

Report of Test

LLIA002469-003

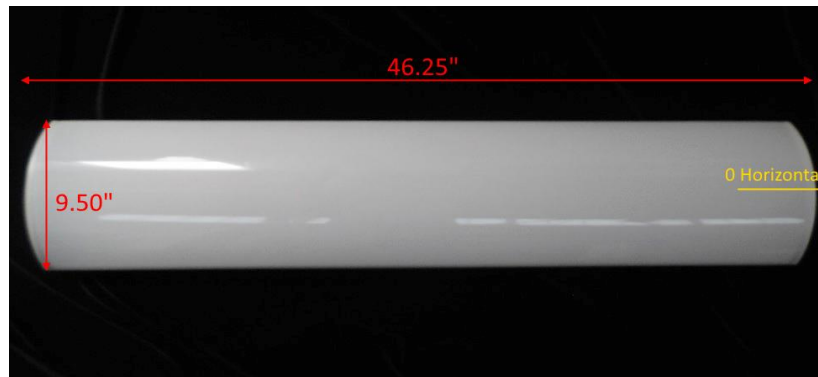
Indoor Distribution Photometry Test Report

Catalog Number: LWRAPA4-50PCS 50W Setting 4000K

Surface mounted, formed white painted steel housing, white painted steel reflector, translucent white linear ribbed plastic enclosure.

480 white LEDs, 240 CW LEDs and 240 WW LEDs on 4 boards

One PLC050S1050US-DEGAR LED driver



Prepared For:

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

Performance Summary			
Input Voltage	119.8 Vac	Luminous Flux	6411.3 Lumens
Input Current	0.3831 A	Total Efficacy	140.0 Lm/W
Input Power	45.78 W	Downward Flux	6156.4 Lumens
Frequency	60.00 Hz	Downward Flux	96.0 % of Total
Power Factor	0.997		
Current THD	7.2 %		

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

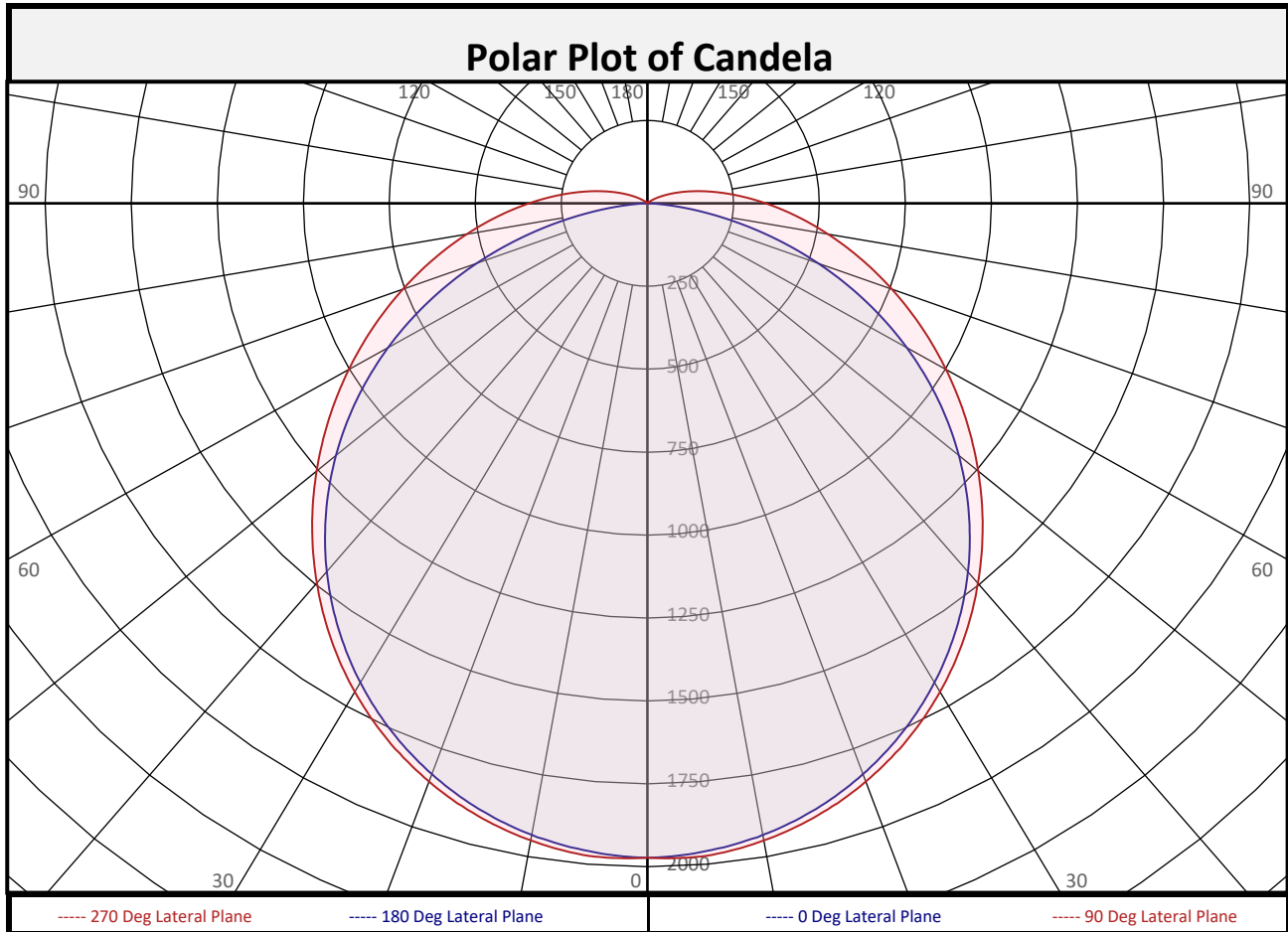
Test date: 08/16/2024

Report date: 09/03/2024

Signed: _____

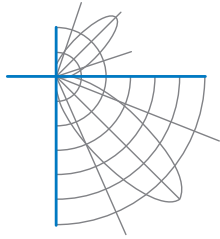


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Zonal Flux Summary

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	186.8	2.9%	90-100	153.1	2.4%	0-20	722.8	11.3%
10-20	535.9	8.4%	100-110	68.0	1.1%	0-30	1539	24.0%
20-30	815.8	12.7%	110-120	24.5	0.4%	0-40	2529	39.4%
30-40	990.5	15.4%	120-130	6.7	0.1%	0-60	4531	70.7%
40-50	1039	16.2%	130-140	1.7	0.0%	0-80	5850	91.2%
50-60	962.2	15.0%	140-150	0.8	0.0%	10-90	5970	93.1%
60-70	780.4	12.2%	150-160	0.1	0.0%	20-50	2846	44.4%
70-80	538.9	8.4%	160-170	0.0	0.0%	40-90	3627	56.6%
80-90	306.3	4.8%	170-180	0.0	0.0%	60-90	1626	25.4%
0-90	6156	96.0%	90-180	254.9	4.0%	0-180	6411	100.0%



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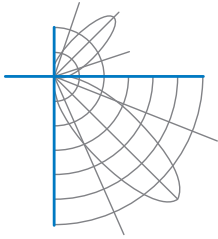
Luminous Intensity (Candela) Table

		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	1973	1973	1973	1973	1973	1973	1973	1973	1973
	2.5	1969	1968	1970	1973	1975	1973	1970	1968	1969
	5	1960	1959	1962	1969	1974	1969	1962	1959	1960
	7.5	1949	1949	1952	1959	1964	1959	1952	1949	1949
	10	1933	1934	1937	1945	1950	1945	1937	1934	1933
	12.5	1914	1915	1919	1927	1932	1927	1919	1915	1914
	15	1891	1892	1897	1905	1910	1905	1897	1892	1891
	17.5	1863	1865	1870	1880	1885	1880	1870	1865	1863
	20	1831	1834	1840	1850	1855	1850	1840	1834	1831
	22.5	1796	1799	1806	1817	1821	1817	1806	1799	1796
	25	1757	1760	1768	1780	1785	1780	1768	1760	1757
	27.5	1714	1718	1727	1740	1745	1740	1727	1718	1714
	30	1668	1672	1682	1695	1701	1695	1682	1672	1668
	32.5	1619	1623	1633	1648	1654	1648	1633	1623	1619
	35	1566	1570	1581	1597	1603	1597	1581	1570	1566
	37.5	1509	1514	1526	1544	1551	1544	1526	1514	1509
	40	1450	1455	1468	1487	1494	1487	1468	1455	1450
	42.5	1387	1392	1407	1429	1437	1429	1407	1392	1387
	45	1321	1327	1344	1368	1378	1368	1344	1327	1321
	47.5	1253	1259	1278	1307	1317	1307	1278	1259	1253
50	1182	1188	1211	1243	1255	1243	1211	1188	1182	
52.5	1108	1115	1141	1179	1192	1179	1141	1115	1108	
55	1031	1039	1072	1113	1129	1113	1072	1039	1031	
57.5	952	962	1000	1048	1066	1048	1000	962	952	
60	871	883	929	983	1002	983	929	883	871	
62.5	787	802	858	917	940	917	858	802	787	
65	702	721	787	853	877	853	787	721	702	
67.5	615	640	718	790	816	790	718	640	615	
70	528	560	650	728	757	728	650	560	528	
72.5	440	483	584	668	698	668	584	483	440	
75	353	407	520	609	641	609	520	407	353	
77.5	269	337	460	553	586	553	460	337	269	
80	189	272	403	499	533	499	403	272	189	
82.5	117	213	350	448	482	448	350	213	117	
85	57	162	300	399	434	399	300	162	57	
87.5	15	119	255	353	388	353	255	119	15	
90	0	85	214	310	345	310	214	85	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	85	214	310	345	310	214	85	0
	92.5	0	58	178	270	304	270	178	58	0
	95	0	38	146	234	266	234	146	38	0
	97.5	0	24	118	200	231	200	118	24	0
	100	0	15	94	170	199	170	94	15	0
	102.5	0	9	73	142	169	142	73	9	0
	105	0	5	56	118	142	118	56	5	0
	107.5	0	3	42	96	119	96	42	3	0
	110	0	0	31	77	97	77	31	0	0
	112.5	0	0	23	61	79	61	23	0	0
	115	0	0	16	47	63	47	16	0	0
	117.5	0	0	11	36	49	36	11	0	0
	120	0	0	8	27	37	27	8	0	0
	122.5	0	0	5	19	28	19	5	0	0
	125	0	0	4	14	20	14	4	0	0
	127.5	0	0	3	9	14	9	3	0	0
	130	0	0	2	6	10	6	2	0	0
	132.5	0	1	2	5	7	5	2	1	0
	135	0	0	1	4	5	4	1	0	0
	137.5	0	0	1	3	4	3	1	0	0
	140	0	0	1	3	3	3	1	0	0
	142.5	0	0	1	3	3	3	1	0	0
	145	0	0	1	3	3	3	1	0	0
	147.5	0	0	1	1	3	1	1	0	0
150	0	0	1	1	1	1	1	0	0	
152.5	0	0	0	1	1	1	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	118	118	118	118	115	115	115	115	109	109	109	103	103	103	98	98	98	96			
1	106	101	96	92	103	98	94	90	93	90	86	89	86	83	84	82	80	77			
2	96	87	80	74	93	85	78	72	81	75	70	77	72	68	73	69	66	63			
3	87	76	68	61	84	74	66	60	71	64	58	67	62	57	64	59	55	53			
4	80	67	58	51	77	66	57	50	63	55	49	60	53	48	57	52	47	45			
5	73	60	51	44	71	59	50	43	56	48	42	54	47	42	51	45	41	38			
6	68	54	45	38	65	53	44	38	50	43	37	48	42	36	46	40	36	34			
7	63	49	40	33	61	48	39	33	46	38	33	44	37	32	42	36	32	30			
8	58	44	36	30	56	44	35	30	42	34	29	40	34	29	39	33	28	26			
9	54	41	32	27	53	40	32	27	39	31	26	37	31	26	36	30	25	24			
10	51	38	30	24	49	37	29	24	36	29	24	34	28	23	33	27	23	21			

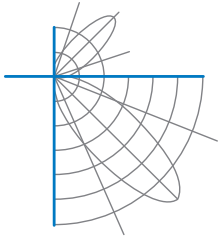
For absolute test reports, RUs are expressed as a percentage of total lumen output. For relative test reports, CUs are expressed as a percentage of total lamp output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are 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	54.8	7.54	7.68
8.0	30.8	10.06	10.24
10.0	19.7	12.57	12.80
12.0	13.7	15.09	15.37
14.0	10.1	17.60	17.93
16.0	7.7	20.12	20.49

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	6960	6960	6960
45	6591	5565	5331
55	6342	5100	4914
65	5859	4566	4519
75	4810	4022	4197
85	2293	3640	4077

Beam and Field Angle	
0-180 Degree Plane	
Beam Angle:	112.8°
Field Angle:	159.4°
90-270 Degree Plane	
Beam Angle:	121.1°
Field Angle:	200.2°



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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

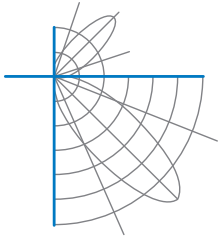
Room Size

UGR Viewed Crosswise

UGR Viewed Endwise

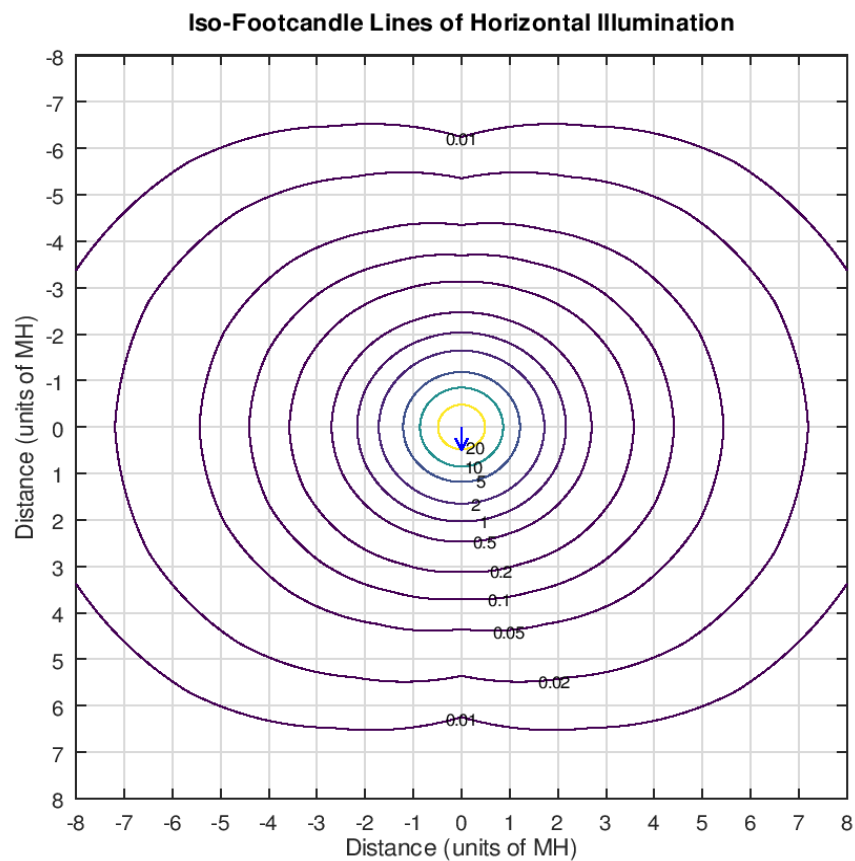
X=2H	Y=2H	16.7	18.3	17.2	18.7	19.1	18.0	19.6	18.4	20.0	20.4	
		3H	18.3	19.7	18.7	20.1	20.6	20.3	21.7	20.7	22.1	22.6
		4H	18.8	20.1	19.2	20.6	21.0	21.3	22.7	21.8	23.1	23.6
		6H	19.0	20.3	19.5	20.8	21.3	22.4	23.7	22.9	24.1	24.6
		8H	19.1	20.3	19.6	20.8	21.3	23.0	24.2	23.4	24.7	25.1
		12H	19.1	20.3	19.6	20.7	21.3	23.5	24.7	24.0	25.2	25.7
4H	2H	17.5	18.8	17.9	19.3	19.7	18.5	19.8	18.9	20.3	20.7	
	3H	19.2	20.4	19.7	20.9	21.4	21.0	22.1	21.4	22.6	23.1	
	4H	19.8	20.9	20.3	21.4	21.9	22.2	23.3	22.7	23.8	24.3	
	6H	20.2	21.2	20.7	21.7	22.2	23.5	24.4	24.0	24.9	25.5	
	8H	20.3	21.2	20.8	21.7	22.3	24.1	25.0	24.6	25.5	26.1	
	12H	20.4	21.2	20.9	21.7	22.3	24.8	25.6	25.3	26.1	26.7	
8H	4H	20.4	21.3	20.9	21.8	22.3	22.4	23.3	22.9	23.8	24.4	
	6H	20.9	21.7	21.5	22.2	22.8	23.9	24.6	24.4	25.2	25.7	
	8H	21.1	21.8	21.7	22.3	22.9	24.6	25.3	25.2	25.9	26.5	
	12H	21.2	21.8	21.8	22.4	23.0	25.5	26.1	26.1	26.7	27.3	
12H	4H	20.5	21.3	21.1	21.9	22.4	22.5	23.3	23.0	23.8	24.4	
	6H	21.2	21.8	21.7	22.4	23.0	23.9	24.6	24.5	25.1	25.8	
	8H	21.4	22.0	22.0	22.6	23.2	24.8	25.4	25.3	25.9	26.6	

Maximum UGR = 27.3

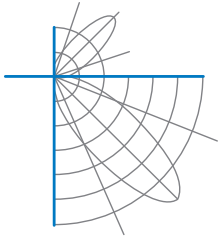


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Iso-Illuminance Plot

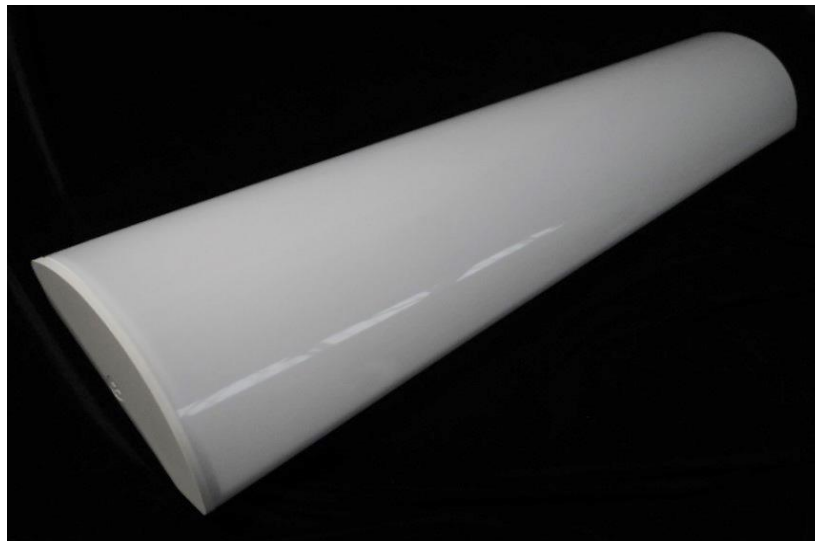


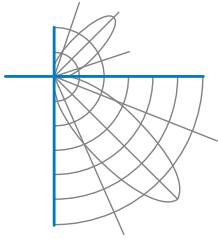
The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution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



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Additional Pictures of Test Subject





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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.