LightLab INTERNATIONAL ALLENTOWN LLC

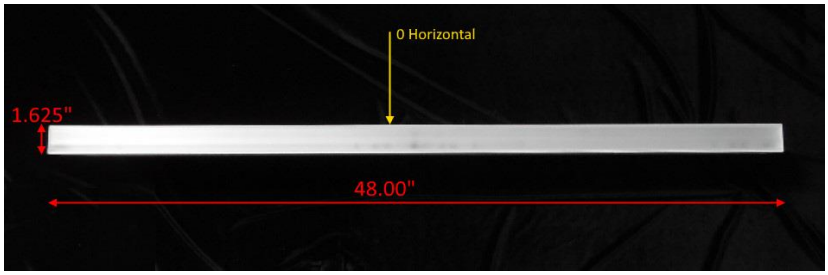
NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA002496-001

Indoor Distribution Photometry Test Report

Catalog Number: MLD2-AS-M-48-400-35K-1%-U
Pendant mounted, white painted extruded aluminum housing, white aluminum reflector, frosted liner prismatic asymmetric plastic lens.
112 white LEDs, 2 LED boards with 56 LEDs each.
One Advance XI020C056V054BST3 LED driver measured at 289mA



Prepared For:
Mercury Lighting Products Company, Inc.
20 Audrey Place
Fairfield, NJ 07004, USA

Performance Summary					
Input Voltage	120.0	Vac	Luminous Flux	1633.3	Lumens
Input Current	0.1050	A	Total Efficacy	130.8	Lm/W
Input Power	12.49	W	Downward Flux	1633.1	Lumens
Frequency	60.00	Hz	Downward Flux	100.0	% of Total
Power Factor	0.991				
Current THD	6.3	%			

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

Test date: 08/26/2024
Report date: 08/27/2024

Signed: Michael L. Grather Digitally signed by Michael L. Grather Date: 2024.11.06 12:27:43 -05'00'

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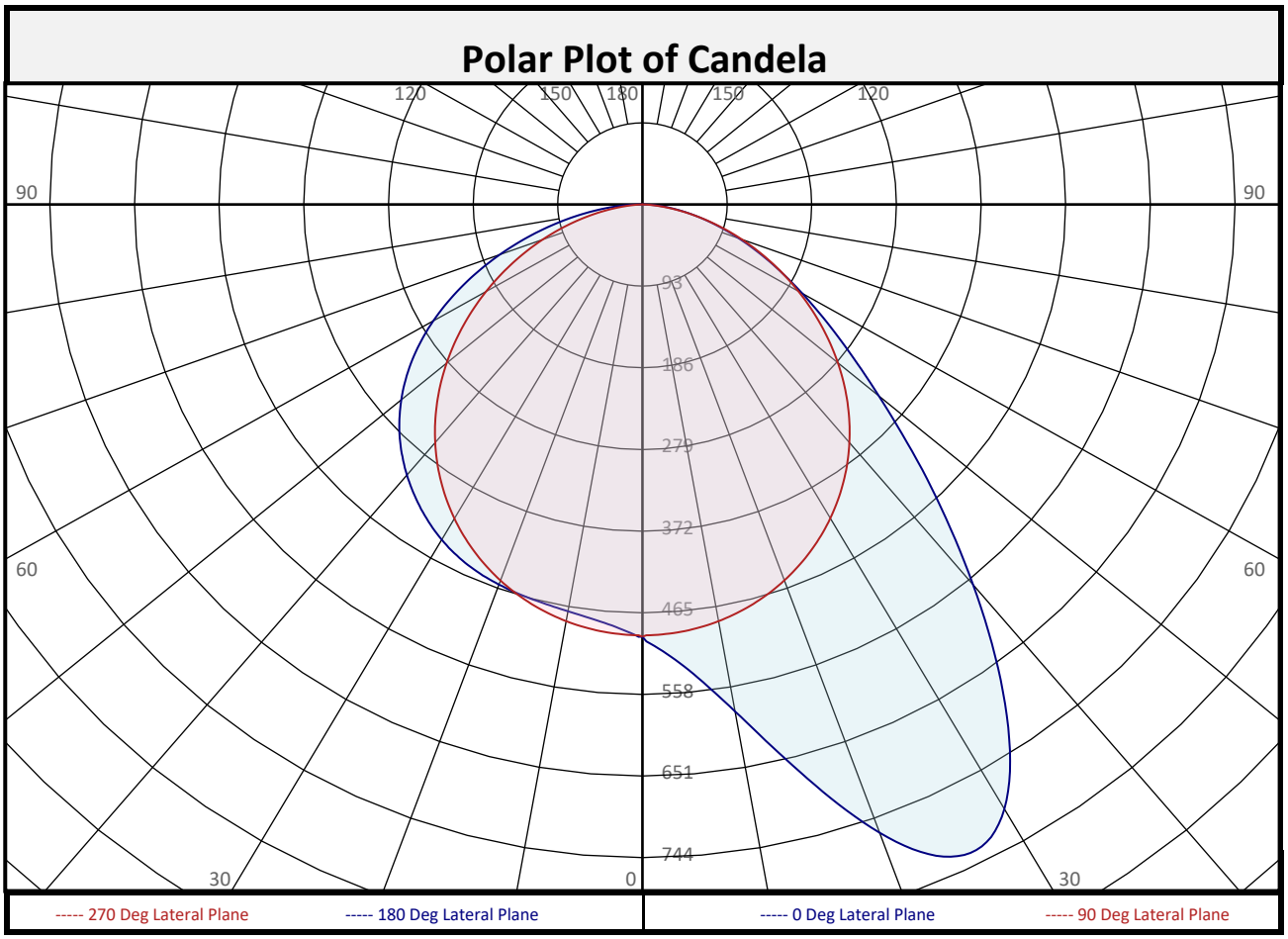

Zonal Flux Summary

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	47.6	2.9%	90-100	0.2	0.0%	0-20	195.2	12.0%
10-20	147.6	9.0%	100-110	0.0	0.0%	0-30	444.8	27.2%
20-30	249.6	15.3%	110-120	0.0	0.0%	0-40	757.1	46.4%
30-40	312.2	19.1%	120-130	0.0	0.0%	0-60	1323	81.0%
40-50	308.3	18.9%	130-140	0.0	0.0%	0-80	1607	98.4%
50-60	257.8	15.8%	140-150	0.0	0.0%	10-90	1585	97.1%
60-70	183.5	11.2%	150-160	0.0	0.0%	20-50	870.2	53.3%
70-80	99.8	6.1%	160-170	0.0	0.0%	40-90	876.0	53.6%
80-90	26.6	1.6%	170-180	0.0	0.0%	60-90	309.8	19.0%
0-90	1633	100.0%	90-180	0.2	0.0%	0-180	1633	100.0%

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Luminous Intensity (Candela) Table

Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	Lateral (C-Plane) Angles									
	0	22.5	45	67.5	90	112.5	135	157.5	180
0	492	492	492	492	492	492	492	492	492
2.5	509	507	501	495	490	486	484	485	485
5	528	524	512	499	489	481	478	479	479
7.5	554	546	525	503	486	476	473	474	474
10	587	573	541	506	482	470	468	470	471
12.5	626	606	559	509	477	463	463	466	468
15	669	644	579	512	471	456	458	463	466
17.5	717	684	601	514	464	448	452	460	464
20	762	724	623	516	456	440	446	457	461
22.5	798	759	645	517	447	431	439	453	458
25	819	784	664	518	436	421	432	448	453
27.5	819	794	678	516	425	410	424	441	448
30	795	785	686	513	413	398	414	434	441
32.5	752	758	685	508	400	385	403	425	433
35	694	715	673	500	385	371	392	415	424
37.5	631	662	652	489	370	357	379	404	413
40	565	603	623	475	354	341	365	392	402
42.5	501	544	586	458	337	325	350	379	390
45	442	485	545	437	319	308	334	365	377
47.5	387	431	501	413	300	290	317	350	362
50	339	378	456	387	280	271	300	333	346
52.5	297	332	411	358	260	253	282	315	328
55	262	292	367	329	240	234	263	296	308
57.5	231	256	324	299	219	214	243	276	287
60	203	224	284	269	198	195	223	255	265
62.5	177	195	246	238	177	176	203	233	241
65	154	169	212	209	157	156	182	210	217
67.5	132	145	181	180	136	137	161	186	192
70	112	122	152	152	116	118	140	162	166
72.5	94	101	124	125	97	99	119	138	141
75	76	82	99	100	78	81	99	115	117
77.5	60	64	77	77	60	63	79	92	94
80	45	48	56	56	43	47	60	71	72
82.5	31	33	38	37	28	32	43	51	51
85	19	20	22	21	15	19	27	32	33
87.5	9	9	9	8	6	8	13	16	17
90	2	2	1	0	0	0	2	4	4

16 lateral half-planes of data were acquired, 22.5 degree increments shown.

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Luminous Intensity (Candela) Table

Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	Lateral (C-Plane) Angles									
		0	22.5	45	67.5	90	112.5	135	157.5	180
	90	2	2	1	0	0	0	2	4	4
	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

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	0
RCR																						
0	119	119	119	119		116	116	116	116		111	111	111		106	106	106		102	102	102	100
1	109	104	100	96		106	102	98	95		98	95	92		94	91	89		90	88	86	84
2	99	91	84	79		97	89	83	78		86	81	76		82	78	74		79	76	73	71
3	91	80	72	66		88	79	71	65		76	69	64		73	67	63		70	66	62	60
4	83	71	62	56		81	70	62	55		67	60	55		65	59	54		63	57	53	51
5	76	63	55	48		74	62	54	48		60	53	47		58	52	47		56	51	46	44
6	70	57	48	42		68	56	48	42		54	47	41		53	46	41		51	45	40	38
7	65	52	43	37		63	51	43	37		49	42	36		48	41	36		47	40	36	34
8	61	47	39	33		59	46	38	33		45	38	32		44	37	32		43	37	32	30
9	57	43	35	29		55	43	35	29		41	34	29		40	34	29		39	33	29	27
10	53	40	32	27		52	39	32	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	13.7	9.10	7.48
8.0	7.7	12.14	9.97
10.0	4.9	15.17	12.47
12.0	3.4	18.21	14.96
14.0	2.5	21.24	17.45
16.0	1.9	24.28	19.94

Spacing Criterion

0 deg:	1.7
90 deg:	1.2
180 deg:	1.3
270 deg:	1.2

Average Luminance (cd/m^2)

	0 deg Plane	45 deg Plane	90 deg Plane
0	9785	9785	9785
45	12424	15303	8962
55	9072	12719	8308
65	7248	9985	7365
75	5836	7636	5992
85	4374	5028	3458

Beam and Field Angle

0-180 Degree Plane

Beam Angle: 84.5°

Field Angle: 152.9°

90-270 Degree Plane

Beam Angle: 60.8°

Field Angle: 148.9°

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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	19.7	21.3	20.0	21.6	21.9	19.7	21.3	20.1	21.6	22.0
	3H	21.0	22.5	21.4	22.8	23.2	21.2	22.7	21.6	23.0	23.4
	4H	21.5	22.9	21.9	23.2	23.6	21.7	23.1	22.1	23.4	23.8
	6H	21.8	23.1	22.2	23.5	23.8	22.0	23.3	22.4	23.7	24.1
	8H	21.9	23.1	22.4	23.5	23.9	22.1	23.3	22.6	23.7	24.1
	12H	22.0	23.2	22.4	23.5	24.0	22.2	23.3	22.6	23.7	24.1
4H	2H	20.5	21.9	20.9	22.3	22.6	20.4	21.8	20.8	22.2	22.5
	3H	22.0	23.2	22.5	23.6	24.0	22.2	23.3	22.6	23.7	24.1
	4H	22.6	23.6	23.0	24.1	24.5	22.8	23.8	23.2	24.2	24.7
	6H	23.0	23.9	23.5	24.4	24.8	23.2	24.1	23.7	24.6	25.0
	8H	23.2	24.0	23.6	24.5	24.9	23.3	24.2	23.8	24.6	25.1
	12H	23.3	24.0	23.7	24.5	25.0	23.4	24.2	23.9	24.7	25.1
8H	4H	23.0	23.8	23.4	24.2	24.7	23.1	24.0	23.6	24.4	24.9
	6H	23.5	24.2	24.0	24.7	25.2	23.7	24.4	24.2	24.9	25.4
	8H	23.7	24.3	24.2	24.8	25.3	23.9	24.5	24.4	25.0	25.5
	12H	23.8	24.4	24.4	24.9	25.5	24.0	24.5	24.5	25.0	25.6
12H	4H	23.0	23.8	23.5	24.2	24.7	23.2	23.9	23.6	24.4	24.9
	6H	23.6	24.2	24.1	24.7	25.2	23.8	24.4	24.3	24.9	25.4
	8H	23.8	24.4	24.3	24.9	25.4	24.0	24.5	24.5	25.0	25.6

Maximum UGR = 25.6

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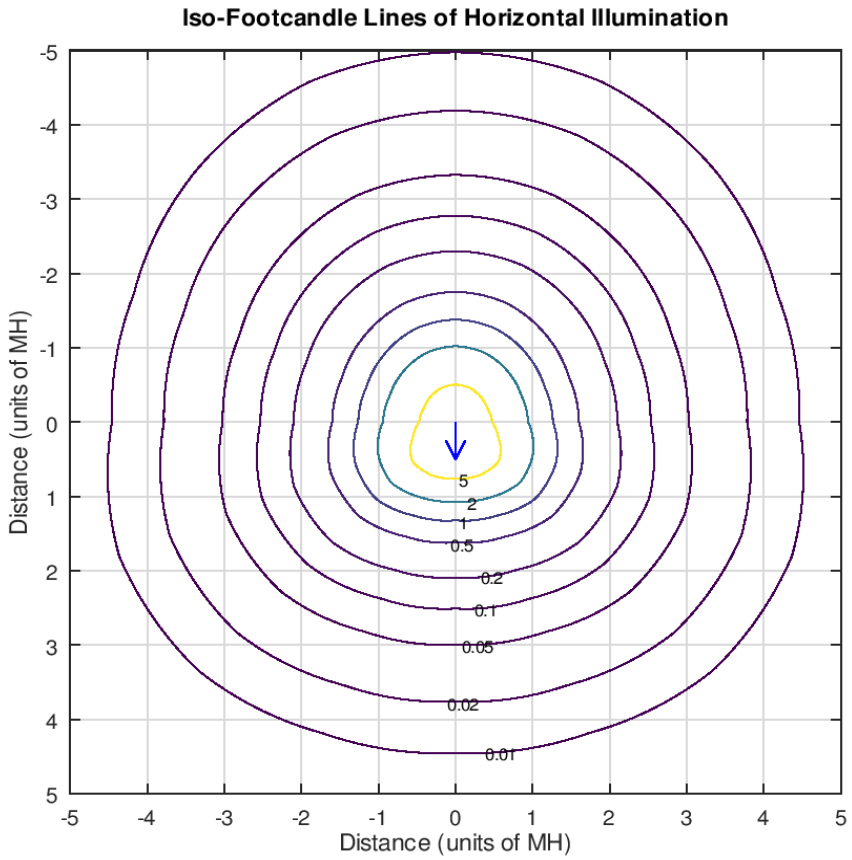
Iso-Illuminance Plot



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	25.5 °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-41-20 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.