LightLab INTERNATIONAL ALLENTOWN LLC

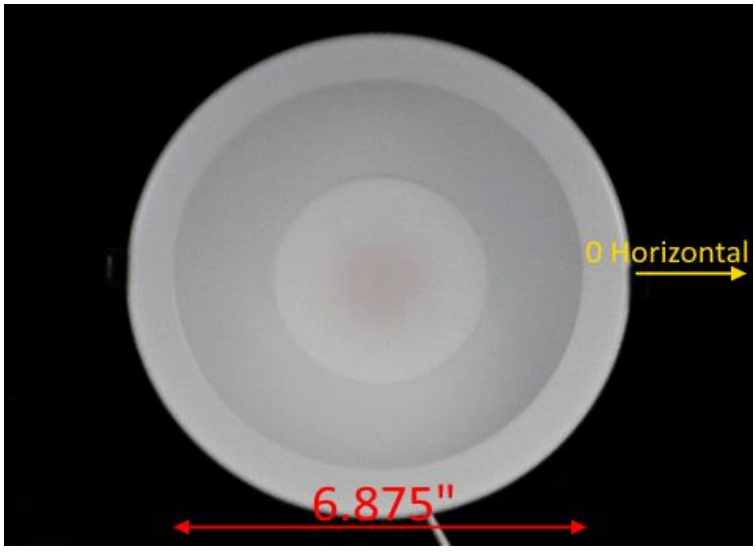
NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA002379-020

Indoor Distribution Photometry Test Report

Catalog Number: CDL8S-RM-24WPCS-U - 22W Setting - 4000K Setting
Recessed mounted, formed white painted aluminum housing,
white interior reflector, diffuse white plastic enclosure.
white LEDs
One unmarked PCB type LED driver in formed steel box.



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

Performance Summary					
Input Voltage	120.0	Vac	Luminous Flux	2181.4	Lumens
Input Current	0.1757	A	Total Efficacy	104.0	Lm/W
Input Power	20.97	W	Downward Flux	2181.4	Lumens
Frequency	60.00	Hz	Downward Flux	100.0	% of Total
Power Factor	0.995				
Current THD	6.7	%			

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

Test date: 05/01/2024
Report date: 05/16/2024

Signed: Michael L. Grather Digitally signed by Michael L. Grather Date: 2024.05.16 15:30:55 -04'00'

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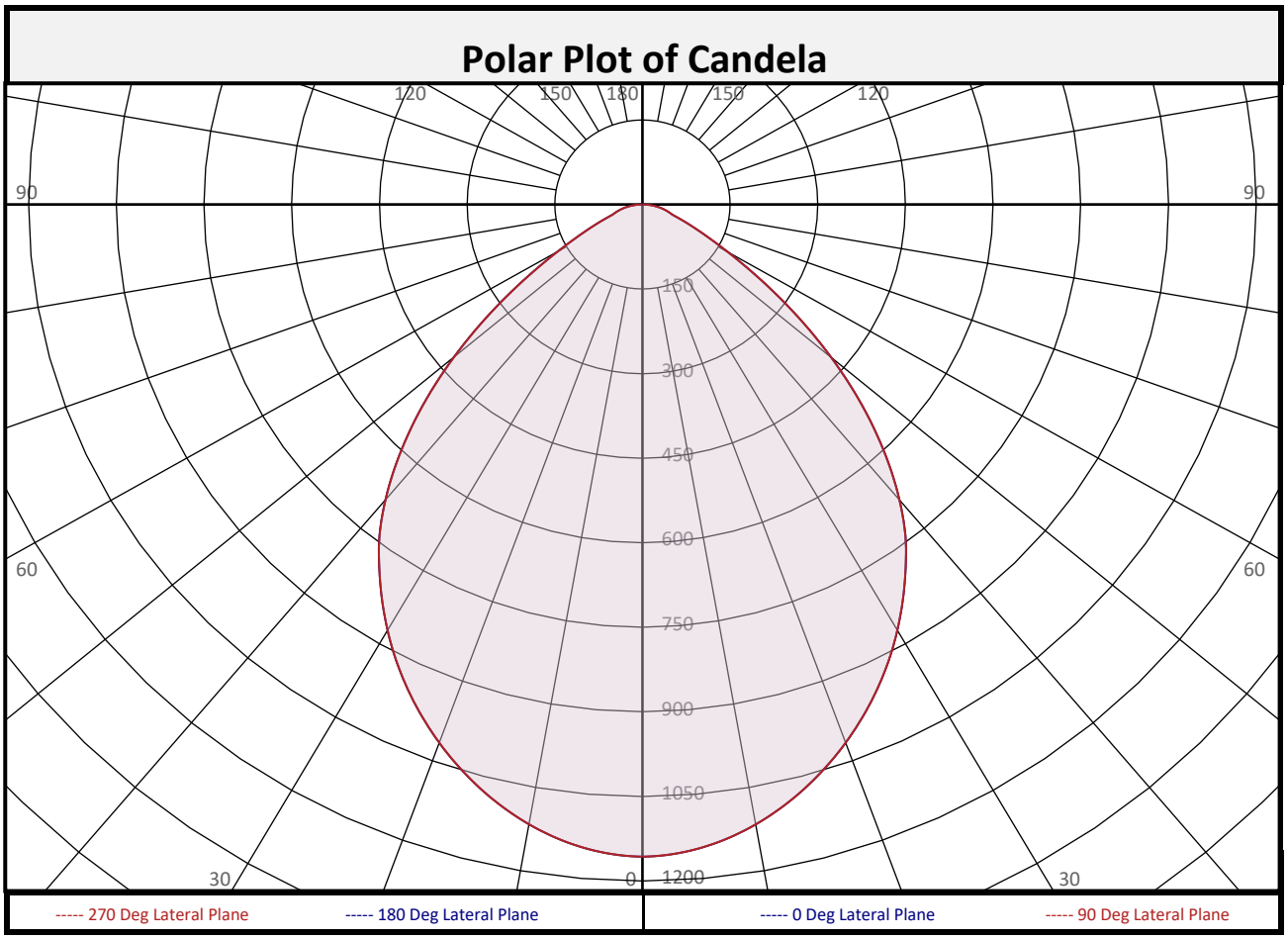

Zonal Flux Summary

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	108.5	5.0%	90-100	0.0	0.0%	0-20	410.4	18.8%
10-20	301.9	13.8%	100-110	0.0	0.0%	0-30	847.1	38.8%
20-30	436.7	20.0%	110-120	0.0	0.0%	0-40	1337	61.3%
30-40	489.8	22.5%	120-130	0.0	0.0%	0-60	2021	92.6%
40-50	428.5	19.6%	130-140	0.0	0.0%	0-80	2166	99.3%
50-60	255.1	11.7%	140-150	0.0	0.0%	10-90	2073	95.0%
60-70	101.3	4.6%	150-160	0.0	0.0%	20-50	1355	62.1%
70-80	44.5	2.0%	160-170	0.0	0.0%	40-90	844.4	38.7%
80-90	15.0	0.7%	170-180	0.0	0.0%	60-90	160.9	7.4%
0-90	2181	100.0%	90-180	0.0	0.0%	0-180	2181	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	1157	1157	1157	1157	1157	1157	1157	1157	1157
2.5	1154	1154	1154	1154	1154	1154	1154	1154	1154
5	1146	1146	1146	1146	1146	1146	1146	1146	1146
7.5	1133	1133	1133	1133	1133	1133	1133	1133	1133
10	1117	1117	1117	1117	1117	1117	1117	1117	1117
12.5	1096	1096	1096	1096	1096	1096	1096	1096	1096
15	1073	1073	1073	1073	1073	1073	1073	1073	1073
17.5	1046	1046	1046	1046	1046	1046	1046	1046	1046
20	1016	1016	1016	1016	1016	1016	1016	1016	1016
22.5	984	984	984	984	984	984	984	984	984
25	950	950	950	950	950	950	950	950	950
27.5	913	913	913	913	913	913	913	913	913
30	872	872	872	872	872	872	872	872	872
32.5	830	830	830	830	830	830	830	830	830
35	786	786	786	786	786	786	786	786	786
37.5	739	739	739	739	739	739	739	739	739
40	684	684	684	684	684	684	684	684	684
42.5	624	624	624	624	624	624	624	624	624
45	559	559	559	559	559	559	559	559	559
47.5	491	491	491	491	491	491	491	491	491
50	421	421	421	421	421	421	421	421	421
52.5	351	351	351	351	351	351	351	351	351
55	283	283	283	283	283	283	283	283	283
57.5	221	221	221	221	221	221	221	221	221
60	169	169	169	169	169	169	169	169	169
62.5	128	128	128	128	128	128	128	128	128
65	98	98	98	98	98	98	98	98	98
67.5	75	75	75	75	75	75	75	75	75
70	57	57	57	57	57	57	57	57	57
72.5	49	49	49	49	49	49	49	49	49
75	42	42	42	42	42	42	42	42	42
77.5	35	35	35	35	35	35	35	35	35
80	28	28	28	28	28	28	28	28	28
82.5	21	21	21	21	21	21	21	21	21
85	14	14	14	14	14	14	14	14	14
87.5	6	6	6	6	6	6	6	6	6
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	111	107	104	101		109	105	102	99		101	98	96		97	95	93		94	92	91	89
2	103	96	91	86		101	95	89	85		91	87	83		88	84	81		85	82	80	78
3	95	87	80	75		93	85	79	74		82	77	73		80	75	71		77	74	70	68
4	89	78	71	65		86	77	70	65		75	69	64		73	67	63		70	66	62	60
5	82	71	63	58		80	70	63	57		68	62	57		66	61	56		64	60	56	54
6	77	65	57	51		75	64	56	51		62	56	51		61	55	50		59	54	50	48
7	71	59	52	46		70	59	51	46		57	50	46		56	50	45		55	49	45	43
8	67	55	47	42		65	54	47	42		53	46	41		52	46	41		50	45	41	39
9	63	50	43	38		61	50	43	38		49	42	38		48	42	37		47	41	37	36
10	59	47	40	35		58	46	39	35		45	39	35		44	39	34		44	38	34	33

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	32.1	6.81	6.81
8.0	18.1	9.08	9.08
10.0	11.6	11.35	11.35
12.0	8.0	13.62	13.62
14.0	5.9	15.89	15.89
16.0	4.5	18.16	18.16

Spacing Criterion

SC: 1.1

Average Luminance (cd/m^2)

	0 deg Plane	45 deg Plane	90 deg Plane
0	48314	48314	48314
45	33028	33028	33028
55	20596	20596	20596
65	9686	9686	9686
75	6819	6819	6819
85	6636	6636	6636

Beam and Field Angle

0-180 Degree Plane

Beam Angle: 88.5°

Field Angle: 126.9°

90-270 Degree Plane

Beam Angle: 88.5°

Field Angle: 126.9°

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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	19.7	21.1	20.1	21.4	21.7	19.7	21.1	20.1	21.4	21.7
	3H	20.1	21.4	20.5	21.7	22.1	20.1	21.4	20.5	21.7	22.1
	4H	20.3	21.5	20.7	21.9	22.2	20.3	21.5	20.7	21.9	22.2
	6H	20.5	21.6	20.9	22.0	22.4	20.5	21.6	20.9	22.0	22.4
	8H	20.6	21.6	21.0	22.0	22.4	20.6	21.6	21.0	22.0	22.4
	12H	20.6	21.6	21.1	22.0	22.4	20.6	21.6	21.1	22.0	22.4
4H	2H	19.8	21.0	20.2	21.3	21.7	19.8	21.0	20.2	21.3	21.7
	3H	20.4	21.4	20.8	21.8	22.2	20.4	21.4	20.8	21.8	22.2
	4H	20.7	21.6	21.1	22.0	22.4	20.7	21.6	21.1	22.0	22.4
	6H	21.0	21.7	21.5	22.2	22.7	21.0	21.7	21.5	22.2	22.7
	8H	21.1	21.8	21.6	22.3	22.7	21.1	21.8	21.6	22.3	22.7
	12H	21.2	21.8	21.7	22.3	22.8	21.2	21.8	21.7	22.3	22.8
8H	4H	20.8	21.5	21.2	21.9	22.4	20.8	21.5	21.2	21.9	22.4
	6H	21.2	21.7	21.7	22.2	22.7	21.2	21.7	21.7	22.2	22.7
	8H	21.4	21.9	21.9	22.4	22.9	21.4	21.9	21.9	22.4	22.9
	12H	21.5	22.0	22.0	22.5	23.0	21.5	22.0	22.0	22.5	23.0
12H	4H	20.8	21.4	21.2	21.9	22.3	20.8	21.4	21.2	21.9	22.3
	6H	21.2	21.7	21.7	22.2	22.7	21.2	21.7	21.7	22.2	22.7
	8H	21.4	21.9	21.9	22.4	22.9	21.4	21.9	21.9	22.4	22.9

Maximum UGR = 23.0

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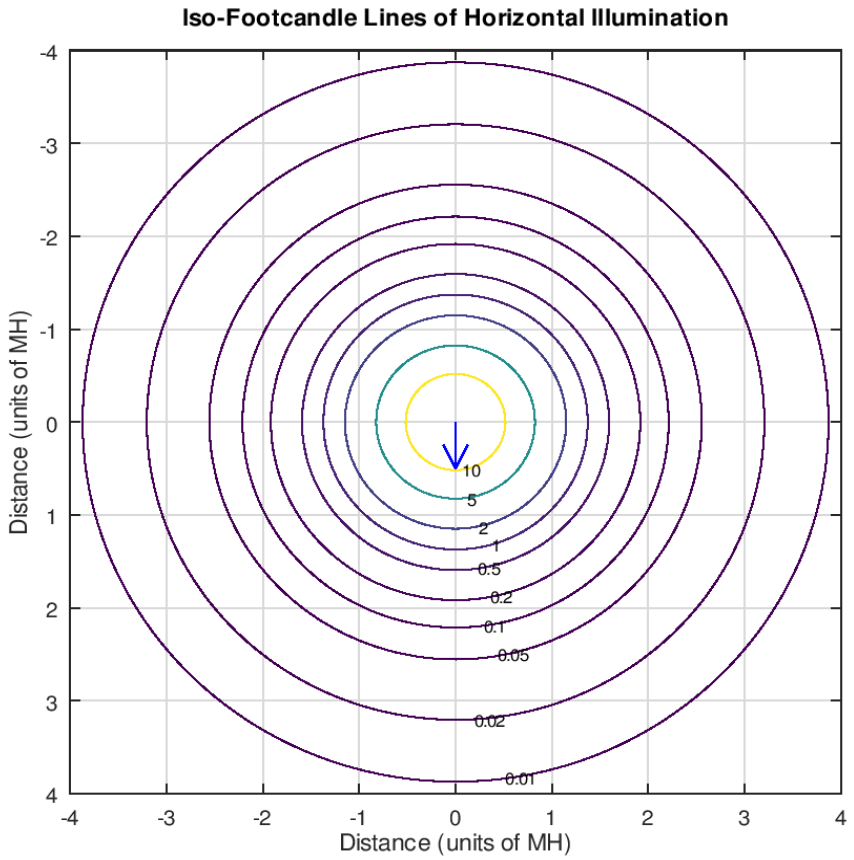
Iso-Illuminance Plot



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	25.1 °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.