



Report of Test

LLIA001928-005

Indoor Distribution Photometry Test Report

Catalog Number: PL24-40WPCTS-D - 35W/4000K setting
Recessed mounted, formed white painted steel housing/reflector,
white painted aluminum frame, diffuse white plastic enclosure.
180 white LEDs on six white circuit boards with optic below each LED
One Fosen FS-TMG017-V01 LED driver, set for 35W 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	4949.8 Lumens
Input Current	0.2771 A	Total Efficacy	149.8 Lm/W
Input Power	33.05 W	Downward Flux	4949.8 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.994		
Current THD	5.6 %		

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

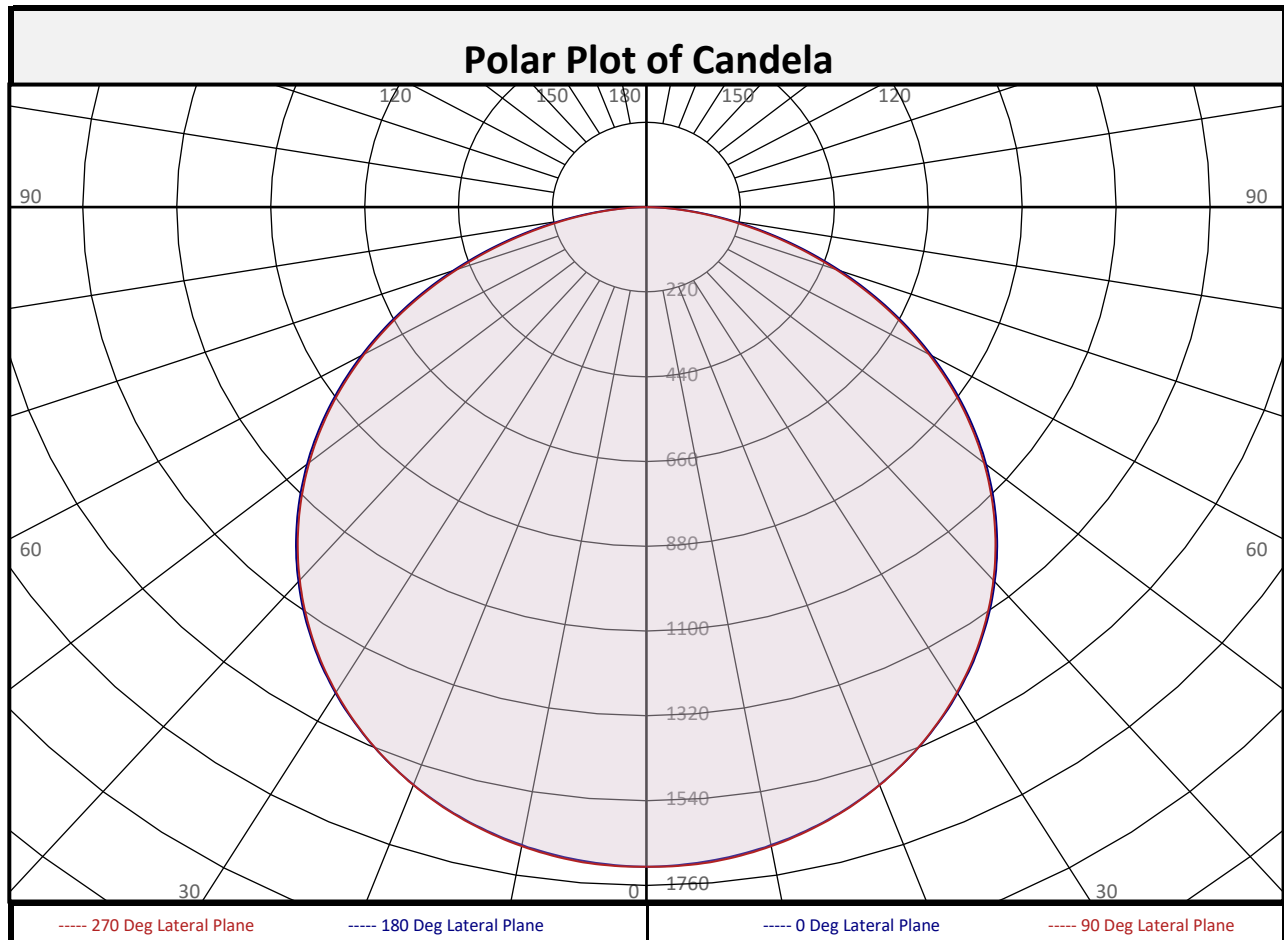
Test date: 11/23/2022
Report date: 11/28/2022

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	162.1	3.3%	90-100	0.0	0.0%	0-20	626.6	12.7%
10-20	464.5	9.4%	100-110	0.0	0.0%	0-30	1332	26.9%
20-30	705.9	14.3%	110-120	0.0	0.0%	0-40	2187	44.2%
30-40	854.6	17.3%	120-130	0.0	0.0%	0-60	3886	78.5%
40-50	890.8	18.0%	130-140	0.0	0.0%	0-80	4854	98.1%
50-60	808.2	16.3%	140-150	0.0	0.0%	10-90	4788	96.7%
60-70	616.1	12.4%	150-160	0.0	0.0%	20-50	2451	49.5%
70-80	351.8	7.1%	160-170	0.0	0.0%	40-90	2763	55.8%
80-90	95.8	1.9%	170-180	0.0	0.0%	60-90	1064	21.5%
0-90	4950	100.0%	90-180	0.0	0.0%	0-180	4950	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	1712	1712	1712	1712	1712	1712	1712	1712	1712
	2.5	1709	1709	1710	1711	1711	1711	1710	1709	1709
	5	1703	1703	1704	1706	1707	1706	1704	1703	1703
	7.5	1694	1694	1695	1696	1697	1696	1695	1694	1694
	10	1681	1681	1682	1683	1684	1683	1682	1681	1681
	12.5	1664	1665	1666	1666	1667	1666	1666	1665	1664
	15	1645	1645	1645	1646	1647	1646	1645	1645	1645
	17.5	1622	1622	1622	1623	1623	1623	1622	1622	1622
	20	1595	1595	1595	1595	1596	1595	1595	1595	1595
	22.5	1566	1565	1565	1565	1566	1565	1565	1565	1566
	25	1533	1532	1531	1531	1532	1531	1531	1532	1533
	27.5	1496	1495	1495	1494	1494	1494	1495	1495	1496
	30	1457	1456	1455	1454	1454	1454	1455	1456	1457
	32.5	1415	1413	1412	1411	1411	1411	1412	1413	1415
	35	1368	1368	1366	1365	1365	1365	1366	1368	1368
	37.5	1320	1320	1318	1316	1315	1316	1318	1320	1320
	40	1269	1268	1266	1264	1263	1264	1266	1268	1269
	42.5	1215	1214	1212	1210	1209	1210	1212	1214	1215
	45	1159	1158	1155	1153	1152	1153	1155	1158	1159
	47.5	1100	1099	1096	1094	1093	1094	1096	1099	1100
50	1038	1037	1035	1032	1031	1032	1035	1037	1038	
52.5	974	973	971	968	967	968	971	973	974	
55	909	908	905	902	901	902	905	908	909	
57.5	841	840	837	834	833	834	837	840	841	
60	771	770	767	764	763	764	767	770	771	
62.5	700	699	695	693	691	693	695	699	700	
65	628	626	623	620	619	620	623	626	628	
67.5	555	553	550	546	545	546	550	553	555	
70	482	480	476	473	471	473	476	480	482	
72.5	409	407	403	399	398	399	403	407	409	
75	338	336	332	328	326	328	332	336	338	
77.5	269	267	263	259	257	259	263	267	269	
80	203	202	198	194	192	194	198	202	203	
82.5	143	141	138	135	133	135	138	141	143	
85	86	85	83	81	80	81	83	85	86	
87.5	36	36	35	35	34	35	35	36	36	
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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		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	96		106	102	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		79	75	72	69
3	90	79	71	64		87	78	70	64		75	68	63		72	66	62		69	64	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	46		59	52	46		57	51	45		55	50	45	43
6	70	56	47	41		68	55	47	41		53	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	46	38	32		59	46	38	32		44	37	32		43	36	31		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	47.6	7.59	7.57	
8.0	26.7	10.12	10.10	
10.0	17.1	12.65	12.62	
12.0	11.9	15.18	15.15	
14.0	8.7	17.71	17.67	
16.0	6.7	20.24	20.19	

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	2667	2667	2667
45	2552	2545	2538
55	2468	2457	2447
65	2313	2296	2281
75	2032	1997	1963
85	1535	1490	1421

Beam and Field Angle	
0-180 Degree Plane	
Beam Angle:	113.9°
Field Angle:	162.6°
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

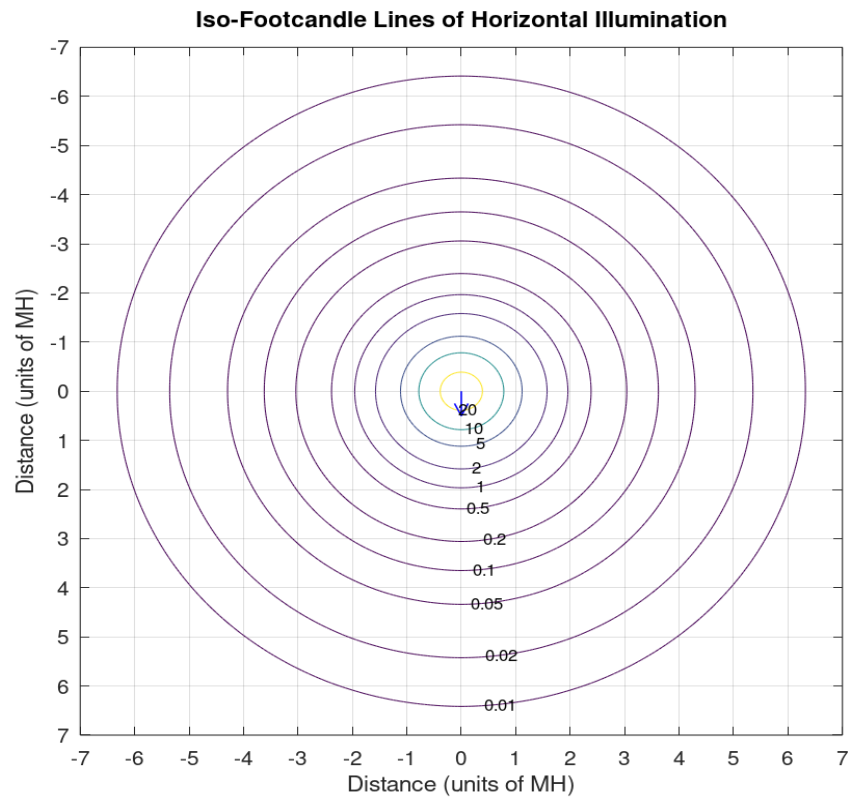
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	15.4	17.0	15.7	17.3	17.7	15.3	17.0	15.7	17.3	17.6
	3H	17.2	18.7	17.6	19.0	19.4	17.1	18.6	17.5	19.0	19.3
	4H	17.9	19.3	18.3	19.6	20.0	17.8	19.2	18.2	19.5	19.9
	6H	18.4	19.7	18.8	20.1	20.4	18.2	19.6	18.7	19.9	20.3
	8H	18.5	19.8	19.0	20.2	20.6	18.4	19.6	18.8	20.0	20.4
	12H	18.7	19.9	19.1	20.2	20.7	18.5	19.7	18.9	20.1	20.5
4H	2H	16.0	17.4	16.4	17.8	18.1	16.0	17.4	16.4	17.7	18.1
	3H	18.1	19.2	18.5	19.6	20.0	18.0	19.2	18.4	19.6	20.0
	4H	18.9	19.9	19.3	20.3	20.8	18.8	19.8	19.2	20.3	20.7
	6H	19.5	20.4	20.0	20.9	21.3	19.4	20.3	19.8	20.7	21.2
	8H	19.7	20.6	20.2	21.0	21.5	19.6	20.4	20.0	20.9	21.3
	12H	19.9	20.6	20.3	21.1	21.6	19.7	20.5	20.2	21.0	21.4
8H	4H	19.2	20.1	19.6	20.5	21.0	19.1	20.0	19.6	20.4	20.9
	6H	19.9	20.7	20.4	21.1	21.6	19.8	20.5	20.3	21.0	21.5
	8H	20.2	20.9	20.7	21.4	21.9	20.1	20.7	20.6	21.2	21.7
	12H	20.4	21.0	20.9	21.5	22.1	20.3	20.8	20.8	21.3	21.9
12H	4H	19.2	20.0	19.7	20.5	20.9	19.1	19.9	19.6	20.4	20.9
	6H	20.0	20.7	20.5	21.1	21.6	19.9	20.5	20.4	21.0	21.5
	8H	20.3	20.9	20.8	21.4	21.9	20.2	20.8	20.7	21.2	21.8

Maximum UGR = 22.1

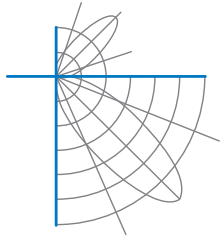


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Iso-Illuminance Plot



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 25.2 °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.

North America (issuing laboratory)

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