

Report of Test

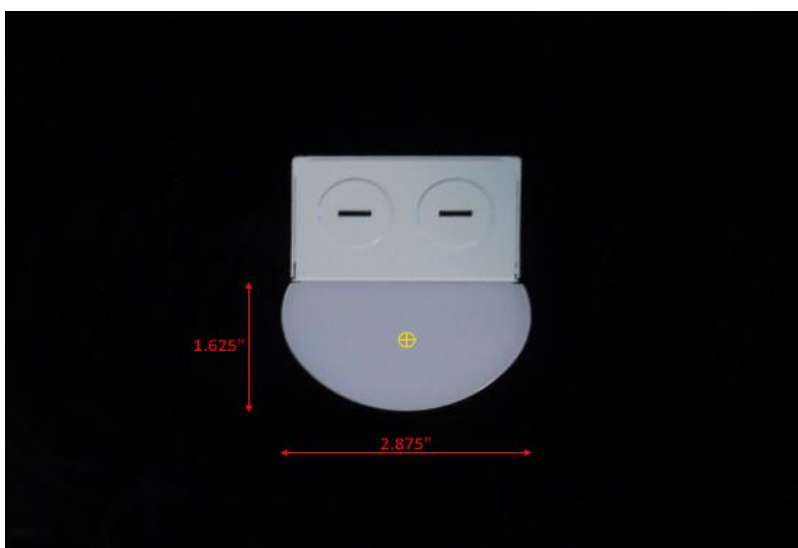
LLIA001298-002

Indoor Distribution Photometry Test Report

Catalog Number: F-L8/64W/CTS/D-87 - 3500K Setting

Surface mounted, formed steel housing, formed white enamel
aluminum reflector, translucent white plastic enclosure.

Measured test data from test LLIA001298-001 was prorated to represent the
performance of an 8' luminaire using a manufacturer specified factor of 1.6.



Prepared For:

Topaz Lighting Corp

925 Waverly Avenue

Holtsville, NY 11742, USA

Performance Summary

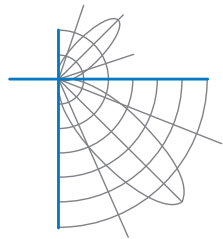
Input Voltage	120.0 V	Luminous Flux	8767.5 Lumens
Prorated Input Power	62.38 W	Total Efficacy	140.6 Lm/W
Frequency	60.00 Hz	Downward Flux	7324.9 Lumens
		Downward Flux	83.5 % of Total

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

Test date: 08/05/2020

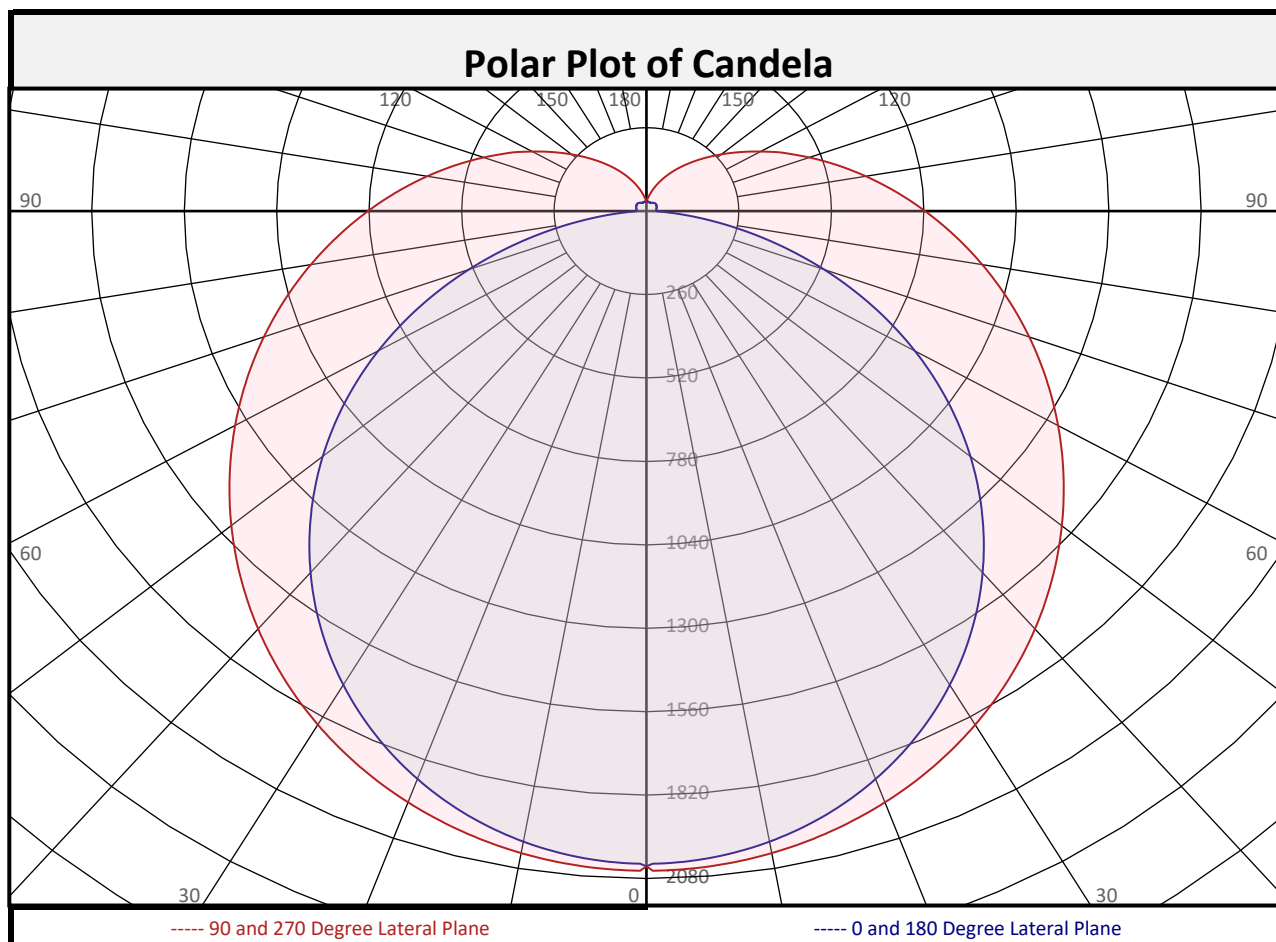
Report date: 08/05/2020

Signed: _____

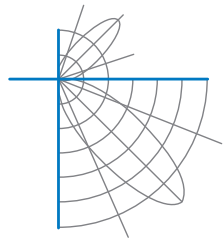


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Zonal Flux Summary											
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total	
0-10	193.5	2.2%		90-100	455.8	5.2%		0-20	750.5	8.6%	
10-20	557.0	6.4%		100-110	338.2	3.9%		0-30	1606	18.3%	
20-30	855.2	9.8%		110-120	244.6	2.8%		0-40	2662	30.4%	
30-40	1056	12.0%		120-130	170.6	1.9%		0-60	4919	56.1%	
40-50	1142	13.0%		130-140	112.6	1.3%		0-80	6716	76.6%	
50-60	1115	12.7%		140-150	68.0	0.8%		10-90	7131	81.3%	
60-70	991.2	11.3%		150-160	35.3	0.4%		20-50	3053	34.8%	
70-80	805.9	9.2%		160-170	14.3	0.2%		40-90	4663	53.2%	
80-90	609.2	6.9%		170-180	3.2	0.0%		60-90	2406	27.4%	
0-90	7325	83.5%		90-180	1443	16.5%		0-180	8767	100.0%	

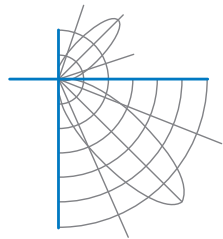


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Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles									
Vertical (Gamma) Angles		0	22.5	45	67.5	90	112.5	135	157.5	180
	0	2042	2042	2042	2042	2042	2042	2042	2042	2042
	2.5	2031	2032	2037	2047	2054	2047	2037	2032	2031
	5	2024	2025	2032	2042	2050	2042	2032	2025	2024
	7.5	2012	2014	2022	2034	2042	2034	2022	2014	2012
	10	1995	1998	2008	2023	2031	2023	2008	1998	1995
	12.5	1974	1978	1991	2008	2018	2008	1991	1978	1974
	15	1948	1954	1970	1991	2001	1991	1970	1954	1948
	17.5	1918	1926	1946	1970	1982	1970	1946	1926	1918
	20	1883	1893	1918	1947	1960	1947	1918	1893	1883
	22.5	1845	1857	1887	1921	1937	1921	1887	1857	1845
	25	1802	1816	1852	1892	1910	1892	1852	1816	1802
	27.5	1756	1773	1815	1861	1880	1861	1815	1773	1756
	30	1705	1725	1774	1827	1849	1827	1774	1725	1705
	32.5	1652	1674	1731	1791	1814	1791	1731	1674	1652
	35	1594	1621	1686	1753	1778	1753	1686	1621	1594
	37.5	1534	1565	1638	1712	1740	1712	1638	1565	1534
	40	1470	1505	1588	1670	1699	1670	1588	1505	1470
	42.5	1404	1444	1536	1625	1658	1625	1536	1444	1404
	45	1334	1381	1483	1579	1615	1579	1483	1381	1334
	47.5	1263	1315	1428	1532	1570	1532	1428	1315	1263
	50	1189	1247	1371	1484	1525	1484	1371	1247	1189
	52.5	1112	1178	1314	1435	1478	1435	1314	1178	1112
	55	1034	1108	1256	1385	1431	1385	1256	1108	1034
	57.5	954	1036	1198	1335	1384	1335	1198	1036	954
	60	872	964	1139	1285	1337	1285	1139	964	872
	62.5	787	891	1081	1235	1289	1235	1081	891	787
	65	703	819	1024	1185	1241	1185	1024	819	703
	67.5	617	748	967	1135	1193	1135	967	748	617
	70	531	678	912	1086	1146	1086	912	678	531
	72.5	446	610	858	1037	1098	1037	858	610	446
	75	362	545	805	989	1051	989	805	545	362
	77.5	282	483	754	941	1005	941	754	483	282
	80	206	427	705	895	959	895	705	427	206
	82.5	138	375	658	849	914	849	658	375	138
	85	82	329	613	804	870	804	613	329	82
	87.5	43	288	570	761	826	761	570	288	43
90	28	253	530	720	784	720	530	253	28	

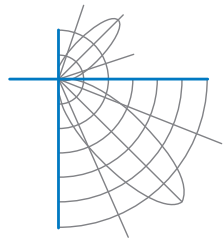


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Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles									
Vertical (Gamma) Angles		0	22.5	45	67.5	90	112.5	135	157.5	180
	90	28	253	530	720	784	720	530	253	28
	92.5	28	224	493	680	743	680	493	224	28
	95	28	200	459	641	703	641	459	200	28
	97.5	28	179	426	604	664	604	426	179	28
	100	28	163	396	568	627	568	396	163	28
	102.5	29	149	368	533	590	533	368	149	29
	105	29	139	342	501	555	501	342	139	29
	107.5	30	130	318	469	521	469	318	130	30
	110	31	123	296	438	489	438	296	123	31
	112.5	31	117	276	410	458	410	276	117	31
	115	32	111	257	382	429	382	257	111	32
	117.5	32	107	240	357	401	357	240	107	32
	120	33	102	225	333	372	333	225	102	33
	122.5	34	98	211	309	346	309	211	98	34
	125	34	96	197	287	321	287	197	96	34
	127.5	34	92	184	266	298	266	184	92	34
	130	35	87	172	247	276	247	172	87	35
	132.5	35	84	161	229	255	229	161	84	35
	135	35	80	151	212	236	212	151	80	35
	137.5	34	76	141	196	218	196	141	76	34
	140	33	72	131	181	200	181	131	72	33
	142.5	33	68	122	166	184	166	122	68	33
	145	32	63	113	153	168	153	113	63	32
	147.5	31	59	105	140	154	140	105	59	31
	150	30	54	97	127	140	127	97	54	30
	152.5	29	50	88	115	126	115	88	50	29
	155	28	46	79	104	113	104	79	46	28
	157.5	28	43	70	93	101	93	70	43	28
	160	28	40	61	83	90	83	61	40	28
	162.5	29	36	53	74	80	74	53	36	29
	165	29	34	46	65	70	65	46	34	29
	167.5	30	33	40	56	60	56	40	33	30
	170	30	31	35	49	52	49	35	31	30
	172.5	30	28	31	43	45	43	31	28	30
	175	30	27	28	34	39	34	28	27	30
	177.5	31	29	24	25	32	25	24	29	31
180	27	27	27	27	27	27	27	27	27	



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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	115	115	115	115		111	111	111	111		102	102	102		94	94	94		87	87	87	84
1	102	96	91	86		98	92	88	83		85	81	78		78	75	72		72	70	67	64
2	92	83	75	68		88	79	72	66		73	67	62		67	62	58		62	58	55	51
3	83	72	63	56		79	69	61	54		64	57	51		59	53	48		54	49	45	42
4	76	63	54	47		72	61	52	45		56	49	43		52	46	41		48	43	38	35
5	70	56	47	40		66	54	45	39		50	42	37		46	40	35		43	37	33	30
6	64	50	41	34		61	48	40	33		45	37	32		42	35	30		39	33	29	26
7	59	45	36	30		57	44	35	29		41	33	28		38	31	27		35	30	25	23
8	55	41	32	27		53	40	32	26		37	30	25		35	28	24		32	27	23	20
9	51	38	29	24		49	36	29	23		34	27	22		32	26	21		30	24	20	18
10	48	35	27	21		46	34	26	21		31	25	20		29	23	19		28	22	18	16

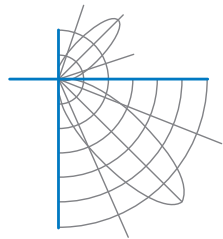
For absolute test reports, RUs are expressed as a percentage of total lumen output. For relative test reports, CUs are expressed as a percentage of total lamp output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are 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	56.7	7.46	8.10
8.0	31.9	9.94	10.80
10.0	20.4	12.43	13.50
12.0	14.2	14.91	16.20
14.0	10.4	17.40	18.90
16.0	8.0	19.88	21.60

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	11467	11467	11467
45	10421	8342	8193
55	9885	7746	7755
65	9011	7225	7455
75	7391	6887	7334
85	4414	6920	7510

Spacing Criterion	
0 degree plane:	1.2
90 degree plane:	1.3
180 degree plane:	1.2
270 degree plane:	1.3



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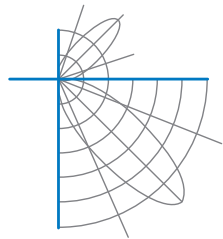
UGR TABLE - CORRECTED

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	16.4	17.8	16.9	18.4	19.0	19.5	20.9	20.1	21.5	22.2
	3H	17.8	19.1	18.4	19.7	20.5	22.4	23.6	23.0	24.3	25.0
	4H	18.3	19.5	18.9	20.2	20.9	23.8	25.0	24.4	25.7	26.4
	6H	18.6	19.7	19.2	20.4	21.1	25.4	26.5	26.0	27.2	27.9
	8H	18.7	19.8	19.3	20.4	21.2	26.3	27.3	26.9	28.0	28.8
	12H	18.7	19.7	19.3	20.4	21.2	27.2	28.3	27.9	28.9	29.7
4H	2H	17.5	18.7	18.1	19.3	20.1	19.9	21.1	20.5	21.7	22.5
	3H	19.2	20.3	19.9	21.0	21.7	23.0	24.0	23.6	24.7	25.4
	4H	19.9	20.8	20.5	21.5	22.3	24.6	25.6	25.2	26.2	27.0
	6H	20.3	21.1	21.0	21.8	22.6	26.4	27.2	27.0	27.9	28.7
	8H	20.4	21.2	21.1	21.9	22.7	27.3	28.1	28.0	28.8	29.6
	12H	20.5	21.2	21.1	21.9	22.7	28.4	29.1	29.1	29.9	30.7
8H	4H	20.8	21.7	21.5	22.3	23.1	24.8	25.6	25.5	26.3	27.1
	6H	21.5	22.2	22.2	22.9	23.7	26.7	27.4	27.4	28.2	29.0
	8H	21.7	22.4	22.5	23.1	23.9	27.8	28.5	28.5	29.2	30.0
	12H	21.9	22.5	22.6	23.2	24.1	29.1	29.6	29.8	30.4	31.2
12H	4H	21.2	21.9	21.9	22.6	23.4	24.8	25.5	25.5	26.3	27.1
	6H	22.0	22.6	22.7	23.3	24.2	26.8	27.4	27.5	28.1	29.0
	8H	22.3	22.9	23.0	23.6	24.5	27.9	28.5	28.6	29.2	30.1

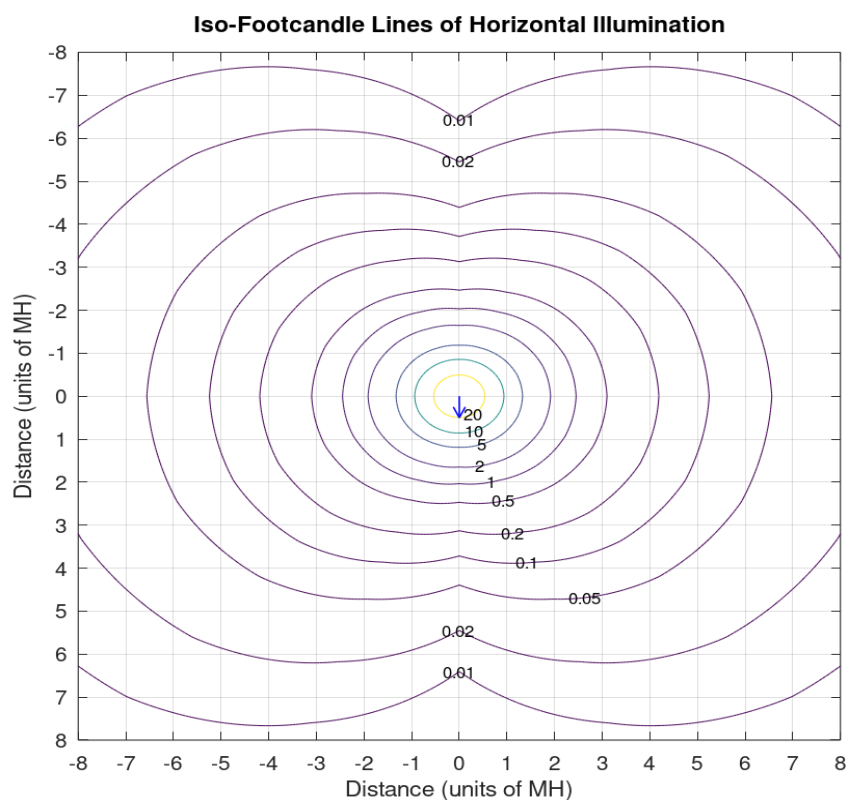
Maximum UGR = 31.2



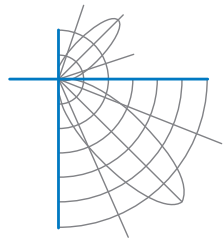
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Iso-Illuminance Plot



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.



LightLab
INTERNATIONAL
ALLENTOWN LLC

Report of Test LLIA001298-002

Additional Pictures of Test Subject



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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-41-14 and LM-46-04.

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.