LightLab INTERNATIONAL ALLENTOWN LLC

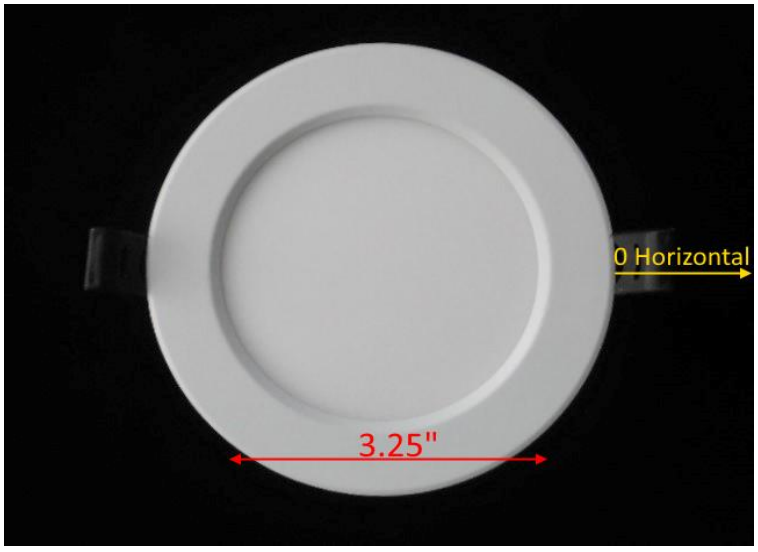
NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA002581-002

Indoor Distribution Photometry Test Report

Catalog Number: RDL4-8W-CS 4000K Setting
Recessed mounted, formed white painted aluminum housing,
white interior reflector, diffuse white plastic enclosure.
52 white LEDs, switch set for 4000K.
One Topaz RDL4-8W-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	654.7	Lumens
Input Current	0.0610	A	Total Efficacy	93.4	Lm/W
Input Power	7.01	W	Downward Flux	654.7	Lumens
Frequency	60.00	Hz	Downward Flux	100.0	% of Total
Power Factor	0.957				
Current THD	17.3	%			

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

Test date: 01/22/2025
Report date: 01/24/2025

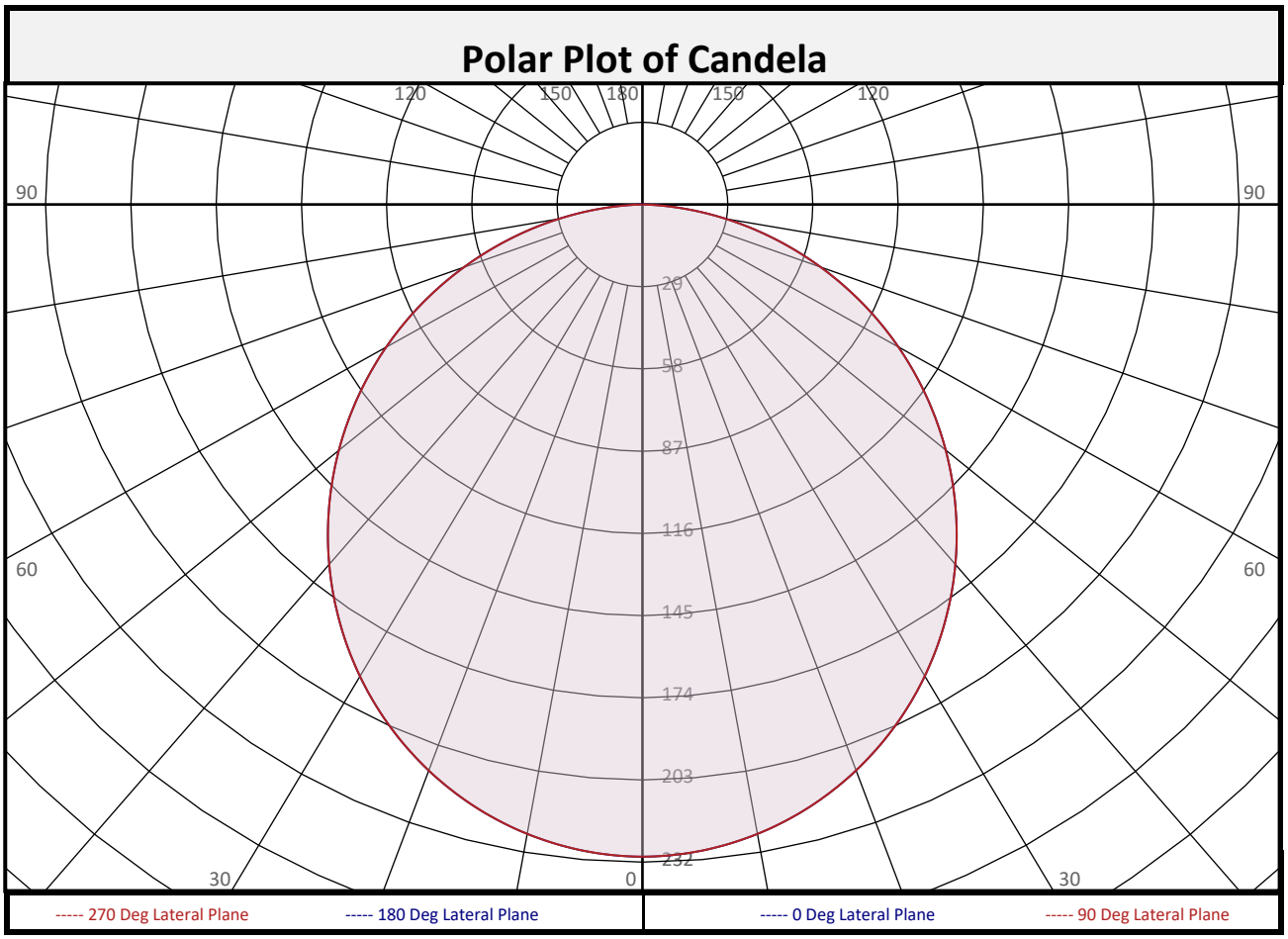
Signed: Michael L. Grather Digitally signed by Michael L. Grather Date: 2025.02.06 11:22:36 -05'00'

North America (issuing laboratory)
LightLab International Allentown, LLC
905 Harrison Street, Suite 135
Allentown, PA 18103 USA
Ph: +1 484-273-0705
Fx: +1 484-209-5779
www.lightlaballentown.com

Australasia & S.E. Asia
LightLab International
50 Redcliffe Gardens Drive
Clontarf - Queensland, 4019, Australia
Ph : +61 7 3283 7862
Fx : +61 7 3283 8751
www.lightlabint.com

Report of Test

LLIA002581-002



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	21.7	3.3%	90-100	0.0	0.0%	0-20	83.8	12.8%
10-20	62.1	9.5%	100-110	0.0	0.0%	0-30	177.4	27.1%
20-30	93.6	14.3%	110-120	0.0	0.0%	0-40	289.7	44.3%
30-40	112.3	17.2%	120-130	0.0	0.0%	0-60	511.3	78.1%
40-50	116.2	17.7%	130-140	0.0	0.0%	0-80	641.9	98.0%
50-60	105.4	16.1%	140-150	0.0	0.0%	10-90	633.0	96.7%
60-70	81.8	12.5%	150-160	0.0	0.0%	20-50	322.1	49.2%
70-80	48.8	7.5%	160-170	0.0	0.0%	40-90	365.0	55.7%
80-90	12.8	2.0%	170-180	0.0	0.0%	60-90	143.4	21.9%
0-90	654.7	100.0%	90-180	0.0	0.0%	0-180	654.7	100.0%

Report of Test

LLIA002581-002

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	230	230	230	230	230	230	230	230	230
	2.5	230	230	230	230	230	230	230	230	230
	5	229	229	229	229	229	229	229	229	229
	7.5	227	227	227	227	227	227	227	227	227
	10	225	225	225	225	225	225	225	225	225
	12.5	223	223	223	223	223	223	223	223	223
	15	220	220	220	220	220	220	220	220	220
	17.5	216	216	216	216	216	216	216	216	216
	20	212	212	212	212	212	212	212	212	212
	22.5	208	208	208	208	208	208	208	208	208
	25	203	203	203	203	203	203	203	203	203
	27.5	198	198	198	198	198	198	198	198	198
	30	192	192	192	192	192	192	192	192	192
	32.5	186	186	186	186	186	186	186	186	186
	35	180	180	180	180	180	180	180	180	180
	37.5	173	173	173	173	173	173	173	173	173
	40	166	166	166	166	166	166	166	166	166
	42.5	158	158	158	158	158	158	158	158	158
	45	151	151	151	151	151	151	151	151	151
	47.5	143	143	143	143	143	143	143	143	143
	50	135	135	135	135	135	135	135	135	135
	52.5	126	126	126	126	126	126	126	126	126
	55	118	118	118	118	118	118	118	118	118
	57.5	109	109	109	109	109	109	109	109	109
	60	101	101	101	101	101	101	101	101	101
	62.5	92	92	92	92	92	92	92	92	92
	65	83	83	83	83	83	83	83	83	83
	67.5	74	74	74	74	74	74	74	74	74
	70	64	64	64	64	64	64	64	64	64
	72.5	55	55	55	55	55	55	55	55	55
	75	46	46	46	46	46	46	46	46	46
	77.5	37	37	37	37	37	37	37	37	37
	80	28	28	28	28	28	28	28	28	28
	82.5	20	20	20	20	20	20	20	20	20
	85	11	11	11	11	11	11	11	11	11
	87.5	3	3	3	3	3	3	3	3	3
	90	0	0	0	0	0	0	0	0	0

16 lateral half-planes of data were acquired, 22.5 degree increments shown.

Report of Test

LLIA002581-002

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.

LightLab INTERNATIONAL ALLENTOWN LLC

NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA002581-002

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	104	99	95		106	101	97	94		97	94	91		93	91	88		90	87	85	83
2	99	90	83	77		96	88	82	76		85	79	75		81	77	73		78	75	71	69
3	90	79	71	64		87	77	70	64		74	68	62		72	66	61		69	64	60	58
4	82	70	61	54		80	69	60	54		66	59	53		64	57	52		62	56	52	49
5	75	62	53	47		73	61	53	46		59	52	46		57	51	45		55	50	45	43
6	70	56	47	41		68	55	47	41		53	46	40		52	45	40		50	44	39	37
7	65	51	42	36		63	50	42	36		49	41	36		47	40	35		46	40	35	33
8	60	46	38	32		59	46	38	32		44	37	32		43	36	32		42	36	31	29
9	56	43	34	29		55	42	34	29		41	34	29		40	33	28		39	33	28	26
10	53	39	31	26		51	39	31	26		38	31	26		37	30	26		36	30	26	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	6.4	7.45	7.45
8.0	3.6	9.94	9.94
10.0	2.3	12.42	12.42
12.0	1.6	14.91	14.91
14.0	1.2	17.39	17.39
16.0	0.9	19.88	19.88

Spacing Criterion

SC: 1.2

Average Luminance (cd/m^2)

	0 deg Plane	45 deg Plane	90 deg Plane
0	42988	42988	42988
45	39807	39807	39807
55	38420	38420	38420
65	36554	36554	36554
75	33365	33365	33365
85	23650	23650	23650

Beam and Field Angle

0-180 Degree Plane

Beam Angle: 111.7°

Field Angle: 163.0°

90-270 Degree Plane

Beam Angle: 111.7°

Field Angle: 163.0°

North America (issuing laboratory)
LightLab International Allentown, LLC
905 Harrison Street, Suite 135
Allentown, PA 18103 USA
Ph: +1 484-273-0705
Fx: +1 484-209-5779
www.lightlaballentown.com

Australasia & S.E. Asia
LightLab International
50 Redcliffe Gardens Drive
Clontarf - Queensland, 4019, Australia
Ph : +61 7 3283 7862
Fx : +61 7 3283 8751
www.lightlabint.com

Report of Test

LLIA002581-002

UGR Table - Corrected

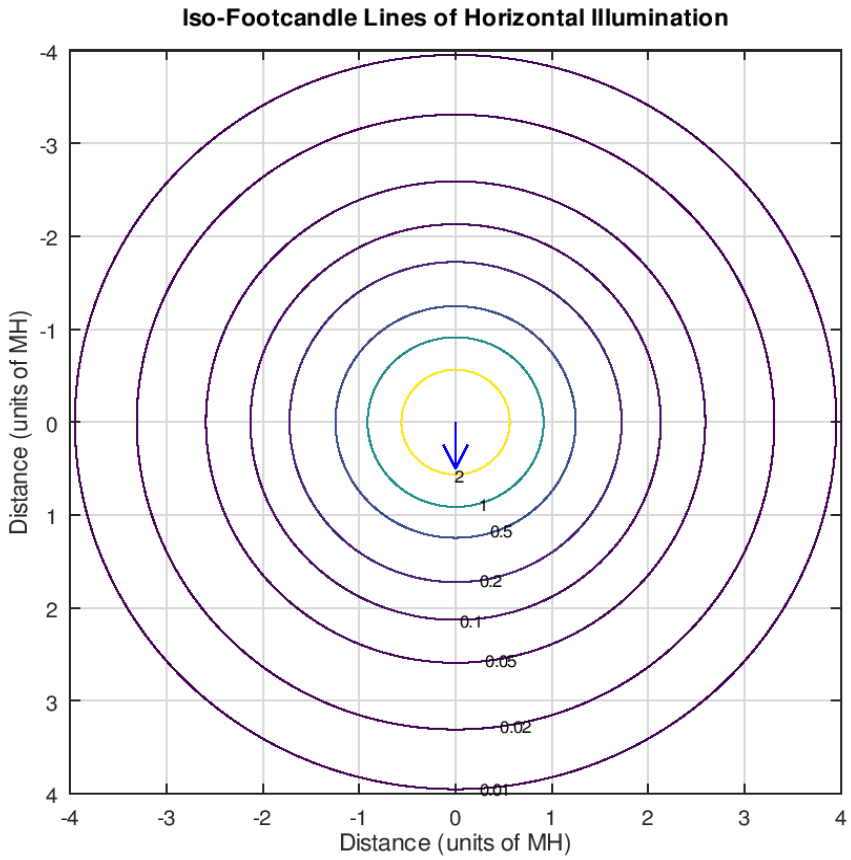
Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	23.9	25.6	24.3	25.9	26.2	23.9	25.6	24.3	25.9	26.2
	3H	25.9	27.3	26.2	27.7	28.0	25.9	27.3	26.2	27.7	28.0
	4H	26.6	28.0	27.0	28.3	28.7	26.6	28.0	27.0	28.3	28.7
	6H	27.1	28.4	27.5	28.8	29.2	27.1	28.4	27.5	28.8	29.2
	8H	27.3	28.6	27.7	28.9	29.3	27.3	28.6	27.7	28.9	29.3
	12H	27.4	28.6	27.8	29.0	29.4	27.4	28.6	27.8	29.0	29.4
4H	2H	24.6	26.0	25.0	26.4	26.7	24.6	26.0	25.0	26.4	26.7
	3H	26.7	27.9	27.1	28.3	28.7	26.7	27.9	27.1	28.3	28.7
	4H	27.6	28.7	28.0	29.1	29.5	27.6	28.7	28.0	29.1	29.5
	6H	28.3	29.2	28.7	29.7	30.1	28.3	29.2	28.7	29.7	30.1
	8H	28.5	29.4	29.0	29.8	30.3	28.5	29.4	29.0	29.8	30.3
	12H	28.7	29.4	29.1	29.9	30.4	28.7	29.4	29.1	29.9	30.4
8H	4H	28.0	28.8	28.4	29.3	29.7	28.0	28.8	28.4	29.3	29.7
	6H	28.8	29.5	29.3	30.0	30.5	28.8	29.5	29.3	30.0	30.5
	8H	29.0	29.7	29.6	30.2	30.7	29.0	29.7	29.6	30.2	30.7
	12H	29.3	29.8	29.8	30.3	30.9	29.3	29.8	29.8	30.3	30.9
12H	4H	28.0	28.8	28.5	29.3	29.7	28.0	28.8	28.5	29.3	29.7
	6H	28.8	29.5	29.3	30.0	30.5	28.8	29.5	29.3	30.0	30.5
	8H	29.2	29.8	29.7	30.2	30.8	29.2	29.8	29.7	30.2	30.8

Maximum UGR = 30.9

Report of Test

LLIA002581-002

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.

Report of Test

LLIA002581-002

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.