

Report of Test

LLIA001148-002

Indoor Distribution Photometry Test Report

Catalog Number: RTL/633WH/90/D-28

Recessed mounted, formed white aluminum housing, stepped white aluminum reflector, translucent white plastic enclosure.

28 white LEDs, one 2835-281B-28*1 LED board.

One LED driver.



Prepared For:

Topaz Lighting Corp

925 Waverly Avenue

Holtsville, NY 11742, USA

Performance Summary

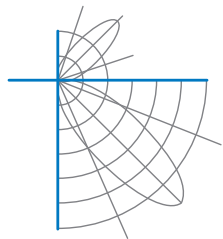
Input Voltage	120.0 V	Luminous Flux	1075.6 Lumens
Input Current	0.1253 A	Total Efficacy	73.9 Lm/W
Input Power	14.55 W	Downward Flux	1075.6 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.968		
Current THD	21.9 %		

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

Test date: 08/12/2019

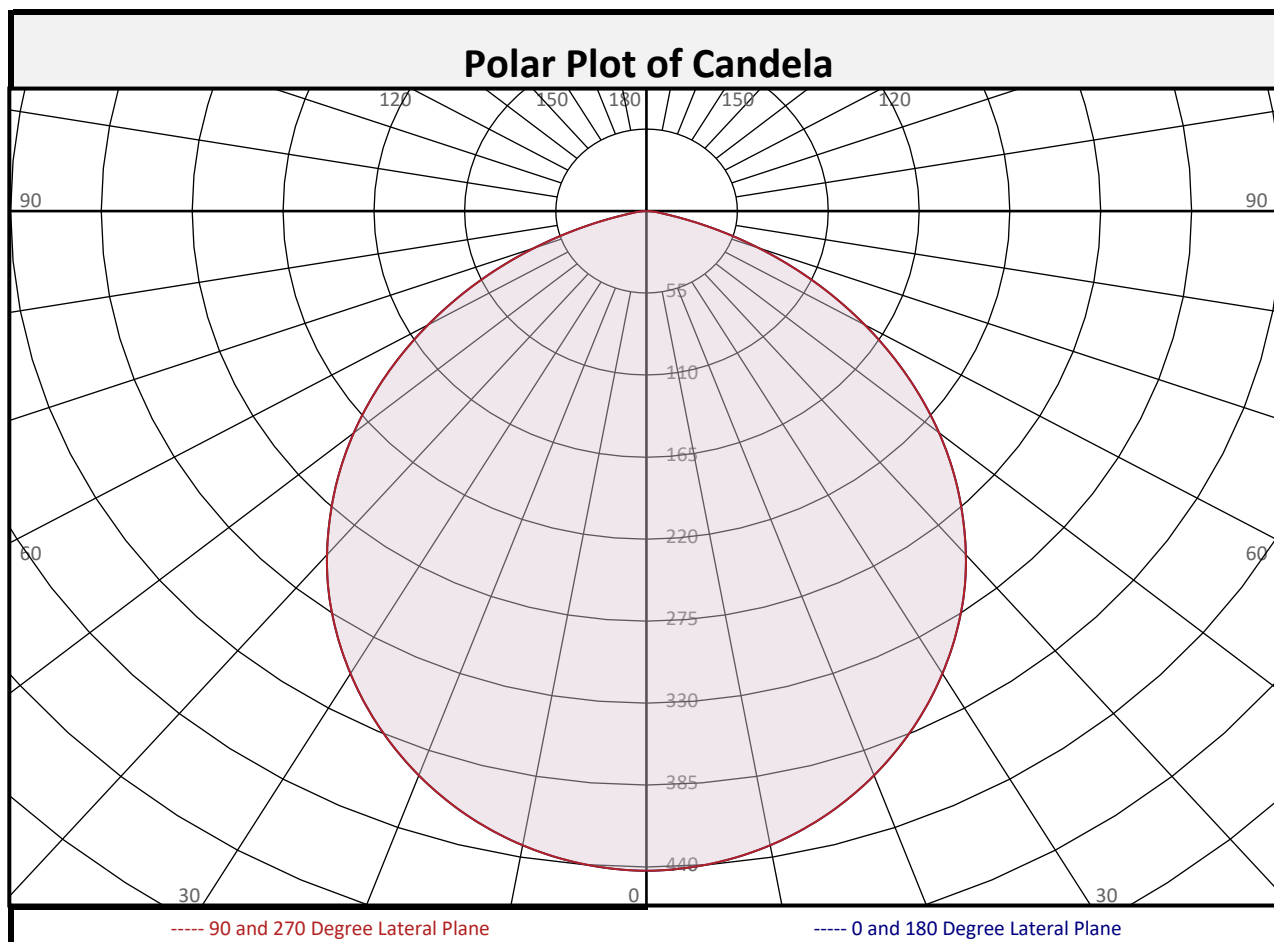
Report date: 08/12/2019

Signed: _____

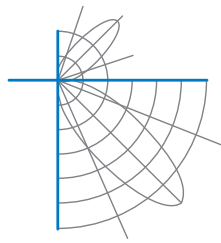


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Zonal Flux Summary										
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	41.7	3.9%		90-100	0.0	0.0%		0-20	160.0	14.9%
10-20	118.3	11.0%		100-110	0.0	0.0%		0-30	336.0	31.2%
20-30	176.0	16.4%		110-120	0.0	0.0%		0-40	543.0	50.5%
30-40	207.0	19.2%		120-130	0.0	0.0%		0-60	920.6	85.6%
40-50	205.8	19.1%		130-140	0.0	0.0%		0-80	1070	99.5%
50-60	171.8	16.0%		140-150	0.0	0.0%		10-90	1034	96.1%
60-70	110.7	10.3%		150-160	0.0	0.0%		20-50	588.8	54.7%
70-80	39.1	3.6%		160-170	0.0	0.0%		40-90	532.6	49.5%
80-90	5.2	0.5%		170-180	0.0	0.0%		60-90	155.0	14.4%
0-90	1076	100.0%		90-180	0.0	0.0%		0-180	1076	100.0%

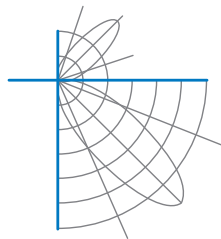


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Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles									
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles	0	443	443	443	443	443	443	443	443	443
	2.5	442	442	442	442	442	442	442	442	442
	5	440	440	440	440	440	440	440	440	440
	7.5	436	436	436	436	436	436	436	436	436
	10	432	432	432	432	432	432	432	432	432
	12.5	426	426	426	426	426	426	426	426	426
	15	420	420	420	420	420	420	420	420	420
	17.5	412	412	412	412	412	412	412	412	412
	20	403	403	403	403	403	403	403	403	403
	22.5	393	393	393	393	393	393	393	393	393
	25	382	382	382	382	382	382	382	382	382
	27.5	371	371	371	371	371	371	371	371	371
	30	358	358	358	358	358	358	358	358	358
	32.5	345	345	345	345	345	345	345	345	345
	35	331	331	331	331	331	331	331	331	331
	37.5	317	317	317	317	317	317	317	317	317
	40	301	301	301	301	301	301	301	301	301
	42.5	284	284	284	284	284	284	284	284	284
	45	267	267	267	267	267	267	267	267	267
	47.5	250	250	250	250	250	250	250	250	250
	50	231	231	231	231	231	231	231	231	231
	52.5	212	212	212	212	212	212	212	212	212
	55	192	192	192	192	192	192	192	192	192
	57.5	173	173	173	173	173	173	173	173	173
	60	153	153	153	153	153	153	153	153	153
	62.5	132	132	132	132	132	132	132	132	132
	65	112	112	112	112	112	112	112	112	112
	67.5	92	92	92	92	92	92	92	92	92
	70	72	72	72	72	72	72	72	72	72
	72.5	53	53	53	53	53	53	53	53	53
	75	35	35	35	35	35	35	35	35	35
	77.5	21	21	21	21	21	21	21	21	21
	80	11	11	11	11	11	11	11	11	11
	82.5	7	7	7	7	7	7	7	7	7
	85	5	5	5	5	5	5	5	5	5
	87.5	2	2	2	2	2	2	2	2	2
	90	0	0	0	0	0	0	0	0	0

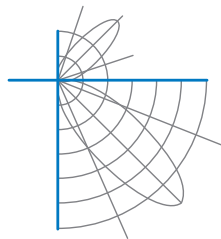


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Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles									
	0	22.5	45	67.5	90	112.5	135	157.5	180	
Vertical (Gamma) Angles	90	0	0	0	0	0	0	0	0	
	92.5	0	0	0	0	0	0	0	0	
	95	0	0	0	0	0	0	0	0	
	97.5	0	0	0	0	0	0	0	0	
	100	0	0	0	0	0	0	0	0	
	102.5	0	0	0	0	0	0	0	0	
	105	0	0	0	0	0	0	0	0	
	107.5	0	0	0	0	0	0	0	0	
	110	0	0	0	0	0	0	0	0	
	112.5	0	0	0	0	0	0	0	0	
	115	0	0	0	0	0	0	0	0	
	117.5	0	0	0	0	0	0	0	0	
	120	0	0	0	0	0	0	0	0	
	122.5	0	0	0	0	0	0	0	0	
	125	0	0	0	0	0	0	0	0	
	127.5	0	0	0	0	0	0	0	0	
	130	0	0	0	0	0	0	0	0	
	132.5	0	0	0	0	0	0	0	0	
	135	0	0	0	0	0	0	0	0	
	137.5	0	0	0	0	0	0	0	0	
	140	0	0	0	0	0	0	0	0	
	142.5	0	0	0	0	0	0	0	0	
	145	0	0	0	0	0	0	0	0	
	147.5	0	0	0	0	0	0	0	0	
	150	0	0	0	0	0	0	0	0	
	152.5	0	0	0	0	0	0	0	0	
	155	0	0	0	0	0	0	0	0	
	157.5	0	0	0	0	0	0	0	0	
	160	0	0	0	0	0	0	0	0	
	162.5	0	0	0	0	0	0	0	0	
	165	0	0	0	0	0	0	0	0	
	167.5	0	0	0	0	0	0	0	0	
	170	0	0	0	0	0	0	0	0	
	172.5	0	0	0	0	0	0	0	0	
	175	0	0	0	0	0	0	0	0	
	177.5	0	0	0	0	0	0	0	0	
	180	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	110	106	102	99		107	104	100	97		99	97	94		96	93	91		92	90	89	87
2	101	93	87	82		98	92	86	81		88	83	79		85	81	77		82	79	76	74
3	92	83	75	69		90	81	74	69		78	72	67		76	70	66		73	69	65	63
4	85	74	65	59		83	72	65	59		70	63	58		68	62	57		66	61	56	54
5	78	66	58	51		76	65	57	51		63	56	50		61	55	50		59	54	49	47
6	72	60	51	45		71	59	51	45		57	50	44		55	49	44		54	48	44	42
7	67	54	46	40		66	53	45	40		52	45	40		51	44	39		49	43	39	37
8	63	50	41	36		61	49	41	36		48	41	35		46	40	35		45	39	35	33
9	59	46	38	32		57	45	37	32		44	37	32		43	36	32		42	36	32	30
10	55	42	34	29		54	42	34	29		41	34	29		40	33	29		39	33	29	27

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

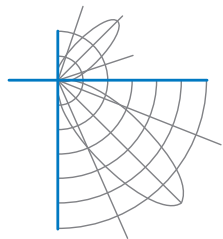
Height(ft)	Illuminance at Nadir (fc)	Ground-level distance to half-of-nadir illuminance (ft)	
		0-180 deg	90-270 deg
6.0	12.3	7.24	7.24
8.0	6.9	9.65	9.65
10.0	4.4	12.07	12.07
12.0	3.1	14.48	14.48
14.0	2.3	16.89	16.89
16.0	1.7	19.31	19.31

Average Luminance (cd/m²)

	0 deg Plane	45 deg Plane	90 deg Plane
0	36749	36749	36749
45	31372	31372	31372
55	27869	27869	27869
65	22018	22018	22018
75	11268	11268	11268
85	4375	4375	4375

Spacing Criterion

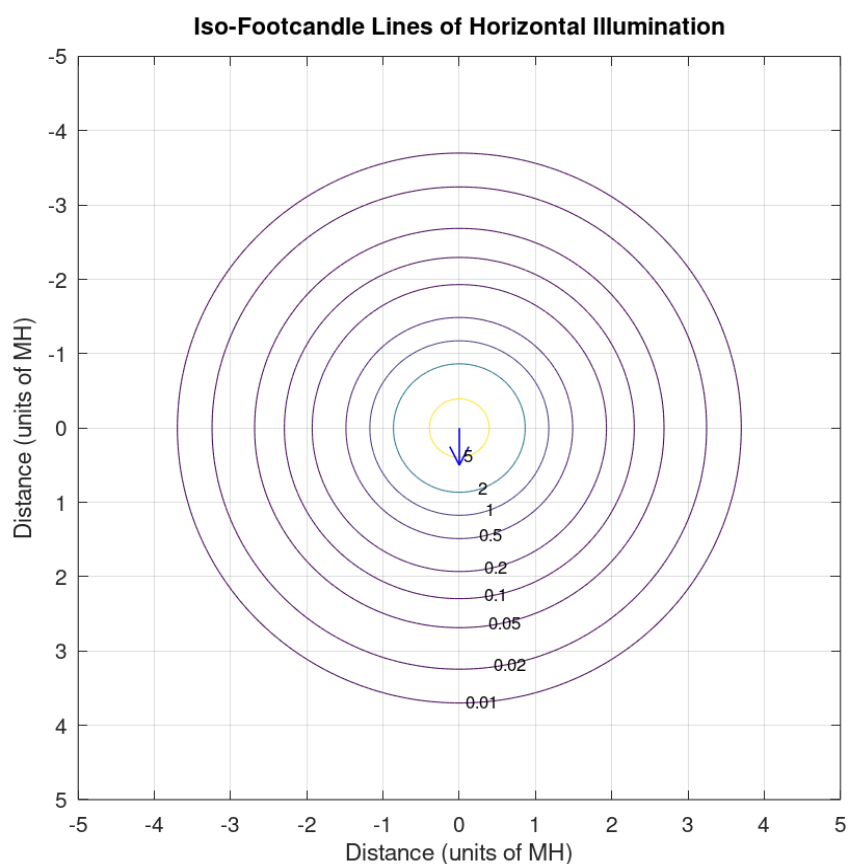
Spacing Criterion:	1.2
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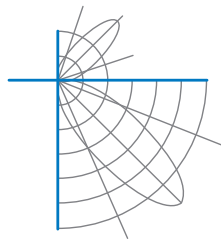
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Iso-Illuminance Plot



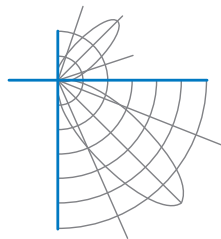
The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution 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 publications: IES LM-79-08 and ANSI C82.77-10:2014. 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.