LightLab INTERNATIONAL ALLENTOWN LLC

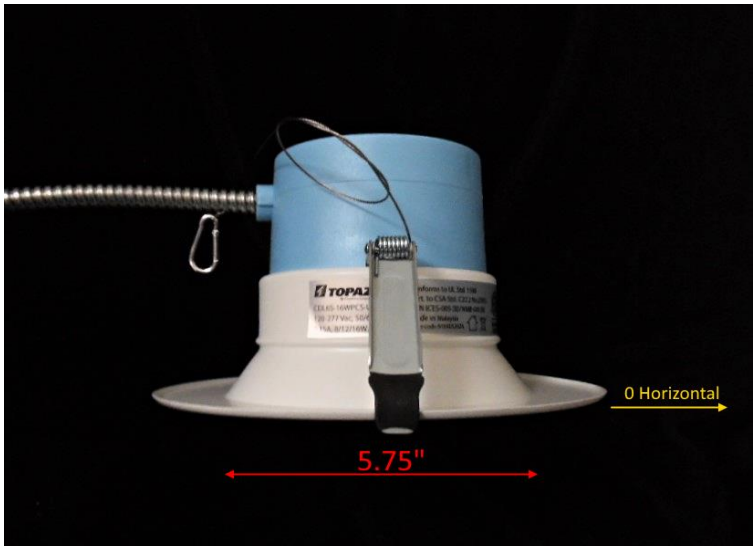
NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA002379-005

Indoor Distribution Photometry Test Report

Catalog Number: CDL6S-16WPCS-U - 12W 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 mounted on top of fixture housing



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

Performance Summary					
Input Voltage	120.0	Vac	Luminous Flux	1317.6	Lumens
Input Current	0.1004	A	Total Efficacy	111.5	Lm/W
Input Power	11.82	W	Downward Flux	1317.6	Lumens
Frequency	60.00	Hz	Downward Flux	100.0	% of Total
Power Factor	0.982				
Current THD	9.2	%			

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

Test date: 05/02/2024
Report date: 05/16/2024

Signed: Michael L. Grather Digitally signed by Michael L. Grather Date: 2024.05.16 15:07:49 -04'00'

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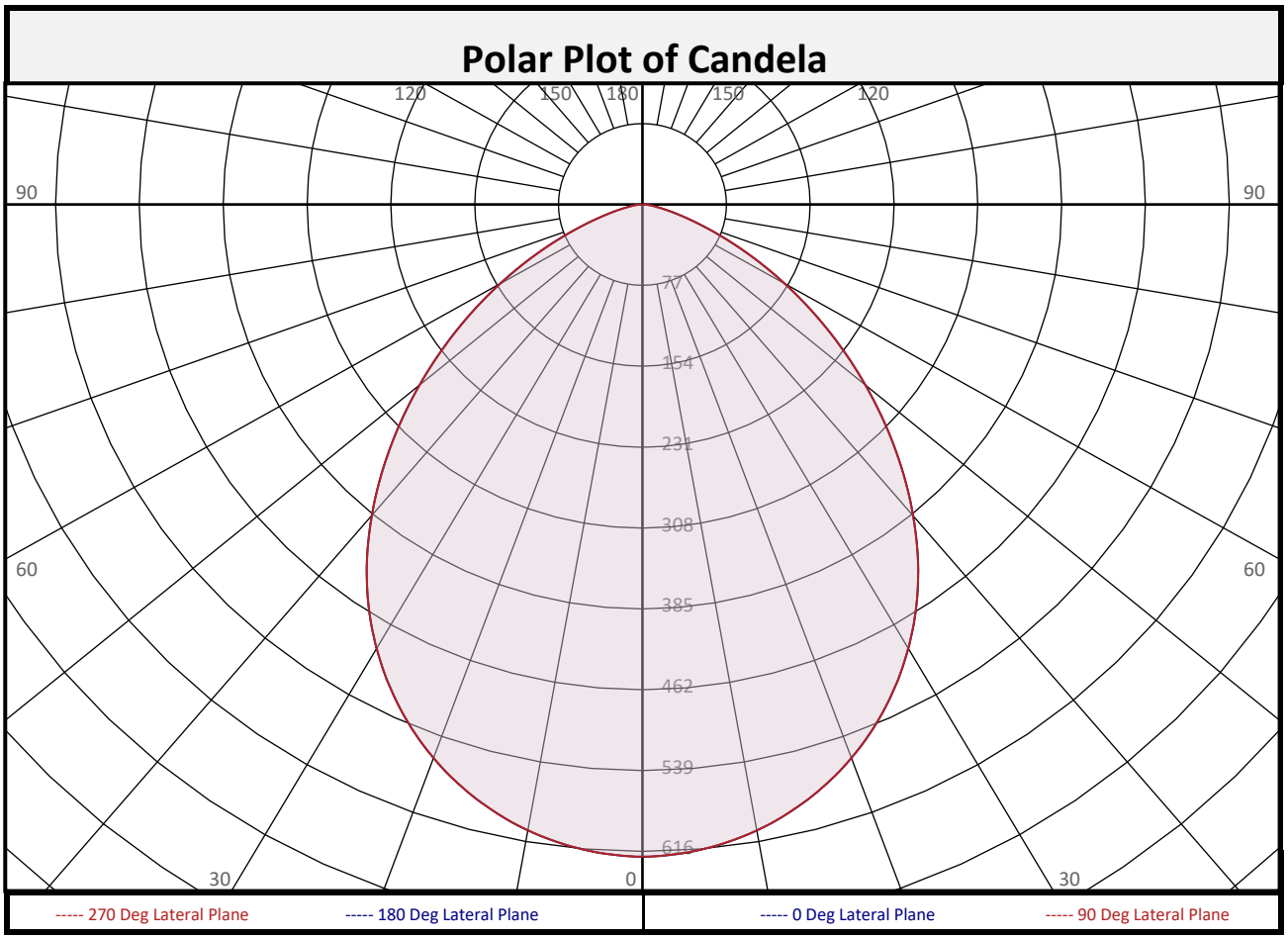

Zonal Flux Summary

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	58.5	4.4%	90-100	0.0	0.0%	0-20	223.8	17.0%
10-20	165.3	12.5%	100-110	0.0	0.0%	0-30	466.7	35.4%
20-30	242.9	18.4%	110-120	0.0	0.0%	0-40	741.7	56.3%
30-40	275.0	20.9%	120-130	0.0	0.0%	0-60	1179	89.5%
40-50	252.2	19.1%	130-140	0.0	0.0%	0-80	1312	99.5%
50-60	185.6	14.1%	140-150	0.0	0.0%	10-90	1259	95.6%
60-70	99.7	7.6%	150-160	0.0	0.0%	20-50	770.1	58.4%
70-80	32.4	2.5%	160-170	0.0	0.0%	40-90	575.9	43.7%
80-90	6.0	0.5%	170-180	0.0	0.0%	60-90	138.1	10.5%
0-90	1318	100.0%	90-180	0.0	0.0%	0-180	1318	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	621	621	621	621	621	621	621	621	621
	2.5	620	620	620	620	620	620	620	620	620
	5	617	617	617	617	617	617	617	617	617
	7.5	612	612	612	612	612	612	612	612	612
	10	605	605	605	605	605	605	605	605	605
	12.5	597	597	597	597	597	597	597	597	597
	15	587	587	587	587	587	587	587	587	587
	17.5	575	575	575	575	575	575	575	575	575
	20	561	561	561	561	561	561	561	561	561
	22.5	545	545	545	545	545	545	545	545	545
	25	528	528	528	528	528	528	528	528	528
	27.5	509	509	509	509	509	509	509	509	509
	30	488	488	488	488	488	488	488	488	488
	32.5	466	466	466	466	466	466	466	466	466
	35	441	441	441	441	441	441	441	441	441
	37.5	415	415	415	415	415	415	415	415	415
	40	387	387	387	387	387	387	387	387	387
	42.5	358	358	358	358	358	358	358	358	358
	45	328	328	328	328	328	328	328	328	328
	47.5	297	297	297	297	297	297	297	297	297
	50	267	267	267	267	267	267	267	267	267
	52.5	237	237	237	237	237	237	237	237	237
	55	207	207	207	207	207	207	207	207	207
	57.5	179	179	179	179	179	179	179	179	179
	60	151	151	151	151	151	151	151	151	151
	62.5	124	124	124	124	124	124	124	124	124
	65	100	100	100	100	100	100	100	100	100
	67.5	77	77	77	77	77	77	77	77	77
	70	57	57	57	57	57	57	57	57	57
	72.5	41	41	41	41	41	41	41	41	41
	75	29	29	29	29	29	29	29	29	29
	77.5	19	19	19	19	19	19	19	19	19
	80	13	13	13	13	13	13	13	13	13
	82.5	9	9	9	9	9	9	9	9	9
	85	5	5	5	5	5	5	5	5	5
	87.5	2	2	2	2	2	2	2	2	2
	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	103	100		108	105	101	98		100	98	95		97	94	92		93	91	90	88
2	102	95	89	84		100	93	88	83		90	85	81		87	83	80		84	81	78	76
3	94	85	78	72		92	83	77	71		81	75	70		78	73	69		75	71	68	66
4	87	76	68	62		85	75	68	62		73	66	61		70	65	60		68	64	60	58
5	80	69	61	55		78	68	60	54		66	59	54		64	58	53		62	57	53	51
6	75	62	54	48		73	62	54	48		60	53	48		58	52	47		57	51	47	45
7	70	57	49	43		68	56	49	43		55	48	43		53	47	43		52	46	42	40
8	65	52	44	39		63	52	44	39		50	43	39		49	43	38		48	42	38	36
9	61	48	40	35		59	48	40	35		47	40	35		45	39	35		45	39	35	33
10	57	45	37	32		56	44	37	32		43	37	32		42	36	32		41	36	32	30

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	17.3	7.05	7.05
8.0	9.7	9.40	9.40
10.0	6.2	11.75	11.75
12.0	4.3	14.10	14.10
14.0	3.2	16.45	16.45
16.0	2.4	18.80	18.80

Spacing Criterion

SC: 1.2

Average Luminance (cd/m^2)

	0 deg Plane	45 deg Plane	90 deg Plane
0	37074	37074	37074
45	27660	27660	27660
55	21594	21594	21594
65	14059	14059	14059
75	6637	6637	6637
85	3568	3568	3568

Beam and Field Angle

0-180 Degree Plane

Beam Angle: 92.8°

Field Angle: 138.7°

90-270 Degree Plane

Beam Angle: 92.8°

Field Angle: 138.7°

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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	21.2	22.7	21.6	23.0	23.3	21.2	22.7	21.6	23.0	23.3
	3H	22.0	23.3	22.3	23.6	24.0	22.0	23.3	22.3	23.6	24.0
	4H	22.1	23.3	22.5	23.7	24.1	22.1	23.3	22.5	23.7	24.1
	6H	22.1	23.3	22.5	23.6	24.0	22.1	23.3	22.5	23.6	24.0
	8H	22.1	23.2	22.6	23.6	24.0	22.1	23.2	22.6	23.6	24.0
	12H	22.1	23.2	22.5	23.5	24.0	22.1	23.2	22.5	23.5	24.0
4H	2H	21.5	22.8	21.9	23.1	23.5	21.5	22.8	21.9	23.1	23.5
	3H	22.4	23.4	22.8	23.8	24.2	22.4	23.4	22.8	23.8	24.2
	4H	22.6	23.5	23.0	23.9	24.3	22.6	23.5	23.0	23.9	24.3
	6H	22.7	23.4	23.1	23.9	24.3	22.7	23.4	23.1	23.9	24.3
	8H	22.7	23.4	23.1	23.8	24.3	22.7	23.4	23.1	23.8	24.3
	12H	22.6	23.3	23.1	23.8	24.3	22.6	23.3	23.1	23.8	24.3
8H	4H	22.6	23.3	23.1	23.8	24.2	22.6	23.3	23.1	23.8	24.2
	6H	22.7	23.3	23.2	23.8	24.3	22.7	23.3	23.2	23.8	24.3
	8H	22.7	23.2	23.2	23.7	24.2	22.7	23.2	23.2	23.7	24.2
	12H	22.7	23.2	23.2	23.7	24.3	22.7	23.2	23.2	23.7	24.3
12H	4H	22.6	23.2	23.0	23.7	24.2	22.6	23.2	23.0	23.7	24.2
	6H	22.7	23.2	23.2	23.7	24.2	22.7	23.2	23.2	23.7	24.2
	8H	22.7	23.2	23.2	23.7	24.2	22.7	23.2	23.2	23.7	24.2

Maximum UGR = 24.3

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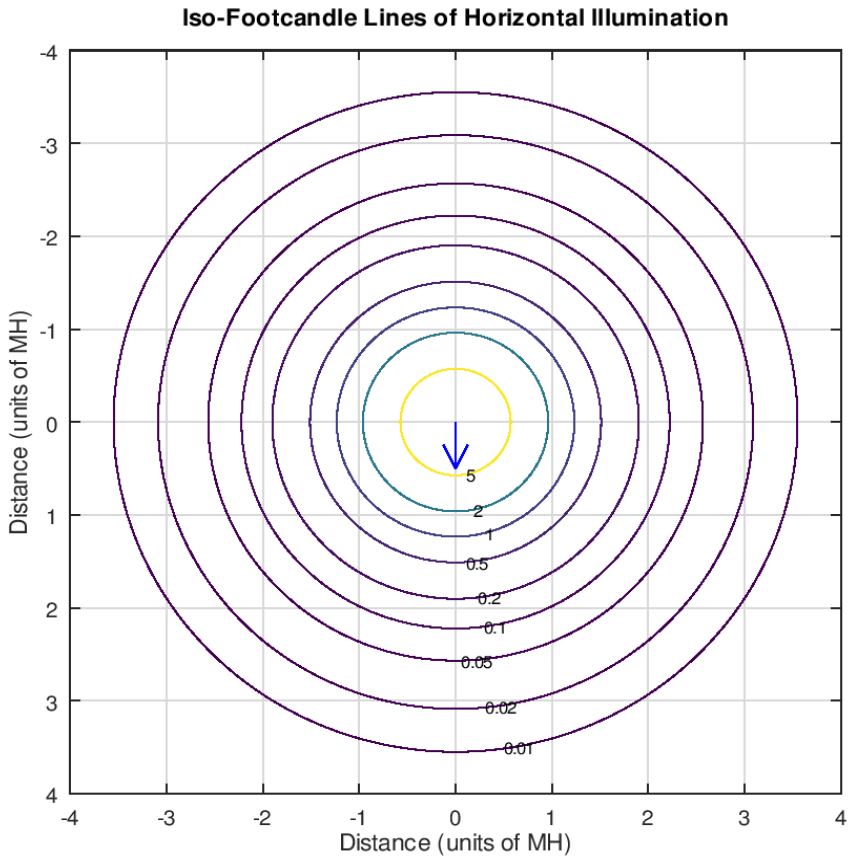
Iso-Illuminance Plot



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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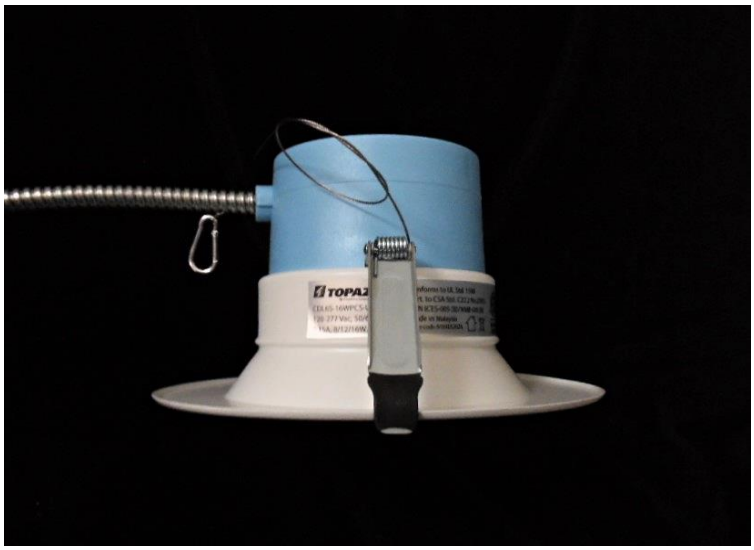
Additional Pictures of Test Subject



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Test Distance	9.5 m
Ambient Temperature	24.9 °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.