LightLab INTERNATIONAL ALLENTOWN LLC

NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA001503-001-R01*

Indoor Distribution Photometry Test Report

Catalog Number: MLC4-DI-48-550-670-35K-ASO-BW-1%-2C-U

Pendant mounted, extruded aluminum housing, frosted plastic upper enclosure, translucent white plastic lower enclosure. 224 white LEDs, two Advance FO Strip PR 22 in 2200lm 835 LV5 LED boards with 56 LEDs each in indirect section, two Advance FO Strip PR 23.7 in 2200lm 835 LV5 LED boards with 56 LEDs each in direct section. Two Advance XI040C110V054BST2 LED drivers labeled as 460mA(direct) and 445mA(indirect)

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

Performance Summary					
Input Voltage	120.0	V	Luminous Flux	4903.0	Lumens
Input Current	0.3456	A	Total Efficacy	119.7	Lm/W
Input Power	40.96	W	Downward Flux	2216.0	Lumens
Frequency	60.00	Hz	Downward Flux	45.2	% of Total
Power Factor	0.987				
Current THD	6.7	%			

*This test report supersedes test report LLIA001503-001

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

Test date: 08/03/2021
Report date: 08/19/2021

Signed: Michael L. Grather

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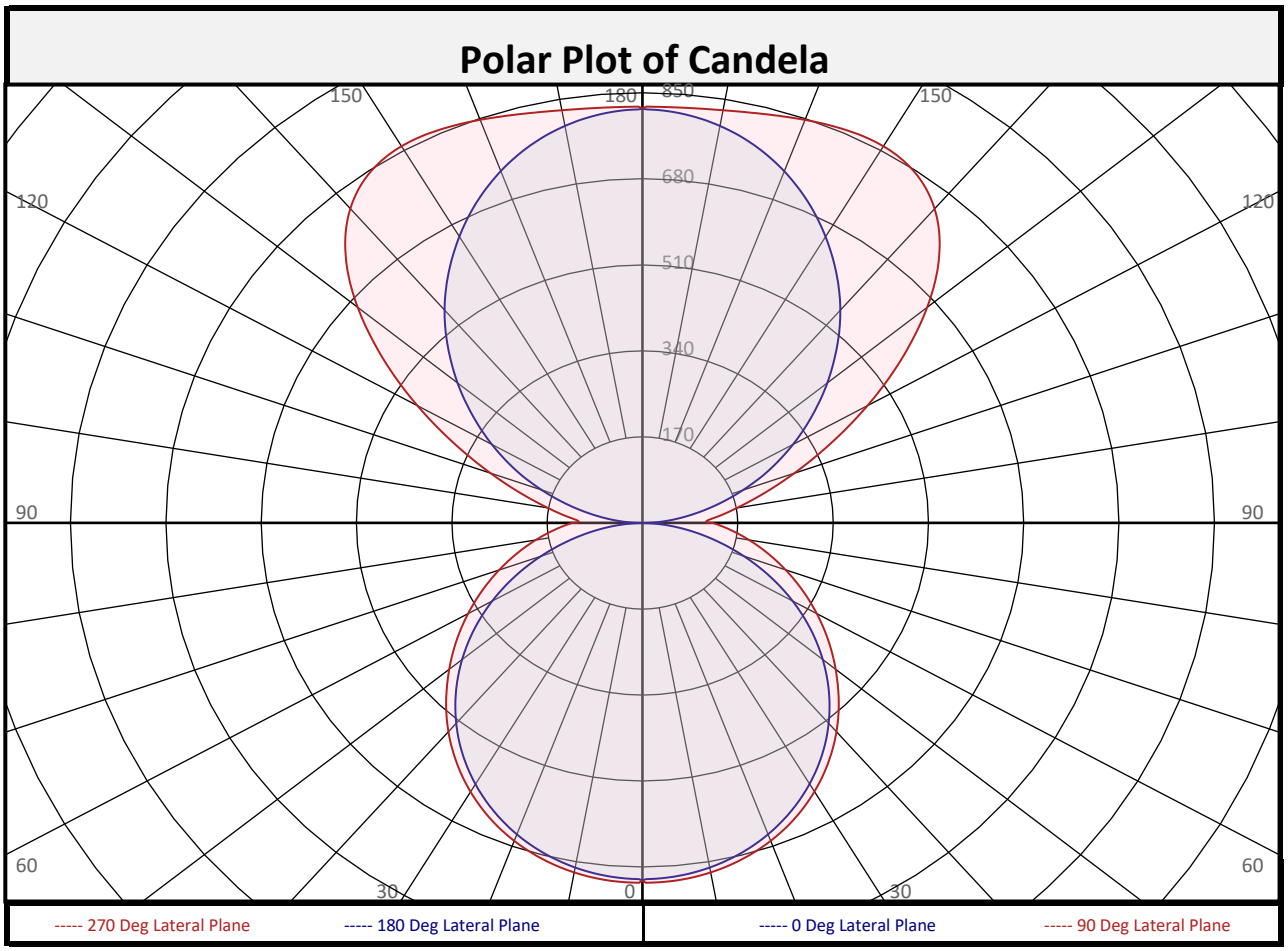

Zonal Flux Summary

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	66.9	1.4%	90-100	105.7	2.2%	0-20	259.0	5.3%
10-20	192.1	3.9%	100-110	203.5	4.2%	0-30	551.5	11.2%
20-30	292.5	6.0%	110-120	327.8	6.7%	0-40	906.3	18.5%
30-40	354.8	7.2%	120-130	439.0	9.0%	0-60	1621	33.1%
40-50	371.5	7.6%	130-140	489.8	10.0%	0-80	2099	42.8%
50-60	343.3	7.0%	140-150	456.4	9.3%	10-90	2149	43.8%
60-70	280.0	5.7%	150-160	359.4	7.3%	20-50	1019	20.8%
70-80	197.7	4.0%	160-170	227.5	4.6%	40-90	1310	26.7%
80-90	117.2	2.4%	170-180	77.9	1.6%	60-90	594.9	12.1%
0-90	2216	45.2%	90-180	2687	54.8%	0-180	4903	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	706	706	706	706	706	706	706	706	706
	2.5	703	703	705	708	710	708	705	703	703
	5	701	701	703	706	709	706	703	701	701
	7.5	697	697	699	703	706	703	699	697	697
	10	691	692	694	698	701	698	694	692	691
	12.5	684	685	688	691	695	691	688	685	684
	15	676	677	680	684	688	684	680	677	676
	17.5	666	667	671	675	679	675	671	667	666
	20	655	656	660	664	668	664	660	656	655
	22.5	642	643	648	652	657	652	648	643	642
	25	628	629	634	639	644	639	634	629	628
	27.5	612	614	619	624	629	624	619	614	612
	30	596	598	603	608	613	608	603	598	596
	32.5	578	580	586	591	596	591	586	580	578
	35	559	561	567	573	578	573	567	561	559
	37.5	538	541	547	553	558	553	547	541	538
	40	516	519	526	532	538	532	526	519	516
	42.5	494	497	504	511	517	511	504	497	494
	45	470	474	481	489	495	489	481	474	470
	47.5	445	450	457	466	472	466	457	450	445
	50	420	425	433	442	450	442	433	425	420
	52.5	393	399	408	419	427	419	408	399	393
	55	366	372	382	396	404	396	382	372	366
	57.5	338	345	357	373	382	373	357	345	338
	60	310	317	331	350	359	350	331	317	310
	62.5	281	289	306	327	337	327	306	289	281
	65	252	261	282	304	315	304	282	261	252
	67.5	223	233	257	282	293	282	257	233	223
	70	194	205	234	261	272	261	234	205	194
	72.5	165	178	211	240	252	240	211	178	165
	75	138	153	189	219	231	219	189	153	138
	77.5	111	129	169	200	212	200	169	129	111
	80	86	107	149	181	193	181	149	107	86
	82.5	62	86	130	163	175	163	130	86	62
	85	39	68	113	146	158	146	113	68	39
	87.5	18	52	97	130	142	130	97	52	18
	90	0	39	83	115	126	115	83	39	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	39	83	115	126	115	83	39	0
	92.5	16	49	83	107	116	107	83	49	16
	95	37	65	106	125	131	125	106	65	37
	97.5	59	84	126	145	150	145	126	84	59
	100	83	106	150	167	171	167	150	106	83
	102.5	108	131	176	192	195	192	176	131	108
	105	135	159	205	221	222	221	205	159	135
	107.5	163	189	238	253	254	253	238	189	163
	110	191	221	274	289	288	289	274	221	191
	112.5	221	254	312	330	326	330	312	254	221
	115	251	288	351	373	369	373	351	288	251
	117.5	280	321	392	419	414	419	392	321	280
	120	309	354	435	466	463	466	435	354	309
	122.5	339	387	478	514	513	514	478	387	339
	125	369	419	519	562	563	562	519	419	369
	127.5	400	451	558	609	613	609	558	451	400
	130	430	483	594	654	662	654	594	483	430
	132.5	460	513	626	695	708	695	626	513	460
	135	490	542	654	731	748	731	654	542	490
	137.5	520	570	679	761	783	761	679	570	520
	140	549	595	700	786	810	786	700	595	549
	142.5	576	619	719	805	832	805	719	619	576
	145	603	641	735	819	846	819	735	641	603
	147.5	628	663	748	828	855	828	748	663	628
	150	653	684	760	833	860	833	760	684	653
	152.5	677	703	770	836	860	836	770	703	677
	155	700	721	778	836	857	836	778	721	700
	157.5	720	738	786	835	853	835	786	738	720
	160	740	754	792	833	848	833	792	754	740
	162.5	757	768	798	830	842	830	798	768	757
	165	773	780	803	828	837	828	803	780	773
	167.5	786	791	807	826	832	826	807	791	786
	170	797	800	811	824	829	824	811	800	797
	172.5	806	807	814	823	826	823	814	807	806
	175	812	812	816	822	824	822	816	812	812
	177.5	816	816	818	822	823	822	818	816	816
	180	819	819	819	819	819	819	819	819	819

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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	106	106	106	106		97	97	97	97		81	81	81		66	66	66		52	52	52	45
1	96	91	87	83		88	84	80	77		69	67	64		56	54	53		44	43	42	36
2	87	79	73	67		79	73	67	62		60	56	53		49	46	43		38	36	35	30
3	79	69	62	56		72	64	57	52		53	48	44		43	39	36		34	31	29	25
4	72	61	53	47		66	56	49	43		47	41	37		38	34	31		30	27	25	21
5	66	54	46	40		60	50	43	37		42	36	32		34	30	27		27	24	21	18
6	61	48	40	34		55	45	37	32		37	32	27		31	26	23		24	21	19	16
7	56	44	36	30		51	40	33	28		34	28	24		28	24	20		22	19	17	14
8	52	40	32	26		47	37	30	25		31	25	21		25	21	18		20	17	15	12
9	48	36	28	23		44	33	27	22		28	23	19		23	19	16		19	16	13	11
10	45	33	26	21		41	31	24	20		26	21	17		22	17	14		17	14	12	10

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	19.6	7.53	7.73
8.0	11.0	10.03	10.30
10.0	7.1	12.54	12.88
12.0	4.9	15.05	15.45
14.0	3.6	17.56	18.03
16.0	2.8	20.07	20.60

Average Luminance (cd/m^2)

	0 deg Plane	45 deg Plane	90 deg Plane
0	7602	7602	7602
45	7156	6224	6026
55	6874	5727	5593
65	6419	5200	5222
75	5719	4742	4981
85	4851	4627	5064

Spacing Criterion

0 degree plane:	1.3
90 degree plane:	1.3
180 degree plane:	1.3
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	13.2	14.0	14.2	15.1	16.4	14.5	15.3	15.5	16.3	17.7
	3H	14.8	15.5	15.8	16.5	17.9	16.8	17.6	17.8	18.6	19.9
	4H	15.3	16.0	16.3	17.0	18.4	17.9	18.6	18.9	19.6	21.0
	6H	15.6	16.3	16.7	17.3	18.7	19.0	19.7	20.1	20.7	22.1
	8H	15.7	16.4	16.7	17.4	18.8	19.6	20.3	20.7	21.3	22.7
	12H	15.8	16.4	16.8	17.4	18.8	20.3	20.9	21.3	21.9	23.3
4H	2H	13.9	14.6	14.9	15.6	17.0	14.9	15.6	15.9	16.6	18.0
	3H	15.7	16.3	16.7	17.3	18.7	17.4	18.0	18.5	19.1	20.5
	4H	16.3	16.9	17.4	17.9	19.3	18.7	19.3	19.7	20.3	21.7
	6H	16.8	17.3	17.8	18.3	19.7	20.0	20.5	21.1	21.6	23.0
	8H	16.9	17.4	18.0	18.4	19.8	20.7	21.2	21.8	22.2	23.7
	12H	17.0	17.4	18.1	18.5	19.9	21.5	21.9	22.6	23.0	24.4
8H	4H	16.8	17.3	17.9	18.3	19.8	18.9	19.4	20.0	20.4	21.8
	6H	17.5	17.9	18.5	19.0	20.4	20.4	20.8	21.5	21.9	23.3
	8H	17.7	18.0	18.8	19.1	20.5	21.3	21.6	22.3	22.7	24.1
	12H	17.8	18.1	18.9	19.2	20.7	22.2	22.5	23.3	23.6	25.0
12H	4H	17.0	17.4	18.0	18.4	19.9	18.9	19.3	20.0	20.4	21.8
	6H	17.7	18.0	18.8	19.1	20.6	20.4	20.8	21.5	21.9	23.3
	8H	18.0	18.3	19.1	19.4	20.8	21.3	21.6	22.4	22.7	24.2

Maximum UGR = 25.0

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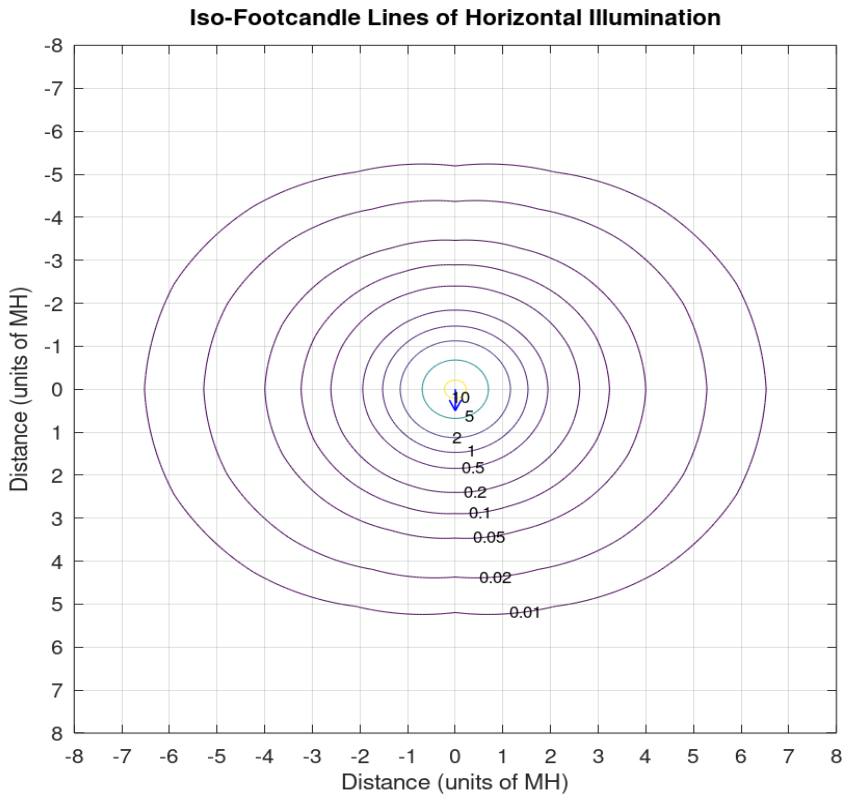
Iso-Illuminance Plot



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	25.0 °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.

Revision

R01 - 08/19/2021 - Revised catalog number