



Report of Test

LLIA001249-022

Indoor Distribution Photometry Test Report

Catalog Number: PBL G2 4W VH UV FR 835

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

896 white LEDs, eight 20103 3500K 3437A1 LED boards with 112 LEDs each.

Four ULT Everline D21CC80UNVPW-C LED drivers each programmed at 1630mA



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

Performance Summary			
Input Voltage	120.0 V	Luminous Flux	48896.1 Lumens
Input Current	2.668 A	Total Efficacy	153.0 Lm/W
Input Power	319.5 W	Downward Flux	48867.0 Lumens
Frequency	60.00 Hz	Downward Flux	99.9 % of Total
Power Factor	0.998		
Current THD	5.5 %		

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

Test date: 03/30/2020

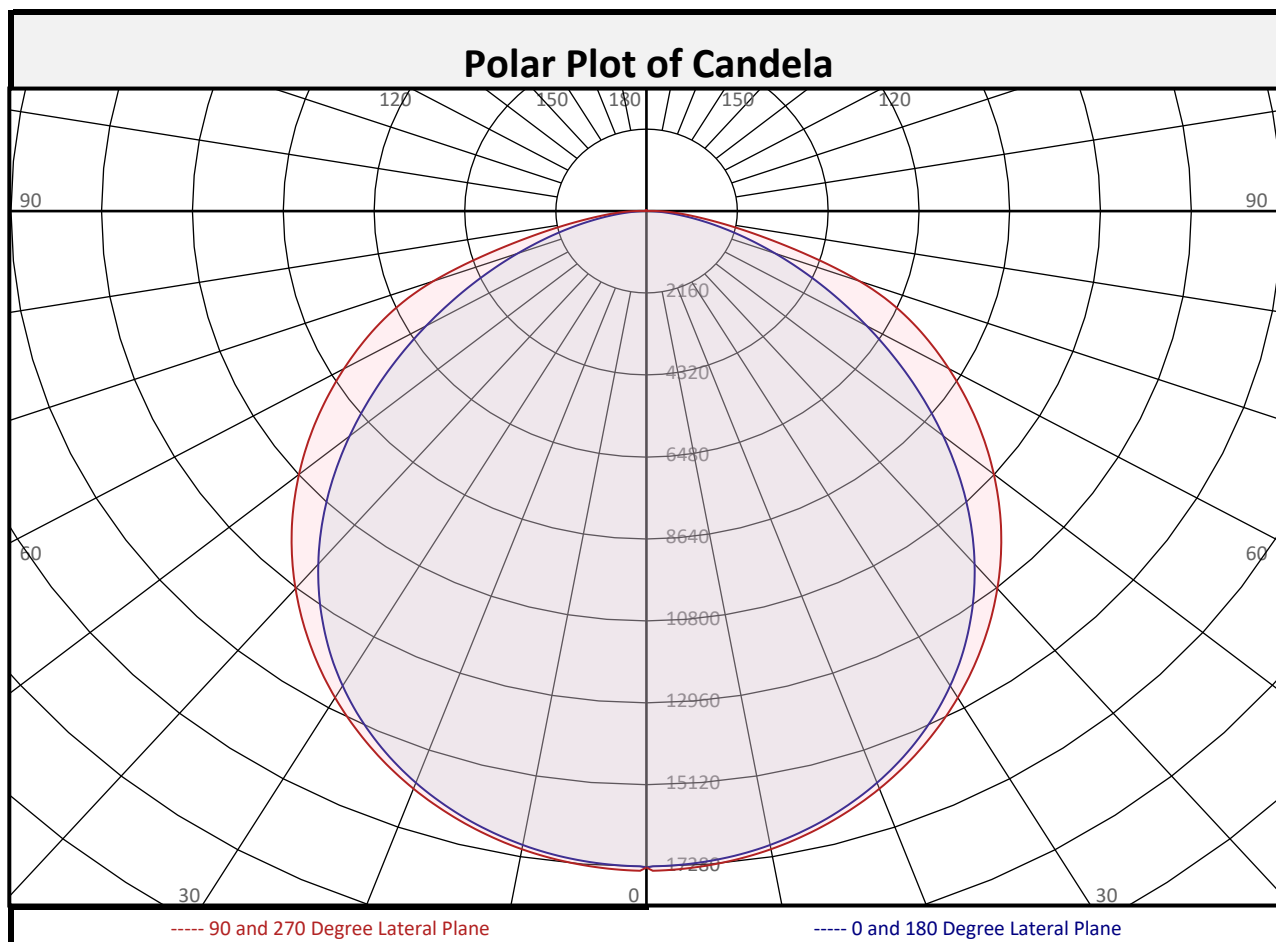
Report date: 03/30/2020

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	1638	3.3%		90-100	29.1	0.1%		0-20	6331	12.9%	
10-20	4692	9.6%		100-110	0.0	0.0%		0-30	13444	27.5%	
20-30	7114	14.5%		110-120	0.0	0.0%		0-40	21996	45.0%	
30-40	8551	17.5%		120-130	0.0	0.0%		0-60	38609	79.0%	
40-50	8788	18.0%		130-140	0.0	0.0%		0-80	47923	98.0%	
50-60	7825	16.0%		140-150	0.0	0.0%		10-90	47229	96.6%	
60-70	5961	12.2%		150-160	0.0	0.0%		20-50	24453	50.0%	
70-80	3353	6.9%		160-170	0.0	0.0%		40-90	26871	55.0%	
80-90	944.5	1.9%		170-180	0.0	0.0%		60-90	10258	21.0%	
0-90	48867	99.9%		90-180	29.1	0.1%		0-180	48896	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	17304	17304	17304	17304	17304	17304	17304	17304	17304
	2.5	17253	17252	17258	17311	17367	17311	17258	17252	17253
	5	17196	17195	17202	17252	17306	17252	17202	17195	17196
	7.5	17101	17098	17110	17160	17211	17160	17110	17098	17101
	10	16964	16965	16981	17033	17080	17033	16981	16965	16964
	12.5	16789	16794	16816	16869	16912	16869	16816	16794	16789
	15	16578	16587	16613	16669	16709	16669	16613	16587	16578
	17.5	16323	16339	16371	16432	16471	16432	16371	16339	16323
	20	16035	16053	16093	16163	16205	16163	16093	16053	16035
	22.5	15703	15727	15778	15859	15903	15859	15778	15727	15703
	25	15328	15361	15428	15521	15569	15521	15428	15361	15328
	27.5	14911	14955	15044	15152	15206	15152	15044	14955	14911
	30	14448	14505	14621	14753	14814	14753	14621	14505	14448
	32.5	13941	14016	14169	14328	14396	14328	14169	14016	13941
	35	13382	13481	13682	13873	13950	13873	13682	13481	13382
	37.5	12784	12909	13169	13399	13484	13399	13169	12909	12784
	40	12139	12296	12622	12898	12989	12898	12622	12296	12139
	42.5	11458	11650	12052	12376	12474	12376	12052	11650	11458
	45	10738	10973	11457	11832	11937	11832	11457	10973	10738
	47.5	9985	10267	10844	11269	11374	11269	10844	10267	9985
	50	9210	9539	10214	10684	10793	10684	10214	9539	9210
	52.5	8415	8794	9568	10075	10192	10075	9568	8794	8415
	55	7619	8046	8913	9456	9576	9456	8913	8046	7619
	57.5	6826	7301	8249	8824	8946	8824	8249	7301	6826
	60	6049	6567	7583	8184	8311	8184	7583	6567	6049
	62.5	5290	5849	6915	7538	7665	7538	6915	5849	5290
	65	4573	5160	6261	6890	6999	6890	6261	5160	4573
	67.5	3890	4501	5618	6210	6271	6210	5618	4501	3890
	70	3252	3878	4987	5449	5387	5449	4987	3878	3252
	72.5	2658	3290	4349	4521	4318	4521	4349	3290	2658
	75	2109	2745	3665	3501	3285	3501	3665	2745	2109
	77.5	1613	2241	2897	2600	2438	2600	2897	2241	1613
	80	1171	1766	2110	1869	1757	1869	2110	1766	1171
	82.5	789	1306	1428	1292	1234	1292	1428	1306	789
	85	467	820	890	864	843	864	890	820	467
	87.5	197	371	497	540	540	540	497	371	197
90	0	93	224	269	271	269	224	93	0	



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	Lateral (C-Plane) Angles									
Vertical (Gamma) Angles		0	22.5	45	67.5	90	112.5	135	157.5	180
	90	0	93	224	269	271	269	224	93	0
	92.5	0	5	25	58	66	58	25	5	0
	95	0	2	4	4	2	4	4	2	0
	97.5	0	0	3	0	0	0	3	0	0
	100	0	0	0	0	0	0	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	94		97	94	91		93	91	88		90	88	86	84
2	99	91	84	78		96	89	82	77		85	80	75		82	77	73		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	62	55		80	69	61	54		67	59	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	43	36		63	51	42	36		49	41	36		48	41	36		46	40	35	33
8	60	47	38	32		59	46	38	32		45	37	32		44	37	32		42	36	32	30
9	56	43	35	29		55	42	34	29		41	34	29		40	34	29		39	33	29	27
10	53	40	32	26		52	39	32	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	480.7	7.44	7.63
8.0	270.4	9.92	10.18
10.0	173.0	12.40	12.72
12.0	120.2	14.88	15.27
14.0	88.3	17.36	17.81
16.0	67.6	19.84	20.35

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	39298	39298	39298
45	34487	36797	38339
55	30168	35289	37914
65	24572	33644	37613
75	18503	32163	28821
85	12180	23184	21965

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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IES INDOOR REPORT
PHOTOMETRIC FILENAME : LLIA001249-022.IES

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

Room Size	UGR Viewed Crosswise	UGR Viewed Endwise
X=2H Y=2H	23.6 25.3 24.0 25.6 25.9	25.1 26.7 25.4 27.0 27.3
3H	25.1 26.6 25.4 26.9 27.2	27.1 28.6 27.5 28.9 29.3
4H	25.6 27.0 26.0 27.3 27.7	27.7 29.1 28.1 29.4 29.8
6H	25.9 27.2 26.3 27.6 28.0	28.1 29.3 28.5 29.7 30.1
8H	26.0 27.2 26.4 27.6 28.0	28.1 29.4 28.6 29.8 30.2
12H	26.1 27.2 26.5 27.6 28.1	28.2 29.4 28.7 29.8 30.2
4H 2H	24.5 25.9 24.9 26.3 26.6	25.6 27.0 26.0 27.4 27.7
3H	26.2 27.4 26.7 27.8 28.2	27.9 29.1 28.3 29.5 29.9
4H	26.9 27.9 27.3 28.3 28.8	28.6 29.7 29.1 30.1 30.5
6H	27.3 28.3 27.8 28.7 29.2	29.1 30.0 29.6 30.5 30.9
8H	27.5 28.3 27.9 28.8 29.3	29.2 30.1 29.7 30.5 31.0
12H	27.6 28.3 28.0 28.8 29.3	29.3 30.1 29.8 30.6 31.1
8H 4H	27.4 28.3 27.9 28.7 29.2	28.9 29.8 29.4 30.2 30.7
6H	28.0 28.8 28.5 29.2 29.7	29.5 30.2 30.0 30.7 31.2
8H	28.3 28.9 28.8 29.4 29.9	29.7 30.3 30.2 30.9 31.3
12H	28.4 29.0 28.9 29.5 30.1	29.9 30.5 30.4 30.9 31.5
12H 4H	27.4 28.2 27.9 28.7 29.2	28.9 29.7 29.4 30.2 30.7
6H	28.1 28.8 28.6 29.3 29.8	29.5 30.2 30.1 30.7 31.2
8H	28.4 29.0 28.9 29.5 30.1	29.8 30.4 30.3 30.9 31.4

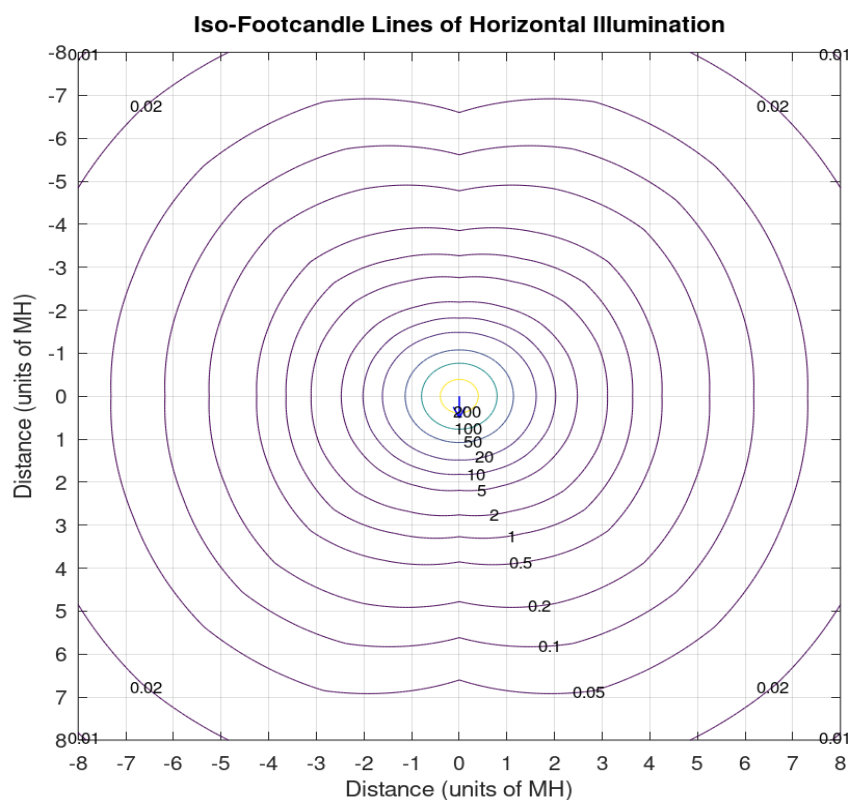
Maximum UGR = 31.5



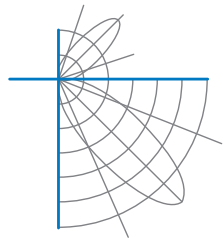
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Iso-Illuminance Plot



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.

This report may contain data that are not covered by the NVLAP accreditation. Quantities marked with ‡ are not covered.

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