

## Report of Test

LLIA002469-012

Indoor Distribution Photometry Test Report

Catalog Number: LSA4P-50PCS-WH 30W Setting 4000K - 80/20%

Pendant mounted, extruded aluminum housing, formed white reflectors, translucent white plastic enclosure.

360 white LEDs, 180 CW LEDs and 180 WW LEDs in direct section, 40 unenergized LEDs and 110 LEDs, 55CW LEDs and 55WW LEDs, in indirect section. One FS-TMG050B1050TC-12V LED driver



Prepared For:

Topaz Lighting, A Southwire Company  
925 Waverly Avenue  
Holtsville, NY 11742, USA

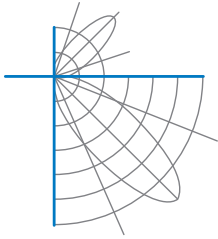
Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	4155.0 Lumens
Input Current	0.2348 A	Total Efficacy	149.1 lm/W
Input Power	27.86 W	Downward Flux	2972.5 Lumens
Frequency	60.00 Hz	Downward Flux	71.5 % of Total
Power Factor	0.989		
Current THD	10.1 %		

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

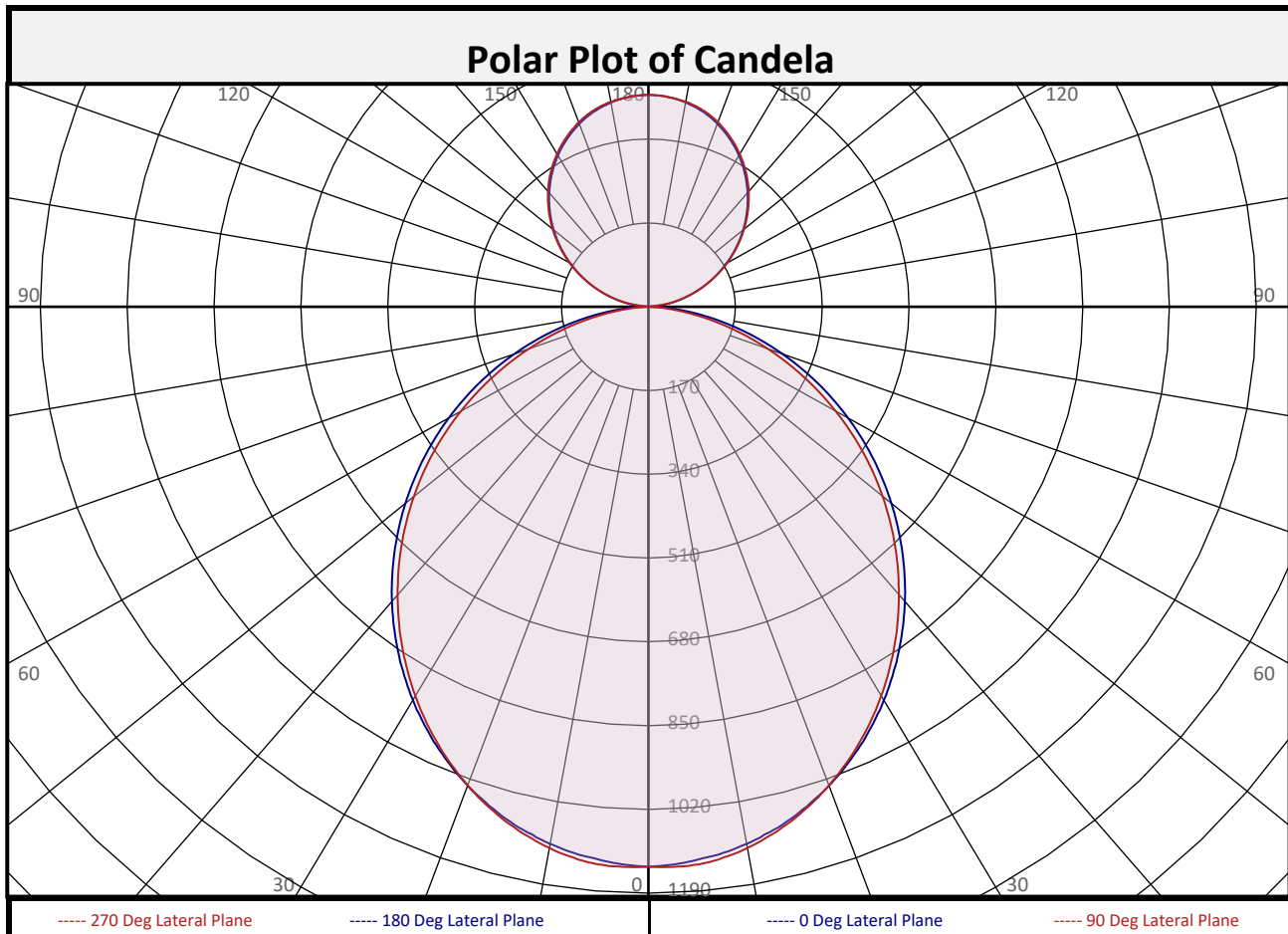
Test date: 09/12/2024

Report date: 09/18/2024

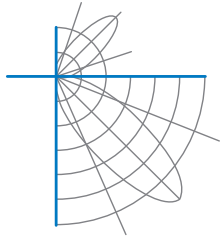
Signed: \_\_\_\_\_



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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	107.3	2.6%		90-100	18.0	0.4%		0-20	411.0	9.9%
10-20	303.7	7.3%		100-110	82.2	2.0%		0-30	861.5	20.7%
20-30	450.6	10.8%		110-120	143.0	3.4%		0-40	1390	33.5%
30-40	528.9	12.7%		120-130	189.1	4.6%		0-60	2392	57.6%
40-50	533.4	12.8%		130-140	212.1	5.1%		0-80	2929	70.5%
50-60	468.6	11.3%		140-150	207.4	5.0%		10-90	2865	69.0%
60-70	346.4	8.3%		150-160	174.2	4.2%		20-50	1513	36.4%
70-80	190.4	4.6%		160-170	116.0	2.8%		40-90	1582	38.1%
80-90	43.2	1.0%		170-180	40.6	1.0%		60-90	580.0	14.0%
0-90	2972	71.5%		90-180	1183	28.5%		0-180	4155	100.0%



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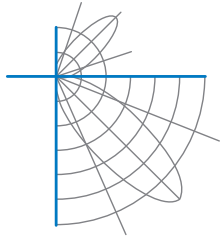
#### Luminous Intensity (Candela) Table

		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	1137	1137	1137	1137	1137	1137	1137	1137	1137
	2.5	1133	1133	1135	1137	1138	1137	1135	1133	1133
	5	1126	1126	1129	1134	1136	1134	1129	1126	1126
	7.5	1118	1118	1121	1125	1127	1125	1121	1118	1118
	10	1107	1107	1110	1113	1115	1113	1110	1107	1107
	12.5	1093	1092	1095	1098	1099	1098	1095	1092	1093
	15	1076	1075	1078	1079	1081	1079	1078	1075	1076
	17.5	1056	1056	1056	1057	1059	1057	1056	1056	1056
	20	1034	1033	1033	1032	1034	1032	1033	1033	1034
	22.5	1009	1008	1007	1005	1006	1005	1007	1008	1009
	25	982	980	978	976	977	976	978	980	982
	27.5	953	951	948	944	945	944	948	951	953
	30	922	919	915	911	912	911	915	919	922
	32.5	889	886	881	876	877	876	881	886	889
	35	855	851	845	839	840	839	845	851	855
	37.5	819	815	809	802	802	802	809	815	819
	40	781	777	770	763	763	763	770	777	781
	42.5	742	739	731	724	723	724	731	739	742
	45	703	700	691	683	682	683	691	700	703
	47.5	662	659	651	642	641	642	651	659	662
50	621	618	609	600	598	600	609	618	621	
52.5	579	576	567	558	556	558	567	576	579	
55	537	534	525	515	512	515	525	534	537	
57.5	494	491	482	471	467	471	482	491	494	
60	451	448	439	426	423	426	439	448	451	
62.5	407	405	395	382	378	382	395	405	407	
65	364	362	351	338	334	338	351	362	364	
67.5	321	319	307	295	290	295	307	319	321	
70	278	276	263	252	247	252	263	276	278	
72.5	236	234	220	209	205	209	220	234	236	
75	195	192	179	168	164	168	179	192	195	
77.5	155	151	139	129	125	129	139	151	155	
80	117	112	101	92	88	92	101	112	117	
82.5	81	76	65	57	55	57	65	76	81	
85	48	42	33	27	25	27	33	42	48	
87.5	19	13	7	5	5	5	7	13	19	
90	0	0	1	1	1	1	1	0	0	

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

**North America (issuing laboratory)**

**Australasia & S.E. Asia**



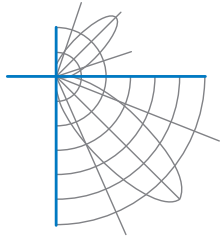
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#### Luminous Intensity (Candela) Table

		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	0	0	1	1	1	1	1	0	0
	92.5	7	3	2	2	2	2	2	3	7
	95	20	20	10	4	4	4	10	20	20
	97.5	33	33	32	25	20	25	32	33	33
	100	47	47	47	45	45	45	47	47	47
	102.5	62	62	62	61	61	61	62	62	62
	105	77	78	78	77	77	77	78	78	77
	107.5	94	95	94	94	94	94	94	95	94
	110	110	111	111	111	110	111	111	111	110
	112.5	127	128	128	127	128	127	128	128	127
	115	143	145	145	144	145	144	145	145	143
	117.5	160	161	162	161	162	161	162	161	160
	120	177	178	179	178	179	178	179	178	177
	122.5	193	195	195	195	195	195	195	195	193
	125	210	211	212	212	212	212	212	211	210
	127.5	226	228	228	228	228	228	228	228	226
	130	242	244	244	245	244	245	244	244	242
	132.5	258	259	260	261	260	261	260	259	258
	135	273	275	275	276	276	276	275	275	273
	137.5	287	290	290	291	291	291	290	290	287
140	302	304	305	306	306	306	305	304	302	
142.5	316	318	318	320	320	320	318	318	316	
145	329	331	332	333	333	333	332	331	329	
147.5	342	343	345	346	346	346	345	343	342	
150	354	355	357	358	358	358	357	355	354	
152.5	365	366	368	369	369	369	368	366	365	
155	376	376	379	380	379	380	379	376	376	
157.5	386	386	389	390	389	390	389	386	386	
160	395	395	398	399	398	399	398	395	395	
162.5	403	402	405	407	406	407	405	402	403	
165	410	409	412	413	412	413	412	409	410	
167.5	415	415	417	419	418	419	417	415	415	
170	420	420	421	423	422	423	421	420	420	
172.5	424	423	425	426	425	426	425	423	424	
175	427	426	427	429	427	429	427	426	427	
177.5	429	428	429	429	429	429	429	428	429	
180	429	429	429	429	429	429	429	429	429	

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	70	50	30	10	70	50	30	10	70	50	30	10	0
RCR																					
0	112	112	112	112	106	106	106	106	95	95	95	95	85	85	85	85	76	76	76	76	72
1	103	98	94	91	97	93	90	86	84	81	79	79	75	73	71	71	67	66	64	64	60
2	94	86	79	74	88	82	76	71	73	69	65	65	66	63	59	59	59	56	54	54	51
3	85	75	68	62	81	72	65	59	65	59	55	55	58	54	50	50	52	49	46	46	43
4	78	67	59	52	74	64	56	50	58	52	47	47	52	47	43	43	47	43	40	40	37
5	72	60	51	45	68	57	49	43	52	45	40	40	47	42	37	37	42	38	35	35	32
6	66	54	45	39	63	51	44	38	47	40	35	35	42	37	33	33	38	34	30	30	28
7	61	49	40	34	58	46	39	33	42	36	31	31	39	33	29	29	35	30	27	27	25
8	57	44	36	31	54	42	35	30	39	32	28	28	35	30	26	26	32	28	24	24	22
9	53	40	33	27	50	39	32	27	36	29	25	25	33	27	23	23	30	25	22	22	20
10	50	37	30	25	47	36	29	24	33	27	23	23	30	25	21	21	28	23	20	20	18

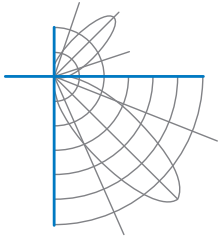
For absolute test reports, RUs are expressed as a percentage of total lumen output. For relative test reports, CUs are expressed as a percentage of total lamp output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are 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	31.6	7.26	7.18
8.0	17.8	9.68	9.58
10.0	11.4	12.10	11.97
12.0	7.9	14.52	14.36
14.0	5.8	16.94	16.76
16.0	4.4	19.35	19.15

Spacing Criterion	
0 deg:	1.2
90 deg:	1.2
180 deg:	1.2
270 deg:	1.2

Average Luminance (cd/m <sup>2</sup> )			
	0 deg Plane	45 deg Plane	90 deg Plane
0	21082	21082	21082
45	18443	18130	17901
55	17367	16973	16547
65	15991	15391	14649
75	13944	12816	11768
85	10305	6991	5318

Beam and Field Angle	
0-180 Degree Plane	
Beam Angle:	106.2°
Field Angle:	160.4°
90-270 Degree Plane	
Beam Angle:	103.5°
Field Angle:	156.5°



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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

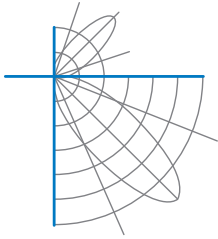
##### Room Size

##### UGR Viewed Crosswise

##### UGR Viewed Endwise

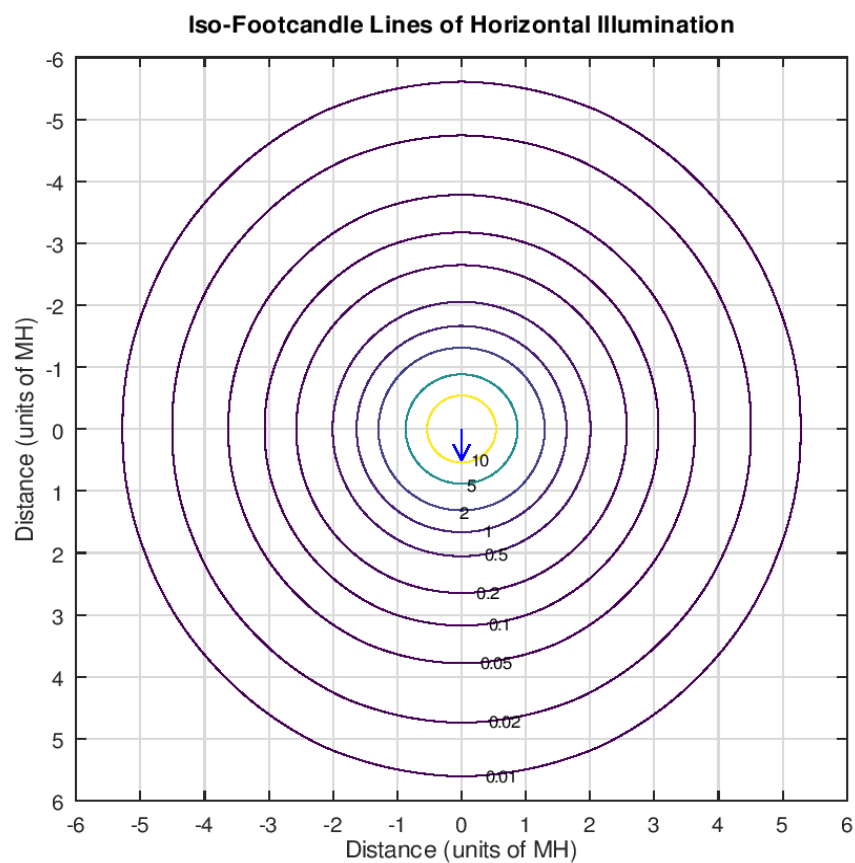
X=2H	Y=2H	20.0	21.1	20.8	21.9	22.8	19.7	20.8	20.5	21.6	22.5
	3H	21.8	22.8	22.6	23.5	24.5	21.3	22.3	22.1	23.1	24.1
	4H	22.4	23.3	23.2	24.1	25.1	21.9	22.8	22.6	23.6	24.6
	6H	22.9	23.7	23.7	24.5	25.5	22.2	23.1	23.0	23.9	24.9
	8H	23.0	23.8	23.8	24.7	25.6	22.3	23.1	23.1	23.9	24.9
	12H	23.1	23.9	23.9	24.7	25.7	22.3	23.1	23.1	23.9	24.9
4H	2H	20.5	21.5	21.3	22.3	23.2	20.3	21.2	21.1	22.0	23.0
	3H	22.5	23.3	23.3	24.1	25.1	22.1	22.9	22.9	23.7	24.7
	4H	23.3	24.0	24.1	24.8	25.8	22.8	23.5	23.6	24.3	25.3
	6H	23.9	24.5	24.7	25.3	26.4	23.2	23.8	24.0	24.7	25.7
	8H	24.1	24.6	24.9	25.5	26.5	23.3	23.9	24.2	24.7	25.8
	12H	24.2	24.7	25.0	25.5	26.6	23.3	23.8	24.2	24.7	25.8
8H	4H	23.5	24.1	24.3	24.9	26.0	23.0	23.6	23.9	24.4	25.5
	6H	24.2	24.7	25.1	25.6	26.6	23.6	24.0	24.4	24.9	26.0
	8H	24.5	24.9	25.3	25.8	26.8	23.7	24.2	24.6	25.0	26.1
	12H	24.6	25.0	25.5	25.9	27.0	23.8	24.2	24.7	25.0	26.2
12H	4H	23.5	24.0	24.3	24.9	25.9	23.0	23.6	23.9	24.4	25.5
	6H	24.2	24.6	25.1	25.5	26.6	23.6	24.0	24.5	24.9	26.0
	8H	24.5	24.9	25.4	25.7	26.9	23.8	24.2	24.7	25.0	26.2

Maximum UGR = 27.0

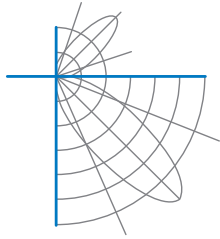


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### Iso-Illuminance Plot



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        25.1 °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.