

Report of Test

LLIA001182-001-R01*

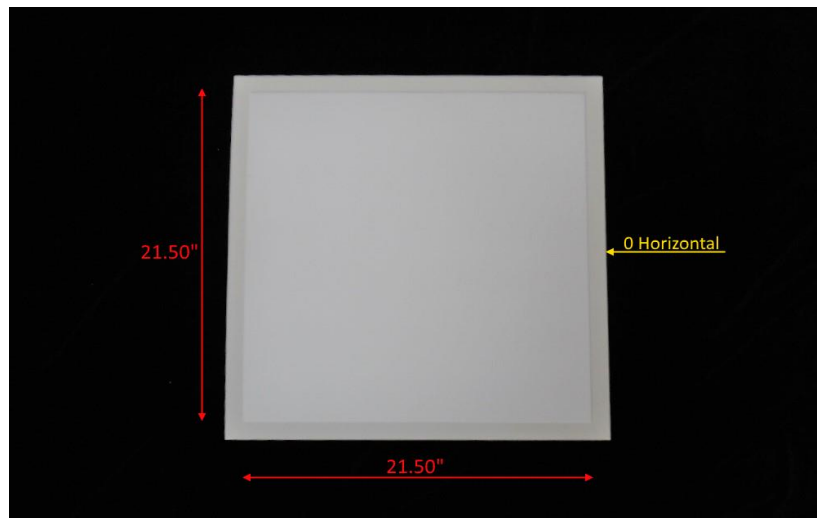
Indoor Distribution Photometry Test Report

Catalog Number: PL22-30W-40K-D

Recessed ceiling, formed and extruded aluminum housing,
white reflector below LEDs, translucent white plastic enclosure.

126 white LEDs, 42 clusters of 3 LEDs each.

One LED driver



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

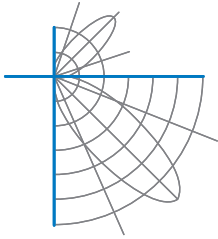
Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	3560.8 Lumens
Input Current	0.2511 A	Total Efficacy	119.4 lm/W
Input Power	29.82 W	Downward Flux	3560.8 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.990		
Current THD	7.0 %		

*This test report supersedes previous versions - see the end of this report for a list of revisions

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

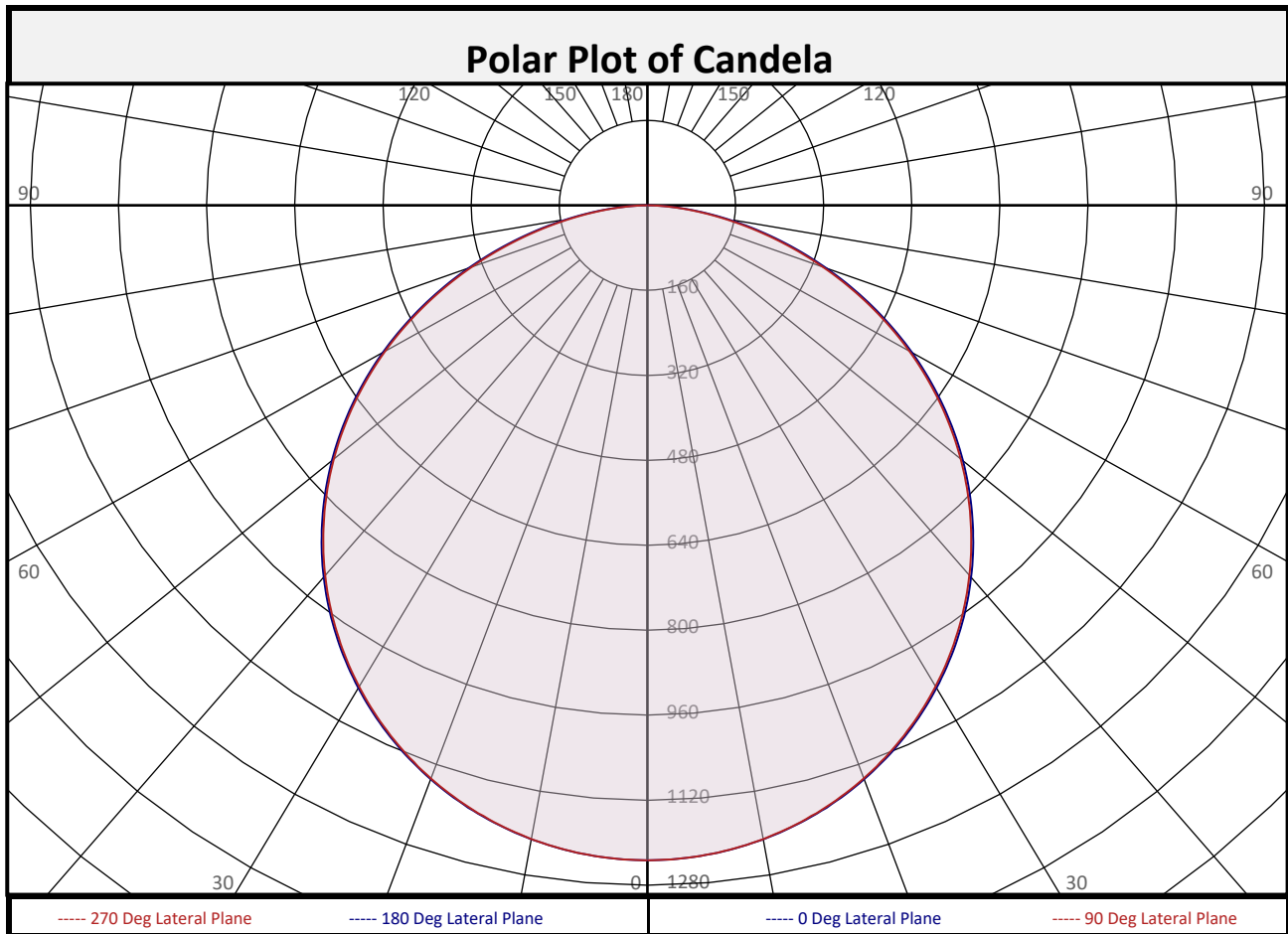
Test date: 11/04/2019
Report date: 10/25/2022

Signed: _____

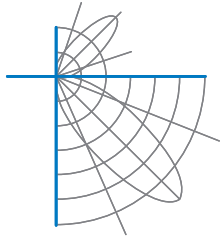


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Zonal Flux Summary										
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	116.8	3.3%		90-100	0.0	0.0%		0-20	451.4	12.7%
10-20	334.6	9.4%		100-110	0.0	0.0%		0-30	959.7	27.0%
20-30	508.4	14.3%		110-120	0.0	0.0%		0-40	1575	44.2%
30-40	615.4	17.3%		120-130	0.0	0.0%		0-60	2798	78.6%
40-50	641.4	18.0%		130-140	0.0	0.0%		0-80	3493	98.1%
50-60	581.7	16.3%		140-150	0.0	0.0%		10-90	3444	96.7%
60-70	442.8	12.4%		150-160	0.0	0.0%		20-50	1765	49.6%
70-80	252.1	7.1%		160-170	0.0	0.0%		40-90	1986	55.8%
80-90	67.8	1.9%		170-180	0.0	0.0%		60-90	762.6	21.4%
0-90	3561	100.0%		90-180	0.0	0.0%		0-180	3561	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 - Data was acquired in 0.5° increments, 2.5° increments shown.	0	1233	1233	1233	1233	1233	1233	1233	1233	1233
	2.5	1232	1232	1232	1232	1232	1232	1232	1232	1232
	5	1228	1228	1228	1228	1228	1228	1228	1228	1228
	7.5	1221	1221	1221	1221	1221	1221	1221	1221	1221
	10	1212	1212	1212	1212	1212	1212	1212	1212	1212
	12.5	1200	1200	1200	1199	1200	1199	1200	1200	1200
	15	1186	1186	1186	1185	1185	1185	1186	1186	1186
	17.5	1169	1169	1169	1168	1168	1168	1169	1169	1169
	20	1150	1149	1149	1148	1149	1148	1149	1149	1150
	22.5	1128	1128	1127	1126	1126	1126	1127	1128	1128
	25	1104	1104	1103	1102	1102	1102	1103	1104	1104
	27.5	1078	1078	1077	1075	1075	1075	1077	1078	1078
	30	1049	1049	1048	1047	1046	1047	1048	1049	1049
	32.5	1018	1018	1017	1016	1015	1016	1017	1018	1018
	35	985	985	984	982	982	982	984	985	985
	37.5	951	950	949	947	947	947	949	950	951
	40	914	913	912	910	909	910	912	913	914
	42.5	875	874	873	871	870	871	873	874	875
	45	834	833	832	830	829	830	832	833	834
	47.5	792	791	789	787	787	787	789	791	792
50	747	747	745	743	743	743	745	747	747	
52.5	701	701	699	697	696	697	699	701	701	
55	654	653	651	649	649	649	651	653	654	
57.5	605	604	602	600	600	600	602	604	605	
60	555	554	552	550	549	550	552	554	555	
62.5	503	502	500	498	498	498	500	502	503	
65	451	450	448	446	445	446	448	450	451	
67.5	398	397	395	393	392	393	395	397	398	
70	345	344	342	340	339	340	342	344	345	
72.5	293	292	289	287	286	287	289	292	293	
75	241	240	238	235	234	235	238	240	241	
77.5	192	191	188	186	185	186	188	191	192	
80	145	144	141	139	138	139	141	144	145	
82.5	101	100	98	96	95	96	98	100	101	
85	60	60	59	57	57	57	59	60	60	
87.5	24	24	24	25	24	25	24	24	24	
90	1	1	2	2	2	2	2	1	1	

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

North America (issuing laboratory)

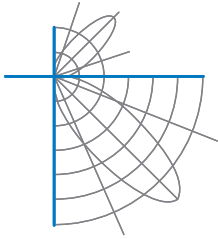
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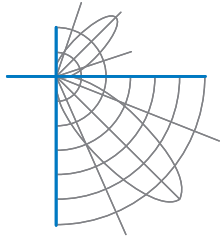
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Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	90	1	1	2	2	2	2	2	1	1
	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	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	96	106	102	98	94	97	94	91	93	91	88	90	88	86	84			
2	99	90	83	78	96	88	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	60	58			
4	82	70	61	54	80	69	60	54	66	59	53	64	58	53	62	56	52	50			
5	76	63	53	47	73	61	53	47	59	52	46	57	51	45	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	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			

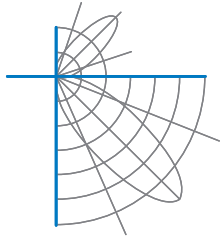
For absolute test reports, RUs are expressed as a percentage of total lumen output. For relative test reports, CUs are expressed as a percentage of total lamp output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are 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	34.3	7.59	7.57
8.0	19.3	10.11	10.09
10.0	12.3	12.64	12.61
12.0	8.6	15.17	15.13
14.0	6.3	17.70	17.65
16.0	4.8	20.23	20.17

Spacing Criterion	
0 deg:	1.3
90 deg:	1.3
180 deg:	1.3
270 deg:	1.3

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	4135	4135	4135
45	3955	3945	3933
55	3822	3807	3793
65	3575	3551	3533
75	3125	3079	3035
85	2305	2264	2180

Beam and Field Angle	
0-180 Degree Plane	
Beam Angle:	113.8°
Field Angle:	162.4°
90-270 Degree Plane	
Beam Angle:	113.3°
Field Angle:	161.7°



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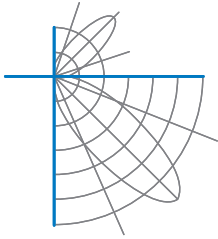
UGR Table - Corrected

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

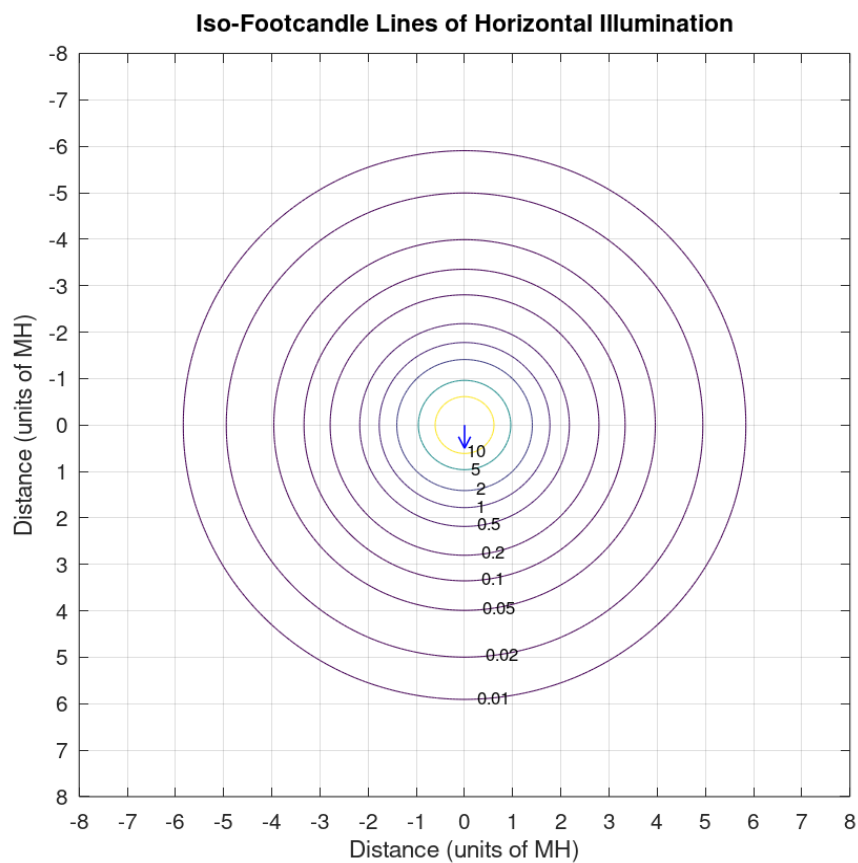
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	16.8	18.5	17.2	18.8	19.1	16.8	18.4	17.2	18.8	19.1
	3H	18.7	20.2	19.0	20.5	20.8	18.6	20.1	19.0	20.4	20.8
	4H	19.3	20.7	19.7	21.1	21.5	19.2	20.7	19.6	21.0	21.4
	6H	19.8	21.1	20.2	21.5	21.9	19.7	21.0	20.1	21.4	21.8
	8H	20.0	21.2	20.4	21.6	22.0	19.9	21.1	20.3	21.5	21.9
	12H	20.1	21.3	20.5	21.7	22.1	20.0	21.1	20.4	21.5	22.0
4H	2H	17.5	18.9	17.9	19.2	19.6	17.4	18.8	17.8	19.2	19.6
	3H	19.5	20.7	19.9	21.1	21.5	19.4	20.6	19.9	21.0	21.4
	4H	20.3	21.4	20.7	21.8	22.2	20.2	21.3	20.7	21.7	22.1
	6H	20.9	21.9	21.4	22.3	22.8	20.8	21.8	21.3	22.2	22.7
	8H	21.1	22.0	21.6	22.5	22.9	21.0	21.9	21.5	22.3	22.8
	12H	21.3	22.1	21.8	22.5	23.0	21.1	21.9	21.6	22.4	22.9
8H	4H	20.6	21.5	21.1	21.9	22.4	20.5	21.4	21.0	21.9	22.3
	6H	21.4	22.1	21.9	22.6	23.1	21.3	22.0	21.8	22.5	22.9
	8H	21.6	22.3	22.1	22.8	23.3	21.5	22.2	22.0	22.7	23.2
	12H	21.8	22.4	22.4	22.9	23.5	21.7	22.3	22.2	22.8	23.3
12H	4H	20.6	21.4	21.1	21.9	22.4	20.6	21.4	21.1	21.8	22.3
	6H	21.4	22.1	21.9	22.5	23.1	21.3	22.0	21.8	22.4	23.0
	8H	21.7	22.3	22.2	22.8	23.4	21.6	22.2	22.1	22.7	23.3

Maximum UGR = 23.5



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Iso-Illuminance Plot



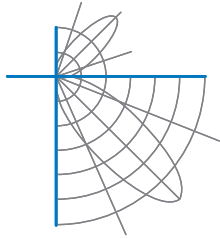
The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution of room reflections.



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Additional Pictures of Test Subject





Report of Test

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Test Distance 9.5 m
Ambient Temperature 24.6 °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.

Revision History: R01 - 10/25/2022 - Revised catalog number

North America (issuing laboratory)

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