



## Report of Test

**LLIA001249-018**

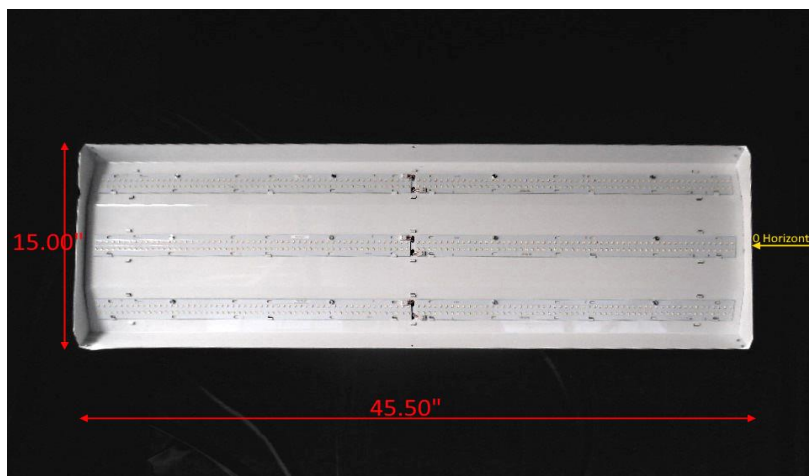
### Indoor Distribution Photometry Test Report

Catalog Number: PBL G2 4W HI UV 835

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

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	39907.9 Lumens
Input Current	2.045 A	Total Efficacy	163.1 Lm/W
Input Power	244.7 W	Downward Flux	39902.9 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % 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

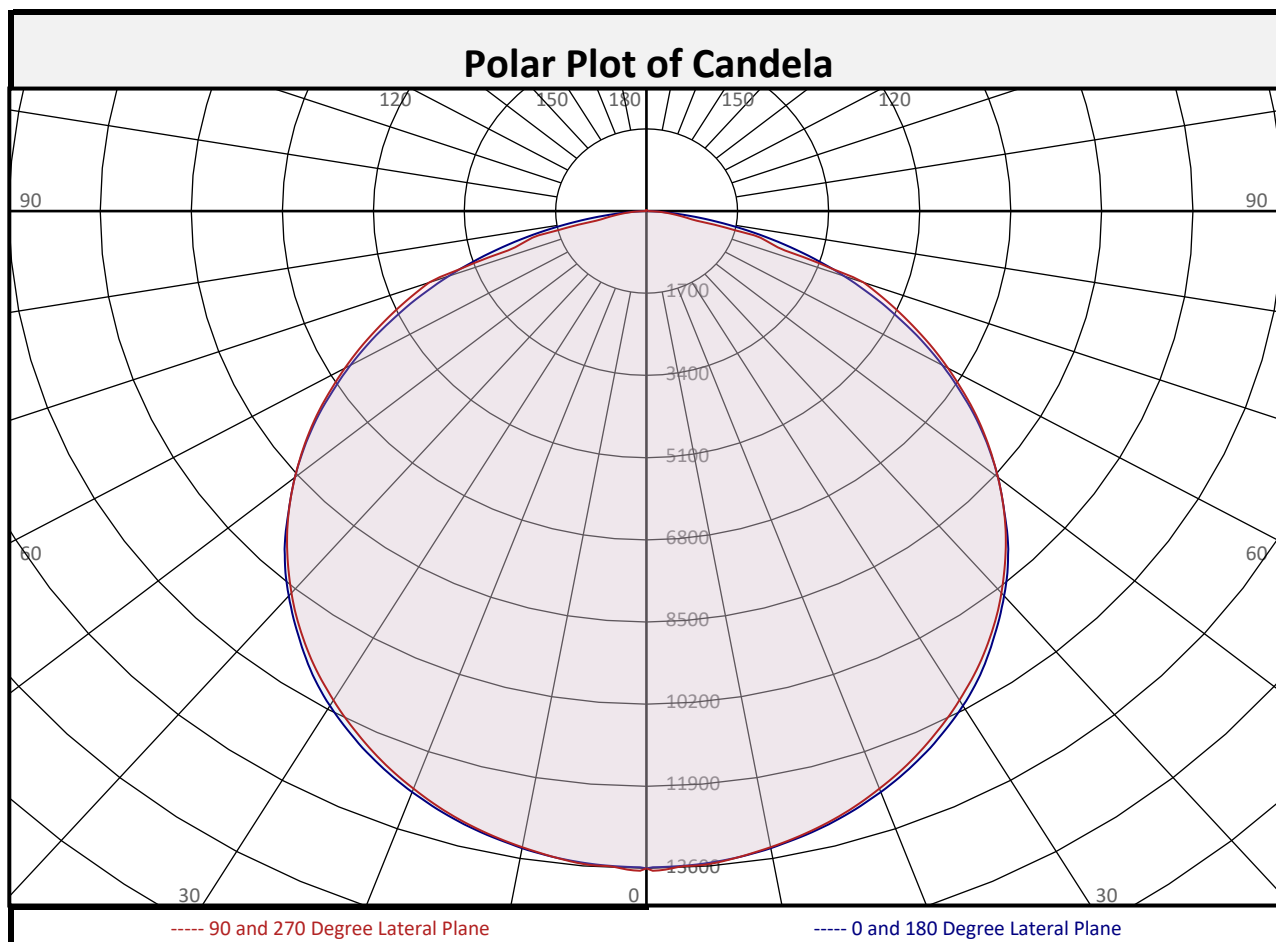
Report date: 03/24/2020

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	1285	3.2%		90-100	4.9	0.0%		0-20	4982	12.5%	
10-20	3696	9.3%		100-110	0.0	0.0%		0-30	10639	26.7%	
20-30	5658	14.2%		110-120	0.0	0.0%		0-40	17561	44.0%	
30-40	6921	17.3%		120-130	0.0	0.0%		0-60	31555	79.1%	
40-50	7297	18.3%		130-140	0.0	0.0%		0-80	39430	98.8%	
50-60	6697	16.8%		140-150	0.0	0.0%		10-90	38617	96.8%	
60-70	5184	13.0%		150-160	0.0	0.0%		20-50	19876	49.8%	
70-80	2691	6.7%		160-170	0.0	0.0%		40-90	22342	56.0%	
80-90	473.0	1.2%		170-180	0.0	0.0%		60-90	8348	20.9%	
0-90	39903	100.0%		90-180	5.0	0.0%		0-180	39908	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	13600	13600	13600	13600	13600	13600	13600	13600	13600
	2.5	13567	13560	13540	13565	13584	13565	13540	13560	13567
	5	13534	13491	13482	13535	13559	13535	13482	13491	13534
	7.5	13473	13399	13432	13460	13471	13460	13432	13399	13473
	10	13384	13330	13337	13360	13364	13360	13337	13330	13384
	12.5	13268	13227	13218	13237	13242	13237	13218	13227	13268
	15	13138	13088	13070	13090	13096	13090	13070	13088	13138
	17.5	12976	12922	12900	12917	12921	12917	12900	12922	12976
	20	12792	12731	12708	12721	12717	12721	12708	12731	12792
	22.5	12584	12517	12489	12500	12497	12500	12489	12517	12584
	25	12354	12279	12249	12258	12248	12258	12249	12279	12354
	27.5	12094	12017	11981	11988	11976	11988	11981	12017	12094
	30	11816	11729	11688	11697	11687	11697	11688	11729	11816
	32.5	11507	11415	11378	11383	11383	11383	11378	11415	11507
	35	11151	11069	11040	11049	11051	11049	11040	11069	11151
	37.5	10775	10681	10682	10694	10696	10694	10682	10681	10775
	40	10388	10275	10298	10315	10311	10315	10298	10275	10388
	42.5	9984	9863	9884	9916	9907	9916	9884	9863	9984
	45	9535	9427	9441	9495	9488	9495	9441	9427	9535
	47.5	9042	8941	8976	9051	9041	9051	8976	8941	9042
	50	8567	8428	8506	8592	8568	8592	8506	8428	8567
	52.5	8056	7920	8016	8094	8079	8094	8016	7920	8056
	55	7524	7383	7488	7586	7576	7586	7488	7383	7524
	57.5	6952	6832	6929	7059	7042	7059	6929	6832	6952
	60	6382	6243	6378	6516	6504	6516	6378	6243	6382
	62.5	5786	5664	5808	5960	5958	5960	5808	5664	5786
	65	5162	5065	5226	5392	5398	5392	5226	5065	5162
	67.5	4546	4451	4645	4822	4852	4822	4645	4451	4546
	70	3920	3838	4064	4264	4312	4264	4064	3838	3920
	72.5	3292	3245	3490	3275	2711	3275	3490	3245	3292
	75	2656	2644	2936	2214	2264	2214	2936	2644	2656
	77.5	2040	2077	1752	1561	1295	1561	1752	2077	2040
	80	1450	1553	1327	720	721	720	1327	1553	1450
	82.5	915	1052	492	512	516	512	492	1052	915
	85	457	416	306	338	337	338	306	416	457
	87.5	140	120	161	165	157	165	161	120	140
90	0	30	31	26	16	26	31	30	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	30	31	26	16	26	31	30	0
	92.5	0	5	8	6	1	6	8	5	0
	95	0	2	5	4	0	4	5	2	0
	97.5	0	2	3	3	0	3	3	2	0
	100	0	0	0	3	0	3	0	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	94	92		94	91	89		90	88	86	84
2	99	91	84	78		96	89	82	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	53		64	58	53		62	56	52	50
5	76	63	54	47		73	61	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	39	37
7	65	51	42	36		63	50	42	36		49	41	35		47	40	35		46	40	35	33
8	60	46	38	32		58	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	377.8	7.74	7.67
8.0	212.5	10.33	10.23
10.0	136.0	12.91	12.79
12.0	94.4	15.49	15.35
14.0	69.4	18.07	17.90
16.0	53.1	20.65	20.46

Average Luminance (cd/m <sup>2</sup> )			
	0 deg Plane	45 deg Plane	90 deg Plane
0	30887	30887	30887
45	30625	30322	30474
55	29792	29650	29997
65	27737	28085	29010
75	23308	25763	19866
85	11909	7974	8774

### 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	24.0	25.6	24.3	25.9	26.2	24.2	25.8	24.5	26.1	26.4
	3H	25.8	27.3	26.2	27.6	28.0	26.1	27.6	26.5	28.0	28.3
	4H	26.4	27.8	26.8	28.2	28.5	26.5	27.9	26.9	28.3	28.7
	6H	26.8	28.1	27.2	28.5	28.9	26.6	28.0	27.1	28.3	28.7
	8H	27.0	28.2	27.4	28.6	29.0	26.7	27.9	27.1	28.3	28.7
	12H	27.0	28.2	27.4	28.6	29.0	26.7	27.9	27.1	28.2	28.7
4H	2H	24.6	26.0	25.0	26.4	26.8	24.8	26.2	25.2	26.5	26.9
	3H	26.7	27.8	27.1	28.2	28.6	27.0	28.2	27.4	28.6	29.0
	4H	27.4	28.5	27.9	28.9	29.3	27.5	28.6	27.9	29.0	29.4
	6H	28.0	28.9	28.4	29.3	29.8	27.7	28.6	28.1	29.0	29.5
	8H	28.1	29.0	28.6	29.4	29.9	27.7	28.6	28.1	29.0	29.5
	12H	28.2	29.0	28.7	29.4	29.9	27.7	28.5	28.2	29.0	29.4
8H	4H	27.7	28.6	28.2	29.0	29.5	27.8	28.6	28.2	29.1	29.5
	6H	28.4	29.1	28.8	29.6	30.0	28.0	28.7	28.5	29.2	29.7
	8H	28.6	29.2	29.1	29.7	30.2	28.0	28.7	28.5	29.2	29.7
	12H	28.7	29.2	29.2	29.7	30.3	28.1	28.6	28.6	29.1	29.7
12H	4H	27.7	28.5	28.2	29.0	29.4	27.8	28.6	28.3	29.0	29.5
	6H	28.4	29.0	28.9	29.5	30.0	28.0	28.7	28.5	29.1	29.7
	8H	28.6	29.2	29.1	29.7	30.2	28.1	28.6	28.6	29.1	29.7

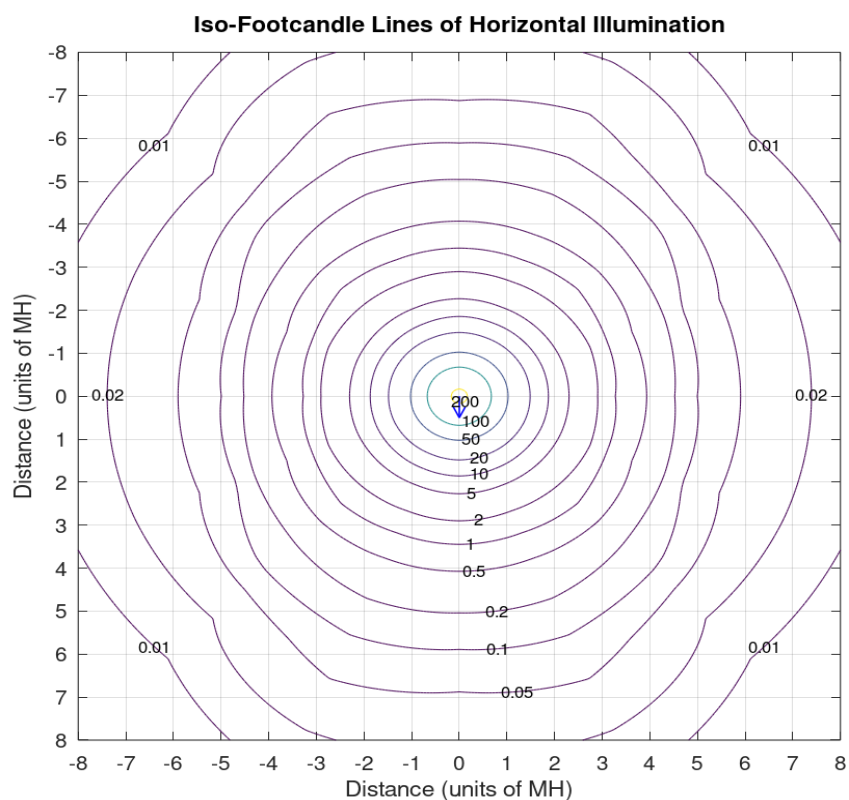
Maximum UGR = 30.3



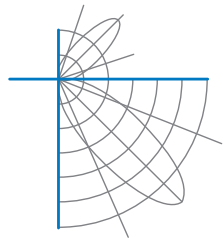
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### Iso-Illuminance Plot

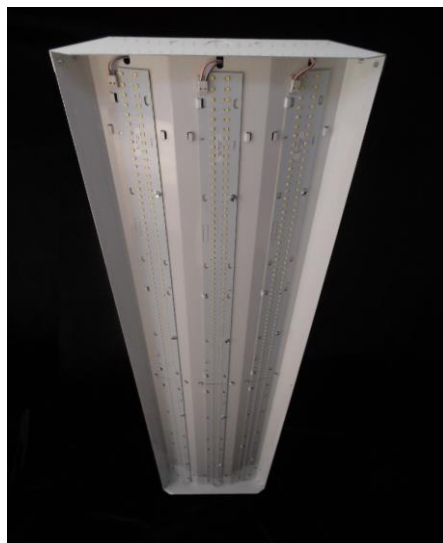


The isofootcandle values shown in the plot above are based on a mounting height of  $h = 8.0$  feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution of room reflections.



## Report of Test LLIA001249-018

### Additional Pictures of Test Subject





## Report of Test

### LLIA001249-018

Test Distance                      9.5 m  
Ambient Temperature          25.4 °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.