



## Report of Test

**LLIA002469-011**

Indoor Distribution Photometry Test Report

Catalog Number: LSA4P-50PCS-WH 30W Setting 4000K - 90/10%

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 white LEDs, 20CW and 20WW and 110 unenergized 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	4094.4 Lumens
Input Current	0.2358 A	Total Efficacy	146.3 lm/W
Input Power	27.98 W	Downward Flux	3554.2 Lumens
Frequency	60.00 Hz	Downward Flux	86.8 % of Total
Power Factor	0.989		
Current THD	10.1 %		

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

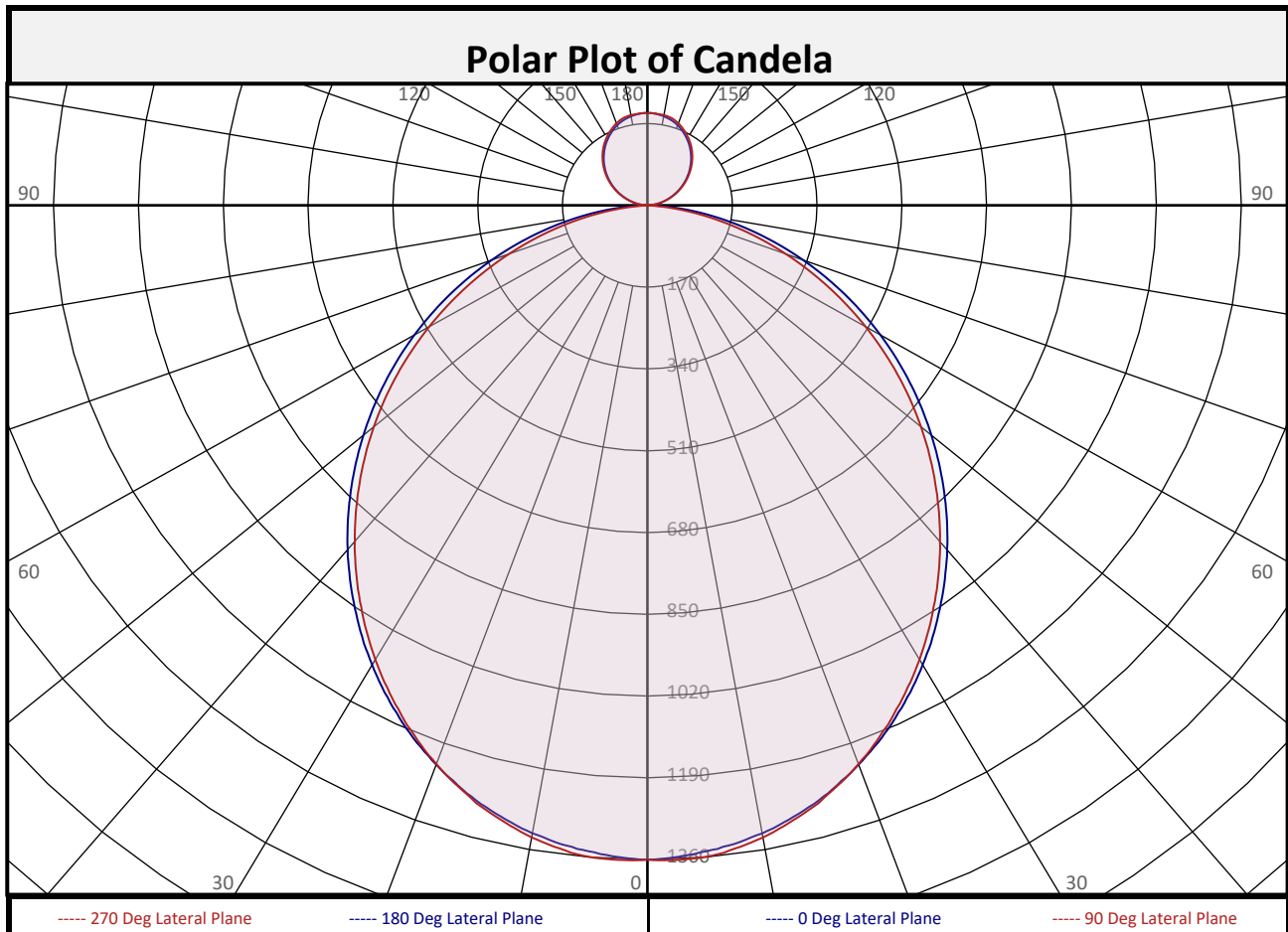
Test date: 09/12/2024

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	128.4	3.1%		90-100	8.9	0.2%		0-20	491.6	12.0%
10-20	363.2	8.9%		100-110	38.0	0.9%		0-30	1030	25.2%
20-30	538.8	13.2%		110-120	65.6	1.6%		0-40	1663	40.6%
30-40	632.5	15.4%		120-130	86.5	2.1%		0-60	2861	69.9%
40-50	637.8	15.6%		130-140	96.9	2.4%		0-80	3503	85.6%
50-60	560.4	13.7%		140-150	94.5	2.3%		10-90	3426	83.7%
60-70	414.2	10.1%		150-160	79.1	1.9%		20-50	1809	44.2%
70-80	227.5	5.6%		160-170	52.4	1.3%		40-90	1891	46.2%
80-90	51.4	1.3%		170-180	18.2	0.4%		60-90	693.1	16.9%
0-90	3554	86.8%		90-180	540.2	13.2%		0-180	4094	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	1360	1360	1360	1360	1360	1360	1360	1360	1360
	2.5	1356	1356	1358	1361	1362	1361	1358	1356	1356
	5	1348	1347	1351	1357	1359	1357	1351	1347	1348
	7.5	1339	1338	1341	1346	1348	1346	1341	1338	1339
	10	1326	1324	1327	1331	1334	1331	1327	1324	1326
	12.5	1308	1307	1310	1312	1315	1312	1310	1307	1308
	15	1289	1286	1288	1290	1293	1290	1288	1286	1289
	17.5	1264	1263	1263	1264	1265	1264	1263	1263	1264
	20	1237	1235	1235	1234	1236	1234	1235	1235	1237
	22.5	1209	1206	1203	1202	1204	1202	1203	1206	1209
	25	1176	1173	1170	1167	1168	1167	1170	1173	1176
	27.5	1141	1137	1133	1129	1130	1129	1133	1137	1141
	30	1103	1100	1094	1089	1091	1089	1094	1100	1103
	32.5	1064	1060	1053	1047	1048	1047	1053	1060	1064
	35	1023	1018	1010	1004	1005	1004	1010	1018	1023
	37.5	980	974	967	959	959	959	967	974	980
	40	935	929	921	913	912	913	921	929	935
	42.5	889	883	874	866	865	866	874	883	889
	45	841	836	826	817	816	817	826	836	841
	47.5	793	788	778	768	766	768	778	788	793
50	743	739	729	718	716	718	729	739	743	
52.5	693	689	678	667	664	667	678	689	693	
55	642	638	627	615	612	615	627	638	642	
57.5	592	588	576	563	559	563	576	588	592	
60	540	536	524	510	506	510	524	536	540	
62.5	488	484	472	457	452	457	472	484	488	
65	436	433	419	404	399	404	419	433	436	
67.5	384	381	366	352	347	352	366	381	384	
70	332	330	315	301	296	301	315	330	332	
72.5	282	279	264	250	245	250	264	279	282	
75	233	229	214	201	196	201	214	229	233	
77.5	185	181	166	154	150	154	166	181	185	
80	140	134	120	110	106	110	120	134	140	
82.5	97	91	78	69	65	69	78	91	97	
85	58	50	39	32	30	32	39	50	58	
87.5	23	15	8	6	6	6	8	15	23	
90	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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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	0	0	0	0	0	0	0
	92.5	3	2	2	2	2	2	2	2	3
	95	9	10	6	3	3	3	6	10	9
	97.5	15	16	15	12	10	12	15	16	15
	100	21	22	22	21	21	21	22	22	21
	102.5	28	29	29	29	29	29	29	29	28
	105	35	36	36	36	36	36	36	36	35
	107.5	42	44	44	43	43	43	44	44	42
	110	50	51	51	51	51	51	51	51	50
	112.5	57	59	59	59	59	59	59	59	57
	115	65	66	67	67	67	67	67	66	65
	117.5	72	74	74	74	74	74	74	74	72
	120	80	82	82	82	82	82	82	82	80
	122.5	87	89	90	90	90	90	90	89	87
	125	95	97	97	97	97	97	97	97	95
	127.5	102	104	104	105	105	105	104	104	102
	130	109	112	112	112	112	112	112	112	109
	132.5	116	119	119	119	119	119	119	119	116
	135	123	126	126	126	126	126	126	126	123
	137.5	130	132	133	133	133	133	133	132	130
140	136	139	139	140	140	140	139	139	136	
142.5	142	145	146	146	146	146	146	145	142	
145	148	151	152	152	152	152	152	151	148	
147.5	154	156	157	158	158	158	157	156	154	
150	159	161	163	163	163	163	163	161	159	
152.5	164	166	168	168	168	168	168	166	164	
155	169	170	173	173	173	173	173	170	169	
157.5	173	174	177	178	178	178	177	174	173	
160	177	178	181	182	182	182	181	178	177	
162.5	181	181	184	185	185	185	184	181	181	
165	184	184	186	188	188	188	186	184	184	
167.5	186	186	188	190	190	190	188	186	186	
170	188	188	189	191	191	191	189	188	188	
172.5	190	189	191	191	191	191	191	189	190	
175	191	191	192	192	192	192	192	191	191	
177.5	192	192	192	192	192	192	192	192	192	
180	192	192	192	192	192	192	192	192	192	

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	116	116	116	116	112	112	112	112	104	104	104	97	97	97	90	90	90	87			
1	106	102	97	94	102	98	94	91	91	88	86	85	83	81	80	78	76	73			
2	97	89	82	77	93	86	80	75	80	75	71	75	71	68	70	67	64	61			
3	88	78	70	64	85	76	68	63	71	65	60	66	61	57	62	58	55	52			
4	81	69	61	54	78	67	59	53	63	56	51	59	54	49	56	51	47	45			
5	74	62	53	47	71	60	52	46	56	50	44	53	47	43	50	45	41	39			
6	69	56	47	41	66	54	46	40	51	44	39	48	42	37	45	40	36	34			
7	64	51	42	36	61	49	41	36	46	39	34	44	38	33	41	36	32	30			
8	59	46	38	32	57	45	37	32	42	36	31	40	34	30	38	33	29	27			
9	55	42	34	29	53	41	34	29	39	32	28	37	31	27	35	30	26	24			
10	52	39	31	26	50	38	31	26	36	30	25	34	29	24	33	28	24	22			

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	37.8	7.26	7.18
8.0	21.3	9.67	9.57
10.0	13.6	12.09	11.96
12.0	9.4	14.51	14.35
14.0	6.9	16.93	16.75
16.0	5.3	19.35	19.14

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	25231	25231	25231
45	22066	21667	21397
55	20766	20292	19779
65	19136	18399	17528
75	16674	15305	14076
85	12285	8311	6315

Beam and Field Angle	
0-180 Degree Plane	
Beam Angle:	106.2°
Field Angle:	160.4°
90-270 Degree Plane	
Beam Angle:	103.4°
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

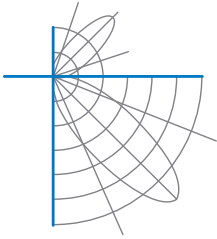
##### Room Size

##### UGR Viewed Crosswise

##### UGR Viewed Endwise

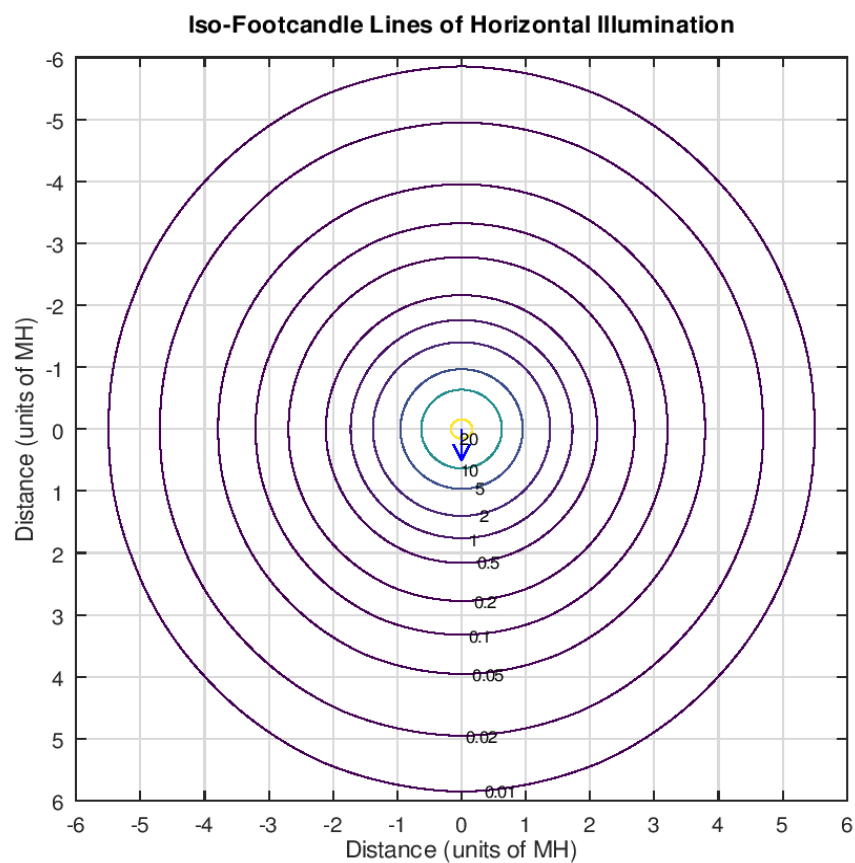
X=2H	Y=2H	21.7	23.1	22.3	23.6	24.3	21.4	22.8	22.0	23.3	23.9
	3H	23.5	24.7	24.1	25.3	25.9	23.1	24.3	23.6	24.8	25.5
	4H	24.1	25.3	24.7	25.9	26.5	23.6	24.7	24.2	25.3	26.0
	6H	24.6	25.7	25.2	26.3	27.0	23.9	25.0	24.5	25.6	26.3
	8H	24.8	25.8	25.4	26.4	27.1	24.0	25.0	24.6	25.6	26.3
	12H	24.9	25.8	25.5	26.4	27.1	24.0	25.0	24.7	25.6	26.3
4H	2H	22.3	23.4	22.9	24.0	24.7	22.0	23.2	22.6	23.8	24.4
	3H	24.3	25.2	24.9	25.8	26.5	23.9	24.8	24.5	25.4	26.1
	4H	25.0	25.9	25.7	26.5	27.3	24.5	25.4	25.2	26.0	26.7
	6H	25.6	26.4	26.3	27.0	27.8	25.0	25.7	25.6	26.4	27.1
	8H	25.8	26.5	26.5	27.2	27.9	25.1	25.8	25.7	26.4	27.2
	12H	26.0	26.6	26.6	27.3	28.0	25.1	25.8	25.8	26.4	27.2
8H	4H	25.3	26.0	25.9	26.6	27.4	24.8	25.5	25.5	26.2	26.9
	6H	26.0	26.6	26.7	27.3	28.0	25.4	25.9	26.0	26.6	27.4
	8H	26.2	26.8	26.9	27.5	28.2	25.5	26.0	26.2	26.7	27.5
	12H	26.4	26.9	27.1	27.6	28.4	25.6	26.1	26.3	26.7	27.6
12H	4H	25.3	25.9	25.9	26.6	27.3	24.8	25.5	25.5	26.1	26.9
	6H	26.0	26.5	26.7	27.2	28.0	25.4	25.9	26.1	26.6	27.4
	8H	26.3	26.8	27.0	27.5	28.3	25.6	26.1	26.3	26.8	27.6

Maximum UGR = 28.4

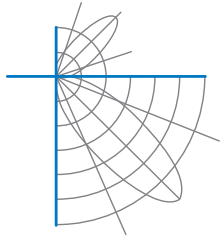


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### Iso-Illuminance Plot



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        25.3 °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.