LightLab INTERNATIONAL ALLENTOWN LLC

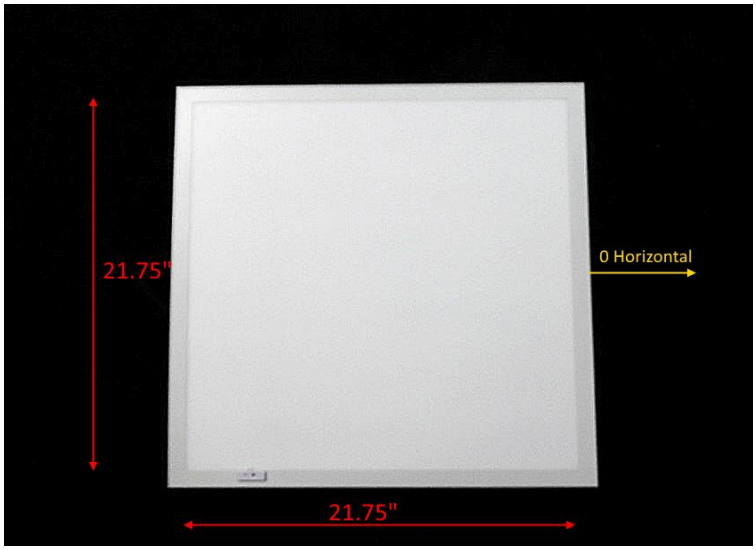
NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA002377-002

Indoor Distribution Photometry Test Report

Catalog Number: PL22-30WPCTS-D-EM - 25 Watt Setting
Recessed mounted, formed white painted steel housing/reflector,
white painted aluminum frame, diffuse white plastic enclosure.
120 white LEDs on six white circuit boards with optic below each LED
One Streamer Combined LED Driver & Emergency Conversion Module YH07-2008WL-XX



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

Performance Summary					
Input Voltage	120.0	Vac	Luminous Flux	3322.1	Lumens
Input Current	0.1925	A	Total Efficacy	147.6	Lm/W
Input Power	22.51	W	Downward Flux	3322.1	Lumens
Frequency	60.00	Hz	Downward Flux	100.0	% of Total
Power Factor	0.974				
Current THD	9.5	%			

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

Test date: 07/12/2024
Report date: 07/23/2024

Signed: Michael L. Grather Digitally signed by Michael L. Grather Date: 2024.07.23 15:48:31 -04'00'

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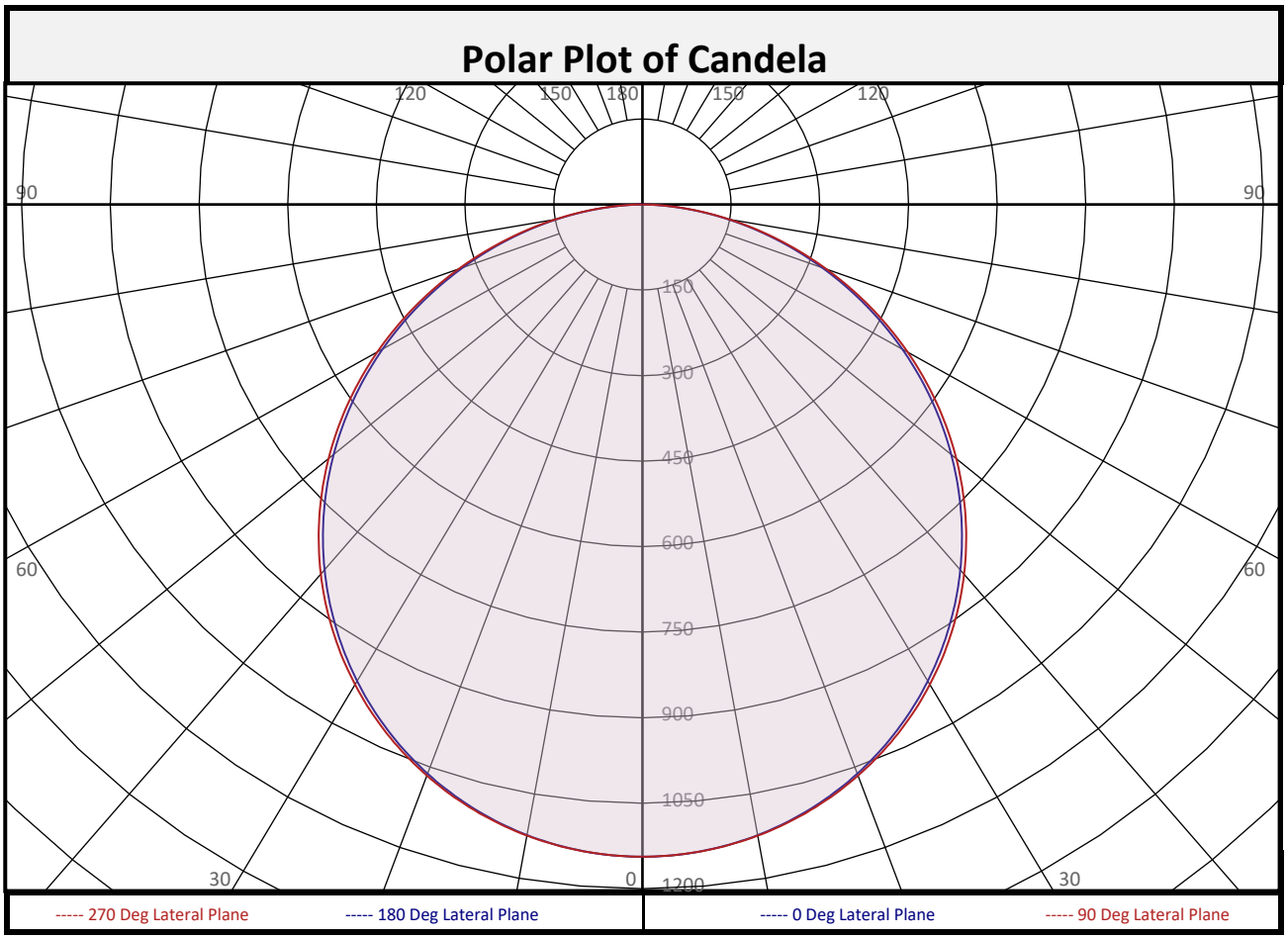

Zonal Flux Summary

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	108.3	3.3%	90-100	0.0	0.0%	0-20	418.4	12.6%
10-20	310.1	9.3%	100-110	0.0	0.0%	0-30	888.8	26.8%
20-30	470.4	14.2%	110-120	0.0	0.0%	0-40	1457	43.9%
30-40	568.5	17.1%	120-130	0.0	0.0%	0-60	2587	77.9%
40-50	591.8	17.8%	130-140	0.0	0.0%	0-80	3251	97.9%
50-60	537.9	16.2%	140-150	0.0	0.0%	10-90	3214	96.7%
60-70	415.8	12.5%	150-160	0.0	0.0%	20-50	1631	49.1%
70-80	248.0	7.5%	160-170	0.0	0.0%	40-90	1865	56.1%
80-90	71.4	2.1%	170-180	0.0	0.0%	60-90	735.1	22.1%
0-90	3322	100.0%	90-180	0.0	0.0%	0-180	3322	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	1144	1144	1144	1144	1144	1144	1144	1144	1144
2.5	1143	1143	1143	1143	1143	1143	1143	1143	1143
5	1139	1139	1139	1139	1139	1139	1139	1139	1139
7.5	1132	1132	1133	1133	1133	1133	1133	1132	1132
10	1123	1123	1124	1124	1124	1124	1124	1123	1123
12.5	1112	1112	1113	1113	1113	1113	1113	1112	1112
15	1098	1098	1099	1100	1099	1100	1099	1098	1098
17.5	1081	1082	1083	1084	1084	1084	1083	1082	1081
20	1062	1063	1064	1065	1066	1065	1064	1063	1062
22.5	1041	1042	1044	1045	1046	1045	1044	1042	1041
25	1018	1019	1021	1022	1024	1022	1021	1019	1018
27.5	993	994	996	998	999	998	996	994	993
30	965	966	969	971	972	971	969	966	965
32.5	936	937	940	942	944	942	940	937	936
35	905	906	909	912	913	912	909	906	905
37.5	871	873	876	879	881	879	876	873	871
40	836	838	842	845	846	845	842	838	836
42.5	800	802	805	809	810	809	805	802	800
45	762	764	768	771	773	771	768	764	762
47.5	723	724	728	732	734	732	728	724	723
50	682	684	688	691	693	691	688	684	682
52.5	640	641	645	649	651	649	645	641	640
55	597	598	602	606	608	606	602	598	597
57.5	553	554	558	562	563	562	558	554	553
60	508	509	513	516	518	516	513	509	508
62.5	462	463	466	470	471	470	466	463	462
65	416	417	420	423	425	423	420	417	416
67.5	370	371	373	377	378	377	373	371	370
70	323	324	327	330	331	330	327	324	323
72.5	277	278	280	283	284	283	280	278	277
75	232	232	234	236	237	236	234	232	232
77.5	187	188	189	191	192	191	189	188	187
80	144	145	146	147	148	147	146	145	144
82.5	102	102	104	105	105	105	104	102	102
85	61	61	63	64	65	64	63	61	61
87.5	24	25	26	27	28	27	26	25	24
90	0	0	0	1	1	1	0	0	0

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	0	0	0	1	1	1	0	0	0
	92.5	0	0	0	0	0	0	0	0	0
	95	0	0	0	0	0	0	0	0	0
	97.5	0	0	0	0	0	0	0	0	0
	100	0	0	0	0	0	0	0	0	0
	102.5	0	0	0	0	0	0	0	0	0
	105	0	0	0	0	0	0	0	0	0
	107.5	0	0	0	0	0	0	0	0	0
	110	0	0	0	0	0	0	0	0	0
	112.5	0	0	0	0	0	0	0	0	0
	115	0	0	0	0	0	0	0	0	0
	117.5	0	0	0	0	0	0	0	0	0
	120	0	0	0	0	0	0	0	0	0
	122.5	0	0	0	0	0	0	0	0	0
	125	0	0	0	0	0	0	0	0	0
	127.5	0	0	0	0	0	0	0	0	0
	130	0	0	0	0	0	0	0	0	0
	132.5	0	0	0	0	0	0	0	0	0
	135	0	0	0	0	0	0	0	0	0
	137.5	0	0	0	0	0	0	0	0	0
	140	0	0	0	0	0	0	0	0	0
	142.5	0	0	0	0	0	0	0	0	0
	145	0	0	0	0	0	0	0	0	0
	147.5	0	0	0	0	0	0	0	0	0
	150	0	0	0	0	0	0	0	0	0
	152.5	0	0	0	0	0	0	0	0	0
	155	0	0	0	0	0	0	0	0	0
	157.5	0	0	0	0	0	0	0	0	0
	160	0	0	0	0	0	0	0	0	0
	162.5	0	0	0	0	0	0	0	0	0
	165	0	0	0	0	0	0	0	0	0
	167.5	0	0	0	0	0	0	0	0	0
	170	0	0	0	0	0	0	0	0	0
	172.5	0	0	0	0	0	0	0	0	0
	175	0	0	0	0	0	0	0	0	0
	177.5	0	0	0	0	0	0	0	0	0
	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	119	119	119	119		116	116	116	116		111	111	111		106	106	106		102	102	102	100
1	108	104	99	95		106	101	97	94		97	94	91		93	90	88		89	87	85	83
2	98	90	83	77		96	88	82	76		85	79	74		81	77	73		78	74	71	69
3	90	79	71	64		87	77	70	63		74	68	62		72	66	61		69	64	60	58
4	82	70	61	54		80	68	60	54		66	59	53		64	57	52		61	56	51	49
5	75	62	53	46		73	61	53	46		59	51	46		57	50	45		55	49	45	42
6	70	56	47	40		68	55	47	40		53	46	40		52	45	40		50	44	39	37
7	64	51	42	36		63	50	42	36		48	41	35		47	40	35		46	39	35	33
8	60	46	38	32		58	46	37	32		44	37	31		43	36	31		42	36	31	29
9	56	42	34	29		55	42	34	29		41	33	28		40	33	28		39	33	28	26
10	53	39	31	26		51	39	31	26		38	31	26		37	30	26		36	30	25	24

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	31.8	7.53	7.58
8.0	17.9	10.03	10.10
10.0	11.4	12.54	12.63
12.0	7.9	15.05	15.16
14.0	5.8	17.56	17.68
16.0	4.5	20.07	20.21

Spacing Criterion

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

Average Luminance (cd/m^2)

	0 deg Plane	45 deg Plane	90 deg Plane
0	3748	3748	3748
45	3531	3557	3580
55	3408	3439	3470
65	3224	3258	3294
75	2934	2965	3006
85	2293	2364	2434

Beam and Field Angle

0-180 Degree Plane

Beam Angle: 112.8°

Field Angle: 163.5°

90-270 Degree Plane

Beam Angle: 114.0°

Field Angle: 163.9°

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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	16.4	18.1	16.8	18.4	18.7	16.5	18.2	16.9	18.5	18.8
	3H	18.3	19.8	18.7	20.1	20.5	18.4	19.9	18.8	20.3	20.6
	4H	19.0	20.4	19.4	20.8	21.2	19.2	20.6	19.6	20.9	21.3
	6H	19.6	20.9	20.0	21.3	21.7	19.7	21.0	20.1	21.4	21.8
	8H	19.8	21.0	20.2	21.4	21.8	19.9	21.2	20.3	21.5	21.9
	12H	19.9	21.1	20.3	21.5	21.9	20.0	21.2	20.5	21.6	22.0
4H	2H	17.1	18.5	17.5	18.9	19.2	17.2	18.6	17.6	18.9	19.3
	3H	19.2	20.4	19.6	20.8	21.2	19.3	20.5	19.7	20.9	21.3
	4H	20.1	21.1	20.5	21.5	22.0	20.2	21.2	20.6	21.7	22.1
	6H	20.7	21.7	21.2	22.1	22.6	20.9	21.8	21.3	22.2	22.7
	8H	21.0	21.9	21.4	22.3	22.8	21.1	22.0	21.5	22.4	22.9
	12H	21.2	21.9	21.6	22.4	22.9	21.3	22.1	21.8	22.6	23.0
8H	4H	20.4	21.3	20.9	21.7	22.2	20.5	21.4	20.9	21.8	22.3
	6H	21.2	22.0	21.7	22.4	22.9	21.3	22.1	21.8	22.5	23.0
	8H	21.5	22.2	22.0	22.7	23.2	21.6	22.3	22.2	22.8	23.3
	12H	21.8	22.4	22.3	22.9	23.4	21.9	22.5	22.4	23.0	23.5
12H	4H	20.5	21.2	20.9	21.7	22.2	20.5	21.3	21.0	21.8	22.3
	6H	21.3	22.0	21.8	22.4	23.0	21.4	22.1	21.9	22.5	23.1
	8H	21.7	22.3	22.2	22.7	23.3	21.8	22.4	22.3	22.9	23.4

Maximum UGR = 23.5

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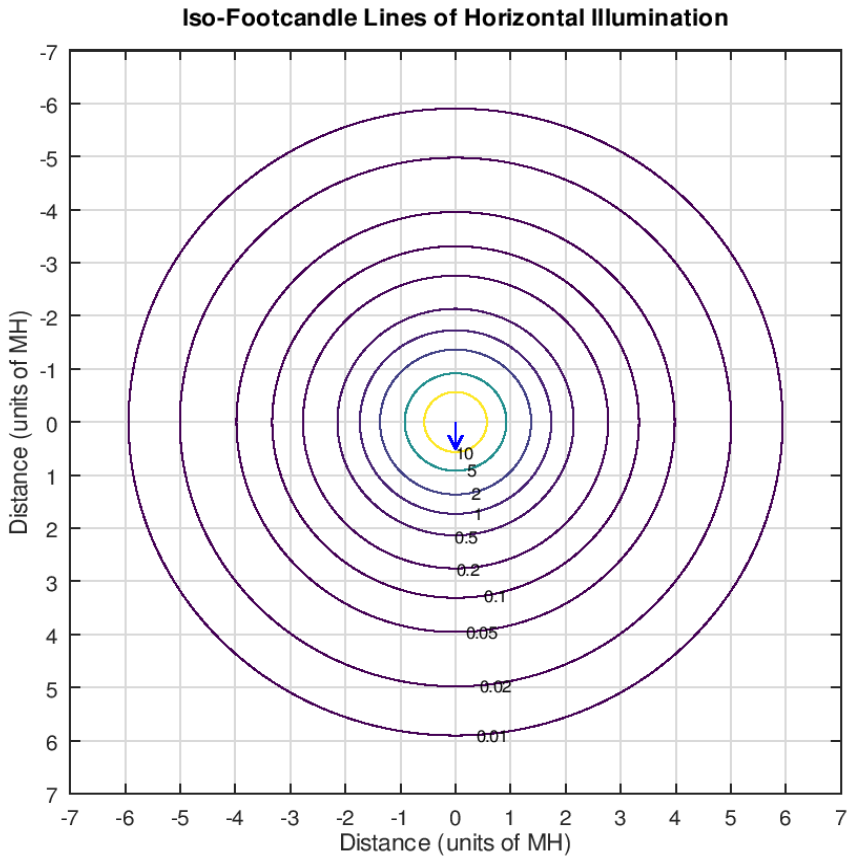
Iso-Illuminance Plot



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	24.5 °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.