LightLab INTERNATIONAL ALLENTOWN LLC

NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA001979-003

Indoor Distribution Photometry Test Report

Catalog Number: LVT4-50PCS tested at 4000K and 30W settings
Surface/pendant mounted, formed white plastic housing, formed white painted steel LED tray/reflector, translucent white drop plastic lens with internal linear prisms.
896 white LEDs on two L3905(1157XX16XX1.0)448LED(14C16BX2)-CCT LED boards.
One Fosen FS-TMG041B1100TWCP LED driver, set for 4000K and 30W

Prepared For:
Topaz Lighting, A Southwire Company
925 Waverly Avenue
Holtsville, NY 11742, USA

Performance Summary					
Input Voltage	120.0	Vac	Luminous Flux	3952.2	Lumens
Input Current	0.2217	A	Total Efficacy	149.9	Lm/W
Input Power	26.37	W	Downward Flux	3660.3	Lumens
Frequency	60.00	Hz	Downward Flux	92.6	% of Total
Power Factor	0.991				
Current THD	8.5	%			

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

Test date: 01/09/2023
Report date: 01/09/2023

Signed: Michael L. Grather Digitally signed by Michael L. Grather Date: 2023.01.11 15:01:47 -05'00'

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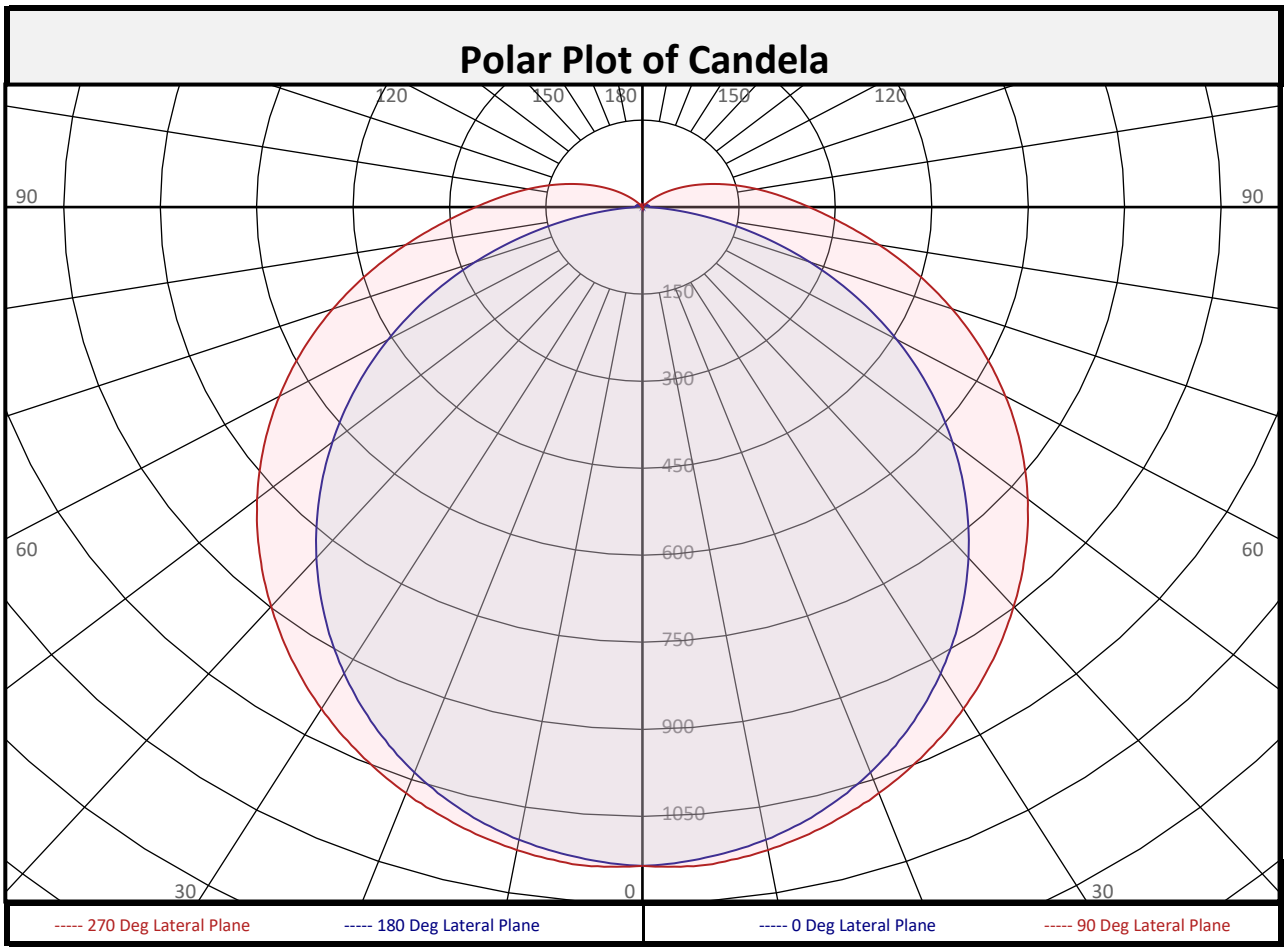

Zonal Flux Summary									
Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	107.4	2.7%	90-100	138.0	3.5%	0-20	414.8	10.5%
10-20	307.3	7.8%	100-110	83.1	2.1%	0-30	881.0	22.3%
20-30	466.3	11.8%	110-120	43.7	1.1%	0-40	1447	36.6%
30-40	566.1	14.3%	120-130	18.6	0.5%	0-60	2611	66.1%
40-50	598.4	15.1%	130-140	5.4	0.1%	0-80	3438	87.0%
50-60	565.5	14.3%	140-150	1.7	0.0%	10-90	3553	89.9%
60-70	476.6	12.1%	150-160	0.9	0.0%	20-50	1631	41.3%
70-80	350.7	8.9%	160-170	0.4	0.0%	40-90	2213	56.0%
80-90	222.1	5.6%	170-180	0.1	0.0%	60-90	1049	26.5%
0-90	3660	92.6%	90-180	291.9	7.4%	0-180	3952	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	1136	1136	1136	1136	1136	1136	1136	1136	1136
2.5	1132	1132	1133	1136	1138	1136	1133	1132	1132
5	1125	1126	1129	1134	1138	1134	1129	1126	1125
7.5	1118	1118	1122	1129	1133	1129	1122	1118	1118
10	1107	1108	1113	1121	1125	1121	1113	1108	1107
12.5	1093	1095	1102	1110	1115	1110	1102	1095	1093
15	1077	1079	1088	1098	1104	1098	1088	1079	1077
17.5	1059	1062	1071	1084	1089	1084	1071	1062	1059
20	1037	1040	1053	1068	1075	1068	1053	1040	1037
22.5	1012	1018	1032	1050	1058	1050	1032	1018	1012
25	987	992	1010	1031	1040	1031	1010	992	987
27.5	959	965	986	1009	1020	1009	986	965	959
30	928	936	959	987	998	987	959	936	928
32.5	896	905	932	963	976	963	932	905	896
35	861	872	902	938	951	938	902	872	861
37.5	826	837	873	910	925	910	873	837	826
40	789	802	841	882	898	882	841	802	789
42.5	751	766	808	852	871	852	808	766	751
45	711	728	774	823	842	823	774	728	711
47.5	671	689	739	792	813	792	739	689	671
50	629	650	704	761	782	761	704	650	629
52.5	587	610	668	728	751	728	668	610	587
55	544	570	632	695	719	695	632	570	544
57.5	501	529	596	661	686	661	596	529	501
60	457	488	560	627	652	627	560	488	457
62.5	412	446	523	593	617	593	523	446	412
65	367	405	487	557	583	557	487	405	367
67.5	322	365	450	522	548	522	450	365	322
70	277	325	414	487	512	487	414	325	277
72.5	232	287	379	451	477	451	379	287	232
75	189	249	344	417	442	417	344	249	189
77.5	147	214	310	382	407	382	310	214	147
80	107	180	277	349	374	349	277	180	107
82.5	71	149	247	317	342	317	247	149	71
85	41	122	218	287	312	287	218	122	41
87.5	20	98	193	261	284	261	193	98	20
90	12	80	171	237	260	237	171	80	12

16 lateral half-planes of data were acquired, 22.5 degree increments shown.

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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	12	80	171	237	260	237	171	80	12
92.5	11	67	153	216	238	216	153	67	11
95	11	55	137	197	218	197	137	55	11
97.5	10	45	121	179	198	179	121	45	10
100	10	36	107	161	181	161	107	36	10
102.5	9	29	94	145	164	145	94	29	9
105	9	22	81	130	148	130	81	22	9
107.5	8	17	70	115	132	115	70	17	8
110	8	13	59	101	117	101	59	13	8
112.5	7	9	49	88	104	88	49	9	7
115	7	7	41	76	91	76	41	7	7
117.5	6	7	32	65	79	65	32	7	6
120	6	6	25	55	67	55	25	6	6
122.5	5	6	19	45	57	45	19	6	5
125	5	5	14	36	47	36	14	5	5
127.5	4	5	9	28	37	28	9	5	4
130	4	4	6	21	29	21	6	4	4
132.5	4	4	4	15	22	15	4	4	4
135	3	3	4	9	15	9	4	3	3
137.5	3	3	4	5	9	5	4	3	3
140	2	2	3	4	5	4	3	2	2
142.5	2	2	3	4	4	4	3	2	2
145	2	2	3	4	4	4	3	2	2
147.5	1	1	2	3	4	3	2	1	1
150	1	1	2	3	3	3	2	1	1
152.5	1	1	2	3	3	3	2	1	1
155	1	1	2	2	3	2	2	1	1
157.5	1	1	2	2	2	2	2	1	1
160	1	1	2	2	2	2	2	1	1
162.5	1	1	1	2	2	2	1	1	1
165	1	1	1	2	2	2	1	1	1
167.5	1	1	1	2	2	2	1	1	1
170	1	1	1	2	2	2	1	1	1
172.5	1	1	1	1	2	1	1	1	1
175	1	1	1	1	1	1	1	1	1
177.5	1	1	1	1	1	1	1	1	1
180	0	0	0	0	0	0	0	0	0

16 lateral half-planes of data were acquired, 22.5 degree increments shown.

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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	117	117	117	117		114	114	114	114		107	107	107		101	101	101		95	95	95	93
1	105	99	94	90		101	96	92	88		91	87	84		86	83	80		81	78	76	73
2	95	86	78	72		91	83	76	70		78	73	68		74	69	65		70	66	62	60
3	86	75	66	59		83	73	64	58		68	62	56		65	59	54		61	56	52	50
4	79	66	57	49		76	64	55	49		61	53	47		57	51	46		54	49	44	42
5	72	59	49	42		69	57	48	42		54	46	41		51	45	39		49	43	38	36
6	66	53	43	37		64	51	43	36		49	41	35		46	40	34		44	38	34	31
7	62	48	39	32		59	46	38	32		44	37	31		42	35	30		40	34	30	28
8	57	43	35	29		55	42	34	28		40	33	28		39	32	27		37	31	27	24
9	53	40	31	26		52	39	31	25		37	30	25		36	29	24		34	28	24	22
10	50	37	29	23		48	36	28	23		34	27	23		33	27	22		32	26	22	20

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.

Circle of Light Plot

Height(ft)	Illuminance at Nadir (fc)	Ground-level distance to half-of-nadir illuminance (ft) 0-180 deg	90-270 deg
6.0	31.5	7.30	7.85
8.0	17.7	9.74	10.46
10.0	11.4	12.17	13.08
12.0	7.9	14.61	15.70
14.0	5.8	17.04	18.31
16.0	4.4	19.47	20.93

Spacing Criterion

0 deg:	1.2
90 deg:	1.3
180 deg:	1.2
270 deg:	1.3

Average Luminance (cd/m^2)

	0 deg Plane	45 deg Plane	90 deg Plane
0	9337	9337	9337
45	8033	7124	7286
55	7488	6584	6909
65	6726	6047	6527
75	5404	5506	6145
85	2915	5127	5964

Beam and Field Angle

0-180 Degree Plane

Beam Angle: 107.1°

Field Angle: 159.1°

90-270 Degree Plane

Beam Angle: 131.9°

Field Angle: 221.3°

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UGR Table - Corrected

Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	16.8	18.4	17.3	18.9	19.3	19.3	20.9	19.8	21.3	21.8
	3H	18.4	19.8	18.8	20.3	20.8	21.8	23.3	22.3	23.7	24.3
	4H	18.9	20.2	19.4	20.7	21.2	23.1	24.4	23.6	24.9	25.4
	6H	19.2	20.4	19.7	20.9	21.5	24.3	25.6	24.8	26.1	26.6
	8H	19.2	20.4	19.8	20.9	21.5	24.9	26.1	25.5	26.7	27.2
	12H	19.2	20.4	19.8	20.9	21.5	25.6	26.8	26.2	27.3	27.9
4H	2H	17.8	19.2	18.3	19.7	20.2	19.7	21.1	20.2	21.6	22.1
	3H	19.6	20.7	20.1	21.3	21.8	22.5	23.7	23.0	24.2	24.7
	4H	20.2	21.3	20.7	21.8	22.4	23.9	24.9	24.4	25.5	26.1
	6H	20.6	21.6	21.2	22.1	22.7	25.3	26.3	25.9	26.8	27.4
	8H	20.8	21.6	21.3	22.2	22.8	26.1	26.9	26.6	27.5	28.1
	12H	20.8	21.6	21.4	22.2	22.8	26.9	27.7	27.5	28.3	28.9
8H	4H	21.0	21.9	21.5	22.4	23.0	24.1	25.0	24.7	25.5	26.2
	6H	21.6	22.3	22.2	22.9	23.6	25.7	26.5	26.3	27.1	27.7
	8H	21.8	22.5	22.4	23.1	23.7	26.6	27.3	27.2	27.9	28.5
	12H	21.9	22.5	22.5	23.1	23.8	27.6	28.2	28.2	28.8	29.5
12H	4H	21.2	22.0	21.8	22.6	23.2	24.1	24.9	24.7	25.5	26.1
	6H	21.9	22.6	22.5	23.2	23.9	25.8	26.4	26.4	27.0	27.7
	8H	22.2	22.8	22.8	23.4	24.1	26.7	27.3	27.3	27.9	28.6

Maximum UGR = 29.5

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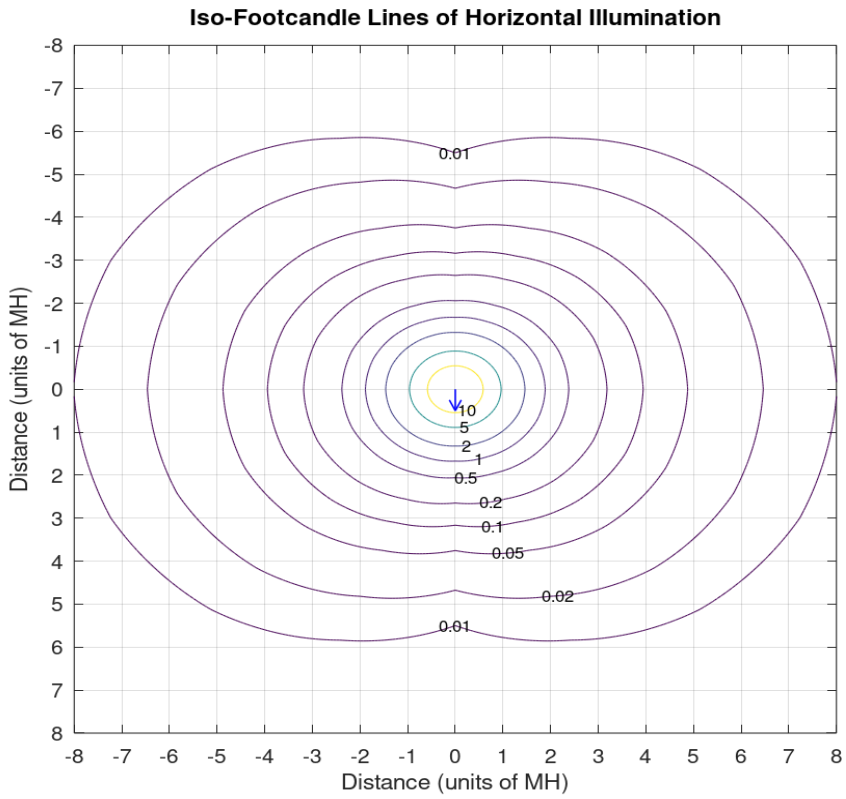
Iso-Illuminance Plot



The isofootcandle values shown in the plot above are based on a mounting height of h = 8.0 feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution of room reflections.

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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 ‡ 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.