

## Report of Test

**LLIA001249-009-R01\***

Indoor Distribution Photometry Test Report

Catalog Number: PBL G2 2 MH UV 835

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

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

One ULT Everline D21CC80UNVPW-C programmed at 1730mA



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

Performance Summary			
Input Voltage	120.0 V	Luminous Flux	13674.1 Lumens
Input Current	0.7101 A	Total Efficacy	160.7 Lm/W
Input Power	85.07 W	Downward Flux	13670.2 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.998		
Current THD	4.9 %		

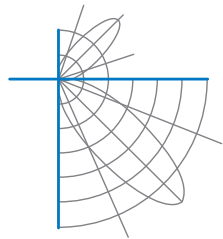
\*This test report supersedes test report LLIA001249-009

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

Test date: 03/18/2020

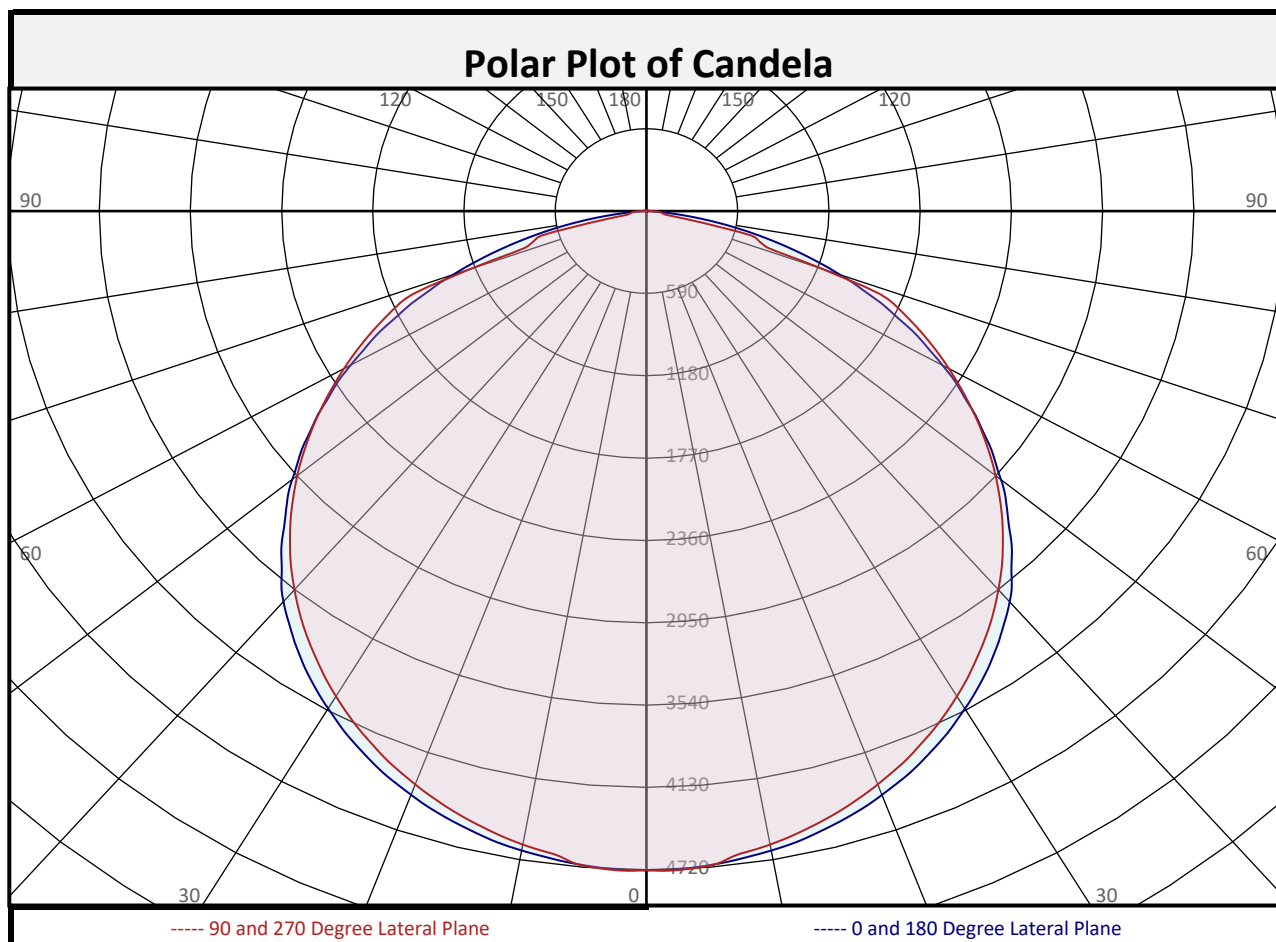
Report date: 03/19/2020

Signed: \_\_\_\_\_

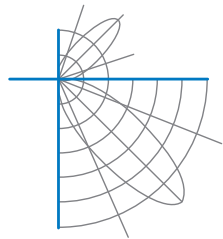


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Zonal Flux Summary											
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total	
0-10	447.9	3.3%		90-100	3.5	0.0%		0-20	1729	12.6%	
10-20	1282	9.4%		100-110	0.4	0.0%		0-30	3686	27.0%	
20-30	1957	14.3%		110-120	0.0	0.0%		0-40	6079	44.5%	
30-40	2393	17.5%		120-130	0.0	0.0%		0-60	10909	79.8%	
40-50	2522	18.4%		130-140	0.0	0.0%		0-80	13544	99.0%	
50-60	2308	16.9%		140-150	0.0	0.0%		10-90	13222	96.7%	
60-70	1790	13.1%		150-160	0.0	0.0%		20-50	6872	50.3%	
70-80	846.0	6.2%		160-170	0.0	0.0%		40-90	7591	55.5%	
80-90	125.9	0.9%		170-180	0.0	0.0%		60-90	2762	20.2%	
0-90	13670	100.0%		90-180	4.0	0.0%		0-180	13674	100.0%	

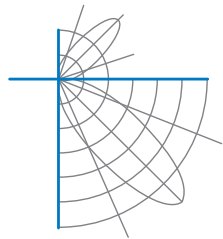


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Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles									
Vertical (Gamma) Angles		0	22.5	45	67.5	90	112.5	135	157.5	180
	0	4725	4725	4725	4725	4725	4725	4725	4725	4725
	2.5	4722	4730	4733	4740	4727	4740	4733	4730	4722
	5	4706	4721	4723	4723	4709	4723	4723	4721	4706
	7.5	4682	4701	4695	4663	4645	4663	4695	4701	4682
	10	4653	4670	4629	4620	4610	4620	4629	4670	4653
	12.5	4619	4629	4582	4576	4562	4576	4582	4629	4619
	15	4570	4574	4530	4522	4507	4522	4530	4574	4570
	17.5	4517	4493	4470	4460	4444	4460	4470	4493	4517
	20	4453	4419	4402	4389	4373	4389	4402	4419	4453
	22.5	4385	4342	4322	4312	4297	4312	4322	4342	4385
	25	4303	4259	4237	4224	4209	4224	4237	4259	4303
	27.5	4217	4165	4143	4130	4117	4130	4143	4165	4217
	30	4118	4064	4041	4027	4015	4027	4041	4064	4118
	32.5	4017	3954	3930	3918	3907	3918	3930	3954	4017
	35	3904	3834	3812	3802	3792	3802	3812	3834	3904
	37.5	3781	3708	3686	3678	3672	3678	3686	3708	3781
	40	3654	3572	3552	3546	3541	3546	3552	3572	3654
	42.5	3493	3430	3410	3408	3406	3408	3410	3430	3493
	45	3336	3256	3263	3262	3260	3262	3263	3256	3336
	47.5	3163	3083	3108	3114	3107	3114	3108	3083	3163
	50	2993	2902	2950	2953	2948	2953	2950	2902	2993
	52.5	2813	2715	2767	2786	2780	2786	2767	2715	2813
	55	2618	2528	2582	2614	2609	2614	2582	2528	2618
	57.5	2417	2328	2388	2437	2435	2437	2388	2328	2417
	60	2212	2123	2202	2257	2259	2257	2202	2123	2212
	62.5	2003	1911	2006	2075	2082	2075	2006	1911	2003
	65	1777	1709	1801	1893	1903	1893	1801	1709	1777
	67.5	1555	1492	1614	1714	1727	1714	1614	1492	1555
	70	1329	1282	1426	1503	1204	1503	1426	1282	1329
	72.5	1103	1082	1243	814	788	814	1243	1082	1103
	75	877	882	955	701	727	701	955	882	877
	77.5	662	696	519	440	245	440	519	696	662
	80	450	531	381	114	112	114	381	531	450
	82.5	261	290	89	99	99	99	89	290	261
	85	113	118	71	83	86	83	71	118	113
	87.5	33	36	51	60	59	60	51	36	33
90	3	16	16	11	5	11	16	16	3	

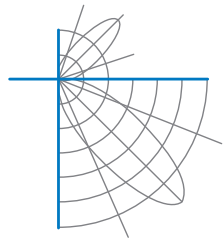


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Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles									
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles	90	3	16	16	11	5	11	16	16	3
	92.5	0	5	6	4	0	4	6	5	0
	95	0	2	4	3	0	3	4	2	0
	97.5	0	1	3	2	0	2	3	1	0
	100	0	1	2	2	0	2	2	1	0
	102.5	0	0	2	2	0	2	2	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	97		106	102	98	95		98	95	92		94	92	89		90	88	87	84
2	99	91	84	79		97	89	83	78		86	80	76		82	78	74		79	76	72	70
3	90	80	72	65		88	78	71	65		75	69	63		72	67	62		70	65	61	59
4	83	71	62	55		80	69	61	55		67	60	54		64	58	53		62	57	52	50
5	76	63	54	47		74	62	53	47		60	52	46		58	51	46		56	50	45	43
6	70	57	48	41		68	56	47	41		54	46	41		52	45	40		51	45	40	38
7	65	51	42	36		63	50	42	36		49	41	36		47	41	36		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	39	32	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.

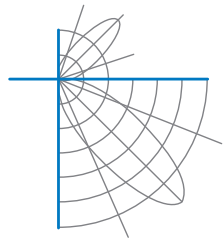
### Circle of Light Plot

Height(ft)	Illuminance at Nadir (fc)	Ground-level distance to half-of-nadir illuminance (ft)	
		0-180 deg	90-270 deg
6.0	131.3	7.78	7.59
8.0	73.8	10.37	10.12
10.0	47.3	12.96	12.65
12.0	32.8	15.55	15.19
14.0	24.1	18.14	17.72
16.0	18.5	20.74	20.25

Average Luminance (cd/m <sup>2</sup> )			
	0 deg Plane	45 deg Plane	90 deg Plane
0	27742	27742	27742
45	27699	27090	27065
55	26800	26425	26711
65	24691	25016	26439
75	19900	21674	16503
85	7632	4754	5800

### 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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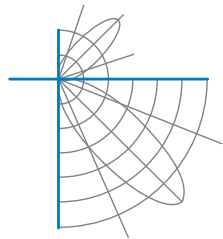
#### UGR TABLE - CORRECTED

##### 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	23.5	25.2	23.9	25.5	25.8	23.8	25.5	24.2	25.8	26.1
	3H	25.3	26.8	25.7	27.1	27.5	25.9	27.4	26.2	27.7	28.0
	4H	26.0	27.3	26.3	27.7	28.1	26.2	27.6	26.6	27.9	28.3
	6H	26.3	27.6	26.7	28.0	28.4	26.2	27.5	26.6	27.8	28.2
	8H	26.4	27.6	26.8	28.0	28.4	26.2	27.4	26.6	27.8	28.2
	12H	26.4	27.6	26.9	28.0	28.4	26.1	27.3	26.6	27.7	28.1
4H	2H	24.2	25.6	24.6	26.0	26.4	24.5	25.8	24.9	26.2	26.6
	3H	26.2	27.4	26.6	27.8	28.2	26.7	27.8	27.1	28.2	28.6
	4H	26.9	28.0	27.4	28.4	28.9	27.0	28.1	27.5	28.5	28.9
	6H	27.5	28.4	27.9	28.8	29.3	27.1	28.0	27.5	28.4	28.9
	8H	27.6	28.4	28.1	28.9	29.4	27.1	27.9	27.5	28.4	28.8
	12H	27.6	28.4	28.1	28.9	29.3	27.1	27.8	27.5	28.3	28.8
8H	4H	27.2	28.1	27.7	28.5	29.0	27.3	28.2	27.8	28.6	29.1
	6H	27.8	28.5	28.3	29.0	29.5	27.3	28.1	27.8	28.5	29.0
	8H	28.0	28.6	28.5	29.1	29.6	27.3	28.0	27.8	28.5	29.0
	12H	28.0	28.6	28.6	29.1	29.7	27.3	27.9	27.8	28.4	28.9
12H	4H	27.2	28.0	27.7	28.4	28.9	27.3	28.1	27.8	28.6	29.0
	6H	27.8	28.4	28.3	28.9	29.4	27.4	28.0	27.9	28.5	29.0
	8H	28.0	28.5	28.5	29.0	29.6	27.4	27.9	27.9	28.4	29.0

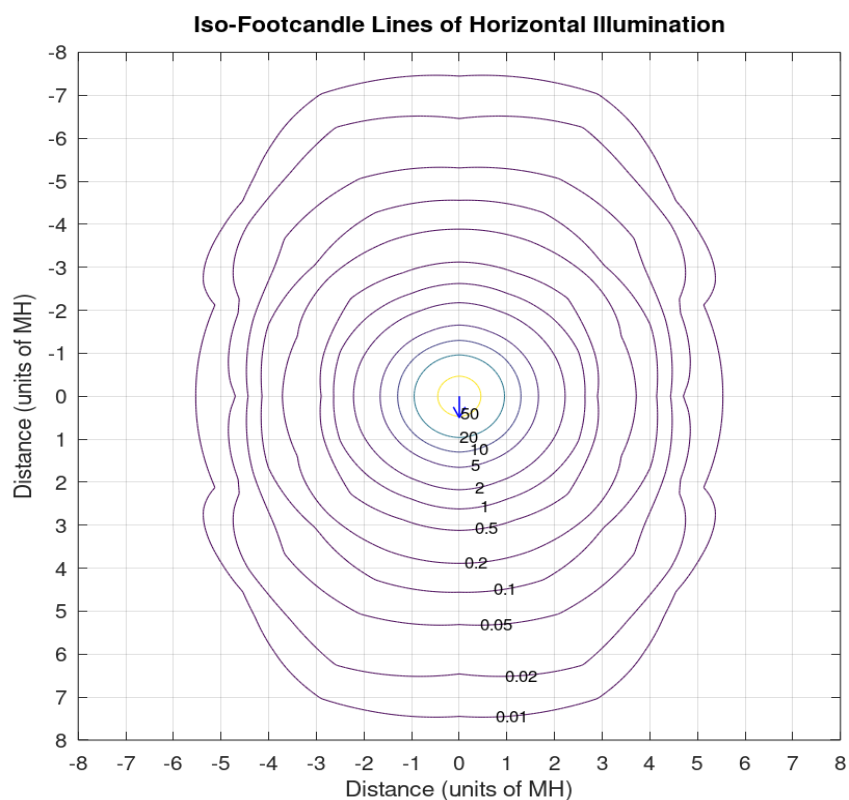
Maximum UGR = 29.7



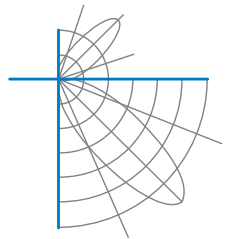
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#### Iso-Illuminance Plot



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.



## Report of Test

### LLIA001249-009-R01

### Additional Pictures of Test Subject



## Report of Test

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Test Distance                      9.5 m  
Ambient Temperature          25.1 °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.

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 Log: R01 03/19/2020 A typo was corrected in the catalog number