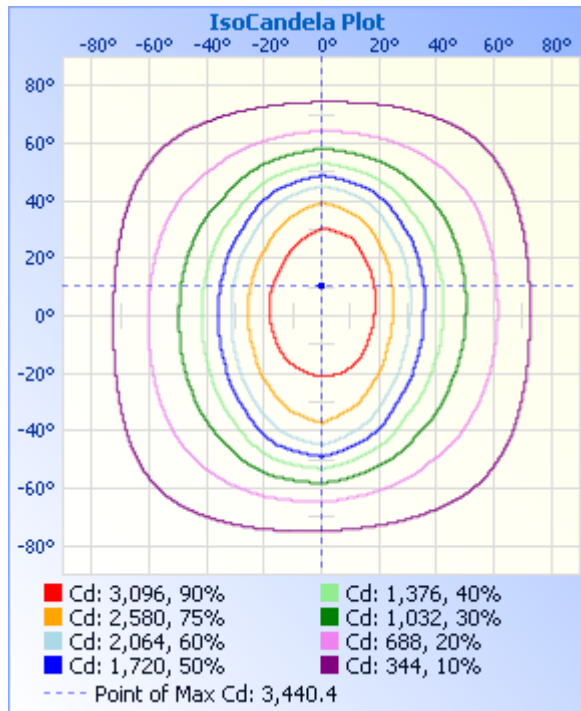
Photometric Data



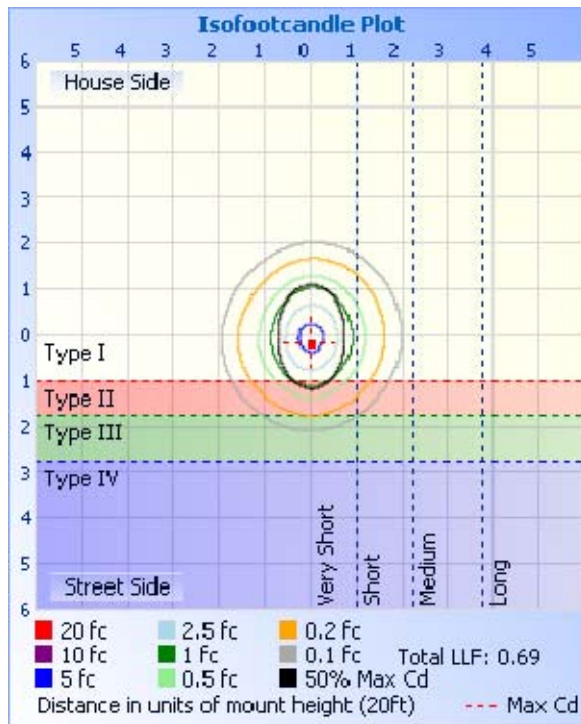
Illuminance Plots



ISOCANDELA DIAGRAM



ISOLUX DIAGRAM



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

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, 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	3395	3395	3395	3395	3395	3395	3395	3395	3395	3395	3395	3395	3395	3395	3395	3395	3395
1	3402	3402	3395	3394	3390	3386	3386	3385	3387	3387	3394	3395	3399	3402	3402	3401	3402
2	3408	3408	3395	3392	3385	3379	3379	3376	3378	3378	3392	3394	3402	3408	3409	3409	3408
3	3415	3414	3393	3390	3380	3370	3368	3366	3368	3369	3388	3393	3405	3415	3416	3416	3415
4	3421	3419	3390	3388	3374	3360	3359	3355	3357	3358	3385	3391	3407	3421	3422	3421	3421
5	3426	3423	3386	3384	3366	3351	3348	3344	3347	3351	3380	3387	3408	3428	3427	3427	3426
6	3430	3425	3381	3378	3358	3340	3336	3331	3336	3338	3374	3383	3406	3429	3430	3432	3430
7	3434	3426	3375	3374	3351	3330	3325	3321	3323	3327	3367	3377	3405	3430	3434	3434	3434
8	3437	3426	3368	3367	3341	3317	3312	3307	3311	3317	3359	3371	3399	3431	3436	3437	3437
9	3439	3425	3360	3360	3331	3305	3299	3293	3298	3304	3349	3360	3393	3429	3437	3440	3439
10	3440	3422	3351	3351	3320	3293	3286	3279	3284	3292	3338	3348	3382	3426	3436	3440	3440
11	3439	3417	3339	3340	3305	3276	3271	3264	3270	3276	3323	3333	3370	3418	3433	3440	3439
12	3439	3410	3327	3328	3288	3259	3255	3248	3254	3260	3308	3314	3349	3405	3429	3438	3439
13	3438	3402	3314	3312	3273	3241	3238	3231	3239	3244	3290	3291	3322	3389	3422	3435	3438
14	3435	3392	3299	3293	3251	3220	3222	3214	3221	3229	3271	3260	3286	3365	3412	3432	3435
15	3432	3382	3280	3272	3219	3195	3201	3196	3205	3212	3248	3226	3247	3334	3400	3426	3432
16	3426	3369	3262	3246	3187	3167	3180	3177	3187	3192	3220	3184	3201	3299	3383	3421	3426
17	3421	3353	3239	3215	3155	3135	3156	3157	3168	3173	3188	3128	3145	3256	3362	3412	3421
18	3413	3337	3214	3180	3111	3099	3131	3138	3150	3153	3148	3073	3082	3206	3334	3404	3413
19	3403	3318	3184	3139	3063	3056	3102	3115	3130	3131	3108	3017	3014	3150	3302	3392	3403
20	3392	3298	3154	3090	3008	3010	3072	3094	3110	3106	3067	2950	2941	3085	3266	3378	3392
21	3377	3275	3117	3036	2945	2955	3037	3071	3088	3082	3015	2877	2862	3016	3223	3363	3377
22	3362	3248	3079	2975	2877	2896	2998	3045	3066	3054	2960	2801	2779	2943	3175	3344	3362
23	3343	3219	3033	2908	2803	2831	2957	3020	3042	3025	2899	2721	2690	2863	3121	3321	3343
24	3321	3187	2983	2836	2727	2763	2910	2992	3019	2994	2835	2637	2605	2781	3062	3296	3321
25	3297	3154	2928	2760	2645	2690	2857	2963	2994	2959	2765	2551	2515	2697	2997	3266	3297
26	3270	3117	2869	2681	2560	2613	2802	2931	2969	2922	2692	2464	2426	2610	2928	3231	3270
27	3242	3077	2803	2596	2471	2534	2742	2897	2940	2881	2619	2378	2337	2526	2856	3193	3242
28	3210	3032	2734	2510	2384	2451	2678	2861	2914	2838	2541	2291	2247	2436	2780	3150	3210
29	3176	2986	2659	2424	2296	2368	2610	2820	2884	2790	2463	2204	2163	2350	2702	3102	3176

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

30	3138	2935	2584	2336	2207	2285	2541	2779	2853	2739	2383	2119	2080	2262	2621	3048	3138
31	3098	2882	2506	2248	2121	2201	2468	2734	2820	2684	2303	2037	2000	2180	2540	2989	3098
32	3055	2824	2426	2161	2034	2118	2394	2685	2786	2625	2221	1956	1939	2097	2457	2925	3055
33	3009	2762	2345	2074	1952	2036	2319	2635	2750	2563	2140	1879	1898	2016	2374	2855	3009
34	2959	2698	2263	1991	1873	1955	2244	2580	2709	2497	2060	1812	1802	1946	2290	2782	2959
35	2905	2629	2179	1909	1795	1877	2166	2522	2668	2429	1979	1784	1716	1890	2206	2705	2905
36	2848	2555	2096	1832	1723	1802	2089	2461	2623	2358	1901	1696	1658	1818	2124	2624	2848
37	2786	2481	2011	1756	1654	1731	2012	2398	2573	2285	1824	1611	1599	1745	2041	2542	2786
38	2720	2404	1931	1685	1589	1662	1937	2333	2518	2210	1749	1539	1586	1672	1962	2459	2720
39	2647	2324	1849	1622	1527	1597	1860	2265	2459	2134	1676	1480	1548	1610	1883	2373	2647
40	2569	2241	1769	1559	1469	1534	1785	2195	2394	2056	1606	1438	1468	1567	1807	2286	2569
41	2485	2158	1694	1496	1415	1476	1713	2124	2326	1979	1539	1448	1399	1539	1732	2199	2485
42	2396	2075	1624	1437	1363	1419	1642	2052	2252	1900	1507	1361	1345	1460	1676	2113	2396
43	2302	1989	1555	1382	1314	1368	1575	1978	2176	1823	1442	1288	1333	1395	1600	2026	2302
44	2207	1907	1486	1329	1268	1318	1508	1906	2098	1745	1356	1231	1317	1345	1525	1941	2207
45	2112	1822	1418	1279	1224	1271	1446	1831	2016	1668	1293	1192	1242	1306	1460	1856	2112
46	2017	1739	1354	1232	1183	1226	1384	1759	1934	1594	1237	1217	1182	1300	1399	1773	2017
47	1925	1664	1291	1185	1143	1183	1327	1685	1850	1521	1186	1151	1136	1224	1339	1691	1925
48	1835	1589	1232	1142	1104	1142	1271	1613	1767	1450	1161	1086	1098	1169	1306	1614	1835
49	1748	1512	1176	1099	1065	1102	1219	1542	1682	1381	1132	1031	1060	1128	1245	1537	1748
50	1662	1438	1123	1058	1026	1064	1169	1471	1599	1314	1058	993	1025	1089	1182	1463	1662
51	1579	1366	1073	1019	989	1026	1122	1403	1517	1248	1001	958	992	1052	1134	1392	1579
52	1499	1296	1026	981	952	990	1077	1334	1437	1183	959	923	959	1016	1090	1323	1499
53	1419	1228	982	943	918	955	1036	1270	1360	1123	935	889	927	980	1066	1255	1419
54	1343	1162	940	907	884	920	996	1205	1285	1064	923	856	897	945	1011	1191	1343
55	1269	1100	900	871	853	886	957	1143	1213	1008	860	823	867	910	965	1130	1269
56	1197	1039	861	836	822	854	922	1084	1144	956	808	791	838	876	925	1070	1197
57	1129	983	823	803	792	821	886	1027	1079	905	771	760	809	843	887	1014	1129
58	1063	928	787	771	763	789	851	972	1017	858	737	730	779	810	849	960	1063
59	1000	876	751	739	734	760	816	920	956	821	706	701	749	778	813	908	1000
60	940	827	716	707	706	729	781	870	899	776	675	673	718	747	777	860	940
61	882	781	683	676	678	700	747	823	844	728	645	644	687	716	743	814	882

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

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

62	827	737	651	647	650	672	714	778	792	689	616	617	656	687	709	770	827
63	775	694	619	617	622	643	681	734	741	653	588	589	626	656	676	728	775
64	724	655	589	589	593	615	650	693	695	626	561	561	595	626	645	689	724
65	678	617	560	561	565	589	619	653	653	589	534	534	565	596	614	650	678
66	633	582	532	533	537	562	589	615	612	551	507	506	534	565	583	614	633
67	594	549	504	506	508	535	559	579	574	521	480	478	504	534	553	580	594
68	556	516	478	478	480	508	530	544	539	503	454	449	474	503	524	546	556
69	521	486	451	450	451	481	501	511	505	462	427	422	443	472	493	515	521
70	488	458	425	423	424	453	471	480	472	433	401	394	412	441	464	484	488
71	457	430	399	396	395	425	443	450	441	406	375	366	381	410	434	454	457
72	427	402	374	368	368	397	414	422	412	380	350	339	351	379	404	425	427
73	397	375	349	342	341	369	386	393	383	354	325	311	321	349	376	397	397
74	369	350	324	315	314	341	359	366	356	330	300	284	292	319	348	370	369
75	341	326	300	290	288	313	332	341	329	307	276	256	262	288	321	344	341
76	315	302	277	264	261	286	306	316	303	283	252	229	233	258	294	318	315
77	290	279	254	238	235	258	281	293	279	259	227	202	202	228	266	293	290
78	266	256	231	213	208	231	256	269	255	236	202	174	169	197	238	267	266
79	242	234	209	187	182	204	231	245	232	212	177	145	134	165	210	241	242
80	218	211	186	161	152	175	206	221	209	188	152	114	96	130	182	215	218
81	194	189	163	133	120	143	181	197	185	164	126	81	76	93	153	189	194
82	169	166	140	105	100	114	155	172	161	140	99	64	60	72	122	163	169
83	146	143	115	87	85	96	126	147	137	115	70	49	47	56	86	137	146
84	122	120	89	73	71	80	99	123	113	92	50	37	34	41	61	110	122
85	97	97	70	59	58	65	78	97	89	67	35	24	22	28	42	83	97
86	74	73	53	45	45	49	58	72	66	44	20	13	11	15	25	55	74
87	50	49	37	31	32	34	39	47	42	23	8	6	5	6	11	29	50
88	27	29	21	19	20	20	22	25	20	7	3	1	1	1	3	10	27
89	8	11	8	4	5	5	5	6	4	1	0	1	0	0	0	1	8
90	0	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0

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

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

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

Test date	2014-10-28	Test Ambient:	25.0 ° C
Test Orientation	As Intended	Stabilization Time (min)	90
Model Number	TR24-DH-50E		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
141009-12	120.0	60	0.5392	64.08	0.9903	11.54
	277.0	60	0.2506	64.66	0.9316	18.22

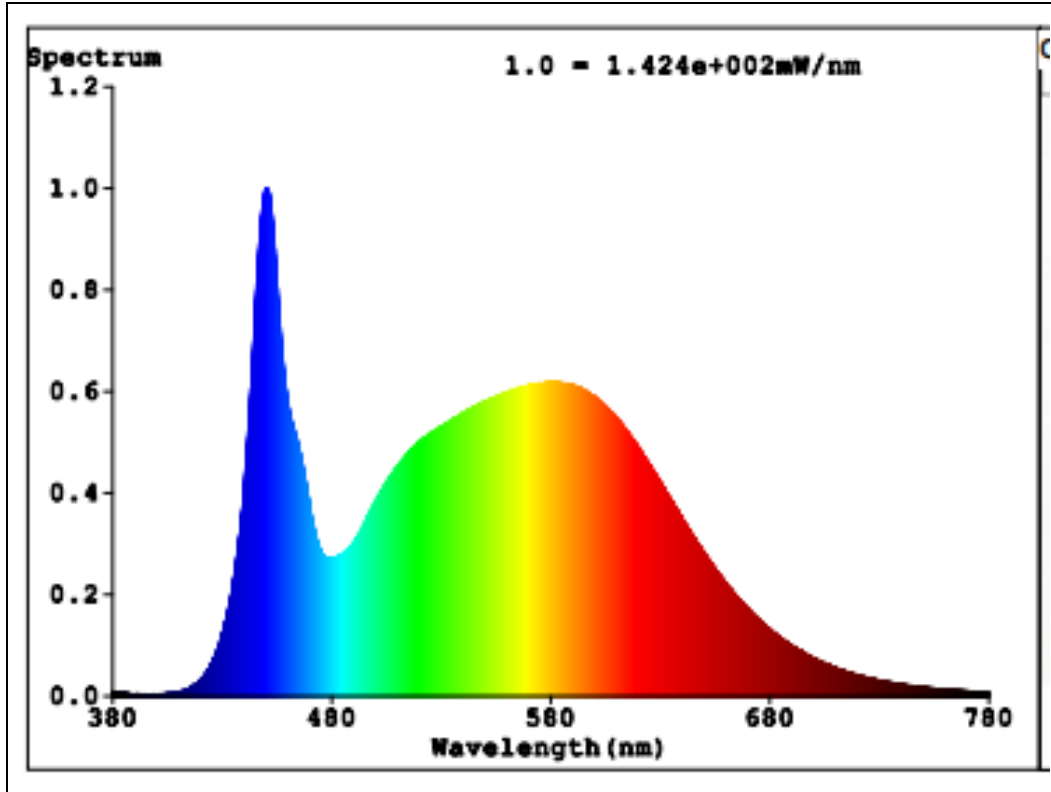
Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	82.4
R9	3
CCT (K)	5008
Chromaticity (x, y)	x=0.3456 y=0.3598
Chromaticity (u', v')	u'=0.2086 v'=0.4887
Duv	0.0038
Total Luminous (lm)	7228
Luminous Efficacy (lm/W)	112.80

Special Color Rendering Indices			
R1	80	R9	3
R2	88	R10	71
R3	93	R11	80
R4	82	R12	62
R5	81	R13	82
R6	83	R14	96
R7	87	R15	74
R8	65	--	--

Spectral Power Distribution

Spectral Power Distribution:



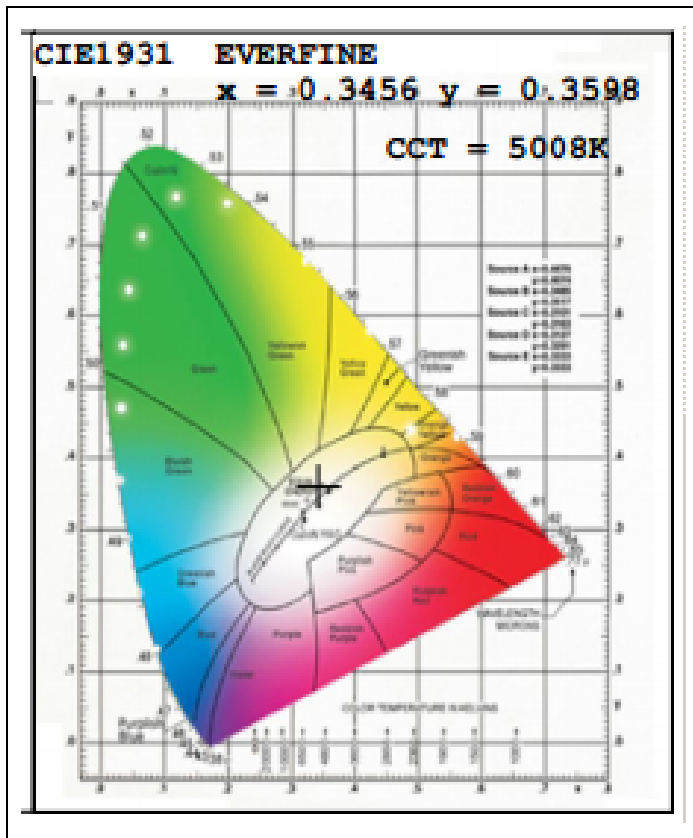
Laboratory: Standard-Tech Co. Ltd Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

Chromaticity Diagram



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

Report Format Number STD/QR4909-A/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, 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	2014-07-01	2015-06-30
ST-R-331	Spectral analysis system HAAS-2000	2014-07-01	2015-06-30
D204	Standard Lamp	2014-07-01	2015-06-30
PF2010	Power Meter for Integrating Sphere	2014-07-01	2015-06-30
EE-09	Goniophotometer system	2014-07-01	2015-06-30
D908S	Standard Lamp	2014-07-01	2015-06-30
PF210	Power Meter for Goniophotometer	2014-07-01	2015-06-30
ST-R-181A	Temperature Tester	2014-07-01	2015-06-30

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