

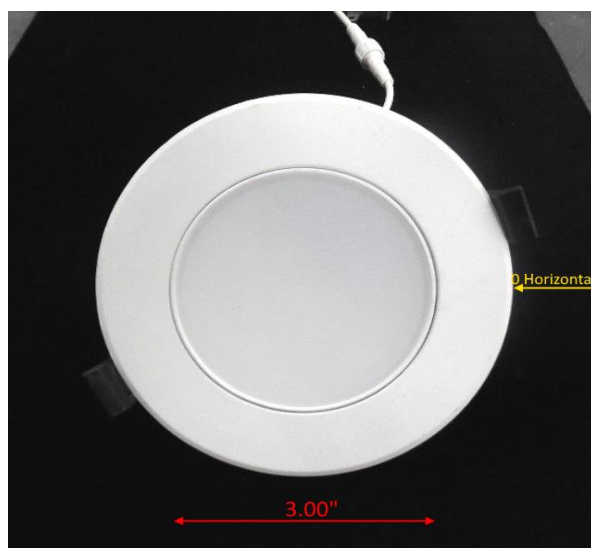


Report of Test

LLIA001426-004

Indoor Distribution Photometry Test Report

Catalog Number: RDL/4GIM/15/5CTS-46 - 3000K Setting
Recessed mounted, cast aluminum housing, translucent white plastic enclosure.
white LEDs
One LED20010A LED driver



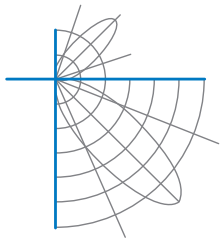
Prepared For:
Topaz Lighting Corp
925 Waverly Avenue
Holtsville, NY 11742, USA

Performance Summary			
Input Voltage	120.0 V	Luminous Flux	1227.7 Lumens
Input Current	0.1263 A	Total Efficacy	82.0 Lm/W
Input Power	14.97 W	Downward Flux	1227.7 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.988		
Current THD	9.6 %		

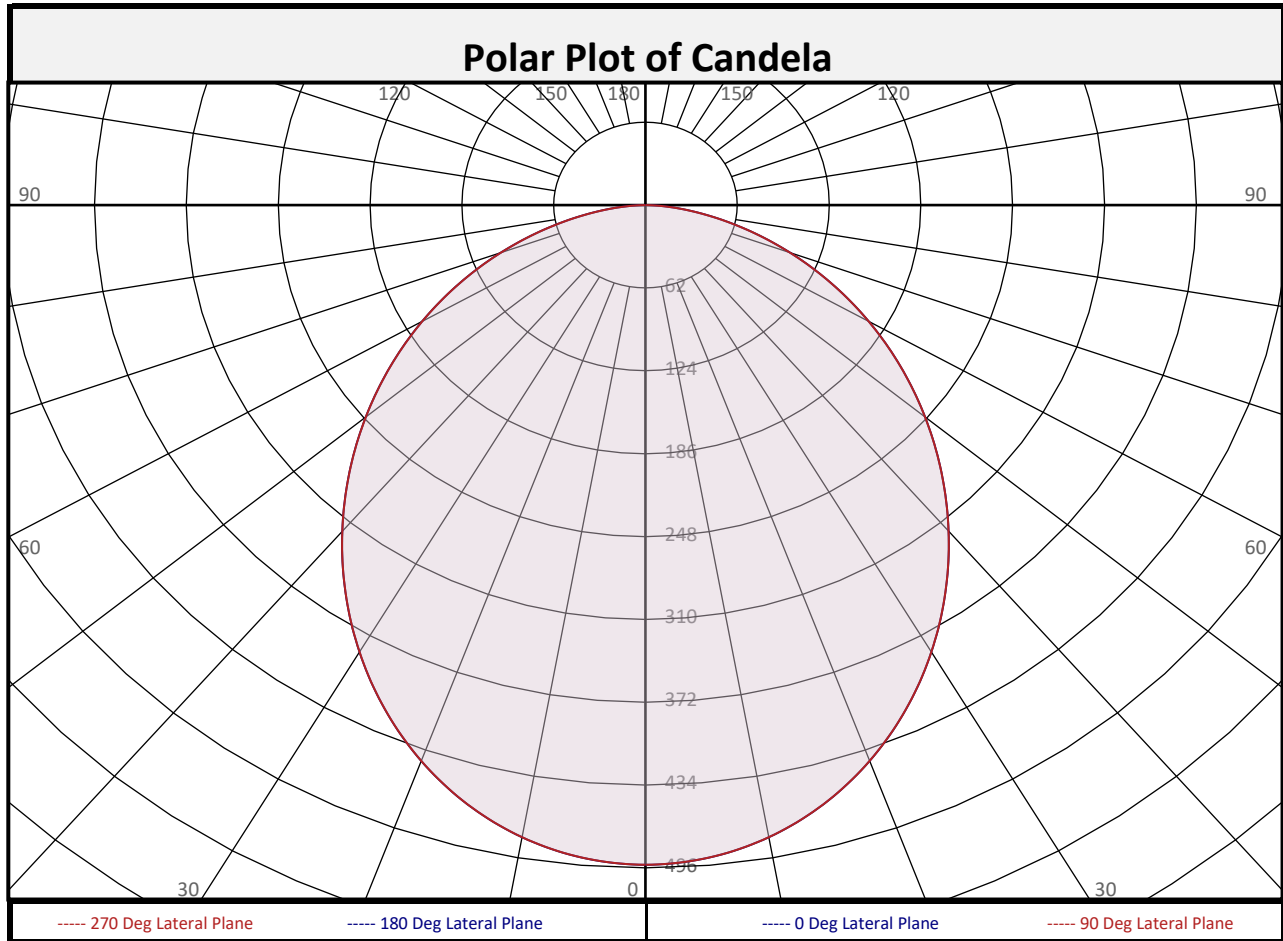
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 03/16/2021
Report date: 03/19/2021

Signed: _____



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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	46.5	3.8%	90-100	0.0	0.0%	0-20	177.3	14.4%
10-20	130.8	10.7%	100-110	0.0	0.0%	0-30	368.9	30.0%
20-30	191.6	15.6%	110-120	0.0	0.0%	0-40	589.8	48.0%
30-40	220.9	18.0%	120-130	0.0	0.0%	0-60	996.0	81.1%
40-50	218.1	17.8%	130-140	0.0	0.0%	0-80	1208	98.4%
50-60	188.0	15.3%	140-150	0.0	0.0%	10-90	1181	96.2%
60-70	137.2	11.2%	150-160	0.0	0.0%	20-50	630.7	51.4%
70-80	75.2	6.1%	160-170	0.0	0.0%	40-90	637.9	52.0%
80-90	19.3	1.6%	170-180	0.0	0.0%	60-90	231.7	18.9%
0-90	1228	100.0%	90-180	0.0	0.0%	0-180	1228	100.0%

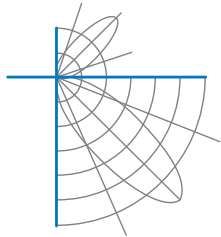


Report of Test

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Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles	0	494	494	494	494	494	494	494	494	494
	2.5	493	493	493	493	493	493	493	493	493
	5	490	490	490	490	490	490	490	490	490
	7.5	486	486	486	486	486	486	486	486	486
	10	480	480	480	480	480	480	480	480	480
	12.5	473	473	473	473	473	473	473	473	473
	15	464	464	464	464	464	464	464	464	464
	17.5	454	454	454	454	454	454	454	454	454
	20	443	443	443	443	443	443	443	443	443
	22.5	430	430	430	430	430	430	430	430	430
	25	416	416	416	416	416	416	416	416	416
	27.5	402	402	402	402	402	402	402	402	402
	30	386	386	386	386	386	386	386	386	386
	32.5	370	370	370	370	370	370	370	370	370
	35	353	353	353	353	353	353	353	353	353
	37.5	336	336	336	336	336	336	336	336	336
	40	319	319	319	319	319	319	319	319	319
	42.5	301	301	301	301	301	301	301	301	301
	45	283	283	283	283	283	283	283	283	283
	47.5	265	265	265	265	265	265	265	265	265
50	247	247	247	247	247	247	247	247	247	
52.5	228	228	228	228	228	228	228	228	228	
55	210	210	210	210	210	210	210	210	210	
57.5	192	192	192	192	192	192	192	192	192	
60	174	174	174	174	174	174	174	174	174	
62.5	156	156	156	156	156	156	156	156	156	
65	139	139	139	139	139	139	139	139	139	
67.5	121	121	121	121	121	121	121	121	121	
70	104	104	104	104	104	104	104	104	104	
72.5	87	87	87	87	87	87	87	87	87	
75	71	71	71	71	71	71	71	71	71	
77.5	55	55	55	55	55	55	55	55	55	
80	41	41	41	41	41	41	41	41	41	
82.5	28	28	28	28	28	28	28	28	28	
85	17	17	17	17	17	17	17	17	17	
87.5	7	7	7	7	7	7	7	7	7	
90	0	0	0	0	0	0	0	0	0	



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Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles	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	



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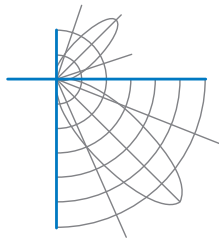
Coefficients of Utilization/Room Utilization - Zonal Cavity Method																						
Effective Floor Cavity Reflectance 0.20																						
RC	80					70					50				30				10			0
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10	0
RCR																						
0	119	119	119	119		116	116	116	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	42	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	44	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	13.7	7.03	7.03	
8.0	7.7	9.37	9.37	
10.0	4.9	11.71	11.71	
12.0	3.4	14.05	14.05	
14.0	2.5	16.39	16.39	
16.0	1.9	18.74	18.74	

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	108252	108252	108252
45	87707	87707	87707
55	80389	80389	80389
65	71909	71909	71909
75	59941	59941	59941
85	41516	41516	41516

Spacing Criterion	
Spacing Criterion:	1.2



Report of Test

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UGR TABLE - CORRECTED

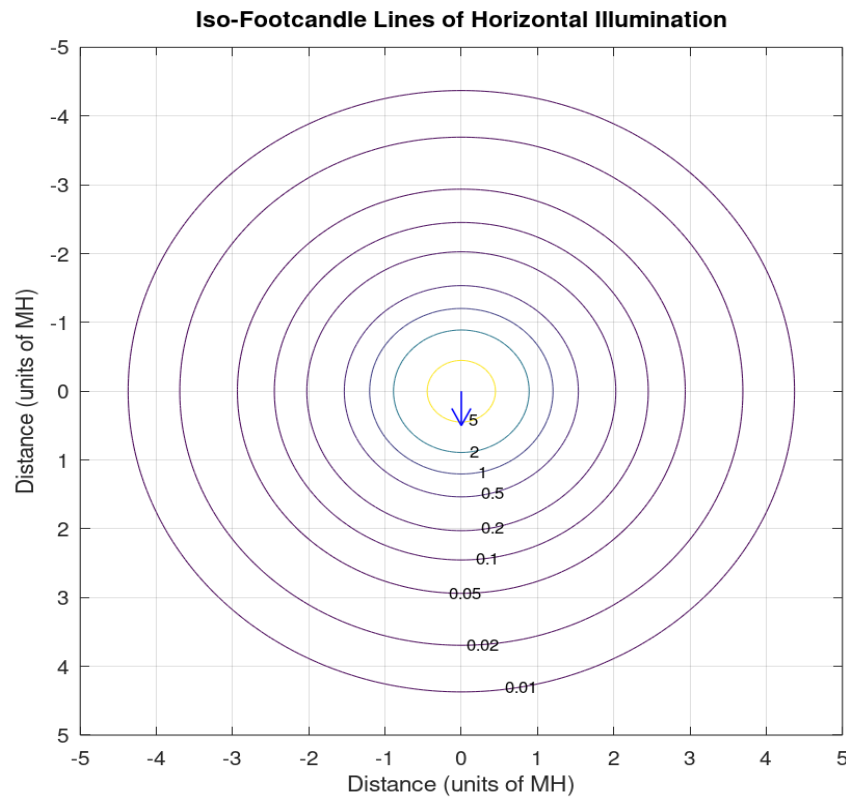
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H Y=2H		26.3	27.9	26.7	28.2	28.5	26.3	27.9	26.7	28.2	28.5
	3H	28.0	29.5	28.4	29.8	30.1	28.0	29.5	28.4	29.8	30.1
	4H	28.6	30.0	29.0	30.3	30.7	28.6	30.0	29.0	30.3	30.7
	6H	29.0	30.3	29.4	30.7	31.0	29.0	30.3	29.4	30.7	31.0
	8H	29.1	30.4	29.6	30.7	31.1	29.1	30.4	29.6	30.7	31.1
	12H	29.2	30.4	29.7	30.8	31.2	29.2	30.4	29.7	30.8	31.2
4H	2H	26.9	28.3	27.3	28.6	29.0	26.9	28.3	27.3	28.6	29.0
	3H	28.8	30.0	29.2	30.3	30.7	28.8	30.0	29.2	30.3	30.7
	4H	29.5	30.6	30.0	31.0	31.4	29.5	30.6	30.0	31.0	31.4
	6H	30.1	31.0	30.5	31.4	31.9	30.1	31.0	30.5	31.4	31.9
	8H	30.3	31.1	30.7	31.5	32.0	30.3	31.1	30.7	31.5	32.0
	12H	30.4	31.1	30.8	31.6	32.1	30.4	31.1	30.8	31.6	32.1
8H	4H	29.8	30.6	30.3	31.1	31.6	29.8	30.6	30.3	31.1	31.6
	6H	30.5	31.2	30.9	31.6	32.1	30.5	31.2	30.9	31.6	32.1
	8H	30.7	31.3	31.2	31.8	32.3	30.7	31.3	31.2	31.8	32.3
	12H	30.9	31.4	31.4	31.9	32.5	30.9	31.4	31.4	31.9	32.5
12H	4H	29.8	30.6	30.3	31.1	31.5	29.8	30.6	30.3	31.1	31.5
	6H	30.5	31.1	31.0	31.6	32.1	30.5	31.1	31.0	31.6	32.1
	8H	30.8	31.3	31.3	31.8	32.4	30.8	31.3	31.3	31.8	32.4

Maximum UGR = 32.5

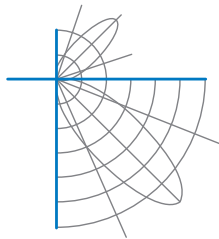


Report of Test LLIA001426-004

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

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Test Distance 9.5 m
Ambient Temperature 24.8 °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-41-14 and LM-46-04.

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.