



Report of Test

LLIA001249-001

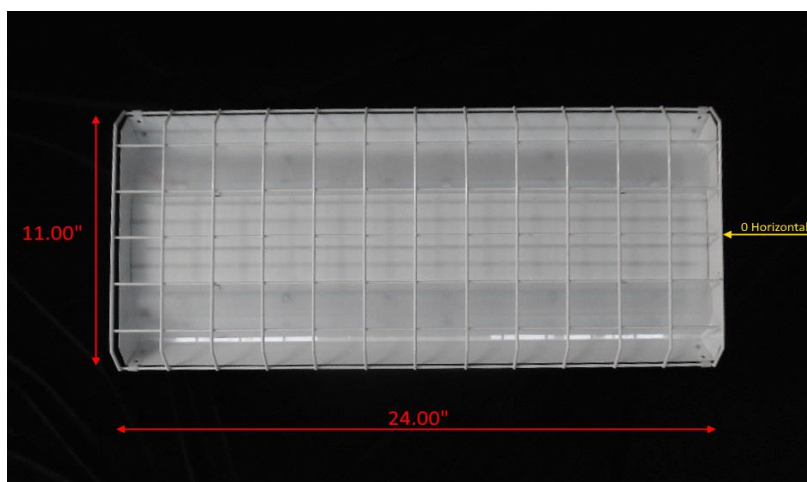
Indoor Distribution Photometry Test Report

Catalog Number: PBL G2 2 MD UV FR 835-WG

Surface/pendant mounted, formed white enamel aluminum housing/reflectors
frosted plastic enclosures below LEDs, formed white enamel steel wire guard.

224 white LEDs, two 20103 3500K 3437A1 LED boards with 112 LEDs each.

One ULT Everline D21CC80UNVPW-C LED driver programmed at 1460mA



Prepared For:
Lumen Focus, LLC
880 Facet Road
Henderson, NC 27537, USA

Performance Summary			
Input Voltage	120.0 V	Luminous Flux	10441.1 Lumens
Input Current	0.5953 A	Total Efficacy	146.4 Lm/W
Input Power	71.30 W	Downward Flux	10375.2 Lumens
Frequency	60.00 Hz	Downward Flux	99.4 % of Total
Power Factor	0.998		
Current THD	5.4 %		

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

Test date: 03/16/2020

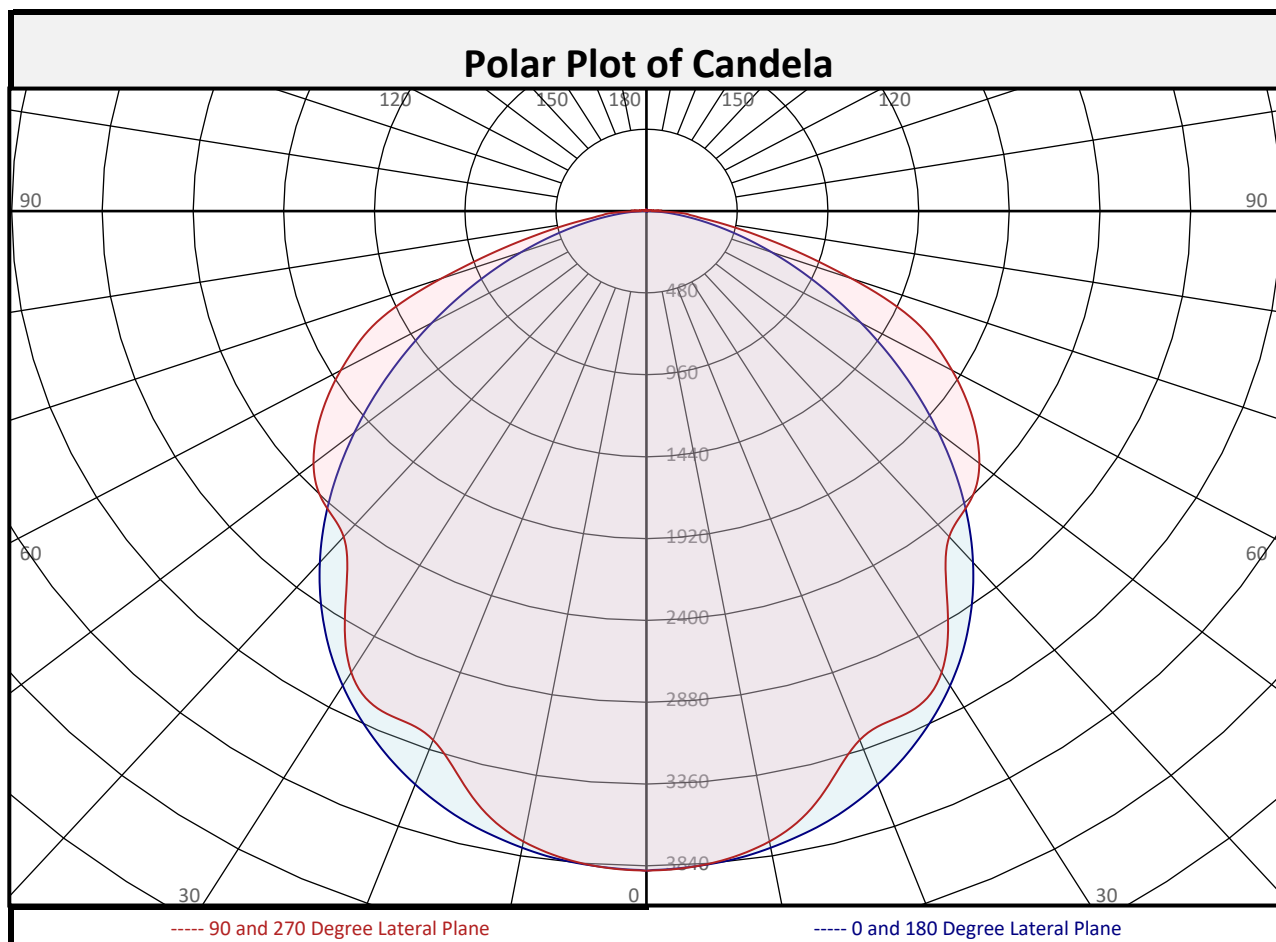
Report date: 03/19/2020

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	365.2	3.5%		90-100	35.9	0.3%		0-20	1390	13.3%
10-20	1025	9.8%		100-110	13.4	0.1%		0-30	2904	27.8%
20-30	1514	14.5%		110-120	5.0	0.0%		0-40	4693	44.9%
30-40	1790	17.1%		120-130	3.1	0.0%		0-60	8142	78.0%
40-50	1797	17.2%		130-140	2.7	0.0%		0-80	10158	97.3%
50-60	1652	15.8%		140-150	2.5	0.0%		10-90	10010	95.9%
60-70	1295	12.4%		150-160	1.8	0.0%		20-50	5101	48.9%
70-80	720.9	6.9%		160-170	1.1	0.0%		40-90	5682	54.4%
80-90	217.0	2.1%		170-180	0.4	0.0%		60-90	2233	21.4%
0-90	10375	99.4%		90-180	65.8	0.6%		0-180	10441	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	3869	3869	3869	3869	3869	3869	3869	3869	3869
	2.5	3858	3861	3863	3867	3861	3867	3863	3861	3858
	5	3845	3847	3847	3848	3842	3848	3847	3847	3845
	7.5	3824	3825	3819	3815	3807	3815	3819	3825	3824
	10	3791	3792	3781	3766	3754	3766	3781	3792	3791
	12.5	3751	3748	3728	3698	3676	3698	3728	3748	3751
	15	3705	3697	3659	3599	3558	3599	3659	3697	3705
	17.5	3647	3634	3571	3466	3414	3466	3571	3634	3647
	20	3578	3559	3462	3331	3301	3331	3462	3559	3578
	22.5	3501	3473	3332	3244	3259	3244	3332	3473	3501
	25	3414	3375	3200	3210	3253	3210	3200	3375	3414
	27.5	3319	3267	3092	3187	3219	3187	3092	3267	3319
	30	3214	3147	3013	3129	3125	3129	3013	3147	3214
	32.5	3100	3016	2950	3017	2969	3017	2950	3016	3100
	35	2973	2873	2877	2852	2775	2852	2877	2873	2973
	37.5	2837	2722	2776	2664	2601	2664	2776	2722	2837
	40	2689	2569	2640	2498	2494	2498	2640	2569	2689
	42.5	2533	2419	2476	2393	2447	2393	2476	2419	2533
	45	2366	2271	2301	2335	2417	2335	2301	2271	2366
	47.5	2194	2123	2140	2294	2372	2294	2140	2123	2194
	50	2017	1972	2008	2234	2301	2234	2008	1972	2017
	52.5	1838	1815	1901	2152	2210	2152	1901	1815	1838
	55	1659	1654	1806	2055	2106	2055	1806	1654	1659
	57.5	1483	1491	1709	1946	1992	1946	1709	1491	1483
	60	1311	1329	1600	1828	1869	1828	1600	1329	1311
	62.5	1147	1173	1484	1701	1740	1701	1484	1173	1147
	65	991	1031	1362	1572	1601	1572	1362	1031	991
	67.5	843	899	1234	1420	1403	1420	1234	899	843
	70	705	780	1109	1209	1153	1209	1109	780	705
	72.5	577	670	977	967	913	967	977	670	577
	75	458	567	800	752	706	752	800	567	458
	77.5	350	473	618	566	531	566	618	473	350
	80	256	388	450	416	387	416	450	388	256
	82.5	174	289	318	291	277	291	318	289	174
	85	107	186	215	222	222	222	215	186	107
	87.5	32	88	138	140	126	140	138	88	32
90	9	34	45	41	28	41	45	34	9	



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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	9	34	45	41	28	41	45	34	9
	92.5	7	30	49	68	67	68	49	30	7
	95	2	23	41	43	38	43	41	23	2
	97.5	2	15	31	41	35	41	31	15	2
	100	2	12	26	25	19	25	26	12	2
	102.5	2	9	22	24	16	24	22	9	2
	105	2	6	13	22	16	22	13	6	2
	107.5	3	4	12	14	16	14	12	4	3
	110	3	3	10	8	4	8	10	3	3
	112.5	3	3	9	8	2	8	9	3	3
	115	3	3	7	7	2	7	7	3	3
	117.5	3	4	6	6	2	6	6	4	3
	120	4	4	4	5	2	5	4	4	4
	122.5	4	4	3	4	2	4	3	4	4
	125	4	4	3	3	2	3	3	4	4
	127.5	4	4	3	3	2	3	3	4	4
	130	4	4	3	3	2	3	3	4	4
	132.5	4	4	3	3	2	3	3	4	4
	135	4	4	4	3	2	3	4	4	4
	137.5	4	4	4	3	3	3	4	4	4
	140	4	4	4	4	3	4	4	4	4
	142.5	4	4	4	4	3	4	4	4	4
	145	4	4	4	4	4	4	4	4	4
	147.5	4	4	4	4	4	4	4	4	4
	150	4	4	4	4	4	4	4	4	4
	152.5	4	4	4	4	4	4	4	4	4
	155	4	4	4	4	4	4	4	4	4
	157.5	3	4	4	4	4	4	4	4	3
	160	4	4	4	4	4	4	4	4	4
	162.5	4	4	4	4	4	4	4	4	4
	165	4	4	4	4	4	4	4	4	4
	167.5	4	4	4	4	4	4	4	4	4
	170	4	4	4	4	4	4	4	4	4
	172.5	4	4	4	4	3	4	4	4	4
	175	4	4	4	4	3	4	4	4	4
	177.5	4	4	4	4	3	4	4	4	4
	180	3	3	3	3	3	3	3	3	3



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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		101	101	101	99
1	109	104	99	95		106	101	97	94		97	94	91		93	90	88		89	87	85	83
2	99	90	83	78		96	88	82	77		85	79	75		81	77	73		78	75	71	69
3	90	79	71	65		87	78	70	64		75	68	63		72	66	62		69	64	60	58
4	82	70	61	55		80	69	61	54		66	59	53		64	58	53		62	56	52	50
5	76	63	54	47		74	62	53	47		59	52	46		57	51	46		56	50	45	43
6	70	57	48	41		68	56	47	41		54	46	41		52	45	40		50	44	40	38
7	65	51	43	36		63	51	42	36		49	41	36		47	41	36		46	40	35	33
8	60	47	38	33		59	46	38	32		45	37	32		43	37	32		42	36	32	30
9	56	43	35	29		55	42	35	29		41	34	29		40	34	29		39	33	29	27
10	53	40	32	27		52	39	32	27		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	107.5	7.41	7.21
8.0	60.5	9.87	9.61
10.0	38.7	12.34	12.01
12.0	26.9	14.81	14.41
14.0	19.7	17.28	16.81
16.0	15.1	19.75	19.21

Average Luminance (cd/m²)

	0 deg Plane	45 deg Plane	90 deg Plane
0	22716	22716	22716
45	19646	19107	20068
55	16984	18491	21561
65	13765	18918	22238
75	10381	18151	16006
85	7178	14515	14980

Spacing Criterion

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



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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

X=2H	Y=2H	21.3	23.0	21.7	23.3	23.6	23.3	24.9	23.6	25.2	25.5
	3H	22.8	24.3	23.2	24.6	25.0	25.3	26.8	25.7	27.2	27.5
	4H	23.3	24.7	23.8	25.1	25.5	25.9	27.3	26.3	27.6	28.0
	6H	23.7	25.0	24.1	25.4	25.8	26.2	27.5	26.7	27.9	28.3
	8H	23.8	25.0	24.3	25.4	25.9	26.3	27.6	26.8	28.0	28.4
	12H	23.9	25.1	24.3	25.5	25.9	26.4	27.6	26.9	28.0	28.5
4H	2H	22.3	23.7	22.8	24.1	24.5	23.8	25.2	24.2	25.5	25.9
	3H	24.1	25.2	24.5	25.6	26.1	26.1	27.3	26.5	27.7	28.1
	4H	24.7	25.7	25.1	26.2	26.6	26.8	27.8	27.3	28.3	28.7
	6H	25.2	26.1	25.7	26.6	27.0	27.3	28.2	27.7	28.6	29.1
	8H	25.4	26.2	25.8	26.7	27.2	27.4	28.3	27.9	28.7	29.2
	12H	25.5	26.2	26.0	26.7	27.2	27.6	28.3	28.1	28.8	29.3
8H	4H	25.3	26.1	25.8	26.6	27.1	27.1	27.9	27.6	28.4	28.9
	6H	25.9	26.6	26.4	27.1	27.6	27.6	28.4	28.1	28.9	29.4
	8H	26.2	26.8	26.7	27.3	27.9	27.9	28.5	28.4	29.0	29.5
	12H	26.4	26.9	26.9	27.5	28.0	28.1	28.7	28.6	29.2	29.7
12H	4H	25.3	26.1	25.8	26.6	27.1	27.1	27.9	27.6	28.4	28.8
	6H	26.1	26.7	26.6	27.2	27.7	27.7	28.3	28.2	28.8	29.4
	8H	26.4	26.9	26.9	27.4	28.0	28.0	28.5	28.5	29.0	29.6

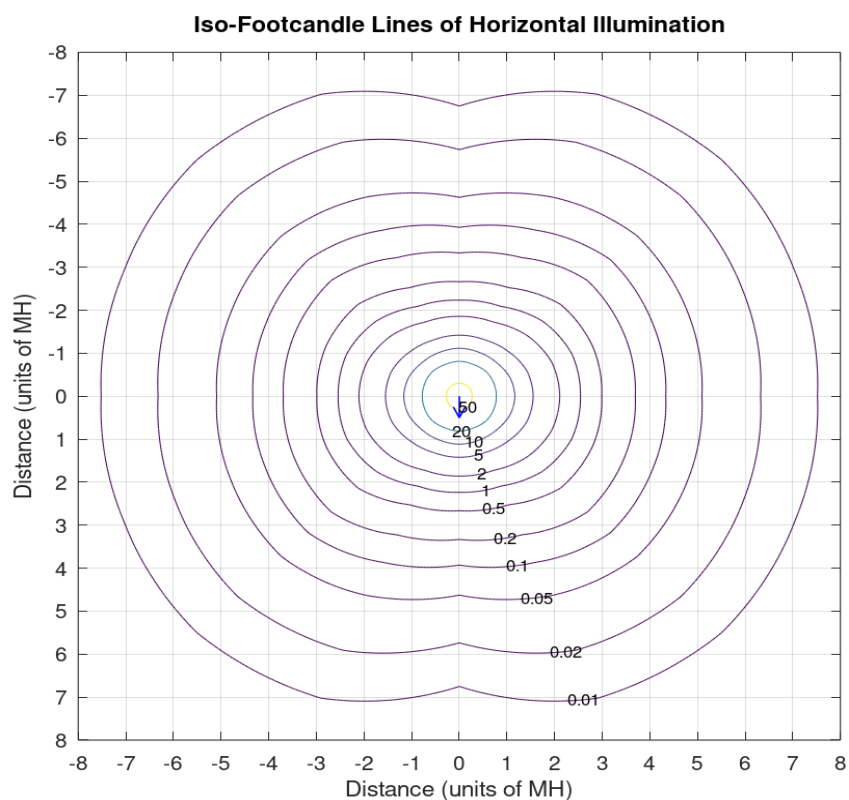
Maximum UGR = 29.7



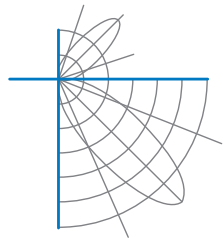
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Iso-Illuminance Plot



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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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 publications: IES LM-79-19 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.

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