



Report No.: BLC2010026E-A

LM-79-08 Test Report

For

LEDVANCE LLC

(Brand Name: SYLVANIA)

200 Ballardvale St. Wilmington, MA 01887 USA

LED Area Lamp

Model name(s):

LED18HIDRODAREA830MED

LED18HIDRODAREA840MED

LED18HIDRODAREA850MED

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

Test & Report By:

Lily Yang

Engineer: Lily Yang

Date: 2020-11-06

Review By:

Jason Luo

Manager: Jason Luo



Report No.: BLC2010026E-A

1.1 Product Information:

Organization Name	LEDVANCE LLC	
Brand Name	SYLVANIA	
Model Number	LED18HIDRODAREA830MED LED18HIDRODAREA840MED LED18HIDRODAREA850MED	
SKU (if available)	N/A	
Type of Product (for integral lamps, list base type and lamp type)	LED Area Lamp	
Rated Voltage / Frequency	120-277Vac, 50/60 Hz	
Nominal Power	18W	
Rated Stabilized Lamp Lumen	2600 lm (3000K), 2700 lm (4000K/5000K)	
Declared CCT	3000K, 4000K, 5000K	
LED Manufacturer	Lumileds Holding B.V.	
LED Model	L128-XX80RA35000H1	
Sample Number	BLC2010026E-A1(3000K), A2(4000K), A3(5000K)	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s
Photo		
		



Report No.: BLC2010026E-A

1.2 Test Specifications:

Date of Receipt	2020-11-02
Date of Test	2020-11-04
Test item	<ol style="list-style-type: none">1. Total Luminous Flux2. Luminous Distribution Intensity3. Luminous Efficacy4. Correlated Color Temperature5. Color Rendering Index6. Chromaticity Coordinate7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none">1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources4. CIE 15-2004 Technical Report Colorimetry5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	BL-QP-033

1.3 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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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 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° vertical intervals and 22.5° horizontal intervals.

2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

Chromaticity 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 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.

3) 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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. 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.



Report No.: BLC2010026E-A

2.1 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2020-11-04	Test Ambient:	25.6 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED18HIDRODAREA830MED		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC201002	120.0	60	0.156	18.50	0.987	10.01
6E-A1	277.0	60	0.077	18.87	0.885	14.81
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	4
Frequency (Hz)	60	R2	92	R10	82
CCT (K)	2965	R3	95	R11	80
Duv	-0.0010	R4	80	R12	73
Chromaticity (x, y)	x=0.4379 y=0.4018	R5	82	R13	83
Chromaticity (u', v')	u(u')=0.2522 v'=0.5206	R6	91	R14	98
Color Rendering Index (CRI)	82	R7	80	R15	73
R9	4	R8	56	--	--
Rf	84				
Rg	95				
Rcs,h1(%)	-12				

Photometric Measurement – Goniophotometer Method:

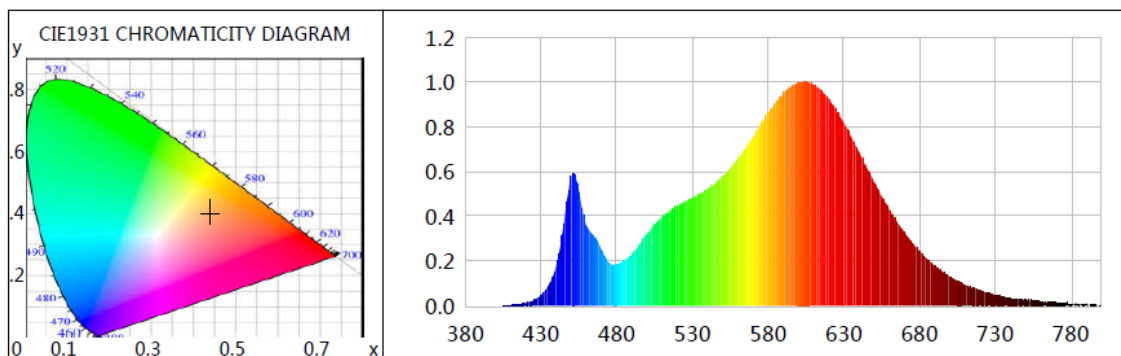
Parameter	Result		Rating	Tolerance
Test Voltage (V)	120.0	277.0	--	--
Frequency (Hz)	60	60	--	--
Total Luminous (lm)	2634.2	2656.7	2600	Comply -10%
Luminous Efficacy (lm/W)	142.39	140.79	140	Comply -3%
Most worst Luminous/Highest	139.60		--	--
Beam Angle (°)	--	--	--	--
Center Beam Candle Power (cd)	930	--	--	--



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Report No.: BLC2010026E-A

Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0003	0.0185	525	0.4641	25.5507	670	0.3276	18.0368
385	0.0007	0.0368	530	0.4812	26.4903	675	0.2838	15.6218
390	0.0009	0.0497	535	0.4994	27.4919	680	0.2446	13.4662
395	0.0005	0.0299	540	0.5213	28.6960	685	0.2084	11.4705
400	0.0010	0.0544	545	0.5462	30.0681	690	0.1787	9.8403
405	0.0014	0.0797	550	0.5774	31.7860	695	0.1524	8.3904
410	0.0023	0.1284	555	0.6138	33.7906	700	0.1294	7.1261
415	0.0061	0.3359	560	0.6566	36.1444	705	0.1098	6.0462
420	0.0129	0.7079	565	0.7032	38.7117	710	0.0935	5.1483
425	0.0247	1.3588	570	0.7513	41.3598	715	0.0783	4.3111
430	0.0476	2.6230	575	0.8087	44.5213	720	0.0676	3.7189
435	0.0901	4.9625	580	0.8607	47.3842	725	0.0577	3.1745
440	0.1763	9.7032	585	0.9055	49.8473	730	0.0489	2.6944
445	0.3641	20.0433	590	0.9470	52.1345	735	0.0403	2.2201
450	0.5758	31.6962	595	0.9796	53.9258	740	0.0347	1.9096
455	0.5108	28.1201	600	0.9966	54.8651	745	0.0321	1.7672
460	0.3560	19.5999	605	1.0000	55.0510	750	0.0263	1.4501
465	0.3098	17.0549	610	0.9889	54.4406	755	0.0229	1.2585
470	0.2477	13.6371	615	0.9639	53.0652	760	0.0194	1.0656
475	0.1910	10.5163	620	0.9273	51.0499	765	0.0145	0.7963
480	0.1846	10.1639	625	0.8738	48.1033	770	0.0146	0.8065
485	0.2017	11.1053	630	0.8178	45.0204	775	0.0110	0.6040
490	0.2282	12.5628	635	0.7537	41.4924	780	0.0068	0.3741
495	0.2721	14.9781	640	0.6888	37.9164	785	0.0053	0.2899
500	0.3195	17.5886	645	0.6193	34.0911	790	0.0109	0.5999
505	0.3605	19.8473	650	0.5538	30.4852	795	0.0060	0.3281
510	0.3951	21.7523	655	0.4895	26.9451	800	0.0040	0.2223
515	0.4239	23.3335	660	0.4302	23.6811			
520	0.4457	24.5338	665	0.3757	20.6820			

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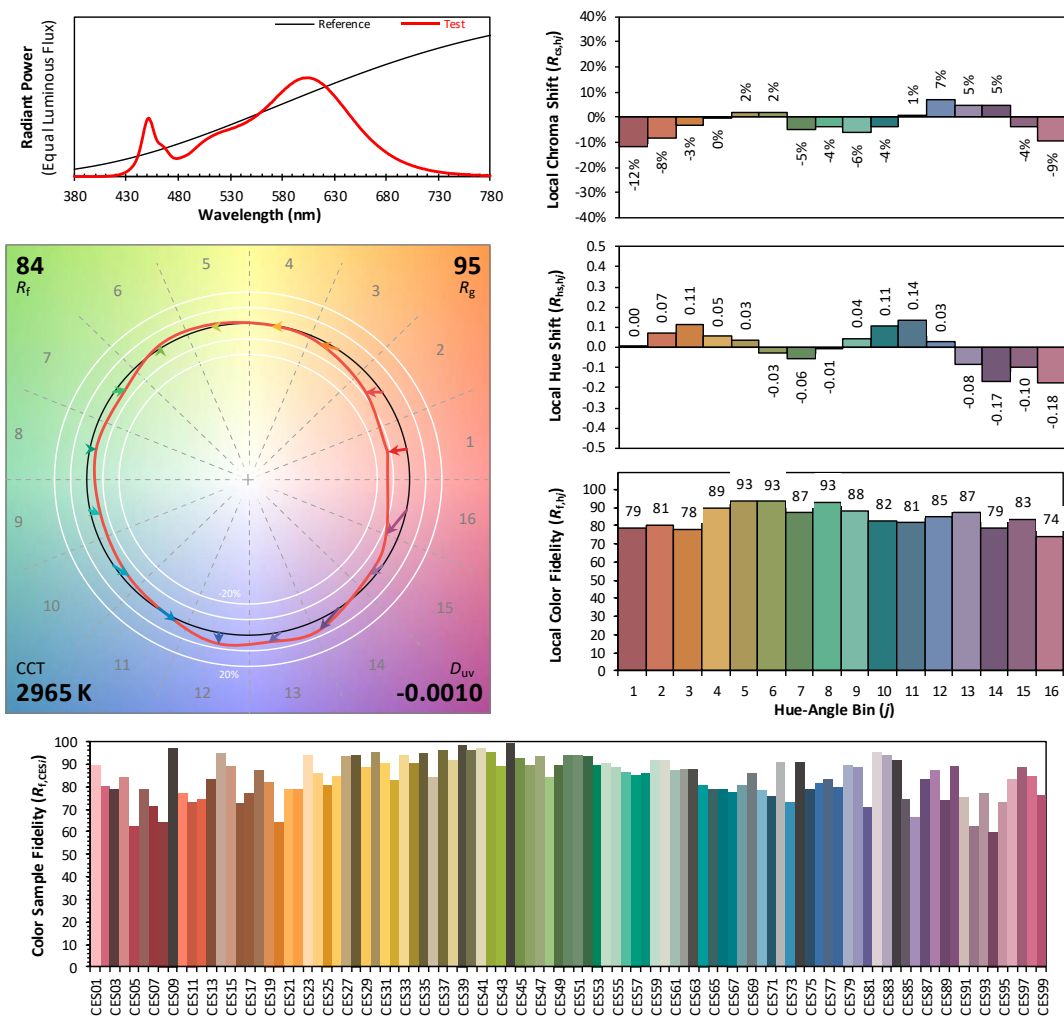
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TM30

ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35000H1 Manufacturer: LEDVANCE LLC
Date: 2020/11/6 Model: LED18HIDRODAREA830MED



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4379
y	0.4018
u'	0.2522
v'	0.5206

CIE 13.3-1995 (CRI)	
R_a	82
R_g	4

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00



Report No.: BLC2010026E-A

Zonal Lumen Tabulation

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	730.0	27.7%	27.7%
0-40	1,206.1	45.8%	45.8%
0-60	2,129.3	80.8%	80.8%
60-90	467.4	17.7%	17.7%
70-100	182.2	6.9%	6.9%
90-120	27.1	1%	1%
0-90	2,596.7	98.6%	98.6%
90-180	37.2	1.4%	1.4%
0-180	2,633.9	100%	100%

Lumens Per Zone

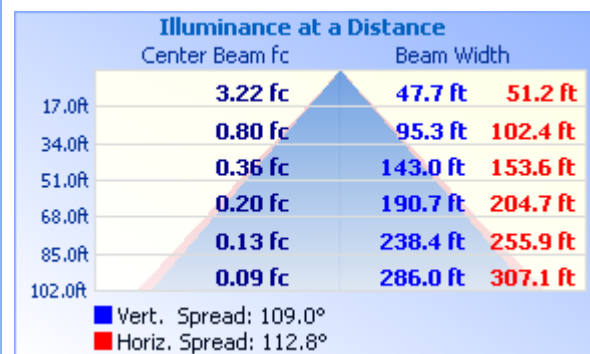
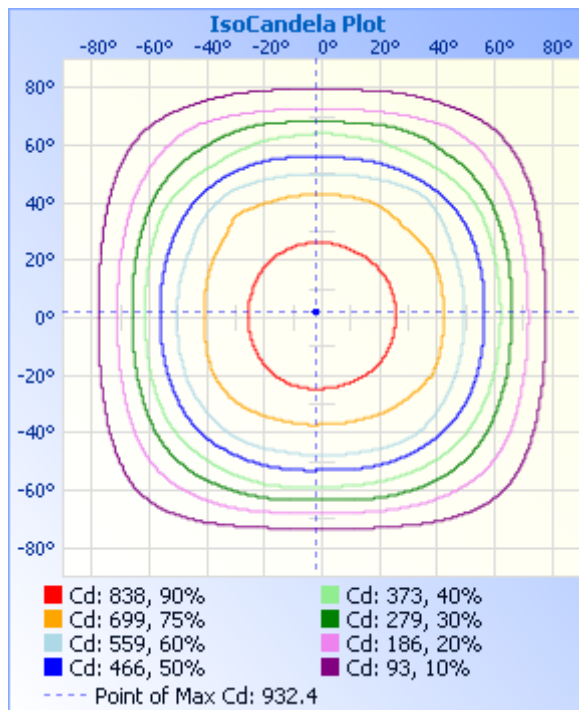
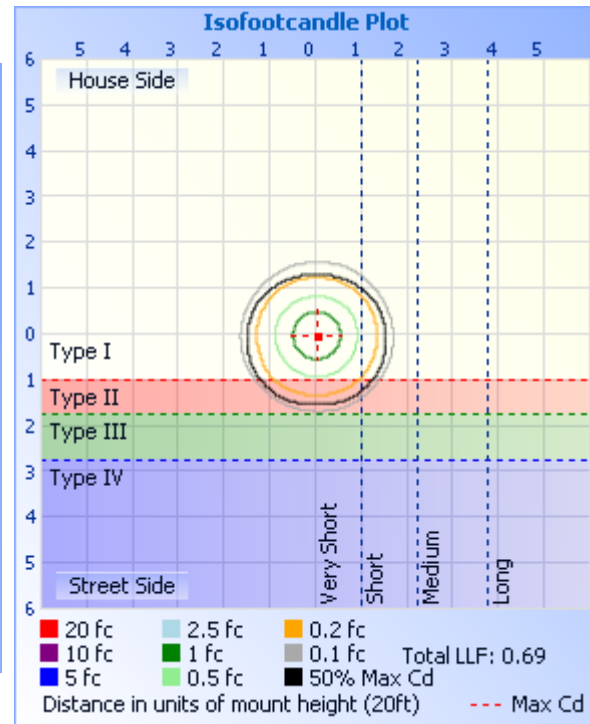
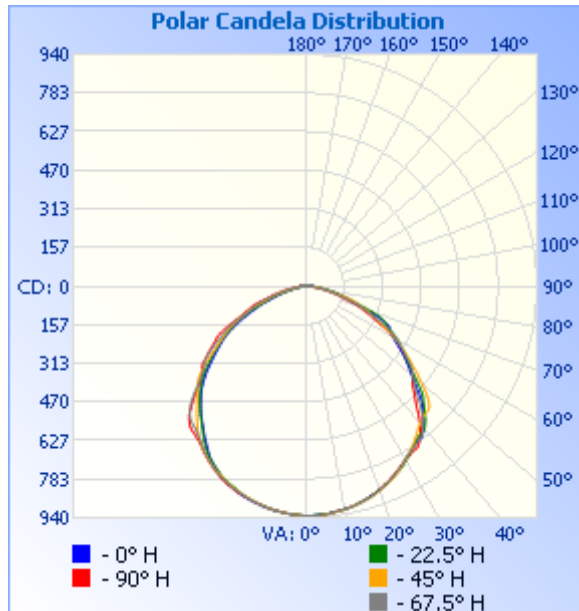
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	88.0	3.3%	90-100	13.5	0.5%
10-20	253.5	9.6%	100-110	9.7	0.4%
20-30	388.5	14.8%	110-120	3.9	0.1%
30-40	476.1	18.1%	120-130	2.7	0.1%
40-50	496.2	18.8%	130-140	2.3	0.1%
50-60	427.0	16.2%	140-150	2.0	0.1%
60-70	298.6	11.3%	150-160	1.6	0.1%
70-80	134.2	5.1%	160-170	1.0	0%
80-90	34.6	1.3%	170-180	0.4	0%



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Report No.: BLC2010026E-A

Photometric Data



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Report Format Number BL-FM-SA-012



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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	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930
1	931	931	931	931	931	932	929	930	931	929	930	929	930	930	930	931	931
2	931	930	931	931	932	932	930	930	928	928	929	928	929	929	929	931	931
3	929	930	931	932	931	932	930	930	929	927	928	927	928	928	928	930	929
4	929	929	931	931	930	930	929	929	926	926	925	925	925	927	926	928	929
5	928	929	930	930	929	929	928	927	925	923	924	924	923	925	926	928	928
6	926	927	929	928	926	926	926	926	922	922	921	921	920	923	923	925	926
7	924	925	926	926	924	923	924	924	919	918	918	919	919	920	921	924	924
8	923	924	924	923	921	921	921	921	918	916	916	916	916	918	919	921	923
9	921	922	922	921	920	919	918	918	915	913	913	913	913	915	916	919	921
10	918	920	920	919	919	916	915	916	912	910	910	909	910	912	914	917	918
11	916	917	917	917	916	915	911	911	909	906	906	905	906	909	910	913	916
12	914	914	914	915	914	912	909	908	904	902	902	902	903	905	907	911	914
13	910	911	911	912	910	909	905	904	901	898	898	898	900	902	903	907	910
14	906	907	907	908	907	905	903	900	897	894	893	896	897	898	899	903	906
15	902	903	905	905	903	901	899	897	893	890	890	891	893	895	895	900	902
16	899	900	902	901	898	897	895	891	888	885	885	887	889	891	892	895	899
17	893	894	898	897	894	893	890	886	884	880	881	881	885	886	888	891	893
18	890	890	893	893	889	888	885	882	878	874	875	878	881	883	882	887	890
19	885	885	888	887	884	882	881	876	872	868	870	873	876	878	878	882	885
20	880	879	883	881	878	877	875	871	867	862	865	868	871	873	873	877	880
21	875	875	878	876	873	871	869	865	862	857	860	863	866	868	868	870	875
22	869	869	872	871	866	865	863	860	855	852	854	857	860	864	862	864	869
23	862	863	866	864	861	858	855	854	848	845	847	851	854	858	856	858	862
24	856	858	860	857	854	851	849	848	841	838	840	846	847	852	850	852	856
25	851	852	853	850	847	843	842	841	833	830	834	839	840	845	844	844	851
26	844	845	847	842	839	837	835	832	823	822	828	831	833	838	836	838	844
27	837	839	839	834	833	829	828	823	814	814	822	822	824	830	831	830	837
28	830	833	831	828	825	821	820	815	805	805	814	815	816	823	824	823	830
29	822	826	822	820	818	813	812	806	795	797	807	805	808	814	816	815	822



Report No.: BLC2010026E-A

Certificate#4810.01

30	814	817	815	812	813	805	802	797	783	786	798	797	800	806	809	806	814
31	806	808	806	804	810	797	794	787	768	776	790	788	792	797	801	799	806
32	797	802	797	798	805	792	784	773	756	763	780	778	783	787	793	791	797
33	791	792	789	794	800	790	773	759	743	751	770	768	773	777	783	782	791
34	784	783	780	789	799	783	764	746	731	737	759	758	765	769	774	774	784
35	779	776	770	783	795	777	753	732	718	723	748	749	758	758	763	767	779
36	777	769	760	780	785	775	743	719	705	709	737	741	753	750	753	760	777
37	777	763	751	777	772	771	732	706	693	697	725	733	748	742	744	756	777
38	772	762	741	770	759	761	719	694	682	684	710	727	744	735	733	756	772
39	760	760	734	756	743	747	711	680	670	673	697	722	738	729	722	754	760
40	746	753	727	743	725	735	701	668	659	661	684	717	729	724	712	745	746
41	732	742	721	727	704	718	691	656	646	649	669	710	717	718	702	734	732
42	715	728	715	711	682	700	682	643	633	638	656	699	703	710	693	720	715
43	701	711	711	692	661	681	673	630	620	626	642	685	681	698	686	706	701
44	685	696	710	672	644	658	662	618	608	613	630	669	658	685	682	690	685
45	671	681	708	648	627	637	648	604	594	600	620	647	637	662	676	675	671
46	651	666	700	629	613	619	632	589	579	588	610	626	613	641	668	663	651
47	628	653	685	611	598	603	613	575	563	574	599	599	590	618	659	646	628
48	605	633	667	596	585	589	590	559	546	560	586	577	573	594	648	626	605
49	583	610	644	582	580	574	572	543	528	543	572	559	558	571	634	606	583
50	565	585	622	568	572	564	552	524	510	524	556	543	544	554	619	582	565
51	548	564	597	559	559	557	531	506	493	506	535	527	535	538	604	560	548
52	534	544	578	550	542	544	510	489	475	489	514	517	530	524	583	540	534
53	518	528	554	538	526	527	490	475	458	472	489	511	519	515	560	523	518
54	504	512	533	521	506	506	473	460	442	455	465	496	499	511	535	507	504
55	488	498	514	502	490	485	462	446	425	437	444	478	482	497	504	492	488
56	471	485	495	485	474	466	448	433	410	420	425	456	467	482	476	475	471
57	453	472	476	470	460	445	429	420	394	404	408	438	450	466	451	459	453
58	438	458	455	455	449	424	411	404	378	386	392	415	435	450	431	441	438
59	424	444	434	440	438	406	392	387	359	367	379	396	423	430	416	424	424
60	409	431	415	426	421	393	374	365	339	350	364	379	412	412	402	408	409
61	398	415	393	414	399	380	352	342	318	334	347	365	393	397	386	395	398

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62	387	400	374	399	374	364	330	322	297	318	326	348	367	383	371	385	387
63	383	385	353	379	344	343	309	302	272	298	306	327	339	365	353	375	383
64	380	370	335	355	323	319	291	280	251	277	287	302	311	342	330	368	380
65	371	360	317	330	304	297	276	260	233	256	269	277	288	314	310	362	371
66	349	351	302	305	286	278	261	238	214	233	250	257	272	291	292	354	349
67	323	339	289	287	269	258	247	216	196	210	235	243	258	268	276	338	323
68	293	319	278	268	251	242	227	196	176	187	217	228	243	252	269	307	293
69	266	289	260	250	236	224	204	177	156	167	192	212	230	234	258	276	266
70	241	259	242	230	221	207	184	162	140	152	168	199	218	215	243	249	241
71	222	237	230	212	200	191	165	144	125	137	153	182	192	200	229	225	222
72	206	215	221	194	174	172	150	124	106	119	140	157	168	183	216	204	206
73	191	195	209	172	158	151	136	106	88	105	129	137	149	158	197	189	191
74	177	177	187	152	146	137	117	89	72	87	114	125	138	138	170	175	177
75	160	162	161	135	135	126	102	76	61	72	97	116	128	124	151	162	160
76	146	146	143	124	121	112	91	63	49	59	81	104	112	112	132	144	146
77	137	131	122	114	103	99	79	53	37	50	71	87	96	102	114	128	137
78	123	124	108	99	95	85	68	42	26	38	63	75	85	89	101	122	123
79	110	112	96	89	84	77	57	32	18	29	50	68	76	81	87	109	110
80	90	96	85	82	72	65	46	26	12	24	42	56	63	74	79	92	90
81	80	80	76	72	60	56	40	20	8	20	36	49	54	62	74	77	80
82	79	72	73	60	50	47	34	16	6	15	30	41	44	52	63	72	79
83	64	66	61	50	42	40	27	13	4	12	24	35	38	43	53	65	64
84	57	57	50	40	35	32	22	10	3	9	20	29	33	35	46	54	57
85	51	51	45	34	32	28	17	7	2	8	16	25	28	32	41	50	51
86	47	44	36	30	26	21	13	6	3	6	12	17	21	27	35	45	47
87	41	40	33	27	17	15	11	5	3	5	10	14	16	20	31	39	41
88	35	34	28	20	14	13	9	5	2	5	9	13	13	17	24	32	35
89	28	28	24	17	12	11	9	4	2	5	8	12	12	16	20	26	28
90	24	22	20	15	12	11	8	4	2	3	8	11	12	14	17	22	24
91	22	20	17	14	12	11	8	4	2	4	8	12	11	13	15	19	22
92	20	17	15	14	12	12	9	3	2	3	9	12	12	13	14	17	20
93	18	15	14	14	13	14	9	4	2	3	10	14	13	14	14	15	18

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01

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Guangzhou, People's Republic of China. info@bellingtest.com

Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

Certificate#4810.01

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Certificate#4810.01

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Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01
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Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

Certificate#4810.01

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Report No.: BLC2010026E-A

2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2020-11-04	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED18HIDRODAREA840MED		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC201002	120.0	60	0.156	18.50	0.987	9.92
6E-A2	277.0	60	0.076	18.74	0.887	13.39
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	80	R9	4
Frequency (Hz)	60	R2	88	R10	73
CCT (K)	4055	R3	95	R11	81
Duv	0.0013	R4	82	R12	60
Chromaticity (x, y)	x=0.3789 y=0.3786	R5	81	R13	82
Chromaticity (u', v')	u(u')=0.2234 v'=0.5022	R6	84	R14	97
Color Rendering Index (CRI)	82	R7	85	R15	74
R9	4	R8	63	--	--
Rf	84				
Rg	95				
Rcs,h1(%)	-12				

Photometric Measurement – Goniophotometer Method:

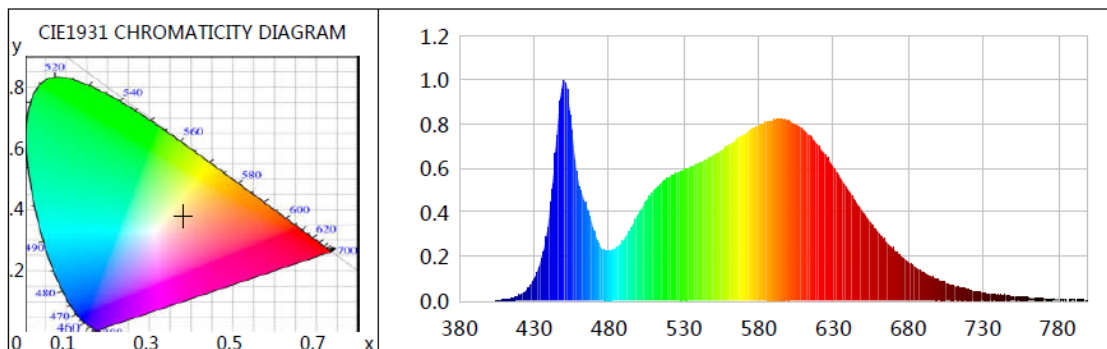
Parameter	Result		Rating	Tolerance
Test Voltage (V)	120.0	277.0	--	--
Frequency (Hz)	60	60	--	--
Total Luminous (lm)	2832.0	2823.2	2700	Comply -10%
Luminous Efficacy (lm/W)	153.08	150.65	150	Comply -3%
Most worst Luminous/Highest Watts	150.65		--	--



Report No.: BLC2010026E-A

Certificate#4810.01

Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0005	0.0297	525	0.5778	34.4742	670	0.2343	13.9765
385	0.0007	0.0403	530	0.5930	35.3800	675	0.2019	12.0436
390	0.0007	0.0424	535	0.6066	36.1910	680	0.1742	10.3952
395	0.0007	0.0418	540	0.6226	37.1450	685	0.1491	8.8956
400	0.0008	0.0454	545	0.6379	38.0622	690	0.1296	7.7346
405	0.0020	0.1166	550	0.6587	39.2980	695	0.1102	6.5729
410	0.0040	0.2413	555	0.6792	40.5212	700	0.0938	5.5964
415	0.0109	0.6508	560	0.7046	42.0400	705	0.0798	4.7603
420	0.0242	1.4456	565	0.7268	43.3648	710	0.0675	4.0276
425	0.0503	3.0038	570	0.7508	44.7927	715	0.0573	3.4216
430	0.1023	6.1029	575	0.7764	46.3254	720	0.0490	2.9261
435	0.1966	11.7322	580	0.7930	47.3160	725	0.0413	2.4629
440	0.3843	22.9306	585	0.8087	48.2501	730	0.0368	2.1981
445	0.7508	44.7938	590	0.8173	48.7612	735	0.0281	1.6752
450	1.0000	59.6638	595	0.8212	48.9950	740	0.0255	1.5233
455	0.7703	45.9605	600	0.8153	48.6443	745	0.0234	1.3933
460	0.5185	30.9377	605	0.7984	47.6361	750	0.0203	1.2088
465	0.4233	25.2529	610	0.7738	46.1675	755	0.0157	0.9369
470	0.3132	18.6840	615	0.7430	44.3305	760	0.0155	0.9243
475	0.2356	14.0558	620	0.7020	41.8848	765	0.0116	0.6909
480	0.2244	13.3889	625	0.6541	39.0249	770	0.0119	0.7095
485	0.2406	14.3553	630	0.6049	36.0914	775	0.0081	0.4811
490	0.2763	16.4869	635	0.5519	32.9298	780	0.0072	0.4273
495	0.3344	19.9524	640	0.5002	29.8411	785	0.0040	0.2403
500	0.3970	23.6859	645	0.4483	26.7468	790	0.0079	0.4722
505	0.4523	26.9831	650	0.3983	23.7614	795	0.0040	0.2393
510	0.4986	29.7456	655	0.3520	21.0004	800	0.0026	0.1557
515	0.5337	31.8449	660	0.3085	18.4036			
520	0.5583	33.3085	665	0.2675	15.9617			

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Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

TM30

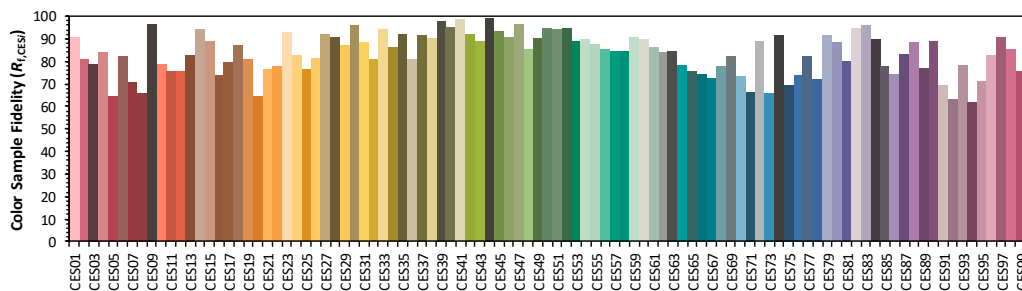
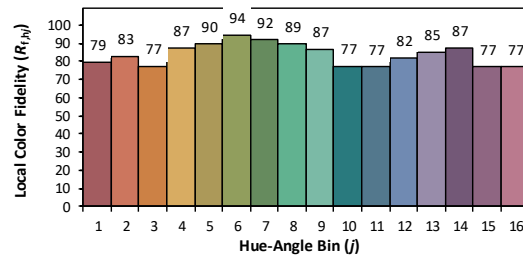
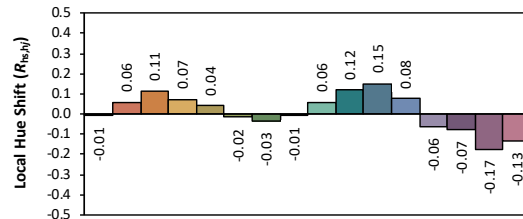
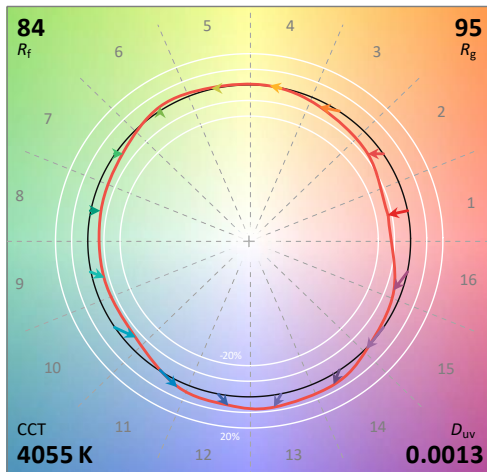
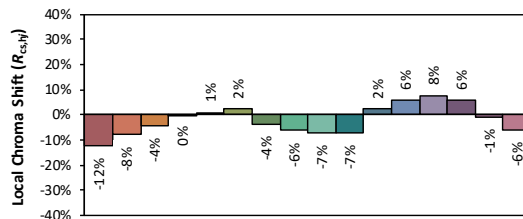
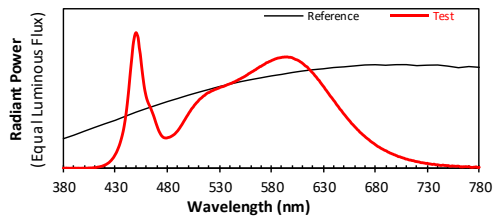
ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35000H1

Manufacturer: LEDVANCE LLC

Date: 2020/11/6

Model: LED18HIDRODAREA840MED



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3789
 y 0.3786
 u' 0.2234
 v' 0.5022

CIE 13.3-1995
(CRI)

R_a 82
 R_g 4

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00

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Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

Zonal Lumen Tabulation

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	782.0	27.6%	27.6%
0-40	1,294.2	45.7%	45.7%
0-60	2,290.4	80.9%	80.9%
60-90	505.3	17.8%	17.8%
70-100	194.7	6.9%	6.9%
90-120	25.7	0.9%	0.9%
0-90	2,795.7	98.7%	98.7%
90-180	36.0	1.3%	1.3%
0-180	2,831.7	100%	100%

Lumens Per Zone

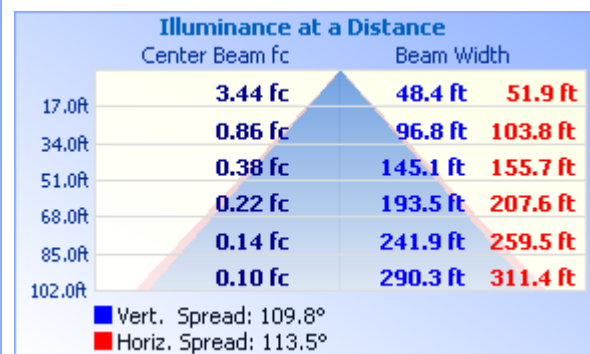
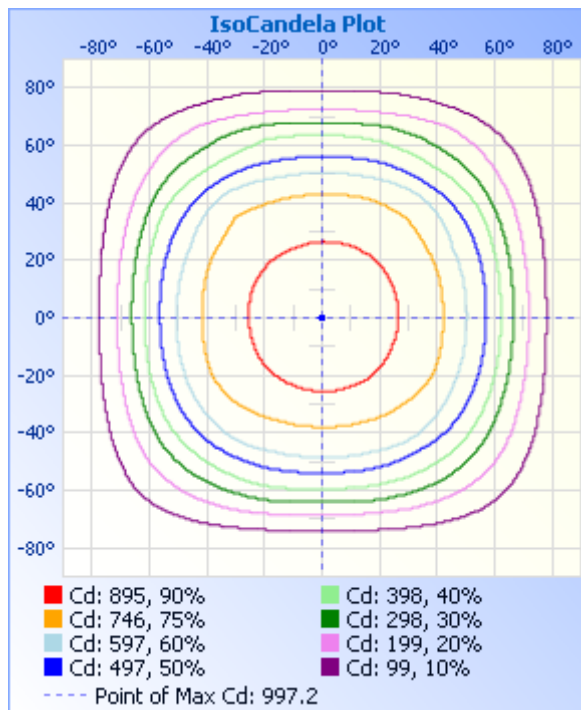
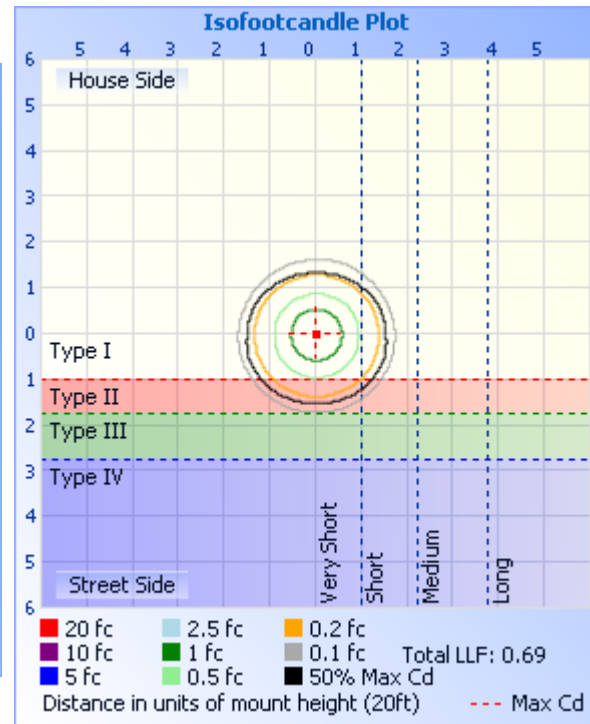
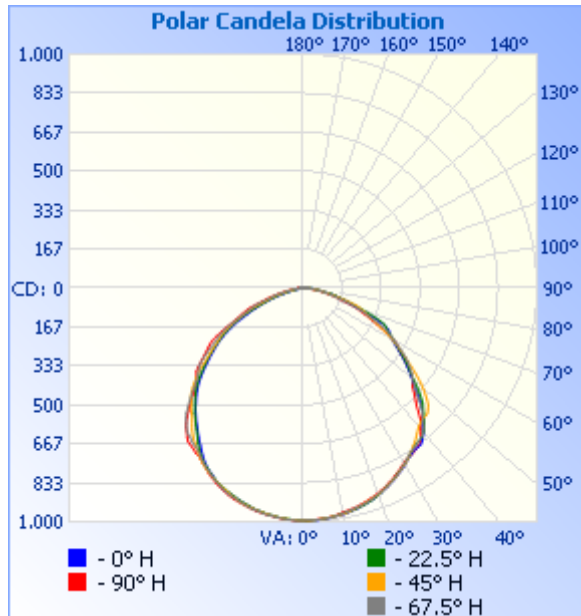
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	94.1	3.3%	90-100	13.1	0.5%
10-20	271.4	9.6%	100-110	8.8	0.3%
20-30	416.6	14.7%	110-120	3.8	0.1%
30-40	512.2	18.1%	120-130	2.8	0.1%
40-50	534.5	18.9%	130-140	2.3	0.1%
50-60	461.7	16.3%	140-150	2.0	0.1%
60-70	323.7	11.4%	150-160	1.7	0.1%
70-80	145.0	5.1%	160-170	1.1	0%
80-90	36.5	1.3%	170-180	0.4	0%



Certificate#4810.01

Report No.: BLC2010026E-A

Photometric Data



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Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

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
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8	986	985	985	986	982	982	983	979	982	980	982	983	983	985	986	986	986
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22	929	927	927	927	922	920	920	920	922	918	920	924	927	929	929	930	929
23	923	920	922	920	915	914	912	914	914	912	914	916	920	923	923	924	923
24	916	914	914	914	908	907	906	905	906	906	907	908	913	915	917	917	916
25	909	907	907	908	902	900	898	896	898	897	900	901	905	907	910	911	909
26	903	899	901	899	894	892	891	888	887	890	893	893	897	900	904	904	903
27	894	891	893	892	887	885	885	880	879	881	887	883	889	891	896	896	894
28	888	884	885	884	879	876	877	871	871	872	880	876	879	884	887	889	888

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01

**Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
Guangzhou, People's Republic of China. info@bellingtest.com**

Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

Certificate#4810.01

29	880	876	877	875	870	869	869	862	860	863	870	866	869	875	879	880	880
30	871	868	869	867	863	859	861	853	848	854	861	856	861	866	871	873	871
31	862	860	861	858	855	850	852	843	834	842	851	846	851	857	861	864	862
32	854	852	851	849	852	841	842	832	820	831	841	836	844	847	853	856	854
33	848	842	841	840	850	833	832	816	805	817	830	826	842	837	842	846	848
34	843	835	832	834	846	828	821	803	792	802	820	819	835	830	832	837	843
35	839	828	822	829	841	826	810	788	779	787	808	816	828	827	822	830	839
36	839	822	812	825	837	820	799	773	765	772	796	809	825	820	811	825	839
37	837	819	802	820	829	815	788	759	751	758	785	801	819	811	801	820	837
38	828	817	791	815	816	811	775	743	739	745	771	796	807	808	789	819	828
39	814	811	780	810	801	804	761	731	726	732	755	789	790	800	778	815	814
40	801	801	770	799	784	791	746	718	714	719	739	776	779	786	767	806	801
41	783	789	763	786	767	774	738	705	700	708	724	761	762	771	760	795	783
42	766	774	758	768	747	755	728	692	688	693	714	749	741	757	757	780	766
43	749	756	757	750	723	738	719	679	672	680	704	732	718	740	753	762	749
44	735	739	757	732	699	719	707	666	659	667	689	710	697	718	747	745	735
45	716	724	752	711	680	696	695	652	645	652	677	688	676	695	744	729	716
46	694	712	742	686	663	673	681	638	630	638	667	667	655	673	734	716	694
47	672	691	731	664	646	653	665	623	615	624	653	646	638	651	718	696	672
48	648	669	713	645	629	636	645	606	598	607	635	623	621	631	699	675	648
49	629	646	692	628	619	620	622	590	579	590	617	605	606	613	679	650	629
50	610	623	671	612	611	605	601	573	561	571	598	590	595	597	656	627	610
51	593	599	649	600	600	595	579	554	542	552	577	576	586	582	633	602	593
52	576	580	623	587	581	584	557	535	523	534	556	566	580	573	607	584	576
53	558	564	599	575	564	566	536	516	505	516	528	557	564	567	580	565	558
54	541	547	573	559	544	550	514	500	487	499	505	541	542	555	556	548	541
55	522	528	547	544	528	526	499	485	468	479	485	519	525	536	534	529	522
56	505	511	527	527	508	505	487	470	451	461	467	496	509	518	511	512	505
57	486	493	505	509	492	484	469	455	435	443	447	475	492	502	490	495	486
58	468	478	483	489	478	460	449	440	418	426	431	453	478	484	474	479	468
59	453	462	462	469	468	441	425	422	399	408	417	434	466	467	456	465	453
60	440	448	441	453	452	422	407	403	377	390	402	418	448	451	436	451	440

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01
Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
Guangzhou, People' s Republic of China. info@bellingtest.com

Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

Certificate#4810.01

61	427	436	421	438	428	409	385	379	355	371	384	401	423	436	418	434	427
62	419	421	398	422	403	394	362	354	333	352	362	380	393	415	396	421	419
63	413	407	375	404	375	372	340	333	311	331	341	359	366	390	373	405	413
64	406	399	354	380	349	349	319	312	286	310	320	334	341	361	350	390	406
65	391	390	336	354	327	324	301	291	262	286	300	311	316	336	332	379	391
66	366	380	318	328	305	301	283	270	243	263	280	285	300	310	315	368	366
67	336	358	305	305	288	281	270	246	223	238	260	270	284	292	302	348	336
68	304	330	294	285	270	261	250	222	204	213	242	253	267	275	284	315	304
69	276	296	279	265	252	242	226	202	182	191	222	234	255	255	266	285	276
70	251	270	264	243	236	223	205	184	161	172	193	220	237	237	248	263	251
71	231	246	254	222	214	207	182	164	144	156	171	203	208	219	238	240	231
72	214	221	240	203	190	188	164	144	129	138	156	176	185	194	229	219	214
73	198	202	213	181	170	163	149	123	108	122	144	156	165	171	210	202	198
74	184	183	188	159	155	146	132	106	88	108	129	139	152	150	181	182	184
75	163	166	165	142	143	134	114	90	75	88	113	128	142	135	162	167	163
76	152	149	144	129	127	121	100	77	61	73	96	117	122	123	136	147	152
77	139	141	126	117	109	106	85	63	48	59	82	99	108	109	118	136	139
78	127	128	110	103	98	91	76	52	35	48	71	85	95	95	106	123	127
79	107	114	96	94	86	82	64	41	26	38	62	76	85	87	92	109	107
80	89	91	87	87	74	69	52	32	17	28	50	65	71	78	83	90	89
81	86	80	83	76	63	59	44	26	12	24	43	55	61	67	78	79	86
82	74	77	71	61	52	50	37	20	8	19	35	47	50	57	66	75	74
83	63	64	60	52	43	42	31	15	6	14	30	40	42	46	55	63	63
84	58	57	51	41	37	36	25	12	4	12	23	33	36	39	50	57	58
85	54	52	44	37	33	29	20	10	4	9	20	28	31	33	41	49	54
86	47	47	39	33	26	22	15	8	2	8	15	21	25	29	35	44	47
87	41	41	33	24	17	16	12	6	2	6	13	17	17	21	29	38	41
88	34	32	28	20	14	14	10	5	3	6	11	14	14	18	24	31	34
89	26	25	23	18	13	12	9	5	2	5	9	14	13	16	20	24	26
90	23	21	19	16	12	12	9	5	2	3	8	13	12	15	17	20	23
91	21	18	17	16	13	12	9	5	2	4	9	13	12	14	16	17	21
92	14	15	16	16	13	12	9	4	2	4	8	13	12	14	15	16	14

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01

Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
Guangzhou, People' s Republic of China. info@bellingtest.com

Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

Certificate#4810.01

93	5	14	16	16	14	14	9	3	2	3	9	15	13	14	15	10	5
94	3	14	16	19	18	16	10	4	2	3	9	16	17	18	16	11	3
95	2	15	16	21	19	16	9	4	2	4	10	17	18	18	15	11	2
96	2	18	16	20	19	16	10	3	2	3	10	16	18	18	16	12	2
97	2	18	17	19	18	15	9	3	2	3	9	15	17	18	17	20	2
98	2	18	17	17	16	15	10	3	2	3	9	16	16	16	17	20	2
99	1	18	17	17	16	14	8	2	2	3	8	14	16	17	18	19	1
100	2	18	14	15	14	13	7	2	2	2	7	13	15	15	16	17	2
101	2	20	11	16	13	13	7	2	2	3	7	14	14	16	13	16	2
102	2	20	10	15	14	11	6	2	1	3	7	12	15	15	12	16	2
103	3	20	9	13	13	10	6	2	2	2	7	11	14	13	10	17	3
104	1	20	8	12	11	9	5	2	2	2	6	11	12	13	8	17	1
105	2	19	5	11	11	9	4	2	2	2	5	10	11	12	7	16	2
106	2	19	5	11	10	9	3	2	2	2	4	10	12	11	6	15	2
107	3	18	4	11	10	8	2	2	2	2	4	10	11	10	5	14	3
108	2	17	4	10	11	7	2	2	2	2	3	9	11	10	4	13	2
109	2	16	5	7	9	6	2	2	2	2	3	8	11	9	4	11	2
110	2	16	6	6	7	4	2	2	2	2	2	7	10	6	4	10	2
111	3	14	7	4	6	2	2	2	2	3	3	7	8	6	4	9	3
112	2	13	7	4	3	2	2	2	2	3	2	5	7	5	4	8	2
113	2	12	7	3	2	1	2	3	2	3	3	4	6	5	4	7	2
114	2	10	7	4	1	2	2	2	2	2	3	3	5	3	3	7	2
115	2	10	8	3	0	1	2	3	2	2	3	3	3	2	4	6	2
116	2	9	8	4	0	1	2	3	2	3	3	3	2	2	5	5	2
117	3	8	7	4	1	1	1	2	3	3	2	3	1	3	4	5	3
118	3	8	7	4	1	1	2	2	1	2	3	3	1	2	4	5	3
119	3	7	7	4	1	2	2	2	2	3	2	3	1	3	5	5	3
120	3	7	7	4	1	1	2	2	3	2	3	3	1	2	4	4	3
121	3	6	8	4	1	2	3	2	2	3	3	3	1	3	4	3	3
122	3	7	8	4	1	1	2	2	3	3	3	3	1	3	5	4	3
123	2	6	8	4	1	2	2	3	3	2	1	3	1	3	4	2	2
124	3	6	8	4	1	1	2	2	3	3	3	3	1	2	5	3	3

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01
Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
Guangzhou, People's Republic of China. info@bellingtest.com

Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

Certificate#4810.01

125	3	5	7	4	1	2	2	3	3	3	3	3	0	3	5	2	3
126	3	6	7	3	1	2	2	3	3	3	3	4	2	3	5	3	3
127	3	5	7	4	1	2	2	3	2	3	3	4	1	2	5	3	3
128	3	5	7	4	1	2	3	3	2	3	2	3	1	2	4	3	3
129	3	4	7	4	1	2	2	3	3	4	3	3	1	3	4	3	3
130	3	5	7	4	1	2	3	2	3	3	3	3	2	2	4	3	3
131	3	3	7	4	1	2	3	3	3	3	3	4	1	2	4	2	3
132	3	5	6	3	1	1	3	3	3	3	3	3	2	2	4	2	3
133	3	4	6	4	1	2	3	3	3	3	4	4	2	3	4	2	3
134	3	4	6	4	1	2	3	3	3	2	3	3	2	3	3	2	3
135	3	4	6	3	1	2	2	2	3	2	4	3	2	2	4	3	3
136	3	4	5	4	1	2	3	3	3	3	3	3	2	3	3	3	3
137	3	4	5	4	1	2	3	3	3	4	3	3	2	3	4	2	3
138	3	3	5	3	2	2	3	3	3	4	3	4	2	2	2	3	3
139	4	4	5	4	2	2	3	2	3	3	3	3	2	2	3	3	4
140	3	3	4	3	2	3	3	4	3	4	3	3	2	3	3	4	3
141	4	3	5	4	2	2	3	3	3	3	3	4	2	3	3	3	4
142	3	4	4	4	2	2	3	4	3	4	4	4	2	3	3	3	3
143	3	4	4	3	2	2	3	4	3	4	4	4	2	3	3	3	3
144	4	4	4	3	2	2	3	4	3	4	4	4	2	3	4	4	4
145	4	4	4	4	2	2	3	4	3	4	4	3	2	3	3	4	4
146	4	4	4	4	2	2	3	3	3	3	3	4	2	3	4	4	4
147	3	4	4	4	2	2	2	4	4	4	4	5	2	3	3	4	3
148	4	4	4	4	2	3	3	4	4	4	4	4	2	3	4	4	4
149	4	4	3	3	2	2	3	4	4	4	4	4	2	3	4	3	4
150	4	4	4	4	2	3	4	4	4	4	4	4	2	3	3	4	4
151	4	3	4	4	2	3	4	4	4	4	4	4	2	3	4	4	4
152	4	4	5	4	2	2	3	4	4	4	4	4	3	3	4	4	4
153	4	4	4	3	2	3	4	4	4	4	4	4	2	3	3	4	4
154	4	4	4	4	2	2	4	3	3	4	4	4	2	3	4	4	4
155	3	3	4	4	2	3	4	4	4	4	5	3	3	3	4	4	3
156	4	4	4	3	2	3	4	4	4	4	4	4	2	3	4	4	4

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01
Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
Guangzhou, People' s Republic of China. info@bellingtest.com

Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

Certificate#4810.01

157	4	4	4	4	2	3	3	4	4	4	4	4	2	4	4	4	4
158	4	4	4	3	2	3	4	4	4	4	4	5	2	4	4	4	4
159	4	4	5	4	2	3	4	4	4	4	5	4	3	3	4	4	4
160	3	4	4	4	2	3	4	4	4	4	3	5	2	3	3	4	3
161	4	4	3	4	2	3	4	4	4	4	5	4	3	4	4	4	4
162	3	4	5	4	2	3	4	4	4	4	4	5	3	4	4	4	3
163	4	4	4	5	2	3	4	4	4	4	5	4	3	3	4	4	4
164	4	4	5	5	3	3	4	4	4	5	4	5	2	4	4	4	4
165	4	4	4	5	2	3	4	4	4	5	4	5	3	4	4	4	4
166	4	4	4	4	2	3	4	5	4	4	4	4	3	4	4	4	4
167	4	4	2	4	2	2	3	4	4	4	5	4	3	3	4	4	4
168	4	4	4	4	2	3	4	4	4	4	5	5	3	3	4	4	4
169	4	4	4	4	2	3	4	4	4	4	5	5	3	4	3	4	4
170	4	4	5	4	2	3	4	4	4	4	4	5	2	3	4	3	4
171	3	4	4	4	2	3	4	3	4	4	5	4	3	4	4	4	3
172	4	4	4	4	2	3	4	4	4	4	4	5	3	3	4	4	4
173	4	3	5	5	3	3	4	4	4	4	4	5	3	3	4	4	4
174	4	4	4	5	3	3	3	4	4	4	4	4	3	4	4	4	4
175	4	4	4	4	2	3	4	4	4	5	5	5	3	3	4	4	4
176	4	4	4	4	3	3	3	4	4	3	5	4	3	4	4	4	4
177	4	4	4	4	3	3	4	4	4	5	4	5	3	3	4	3	4
178	4	4	4	4	3	3	4	4	4	4	5	5	2	4	4	4	4
179	4	4	5	4	2	3	4	4	4	4	5	4	3	4	4	4	4
180	4	4	5	5	3	3	4	4	4	4	4	5	3	4	4	4	4

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01

Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
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Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

2.2 Electrical, Photometric and Chromaticity Measurements

(Refer to Work Instruction BL-QP-033)

Test date	2020-11-04	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED18HIDRODAREA850MED		

Electrical Measurement:

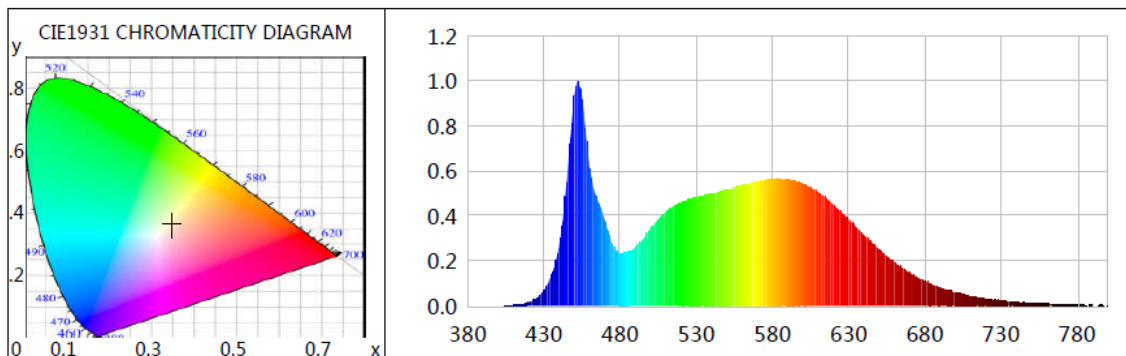
Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC201002	120.0	60	0.155	18.31	0.987	9.87
6E-A3	277.0	60	0.077	18.74	0.882	14.64
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	4
Frequency (Hz)	60	R2	89	R10	74
CCT (K)	5013	R3	94	R11	81
Duv	0.0033	R4	82	R12	60
Chromaticity (x, y)	x=0.3454 y=0.3585	R5	82	R13	83
Chromaticity (u', v')	u(u')=0.2090 v'=0.4880	R6	85	R14	97
Color Rendering Index (CRI)	83	R7	86	R15	75
R9	4	R8	65	--	--
Rf	83		--		--
Rg	95		--		--
Rcs,h1(%)	-13		--		--

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result		Rating	Tolerance
Test Voltage (V)	120.0	277.0	--	--
Frequency (Hz)	60	60	--	--
Total Luminous (lm)	2804.0	2819.4	2700	Comply -10%
Luminous Efficacy (lm/W)	153.14	150.45	150	Comply -3%
Most worst Luminous/Highest Watts	149.63			--

**Spectral Power Distribution & Chromaticity Diagram**

WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0005	0.0403	525	0.4737	37.4641	670	0.1476	11.6705
385	0.0009	0.0708	530	0.4816	38.0862	675	0.1266	10.0088
390	0.0006	0.0500	535	0.4899	38.7420	680	0.1102	8.7171
395	0.0006	0.0484	540	0.4983	39.4100	685	0.0941	7.4392
400	0.0011	0.0843	545	0.5050	39.9363	690	0.0820	6.4840
405	0.0016	0.1228	550	0.5148	40.7081	695	0.0694	5.4902
410	0.0026	0.2088	555	0.5246	41.4828	700	0.0583	4.6098
415	0.0070	0.5565	560	0.5354	42.3378	705	0.0507	4.0110
420	0.0157	1.2378	565	0.5424	42.8928	710	0.0421	3.3291
425	0.0332	2.6240	570	0.5514	43.6044	715	0.0356	2.8161
430	0.0687	5.4301	575	0.5579	44.1193	720	0.0296	2.3374
435	0.1368	10.8183	580	0.5627	44.4984	725	0.0259	2.0480
440	0.2679	21.1823	585	0.5630	44.5219	730	0.0219	1.7318
445	0.5541	43.8202	590	0.5594	44.2422	735	0.0170	1.3462
450	0.9354	73.9770	595	0.5546	43.8600	740	0.0170	1.3481
455	0.9196	72.7222	600	0.5427	42.9198	745	0.0154	1.2162
460	0.6100	48.2404	605	0.5257	41.5751	750	0.0128	1.0140
465	0.4728	37.3934	610	0.5046	39.9018	755	0.0104	0.8248
470	0.3765	29.7706	615	0.4804	37.9923	760	0.0097	0.7669
475	0.2718	21.4981	620	0.4497	35.5643	765	0.0066	0.5239
480	0.2333	18.4479	625	0.4179	33.0512	770	0.0079	0.6250
485	0.2398	18.9675	630	0.3842	30.3833	775	0.0056	0.4414
490	0.2593	20.5092	635	0.3497	27.6550	780	0.0037	0.2914
495	0.2958	23.3953	640	0.3152	24.9239	785	0.0030	0.2398
500	0.3427	27.1051	645	0.2825	22.3427	790	0.0052	0.4082
505	0.3840	30.3678	650	0.2507	19.8255	795	0.0026	0.2056
510	0.4194	33.1700	655	0.2207	17.4560	800	0.0024	0.1861
515	0.4431	35.0409	660	0.1939	15.3345			
520	0.4606	36.4291	665	0.1687	13.3376			



TM30

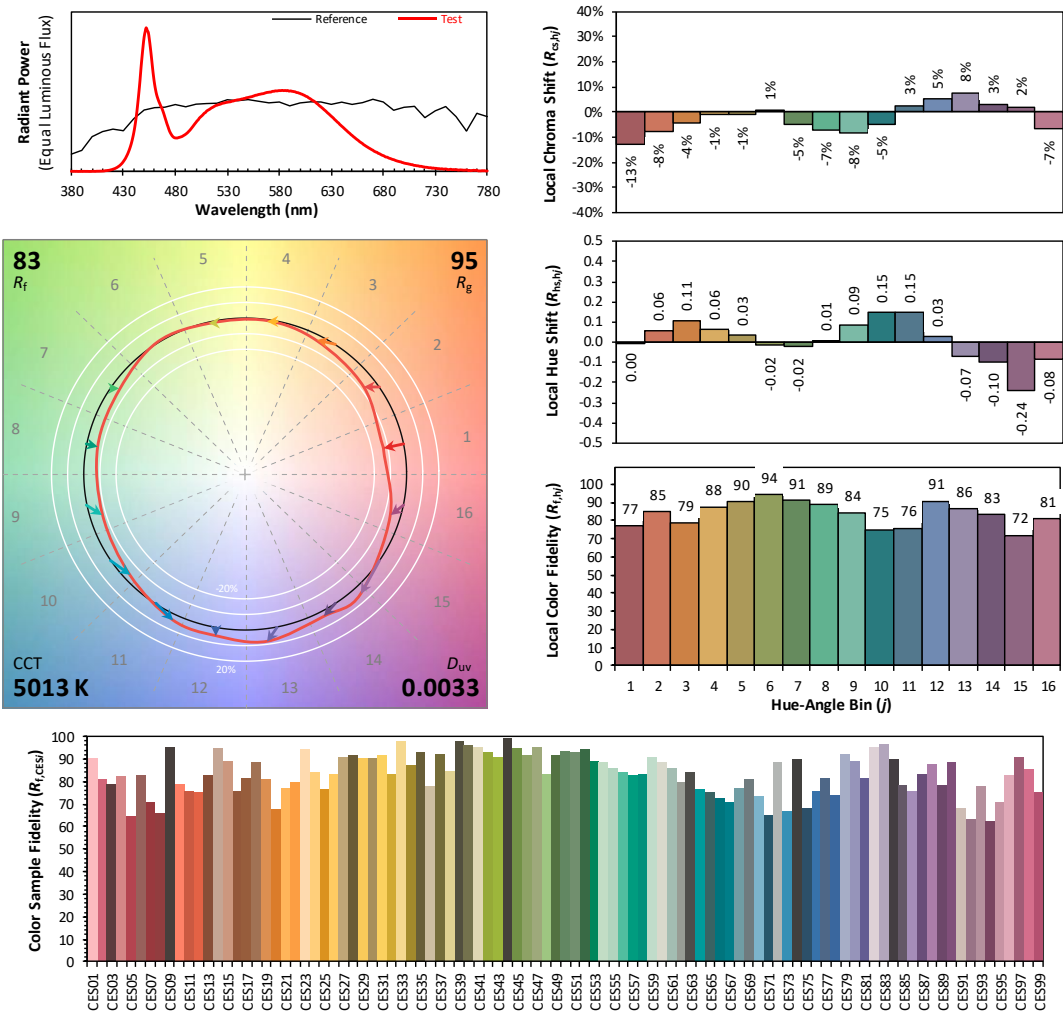
ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35000H1

Manufacturer: LEDVANCE LLC

Date: 2020/11/6

Model: LED18HIDRODAREA850MED



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3454
 y 0.3585
 u' 0.2090
 v' 0.4880

CIE 13.3-1995 (CRI)
 R_a 83
 R_g 4

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00



Report No.: BLC2010026E-A

Zonal Lumen Tabulation

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	774.0	27.6%	27.6%
0-40	1,281.8	45.7%	45.7%
0-60	2,268.6	80.9%	80.9%
60-90	499.0	17.8%	17.8%
70-100	191.2	6.8%	6.8%
90-120	25.7	0.9%	0.9%
0-90	2,767.6	98.7%	98.7%
90-180	36.1	1.3%	1.3%
0-180	2,803.7	100%	100%

Lumens Per Zone

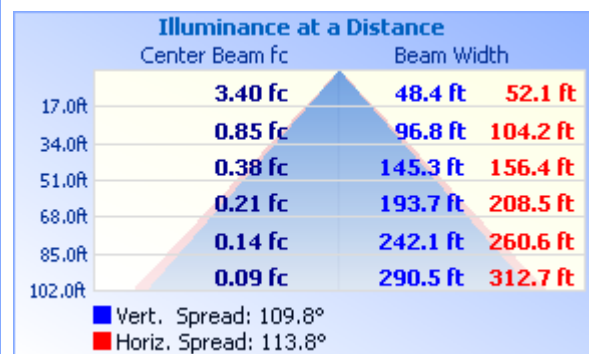
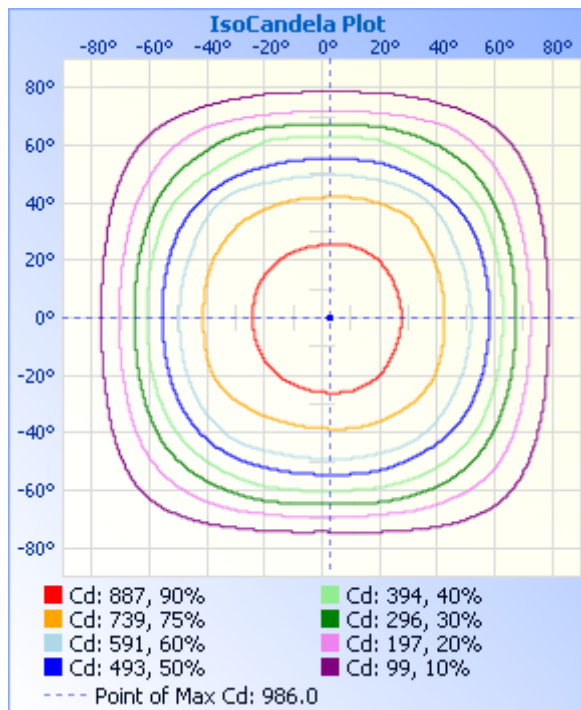
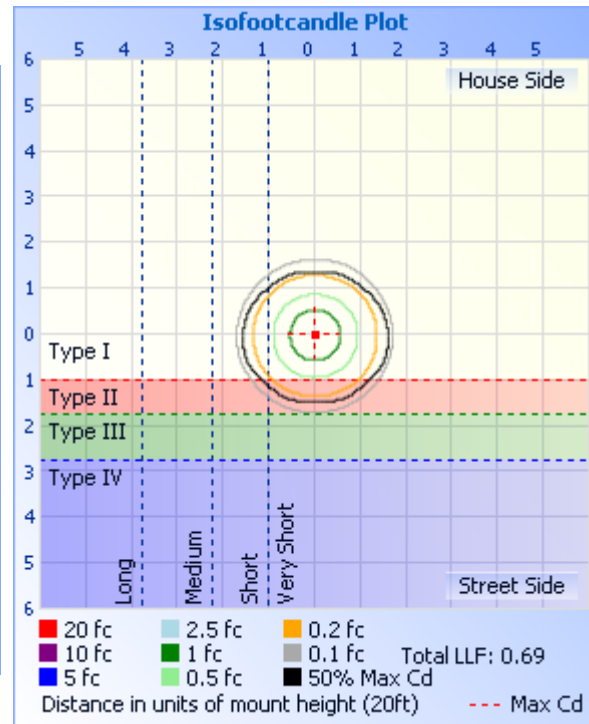
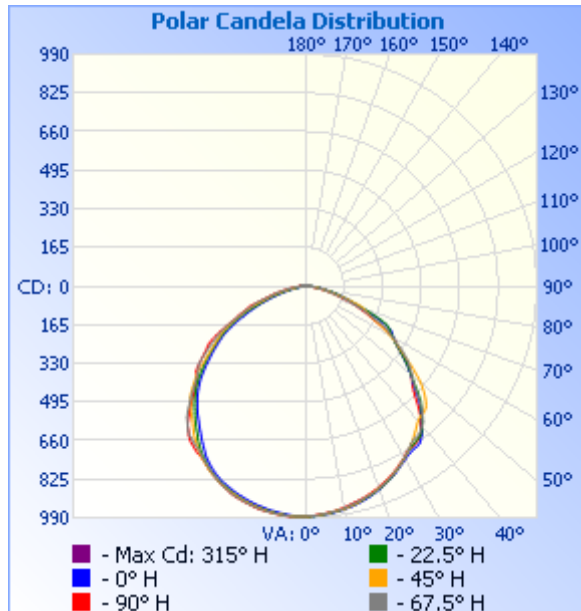
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	93.1	3.3%	90-100	13.2	0.5%
10-20	268.5	9.6%	100-110	8.8	0.3%
20-30	412.4	14.7%	110-120	3.7	0.1%
30-40	507.8	18.1%	120-130	2.8	0.1%
40-50	529.2	18.9%	130-140	2.4	0.1%
50-60	457.7	16.3%	140-150	2.1	0.1%
60-70	321.0	11.4%	150-160	1.7	0.1%
70-80	142.5	5.1%	160-170	1.1	0%
80-90	35.4	1.3%	170-180	0.4	0%



Certificate#4810.01

Report No.: BLC2010026E-A

Photometric Data





Report No.: BLC2010026E-A

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	984	984	984	984	984	984	984	984	984	984	984	984	984	984	984	984	984
1	984	985	983	983	982	983	983	984	983	985	984	984	984	984	985	984	984
2	983	983	982	981	981	982	982	983	983	985	984	985	985	985	985	984	983
3	981	982	981	980	978	979	980	981	981	984	985	986	985	985	986	984	981
4	980	980	978	978	975	977	978	980	980	984	983	984	985	984	984	983	980
5	978	978	977	976	974	975	976	977	977	982	983	984	984	984	984	982	978
6	977	975	975	973	971	973	974	975	975	980	981	983	982	984	982	980	977
7	976	973	971	971	971	972	972	971	973	978	980	980	982	982	981	978	976
8	973	971	969	969	967	968	969	970	970	976	978	978	979	980	980	977	973
9	971	969	968	967	963	965	968	967	968	973	975	977	977	978	977	974	971
10	968	965	966	964	960	962	965	963	965	971	973	975	976	976	975	973	968
11	965	962	963	959	955	958	962	960	961	968	970	973	974	973	972	970	965
12	962	959	958	954	951	953	958	957	958	965	966	969	971	972	970	968	962
13	958	955	955	951	947	949	952	953	955	963	964	966	967	967	967	964	958
14	954	950	950	946	944	944	948	950	950	958	960	963	964	964	964	960	954
15	950	947	945	942	940	941	943	945	947	955	956	959	960	960	961	957	950
16	945	942	939	939	936	937	937	941	942	951	953	956	957	956	956	953	945
17	941	938	934	934	931	932	931	936	938	947	948	951	952	952	952	949	941
18	935	933	930	930	925	927	927	931	933	941	943	947	949	949	947	944	935
19	931	928	924	925	920	922	922	926	928	936	938	943	944	943	941	939	931
20	925	922	919	919	915	916	917	920	922	931	934	937	938	939	937	934	925
21	919	916	914	913	909	910	911	914	917	925	929	931	931	933	932	928	919
22	912	911	908	907	903	905	905	908	911	920	924	926	925	927	926	923	912
23	906	904	901	901	897	898	898	901	906	913	918	917	919	921	921	916	906
24	899	898	894	894	890	892	891	894	899	909	911	911	911	914	914	910	899
25	893	890	888	888	883	884	885	887	891	900	904	905	904	906	907	904	893
26	885	882	880	879	876	877	878	879	883	894	897	895	896	897	901	897	885
27	877	874	872	873	869	869	869	869	874	886	890	887	889	890	893	889	877
28	869	866	865	864	860	862	862	859	865	878	882	878	881	882	884	881	869
29	862	857	856	856	853	853	855	850	854	868	873	869	872	873	876	875	862

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01
Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
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Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

Certificate#4810.01

30	854	848	849	847	846	844	846	839	844	857	865	861	863	865	867	866	854
31	847	840	840	838	835	836	839	828	830	847	856	852	856	856	859	856	847
32	843	831	831	829	828	826	830	818	816	836	847	841	851	847	850	849	843
33	837	825	821	819	825	817	819	804	803	823	835	834	848	839	840	840	837
34	836	820	810	810	824	809	809	791	790	812	824	829	841	833	830	835	836
35	835	816	802	804	820	805	797	778	776	798	813	824	833	828	819	830	835
36	831	813	790	800	816	804	786	764	763	783	802	817	828	820	808	829	831
37	821	810	780	799	810	800	774	751	750	770	790	810	819	815	798	826	821
38	808	804	770	794	802	795	762	737	738	758	776	804	807	808	787	822	808
39	794	791	759	787	788	789	747	724	726	745	762	795	792	797	777	812	794
40	776	777	751	780	770	778	734	711	714	732	749	781	780	782	769	802	776
41	759	761	745	768	753	764	723	699	701	718	738	767	762	769	766	786	759
42	742	744	741	751	732	747	714	686	688	705	728	755	741	756	761	767	742
43	726	729	740	732	711	728	706	673	676	692	717	736	721	736	756	749	726
44	707	712	737	714	687	708	697	660	663	678	704	715	702	714	751	733	707
45	685	699	730	691	663	686	686	648	649	665	692	695	681	695	744	718	685
46	663	676	717	668	645	663	675	634	634	651	681	677	661	675	729	698	663
47	641	655	702	645	628	642	661	620	619	636	666	657	646	655	712	676	641
48	622	631	685	626	614	624	644	604	603	620	646	636	628	634	692	654	622
49	606	611	667	607	603	606	622	587	585	604	630	619	615	618	672	628	606
50	590	592	646	593	590	595	602	571	565	585	612	603	603	601	650	608	590
51	572	575	620	582	578	581	579	552	548	566	592	589	596	589	628	592	572
52	556	557	595	567	563	567	558	534	529	548	571	577	590	578	602	571	556
53	539	540	570	554	542	551	536	515	510	530	544	570	577	572	576	555	539
54	519	521	544	541	526	532	512	497	493	513	522	558	557	562	550	536	519
55	503	503	516	523	505	511	495	481	475	494	501	539	538	544	527	518	503
56	486	487	497	505	487	490	483	464	458	476	483	515	521	526	504	503	486
57	469	470	476	483	471	468	463	450	442	458	463	495	507	511	484	487	469
58	456	454	459	462	458	446	443	435	425	441	446	476	493	494	470	473	456
59	443	441	437	445	446	425	421	420	407	422	433	455	480	475	455	458	443
60	433	431	416	429	428	408	401	402	387	405	418	437	462	460	437	443	433
61	426	420	393	412	406	394	380	379	363	385	402	420	436	443	416	431	426

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Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
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Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

Certificate#4810.01

62	420	411	372	398	380	379	357	357	342	367	379	400	409	421	396	418	420
63	409	403	348	379	350	359	335	336	320	346	360	377	380	396	372	407	409
64	390	393	329	353	325	334	313	316	293	326	336	352	355	368	349	394	390
65	365	379	314	324	305	310	295	296	272	304	318	328	328	343	333	380	365
66	337	356	301	302	286	289	277	273	252	280	298	305	313	316	319	359	337
67	310	324	290	279	269	269	261	250	232	256	278	286	297	299	306	331	310
68	281	295	279	257	250	249	244	227	213	229	258	271	277	281	291	300	281
69	254	269	267	237	233	231	221	203	192	207	240	251	264	259	272	274	254
70	234	241	255	217	217	212	200	184	170	186	214	234	252	241	257	250	234
71	217	220	236	198	196	194	178	167	152	171	187	221	224	226	244	227	217
72	202	202	207	181	170	176	160	147	135	152	170	197	199	199	231	211	202
73	188	184	185	158	153	153	145	127	118	135	157	171	175	176	205	195	188
74	168	166	161	139	142	137	128	109	97	119	145	151	162	155	180	177	168
75	156	149	141	126	129	125	112	92	80	100	127	139	150	140	159	159	156
76	142	140	124	114	112	112	98	79	67	84	110	129	135	127	135	143	142
77	130	127	109	103	96	97	84	64	55	68	93	114	118	114	118	132	130
78	111	113	94	91	88	85	74	52	43	58	80	95	103	101	106	118	111
79	93	92	86	86	73	75	62	42	31	47	70	83	93	91	92	103	93
80	86	80	81	73	64	62	52	33	22	34	59	75	79	83	86	85	86
81	80	77	69	61	51	52	43	26	14	28	49	64	68	72	79	77	80
82	65	63	58	50	42	44	36	20	10	24	43	55	57	60	67	72	65
83	63	57	50	40	36	38	30	16	7	18	35	47	48	49	56	61	63
84	53	51	44	36	32	30	24	13	5	14	29	39	41	42	52	55	53
85	48	46	38	33	26	26	19	11	4	12	23	33	36	35	42	50	48
86	43	40	32	25	18	18	14	7	3	10	19	28	31	32	37	42	43
87	36	33	27	20	15	15	12	7	3	7	15	20	21	24	31	35	36
88	29	26	22	18	13	13	10	5	2	7	12	17	17	19	25	29	29
89	24	22	20	16	12	12	9	4	2	5	11	15	15	17	21	23	24
90	22	19	17	15	12	12	9	5	2	5	10	14	14	16	18	18	22
91	20	17	16	15	12	12	8	4	2	5	9	13	13	14	16	17	20
92	14	14	15	15	14	13	8	3	2	4	9	13	13	15	15	15	14
93	4	14	16	17	17	15	10	4	2	4	9	14	14	15	15	10	4

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01
Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
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Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

Certificate#4810.01

94	3	15	15	19	18	17	9	3	3	4	10	15	16	17	16	11	3
95	2	17	15	19	19	16	10	4	2	4	10	18	20	19	16	10	2
96	2	18	16	19	18	16	9	4	3	4	9	18	19	19	16	12	2
97	3	19	17	16	16	15	9	3	2	2	11	17	19	18	16	20	3
98	3	19	18	17	15	15	9	2	2	3	9	16	19	16	17	20	3
99	2	18	14	15	14	13	8	3	2	3	9	17	17	17	18	19	2
100	2	17	12	16	13	13	7	2	2	2	8	15	18	16	16	18	2
101	2	19	11	15	14	12	7	1	2	2	7	14	16	16	14	17	2
102	3	18	10	13	12	10	7	2	2	2	6	14	16	16	12	16	3
103	3	18	8	12	10	9	6	2	3	2	7	12	16	15	11	17	3
104	3	17	7	11	10	9	5	2	2	3	6	12	15	13	9	17	3
105	2	16	5	11	9	9	4	2	2	2	4	11	14	12	7	17	2
106	3	14	5	10	10	8	3	2	2	2	4	11	14	12	6	17	3
107	3	12	3	9	10	8	2	2	2	3	4	11	13	12	5	17	3
108	3	11	4	7	9	6	2	2	2	3	3	10	13	11	4	16	3
109	2	10	5	5	8	5	2	2	2	3	3	9	12	10	4	15	2
110	2	9	5	6	7	4	2	2	2	2	2	7	12	8	4	14	2
111	3	8	5	3	4	3	2	2	3	3	2	6	9	7	4	13	3
112	3	7	4	3	3	2	2	2	2	3	3	5	8	6	5	12	3
113	3	7	5	3	1	2	2	2	2	2	3	3	7	4	5	11	3
114	3	6	5	3	2	2	2	2	3	3	3	3	4	3	6	10	3
115	2	5	5	3	1	2	2	2	3	3	2	2	2	2	6	9	2
116	3	5	5	3	1	1	2	2	3	3	2	2	2	2	6	9	3
117	3	5	5	4	1	2	2	2	2	3	2	3	1	2	5	8	3
118	3	4	5	4	1	2	2	3	2	3	2	3	1	3	6	8	3
119	3	4	5	3	1	2	2	2	3	3	3	3	1	3	6	7	3
120	3	4	5	4	1	2	2	2	2	2	3	3	2	3	6	7	3
121	3	4	5	3	1	2	2	2	2	3	3	3	2	3	6	7	3
122	2	3	5	4	1	2	2	3	3	3	2	3	1	3	7	6	2
123	3	3	5	4	1	2	3	3	3	3	3	3	1	3	7	6	3
124	3	2	5	3	2	2	2	2	3	3	3	3	2	3	6	6	3
125	3	3	4	3	1	2	3	3	3	3	3	3	2	2	7	6	3

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01

Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,
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Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

Certificate#4810.01

126	3	3	5	2	2	2	3	3	2	3	3	3	1	3	7	5	3
127	3	3	5	4	1	2	2	3	2	3	3	3	2	3	7	5	3
128	3	3	5	3	1	3	2	3	3	3	3	3	2	3	6	5	3
129	3	3	5	2	1	2	3	2	3	3	3	3	2	3	6	5	3
130	3	3	4	4	1	2	3	3	3	3	3	3	2	2	6	5	3
131	3	2	4	3	2	2	3	3	3	3	4	3	2	3	6	4	3
132	3	3	4	3	1	2	3	3	3	3	4	4	2	3	6	4	3
133	3	4	3	3	2	3	3	3	3	2	3	3	2	2	6	5	3
134	3	2	4	3	1	3	2	3	3	3	3	2	2	1	5	4	3
135	4	3	4	3	2	3	3	3	3	4	3	3	2	3	5	4	4
136	3	3	4	3	1	2	3	2	3	4	3	3	2	3	5	4	3
137	3	3	4	3	2	2	2	3	3	4	4	4	2	3	5	4	3
138	3	4	4	4	2	3	3	3	2	3	4	4	2	3	5	4	3
139	3	2	4	4	2	2	3	4	3	2	3	4	2	3	4	4	3
140	3	3	3	3	2	2	3	3	3	3	3	4	2	3	4	4	3
141	3	3	3	4	2	2	3	4	4	3	4	4	2	3	4	4	3
142	4	3	4	4	2	3	3	3	3	4	3	4	2	2	4	4	4
143	3	4	4	3	2	3	3	3	3	3	4	3	2	3	3	3	3
144	4	4	4	3	3	3	3	4	4	4	3	4	2	3	3	4	4
145	4	4	4	4	2	3	3	4	3	4	3	4	2	3	4	4	4
146	4	4	4	3	2	2	4	3	4	4	4	4	2	3	4	4	4
147	4	4	3	4	2	3	3	4	3	4	3	4	2	3	4	4	4
148	4	4	4	3	2	2	3	4	3	4	4	4	3	4	4	3	4
149	4	4	4	4	3	3	3	4	4	3	4	4	2	4	3	3	4
150	4	3	4	2	3	3	3	2	3	4	4	4	2	4	3	3	4
151	4	4	4	4	3	3	3	4	3	4	4	4	2	3	4	4	4
152	4	4	3	4	3	3	3	3	3	4	4	4	3	3	4	3	4
153	3	4	4	4	2	3	4	4	4	4	5	3	3	4	4	4	3
154	4	3	4	4	3	3	3	4	4	4	4	4	3	4	3	4	4
155	4	4	3	4	2	3	3	4	4	4	4	5	3	4	4	4	4
156	3	4	3	4	2	3	3	4	4	4	4	4	3	3	4	4	3
157	4	4	4	4	3	3	3	4	4	4	5	4	3	3	4	4	4



Report No.: BLC2010026E-A

Certificate#4810.01

158	4	4	4	4	3	3	4	4	4	4	4	4	3	4	4	4	4
159	4	4	4	4	3	2	3	4	4	4	4	5	3	3	4	3	4
160	4	4	4	4	3	3	4	4	4	4	4	3	3	3	4	4	4
161	4	4	4	4	2	4	4	4	4	4	4	4	3	4	4	3	4
162	4	4	5	4	3	3	3	4	4	4	5	4	2	3	4	4	4
163	3	4	4	4	3	3	4	4	4	4	4	5	2	3	4	4	3
164	4	4	4	3	3	3	3	4	4	5	4	4	3	3	4	4	4
165	4	4	4	5	2	3	4	3	4	4	4	4	3	4	4	4	4
166	3	4	3	4	3	3	4	4	4	4	4	4	3	4	3	4	3
167	3	4	4	4	3	3	4	4	4	5	3	4	2	4	4	4	3
168	5	4	4	5	2	3	4	4	4	4	4	5	3	3	4	4	5
169	4	4	4	4	3	3	4	4	5	5	5	5	3	4	4	4	4
170	4	4	4	4	3	3	4	4	5	4	4	5	3	3	4	4	4
171	4	4	4	4	3	3	3	4	4	4	5	4	3	4	4	4	4
172	4	4	4	4	3	3	4	3	4	4	5	4	3	4	4	4	4
173	4	4	4	4	2	3	3	5	4	4	4	4	3	3	4	5	4
174	4	3	4	4	3	3	4	4	4	4	4	4	3	4	4	3	4
175	4	4	4	4	3	3	4	4	4	5	4	4	3	4	4	4	4
176	4	4	4	5	3	3	4	4	4	4	5	5	3	3	4	4	4
177	4	4	4	4	3	3	4	4	4	4	4	4	3	3	4	4	4
178	4	4	4	4	3	3	4	4	4	4	4	4	3	4	4	4	4
179	4	4	4	5	3	3	4	4	4	4	4	5	3	4	4	4	4
180	4	4	4	5	3	2	4	4	4	4	4	4	2	4	4	4	4

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01

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Report Format Number BL-FM-SA-012



Report No.: BLC2010026E-A

3. Test Equipment

Equipment Name	Model No.	Serial No.	Next Calibration Date
Goniophotometric System	GPM-3000	DYHXF120001	2021/2/26
AC Power Source	CHP-500C	N/A	2021/3/29
Total Luminous Flux Standard Lamp	24V/150W	DYJYR040040	2021/3/1
Digital Power Meter	WT500	DYDWQ200006	2021/3/29
Integral Sphere (2M)	2M	DYJCE120067	2021/2/26
Digital Power Meter	WT500	DYDWQ200006	2021/3/29
Optical Color and Electrical Measurement System	CMS-3000S	DYJCE120067	2021/2/26
Expand Uncertainty: Photometric Measurement (Sphere): 2.08%, k=2 Chromaticity Measurement(Sphere):25.6K, k=2 Photometric Measurement(Goniophotometer):2.645%, k=2			

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