LightLab INTERNATIONAL ALLENTOWN LLC

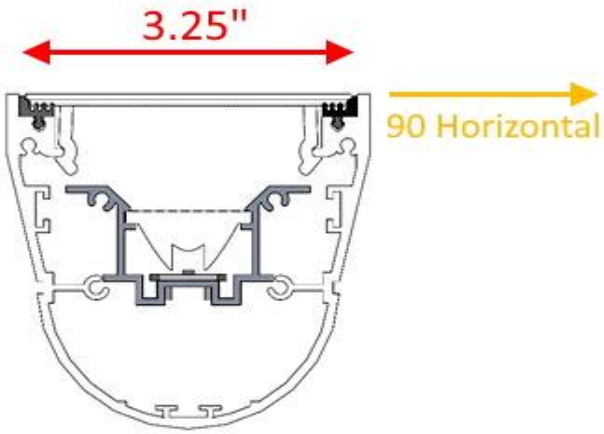
NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA001618-005A

Indoor Distribution Photometry Test Report

Catalog Number: ACC-WL66-NB-HO-K40-80-4-XXX-XXX-UNV
Indirect pendant mount, aluminum housing and end caps, one-piece diffuse plastic lens above LEDs, white painted aluminum reflector, textured linear prismatic "polycarbonate" enclosure.
Osram PrevaLED - 144 white LEDs
One Osram Oti 85/120-277/2A3 DIM-1L LED driver labeled as 1620mA



Prepared For:
Precision Architectural Lighting
4830 Timber Creek Drive
Houston, TX 77017, USA

Performance Summary					
Input Voltage	120.0	Vac	Luminous Flux	3683.3	Lumens
Input Current	0.2816	A	Total Efficacy	111.4	Lm/W
Input Power	33.06	W	Downward Flux	0.0	Lumens
Frequency	60.00	Hz	Downward Flux	0.0	% of Total
Power Factor	0.978				
Current THD	13.2	%			

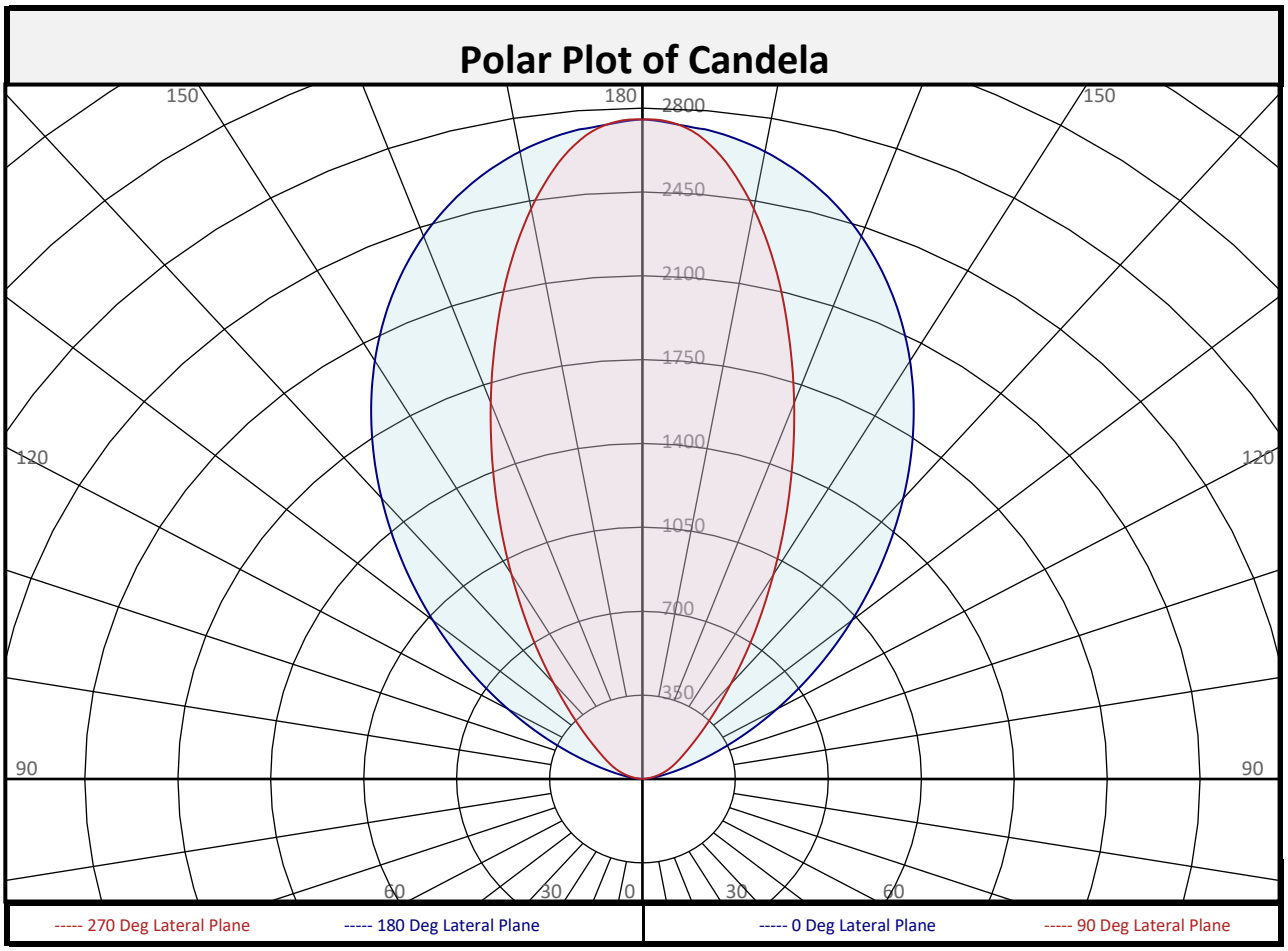
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 12/30/2021
Report date: 01/05/2022

Signed: Michael L. Grather

Report of Test

LLIA001618-005A



Zonal Flux Summary

Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	0.0	0.0%	90-100	18.4	0.5%	0-20	0.0	0.0%
10-20	0.0	0.0%	100-110	93.9	2.5%	0-30	0.0	0.0%
20-30	0.0	0.0%	110-120	215.1	5.8%	0-40	0.0	0.0%
30-40	0.0	0.0%	120-130	377.3	10.2%	0-60	0.0	0.0%
40-50	0.0	0.0%	130-140	565.5	15.4%	0-80	0.0	0.0%
50-60	0.0	0.0%	140-150	732.5	19.9%	10-90	0.0	0.0%
60-70	0.0	0.0%	150-160	788.6	21.4%	20-50	0.0	0.0%
70-80	0.0	0.0%	160-170	639.8	17.4%	40-90	0.0	0.0%
80-90	0.0	0.0%	170-180	252.2	6.8%	60-90	0.0	0.0%
0-90	0.0	0.0%	90-180	3683	100.0%	0-180	3683	100.0%

Report of Test

LLIA001618-005A

Luminous Intensity (Candela) Table

Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	Lateral (C-Plane) Angles								
	0	22.5	45	67.5	90	112.5	135	157.5	180
0	0	0	0	0	0	0	0	0	0
2.5	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
7.5	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
12.5	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
17.5	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
22.5	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0
27.5	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0
32.5	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0
37.5	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0
42.5	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0
47.5	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0
52.5	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0
57.5	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0
62.5	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0
67.5	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0
72.5	0	0	0	0	0	0	0	0	0
75	0	0	0	0	0	0	0	0	0
77.5	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0
82.5	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0
87.5	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0

Report of Test

LLIA001618-005A

Luminous Intensity (Candela) Table

Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	Lateral (C-Plane) Angles									
	0	22.5	45	67.5	90	112.5	135	157.5	180
90	0	0	0	0	0	0	0	0	0
92.5	5	6	5	4	4	4	5	6	5
95	17	18	13	12	12	12	13	18	17
97.5	34	36	24	22	22	22	24	36	34
100	58	58	38	35	34	35	38	58	58
102.5	89	85	55	48	47	48	55	85	89
105	129	116	73	63	61	63	73	116	129
107.5	179	153	94	79	76	79	94	153	179
110	240	195	116	95	92	95	116	195	240
112.5	313	244	142	111	107	111	142	244	313
115	397	300	171	128	123	128	171	300	397
117.5	488	364	204	147	139	147	204	364	488
120	586	437	243	169	157	169	243	437	586
122.5	689	517	289	194	178	194	289	517	689
125	798	605	343	225	202	225	343	605	798
127.5	913	702	404	263	233	263	404	702	913
130	1030	806	475	309	270	309	475	806	1030
132.5	1152	915	554	362	316	362	554	915	1152
135	1276	1029	641	426	371	426	641	1029	1276
137.5	1401	1148	739	503	437	503	739	1148	1401
140	1527	1271	848	594	517	594	848	1271	1527
142.5	1654	1400	968	697	615	697	968	1400	1654
145	1778	1531	1095	810	725	810	1095	1531	1778
147.5	1899	1663	1230	938	848	938	1230	1663	1899
150	2015	1792	1373	1081	987	1081	1373	1792	2015
152.5	2125	1920	1521	1234	1141	1234	1521	1920	2125
155	2228	2044	1671	1398	1307	1398	1671	2044	2228
157.5	2323	2163	1826	1570	1484	1570	1826	2163	2323
160	2410	2276	1984	1748	1670	1748	1984	2276	2410
162.5	2487	2379	2136	1930	1860	1930	2136	2379	2487
165	2554	2472	2281	2115	2055	2115	2281	2472	2554
167.5	2612	2551	2412	2288	2243	2288	2412	2551	2612
170	2658	2617	2530	2446	2416	2446	2530	2617	2658
172.5	2695	2669	2625	2581	2564	2581	2625	2669	2695
175	2722	2708	2692	2682	2678	2682	2692	2708	2722
177.5	2737	2734	2735	2738	2739	2738	2735	2734	2737
180	2752	2752	2752	2752	2752	2752	2752	2752	2752

Report of Test

LLIA001618-005A

Coefficients of Utilization/Room Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

RC	80					70					50				30				10			0
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10	0
RCR																						
0	95	95	95	95		81	81	81	81		56	56	56		32	32	32		10	10	10	0
1	87	83	79	76		74	71	68	65		48	47	45		28	27	26		9	9	8	0
2	79	72	66	62		67	62	57	53		42	40	37		24	23	22		8	7	7	0
3	72	63	57	51		61	54	49	44		37	34	31		21	20	18		7	6	6	0
4	65	56	48	43		56	48	42	37		33	29	26		19	17	16		6	6	5	0
5	60	49	42	36		51	42	36	32		29	25	22		17	15	13		5	5	4	0
6	55	44	36	31		47	38	32	27		26	22	19		15	13	11		5	4	4	0
7	50	39	32	27		43	34	28	23		23	19	17		14	11	10		4	4	3	0
8	47	35	28	23		40	30	24	20		21	17	14		12	10	9		4	3	3	0
9	43	32	25	20		37	27	22	18		19	15	13		11	9	8		4	3	3	0
10	40	29	22	18		34	25	19	16		17	14	11		10	8	7		3	3	2	0

For absolute test reports, RUs are expressed as a percentage of total lumen output. For relative test reports, CUs are expressed as a percentage of total lamp output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are lambertian reflectors. 2) Incident flux on each surface is uniformly distributed. 3) The room is spectrally neutral. When luminaires are not evenly distributed throughout the room, or do not exhibit lateral symmetry, CU values may differ from actual performance.

Report of Test

LLIA001618-005A

Additional Pictures of Test Subject

Report of Test

LLIA001618-005A

Test Distance	9.5 m
Ambient Temperature	25.1 °C

Notes

The laboratory has not participated in the selection of samples to be tested. All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units.

Tested in accordance with the applicable sections of IES LM-79-19. Format of reports and angular increments based on IES LM-41-20 and LM-46-20.

The luminous intensity values, and other derived quantities, contained in this report are based on the absolute data, as measured.

Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

This report is free of erasures and corrections.

Photometric intensity values are reported using the CIE C-Gamma coordinate system as defined in CIE publication number 121.

This report may contain data that are not covered by the NVLAP accreditation. Quantities marked with ‡ are not covered.

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the Federal Government.

LightLab INTERNATIONAL ALLENTOWN LLC

NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA001618-005B

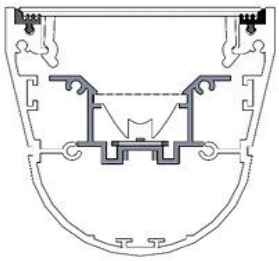
Integrating Sphere Report

Catalog Number: ACC-WL66-NB-HO-K40-80-4-XXX-XXX-UNV

Indirect pendant mount, aluminum housing and end caps, one-piece diffuse plastic lens above LEDs, white painted aluminum reflector, textured linear prismatic "polycarbonate" enclosure.

Osram PrevaLED - 144 white LEDs

One Osram Oti 85/120-277/2A3 DIM-1L LED driver labeled as 1620mA



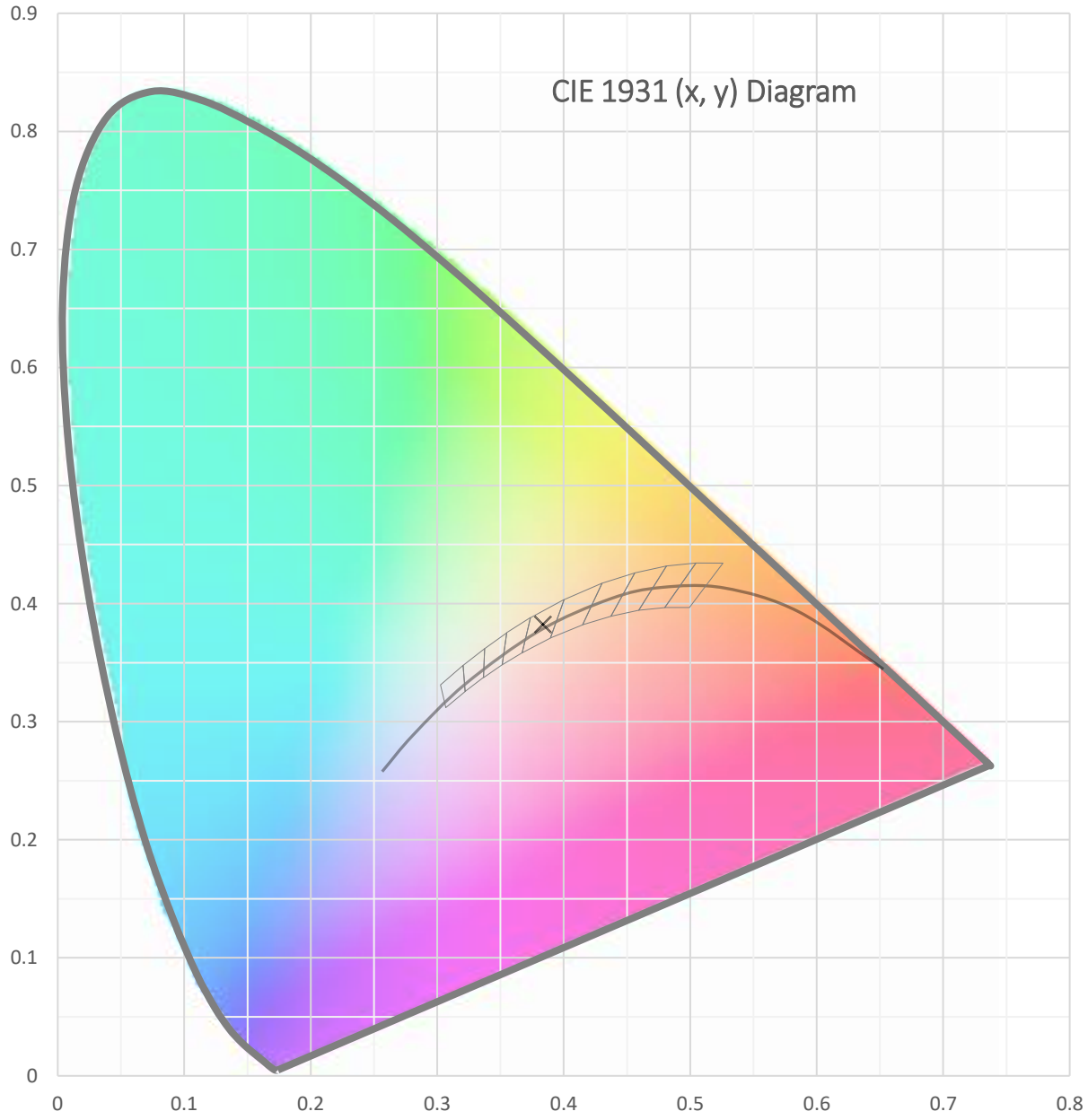
Performance Summary

Voltage	120.0	Vac
Current	0.2807	A
Power	33.05	W
Frequency	59.99	Hz
Power Factor	0.981	
Current THD	13.3	%
Total Luminous Flux	3784.1	lm
Efficacy	114.5	lm/W
Chromaticity (x,y)	(0.3835, 0.3822)	
(u',v')	(0.2249, 0.5044)	
Duv	0.0016	
CCT	3959	K
CRI (Ra)	82	
R9	3	
TM-30: Rf	82	
TM-30: Rg	96	
TM-30: Rcs,h1	-12	

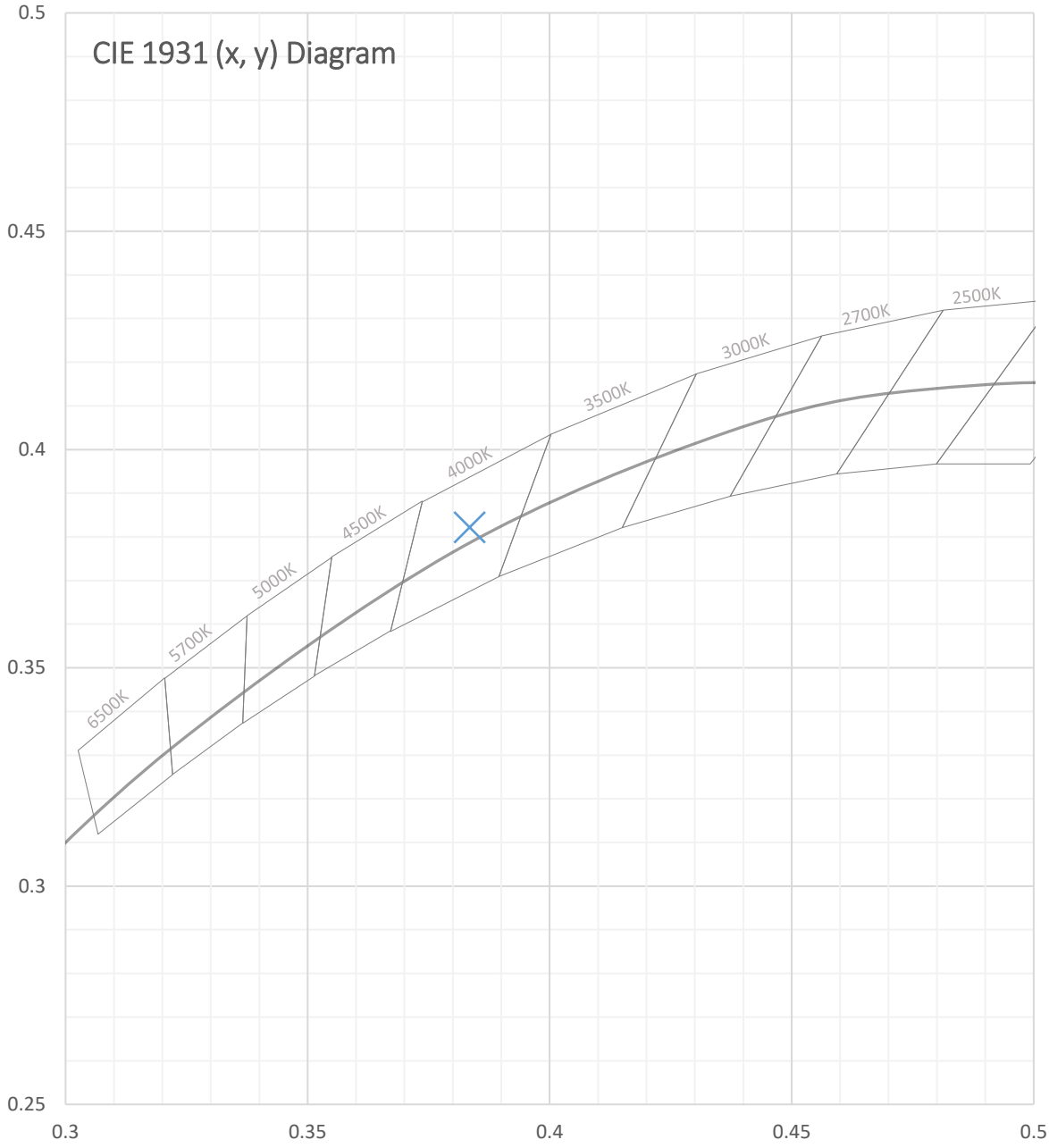
Prepared For:
Precision Architectural Lighting
4830 Timber Creek Drive
Houston, TX 77017, USA

Test date: 01/03/2022
Report date: 01/05/2022

Test Report Number: LLIA001618-005B



Test Report Number: LLIA001618-005B



Test Report Number: LLIA001618-005B

Total Radiant Flux	11.30	W
Total Luminous Flux	3784.1	Lm
Chromaticity CIE 1931 (x, y)	(0.3835, 0.3822)	
Chromaticity CIE 1976 (u', v')	(0.2249, 0.5044)	
Correlated Color Temperature (CCT)	3959	K
Color Rendering Index (Ra)	82	
R1	81	
R2	88	
R3	93	
R4	83	
R5	81	
R6	83	
R7	86	
R8	63	
R9	3	
R10	71	
R11	83	
R12	58	
R13	83	
R14	96	
TM-30: Rf	82	
TM-30: Rg	96	
TM-30: Rcs,h1	-12	
Distance from Planckian Locus (Duv)	0.0016	
Scotopic/Photopic Ratio ǂ	1.646	

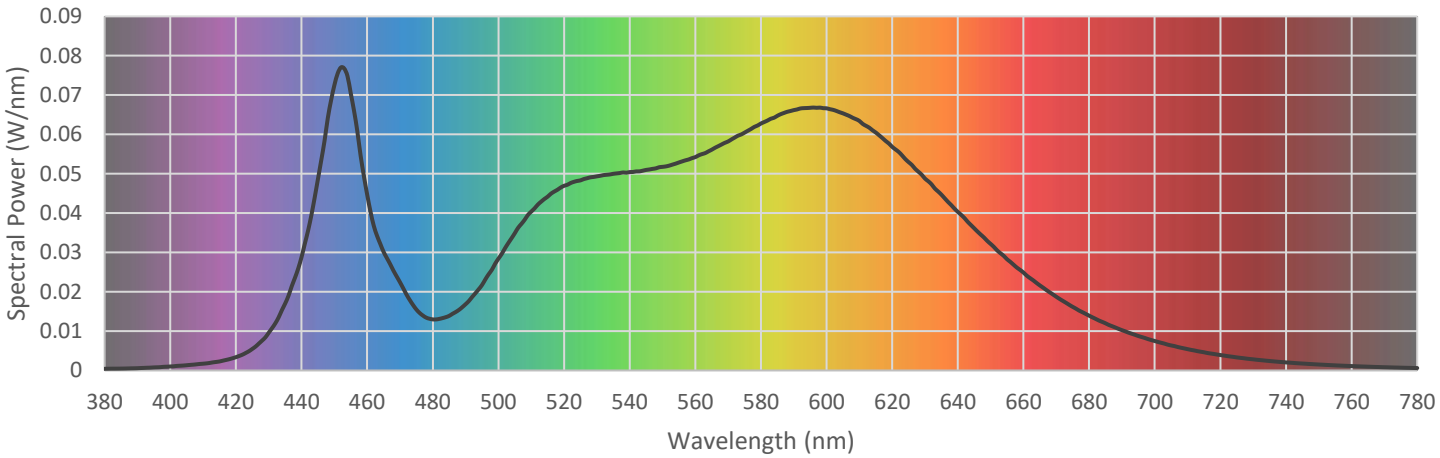
Electrical Data

Voltage	120.0	Vac
Current	0.2807	A
Power	33.05	W
Frequency	59.99	Hz
Power Factor	0.981	
Current THD	13.3	%

Test Report Number: LLIA001618-005B

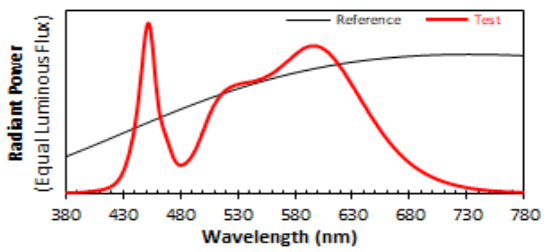
Summary Spectral Power Distribution (wavelength - nm, spectral power - W/nm)

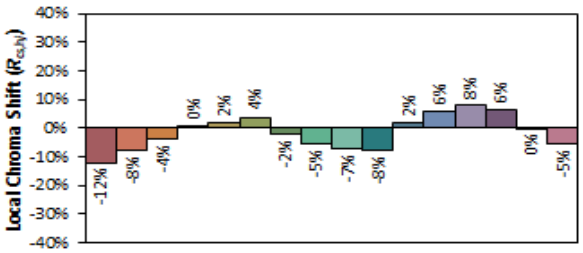
380	0.000432	480	0.012980	580	0.062767	680	0.013930
385	0.000476	485	0.013885	585	0.064723	685	0.011988
390	0.000581	490	0.016850	590	0.066171	690	0.010243
395	0.000776	495	0.021723	595	0.066760	695	0.008755
400	0.001017	500	0.028421	600	0.066629	700	0.007488
405	0.001332	505	0.034906	605	0.065349	705	0.006364
410	0.001720	510	0.040379	610	0.063424	710	0.005423
415	0.002291	515	0.044176	615	0.060469	715	0.004626
420	0.003378	520	0.046934	620	0.056835	720	0.003919
425	0.005478	525	0.048316	625	0.052955	725	0.003321
430	0.009594	530	0.049338	630	0.048763	730	0.002830
435	0.017006	535	0.049985	635	0.044674	735	0.002402
440	0.028838	540	0.050424	640	0.040310	740	0.002047
445	0.048692	545	0.050973	645	0.036131	745	0.001761
450	0.072500	550	0.051750	650	0.032162	750	0.001512
455	0.070432	555	0.052867	655	0.028264	755	0.001296
460	0.044666	560	0.054228	660	0.024883	760	0.001115
465	0.030138	565	0.056111	665	0.021616	765	0.000961
470	0.022416	570	0.058207	670	0.018737	770	0.000824
475	0.015487	575	0.060447	675	0.016167	775	0.000712
						780	0.000616

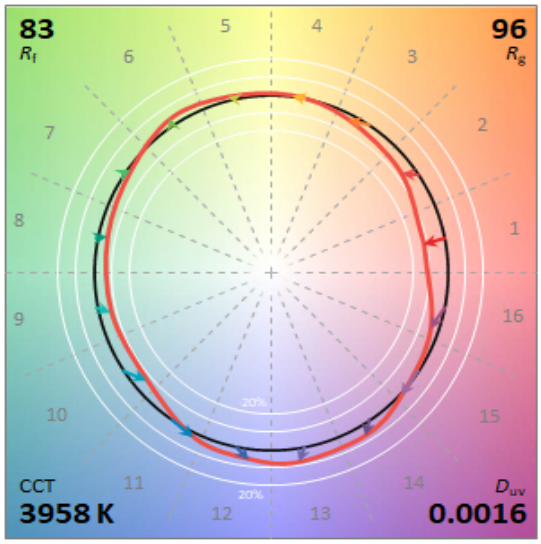


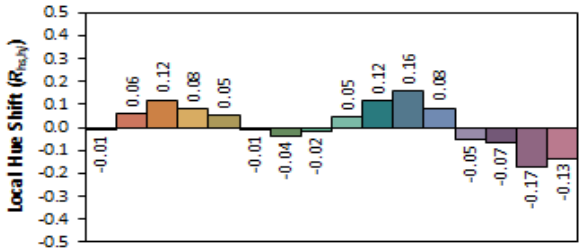
Test Report Number: LLIA001618-005B

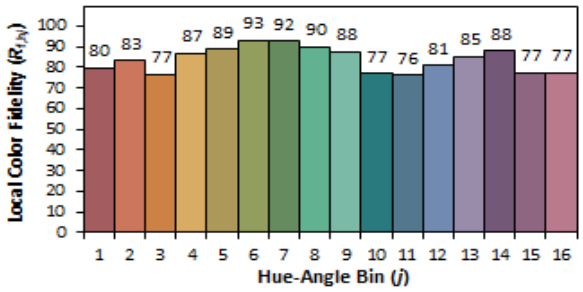
IES TM-30 Details

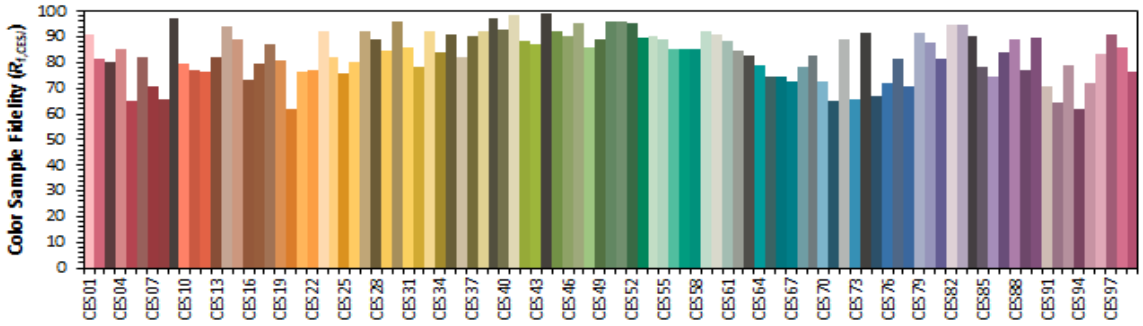












Notes:

x	0.3835
y	0.3821
u'	0.2250
v'	0.5044

CIE 13.3-1995 (CRI)

R_a	82
R_9	3

Test Report Number: LLIA001618-005B

Test Equipment Configuration:	LightLab International Allentown 2m Integrating Sphere Measurements acquired using a Labsphere CDS 2600 spectroradiometer Testing was performed using 4π geometry
Test Temperature:	24.9 °C
Test Procedure:	Tested in accordance with the applicable sections of: LM-79-19, LM-78-20, LM-58-20, ANSI_ANSLG C78.377-2017, TM-30-20
Significance:	The laboratory has not participated in the selection of samples to be tested. All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units.
Notes:	The measurements and other derived quantities contained in this report are based on the absolute data as measured. Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results. This report is free of erasures and corrections This report may contain data that are not covered by the NVLAP accreditation. Quantities marked with ǂ are not covered. This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the Federal Government.

USA west coast LightLab International, LLC, 24825 N. 16th Avenue, Suite 125, Phoenix, AZ, 85085, Ph : +1 623-434-1499, Fx : +1 623-434-1492, www.lightlabint.com

USA east coast LightLab Int'l Allentown LLC, 905 Harrison Street, Suite 135, Allentown, PA 18103, Ph: +1 484-273-0705, www.lightlaballentown.com (issuing laboratory)

Australasia & S.E. Asia LightLab International, 50 Redcliffe Gardens Drive, Clontarf, Queensland, 4019, Australia, Ph : +61 7 3283 7862, Fx : +61 7 3283 8751, www.lightlabint.com