

## Report of Test

**LLIA001249-015**

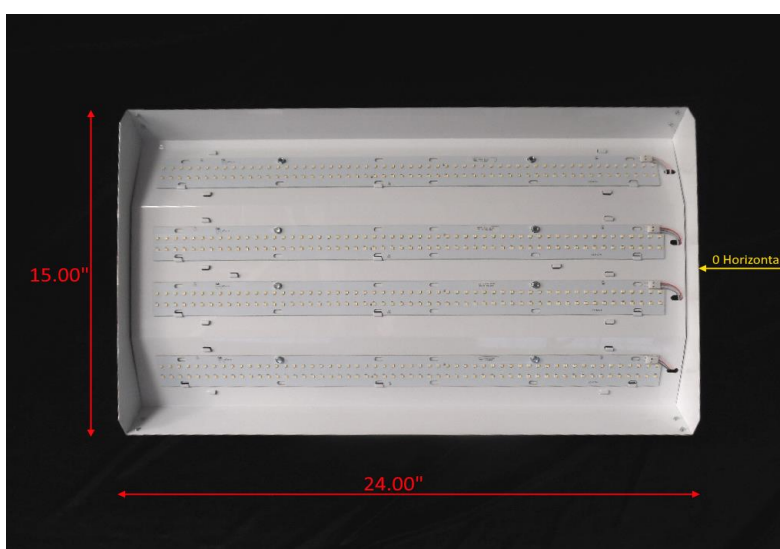
### Indoor Distribution Photometry Test Report

Catalog Number: PBL G2 2W HI HE 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.

One ULT Everline D28CC95UNVPA12-F LED driver programmed at 2100mA



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

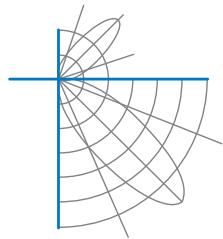
Performance Summary			
Input Voltage	120.0 V	Luminous Flux	17163.7 Lumens
Input Current	0.8312 A	Total Efficacy	173.3 Lm/W
Input Power	99.05 W	Downward Flux	17161.1 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.993		
Current THD	4.0 %		

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

Test date: 03/16/2020

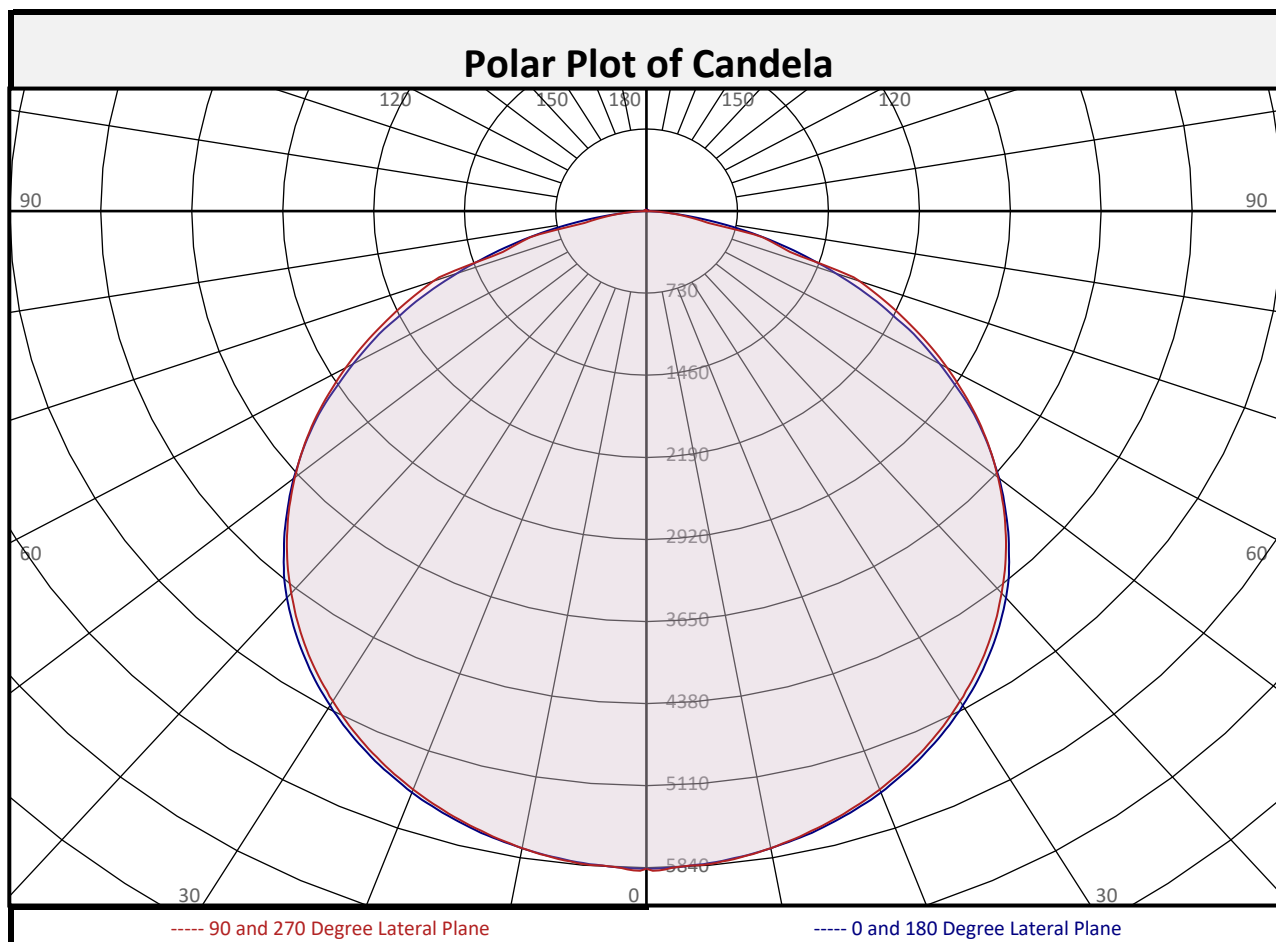
Report date: 03/18/2020

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

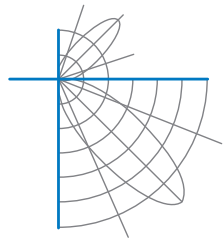


## Report of Test

### LLIA001249-015



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	553.1	3.2%		90-100	2.6	0.0%		0-20	2144	12.5%
10-20	1591	9.3%		100-110	0.1	0.0%		0-30	4581	26.7%
20-30	2437	14.2%		110-120	0.0	0.0%		0-40	7564	44.1%
30-40	2983	17.4%		120-130	0.0	0.0%		0-60	13599	79.2%
40-50	3149	18.3%		130-140	0.0	0.0%		0-80	16956	98.8%
50-60	2886	16.8%		140-150	0.0	0.0%		10-90	16608	96.8%
60-70	2210	12.9%		150-160	0.0	0.0%		20-50	8569	49.9%
70-80	1147	6.7%		160-170	0.0	0.0%		40-90	9597	55.9%
80-90	205.4	1.2%		170-180	0.0	0.0%		60-90	3562	20.8%
0-90	17161	100.0%		90-180	2.6	0.0%		0-180	17164	100.0%

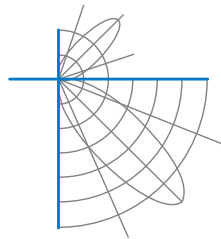


## Report of Test

LLIA001249-015

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	5850	5850	5850	5850	5850	5850	5850	5850	5850
	2.5	5840	5834	5827	5826	5839	5826	5827	5834	5840
	5	5821	5807	5802	5817	5830	5817	5802	5807	5821
	7.5	5792	5771	5784	5787	5798	5787	5784	5771	5792
	10	5754	5741	5742	5745	5754	5745	5742	5741	5754
	12.5	5707	5697	5692	5693	5698	5693	5692	5697	5707
	15	5648	5637	5632	5632	5631	5632	5632	5637	5648
	17.5	5581	5567	5558	5559	5557	5559	5558	5567	5581
	20	5503	5486	5478	5473	5475	5473	5478	5486	5503
	22.5	5410	5395	5384	5380	5381	5380	5384	5395	5410
	25	5310	5291	5279	5275	5278	5275	5279	5291	5310
	27.5	5200	5178	5166	5161	5163	5161	5166	5178	5200
	30	5078	5053	5041	5035	5034	5035	5041	5053	5078
	32.5	4949	4917	4906	4901	4901	4901	4906	4917	4949
	35	4804	4774	4760	4755	4757	4755	4760	4774	4804
	37.5	4654	4617	4605	4603	4601	4603	4605	4617	4654
	40	4490	4451	4438	4438	4436	4438	4438	4451	4490
	42.5	4307	4277	4263	4265	4264	4265	4263	4277	4307
	45	4112	4081	4079	4083	4080	4083	4079	4081	4112
	47.5	3905	3874	3886	3889	3888	3889	3886	3874	3905
	50	3696	3656	3684	3694	3685	3694	3684	3656	3696
	52.5	3471	3433	3466	3475	3474	3475	3466	3433	3471
	55	3238	3200	3235	3254	3256	3254	3235	3200	3238
	57.5	2977	2958	2996	3024	3023	3024	2996	2958	2977
	60	2718	2688	2751	2788	2788	2788	2751	2688	2718
	62.5	2457	2426	2499	2545	2546	2545	2499	2426	2457
	65	2171	2169	2246	2302	2298	2302	2246	2169	2171
	67.5	1899	1890	1972	2054	2056	2054	1972	1890	1899
	70	1615	1620	1718	1806	1819	1806	1718	1620	1615
	72.5	1340	1352	1456	1455	1208	1455	1456	1352	1340
	75	1072	1086	1207	1012	1026	1012	1207	1086	1072
	77.5	813	836	747	804	604	804	747	836	813
	80	561	611	579	397	400	397	579	611	561
	82.5	332	402	251	273	275	273	251	402	332
	85	148	170	143	163	164	163	143	170	148
	87.5	37	43	64	69	61	69	64	43	37
90	1	12	14	8	2	8	14	12	1	

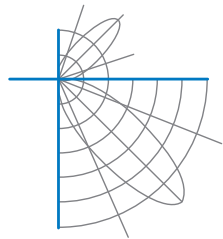


## Report of Test

LLIA001249-015

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	1	12	14	8	2	8	14	12	1
	92.5	0	3	5	3	0	3	5	3	0
	95	0	1	2	2	0	2	2	1	0
	97.5	0	1	2	2	0	2	2	1	0
	100	0	0	2	1	0	1	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	



## Report of Test

LLIA001249-015

### 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

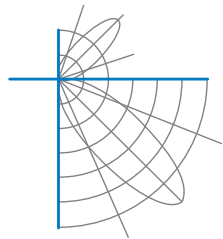
Height(ft)	Illuminance at Nadir (fc)	Ground-level distance to half-of-nadir illuminance (ft)	
		0-180 deg	90-270 deg
6.0	162.5	7.74	7.68
8.0	91.4	10.32	10.24
10.0	58.5	12.90	12.80
12.0	40.6	15.49	15.36
14.0	29.8	18.07	17.92
16.0	22.9	20.65	20.48

### Average Luminance (cd/m<sup>2</sup>)

	0 deg Plane	45 deg Plane	90 deg Plane
0	18116	18116	18116
45	18009	17863	17870
55	17482	17468	17581
65	15905	16457	16838
75	12828	14437	12277
85	5255	5074	5812

### Spacing Criterion

0 degree plane:	1.3
90 degree plane:	1.3
180 degree plane:	1.3
270 degree plane:	1.3



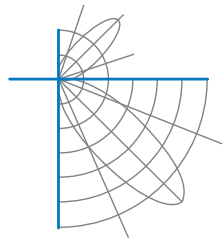
## Report of Test

### LLIA001249-015

#### 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	23.3	25.0	23.7	25.3	25.6	23.5	25.1	23.8	25.4	25.7
	3H	25.0	26.5	25.4	26.9	27.2	25.4	26.9	25.8	27.2	27.6
	4H	25.6	27.0	26.0	27.4	27.8	25.8	27.3	26.2	27.6	28.0
	6H	26.0	27.3	26.4	27.7	28.1	26.0	27.3	26.4	27.7	28.1
	8H	26.1	27.3	26.5	27.7	28.1	26.1	27.3	26.5	27.7	28.1
	12H	26.1	27.3	26.5	27.7	28.1	26.1	27.3	26.5	27.7	28.1
4H	2H	24.0	25.4	24.4	25.7	26.1	24.1	25.5	24.5	25.9	26.2
	3H	25.9	27.1	26.3	27.5	27.9	26.3	27.4	26.7	27.8	28.2
	4H	26.6	27.7	27.1	28.1	28.5	26.8	27.9	27.3	28.3	28.7
	6H	27.1	28.0	27.6	28.5	28.9	27.1	28.0	27.5	28.4	28.9
	8H	27.2	28.1	27.7	28.5	29.0	27.1	28.0	27.6	28.4	28.9
	12H	27.3	28.0	27.7	28.5	29.0	27.1	27.9	27.6	28.4	28.9
8H	4H	26.9	27.8	27.4	28.2	28.7	27.1	27.9	27.5	28.4	28.9
	6H	27.5	28.2	28.0	28.7	29.2	27.4	28.1	27.9	28.6	29.1
	8H	27.7	28.3	28.2	28.8	29.3	27.5	28.1	28.0	28.6	29.1
	12H	27.7	28.3	28.2	28.8	29.4	27.5	28.1	28.0	28.6	29.2
12H	4H	26.9	27.7	27.4	28.2	28.6	27.1	27.9	27.6	28.4	28.8
	6H	27.5	28.2	28.0	28.6	29.1	27.4	28.1	27.9	28.5	29.1
	8H	27.7	28.3	28.2	28.8	29.3	27.5	28.1	28.0	28.6	29.1

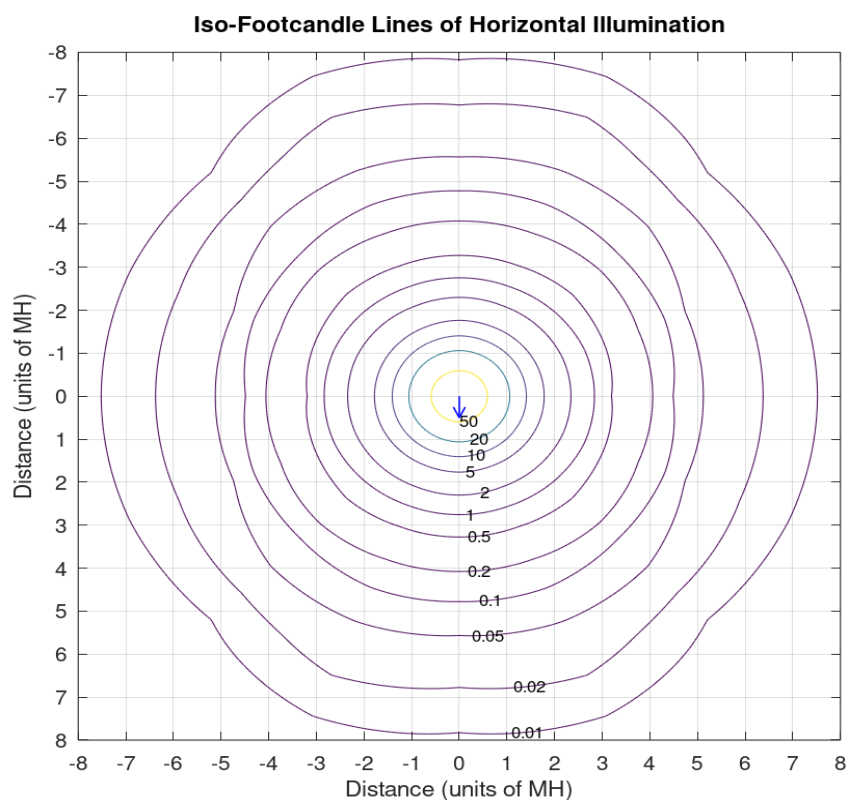
Maximum UGR = 29.4



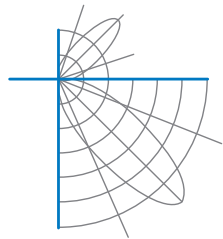
## Report of Test

LLIA001249-015

### 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 LLIA001249-015

### Additional Pictures of Test Subject





## Report of Test

### LLIA001249-015

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.

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.