LightLab INTERNATIONAL ALLENTOWN LLC

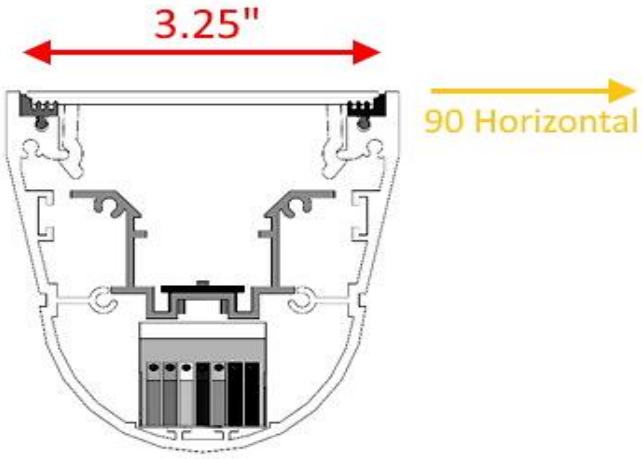
NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA001618-002A

Indoor Distribution Photometry Test Report

Catalog Number: ACC-WL66-WB-MO-K40-80-4-XXX-XXX-UNV
Indirect pendant mount, aluminum housing and end caps, white painted aluminum reflector, translucent white linear prismatic "polycarbonate" enclosure.
Osram PrevaLED - 144 white LEDs
One Osram Oti 50/120-277/2A3 DIM-1L LED driver labeled as 1020mA



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

Performance Summary					
Input Voltage	120.0	Vac	Luminous Flux	1875.6	Lumens
Input Current	0.1834	A	Total Efficacy	91.9	Lm/W
Input Power	20.40	W	Downward Flux	0.0	Lumens
Frequency	60.00	Hz	Downward Flux	0.0	% of Total
Power Factor	0.927				
Current THD	17.7	%			

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

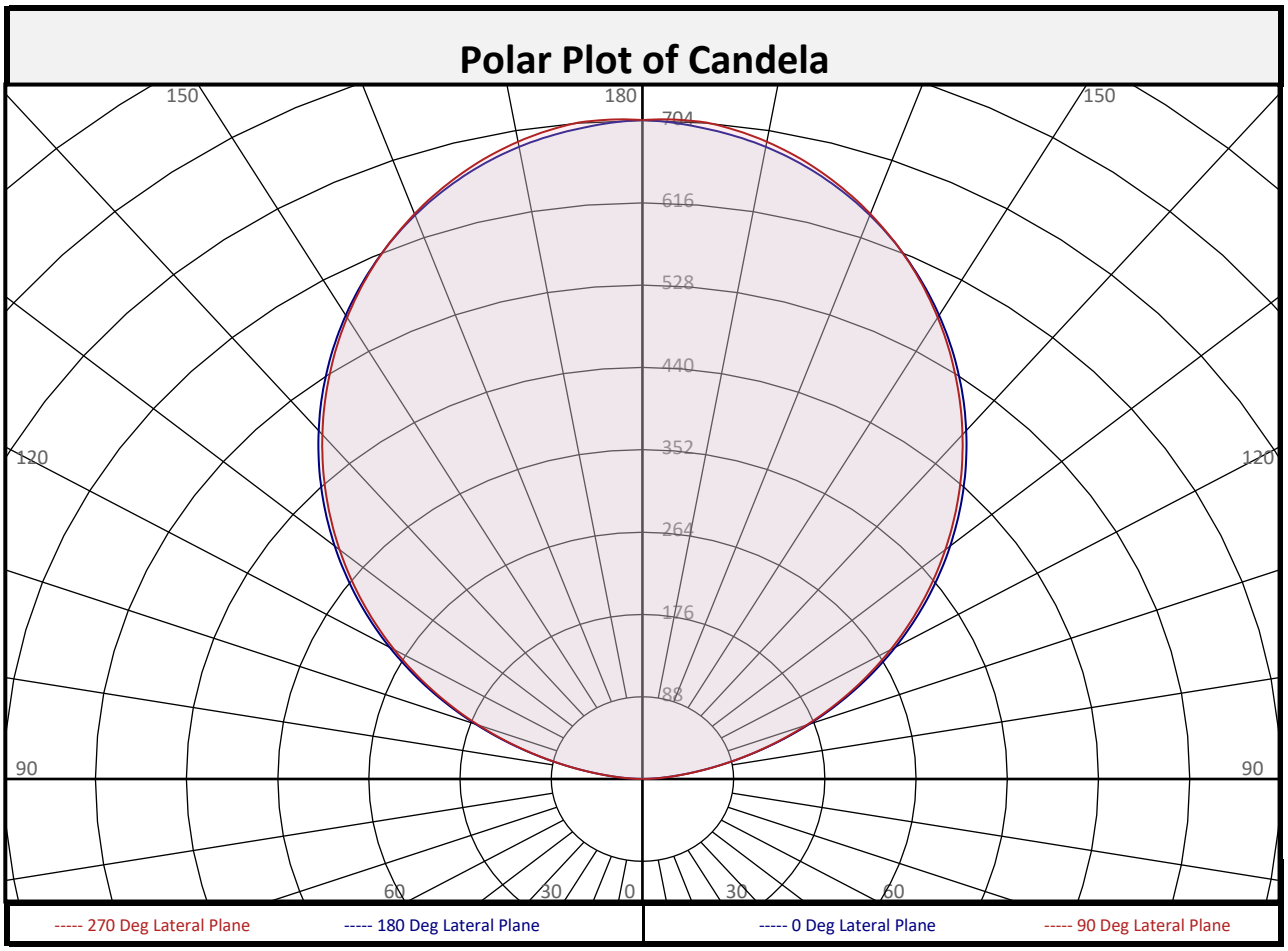
Test date: 12/30/2021
Report date: 01/06/2022

Signed: Michael L. Grather

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

Report of Test

LLIA001618-002A



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	30.7	1.6%		0-20	0.0	0.0%
10-20	0.0	0.0%		100-110	123.4	6.6%		0-30	0.0	0.0%
20-30	0.0	0.0%		110-120	222.8	11.9%		0-40	0.0	0.0%
30-40	0.0	0.0%		120-130	297.5	15.9%		0-60	0.0	0.0%
40-50	0.0	0.0%		130-140	335.5	17.9%		0-80	0.0	0.0%
50-60	0.0	0.0%		140-150	330.5	17.6%		10-90	0.0	0.0%
60-70	0.0	0.0%		150-160	280.3	14.9%		20-50	0.0	0.0%
70-80	0.0	0.0%		160-170	188.4	10.0%		40-90	0.0	0.0%
80-90	0.0	0.0%		170-180	66.5	3.5%		60-90	0.0	0.0%
0-90	0.0	0.0%		90-180	1876	100.0%		0-180	1876	100.0%

Report of Test

LLIA001618-002A

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

LLIA001618-002A

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	10	11	11	12	12	12	11	11	10
95	25	25	25	26	26	26	25	25	25
97.5	43	44	44	45	44	45	44	44	43
100	66	66	66	66	66	66	66	66	66
102.5	90	91	91	91	90	91	91	91	90
105	116	117	117	116	115	116	117	117	116
107.5	144	144	144	143	142	143	144	144	144
110	171	172	171	170	169	170	171	172	171
112.5	199	199	198	197	196	197	198	199	199
115	227	227	226	224	223	224	226	227	227
117.5	254	254	253	251	249	251	253	254	254
120	282	282	280	278	277	278	280	282	282
122.5	309	308	307	305	303	305	307	308	309
125	336	335	333	331	329	331	333	335	336
127.5	362	361	359	357	356	357	359	361	362
130	388	387	385	383	382	383	385	387	388
132.5	413	412	410	408	407	408	410	412	413
135	438	437	435	433	432	433	435	437	438
137.5	462	461	459	457	457	457	459	461	462
140	486	485	483	481	480	481	483	485	486
142.5	509	508	506	504	504	504	506	508	509
145	531	530	528	527	527	527	528	530	531
147.5	552	551	550	549	549	549	550	551	552
150	573	572	570	570	570	570	570	572	573
152.5	592	591	590	589	590	589	590	591	592
155	610	609	608	608	609	608	608	609	610
157.5	626	626	625	626	627	626	625	626	626
160	642	641	641	642	643	642	641	641	642
162.5	655	655	655	657	658	657	655	655	655
165	667	667	668	670	671	670	668	667	667
167.5	678	677	679	681	682	681	679	677	678
170	686	686	688	690	692	690	688	686	686
172.5	693	693	695	697	699	697	695	693	693
175	698	698	700	703	705	703	700	698	698
177.5	702	702	703	705	706	705	703	702	702
180	705	705	705	705	705	705	705	705	705

Report of Test

LLIA001618-002A

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

LLIA001618-002A

Additional Pictures of Test Subject

Report of Test

LLIA001618-002A

Test Distance	9.5 m
Ambient Temperature	24.9 °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

LLIA001618-002B

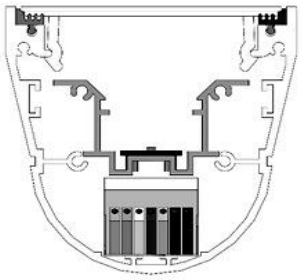
Integrating Sphere Report

Catalog Number: ACC-WL66-WB-MO-K40-80-4-XXX-XXX-UNV

Indirect pendant mount, aluminum housing and end caps, white painted aluminum reflector, translucent white linear prismatic "polycarbonate" enclosure.

Osram PrevaLED - 144 white LEDs

One Osram Oti 50/120-277/2A3 DIM-1L LED driver labeled as 1020mA



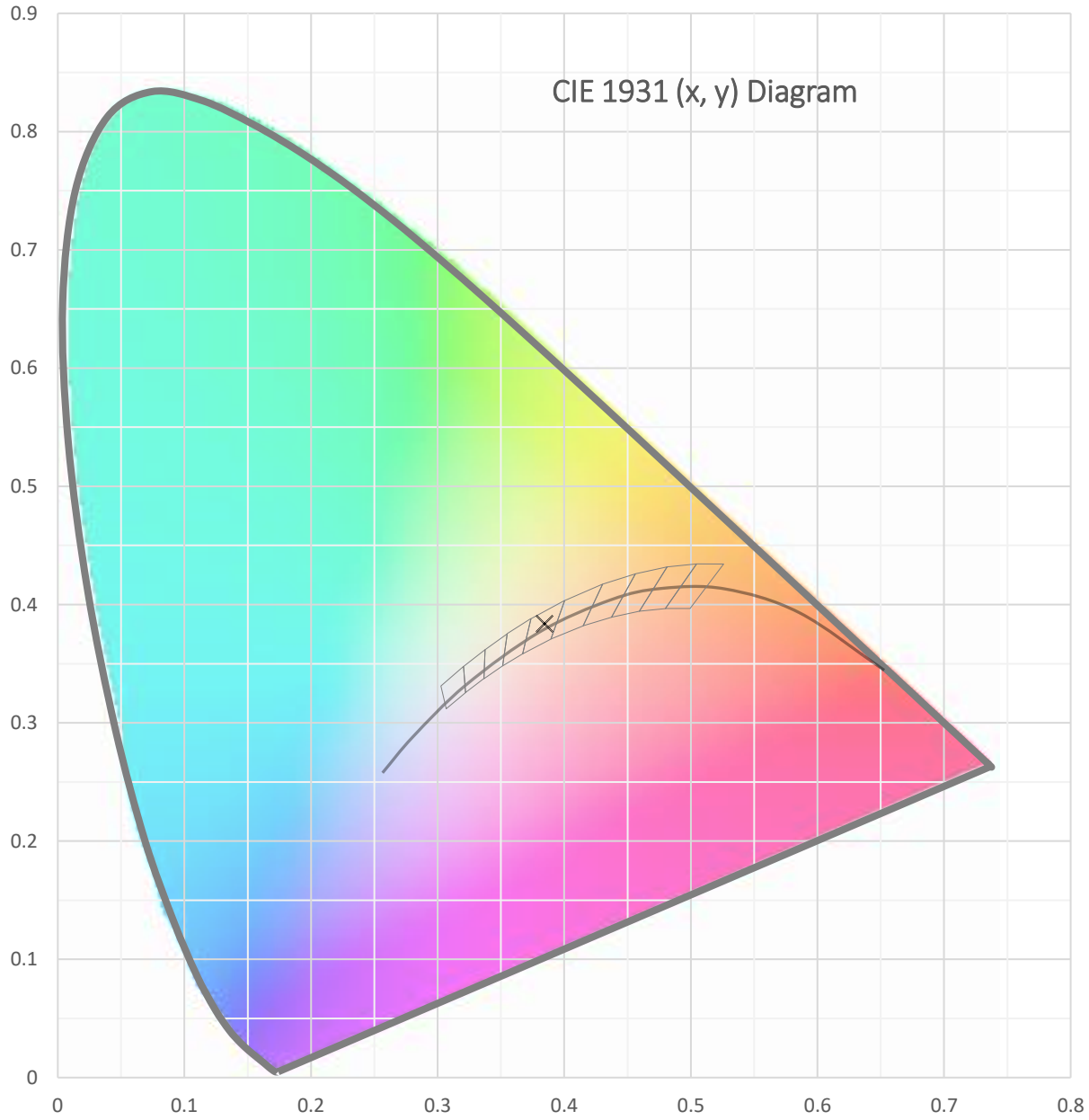
Performance Summary

Voltage	120.0	Vac
Current	0.1811	A
Power	20.38	W
Frequency	59.99	Hz
Power Factor	0.937	
Current THD	16.7	%
Total Luminous Flux	1921.4	lm
Efficacy	94.3	lm/W
Chromaticity (x,y)	(0.3846, 0.3838)	
(u',v')	(0.2250, 0.5053)	
Duv	0.0021	
CCT	3942	K
CRI (Ra)	83	
R9	5	
TM-30: Rf	82	
TM-30: Rg	96	
TM-30: Rcs,h1	-12	

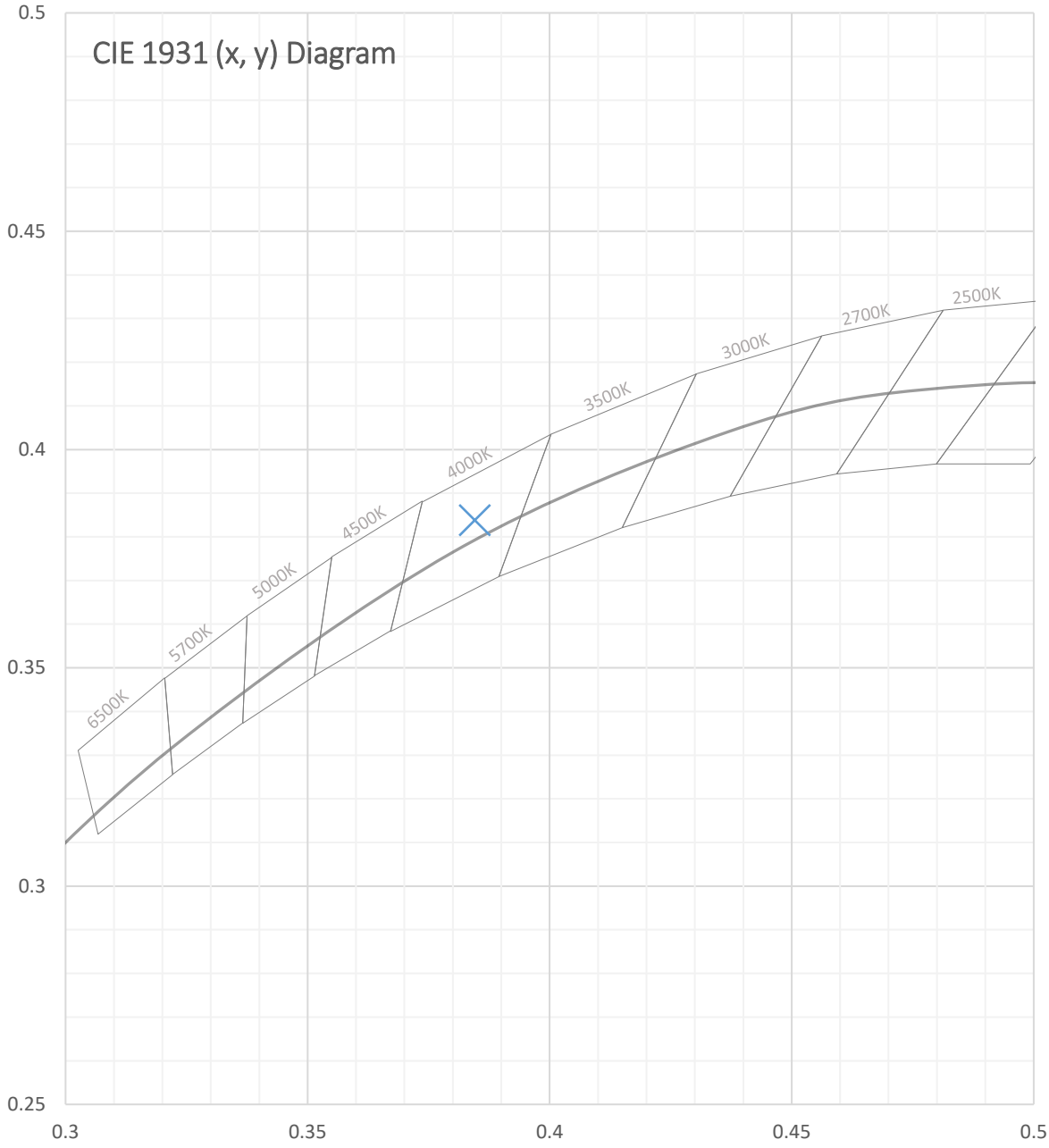
Prepared For:
Precision Architectural Lighting
4830 Timber Creek Drive
Houston, TX 77017, USA

Test date: 01/04/2022
Report date: 01/06/2022

Test Report Number: LLIA001618-002B



Test Report Number: LLIA001618-002B



Test Report Number: LLIA001618-002B

Total Radiant Flux	5.728	W
Total Luminous Flux	1921.4	Lm
Chromaticity CIE 1931 (x, y)	(0.3846, 0.3838)	
Chromaticity CIE 1976 (u', v')	(0.2250, 0.5053)	
Correlated Color Temperature (CCT)	3942	K
Color Rendering Index (Ra)	83	
R1	81	
R2	88	
R3	94	
R4	83	
R5	81	
R6	84	
R7	86	
R8	64	
R9	5	
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)	0.0021	
Scotopic/Photopic Ratio ǂ	1.645	

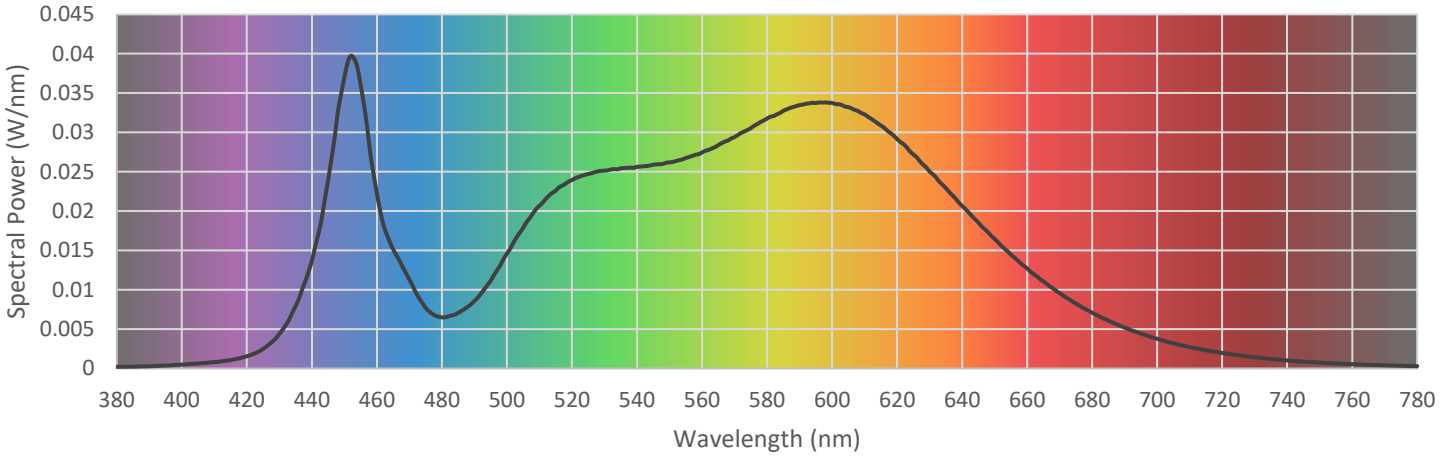
Electrical Data

Voltage	120.0	Vac
Current	0.1811	A
Power	20.38	W
Frequency	59.99	Hz
Power Factor	0.937	
Current THD	16.7	%

Test Report Number: LLIA001618-002B

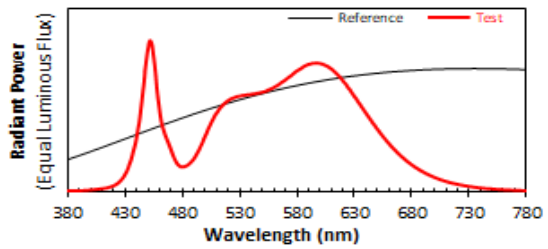
Summary Spectral Power Distribution (wavelength - nm, spectral power - W/nm)

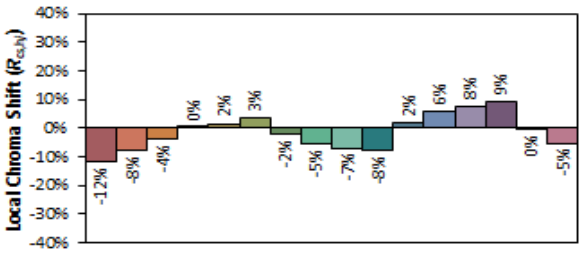
380	0.000213	480	0.006497	580	0.031754	680	0.007086
385	0.000231	485	0.007071	585	0.032745	685	0.006087
390	0.000282	490	0.008584	590	0.033470	690	0.005191
395	0.000373	495	0.011160	595	0.033736	695	0.004419
400	0.000493	500	0.014589	600	0.033745	700	0.003772
405	0.000630	505	0.017883	605	0.033221	705	0.003188
410	0.000812	510	0.020681	610	0.032301	710	0.002710
415	0.001061	515	0.022596	615	0.030877	715	0.002309
420	0.001550	520	0.023938	620	0.029170	720	0.001967
425	0.002481	525	0.024714	625	0.027192	725	0.001674
430	0.004391	530	0.025137	630	0.025030	730	0.001426
435	0.007929	535	0.025435	635	0.022917	735	0.001205
440	0.013677	540	0.025631	640	0.020673	740	0.001023
445	0.023969	545	0.025891	645	0.018553	745	0.000870
450	0.036993	550	0.026191	650	0.016469	750	0.000745
455	0.036018	555	0.026751	655	0.014480	755	0.000638
460	0.022219	560	0.027446	660	0.012705	760	0.000548
465	0.015125	565	0.028384	665	0.011059	765	0.000467
470	0.011281	570	0.029407	670	0.009564	770	0.000401
475	0.007694	575	0.030536	675	0.008246	775	0.000346
						780	0.000297

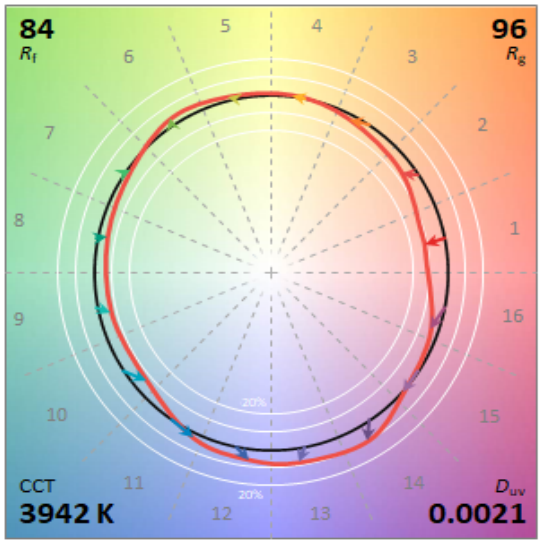


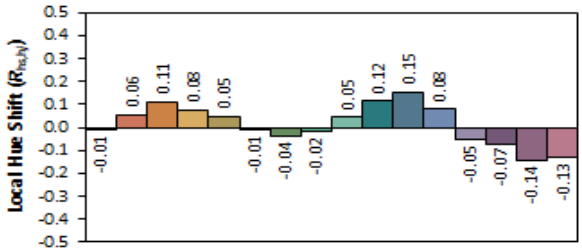
Test Report Number: LLIA001618-002B

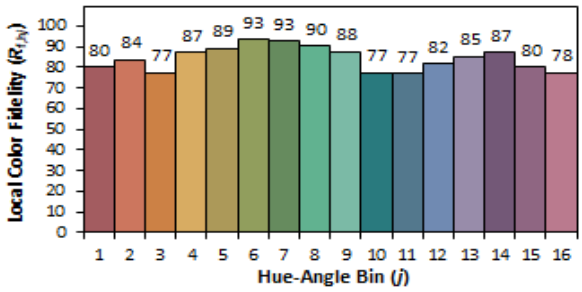
IES TM-30 Details

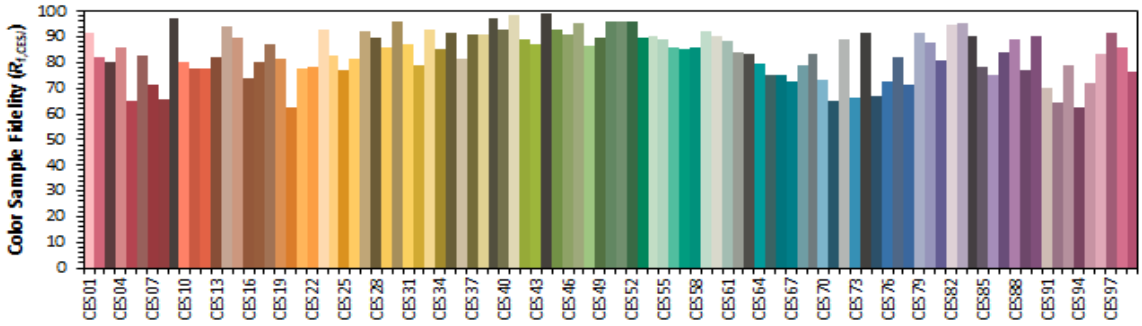












Notes:

x	0.3846
y	0.3837
u'	0.2250
v'	0.5052

CIE 13.3-1995 (CRI)

R_a	83
R_9	5

Test Report Number: LLIA001618-002B

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:	25.8 °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 ‡ 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