LightLab INTERNATIONAL ALLENTOWN LLC

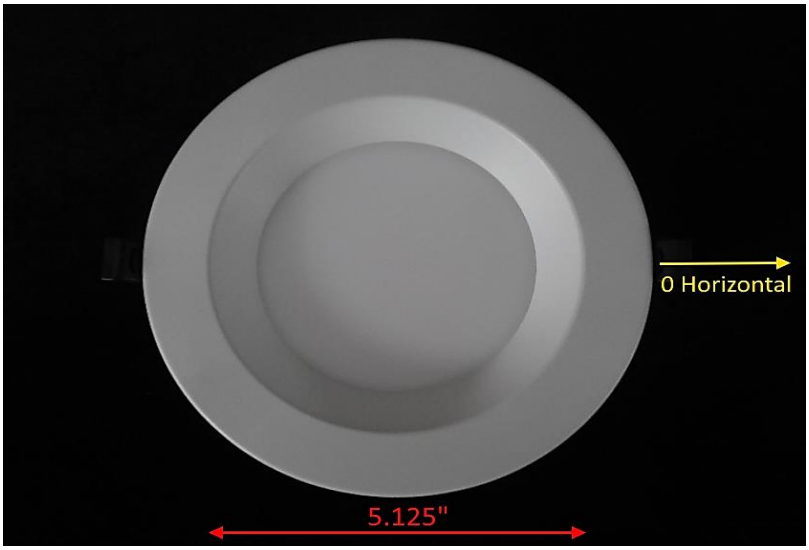
NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA001935-002

Indoor Distribution Photometry Test Report

Catalog Number: DLD6S-10CS
Recessed mounted, formed white painted aluminum housing/lower reflector, white circuit board, white interior reflector, diffuse white plastic enclosure.
20 white LEDs on AL21022A 1.0 CRI90 LED board, switch set for 3000K.
One Topaz DLD6S-10CS LED driver in formed steel box.



Prepared For:
Topaz Lighting, A Southwire Company
925 Waverly Avenue
Holtsville, NY 11742, USA

Performance Summary					
Input Voltage	120.0	Vac	Luminous Flux	956.0	Lumens
Input Current	0.0843	A	Total Efficacy	97.6	Lm/W
Input Power	9.80	W	Downward Flux	956.0	Lumens
Frequency	60.00	Hz	Downward Flux	100.0	% of Total
Power Factor	0.969				
Current THD	14.1	%			

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

Test date: 01/12/2023
Report date: 01/13/2023

Signed: Michael L. Grather Digitally signed by Michael L. Grather Date: 2023.01.20 14:28:16 -05'00'

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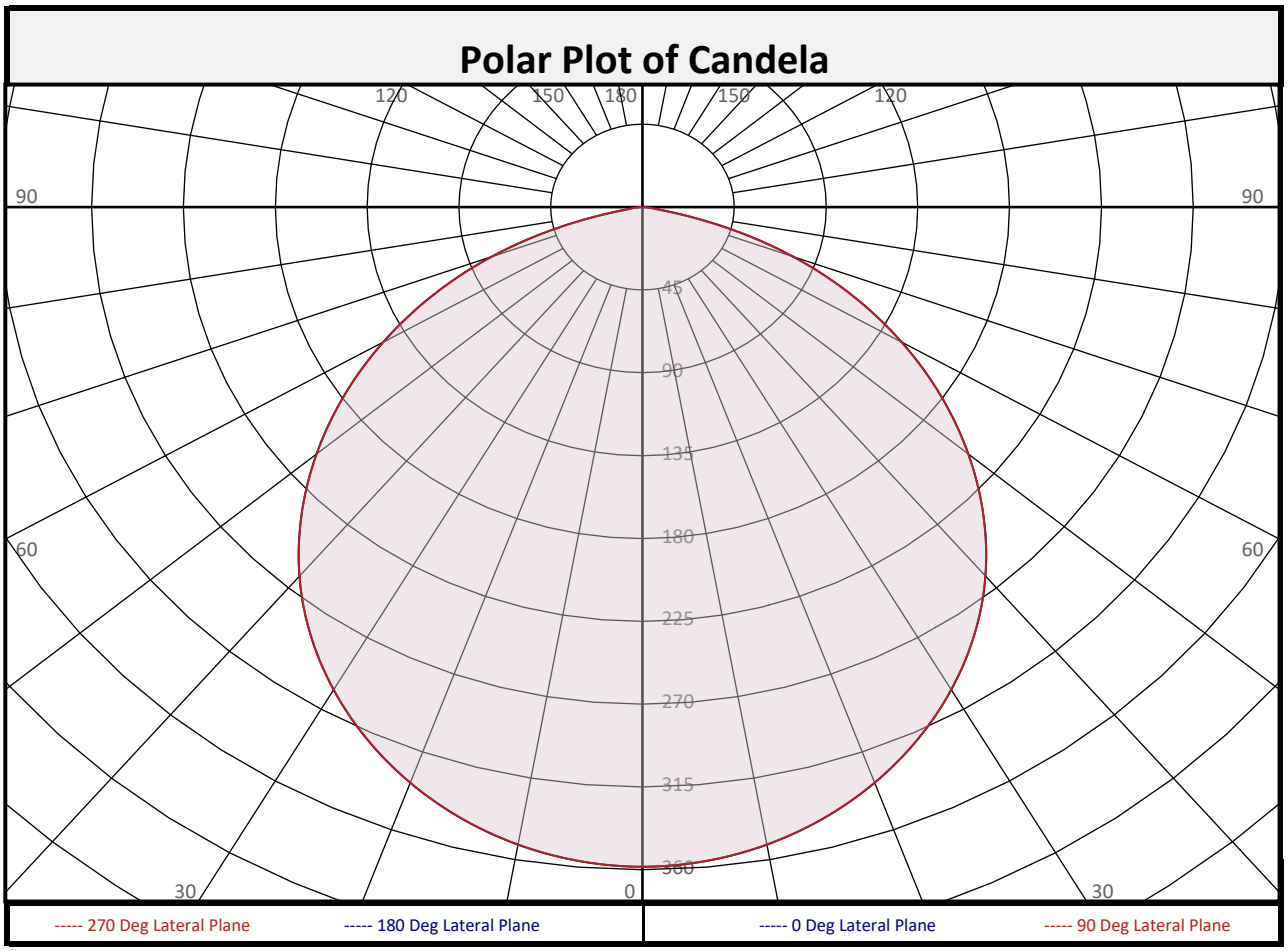

Zonal Flux Summary									
Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	33.9	3.5%	90-100	0.0	0.0%	0-20	130.9	13.7%
10-20	97.0	10.1%	100-110	0.0	0.0%	0-30	277.9	29.1%
20-30	147.1	15.4%	110-120	0.0	0.0%	0-40	455.2	47.6%
30-40	177.3	18.5%	120-130	0.0	0.0%	0-60	796.5	83.3%
40-50	182.0	19.0%	130-140	0.0	0.0%	0-80	952.2	99.6%
50-60	159.2	16.7%	140-150	0.0	0.0%	10-90	922.1	96.5%
60-70	111.7	11.7%	150-160	0.0	0.0%	20-50	506.4	53.0%
70-80	44.0	4.6%	160-170	0.0	0.0%	40-90	500.8	52.4%
80-90	3.8	0.4%	170-180	0.0	0.0%	60-90	159.5	16.7%
0-90	956.0	100.0%	90-180	0.0	0.0%	0-180	956.0	100.0%

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Luminous Intensity (Candela) Table

Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	Lateral (C-Plane) Angles									
		0	22.5	45	67.5	90	112.5	135	157.5	180
	0	358	358	358	358	358	358	358	358	358
	2.5	358	358	358	358	358	358	358	358	358
	5	357	357	357	357	357	357	357	357	357
	7.5	355	355	355	355	355	355	355	355	355
	10	352	352	352	352	352	352	352	352	352
	12.5	348	348	348	348	348	348	348	348	348
	15	344	344	344	344	344	344	344	344	344
	17.5	339	339	339	339	339	339	339	339	339
	20	333	333	333	333	333	333	333	333	333
	22.5	326	326	326	326	326	326	326	326	326
	25	319	319	319	319	319	319	319	319	319
	27.5	311	311	311	311	311	311	311	311	311
	30	303	303	303	303	303	303	303	303	303
	32.5	294	294	294	294	294	294	294	294	294
	35	284	284	284	284	284	284	284	284	284
	37.5	273	273	273	273	273	273	273	273	273
	40	261	261	261	261	261	261	261	261	261
	42.5	249	249	249	249	249	249	249	249	249
	45	236	236	236	236	236	236	236	236	236
	47.5	223	223	223	223	223	223	223	223	223
	50	208	208	208	208	208	208	208	208	208
	52.5	194	194	194	194	194	194	194	194	194
	55	178	178	178	178	178	178	178	178	178
	57.5	163	163	163	163	163	163	163	163	163
	60	147	147	147	147	147	147	147	147	147
	62.5	130	130	130	130	130	130	130	130	130
	65	113	113	113	113	113	113	113	113	113
	67.5	96	96	96	96	96	96	96	96	96
	70	78	78	78	78	78	78	78	78	78
	72.5	60	60	60	60	60	60	60	60	60
	75	41	41	41	41	41	41	41	41	41
	77.5	23	23	23	23	23	23	23	23	23
	80	10	10	10	10	10	10	10	10	10
	82.5	5	5	5	5	5	5	5	5	5
	85	3	3	3	3	3	3	3	3	3
	87.5	1	1	1	1	1	1	1	1	1
	90	0	0	0	0	0	0	0	0	0

16 lateral half-planes of data were acquired, 22.5 degree increments shown.

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Luminous Intensity (Candela) Table

Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	Lateral (C-Plane) Angles								
	0	22.5	45	67.5	90	112.5	135	157.5	180
90	0	0	0	0	0	0	0	0	0
92.5	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0
97.5	0	0	0	0	0	0	0	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

16 lateral half-planes of data were acquired, 22.5 degree increments shown.

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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	110	105	101	98		107	103	100	96		99	96	93		95	93	91		91	90	88	86
2	100	92	86	81		98	91	85	80		87	82	78		84	80	76		81	77	74	72
3	92	82	74	67		89	80	73	67		77	71	66		74	69	65		72	67	63	61
4	84	72	64	57		82	71	63	57		69	62	56		66	60	55		64	59	55	53
5	77	65	56	50		75	64	55	49		61	54	49		60	53	48		58	52	48	46
6	71	58	50	43		69	57	49	43		56	48	43		54	47	42		52	46	42	40
7	66	53	44	38		64	52	44	38		51	43	38		49	42	38		48	42	37	35
8	62	48	40	34		60	48	40	34		46	39	34		45	38	34		44	38	33	31
9	58	44	36	31		56	44	36	31		43	35	30		41	35	30		40	35	30	28
10	54	41	33	28		53	40	33	28		39	32	28		38	32	28		38	32	27	26

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	10.0	7.53	7.53
8.0	5.6	10.04	10.04
10.0	3.6	12.56	12.56
12.0	2.5	15.07	15.07
14.0	1.8	17.58	17.58
16.0	1.4	20.09	20.09

Spacing Criterion

SC: 1.3

Average Luminance (cd/m^2)

	0 deg Plane	45 deg Plane	90 deg Plane
0	26927	26927	26927
45	25104	25104	25104
55	23369	23369	23369
65	20140	20140	20140
75	11970	11970	11970
85	2814	2814	2814

Beam and Field Angle

0-180 Degree Plane

Beam Angle: 109.7°

Field Angle: 151.4°

90-270 Degree Plane

Beam Angle: 109.7°

Field Angle: 151.4°

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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	22.3	23.9	22.6	24.2	24.5	22.3	23.9	22.6	24.2	24.5
	3H	23.8	25.2	24.1	25.5	25.9	23.8	25.2	24.1	25.5	25.9
	4H	24.1	25.4	24.5	25.8	26.2	24.1	25.4	24.5	25.8	26.2
	6H	24.2	25.4	24.6	25.8	26.1	24.2	25.4	24.6	25.8	26.1
	8H	24.1	25.3	24.5	25.7	26.1	24.1	25.3	24.5	25.7	26.1
	12H	24.1	25.2	24.5	25.6	26.0	24.1	25.2	24.5	25.6	26.0
4H	2H	22.8	24.2	23.2	24.5	24.9	22.8	24.2	23.2	24.5	24.9
	3H	24.5	25.6	24.9	26.0	26.4	24.5	25.6	24.9	26.0	26.4
	4H	24.9	25.9	25.3	26.3	26.7	24.9	25.9	25.3	26.3	26.7
	6H	25.0	25.8	25.4	26.3	26.7	25.0	25.8	25.4	26.3	26.7
	8H	24.9	25.7	25.4	26.2	26.7	24.9	25.7	25.4	26.2	26.7
	12H	24.9	25.6	25.4	26.1	26.6	24.9	25.6	25.4	26.1	26.6
8H	4H	25.0	25.8	25.4	26.2	26.7	25.0	25.8	25.4	26.2	26.7
	6H	25.1	25.7	25.6	26.2	26.7	25.1	25.7	25.6	26.2	26.7
	8H	25.0	25.6	25.5	26.1	26.6	25.0	25.6	25.5	26.1	26.6
	12H	25.0	25.6	25.5	26.0	26.6	25.0	25.6	25.5	26.0	26.6
12H	4H	25.0	25.7	25.4	26.2	26.6	25.0	25.7	25.4	26.2	26.6
	6H	25.0	25.6	25.6	26.1	26.6	25.0	25.6	25.6	26.1	26.6
	8H	25.0	25.5	25.5	26.0	26.6	25.0	25.5	25.5	26.0	26.6

Maximum UGR = 26.7

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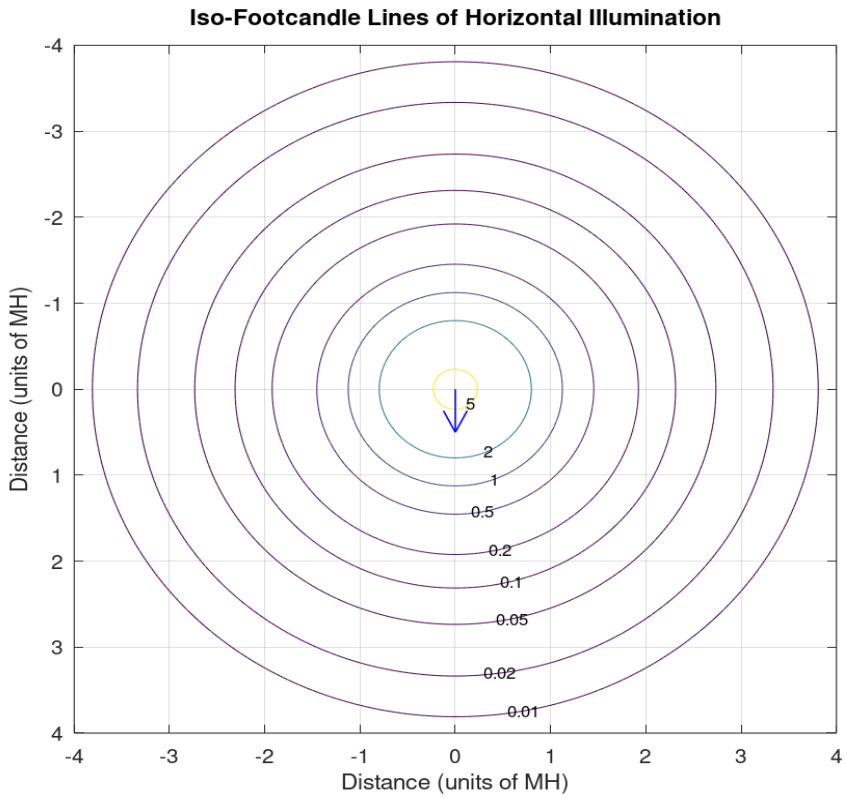
Iso-Illuminance Plot



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.

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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 IES LM-79-19. Format of reports and angular increments based on IES LM-41-20 and LM-46-20.

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.