



Report of Test

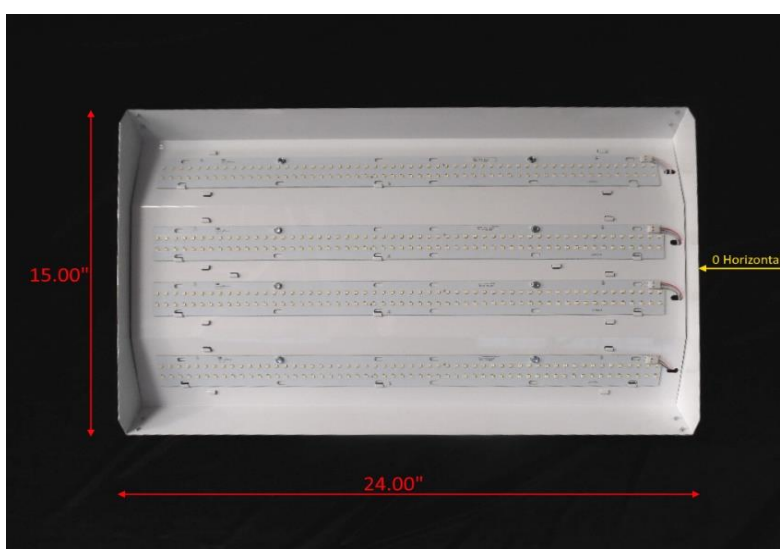
LLIA001249-003

Indoor Distribution Photometry Test Report

Catalog Number: PBL G2 2W SH UV 835

Surface/pendant mounted, formed white enamel aluminum
housing/reflectors, no enclosure.

448 white LEDs, four 20103 3500K 3437A1 LED boards with 112 LEDs each.
Two ULT Everline D21CC80UNVPW-C LED drivers each programmed at 1460mA



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

Performance Summary			
Input Voltage	120.0 V	Luminous Flux	23457.5 Lumens
Input Current	1.191 A	Total Efficacy	164.6 Lm/W
Input Power	142.5 W	Downward Flux	23453.6 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.997		
Current THD	5.9 %		

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

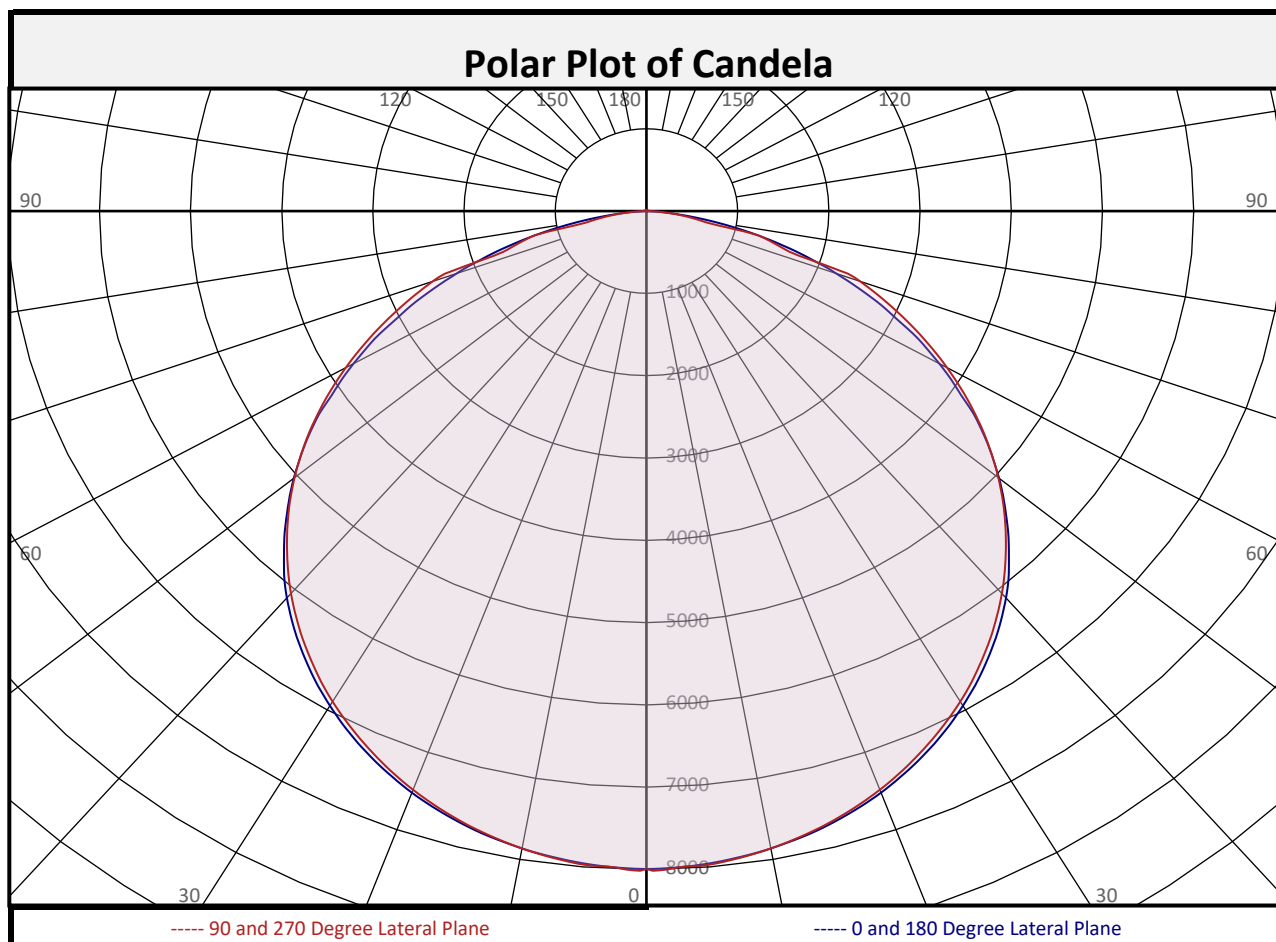
Test date: 03/17/2020
Report date: 03/18/2020

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	756.1	3.2%		90-100	3.7	0.0%		0-20	2931	12.5%	
10-20	2175	9.3%		100-110	0.1	0.0%		0-30	6261	26.7%	
20-30	3330	14.2%		110-120	0.0	0.0%		0-40	10338	44.1%	
30-40	4077	17.4%		120-130	0.0	0.0%		0-60	18584	79.2%	
40-50	4304	18.3%		130-140	0.0	0.0%		0-80	23174	98.8%	
50-60	3942	16.8%		140-150	0.0	0.0%		10-90	22698	96.8%	
60-70	3019	12.9%		150-160	0.0	0.0%		20-50	11710	49.9%	
70-80	1571	6.7%		160-170	0.0	0.0%		40-90	13115	55.9%	
80-90	279.1	1.2%		170-180	0.0	0.0%		60-90	4870	20.8%	
0-90	23454	100.0%		90-180	3.9	0.0%		0-180	23457	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	7995	7995	7995	7995	7995	7995	7995	7995	7995
	2.5	7983	7979	7969	7967	7984	7967	7969	7979	7983
	5	7957	7943	7935	7951	7972	7951	7935	7943	7957
	7.5	7915	7892	7905	7908	7925	7908	7905	7892	7915
	10	7864	7849	7850	7852	7865	7852	7850	7849	7864
	12.5	7800	7789	7781	7782	7790	7782	7781	7789	7800
	15	7722	7709	7698	7695	7703	7695	7698	7709	7722
	17.5	7627	7609	7598	7597	7600	7597	7598	7609	7627
	20	7521	7498	7488	7480	7484	7480	7488	7498	7521
	22.5	7396	7373	7360	7352	7353	7352	7360	7373	7396
	25	7259	7232	7217	7209	7207	7209	7217	7232	7259
	27.5	7109	7076	7060	7052	7051	7052	7060	7076	7109
	30	6941	6907	6890	6880	6883	6880	6890	6907	6941
	32.5	6762	6721	6705	6696	6698	6696	6705	6721	6762
	35	6566	6524	6507	6499	6499	6499	6507	6524	6566
	37.5	6359	6311	6294	6289	6288	6289	6294	6311	6359
	40	6135	6085	6066	6065	6065	6065	6066	6085	6135
	42.5	5883	5845	5827	5828	5825	5828	5827	5845	5883
	45	5616	5577	5575	5579	5574	5579	5575	5577	5616
	47.5	5334	5292	5313	5316	5314	5316	5313	5292	5334
	50	5048	4995	5035	5046	5038	5046	5035	4995	5048
	52.5	4741	4690	4735	4749	4747	4749	4735	4690	4741
	55	4422	4372	4420	4448	4444	4448	4420	4372	4422
	57.5	4051	4040	4094	4133	4132	4133	4094	4040	4051
	60	3710	3666	3758	3810	3808	3810	3758	3666	3710
	62.5	3359	3314	3414	3480	3477	3480	3414	3314	3359
	65	2964	2956	3058	3148	3146	3148	3058	2956	2964
	67.5	2594	2582	2696	2810	2815	2810	2696	2582	2594
	70	2211	2206	2349	2473	2491	2473	2349	2206	2211
	72.5	1839	1843	1992	2095	1643	2095	1992	1843	1839
	75	1467	1481	1651	1379	1398	1379	1651	1481	1467
	77.5	1103	1141	1019	1140	799	1140	1019	1141	1103
	80	760	835	790	532	537	532	790	835	760
	82.5	451	562	338	366	370	366	338	562	451
	85	199	230	192	219	220	219	192	230	199
	87.5	50	58	86	95	87	95	86	58	50
90	0	18	20	12	2	12	20	18	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	18	20	12	2	12	20	18	0
	92.5	0	4	7	5	0	5	7	4	0
	95	0	2	4	3	0	3	4	2	0
	97.5	0	2	3	2	0	2	3	2	0
	100	0	0	2	2	0	2	2	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	100	96		106	102	98	95		98	95	92		94	91	89		90	88	86	84
2	99	91	84	78		96	89	83	77		85	80	75		82	78	74		79	75	72	70
3	90	79	71	65		88	78	70	64		75	68	63		72	67	62		70	65	61	59
4	82	70	61	55		80	69	61	54		66	59	54		64	58	53		62	57	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	37
7	65	51	42	36		63	50	42	36		49	41	36		47	40	35		46	40	35	33
8	60	46	38	32		59	46	38	32		44	37	32		43	36	31		42	36	31	29
9	56	43	34	29		55	42	34	29		41	34	28		40	33	28		39	33	28	26
10	53	39	31	26		51	39	31	26		38	31	26		37	30	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	222.1	7.74	7.68
8.0	124.9	10.32	10.24
10.0	80.0	12.90	12.80
12.0	55.5	15.48	15.36
14.0	40.8	18.06	17.92
16.0	31.2	20.64	20.48

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	34425	34425	34425
45	34196	33946	33937
55	33191	33176	33359
65	30197	31153	32047
75	24403	27459	23257
85	9852	9506	10855

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	24.4	26.1	24.8	26.4	26.7	24.6	26.2	24.9	26.5	26.8
	3H	26.1	27.6	26.5	28.0	28.3	26.5	28.0	26.9	28.3	28.7
	4H	26.7	28.1	27.1	28.5	28.9	27.0	28.4	27.4	28.7	29.1
	6H	27.1	28.4	27.5	28.8	29.1	27.1	28.4	27.5	28.8	29.2
	8H	27.2	28.4	27.6	28.8	29.2	27.2	28.4	27.6	28.8	29.2
	12H	27.2	28.4	27.6	28.8	29.2	27.2	28.4	27.6	28.8	29.2
4H	2H	25.1	26.5	25.5	26.8	27.2	25.2	26.6	25.6	27.0	27.3
	3H	27.0	28.2	27.4	28.6	29.0	27.4	28.6	27.8	29.0	29.4
	4H	27.7	28.8	28.2	29.2	29.6	27.9	29.0	28.4	29.4	29.8
	6H	28.2	29.1	28.6	29.6	30.0	28.2	29.1	28.6	29.6	30.0
	8H	28.3	29.2	28.8	29.6	30.1	28.2	29.1	28.7	29.5	30.0
	12H	28.3	29.1	28.8	29.6	30.1	28.3	29.0	28.7	29.5	30.0
8H	4H	28.0	28.9	28.5	29.3	29.8	28.2	29.1	28.6	29.5	30.0
	6H	28.6	29.3	29.1	29.8	30.3	28.5	29.2	29.0	29.7	30.2
	8H	28.7	29.4	29.3	29.9	30.4	28.6	29.2	29.1	29.7	30.2
	12H	28.8	29.4	29.3	29.9	30.4	28.6	29.2	29.1	29.7	30.3
12H	4H	28.0	28.8	28.5	29.3	29.7	28.2	29.0	28.7	29.5	29.9
	6H	28.6	29.2	29.1	29.7	30.2	28.5	29.2	29.0	29.6	30.2
	8H	28.8	29.4	29.3	29.8	30.4	28.6	29.2	29.1	29.7	30.2

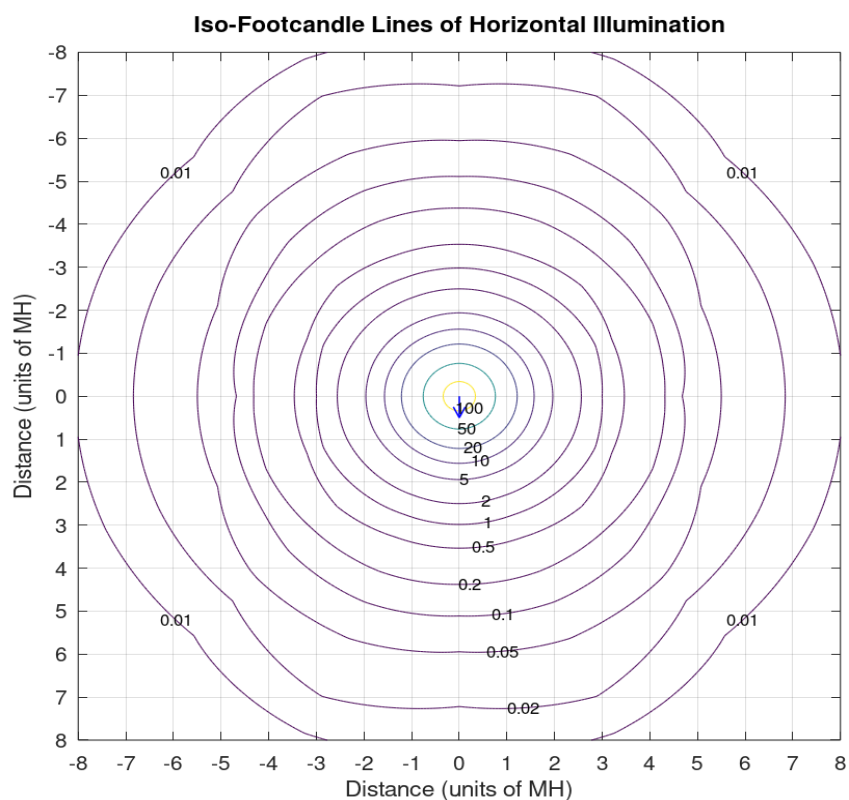
Maximum UGR = 30.4



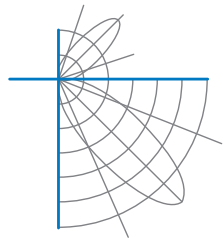
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Iso-Illuminance Plot



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



Report of Test

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Test Distance 9.5 m
Ambient Temperature 25.2 °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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