



Report of Test

LLIA001426-001

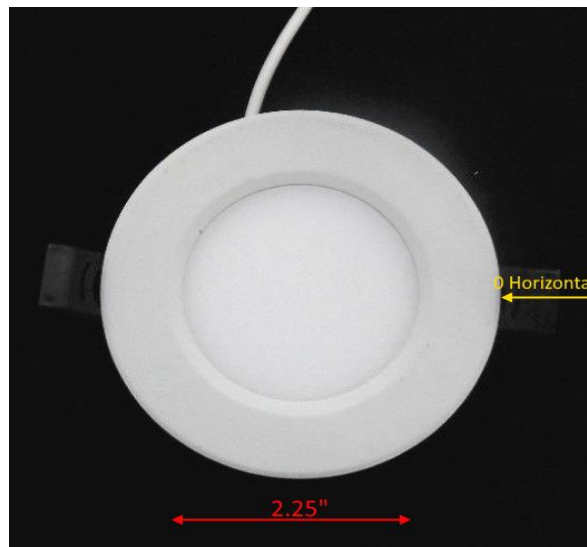
Indoor Distribution Photometry Test Report

Catalog Number: RDL/3RND/8/5CTS - 3000K Setting

Recessed mounted, cast aluminum and formed plastic housing,
clear patterned plastic enclosure above translucent white plastic enclosure.

white LEDs

One LED20009A LED driver



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

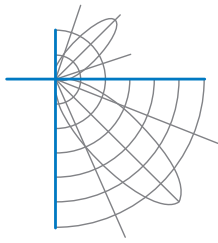
Performance Summary			
Input Voltage	120.0 V	Luminous Flux	672.5 Lumens
Input Current	0.0686 A	Total Efficacy	84.9 Lm/W
Input Power	7.92 W	Downward Flux	672.5 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.961		
Current THD	15.3 %		

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

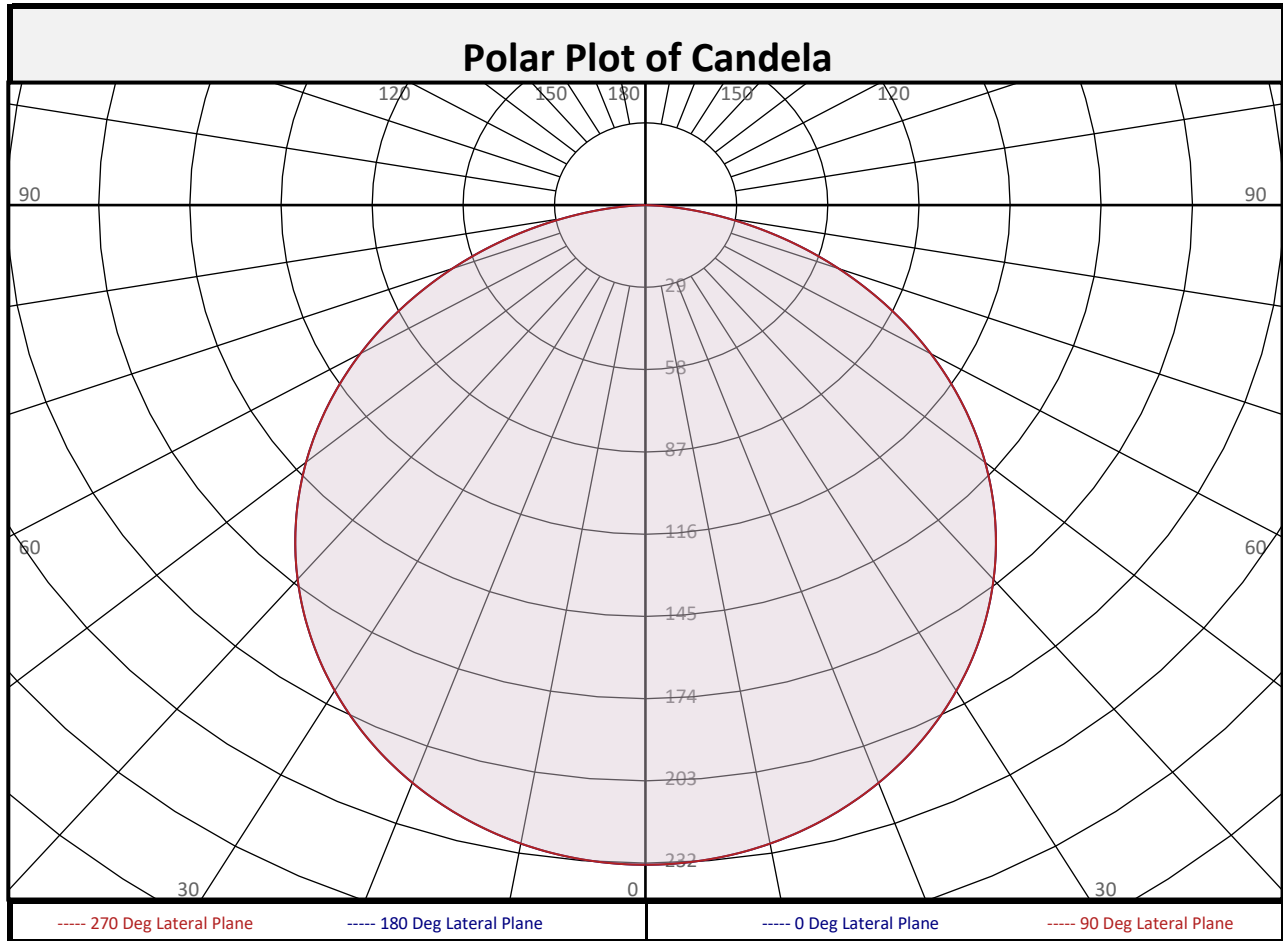
Test date: 03/16/2021

Report date: 03/19/2021

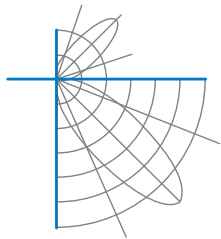
Signed: _____



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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	Zone (Deg Vert)	Flux (Lumens)	Percent of Total						
0-10	22.0	3.3%	90-100	0.0	0.0%	0-20	85.1	12.7%	10-20	63.1	9.4%	100-110	0.0	0.0%	0-30	181.1	26.9%
20-30	95.9	14.3%	110-120	0.0	0.0%	0-40	297.3	44.2%	30-40	116.2	17.3%	120-130	0.0	0.0%	0-60	528.9	78.7%
40-50	121.3	18.0%	130-140	0.0	0.0%	0-80	661.2	98.3%	40-50	110.3	16.4%	140-150	0.0	0.0%	0-80	661.2	98.3%
50-60	110.3	16.4%	150-160	0.0	0.0%	10-90	650.4	96.7%	50-60	84.3	12.5%	160-170	0.0	0.0%	20-50	333.5	49.6%
60-70	84.3	12.5%	170-180	0.0	0.0%	40-90	375.2	55.8%	60-70	48.0	7.1%	180-190	0.0	0.0%	40-90	375.2	55.8%
70-80	48.0	7.1%	90-180	0.0	0.0%	60-90	143.5	21.3%	70-80	11.2	1.7%	0-180	672.5	100.0%	60-90	143.5	21.3%
80-90	11.2	1.7%															
0-90	672.5	100.0%															

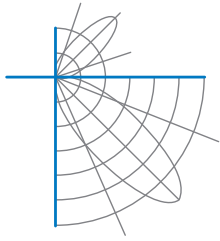


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Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles	0	233	233	233	233	233	233	233	233	233
	2.5	232	232	232	232	232	232	232	232	232
	5	232	232	232	232	232	232	232	232	232
	7.5	230	230	230	230	230	230	230	230	230
	10	229	229	229	229	229	229	229	229	229
	12.5	226	226	226	226	226	226	226	226	226
	15	224	224	224	224	224	224	224	224	224
	17.5	220	220	220	220	220	220	220	220	220
	20	217	217	217	217	217	217	217	217	217
	22.5	213	213	213	213	213	213	213	213	213
	25	208	208	208	208	208	208	208	208	208
	27.5	203	203	203	203	203	203	203	203	203
	30	198	198	198	198	198	198	198	198	198
	32.5	192	192	192	192	192	192	192	192	192
	35	186	186	186	186	186	186	186	186	186
	37.5	179	179	179	179	179	179	179	179	179
	40	172	172	172	172	172	172	172	172	172
	42.5	165	165	165	165	165	165	165	165	165
	45	157	157	157	157	157	157	157	157	157
	47.5	149	149	149	149	149	149	149	149	149
50	141	141	141	141	141	141	141	141	141	
52.5	132	132	132	132	132	132	132	132	132	
55	124	124	124	124	124	124	124	124	124	
57.5	114	114	114	114	114	114	114	114	114	
60	105	105	105	105	105	105	105	105	105	
62.5	95	95	95	95	95	95	95	95	95	
65	85	85	85	85	85	85	85	85	85	
67.5	75	75	75	75	75	75	75	75	75	
70	65	65	65	65	65	65	65	65	65	
72.5	55	55	55	55	55	55	55	55	55	
75	45	45	45	45	45	45	45	45	45	
77.5	36	36	36	36	36	36	36	36	36	
80	26	26	26	26	26	26	26	26	26	
82.5	17	17	17	17	17	17	17	17	17	
85	9	9	9	9	9	9	9	9	9	
87.5	2	2	2	2	2	2	2	2	2	
90	0	0	0	0	0	0	0	0	0	

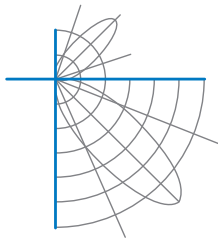


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Luminous Intensity (Candela) Table

		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
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	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	100	96	106	102	98	94	97	94	91	93	91	88	90	88	86	84
2	99	90	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72	69
3	90	79	71	64	87	78	70	64	75	68	63	72	66	62	69	65	61	58
4	82	70	61	54	80	69	60	54	66	59	53	64	58	53	62	56	52	50
5	76	63	54	47	73	61	53	47	59	52	46	57	51	46	55	50	45	43
6	70	56	47	41	68	55	47	41	54	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

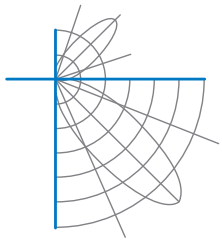
For absolute test reports, RUs are expressed as a percentage of total lumen output. For relative test reports, CUs are expressed as a percentage of total lamp output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are 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	6.5	7.58	7.58
8.0	3.6	10.11	10.11
10.0	2.3	12.64	12.64
12.0	1.6	15.17	15.17
14.0	1.2	17.69	17.69
16.0	0.9	20.22	20.22

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	90673	90673	90673
45	86751	86751	86751
55	83938	83938	83938
65	78682	78682	78682
75	68310	68310	68310
85	41323	41323	41323

Spacing Criterion	
Spacing Criterion:	1.3



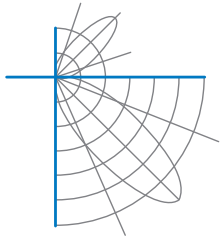
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UGR TABLE - CORRECTED

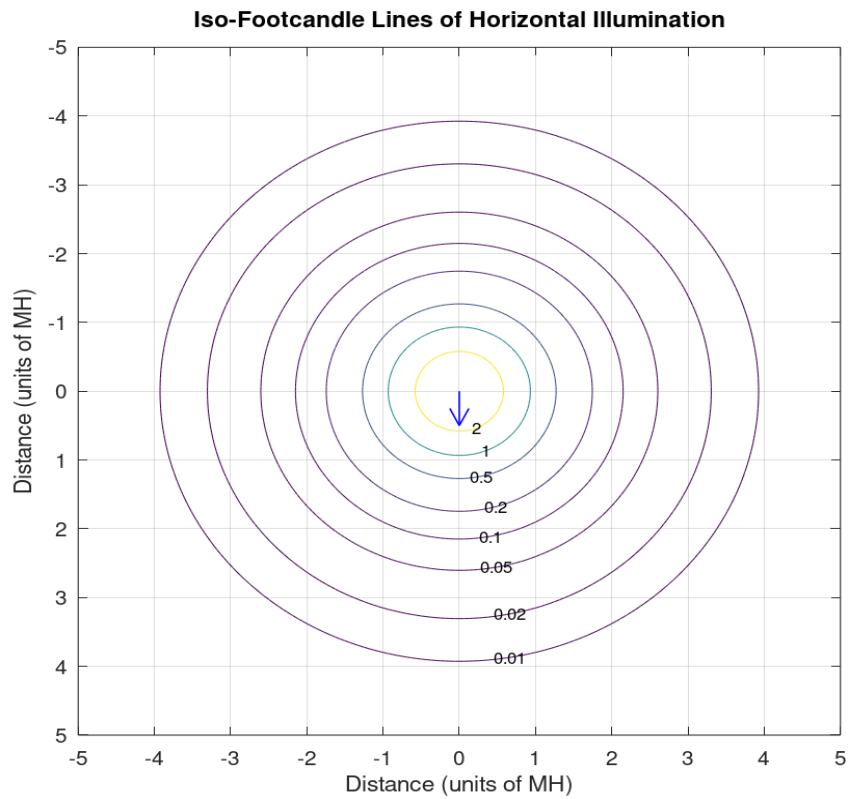
Reflectances											
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30	30
Walls	50	30	50	30	30	50	30	50	30	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	26.7	28.4	27.1	28.7	29.0	26.7	28.4	27.1	28.7	29.0
	3H	28.5	30.0	28.9	30.4	30.7	28.5	30.0	28.9	30.4	30.7
	4H	29.2	30.6	29.6	31.0	31.3	29.2	30.6	29.6	31.0	31.3
	6H	29.7	31.0	30.1	31.3	31.7	29.7	31.0	30.1	31.3	31.7
	8H	29.8	31.1	30.2	31.4	31.8	29.8	31.1	30.2	31.4	31.8
	12H	29.9	31.1	30.3	31.5	31.9	29.9	31.1	30.3	31.5	31.9
4H	2H	27.4	28.8	27.7	29.1	29.5	27.4	28.8	27.7	29.1	29.5
	3H	29.4	30.6	29.8	31.0	31.4	29.4	30.6	29.8	31.0	31.4
	4H	30.2	31.3	30.6	31.7	32.1	30.2	31.3	30.6	31.7	32.1
	6H	30.8	31.7	31.2	32.2	32.6	30.8	31.7	31.2	32.2	32.6
	8H	31.0	31.8	31.4	32.3	32.7	31.0	31.8	31.4	32.3	32.7
	12H	31.1	31.8	31.5	32.3	32.8	31.1	31.8	31.5	32.3	32.8
8H	4H	30.5	31.4	31.0	31.8	32.3	30.5	31.4	31.0	31.8	32.3
	6H	31.2	31.9	31.7	32.4	32.9	31.2	31.9	31.7	32.4	32.9
	8H	31.4	32.1	31.9	32.6	33.1	31.4	32.1	31.9	32.6	33.1
	12H	31.6	32.2	32.1	32.7	33.2	31.6	32.2	32.1	32.7	33.2
12H	4H	30.5	31.3	31.0	31.8	32.3	30.5	31.3	31.0	31.8	32.3
	6H	31.3	31.9	31.8	32.4	32.9	31.3	31.9	31.8	32.4	32.9
	8H	31.5	32.1	32.0	32.6	33.2	31.5	32.1	32.0	32.6	33.2

Maximum UGR = 33.2

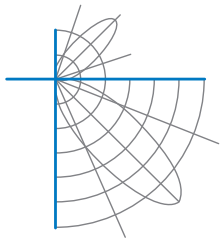


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Iso-Illuminance Plot



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-41-14 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.