LightLab INTERNATIONAL ALLENTOWN LLC

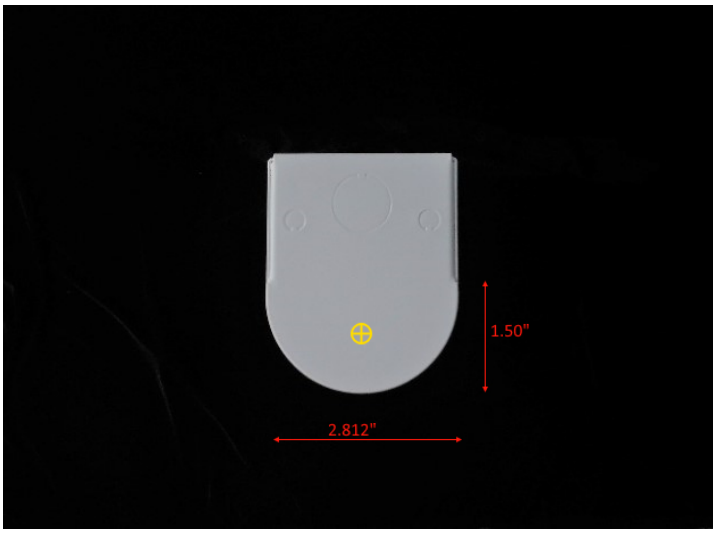
NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA001336-001

Indoor Distribution Photometry Test Report

Catalog Number: LW4-4-3900-30K-HTA-1%-UNI
Surface ceiling mounted, formed white enamel steel reflectors,
translucent white frosted linear ribbed plastic enclosure.
112 white LEDs, two Advance FO Strip PR22in 2200lm 830LV5 boards with 56 LEDs each
One Advance XI040C110V054BST2 LED driver labeled as 632mA



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

Performance Summary					
Input Voltage	120.0	V	Luminous Flux	3949.5	Lumens
Input Current	0.2452	A	Total Efficacy	136.2	Lm/W
Input Power	28.99	W	Downward Flux	3492.8	Lumens
Frequency	60.00	Hz	Downward Flux	88.4	% of Total
Power Factor	0.986				
Current THD	9.5	%			

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

Test date: 10/15/2020
Report date: 10/16/2020

Signed: LightLab INTERNATIONAL ALLENTOWN, LLC Digitally signed by Tracy A Silvert Date: 2020.10.19 09:55:09 -04'00'

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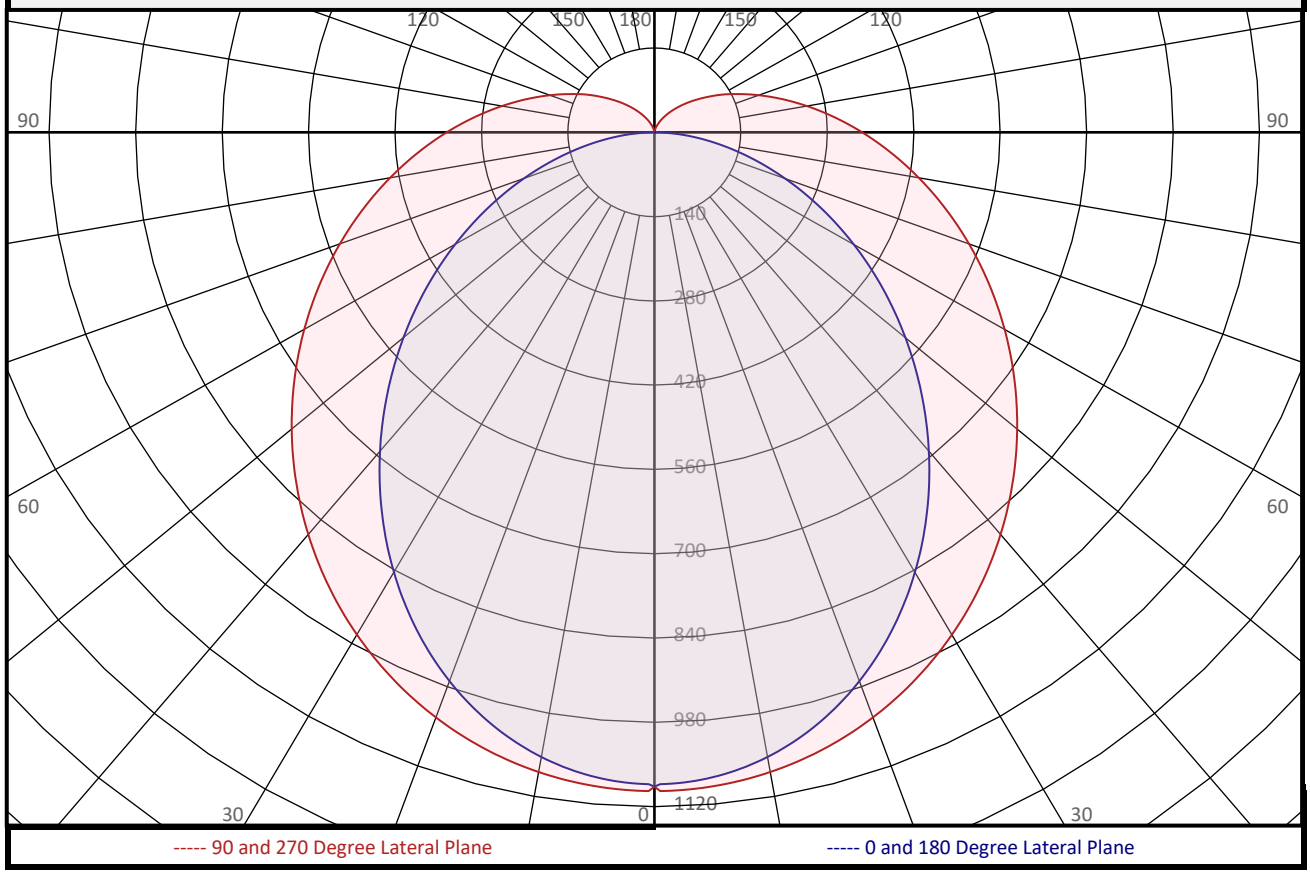
Polar Plot of Candela



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	102.7	2.6%	90-100	175.4	4.4%	0-20	395.5	10.0%
10-20	292.7	7.4%	100-110	117.9	3.0%	0-30	835.7	21.2%
20-30	440.3	11.1%	110-120	75.4	1.9%	0-40	1364	34.5%
30-40	528.2	13.4%	120-130	45.6	1.2%	0-60	2437	61.7%
40-50	552.6	14.0%	130-140	25.0	0.6%	0-80	3238	82.0%
50-60	520.9	13.2%	140-150	11.9	0.3%	10-90	3390	85.8%
60-70	447.9	11.3%	150-160	4.4	0.1%	20-50	1521	38.5%
70-80	352.7	8.9%	160-170	0.9	0.0%	40-90	2129	53.9%
80-90	254.8	6.5%	170-180	0.1	0.0%	60-90	1055	26.7%
0-90	3493	88.4%	90-180	456.6	11.6%	0-180	3949	100.0%

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Luminous Intensity (Candela) Table

Vertical (Gamma) Angles	Lateral (C-Plane) Angles									
	0	22.5	45	67.5	90	112.5	135	157.5	180
0	1087	1087	1087	1087	1087	1087	1087	1087	1087
2.5	1081	1081	1084	1089	1093	1089	1084	1081	1081
5	1076	1076	1080	1086	1090	1086	1080	1076	1076
7.5	1066	1068	1073	1080	1086	1080	1073	1068	1066
10	1054	1056	1064	1073	1079	1073	1064	1056	1054
12.5	1038	1041	1051	1064	1070	1064	1051	1041	1038
15	1018	1023	1037	1052	1060	1052	1037	1023	1018
17.5	996	1002	1019	1039	1048	1039	1019	1002	996
20	970	978	1000	1023	1034	1023	1000	978	970
22.5	942	952	978	1006	1019	1006	978	952	942
25	912	923	954	987	1002	987	954	923	912
27.5	878	893	929	967	983	967	929	893	878
30	844	860	902	945	963	945	902	860	844
32.5	807	826	873	922	942	922	873	826	807
35	770	791	843	897	920	897	843	791	770
37.5	731	755	812	872	896	872	812	755	731
40	691	717	780	845	872	845	780	717	691
42.5	651	680	748	818	847	818	748	680	651
45	611	642	715	790	821	790	715	642	611
47.5	571	603	682	762	794	762	682	603	571
50	531	565	648	733	767	733	648	565	531
52.5	491	527	615	704	739	704	615	527	491
55	451	490	582	675	711	675	582	490	451
57.5	412	453	549	645	683	645	549	453	412
60	373	416	517	616	655	616	517	416	373
62.5	335	381	485	587	626	587	485	381	335
65	298	346	454	558	598	558	454	346	298
67.5	262	313	424	530	570	530	424	313	262
70	226	280	395	502	542	502	395	280	226
72.5	192	250	367	474	515	474	367	250	192
75	160	221	340	447	487	447	340	221	160
77.5	129	194	315	421	461	421	315	194	129
80	99	168	290	395	435	395	290	168	99
82.5	72	145	267	371	409	371	267	145	72
85	46	125	245	346	384	346	245	125	46
87.5	21	106	224	323	360	323	224	106	21
90	0	90	205	301	336	301	205	90	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	90	205	301	336	301	205	90	0
	92.5	0	76	187	279	314	279	187	76	0
	95	0	65	170	259	292	259	170	65	0
	97.5	0	55	155	240	271	240	155	55	0
	100	0	47	140	221	251	221	140	47	0
	102.5	0	40	127	204	232	204	127	40	0
	105	0	35	115	187	214	187	115	35	0
	107.5	0	30	104	171	196	171	104	30	0
	110	0	26	93	156	180	156	93	26	0
	112.5	0	23	84	142	165	142	84	23	0
	115	0	21	76	130	150	130	76	21	0
	117.5	0	19	68	118	137	118	68	19	0
	120	0	17	61	107	125	107	61	17	0
	122.5	0	15	55	97	113	97	55	15	0
	125	0	14	50	87	101	87	50	14	0
	127.5	0	13	45	77	91	77	45	13	0
	130	0	12	40	69	82	69	40	12	0
	132.5	0	10	35	62	73	62	35	10	0
	135	0	9	31	55	65	55	31	9	0
	137.5	0	8	28	48	57	48	28	8	0
	140	0	7	24	42	50	42	24	7	0
	142.5	0	6	21	37	44	37	21	6	0
	145	0	5	18	32	38	32	18	5	0
	147.5	0	4	16	27	32	27	16	4	0
	150	0	4	13	23	27	23	13	4	0
	152.5	0	3	11	19	23	19	11	3	0
	155	0	2	9	16	19	16	9	2	0
	157.5	0	2	7	13	15	13	7	2	0
	160	0	1	6	10	12	10	6	1	0
	162.5	0	1	4	7	9	7	4	1	0
	165	0	0	3	5	6	5	3	0	0
	167.5	0	0	2	4	4	4	2	0	0
	170	0	0	1	2	3	2	1	0	0
	172.5	0	0	0	1	2	1	0	0	0
	175	0	0	0	0	1	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	116	116	116	116		112	112	112	112		105	105	105		98	98	98		91	91	91	88
1	104	98	93	88		100	95	90	86		88	84	81		82	79	76		77	74	72	69
2	94	84	77	70		90	81	75	69		76	70	65		71	66	62		66	62	59	56
3	85	74	65	58		81	71	63	56		66	60	54		62	56	52		58	53	49	46
4	78	65	56	48		74	63	54	48		59	51	46		55	49	44		51	46	42	39
5	71	58	48	41		68	56	47	41		52	45	39		49	43	38		46	41	36	34
6	66	52	43	36		63	50	42	35		47	40	34		44	38	33		42	36	32	29
7	61	47	38	32		58	46	37	31		43	36	30		41	34	29		38	32	28	26
8	57	43	34	28		54	42	33	28		39	32	27		37	31	26		35	29	25	23
9	53	39	31	25		51	38	30	25		36	29	24		34	28	23		32	27	23	21
10	49	36	28	23		48	35	28	22		33	27	22		32	26	21		30	25	21	19

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	30.2	6.98	7.92
8.0	17.0	9.30	10.55
10.0	10.9	11.63	13.19
12.0	7.5	13.96	15.83
14.0	5.5	16.28	18.47
16.0	4.2	18.61	21.11

Average Luminance (cd/m^2)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	13313	13313	13313
45	10586	8992	9271
55	9635	8075	8622
65	8637	7279	8088
75	7552	6690	7713
85	6414	6482	7604

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	16.4	17.8	16.9	18.4	19.0	20.2	21.6	20.7	22.1	22.7
	3H	17.8	19.1	18.3	19.7	20.3	22.9	24.2	23.4	24.8	25.4
	4H	18.2	19.5	18.8	20.1	20.7	24.2	25.5	24.8	26.1	26.7
	6H	18.5	19.7	19.1	20.3	21.0	25.7	26.9	26.3	27.4	28.1
	8H	18.6	19.7	19.2	20.3	21.0	26.5	27.6	27.1	28.2	28.9
	12H	18.7	19.7	19.3	20.3	21.0	27.3	28.4	27.9	29.0	29.7
4H	2H	17.5	18.8	18.1	19.4	20.0	20.4	21.7	21.0	22.3	22.9
	3H	19.2	20.3	19.8	20.9	21.5	23.4	24.5	24.0	25.1	25.8
	4H	19.8	20.7	20.4	21.4	22.1	25.0	26.0	25.6	26.6	27.3
	6H	20.2	21.1	20.8	21.7	22.4	26.6	27.5	27.3	28.1	28.8
	8H	20.3	21.1	20.9	21.8	22.5	27.5	28.3	28.1	29.0	29.7
	12H	20.4	21.1	21.0	21.8	22.5	28.5	29.2	29.1	29.9	30.6
8H	4H	20.8	21.6	21.4	22.2	22.9	25.1	25.9	25.8	26.6	27.3
	6H	21.4	22.1	22.0	22.7	23.5	26.9	27.6	27.6	28.3	29.1
	8H	21.6	22.2	22.3	22.9	23.6	28.0	28.6	28.6	29.3	30.0
	12H	21.7	22.3	22.4	23.0	23.8	29.1	29.7	29.8	30.4	31.2
12H	4H	21.1	21.8	21.7	22.5	23.2	25.1	25.9	25.8	26.5	27.3
	6H	21.8	22.5	22.5	23.1	23.9	27.0	27.6	27.7	28.3	29.1
	8H	22.2	22.7	22.8	23.4	24.2	28.1	28.6	28.7	29.3	30.1

Maximum UGR = 31.2

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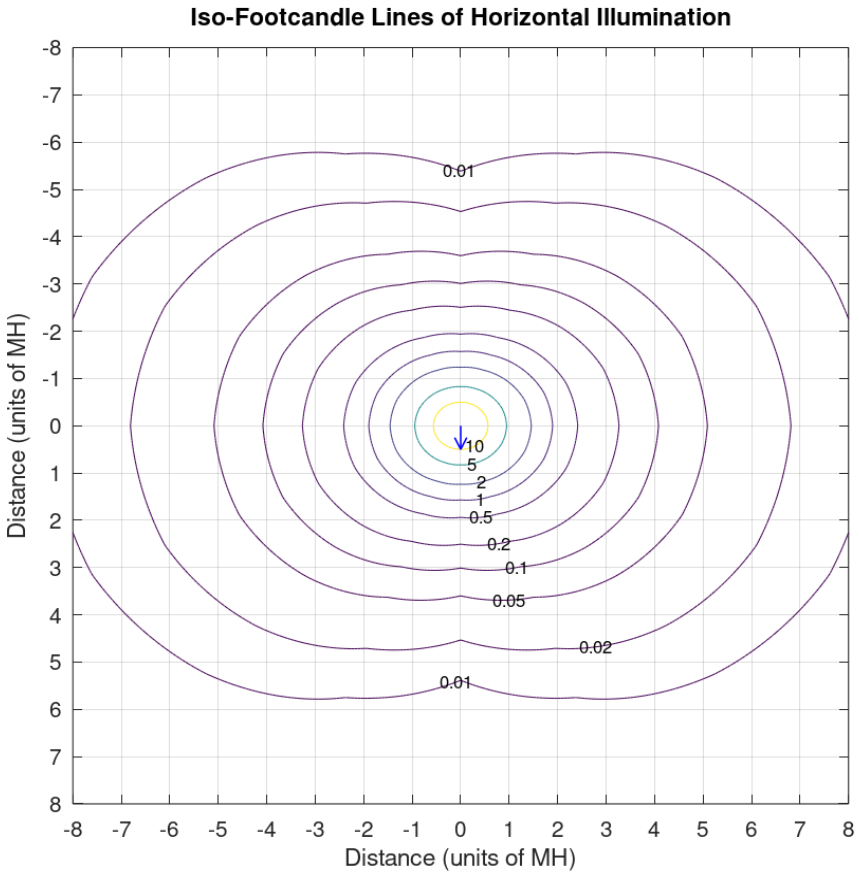
Iso-Illuminance Plot



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	24.7	°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.