LightLab INTERNATIONAL ALLENTOWN LLC

NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA001979-002

Indoor Distribution Photometry Test Report

Catalog Number: LVT4-40-50K
Surface/pendant mounted, formed white plastic housing, formed white painted steel LED tray/reflector, translucent white drop plastic lens with internal linear prisms.
280 white LEDs on one L3387(1150.0*32.0*1.0mm)280LED40C7B LED board.
One Fosen FS-TMF015B310TC LED driver.

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

Performance Summary					
Input Voltage	120.0	Vac	Luminous Flux	5253.5	Lumens
Input Current	0.3102	A	Total Efficacy	142.5	Lm/W
Input Power	36.87	W	Downward Flux	4907.6	Lumens
Frequency	60.00	Hz	Downward Flux	93.4	% of Total
Power Factor	0.991				
Current THD	6.1	%			

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 15:01:19 -05'00'

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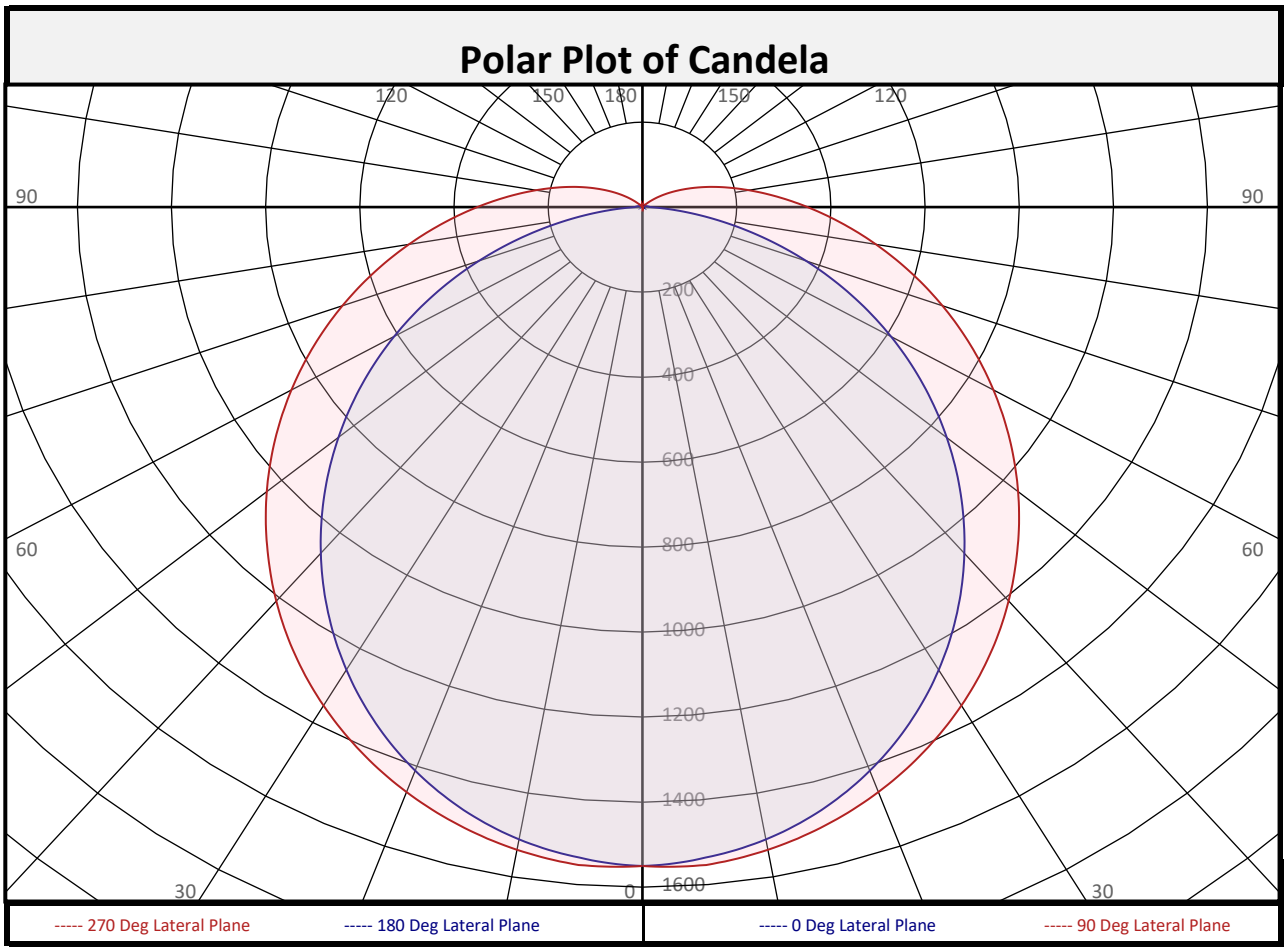

Zonal Flux Summary									
Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	146.7	2.8%	90-100	177.2	3.4%	0-20	565.7	10.8%
10-20	419.0	8.0%	100-110	97.5	1.9%	0-30	1200	22.8%
20-30	633.8	12.1%	110-120	46.1	0.9%	0-40	1965	37.4%
30-40	765.4	14.6%	120-130	16.3	0.3%	0-60	3519	67.0%
40-50	802.7	15.3%	130-140	4.4	0.1%	0-80	4610	87.8%
50-60	751.2	14.3%	140-150	2.4	0.0%	10-90	4761	90.6%
60-70	628.4	12.0%	150-160	1.2	0.0%	20-50	2202	41.9%
70-80	463.1	8.8%	160-170	0.6	0.0%	40-90	2943	56.0%
80-90	297.2	5.7%	170-180	0.2	0.0%	60-90	1389	26.4%
0-90	4908	93.4%	90-180	345.9	6.6%	0-180	5253	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	1551	1551	1551	1551	1551	1551	1551	1551	1551
2.5	1546	1546	1548	1551	1554	1551	1548	1546	1546
5	1537	1537	1541	1549	1554	1549	1541	1537	1537
7.5	1526	1526	1532	1541	1546	1541	1532	1526	1526
10	1511	1512	1519	1530	1536	1530	1519	1512	1511
12.5	1492	1494	1503	1515	1522	1515	1503	1494	1492
15	1469	1472	1484	1498	1505	1498	1484	1472	1469
17.5	1442	1446	1461	1478	1486	1478	1461	1446	1442
20	1411	1417	1434	1455	1465	1455	1434	1417	1411
22.5	1378	1384	1405	1430	1440	1430	1405	1384	1378
25	1341	1349	1373	1402	1414	1402	1373	1349	1341
27.5	1301	1310	1339	1372	1385	1372	1339	1310	1301
30	1258	1269	1302	1339	1354	1339	1302	1269	1258
32.5	1212	1225	1262	1304	1321	1304	1262	1225	1212
35	1165	1179	1221	1267	1286	1267	1221	1179	1165
37.5	1115	1131	1178	1229	1249	1229	1178	1131	1115
40	1063	1082	1133	1188	1209	1188	1133	1082	1063
42.5	1010	1031	1086	1146	1169	1146	1086	1031	1010
45	955	978	1039	1102	1127	1102	1039	978	955
47.5	900	925	990	1058	1084	1058	990	925	900
50	843	870	940	1013	1041	1013	940	870	843
52.5	786	815	889	967	997	967	889	815	786
55	727	759	839	920	952	920	839	759	727
57.5	669	704	789	874	906	874	789	704	669
60	609	647	738	827	861	827	738	647	609
62.5	549	591	688	780	814	780	688	591	549
65	489	535	639	734	769	734	639	535	489
67.5	429	480	590	687	723	687	590	480	429
70	369	427	543	641	678	641	543	427	369
72.5	310	375	497	596	633	596	497	375	310
75	252	325	452	552	588	552	452	325	252
77.5	196	278	408	509	545	509	408	278	196
80	144	235	367	468	503	468	367	235	144
82.5	96	195	328	427	463	427	328	195	96
85	56	159	292	389	423	389	292	159	56
87.5	28	128	258	353	386	353	258	128	28
90	16	103	227	318	351	318	227	103	16

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

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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	16	103	227	318	351	318	227	103	16
92.5	14	82	198	287	318	287	198	82	14
95	13	64	173	257	286	257	173	64	13
97.5	12	50	149	229	257	229	149	50	12
100	10	38	128	203	230	203	128	38	10
102.5	9	29	109	179	204	179	109	29	9
105	8	21	92	157	181	157	92	21	8
107.5	7	14	76	136	159	136	76	14	7
110	7	10	62	117	138	117	62	10	7
112.5	6	8	50	99	119	99	50	8	6
115	5	7	39	83	101	83	39	7	5
117.5	4	6	29	69	85	69	29	6	4
120	4	6	21	55	70	55	21	6	4
122.5	3	5	14	43	57	43	14	5	3
125	3	4	8	33	44	33	8	4	3
127.5	2	4	6	23	33	23	6	4	2
130	2	3	6	15	23	15	6	3	2
132.5	2	3	5	9	15	9	5	3	2
135	2	3	5	7	9	7	5	3	2
137.5	2	3	5	6	7	6	5	3	2
140	2	3	4	6	7	6	4	3	2
142.5	2	2	4	6	6	6	4	2	2
145	2	2	4	5	6	5	4	2	2
147.5	1	2	4	5	5	5	4	2	1
150	1	2	3	4	5	4	3	2	1
152.5	1	2	3	4	4	4	3	2	1
155	1	2	3	3	4	3	3	2	1
157.5	1	2	2	3	3	3	2	2	1
160	2	2	2	3	3	3	2	2	2
162.5	2	2	2	3	3	3	2	2	2
165	2	2	2	3	3	3	2	2	2
167.5	2	2	2	2	2	2	2	2	2
170	2	2	2	2	2	2	2	2	2
172.5	2	2	2	2	2	2	2	2	2
175	2	2	2	2	2	2	2	2	2
177.5	2	2	2	2	2	2	2	2	2
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		96	96	96	93
1	105	100	95	90		102	97	92	88		91	87	84		86	83	80		81	79	77	74
2	95	86	78	72		92	83	77	71		79	73	68		74	70	65		70	67	63	60
3	86	75	66	59		83	73	65	58		69	62	56		65	59	55		62	57	53	50
4	79	66	57	50		76	64	56	49		61	54	48		58	51	46		55	49	45	43
5	72	59	50	43		70	57	49	42		55	47	41		52	45	40		49	44	39	37
6	67	53	44	37		64	52	43	37		49	41	36		47	40	35		45	39	34	32
7	62	48	39	33		60	47	38	32		45	37	32		43	36	31		41	35	30	28
8	58	44	35	29		56	43	34	29		41	33	28		39	32	28		37	31	27	25
9	54	40	32	26		52	39	31	26		38	30	25		36	29	25		35	29	24	22
10	50	37	29	24		49	36	28	23		35	28	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	43.1	7.25	7.79
8.0	24.2	9.67	10.39
10.0	15.5	12.09	12.99
12.0	10.8	14.51	15.59
14.0	7.9	16.93	18.18
16.0	6.1	19.34	20.78

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	14532	14532	14532
45	12338	10831	11004
55	11450	9881	10298
65	10259	8959	9654
75	8306	8126	9135
85	4640	7646	8959

Beam and Field Angle

0-180 Degree Plane

Beam Angle: 105.7°

Field Angle: 158.9°

90-270 Degree Plane

Beam Angle: 129.1°

Field Angle: 215.8°

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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	18.3	19.8	18.7	20.3	20.8	20.7	22.3	21.2	22.7	23.2
	3H	19.8	21.2	20.3	21.7	22.2	23.3	24.7	23.7	25.1	25.7
	4H	20.3	21.6	20.8	22.1	22.6	24.5	25.8	25.0	26.3	26.8
	6H	20.6	21.8	21.1	22.3	22.9	25.8	27.0	26.3	27.5	28.1
	8H	20.6	21.8	21.1	22.3	22.9	26.4	27.6	26.9	28.1	28.7
	12H	20.6	21.8	21.2	22.3	22.9	27.1	28.3	27.7	28.8	29.4
4H	2H	19.2	20.6	19.7	21.0	21.6	21.1	22.5	21.7	23.0	23.5
	3H	21.0	22.1	21.5	22.6	23.2	23.9	25.0	24.4	25.6	26.1
	4H	21.6	22.6	22.1	23.2	23.8	25.3	26.3	25.8	26.9	27.5
	6H	22.0	22.9	22.6	23.5	24.1	26.8	27.7	27.3	28.3	28.9
	8H	22.1	23.0	22.7	23.5	24.2	27.5	28.4	28.1	29.0	29.6
	12H	22.2	23.0	22.8	23.6	24.2	28.4	29.2	29.0	29.8	30.4
8H	4H	22.3	23.2	22.9	23.8	24.4	25.5	26.4	26.1	26.9	27.6
	6H	22.9	23.7	23.5	24.3	24.9	27.2	27.9	27.8	28.5	29.1
	8H	23.2	23.8	23.8	24.4	25.1	28.1	28.7	28.7	29.3	30.0
	12H	23.3	23.9	23.9	24.5	25.2	29.1	29.7	29.7	30.3	31.0
12H	4H	22.6	23.3	23.2	23.9	24.6	25.5	26.3	26.1	26.9	27.5
	6H	23.3	24.0	23.9	24.5	25.2	27.2	27.9	27.8	28.5	29.1
	8H	23.6	24.2	24.2	24.8	25.5	28.2	28.8	28.8	29.4	30.1

Maximum UGR = 31.0

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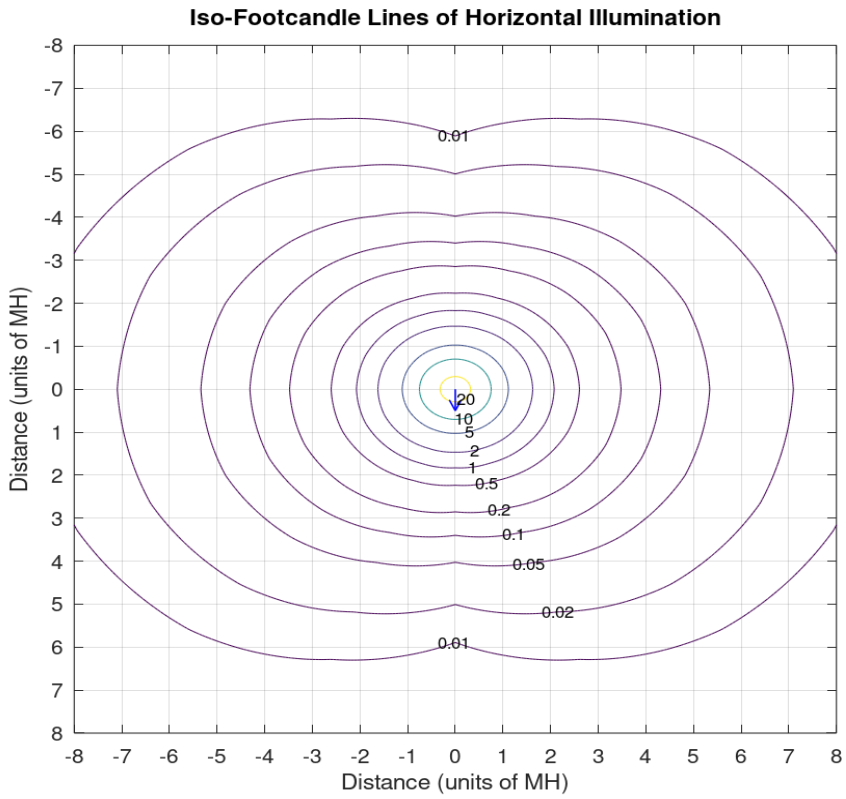
Iso-Illuminance Plot



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.