



## Report of Test

LLIA001928-002

Indoor Distribution Photometry Test Report

Catalog Number: PL14-40WPCTS-D - 30W/4000K setting  
Recessed mounted, formed white painted steel housing/reflector,  
white painted aluminum frame, diffuse white plastic enclosure.  
84 white LEDs on three white circuit boards with optic below each LED  
One Fosen FS-TMG042-V01 LED driver, set for 30W and 4000K



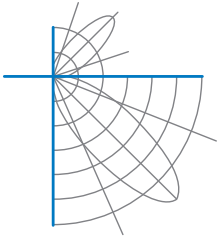
Prepared For:  
Topaz Lighting, A Southwire Company  
925 Waverly Avenue  
Holtsville, NY 11742, USA

Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	3713.9 Lumens
Input Current	0.2269 A	Total Efficacy	136.9 Lm/W
Input Power	27.12 W	Downward Flux	3713.9 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.996		
Current THD	8.1 %		

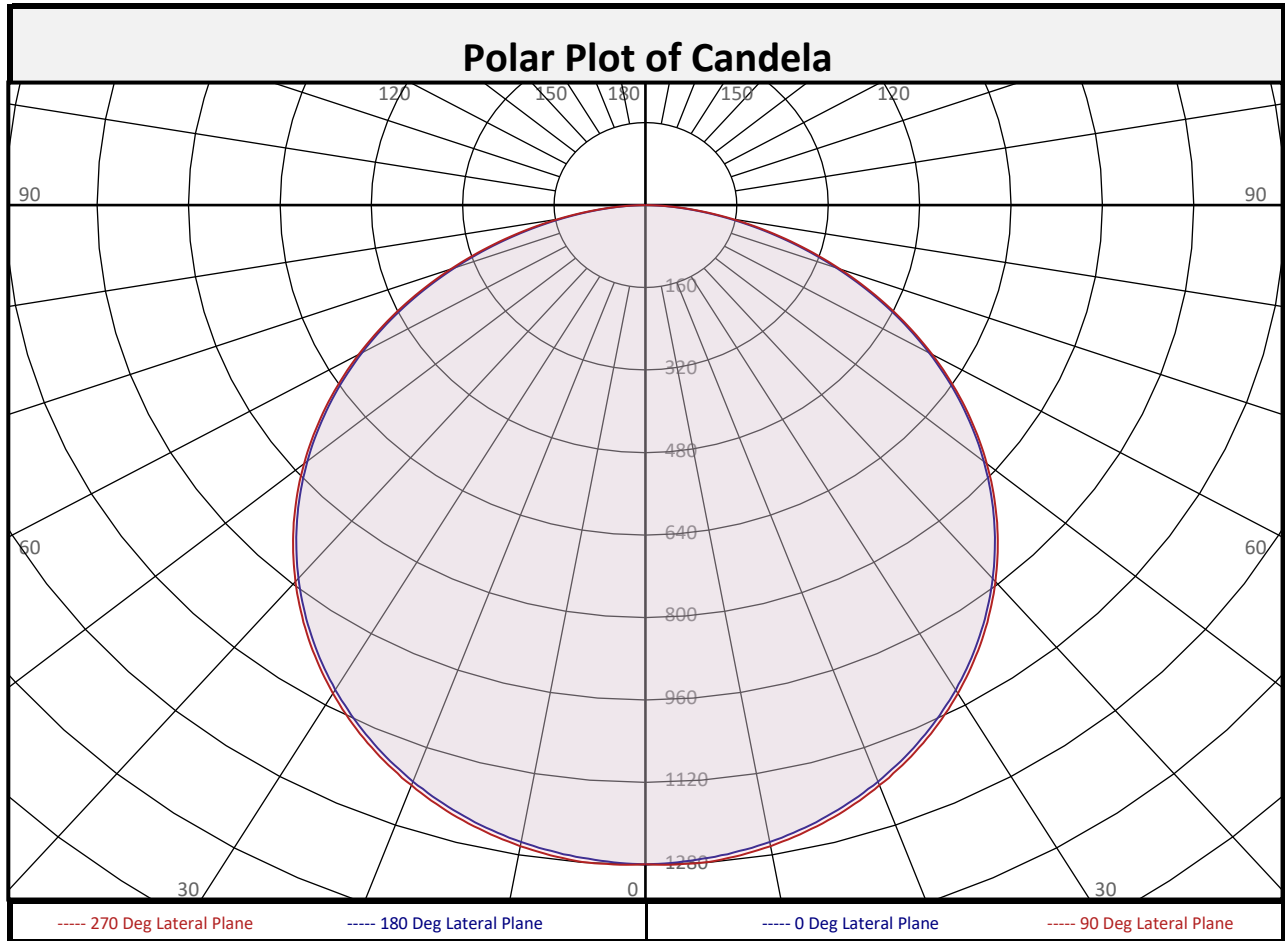
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 11/07/2022  
Report date: 11/08/2022

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	121.1	3.3%		90-100	0.0	0.0%		0-20	468.4	12.6%	
10-20	347.3	9.4%		100-110	0.0	0.0%		0-30	996.6	26.8%	
20-30	528.2	14.2%		110-120	0.0	0.0%		0-40	1637	44.1%	
30-40	640.2	17.2%		120-130	0.0	0.0%		0-60	2912	78.4%	
40-50	668.2	18.0%		130-140	0.0	0.0%		0-80	3641	98.0%	
50-60	606.9	16.3%		140-150	0.0	0.0%		10-90	3593	96.7%	
60-70	463.5	12.5%		150-160	0.0	0.0%		20-50	1837	49.5%	
70-80	265.7	7.2%		160-170	0.0	0.0%		40-90	2077	55.9%	
80-90	72.8	2.0%		170-180	0.0	0.0%		60-90	802.0	21.6%	
0-90	3714	100.0%		90-180	0.0	0.0%		0-180	3714	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 shown.	0	1279	1279	1279	1279	1279	1279	1279	1279	1279
	2.5	1277	1276	1277	1279	1280	1279	1277	1276	1277
	5	1271	1271	1272	1276	1279	1276	1272	1271	1271
	7.5	1264	1264	1265	1270	1273	1270	1265	1264	1264
	10	1255	1255	1256	1260	1263	1260	1256	1255	1255
	12.5	1242	1243	1244	1247	1251	1247	1244	1243	1242
	15	1227	1228	1229	1233	1236	1233	1229	1228	1227
	17.5	1210	1210	1212	1216	1218	1216	1212	1210	1210
	20	1190	1190	1192	1196	1198	1196	1192	1190	1190
	22.5	1168	1169	1170	1174	1176	1174	1170	1169	1168
	25	1142	1143	1145	1149	1152	1149	1145	1143	1142
	27.5	1116	1116	1118	1121	1124	1121	1118	1116	1116
	30	1086	1087	1088	1092	1094	1092	1088	1087	1086
	32.5	1054	1055	1057	1061	1062	1061	1057	1055	1054
	35	1020	1021	1023	1026	1028	1026	1023	1021	1020
	37.5	984	985	987	990	992	990	987	985	984
	40	946	946	948	952	954	952	948	946	946
	42.5	905	906	908	912	913	912	908	906	905
	45	863	864	866	869	871	869	866	864	863
	47.5	819	820	822	825	827	825	822	820	819
50	773	774	776	779	780	779	776	774	773	
52.5	725	726	729	731	733	731	729	726	725	
55	676	677	679	682	684	682	679	677	676	
57.5	625	626	629	631	632	631	629	626	625	
60	573	574	577	579	580	579	577	574	573	
62.5	520	521	523	525	527	525	523	521	520	
65	465	466	469	471	473	471	469	466	465	
67.5	410	411	414	416	417	416	414	411	410	
70	355	356	359	362	362	362	359	356	355	
72.5	300	301	304	307	308	307	304	301	300	
75	246	248	251	253	255	253	251	248	246	
77.5	195	196	199	202	203	202	199	196	195	
80	146	147	150	153	154	153	150	147	146	
82.5	101	103	105	107	108	107	105	103	101	
85	60	61	63	65	66	65	63	61	60	
87.5	25	26	27	28	28	28	27	26	25	
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	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	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	95		106	101	98	94		97	94	91		93	91	88		90	88	86	83
2	99	90	83	78		96	88	82	77		85	79	75		82	77	73		78	75	71	69
3	90	79	71	64		87	78	70	64		75	68	63		72	66	61		69	64	60	58
4	82	70	61	54		80	69	60	54		66	59	53		64	58	52		62	56	52	50
5	75	62	53	47		73	61	53	46		59	52	46		57	51	45		55	50	45	43
6	70	56	47	41		68	55	47	40		53	46	40		52	45	40		50	44	39	37
7	65	51	42	36		63	50	42	36		49	41	35		47	40	35		46	40	35	33
8	60	46	38	32		58	46	38	32		44	37	32		43	36	31		42	36	31	29
9	56	43	34	29		55	42	34	29		41	34	28		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	35.5	7.57	7.62	
8.0	20.0	10.10	10.16	
10.0	12.8	12.62	12.70	
12.0	8.9	15.15	15.25	
14.0	6.5	17.67	17.79	
16.0	5.0	20.20	20.33	

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

Average Luminance (cd/m <sup>2</sup> )			
	0 deg Plane	45 deg Plane	90 deg Plane
0	4333	4333	4333
45	4135	4151	4175
55	3994	4012	4038
65	3731	3758	3788
75	3223	3284	3333
85	2332	2468	2552

Beam and Field Angle	
0-180 Degree Plane	
Beam Angle:	113.6°
Field Angle:	161.9°
90-270 Degree Plane	
Beam Angle:	114.2°
Field Angle:	162.8°



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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

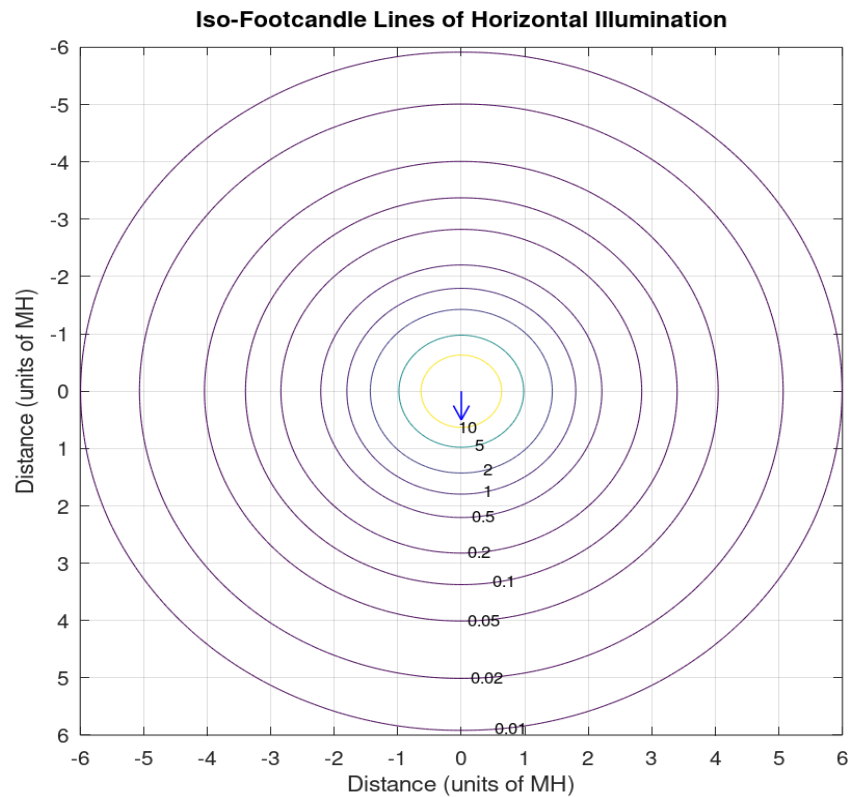
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	17.0	18.7	17.4	19.0	19.3	17.1	18.7	17.5	19.1	19.4
	3H	18.9	20.3	19.2	20.7	21.0	18.9	20.4	19.3	20.7	21.1
	4H	19.5	20.9	19.9	21.3	21.6	19.6	21.0	20.0	21.4	21.7
	6H	20.0	21.3	20.4	21.7	22.0	20.1	21.4	20.5	21.8	22.2
	8H	20.1	21.4	20.6	21.8	22.2	20.3	21.5	20.7	21.9	22.3
	12H	20.2	21.4	20.7	21.8	22.2	20.4	21.6	20.8	22.0	22.4
4H	2H	17.7	19.1	18.1	19.4	19.8	17.7	19.1	18.1	19.5	19.9
	3H	19.7	20.9	20.1	21.3	21.7	19.8	21.0	20.2	21.4	21.8
	4H	20.5	21.6	20.9	22.0	22.4	20.6	21.7	21.0	22.1	22.5
	6H	21.1	22.0	21.6	22.5	22.9	21.2	22.2	21.7	22.6	23.1
	8H	21.3	22.2	21.8	22.6	23.1	21.4	22.3	21.9	22.8	23.2
	12H	21.4	22.2	21.9	22.7	23.2	21.6	22.4	22.1	22.9	23.3
8H	4H	20.8	21.7	21.3	22.1	22.6	20.9	21.8	21.4	22.2	22.7
	6H	21.5	22.3	22.0	22.8	23.2	21.7	22.4	22.2	22.9	23.4
	8H	21.8	22.5	22.3	23.0	23.5	21.9	22.6	22.4	23.1	23.6
	12H	22.0	22.6	22.5	23.1	23.6	22.2	22.7	22.7	23.2	23.8
12H	4H	20.9	21.6	21.3	22.1	22.6	20.9	21.7	21.4	22.2	22.7
	6H	21.6	22.3	22.1	22.7	23.3	21.7	22.4	22.2	22.8	23.4
	8H	21.9	22.5	22.4	23.0	23.6	22.1	22.6	22.6	23.1	23.7

Maximum UGR = 23.8

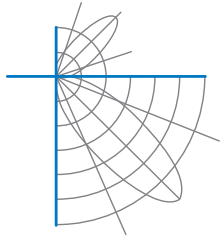


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### Iso-Illuminance Plot



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        24.8 °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.

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