LightLab INTERNATIONAL ALLENTOWN LLC

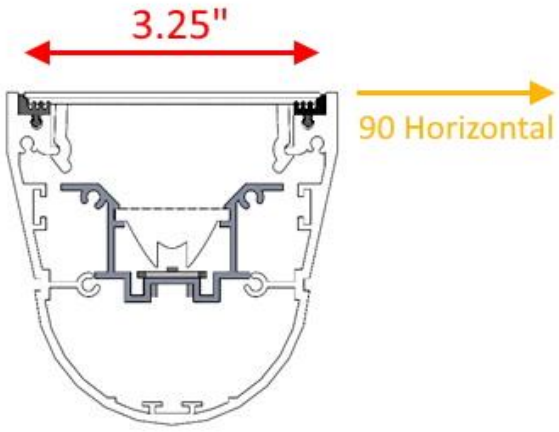
NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA001719-003A

Indoor Distribution Photometry Test Report

Catalog Number: ACC-WL66-MB-MO-K40-4
Indirect pendant mount, aluminum housing and end caps, one-piece diffuse plastic lens above LEDs, white painted aluminum reflector, frosted linear prismatic plastic enclosure.
Osram PrevaLED - 144 white LEDs
One Osram OTi 85/120-277/2A3 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	2123.4	Lumens
Input Current	0.1821	A	Total Efficacy	103.6	Lm/W
Input Power	20.50	W	Downward Flux	0.0	Lumens
Frequency	60.00	Hz	Downward Flux	0.0	% of Total
Power Factor	0.938				
Current THD	14.7	%			

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

Test date: 04/25/2022
Report date: 04/27/2022

Signed: Michael L. Grather

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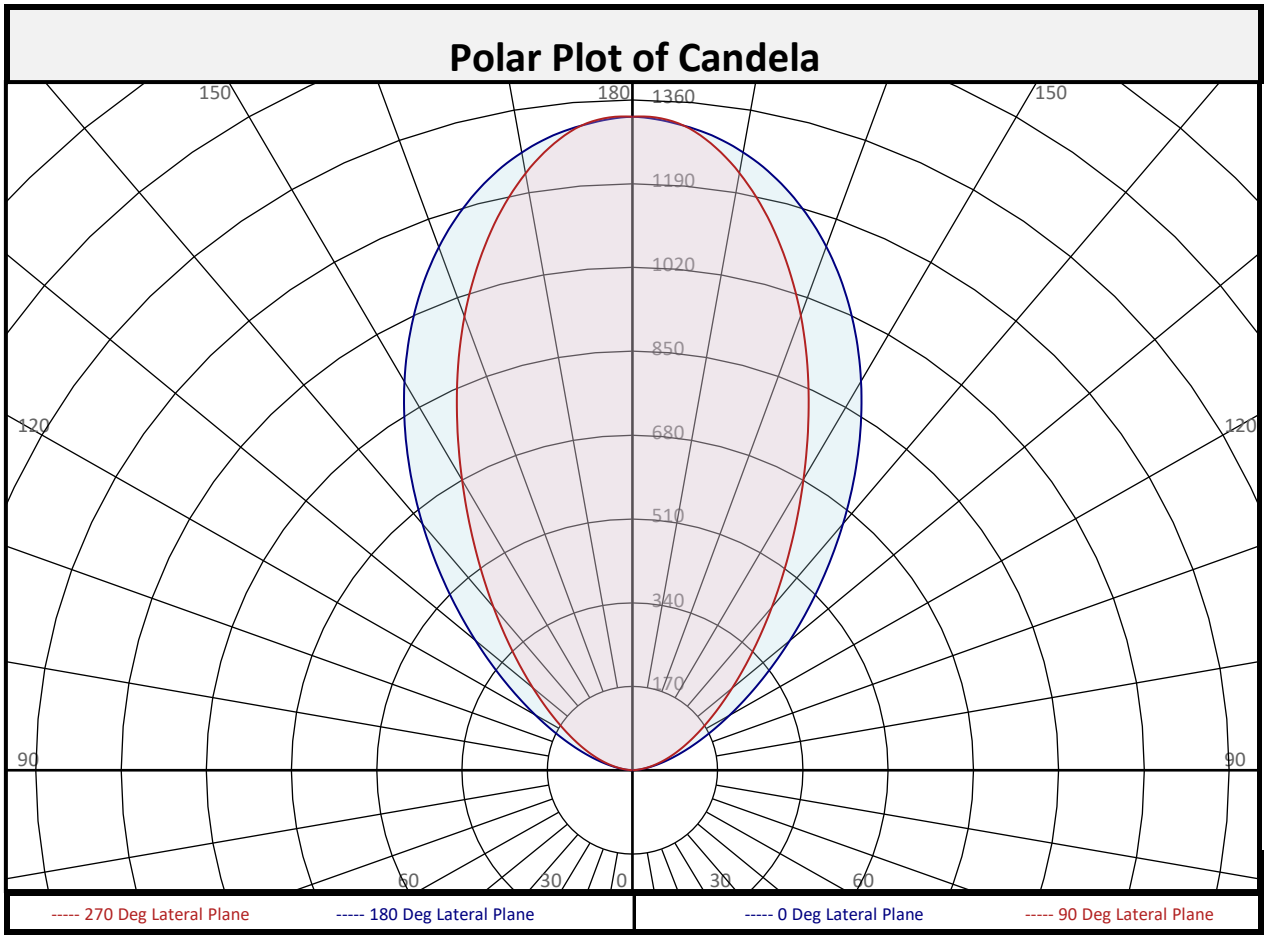

Zonal Flux Summary

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	15.1	0.7%	0-20	0.0	0.0%
10-20	0.0	0.0%	100-110	70.7	3.3%	0-30	0.0	0.0%
20-30	0.0	0.0%	110-120	149.9	7.1%	0-40	0.0	0.0%
30-40	0.0	0.0%	120-130	245.8	11.6%	0-60	0.0	0.0%
40-50	0.0	0.0%	130-140	346.0	16.3%	0-80	0.0	0.0%
50-60	0.0	0.0%	140-150	420.9	19.8%	10-90	0.0	0.0%
60-70	0.0	0.0%	150-160	426.5	20.1%	20-50	0.0	0.0%
70-80	0.0	0.0%	160-170	325.5	15.3%	40-90	0.0	0.0%
80-90	0.0	0.0%	170-180	122.9	5.8%	60-90	0.0	0.0%
0-90	0.0	0.0%	90-180	2123	100.0%	0-180	2123	100.0%

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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

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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	5	5	4	3	4	5	5	5
95	11	14	14	11	10	11	14	14	11
97.5	21	25	25	20	19	20	25	25	21
100	33	40	39	31	29	31	39	40	33
102.5	47	57	55	43	40	43	55	57	47
105	63	77	73	56	52	56	73	77	63
107.5	82	99	92	71	65	71	92	99	82
110	104	124	114	87	79	87	114	124	104
112.5	129	151	137	104	94	104	137	151	129
115	156	181	163	123	111	123	163	181	156
117.5	188	214	190	144	129	144	190	214	188
120	224	250	220	167	150	167	220	250	224
122.5	264	288	253	193	172	193	253	288	264
125	308	331	288	221	198	221	288	331	308
127.5	356	376	326	253	227	253	326	376	356
130	409	424	368	288	259	288	368	424	409
132.5	465	475	412	327	296	327	412	475	465
135	525	528	460	370	337	370	460	528	525
137.5	588	584	512	417	382	417	512	584	588
140	652	642	566	469	432	469	566	642	652
142.5	718	701	623	525	487	525	623	701	718
145	783	761	683	585	547	585	683	761	783
147.5	848	822	745	650	612	650	745	822	848
150	910	882	808	718	681	718	808	882	910
152.5	971	941	871	789	755	789	871	941	971
155	1028	999	933	862	830	862	933	999	1028
157.5	1081	1054	994	933	907	933	994	1054	1081
160	1129	1106	1053	1002	981	1002	1053	1106	1129
162.5	1173	1153	1109	1067	1051	1067	1109	1153	1173
165	1212	1196	1161	1130	1116	1130	1161	1196	1212
167.5	1245	1233	1208	1186	1177	1186	1208	1233	1245
170	1272	1264	1249	1235	1229	1235	1249	1264	1272
172.5	1294	1288	1281	1276	1273	1276	1281	1288	1294
175	1309	1306	1305	1306	1307	1306	1305	1306	1309
177.5	1320	1319	1320	1323	1323	1323	1320	1319	1320
180	1325	1325	1325	1325	1325	1325	1325	1325	1325

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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

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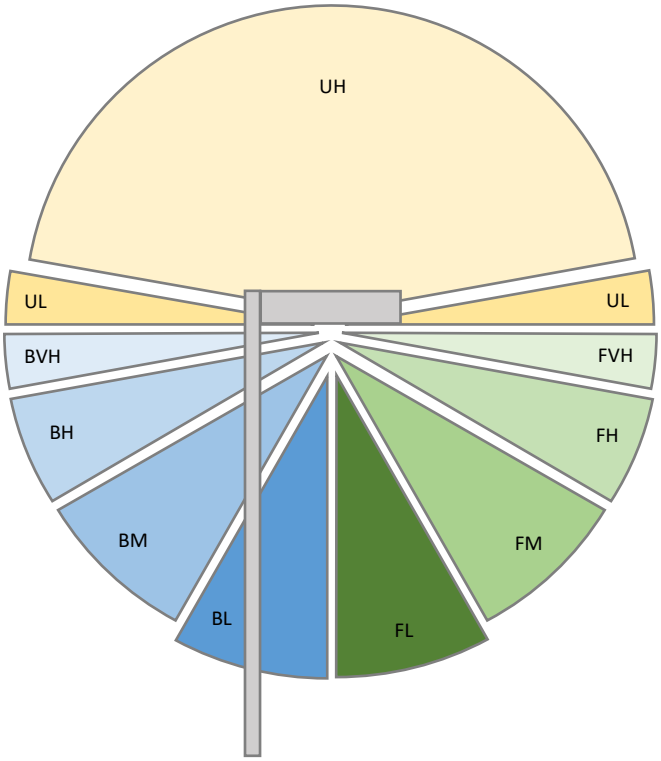
LCS Tables and Bug Classification



Back Light	
BL - Back Low (0°-30°)	0.0 Lm
BM - Back Mid (30°-60°)	0.0 Lm
BH - Back High (60°-80°)	0.0 Lm
BVH - Back Very High (80°-90°)	0.0 Lm

Forward Light	
FL - Forward Low (0°-30°)	0.0 Lm
FM - Forward Mid (30°-60°)	0.0 Lm
FH - Forward High (60°-80°)	0.0 Lm
FVH - Forward Very High (80°-90°)	0.0 Lm

Uplight	
UL - Upward Low (90°-100°)	15.1 Lm
UH - Upward High (100°-180°)	2108.2 Lm

BUG Ratings: B0 - U5 - G0

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Additional Pictures of Test Subject

Report of Test

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Test Distance	9.5 m
Ambient Temperature	25.0 °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 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.

LightLab INTERNATIONAL ALLENTOWN LLC

NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA001719-003B

Integrating Sphere Report

Catalog Number: ACC-WL66-MB-MO-K40-4

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

Osram PrevaLED - 144 white LEDs

One Osram OTi 85/120-277/2A3 DIM-1L LED driver labeled as 1020mA

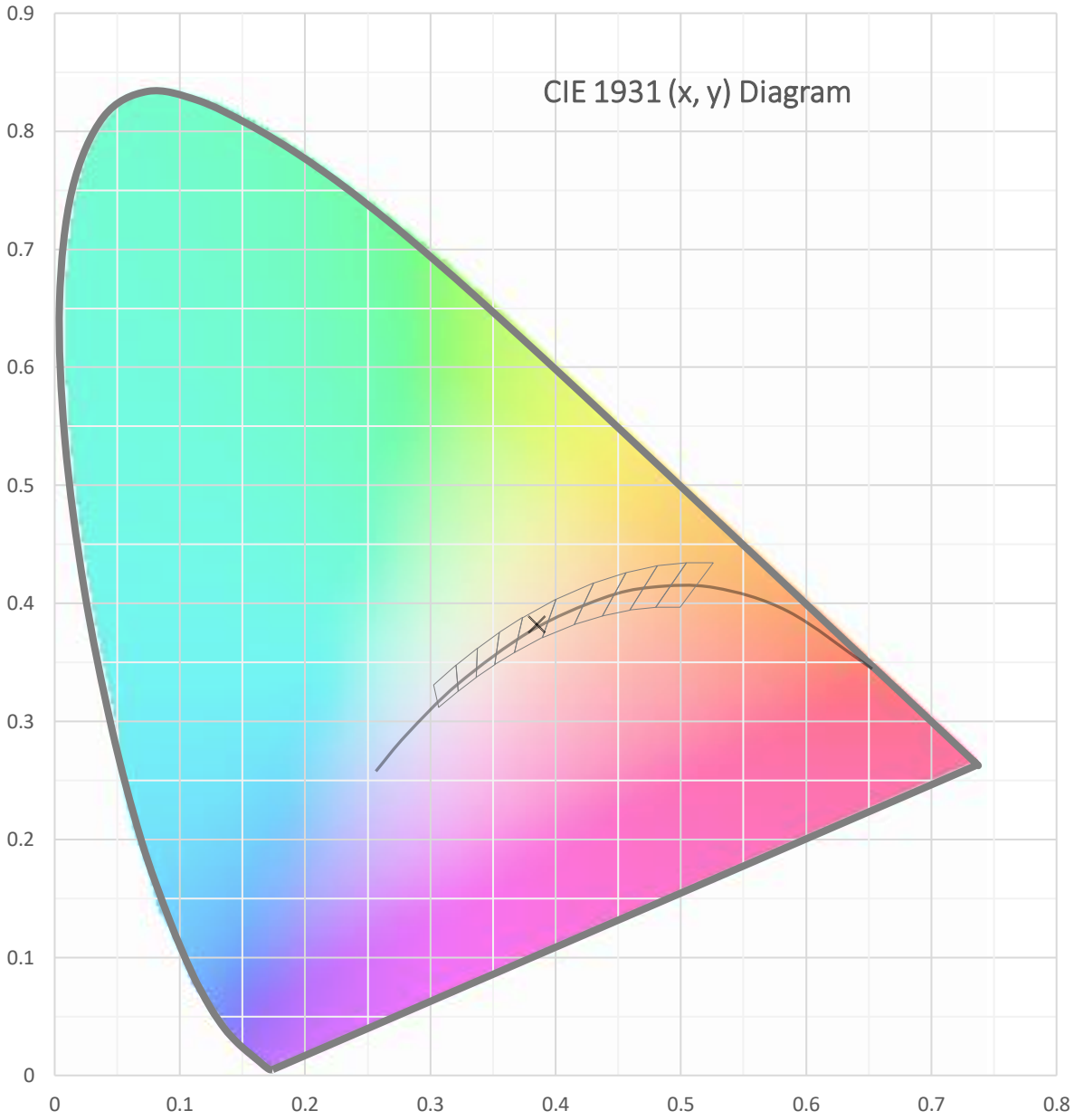
Performance Summary

Voltage	120.0	Vac
Current	0.1817	A
Power	20.46	W
Frequency	59.99	Hz
Power Factor	0.939	
Current THD	15.9	%
Total Luminous Flux	2208.4	lm
Efficacy	107.9	lm/W
Chromaticity (x,y)	(0.3848, 0.3823)	
(u',v')	(0.2258, 0.5046)	
Duv	0.0013	
CCT	3925	K
CRI (Ra)	83	
R9	8	
TM-30: Rf	82	
TM-30: Rg	97	
TM-30: Rcs,h1	-12	

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

Test date: 04/26/2022
Report date: 04/27/2022

Test Report Number: LLIA001719-003B



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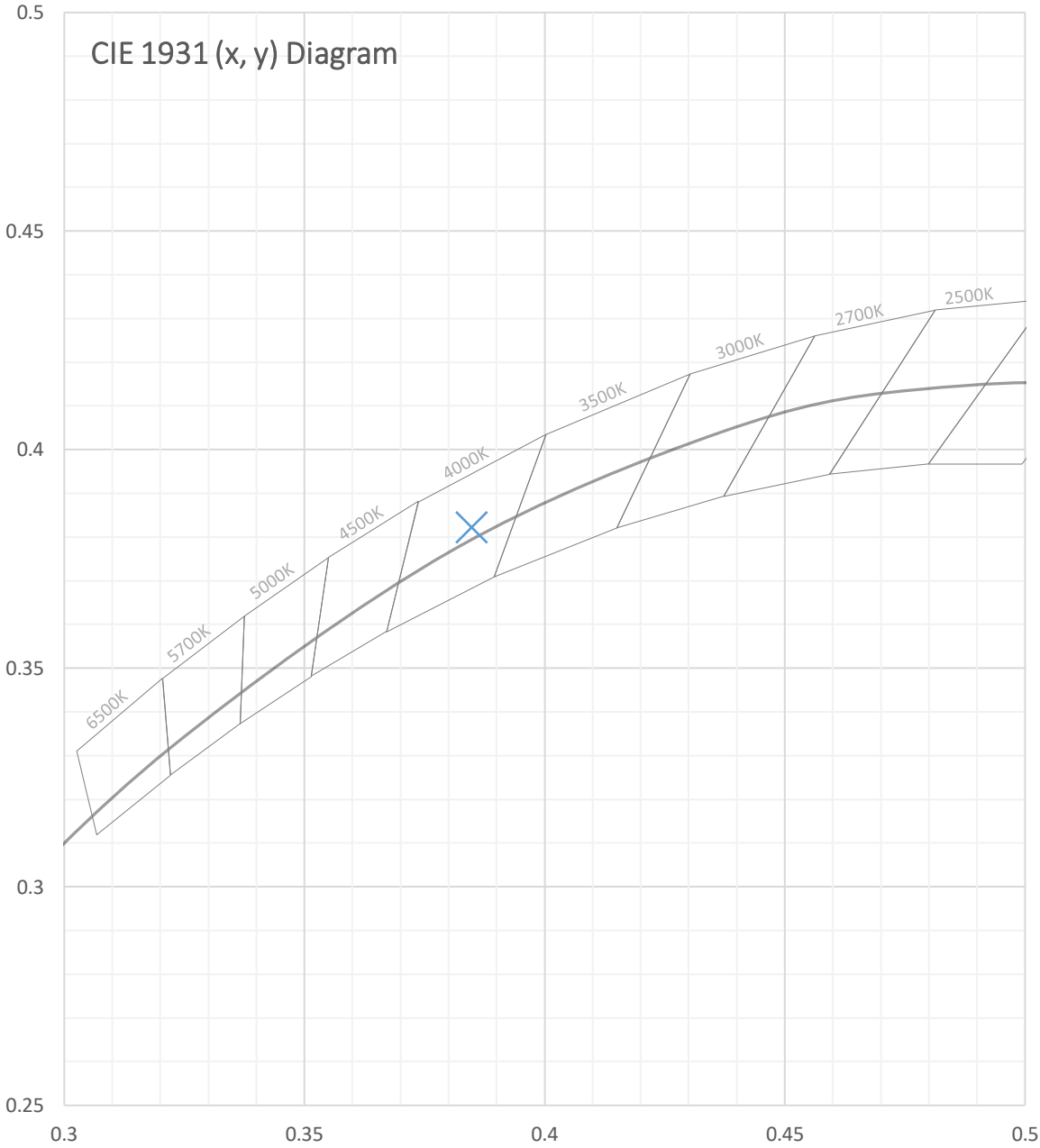


Test Report Number: LLIA001719-003B

Total Radiant Flux	6.633	W
Total Luminous Flux	2208.4	Lm
Chromaticity CIE 1931 (x, y)	(0.3848, 0.3823)	
Chromaticity CIE 1976 (u', v')	(0.2258, 0.5046)	
Correlated Color Temperature (CCT)	3925	K
Color Rendering Index (Ra)	83	
R1	82	
R2	88	
R3	94	
R4	84	
R5	82	
R6	84	
R7	87	
R8	65	
R9	8	
R10	72	
R11	84	
R12	59	
R13	84	
R14	96	
TM-30: Rf	82	
TM-30: Rg	97	
TM-30: Rcs,h1	-12	
Distance from Planckian Locus (Duv)	0.0013	
Scotopic/Photopic Ratio ǂ	1.646	

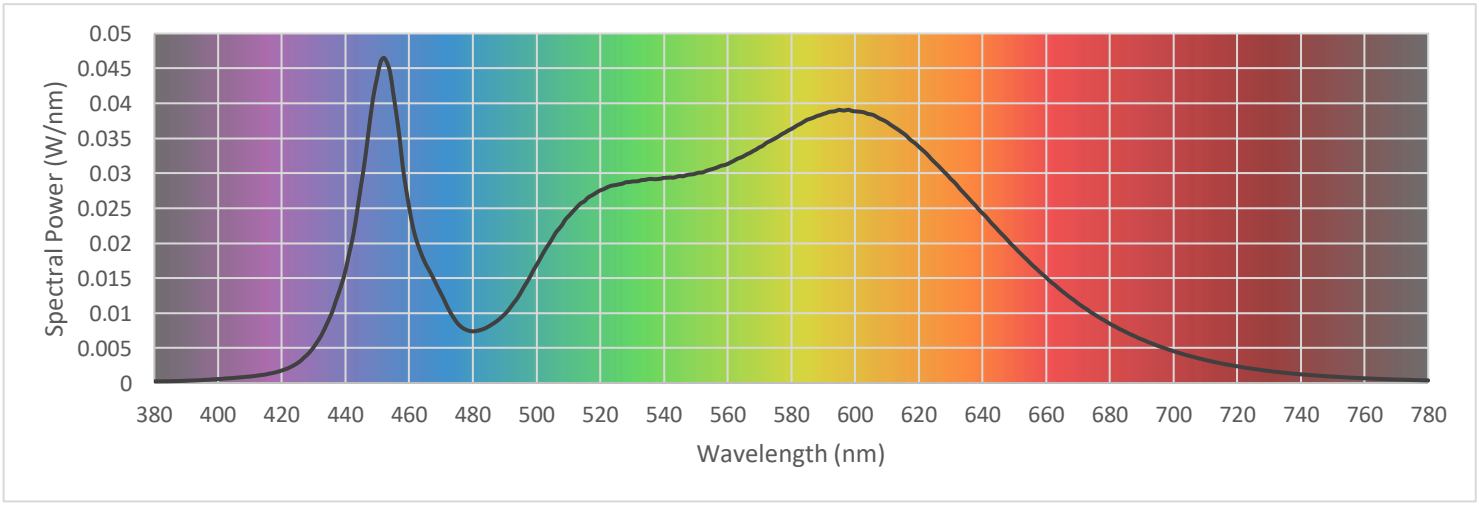
Electrical Data

Voltage	120.0	Vac
Current	0.1817	A
Power	20.46	W
Frequency	59.99	Hz
Power Factor	0.939	
Current THD	15.9	%

Test Report Number: LLIA001719-003B

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

380	0.000243	480	0.007384	580	0.036330	680	0.008477
385	0.000257	485	0.008101	585	0.037655	685	0.007303
390	0.000315	490	0.009844	590	0.038471	690	0.006248
395	0.000422	495	0.012901	595	0.039078	695	0.005332
400	0.000565	500	0.016873	600	0.038862	700	0.004557
405	0.000728	505	0.020691	605	0.038424	705	0.003876
410	0.000927	510	0.023832	610	0.037329	710	0.003292
415	0.001224	515	0.025975	615	0.035759	715	0.002807
420	0.001787	520	0.027550	620	0.033809	720	0.002386
425	0.002869	525	0.028326	625	0.031575	725	0.002018
430	0.005116	530	0.028819	630	0.029221	730	0.001716
435	0.009296	535	0.029152	635	0.026777	735	0.001458
440	0.016092	540	0.029345	640	0.024298	740	0.001238
445	0.028609	545	0.029604	645	0.021830	745	0.001063
450	0.043825	550	0.029961	650	0.019454	750	0.000912
455	0.041449	555	0.030575	655	0.017173	755	0.000780
460	0.025122	560	0.031332	660	0.015103	760	0.000672
465	0.017192	565	0.032433	665	0.013147	765	0.000575
470	0.012787	570	0.033714	670	0.011401	770	0.000493
475	0.008638	575	0.035011	675	0.009865	775	0.000426
						780	0.000368



Test Report Number: LLIA001719-003B

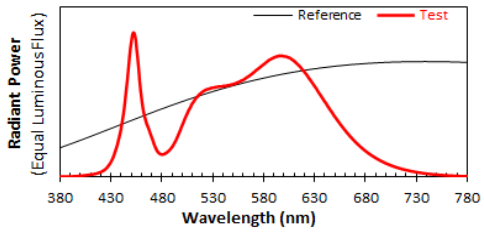
IES TM-30 Details

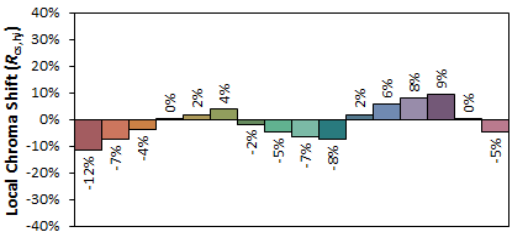
Source: LLIA001719-003B

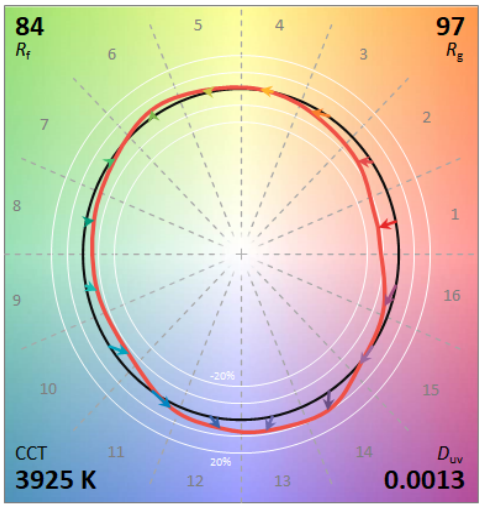
Manufacturer: Precision Architectural Lighting

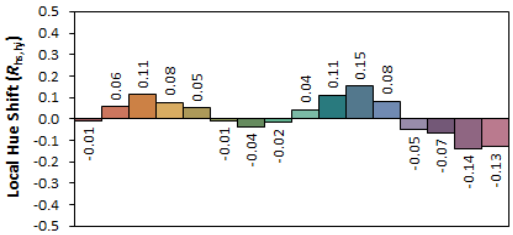
Date: 4/27/2022

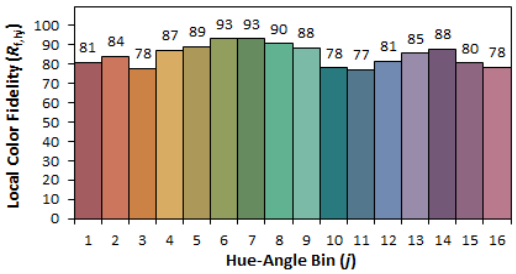
Model: ACC-WL66-MB-MO-K40-4

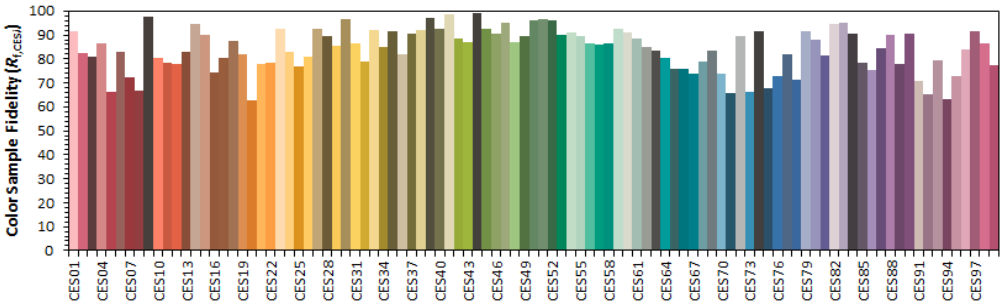












Notes:

x	0.3848
y	0.3822
u'	0.2258
v'	0.5046

CIE 13.3-1995 (CRI)

R_a	83
R_9	8

Test Report Number: LLIA001719-003B

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:	24.3 °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.

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