

Report of Test

LLIA001457-001

Indoor Distribution Photometry Test Report

Catalog Number: F-VTC22/40/PCTS/D86 - 20W/4000K Setting

Recessed mounted, formed steel housing, translucent white linear ribbed plastic enclosure.

228 LEDs, 4 LED boards with 28 cool white and 28 warm white LEDs each.

One WSP-Z45AD-0420900 LED driver



Prepared For:

Topaz Lighting Corp

925 Waverly Avenue

Holtsville, NY 11742, USA

Performance Summary

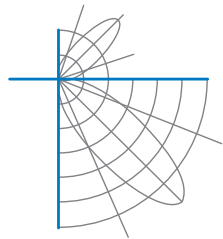
Input Voltage	120.0 V	Luminous Flux	2704.6 Lumens
Input Current	0.1636 A	Total Efficacy	147.1 Lm/W
Input Power	18.38 W	Downward Flux	2704.6 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.936		
Current THD	9.1 %		

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

Test date: 05/05/2021

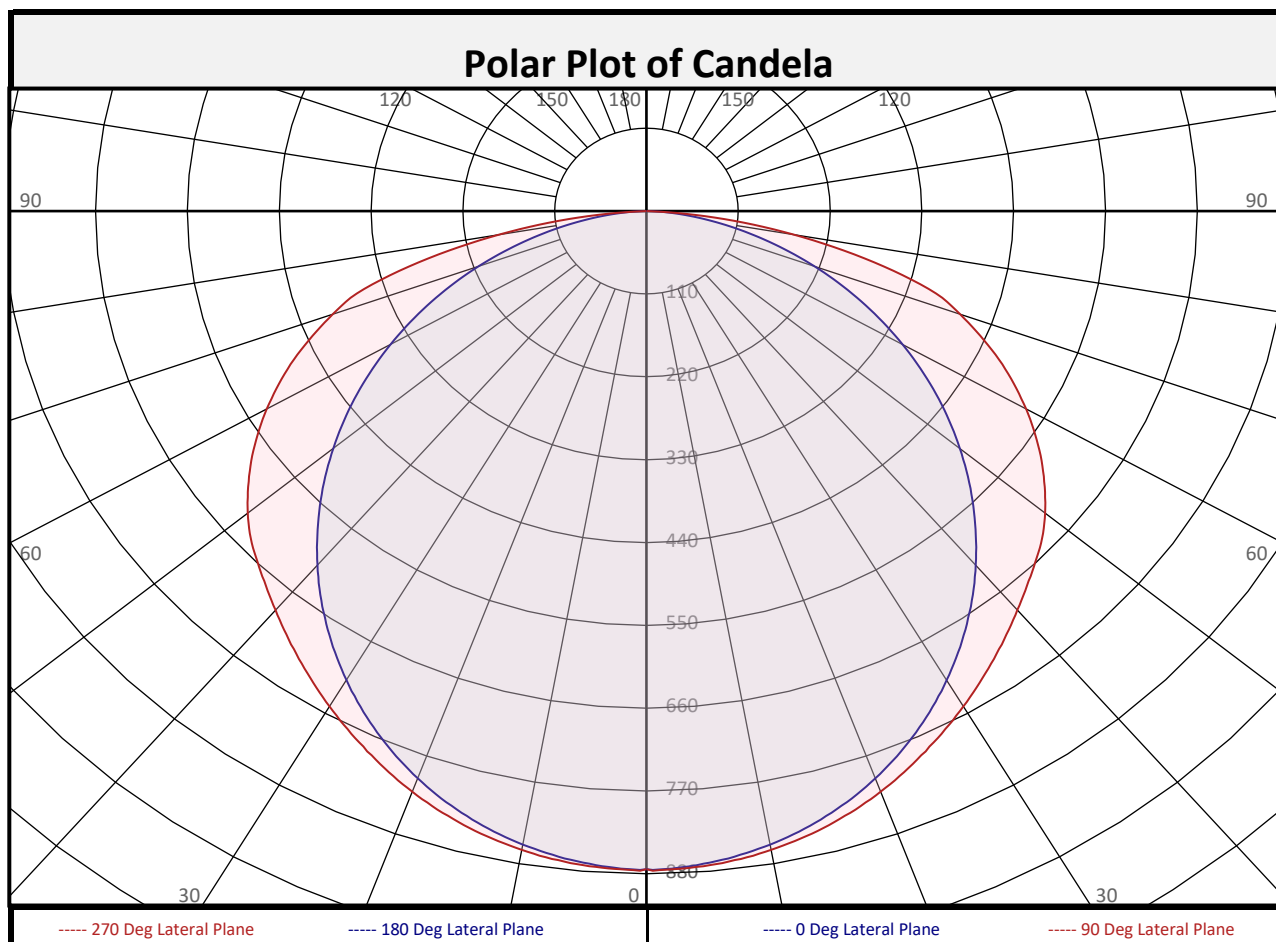
Report date: 05/05/2021

Signed: _____

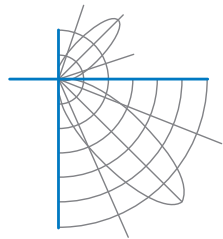


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Zonal Flux Summary											
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total	
0-10	82.7	3.1%		90-100	0.0	0.0%		0-20	319.1	11.8%	
10-20	236.4	8.7%		100-110	0.0	0.0%		0-30	677.3	25.0%	
20-30	358.2	13.2%		110-120	0.0	0.0%		0-40	1112	41.1%	
30-40	434.8	16.1%		120-130	0.0	0.0%		0-60	2020	74.7%	
40-50	463.4	17.1%		130-140	0.0	0.0%		0-80	2642	97.7%	
50-60	444.4	16.4%		140-150	0.0	0.0%		10-90	2622	96.9%	
60-70	373.9	13.8%		150-160	0.0	0.0%		20-50	1256	46.4%	
70-80	248.1	9.2%		160-170	0.0	0.0%		40-90	1592	58.9%	
80-90	62.7	2.3%		170-180	0.0	0.0%		60-90	684.7	25.3%	
0-90	2705	100.0%		90-180	0.0	0.0%		0-180	2705	100.0%	

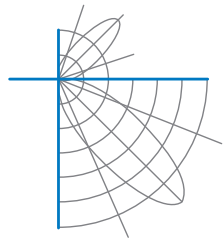


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Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles									
Vertical (Gamma) Angles		0	22.5	45	67.5	90	112.5	135	157.5	180
	0	874	874	874	874	874	874	874	874	874
	2.5	873	872	872	874	874	874	872	872	873
	5	869	869	869	871	872	871	869	869	869
	7.5	862	863	864	866	868	866	864	863	862
	10	854	856	857	860	861	860	857	856	854
	12.5	844	846	848	852	853	852	848	846	844
	15	831	834	838	842	844	842	838	834	831
	17.5	818	820	825	830	833	830	825	820	818
	20	801	804	811	817	820	817	811	804	801
	22.5	784	786	795	803	807	803	795	786	784
	25	764	767	777	787	792	787	777	767	764
	27.5	742	746	757	770	775	770	757	746	742
	30	719	724	736	752	759	752	736	724	719
	32.5	695	700	714	734	743	734	714	700	695
	35	669	675	692	715	726	715	692	675	669
	37.5	642	648	668	696	709	696	668	648	642
	40	613	620	644	676	691	676	644	620	613
	42.5	584	591	619	657	675	657	619	591	584
	45	554	561	594	638	659	638	594	561	554
	47.5	522	531	569	619	643	619	569	531	522
	50	490	500	544	601	624	601	544	500	490
	52.5	457	468	519	579	602	579	519	468	457
	55	423	437	497	554	578	554	497	437	423
	57.5	389	406	474	528	552	528	474	406	389
	60	354	374	447	500	525	500	447	374	354
	62.5	319	343	417	470	496	470	417	343	319
	65	284	312	386	439	466	439	386	312	284
	67.5	249	282	354	406	433	406	354	282	249
	70	214	253	319	372	400	372	319	253	214
	72.5	179	224	284	337	364	337	284	224	179
	75	146	190	247	291	306	291	247	190	146
	77.5	115	155	208	233	242	233	208	155	115
	80	85	119	158	172	178	172	158	119	85
	82.5	57	83	106	114	117	114	106	83	57
	85	33	45	56	58	59	58	56	45	33
	87.5	13	14	15	10	7	10	15	14	13
90	0	0	0	0	0	0	0	0	0	

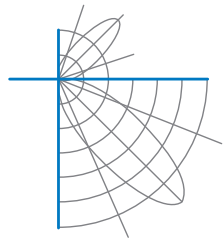


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Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles									
Vertical (Gamma) Angles		0	22.5	45	67.5	90	112.5	135	157.5	180
	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	



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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	108	103	98	94		105	101	96	93		96	93	90		92	89	87		89	86	84	82			
2	98	89	82	75		95	87	80	75		83	78	73		80	75	71		77	73	69	67			
3	89	77	69	62		86	76	68	61		73	66	60		70	64	59		67	62	58	56			
4	81	68	59	52		78	67	58	52		64	57	51		62	55	50		60	54	49	47			
5	74	61	51	44		72	60	51	44		57	50	44		55	49	43		54	48	43	41			
6	68	55	45	39		66	54	45	38		52	44	38		50	43	38		48	42	37	35			
7	63	49	40	34		62	49	40	34		47	39	34		45	39	33		44	38	33	31			
8	59	45	36	30		57	44	36	30		43	35	30		42	35	30		40	34	30	28			
9	55	41	33	27		54	41	33	27		39	32	27		38	32	27		37	31	27	25			
10	52	38	30	25		50	37	30	24		36	29	24		36	29	24		35	29	24	22			

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.

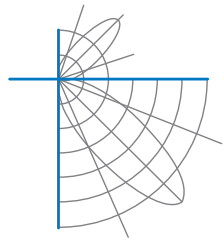
Circle of Light Plot

Height(ft)	Illuminance at Nadir (fc)	Ground-level distance to half-of-nadir illuminance (ft)	
		0-180 deg	90-270 deg
6.0	24.3	7.35	7.78
8.0	13.7	9.80	10.37
10.0	8.7	12.25	12.97
12.0	6.1	14.70	15.56
14.0	4.5	17.15	18.15
16.0	3.4	19.60	20.75

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	2646	2646	2646
45	2370	2545	2822
55	2234	2621	3051
65	2034	2769	3338
75	1708	2884	3585
85	1156	1945	2048

Spacing Criterion

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



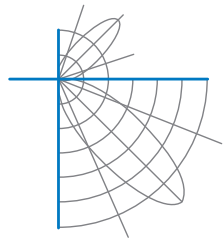
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UGR TABLE - CORRECTED

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	14.6	16.3	15.0	16.6	16.9	16.6	18.3	16.9	18.6	18.9
	3H	16.5	18.0	16.8	18.3	18.7	19.1	20.6	19.4	20.9	21.3
	4H	17.1	18.6	17.5	18.9	19.3	20.1	21.6	20.5	21.9	22.3
	6H	17.6	19.0	18.0	19.3	19.7	20.9	22.2	21.3	22.6	23.0
	8H	17.7	19.0	18.2	19.4	19.8	21.1	22.4	21.5	22.7	23.1
	12H	17.8	19.1	18.2	19.4	19.9	21.2	22.4	21.6	22.8	23.2
4H	2H	15.7	17.2	16.1	17.5	17.9	17.2	18.6	17.6	19.0	19.3
	3H	17.8	19.0	18.2	19.4	19.8	19.9	21.2	20.3	21.5	21.9
	4H	18.6	19.7	19.0	20.1	20.6	21.2	22.3	21.6	22.7	23.1
	6H	19.2	20.2	19.7	20.6	21.1	22.0	23.0	22.5	23.4	23.9
	8H	19.4	20.3	19.9	20.7	21.2	22.3	23.2	22.7	23.6	24.1
	12H	19.5	20.3	20.0	20.8	21.3	22.4	23.3	22.9	23.7	24.2
8H	4H	19.3	20.2	19.8	20.7	21.1	21.5	22.4	21.9	22.8	23.3
	6H	20.1	20.9	20.6	21.3	21.8	22.5	23.2	23.0	23.7	24.2
	8H	20.3	21.0	20.8	21.5	22.0	22.8	23.5	23.3	24.0	24.5
	12H	20.5	21.1	21.0	21.6	22.2	23.0	23.6	23.5	24.1	24.7
12H	4H	19.4	20.3	19.9	20.7	21.2	21.5	22.3	22.0	22.8	23.3
	6H	20.3	21.0	20.8	21.4	22.0	22.5	23.2	23.1	23.7	24.2
	8H	20.6	21.2	21.1	21.7	22.2	22.9	23.5	23.4	24.0	24.6

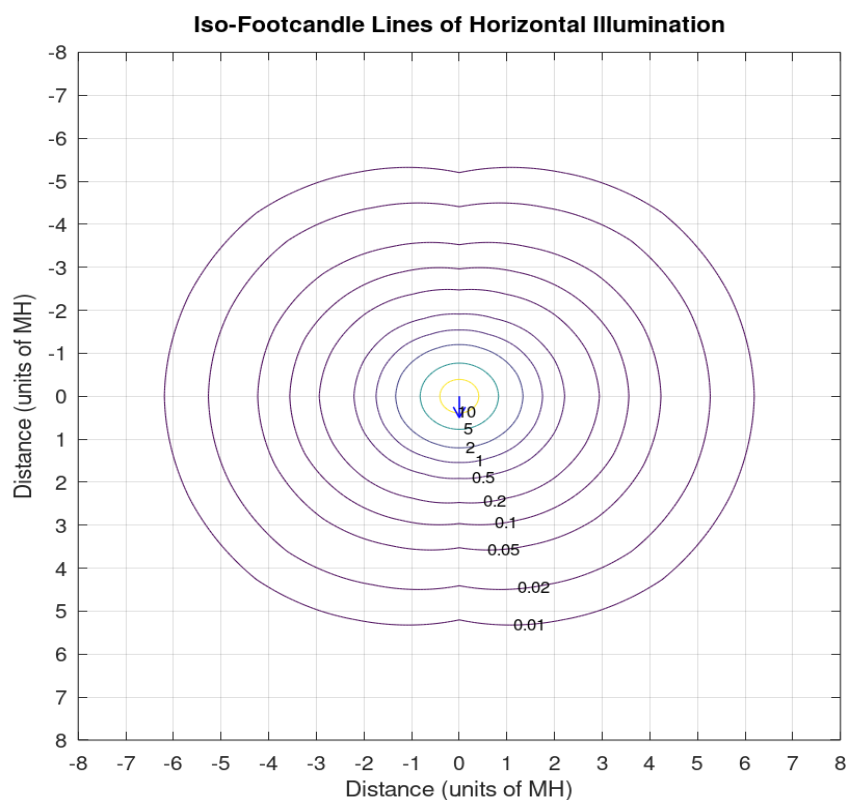
Maximum UGR = 24.7



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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 25.0 °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.