

Report of Test

LLIA001249-010A

Indoor Distribution Photometry Test Report

Catalog Number: PBL G2 4 VH UV FR 835

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

448 white LEDs, four 20103 3500K 3437A1 LED boards with 112 LEDs each.
Two ULT Everline D21CC80UNVPW-C LED drivers each programmed at 1700mA



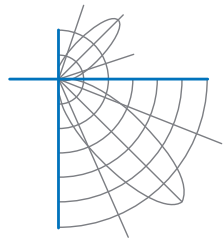
Prepared For:
Lumen Focus, LLC
880 Facet Road
Henderson, NC 27537, USA

Performance Summary			
Input Voltage	120.0 V	Luminous Flux	25485.0 Lumens
Input Current	1.392 A	Total Efficacy	152.9 Lm/W
Input Power	166.7 W	Downward Flux	25481.5 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.998		
Current THD	5.2 %		

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

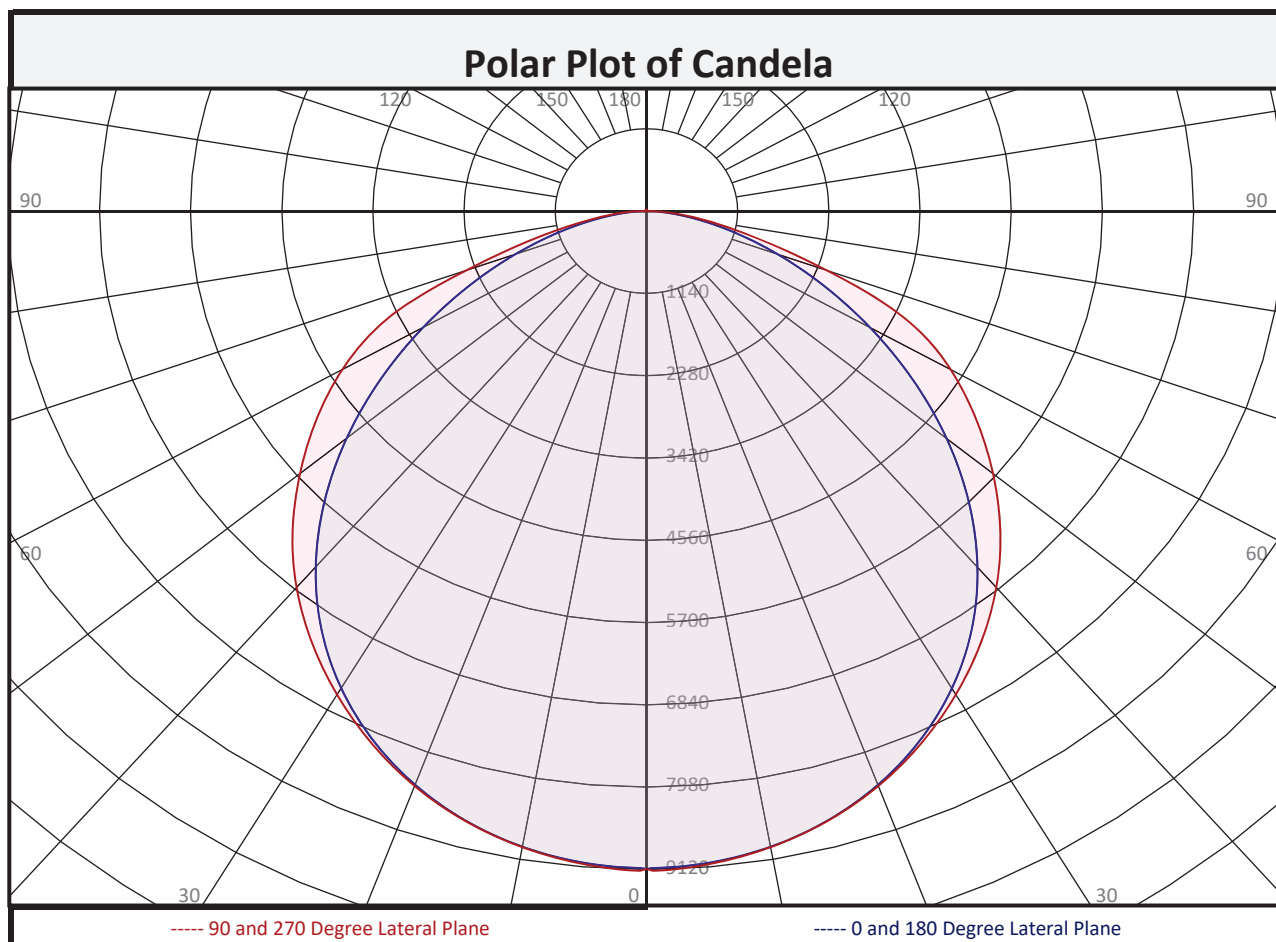
Test date: 03/17/2020
Report date: 03/18/2020

Signed: Michael L. Grather

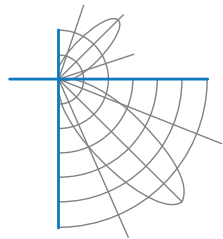


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Zonal Flux Summary											
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total	
0-10	861.6	3.4%		90-100	3.3	0.0%		0-20	3326	13.1%	
10-20	2465	9.7%		100-110	0.2	0.0%		0-30	7060	27.7%	
20-30	3733	14.6%		110-120	0.0	0.0%		0-40	11550	45.3%	
30-40	4490	17.6%		120-130	0.0	0.0%		0-60	20304	79.7%	
40-50	4623	18.1%		130-140	0.0	0.0%		0-80	25052	98.3%	
50-60	4130	16.2%		140-150	0.0	0.0%		10-90	24620	96.6%	
60-70	3128	12.3%		150-160	0.0	0.0%		20-50	12847	50.4%	
70-80	1621	6.4%		160-170	0.0	0.0%		40-90	13931	54.7%	
80-90	429.1	1.7%		170-180	0.0	0.0%		60-90	5178	20.3%	
0-90	25481	100.0%		90-180	3.5	0.0%		0-180	25485	100.0%	

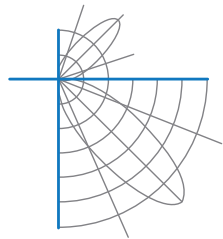


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Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles									
Vertical (Gamma) Angles		0	22.5	45	67.5	90	112.5	135	157.5	180
	0	9115	9115	9115	9115	9115	9115	9115	9115	9115
	2.5	9092	9091	9090	9118	9125	9118	9090	9091	9092
	5	9062	9058	9052	9075	9081	9075	9052	9058	9062
	7.5	9012	9005	8994	9016	9022	9016	8994	9005	9012
	10	8943	8932	8919	8943	8949	8943	8919	8932	8943
	12.5	8853	8838	8827	8854	8858	8854	8827	8838	8853
	15	8743	8725	8718	8746	8749	8746	8718	8725	8743
	17.5	8611	8591	8589	8619	8622	8619	8589	8591	8611
	20	8459	8439	8443	8475	8476	8475	8443	8439	8459
	22.5	8285	8265	8278	8313	8314	8313	8278	8265	8285
	25	8091	8071	8094	8134	8135	8134	8094	8071	8091
	27.5	7875	7857	7891	7938	7942	7938	7891	7857	7875
	30	7634	7621	7669	7726	7736	7726	7669	7621	7634
	32.5	7373	7366	7431	7503	7521	7503	7431	7366	7373
	35	7085	7089	7176	7268	7294	7268	7176	7089	7085
	37.5	6774	6793	6906	7023	7058	7023	6906	6793	6774
	40	6434	6471	6623	6765	6806	6765	6623	6471	6434
	42.5	6075	6130	6329	6497	6540	6497	6329	6130	6075
	45	5697	5772	6024	6217	6257	6217	6024	5772	5697
	47.5	5303	5401	5710	5921	5962	5921	5710	5401	5303
	50	4895	5020	5386	5620	5658	5620	5386	5020	4895
	52.5	4477	4630	5053	5299	5347	5299	5053	4630	4477
	55	4056	4238	4711	4979	5034	4979	4711	4238	4056
	57.5	3639	3850	4365	4658	4719	4658	4365	3850	3639
	60	3228	3468	4019	4334	4394	4334	4019	3468	3228
	62.5	2827	3095	3674	3996	4040	3996	3674	3095	2827
	65	2445	2737	3337	3625	3616	3625	3337	2737	2445
	67.5	2082	2394	2997	3167	3047	3167	2997	2394	2082
	70	1741	2065	2643	2591	2397	2591	2643	2065	1741
	72.5	1424	1752	2242	2002	1848	2002	2242	1752	1424
	75	1130	1459	1785	1523	1410	1523	1785	1459	1130
	77.5	864	1187	1340	1138	1039	1138	1340	1187	864
	80	626	922	973	823	743	823	973	922	626
	82.5	421	659	682	580	531	580	682	659	421
	85	246	409	443	372	343	372	443	409	246
	87.5	97	189	213	188	171	188	213	189	97
90	0	15	14	9	3	9	14	15	0	

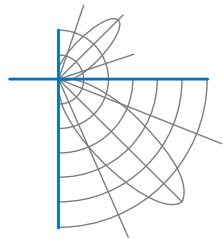


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Luminous Intensity (Candela) Table

	Lateral (C-Plane) Angles									
Vertical (Gamma) Angles		0	22.5	45	67.5	90	112.5	135	157.5	180
	90	0	15	14	9	3	9	14	15	0
	92.5	0	4	6	4	0	4	6	4	0
	95	0	2	4	3	0	3	4	2	0
	97.5	0	2	3	3	0	0	3	2	0
	100	0	0	3	3	0	0	3	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	83	77		85	80	76		82	78	74		79	75	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		65	58	53		62	57	53	50
5	76	63	54	48		74	62	54	47		60	52	47		58	51	46		56	50	46	44
6	70	57	48	41		68	56	47	41		54	47	41		52	46	41		51	45	40	38
7	65	52	43	37		63	51	42	36		49	42	36		48	41	36		46	40	36	34
8	61	47	39	33		59	46	38	33		45	38	32		44	37	32		43	36	32	30
9	57	43	35	29		55	43	35	29		41	34	29		40	34	29		39	33	29	27
10	53	40	32	27		52	39	32	27		38	31	26		37	31	26		36	31	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.

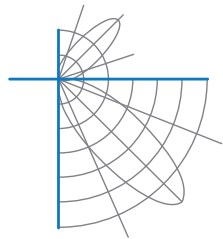
Circle of Light Plot

Height(ft)	Illuminance at Nadir (fc)	Ground-level distance to half-of-nadir illuminance (ft)	
		0-180 deg	90-270 deg
6.0	253.2	7.46	7.58
8.0	142.4	9.95	10.11
10.0	91.2	12.44	12.63
12.0	63.3	14.92	15.16
14.0	46.5	17.41	17.69
16.0	35.6	19.90	20.21

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	28229	28229	28229
45	24949	26385	27404
55	21902	25436	27182
65	17919	24451	26497
75	13523	21358	16866
85	8754	15753	12175

Spacing Criterion

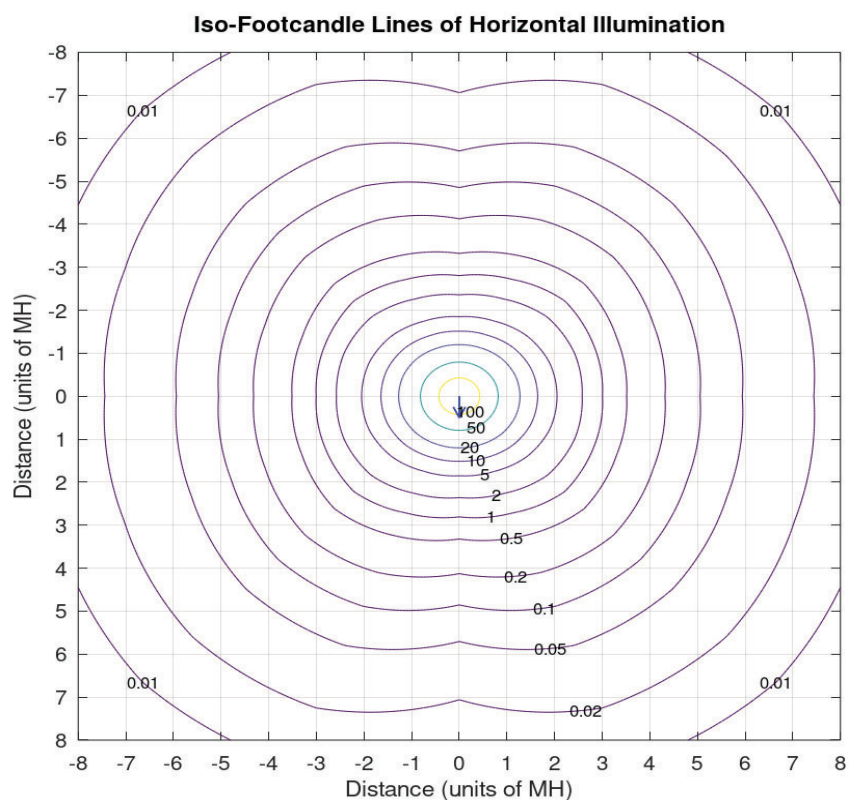
0 degree plane:	1.2
90 degree plane:	1.3
180 degree plane:	1.2
270 degree plane:	1.3



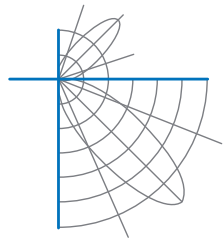
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Iso-Illuminance Plot

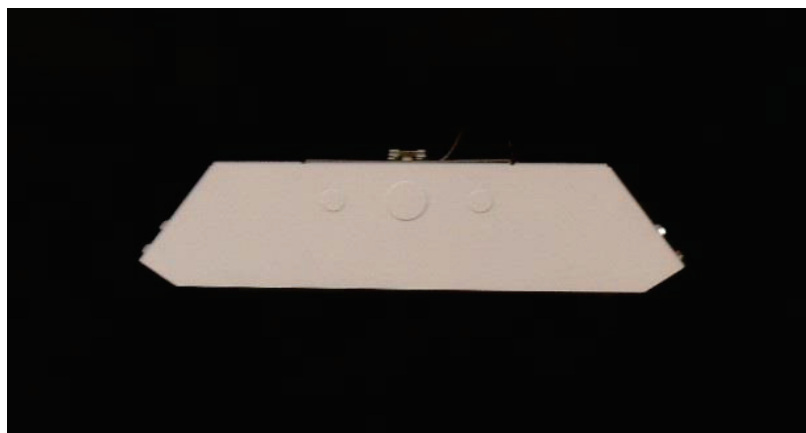


The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution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



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Additional Pictures of Test Subject



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Test Distance 9.5 m
Ambient Temperature 25.0 °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.