

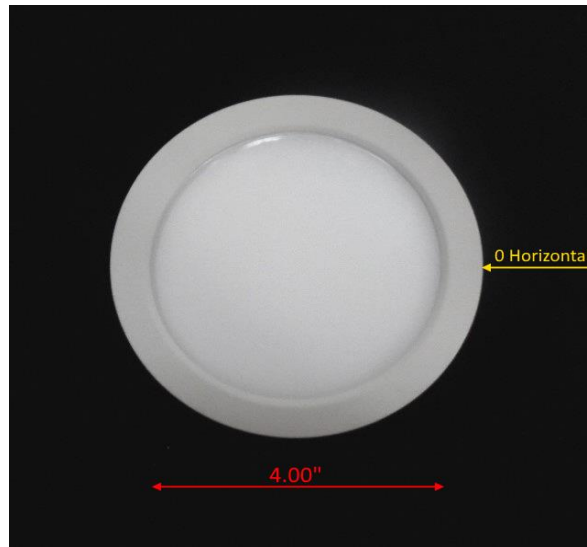
Report of Test

LLIA001426-009

Indoor Distribution Photometry Test Report

Catalog Number: SMD5/RND/11/CTS-46 - 3000K Setting
Surface mounted, cast aluminum housing, clear patterned
plastic enclosure above translucent white plastic enclosure.

52 white LEDs
One internal LED driver



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

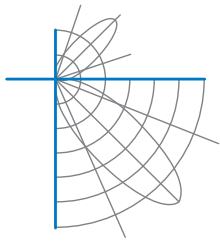
Performance Summary			
Input Voltage	120.0 V	Luminous Flux	957.4 Lumens
Input Current	0.0902 A	Total Efficacy	89.9 Lm/W
Input Power	10.65 W	Downward Flux	957.4 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.984		
Current THD	8.4 %		

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

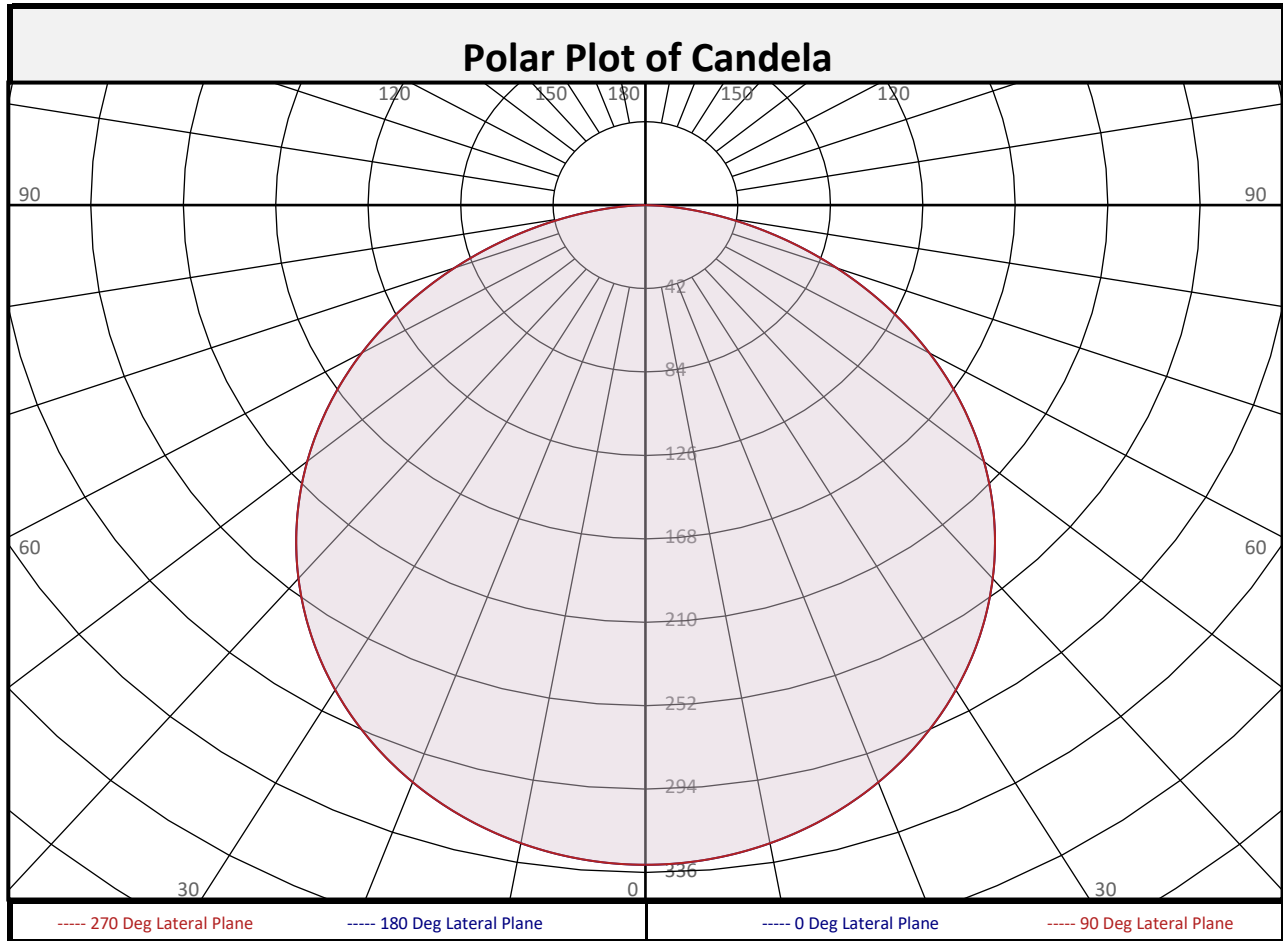
Test date: 03/17/2021

Report date: 03/19/2021

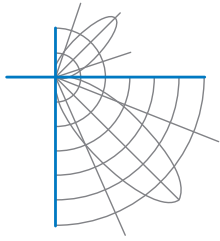
Signed: _____



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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	31.4	3.3%	90-100	0.0	0.0%	0-20	121.5	12.7%	10-20	90.0	9.4%	100-110	0.0	0.0%	0-30	258.3	27.0%
20-30	136.8	14.3%	110-120	0.0	0.0%	0-40	423.9	44.3%	30-40	165.6	17.3%	120-130	0.0	0.0%	0-60	753.3	78.7%
40-50	172.7	18.0%	130-140	0.0	0.0%	0-80	940.5	98.2%	40-50	156.8	16.4%	140-150	0.0	0.0%	0-80	940.5	98.2%
50-60	156.8	16.4%	150-160	0.0	0.0%	10-90	925.9	96.7%	50-60	119.5	12.5%	160-170	0.0	0.0%	20-50	475.1	49.6%
60-70	119.5	12.5%	170-180	0.0	0.0%	40-90	533.5	55.7%	60-70	67.7	7.1%	170-180	0.0	0.0%	40-90	533.5	55.7%
70-80	67.7	7.1%	90-180	0.0	0.0%	60-90	204.0	21.3%	70-80	67.7	7.1%	0-90	957.4	100.0%	60-90	204.0	21.3%
80-90	16.9	1.8%				0-180	957.4	100.0%									

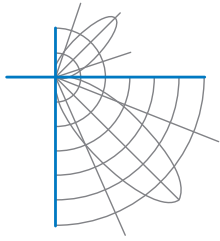


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Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles	0	332	332	332	332	332	332	332	332	332
	2.5	332	332	332	332	332	332	332	332	332
	5	331	331	331	331	331	331	331	331	331
	7.5	329	329	329	329	329	329	329	329	329
	10	326	326	326	326	326	326	326	326	326
	12.5	323	323	323	323	323	323	323	323	323
	15	319	319	319	319	319	319	319	319	319
	17.5	314	314	314	314	314	314	314	314	314
	20	309	309	309	309	309	309	309	309	309
	22.5	303	303	303	303	303	303	303	303	303
	25	297	297	297	297	297	297	297	297	297
	27.5	290	290	290	290	290	290	290	290	290
	30	282	282	282	282	282	282	282	282	282
	32.5	274	274	274	274	274	274	274	274	274
	35	265	265	265	265	265	265	265	265	265
	37.5	255	255	255	255	255	255	255	255	255
	40	245	245	245	245	245	245	245	245	245
	42.5	235	235	235	235	235	235	235	235	235
	45	224	224	224	224	224	224	224	224	224
	47.5	213	213	213	213	213	213	213	213	213
50	201	201	201	201	201	201	201	201	201	
52.5	188	188	188	188	188	188	188	188	188	
55	176	176	176	176	176	176	176	176	176	
57.5	162	162	162	162	162	162	162	162	162	
60	149	149	149	149	149	149	149	149	149	
62.5	135	135	135	135	135	135	135	135	135	
65	121	121	121	121	121	121	121	121	121	
67.5	107	107	107	107	107	107	107	107	107	
70	92	92	92	92	92	92	92	92	92	
72.5	78	78	78	78	78	78	78	78	78	
75	64	64	64	64	64	64	64	64	64	
77.5	50	50	50	50	50	50	50	50	50	
80	37	37	37	37	37	37	37	37	37	
82.5	25	25	25	25	25	25	25	25	25	
85	14	14	14	14	14	14	14	14	14	
87.5	5	5	5	5	5	5	5	5	5	
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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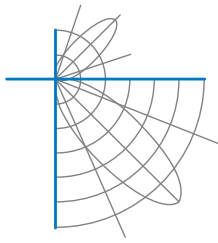
Coefficients of Utilization/Room Utilization - Zonal Cavity Method																						
Effective Floor Cavity Reflectance 0.20																						
RC	80					70					50				30				10			0
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10	0
RCR																						
0	119	119	119	119		116	116	116	116		111	111	111		106	106	106		102	102	102	100
1	109	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	61	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	40	37
7	65	51	42	36		63	50	42	36		49	41	36		47	40	35		46	40	35	33
8	60	47	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	9.2	7.57	7.57	
8.0	5.2	10.09	10.09	
10.0	3.3	12.62	12.62	
12.0	2.3	15.14	15.14	
14.0	1.7	17.67	17.67	
16.0	1.3	20.19	20.19	

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	40963	40963	40963
45	39068	39068	39068
55	37753	37753	37753
65	35267	35267	35267
75	30434	30434	30434
85	20378	20378	20378

Spacing Criterion	
Spacing Criterion:	1.3



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UGR TABLE - CORRECTED

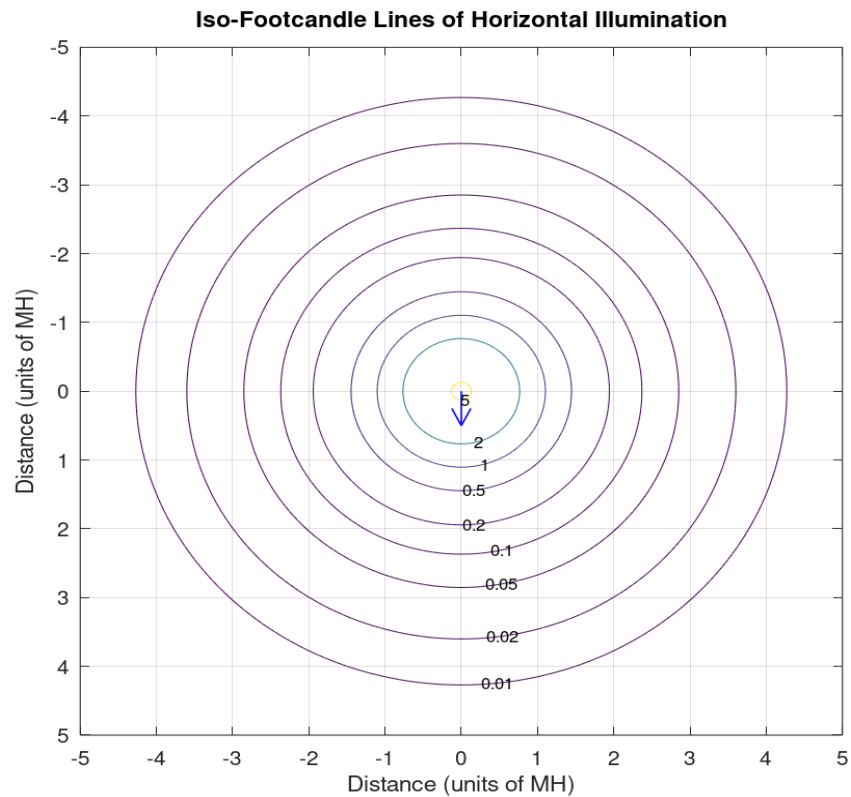
Reflectances											
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30	
Walls	50	30	50	30	30	50	30	50	30	30	
Floor Cavity	20	20	20	20	20	20	20	20	20	20	
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	24.0	25.7	24.4	26.0	26.3	24.0	25.7	24.4	26.0	26.3
	3H	25.8	27.3	26.2	27.7	28.0	25.8	27.3	26.2	27.7	28.0
	4H	26.5	27.9	26.9	28.3	28.6	26.5	27.9	26.9	28.3	28.6
	6H	27.0	28.3	27.4	28.6	29.0	27.0	28.3	27.4	28.6	29.0
	8H	27.1	28.4	27.5	28.7	29.1	27.1	28.4	27.5	28.7	29.1
	12H	27.2	28.4	27.6	28.8	29.2	27.2	28.4	27.6	28.8	29.2
4H	2H	24.7	26.1	25.1	26.4	26.8	24.7	26.1	25.1	26.4	26.8
	3H	26.7	27.9	27.1	28.3	28.7	26.7	27.9	27.1	28.3	28.7
	4H	27.5	28.5	27.9	29.0	29.4	27.5	28.5	27.9	29.0	29.4
	6H	28.1	29.0	28.5	29.5	29.9	28.1	29.0	28.5	29.5	29.9
	8H	28.3	29.1	28.7	29.6	30.0	28.3	29.1	28.7	29.6	30.0
	12H	28.4	29.2	28.9	29.6	30.1	28.4	29.2	28.9	29.6	30.1
8H	4H	27.8	28.7	28.2	29.1	29.6	27.8	28.7	28.2	29.1	29.6
	6H	28.5	29.2	29.0	29.7	30.2	28.5	29.2	29.0	29.7	30.2
	8H	28.7	29.4	29.2	29.9	30.4	28.7	29.4	29.2	29.9	30.4
	12H	28.9	29.5	29.4	30.0	30.6	28.9	29.5	29.4	30.0	30.6
12H	4H	27.8	28.6	28.3	29.1	29.6	27.8	28.6	28.3	29.1	29.6
	6H	28.6	29.2	29.1	29.7	30.2	28.6	29.2	29.1	29.7	30.2
	8H	28.8	29.4	29.3	29.9	30.5	28.8	29.4	29.3	29.9	30.5

Maximum UGR = 30.6

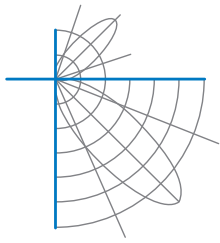


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Iso-Illuminance Plot



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.



Report of Test

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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.