LightLab INTERNATIONAL ALLENTOWN LLC

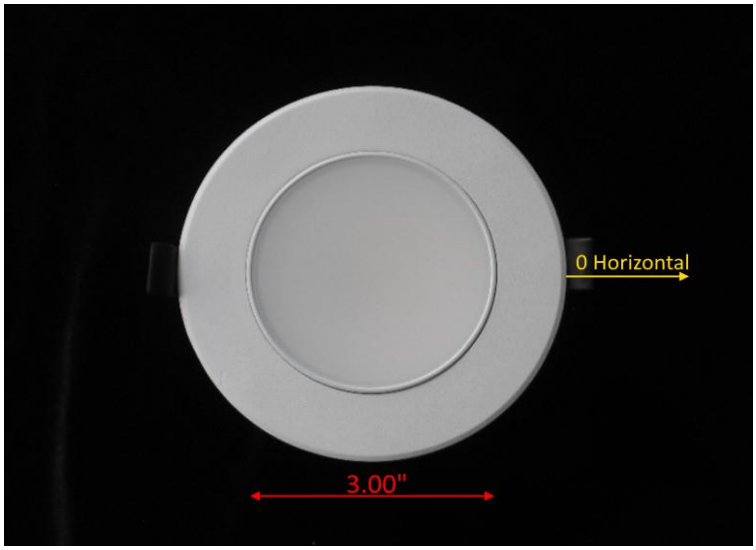
NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA002581-010

Indoor Distribution Photometry Test Report

Catalog Number: RDL4-ADJ-12W-CS 4000K Setting
Recessed mounted, formed white painted aluminum housing,
white interior reflector, diffuse white plastic enclosure.
30 white LEDs, switch set for 4000K.
One Topaz RDL4-ADJ-12W-CS 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	1137.3	Lumens
Input Current	0.0970	A	Total Efficacy	100.2	Lm/W
Input Power	11.35	W	Downward Flux	1137.3	Lumens
Frequency	60.00	Hz	Downward Flux	100.0	% of Total
Power Factor	0.975				
Current THD	12.7	%			

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

Test date: 01/29/2025
Report date: 02/05/2025

Signed: Michael L. Grather Digitally signed by Michael L. Grather Date: 2025.02.06 11:28:17 -05'00'

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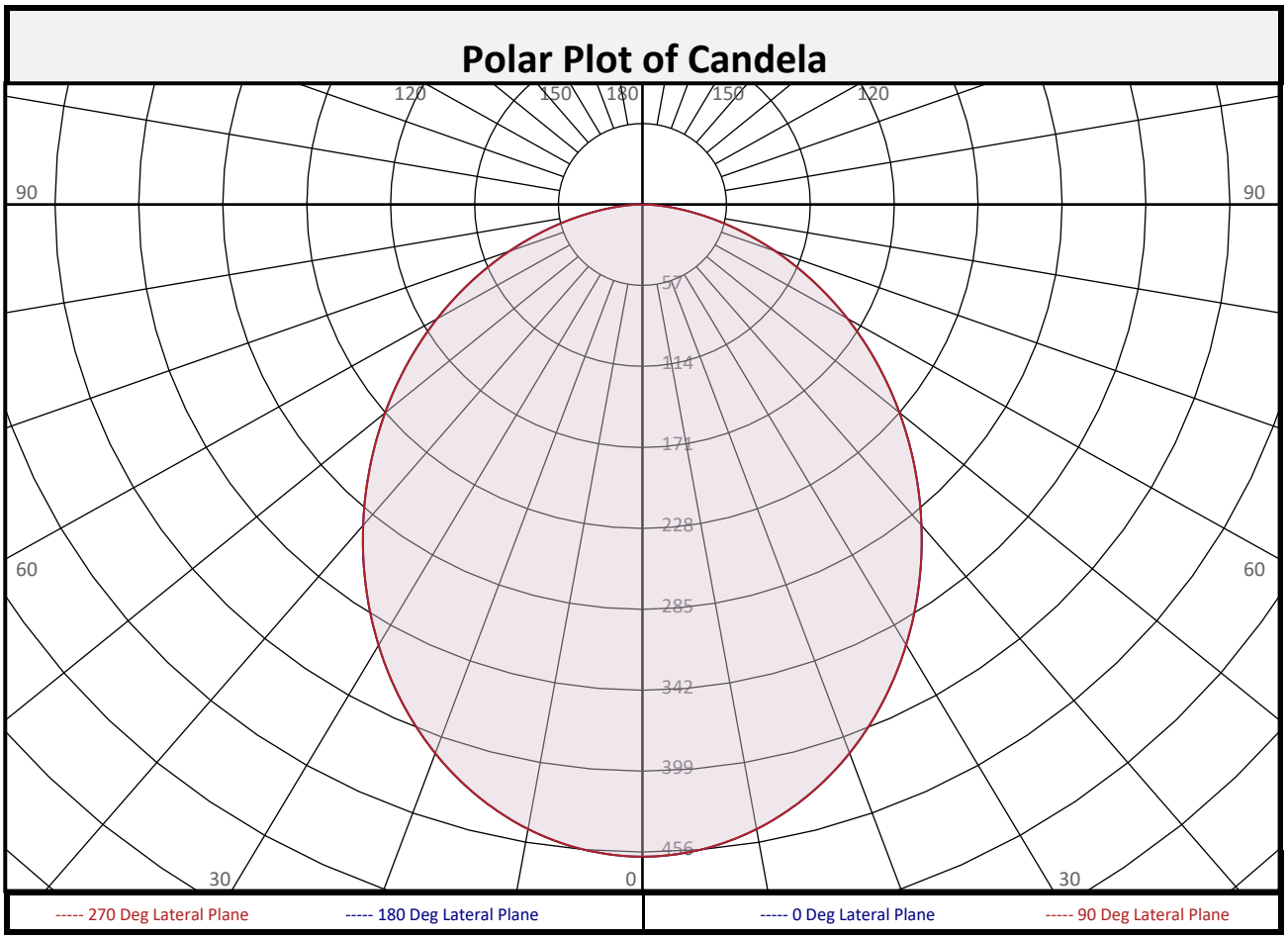

Zonal Flux Summary									
Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	43.3	3.8%	90-100	0.0	0.0%	0-20	164.8	14.5%
10-20	121.5	10.7%	100-110	0.0	0.0%	0-30	342.7	30.1%
20-30	177.9	15.6%	110-120	0.0	0.0%	0-40	547.4	48.1%
30-40	204.7	18.0%	120-130	0.0	0.0%	0-60	922.9	81.2%
40-50	201.8	17.7%	130-140	0.0	0.0%	0-80	1119	98.4%
50-60	173.8	15.3%	140-150	0.0	0.0%	10-90	1094	96.2%
60-70	126.8	11.1%	150-160	0.0	0.0%	20-50	584.4	51.4%
70-80	69.6	6.1%	160-170	0.0	0.0%	40-90	589.9	51.9%
80-90	18.0	1.6%	170-180	0.0	0.0%	60-90	214.4	18.8%
0-90	1137	100.0%	90-180	0.0	0.0%	0-180	1137	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	459	459	459	459	459	459	459	459	459
	2.5	458	458	458	458	458	458	458	458	458
	5	456	456	456	456	456	456	456	456	456
	7.5	452	452	452	452	452	452	452	452	452
	10	447	447	447	447	447	447	447	447	447
	12.5	440	440	440	440	440	440	440	440	440
	15	432	432	432	432	432	432	432	432	432
	17.5	422	422	422	422	422	422	422	422	422
	20	411	411	411	411	411	411	411	411	411
	22.5	399	399	399	399	399	399	399	399	399
	25	387	387	387	387	387	387	387	387	387
	27.5	373	373	373	373	373	373	373	373	373
	30	358	358	358	358	358	358	358	358	358
	32.5	343	343	343	343	343	343	343	343	343
	35	327	327	327	327	327	327	327	327	327
	37.5	311	311	311	311	311	311	311	311	311
	40	295	295	295	295	295	295	295	295	295
	42.5	278	278	278	278	278	278	278	278	278
	45	262	262	262	262	262	262	262	262	262
	47.5	245	245	245	245	245	245	245	245	245
	50	228	228	228	228	228	228	228	228	228
	52.5	211	211	211	211	211	211	211	211	211
	55	194	194	194	194	194	194	194	194	194
	57.5	178	178	178	178	178	178	178	178	178
	60	161	161	161	161	161	161	161	161	161
	62.5	144	144	144	144	144	144	144	144	144
	65	128	128	128	128	128	128	128	128	128
	67.5	112	112	112	112	112	112	112	112	112
	70	96	96	96	96	96	96	96	96	96
	72.5	81	81	81	81	81	81	81	81	81
	75	66	66	66	66	66	66	66	66	66
	77.5	51	51	51	51	51	51	51	51	51
	80	38	38	38	38	38	38	38	38	38
	82.5	26	26	26	26	26	26	26	26	26
	85	15	15	15	15	15	15	15	15	15
	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	109	105	100	97		106	102	99	95		98	95	92		94	92	89		91	89	87	85
2	100	92	85	79		97	90	84	78		86	81	77		83	79	75		80	76	73	71
3	91	81	73	67		89	79	72	66		76	70	65		74	68	64		71	66	63	60
4	84	72	63	57		81	71	63	56		68	61	56		66	60	55		64	58	54	52
5	77	64	56	49		75	63	55	49		61	54	48		59	53	48		57	52	47	45
6	71	58	49	43		69	57	49	43		55	48	43		54	47	42		52	46	42	40
7	66	53	44	38		64	52	44	38		51	43	38		49	43	38		48	42	37	35
8	62	48	40	34		60	48	40	34		46	39	34		45	39	34		44	38	34	32
9	58	45	36	31		56	44	36	31		43	36	31		42	35	31		41	35	30	29
10	54	41	33	28		53	41	33	28		40	33	28		39	32	28		38	32	28	26

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	12.8	7.01	7.01
8.0	7.2	9.34	9.34
10.0	4.6	11.68	11.68
12.0	3.2	14.01	14.01
14.0	2.3	16.35	16.35
16.0	1.8	18.69	18.69

Spacing Criterion

SC: 1.2

Average Luminance (cd/m^2)

	0 deg Plane	45 deg Plane	90 deg Plane
0	100716	100716	100716
45	81128	81128	81128
55	74291	74291	74291
65	66436	66436	66436
75	55537	55537	55537
85	38512	38512	38512

Beam and Field Angle

0-180 Degree Plane

Beam Angle: 99.5°

Field Angle: 157.0°

90-270 Degree Plane

Beam Angle: 99.5°

Field Angle: 157.0°

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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	26.1	27.7	26.5	28.0	28.3	26.1	27.7	26.5	28.0	28.3
	3H	27.8	29.2	28.2	29.6	29.9	27.8	29.2	28.2	29.6	29.9
	4H	28.4	29.7	28.8	30.1	30.5	28.4	29.7	28.8	30.1	30.5
	6H	28.8	30.1	29.2	30.4	30.8	28.8	30.1	29.2	30.4	30.8
	8H	28.9	30.1	29.4	30.5	30.9	28.9	30.1	29.4	30.5	30.9
	12H	29.0	30.2	29.4	30.6	31.0	29.0	30.2	29.4	30.6	31.0
4H	2H	26.7	28.1	27.1	28.4	28.8	26.7	28.1	27.1	28.4	28.8
	3H	28.6	29.7	29.0	30.1	30.5	28.6	29.7	29.0	30.1	30.5
	4H	29.3	30.3	29.8	30.8	31.2	29.3	30.3	29.8	30.8	31.2
	6H	29.9	30.8	30.3	31.2	31.7	29.9	30.8	30.3	31.2	31.7
	8H	30.0	30.9	30.5	31.3	31.8	30.0	30.9	30.5	31.3	31.8
	12H	30.2	30.9	30.6	31.4	31.9	30.2	30.9	30.6	31.4	31.9
8H	4H	29.6	30.4	30.1	30.9	31.3	29.6	30.4	30.1	30.9	31.3
	6H	30.2	30.9	30.7	31.4	31.9	30.2	30.9	30.7	31.4	31.9
	8H	30.5	31.1	31.0	31.6	32.1	30.5	31.1	31.0	31.6	32.1
	12H	30.7	31.2	31.2	31.7	32.3	30.7	31.2	31.2	31.7	32.3
12H	4H	29.6	30.4	30.1	30.9	31.3	29.6	30.4	30.1	30.9	31.3
	6H	30.3	30.9	30.8	31.4	31.9	30.3	30.9	30.8	31.4	31.9
	8H	30.6	31.1	31.1	31.6	32.2	30.6	31.1	31.1	31.6	32.2

Maximum UGR = 32.3

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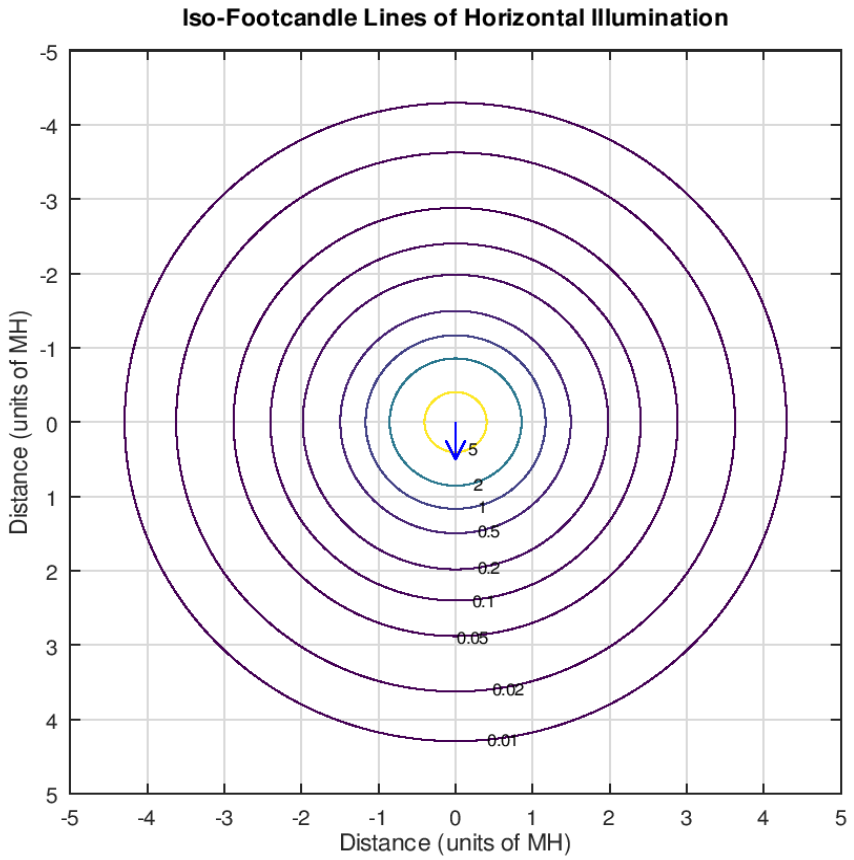
Iso-Illuminance Plot



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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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.