

Report of Test

LLIA001487-001

Indoor Distribution Photometry Test Report

Catalog Number: LWRAP2/25W/CTS/D-98 - 4000K Setting

Surface/pendant mounted, formed white enamel steel
housing, translucent white plastic enclosure.

240 LEDs, one LED board with 120 cool white and 120 warm white LEDs each.

One unmarked LED driver



Prepared For:

Topaz Lighting Corp

925 Waverly Avenue

Holtsville, NY 11742, USA

Performance Summary

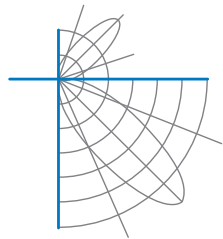
Input Voltage	120.0 V	Luminous Flux	2890.3 Lumens
Input Current	0.1969 A	Total Efficacy	124.6 Lm/W
Input Power	23.20 W	Downward Flux	2867.7 Lumens
Frequency	60.00 Hz	Downward Flux	99.2 % of Total
Power Factor	0.982		
Current THD	10.4 %		

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

Test date: 06/24/2021

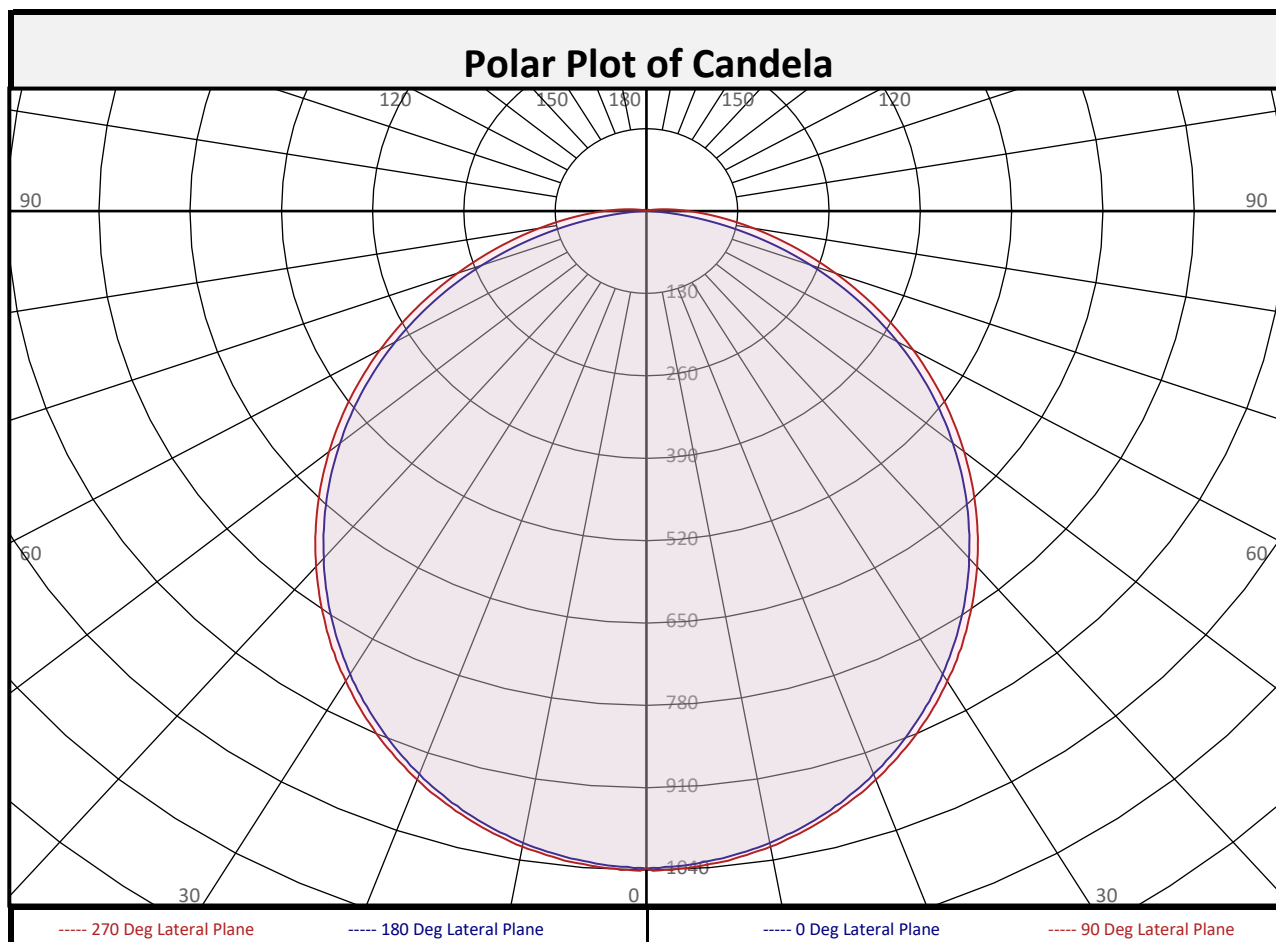
Report date: 06/28/2021

Signed: _____

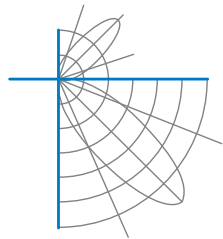


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Zonal Flux Summary											
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total	
0-10	98.0	3.4%		90-100	17.4	0.6%		0-20	376.4	13.0%	
10-20	278.4	9.6%		100-110	3.6	0.1%		0-30	792.7	27.4%	
20-30	416.3	14.4%		110-120	1.3	0.0%		0-40	1287	44.5%	
30-40	493.9	17.1%		120-130	0.3	0.0%		0-60	2242	77.6%	
40-50	504.3	17.4%		130-140	0.0	0.0%		0-80	2789	96.5%	
50-60	450.7	15.6%		140-150	0.0	0.0%		10-90	2770	95.8%	
60-70	343.4	11.9%		150-160	0.0	0.0%		20-50	1414	48.9%	
70-80	204.4	7.1%		160-170	0.0	0.0%		40-90	1581	54.7%	
80-90	78.4	2.7%		170-180	0.0	0.0%		60-90	626.2	21.7%	
0-90	2868	99.2%		90-180	22.6	0.8%		0-180	2890	100.0%	

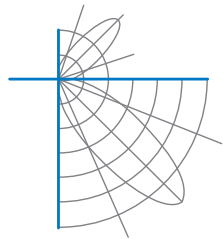


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Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles									
Vertical (Gamma) Angles		0	22.5	45	67.5	90	112.5	135	157.5	180
	0	1038	1038	1038	1038	1038	1038	1038	1038	1038
	2.5	1035	1034	1035	1038	1038	1038	1035	1034	1035
	5	1029	1030	1031	1033	1034	1033	1031	1030	1029
	7.5	1022	1022	1024	1026	1028	1026	1024	1022	1022
	10	1012	1013	1014	1017	1018	1017	1014	1013	1012
	12.5	1000	1000	1001	1005	1006	1005	1001	1000	1000
	15	984	985	987	990	991	990	987	985	984
	17.5	966	967	969	972	974	972	969	967	966
	20	945	947	949	953	955	953	949	947	945
	22.5	923	924	927	931	934	931	927	924	923
	25	898	900	904	908	910	908	904	900	898
	27.5	873	873	878	882	884	882	878	873	873
	30	844	845	850	854	857	854	850	845	844
	32.5	814	816	821	825	827	825	821	816	814
	35	782	784	790	795	797	795	790	784	782
	37.5	750	752	757	763	765	763	757	752	750
	40	715	718	724	730	733	730	724	718	715
	42.5	680	683	690	696	699	696	690	683	680
	45	644	647	654	661	663	661	654	647	644
	47.5	608	611	618	625	627	625	618	611	608
	50	570	573	581	588	590	588	581	573	570
	52.5	531	535	543	550	553	550	543	535	531
	55	493	496	505	513	515	513	505	496	493
	57.5	453	457	466	474	477	474	466	457	453
	60	413	417	427	436	439	436	427	417	413
	62.5	372	377	387	397	400	397	387	377	372
	65	331	336	347	358	361	358	347	336	331
	67.5	290	295	308	319	323	319	308	295	290
	70	249	255	269	282	286	282	269	255	249
	72.5	208	215	230	245	251	245	230	215	208
	75	168	175	193	210	216	210	193	175	168
	77.5	128	137	158	177	184	177	158	137	128
	80	91	102	126	147	154	147	126	102	91
	82.5	57	70	97	119	127	119	97	70	57
	85	28	44	72	94	102	94	72	44	28
	87.5	8	25	51	72	80	72	51	25	8
90	0	12	35	54	61	54	35	12	0	

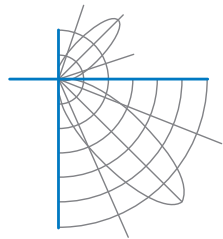


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	Lateral (C-Plane) Angles									
		0	22.5	45	67.5	90	112.5	135	157.5	180
	90	0	12	35	54	61	54	35	12	0
Vertical (Gamma) Angles	92.5	0	5	22	38	45	38	22	5	0
	95	0	0	13	26	32	26	13	0	0
	97.5	0	0	8	18	22	18	8	0	0
	100	0	0	5	11	15	11	5	0	0
	102.5	0	0	4	8	10	8	4	0	0
	105	0	0	3	6	7	6	3	0	0
	107.5	0	0	3	5	5	5	3	0	0
	110	0	0	2	4	5	4	2	0	0
	112.5	0	0	0	3	4	3	0	0	0
	115	0	0	0	3	4	3	0	0	0
	117.5	0	0	0	3	3	3	0	0	0
	120	0	0	0	3	3	3	0	0	0
	122.5	0	0	0	2	3	2	0	0	0
	125	0	0	0	0	2	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	



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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		101	101	101	99			
1	108	103	99	95		105	101	97	93		97	93	90		92	90	87		89	87	85	82			
2	98	90	83	77		96	88	82	76		84	79	74		81	76	72		78	74	71	69			
3	90	79	71	64		87	77	70	64		74	68	62		71	66	61		69	64	60	58			
4	82	70	61	54		80	69	60	54		66	59	53		64	57	52		61	56	52	49			
5	76	63	54	47		73	61	53	47		59	52	46		57	51	45		55	49	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	47	38	32		59	46	38	32		45	37	32		43	37	32		42	36	31	29			
9	56	43	35	29		55	42	34	29		41	34	29		40	33	29		39	33	28	27			
10	53	40	32	26		51	39	31	26		38	31	26		37	31	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.

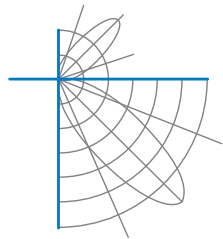
Circle of Light Plot

Height(ft)	Illuminance at Nadir (fc)	Ground-level distance to half-of-nadir illuminance (ft)	
		0-180 deg	90-270 deg
6.0	28.8	7.27	7.38
8.0	16.2	9.69	9.83
10.0	10.4	12.12	12.29
12.0	7.2	14.54	14.75
14.0	5.3	16.97	17.21
16.0	4.1	19.39	19.67

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	3135	3135	3135
45	2754	2640	2615
55	2596	2451	2425
65	2369	2205	2191
75	1956	1848	1928
85	974	1492	1806

Spacing Criterion

0 degree plane:	1.2
90 degree plane:	1.2
180 degree plane:	1.2
270 degree plane:	1.2



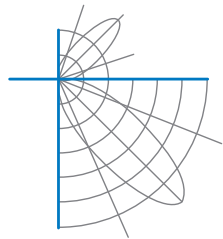
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UGR TABLE - CORRECTED

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	19.8	21.4	20.2	21.8	22.1	20.2	21.8	20.6	22.2	22.5
	3H	21.5	23.0	21.9	23.3	23.7	22.1	23.6	22.5	23.9	24.3
	4H	22.1	23.5	22.5	23.8	24.2	22.9	24.3	23.3	24.7	25.1
	6H	22.5	23.7	22.9	24.1	24.5	23.6	24.9	24.0	25.3	25.7
	8H	22.5	23.7	23.0	24.2	24.6	23.9	25.1	24.3	25.5	26.0
	12H	22.6	23.7	23.0	24.1	24.6	24.2	25.4	24.7	25.8	26.3
4H	2H	20.5	21.9	20.9	22.2	22.6	20.8	22.2	21.2	22.5	22.9
	3H	22.4	23.6	22.8	24.0	24.4	22.9	24.1	23.4	24.5	24.9
	4H	23.1	24.1	23.5	24.6	25.0	23.9	24.9	24.3	25.3	25.8
	6H	23.6	24.5	24.0	24.9	25.4	24.7	25.6	25.2	26.1	26.6
	8H	23.7	24.5	24.1	25.0	25.5	25.1	26.0	25.6	26.4	26.9
	12H	23.7	24.5	24.2	25.0	25.5	25.5	26.3	26.0	26.8	27.3
8H	4H	23.4	24.3	23.9	24.8	25.3	24.1	25.0	24.6	25.5	25.9
	6H	24.0	24.8	24.5	25.3	25.8	25.1	25.9	25.7	26.4	26.9
	8H	24.2	24.9	24.7	25.4	25.9	25.6	26.3	26.2	26.8	27.3
	12H	24.3	24.9	24.8	25.4	26.0	26.2	26.8	26.7	27.3	27.8
12H	4H	23.5	24.3	24.0	24.8	25.3	24.1	24.9	24.6	25.4	25.9
	6H	24.1	24.8	24.7	25.3	25.8	25.2	25.9	25.7	26.3	26.9
	8H	24.4	25.0	24.9	25.5	26.0	25.8	26.3	26.3	26.8	27.4

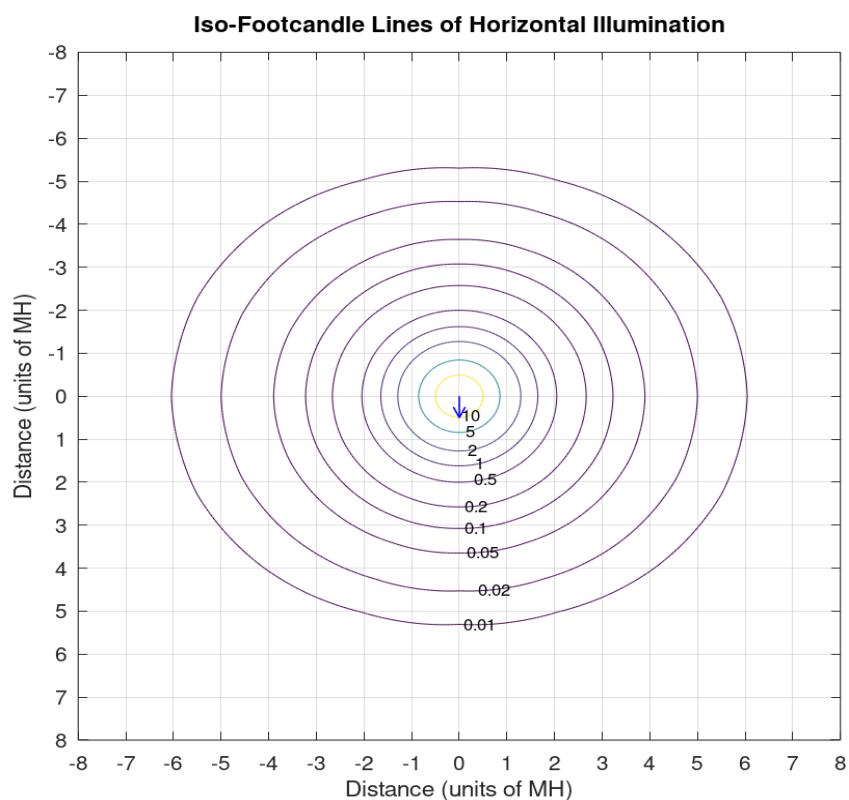
Maximum UGR = 27.8



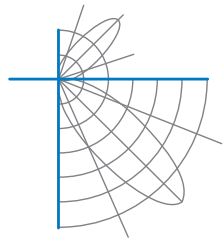
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Iso-Illuminance Plot



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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Additional Pictures of Test Subject



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Test Distance 9.5 m
Ambient Temperature 25.5 °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.