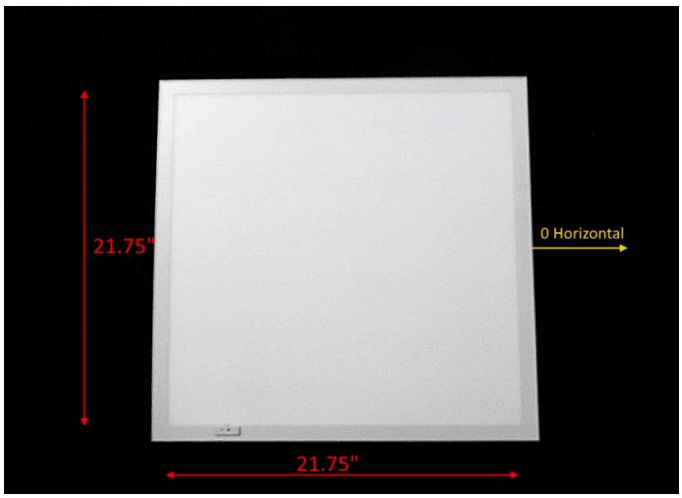
LightLab INTERNATIONAL ALLENTOWN LLC

Report of Test

LLIA002377-004

Indoor Distribution Photometry Test Report

Catalog Number: PL22-30WPCTS-D-EM - Emergency 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
Luminaire was operated using emergency battery power



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

Performance Summary		
Luminous Flux	1442.7	Lumens
Downward Flux	1442.7	Lumens
Downward Flux	100.0	% of Total

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

Test date: 07/11/2024
Report date: 07/23/2024

Signed: Michael L. Grather — Digitally signed by Michael L. Grather Date: 2024.07.23 15:49:35 -04'00'

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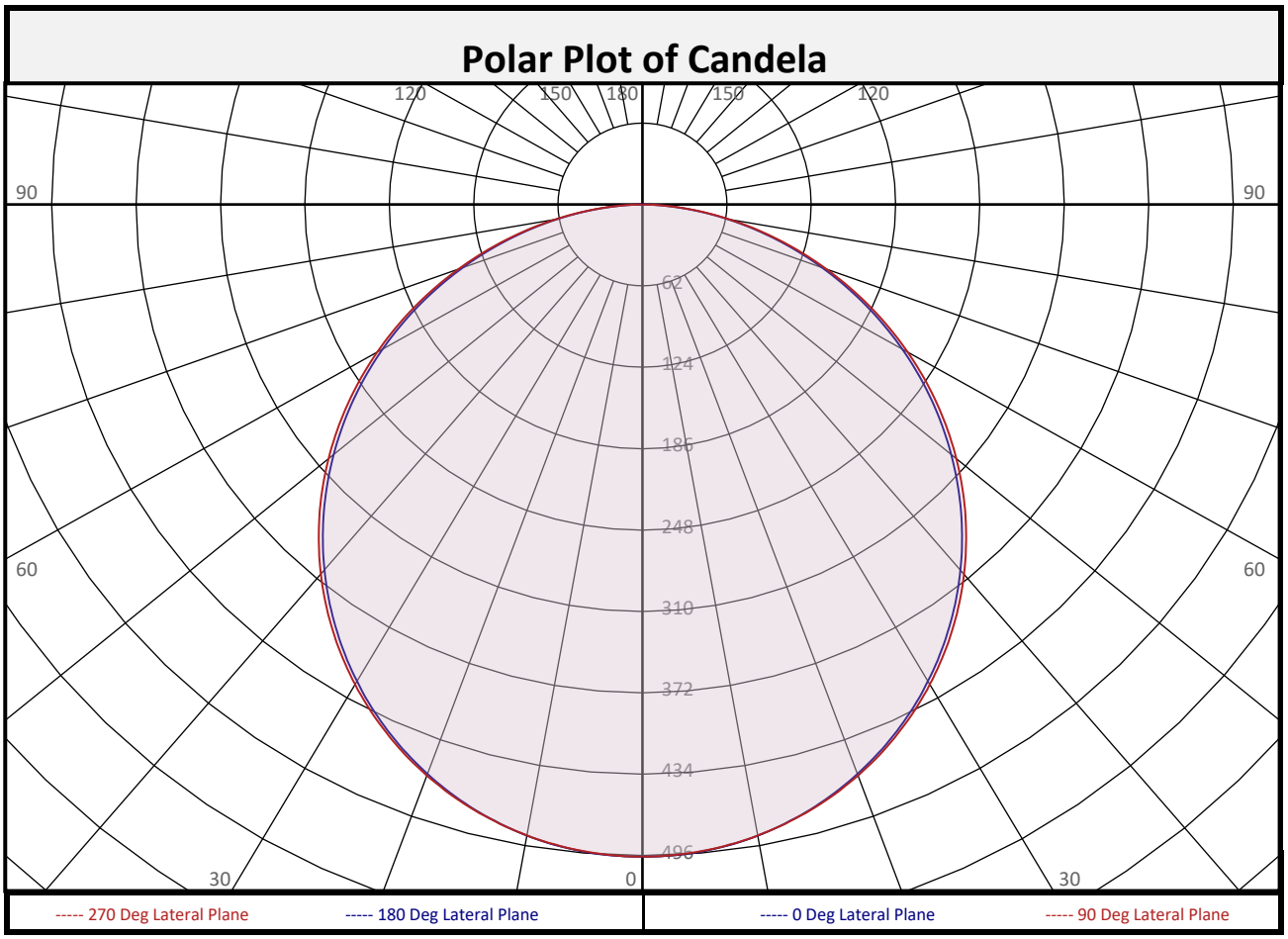

Zonal Flux Summary

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	47.0	3.3%	90-100	0.0	0.0%	0-20	181.7	12.6%
10-20	134.7	9.3%	100-110	0.0	0.0%	0-30	386.0	26.8%
20-30	204.3	14.2%	110-120	0.0	0.0%	0-40	632.9	43.9%
30-40	246.9	17.1%	120-130	0.0	0.0%	0-60	1124	77.9%
40-50	257.0	17.8%	130-140	0.0	0.0%	0-80	1412	97.9%
50-60	233.6	16.2%	140-150	0.0	0.0%	10-90	1396	96.7%
60-70	180.6	12.5%	150-160	0.0	0.0%	20-50	708.2	49.1%
70-80	107.7	7.5%	160-170	0.0	0.0%	40-90	809.8	56.1%
80-90	31.0	2.1%	170-180	0.0	0.0%	60-90	319.2	22.1%
0-90	1443	100.0%	90-180	0.0	0.0%	0-180	1443	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	497	497	497	497	497	497	497	497	497
2.5	496	496	496	496	496	496	496	496	496
5	495	495	495	495	495	495	495	495	495
7.5	492	492	492	492	492	492	492	492	492
10	488	488	488	488	488	488	488	488	488
12.5	483	483	483	483	483	483	483	483	483
15	477	477	477	477	478	477	477	477	477
17.5	470	470	470	470	471	470	470	470	470
20	462	461	462	463	463	463	462	461	462
22.5	453	452	453	454	454	454	453	452	453
25	443	442	443	444	444	444	443	442	443
27.5	432	432	433	433	434	433	433	432	432
30	419	420	421	422	422	422	421	420	419
32.5	407	407	408	409	410	409	408	407	407
35	393	393	395	396	396	396	395	393	393
37.5	379	379	380	382	382	382	380	379	379
40	363	364	365	367	367	367	365	364	363
42.5	348	348	350	351	352	351	350	348	348
45	331	332	333	335	336	335	333	332	331
47.5	314	315	316	318	319	318	316	315	314
50	296	297	298	300	301	300	298	297	296
52.5	278	278	280	282	283	282	280	278	278
55	259	260	261	263	264	263	261	260	259
57.5	240	241	242	244	245	244	242	241	240
60	221	221	223	224	225	224	223	221	221
62.5	201	201	203	204	205	204	203	201	201
65	181	181	182	184	185	184	182	181	181
67.5	161	161	162	164	164	164	162	161	161
70	140	141	142	143	144	143	142	141	140
72.5	120	121	122	123	123	123	122	121	120
75	101	101	102	103	103	103	102	101	101
77.5	81	82	82	83	84	83	82	82	81
80	63	63	63	64	64	64	63	63	63
82.5	44	44	45	45	46	45	45	44	44
85	26	27	27	28	28	28	27	27	26
87.5	10	11	11	12	12	12	11	11	10
90	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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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	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	13.8	7.53	7.58
8.0	7.8	10.04	10.10
10.0	5.0	12.55	12.63
12.0	3.5	15.06	15.15
14.0	2.5	17.57	17.68
16.0	1.9	20.08	20.20

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	1628	1628	1628
45	1534	1544	1555
55	1481	1493	1507
65	1401	1415	1431
75	1274	1288	1307
85	993	1028	1058

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	13.5	15.2	13.9	15.5	15.8	13.6	15.3	14.0	15.6	15.9
	3H	15.4	16.9	15.8	17.2	17.6	15.5	17.0	15.9	17.4	17.7
	4H	16.1	17.5	16.5	17.9	18.3	16.3	17.7	16.7	18.0	18.4
	6H	16.7	18.0	17.1	18.4	18.8	16.8	18.1	17.2	18.5	18.9
	8H	16.9	18.1	17.3	18.5	18.9	17.0	18.3	17.4	18.6	19.0
	12H	17.0	18.2	17.4	18.6	19.0	17.1	18.3	17.6	18.7	19.1
4H	2H	14.2	15.6	14.6	16.0	16.3	14.3	15.7	14.7	16.0	16.4
	3H	16.3	17.5	16.7	17.9	18.3	16.4	17.6	16.8	18.0	18.4
	4H	17.2	18.2	17.6	18.6	19.1	17.3	18.3	17.7	18.8	19.2
	6H	17.8	18.8	18.3	19.2	19.7	18.0	18.9	18.4	19.3	19.8
	8H	18.1	19.0	18.5	19.4	19.9	18.2	19.1	18.7	19.5	20.0
	12H	18.3	19.0	18.7	19.5	20.0	18.4	19.2	18.9	19.7	20.1
8H	4H	17.5	18.4	18.0	18.8	19.3	17.6	18.5	18.0	18.9	19.4
	6H	18.3	19.1	18.8	19.5	20.0	18.4	19.2	18.9	19.7	20.1
	8H	18.6	19.3	19.1	19.8	20.3	18.8	19.4	19.3	19.9	20.4
	12H	18.9	19.5	19.4	20.0	20.5	19.0	19.6	19.5	20.1	20.6
12H	4H	17.6	18.3	18.0	18.8	19.3	17.6	18.4	18.1	18.9	19.4
	6H	18.4	19.1	18.9	19.5	20.1	18.5	19.2	19.0	19.6	20.2
	8H	18.8	19.4	19.3	19.8	20.4	18.9	19.5	19.4	20.0	20.5

Maximum UGR = 20.6

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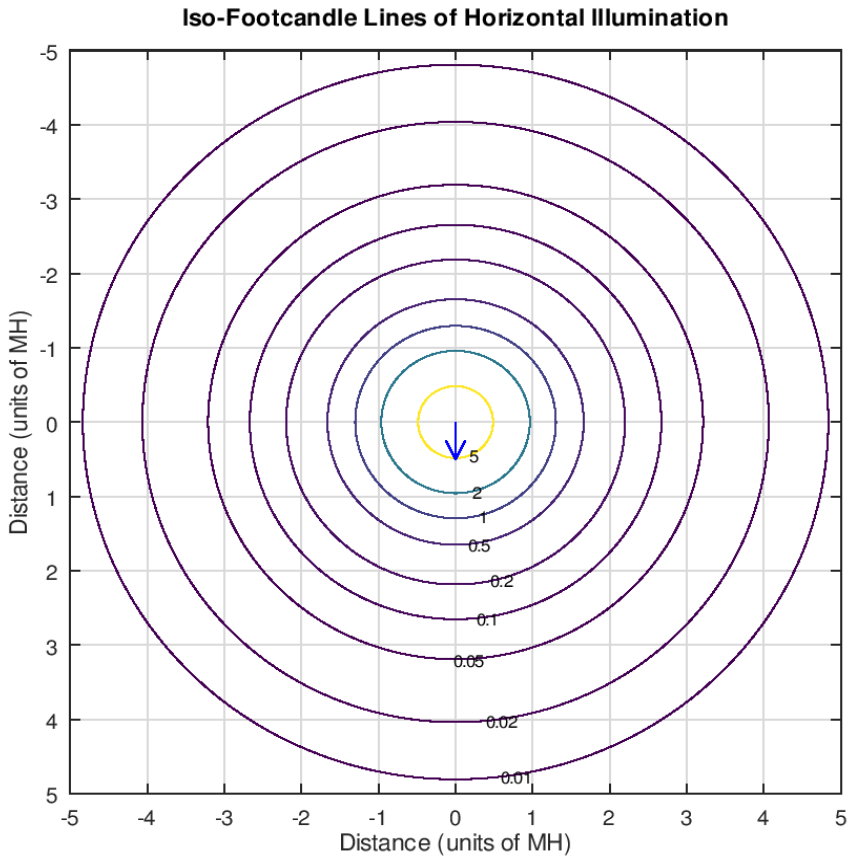
Iso-Illuminance Plot



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	24.4 °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.