



Report of Test

LLIA001249-017

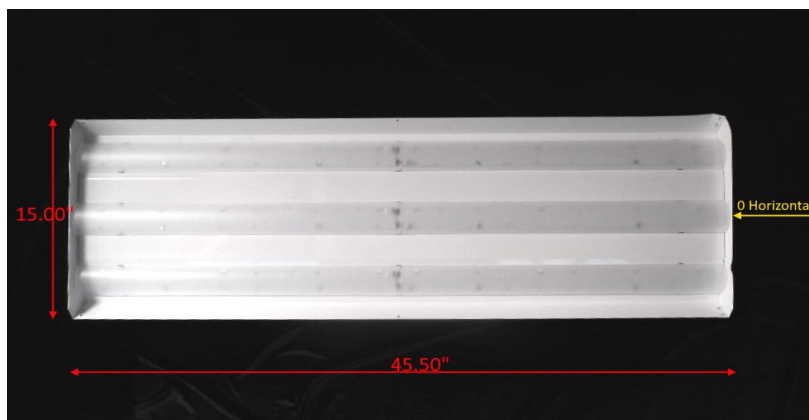
Indoor Distribution Photometry Test Report

Catalog Number: PBL G2 4W HI UV FR 835

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

672 white LEDs, six 20103 3500K 3437A1 LED boards with 112 LEDs each.

Three ULT Everline D21CC80UNVPW-C LED drivers each programmed at 1660mA



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

Performance Summary			
Input Voltage	120.0 V	Luminous Flux	37642.2 Lumens
Input Current	2.043 A	Total Efficacy	154.0 Lm/W
Input Power	244.5 W	Downward Flux	37618.1 Lumens
Frequency	60.00 Hz	Downward Flux	99.9 % of Total
Power Factor	0.997		
Current THD	5.3 %		

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

Test date: 03/24/2020

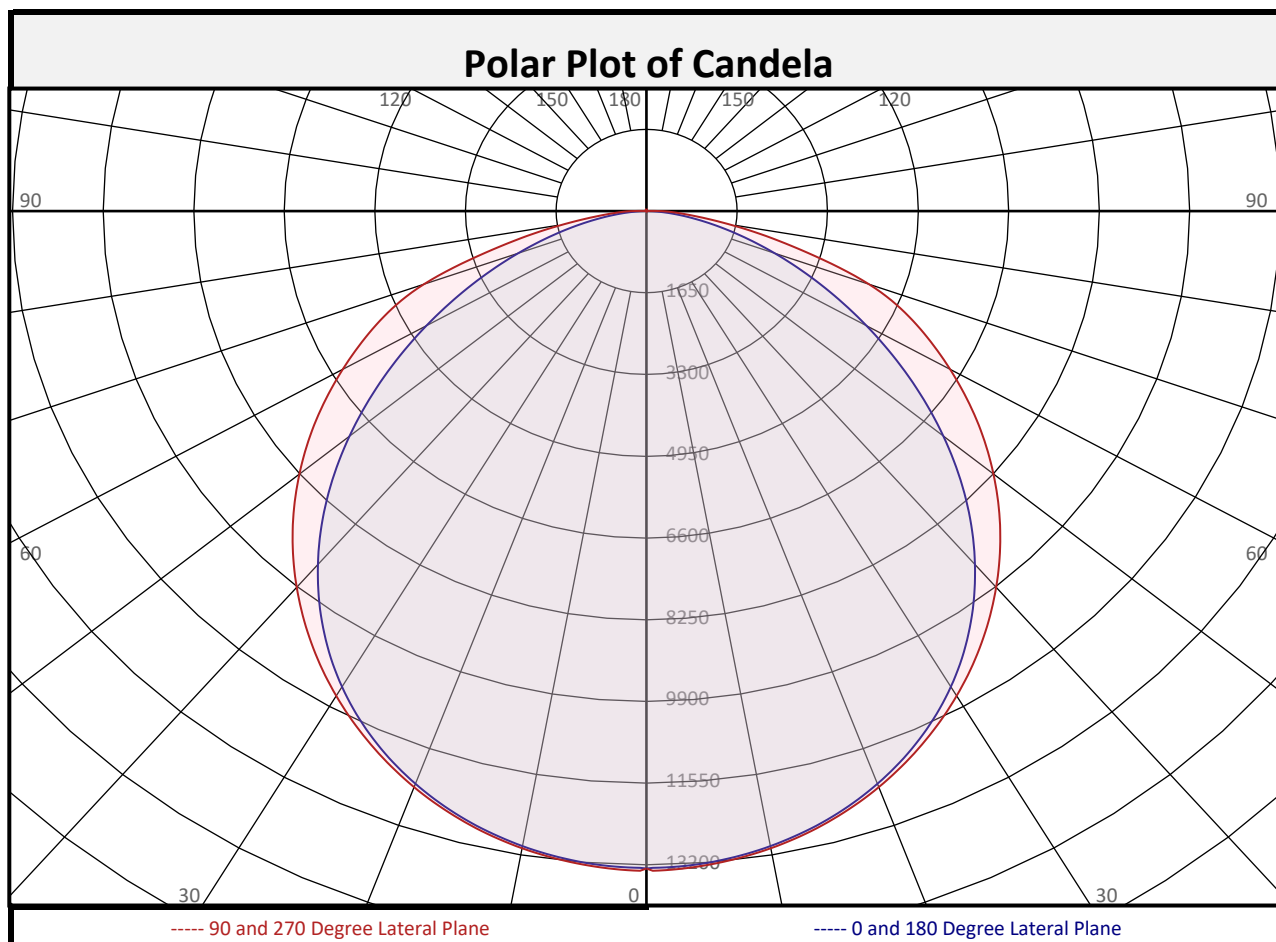
Report date: 03/24/2020

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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	1256	3.3%		90-100	23.9	0.1%		0-20	4850	12.9%
10-20	3594	9.5%		100-110	0.1	0.0%		0-30	10294	27.3%
20-30	5444	14.5%		110-120	0.0	0.0%		0-40	16834	44.7%
30-40	6540	17.4%		120-130	0.0	0.0%		0-60	29545	78.5%
40-50	6719	17.8%		130-140	0.0	0.0%		0-80	36824	97.8%
50-60	5991	15.9%		140-150	0.0	0.0%		10-90	36362	96.6%
60-70	4596	12.2%		150-160	0.0	0.0%		20-50	18704	49.7%
70-80	2683	7.1%		160-170	0.0	0.0%		40-90	20784	55.2%
80-90	793.9	2.1%		170-180	0.0	0.0%		60-90	8073	21.4%
0-90	37618	99.9%		90-180	24.1	0.1%		0-180	37642	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	13276	13276	13276	13276	13276	13276	13276	13276	13276
	2.5	13249	13235	13242	13279	13300	13279	13242	13235	13249
	5	13204	13188	13194	13228	13246	13228	13194	13188	13204
	7.5	13125	13110	13117	13152	13168	13152	13117	13110	13125
	10	13020	13005	13015	13050	13064	13050	13015	13005	13020
	12.5	12884	12871	12884	12921	12934	12921	12884	12871	12884
	15	12724	12709	12726	12764	12775	12764	12726	12709	12724
	17.5	12529	12517	12537	12578	12590	12578	12537	12517	12529
	20	12306	12296	12320	12367	12379	12367	12320	12296	12306
	22.5	12053	12046	12076	12129	12143	12129	12076	12046	12053
	25	11767	11765	11807	11867	11884	11867	11807	11765	11767
	27.5	11448	11452	11509	11583	11606	11583	11509	11452	11448
	30	11091	11107	11181	11275	11305	11275	11181	11107	11091
	32.5	10701	10731	10834	10947	10987	10947	10834	10731	10701
	35	10270	10320	10461	10599	10647	10599	10461	10320	10270
	37.5	9808	9879	10068	10236	10291	10236	10068	9879	9808
	40	9310	9406	9649	9853	9915	9853	9649	9406	9310
	42.5	8786	8908	9212	9457	9525	9457	9212	8908	8786
	45	8232	8385	8756	9046	9118	9046	8756	8385	8232
	47.5	7654	7842	8288	8619	8694	8619	8288	7842	7654
	50	7057	7284	7809	8183	8254	8183	7809	7284	7057
	52.5	6447	6714	7318	7719	7805	7719	7318	6714	6447
	55	5835	6143	6821	7255	7343	7255	6821	6143	5835
	57.5	5227	5573	6320	6779	6869	6779	6320	5573	5227
	60	4629	5012	5818	6296	6391	6296	5818	5012	4629
	62.5	4047	4462	5317	5813	5911	5813	5317	4462	4047
	65	3496	3938	4822	5334	5433	5334	4822	3938	3496
	67.5	2973	3438	4339	4845	4925	4845	4339	3438	2973
	70	2483	2966	3872	4311	4312	4311	3872	2966	2483
	72.5	2028	2521	3410	3652	3534	3652	3410	2521	2028
	75	1610	2111	2920	2899	2761	2899	2920	2111	1610
	77.5	1230	1732	2366	2223	2107	2223	2366	1732	1230
	80	893	1384	1787	1622	1515	1622	1787	1384	893
	82.5	602	1052	1243	1105	1039	1105	1243	1052	602
	85	357	695	756	717	696	717	756	695	357
	87.5	152	309	423	466	466	466	423	309	152
	90	0	82	209	246	243	246	209	82	0



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	Lateral (C-Plane) Angles									
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles	90	0	82	209	246	243	246	209	82	0
	92.5	0	5	11	32	36	32	11	5	0
	95	0	2	4	4	2	4	4	2	0
	97.5	0	2	3	3	0	3	3	2	0
	100	0	0	3	3	0	3	3	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



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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	99	95		106	101	98	94		97	94	91		93	91	88		90	87	85	83
2	99	90	83	78		96	88	82	77		85	80	75		82	77	73		79	75	72	69
3	90	79	71	64		87	78	70	64		75	68	63		72	66	62		69	65	61	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	56	47	41		68	55	47	41		54	46	40		52	45	40		50	44	40	38
7	65	51	42	36		63	50	42	36		49	41	36		47	41	35		46	40	35	33
8	60	47	38	32		59	46	38	32		45	37	32		43	37	32		42	36	32	30
9	56	43	35	29		55	42	34	29		41	34	29		40	33	29		39	33	28	27
10	53	40	32	26		52	39	31	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	368.8	7.44	7.60
8.0	207.4	9.92	10.13
10.0	132.8	12.40	12.66
12.0	92.2	14.88	15.20
14.0	67.7	17.36	17.73
16.0	51.9	19.84	20.26

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	30151	30151	30151
45	26441	28123	29284
55	23104	27009	29074
65	18786	25915	29197
75	14125	25619	24228
85	9305	19711	18126

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	22.6	24.3	23.0	24.6	24.9	24.1	25.8	24.5	26.1	26.4
	3H	24.1	25.6	24.5	25.9	26.3	26.3	27.7	26.6	28.1	28.4
	4H	24.6	26.0	25.0	26.4	26.7	26.9	28.3	27.3	28.7	29.1
	6H	24.9	26.3	25.4	26.6	27.0	27.4	28.7	27.8	29.0	29.4
	8H	25.0	26.3	25.5	26.7	27.1	27.5	28.7	27.9	29.1	29.5
	12H	25.1	26.3	25.5	26.7	27.1	27.6	28.8	28.0	29.1	29.6
4H	2H	23.6	25.0	24.0	25.3	25.7	24.7	26.1	25.1	26.4	26.8
	3H	25.3	26.5	25.7	26.9	27.3	27.1	28.3	27.5	28.7	29.1
	4H	25.9	27.0	26.3	27.4	27.8	27.9	29.0	28.3	29.4	29.8
	6H	26.4	27.3	26.9	27.8	28.2	28.5	29.4	28.9	29.8	30.3
	8H	26.6	27.4	27.0	27.9	28.3	28.6	29.5	29.1	29.9	30.4
	12H	26.6	27.4	27.1	27.9	28.4	28.7	29.5	29.2	30.0	30.5
8H	4H	26.5	27.4	27.0	27.8	28.3	28.2	29.1	28.7	29.5	30.0
	6H	27.2	27.9	27.7	28.4	28.9	28.9	29.6	29.4	30.1	30.6
	8H	27.4	28.1	27.9	28.6	29.1	29.1	29.8	29.6	30.3	30.8
	12H	27.6	28.2	28.1	28.7	29.2	29.3	29.9	29.8	30.4	30.9
12H	4H	26.6	27.4	27.1	27.9	28.3	28.2	29.0	28.7	29.5	29.9
	6H	27.3	28.0	27.8	28.4	29.0	28.9	29.6	29.5	30.1	30.6
	8H	27.6	28.2	28.1	28.7	29.2	29.2	29.8	29.7	30.3	30.9

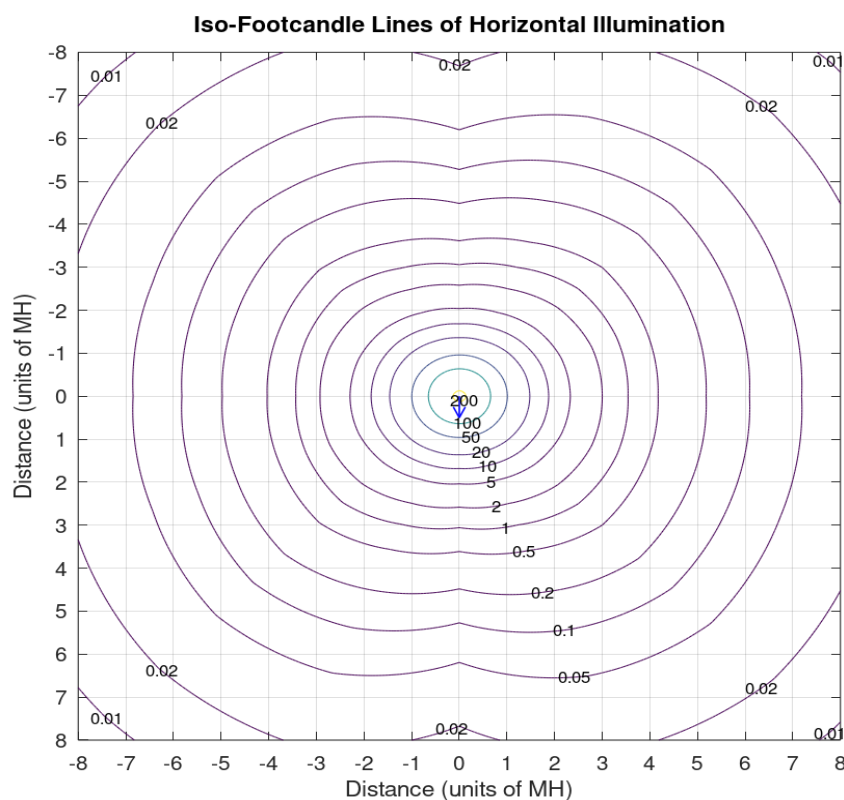
Maximum UGR = 30.9



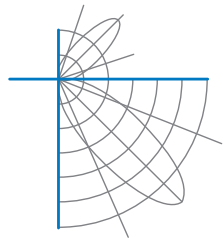
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Iso-Illuminance Plot



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 24.9 °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.

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