LightLab INTERNATIONAL ALLENTOWN LLC

NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA002055-001

Indoor Distribution Photometry Test Report

Catalog Number: DLD3B-7CS 4000K Setting
Recessed mounted, formed white painted aluminum housing,
white interior reflector, diffuse white plastic enclosure.
16 white LEDs, switch set for 4000K.
One Topaz DLD3B-7CS 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	626.3	Lumens
Input Current	0.0637	A	Total Efficacy	85.4	Lm/W
Input Power	7.33	W	Downward Flux	626.3	Lumens
Frequency	60.00	Hz	Downward Flux	100.0	% of Total
Power Factor	0.959				
Current THD	16.4	%			

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

Test date: 03/27/2023
Report date: 03/27/2023

Signed: Michael L. Grather Digitally signed by Michael L. Grather Date: 2023.03.28 16:22:07 -04'00'

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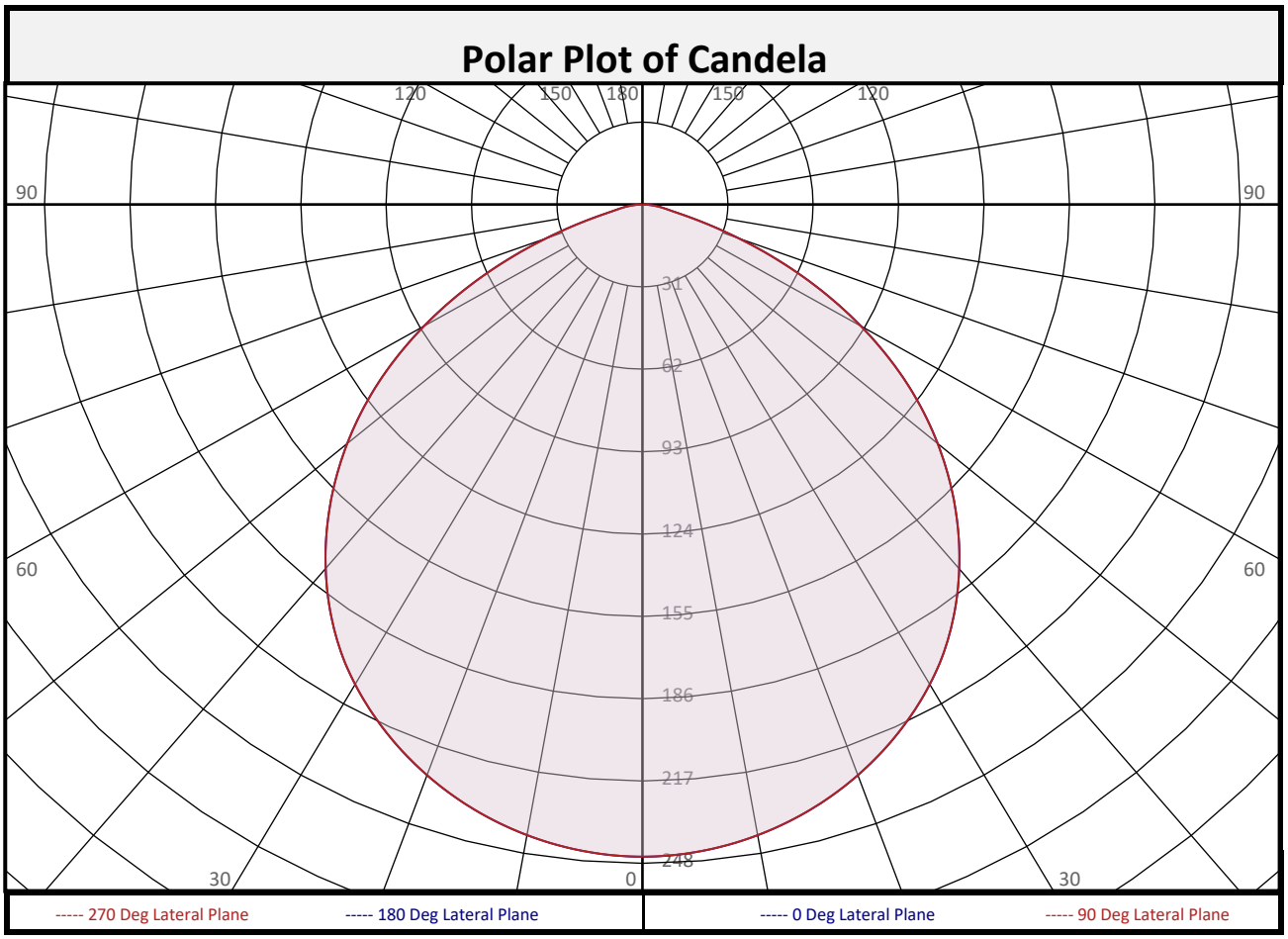

Zonal Flux Summary

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	23.2	3.7%	90-100	0.0	0.0%	0-20	89.8	14.3%
10-20	66.5	10.6%	100-110	0.0	0.0%	0-30	190.9	30.5%
20-30	101.2	16.2%	110-120	0.0	0.0%	0-40	312.8	49.9%
30-40	121.9	19.5%	120-130	0.0	0.0%	0-60	540.4	86.3%
40-50	123.5	19.7%	130-140	0.0	0.0%	0-80	622.7	99.4%
50-60	104.1	16.6%	140-150	0.0	0.0%	10-90	603.1	96.3%
60-70	63.3	10.1%	150-160	0.0	0.0%	20-50	346.5	55.3%
70-80	19.0	3.0%	160-170	0.0	0.0%	40-90	313.5	50.1%
80-90	3.6	0.6%	170-180	0.0	0.0%	60-90	85.9	13.7%
0-90	626.3	100.0%	90-180	0.0	0.0%	0-180	626.3	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	245	245	245	245	245	245	245	245	245
	2.5	245	245	245	245	245	245	245	245	245
	5	244	244	244	244	244	244	244	244	244
	7.5	243	243	243	243	243	243	243	243	243
	10	241	241	241	241	241	241	241	241	241
	12.5	239	239	239	239	239	239	239	239	239
	15	236	236	236	236	236	236	236	236	236
	17.5	232	232	232	232	232	232	232	232	232
	20	229	229	229	229	229	229	229	229	229
	22.5	224	224	224	224	224	224	224	224	224
	25	220	220	220	220	220	220	220	220	220
	27.5	214	214	214	214	214	214	214	214	214
	30	209	209	209	209	209	209	209	209	209
	32.5	202	202	202	202	202	202	202	202	202
	35	195	195	195	195	195	195	195	195	195
	37.5	187	187	187	187	187	187	187	187	187
	40	179	179	179	179	179	179	179	179	179
	42.5	170	170	170	170	170	170	170	170	170
	45	160	160	160	160	160	160	160	160	160
	47.5	150	150	150	150	150	150	150	150	150
	50	140	140	140	140	140	140	140	140	140
	52.5	129	129	129	129	129	129	129	129	129
	55	117	117	117	117	117	117	117	117	117
	57.5	105	105	105	105	105	105	105	105	105
	60	92	92	92	92	92	92	92	92	92
	62.5	78	78	78	78	78	78	78	78	78
	65	64	64	64	64	64	64	64	64	64
	67.5	50	50	50	50	50	50	50	50	50
	70	37	37	37	37	37	37	37	37	37
	72.5	25	25	25	25	25	25	25	25	25
	75	16	16	16	16	16	16	16	16	16
	77.5	10	10	10	10	10	10	10	10	10
	80	8	8	8	8	8	8	8	8	8
	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	106	102	99		107	104	100	97		100	97	94		96	93	91		92	90	89	87
2	101	93	87	82		98	92	86	81		88	83	79		85	81	77		82	79	76	74
3	93	83	75	69		90	81	74	69		78	72	67		76	70	66		73	69	65	63
4	85	74	65	59		83	72	65	59		70	63	58		68	62	57		66	61	56	54
5	78	66	57	51		76	65	57	51		63	56	50		61	55	50		59	54	49	47
6	72	60	51	45		70	59	51	45		57	50	44		55	49	44		54	48	44	42
7	67	54	46	40		65	53	45	40		52	45	39		50	44	39		49	43	39	37
8	63	49	41	35		61	49	41	35		47	40	35		46	40	35		45	39	35	33
9	58	45	37	32		57	45	37	32		44	37	32		43	36	32		42	36	31	30
10	55	42	34	29		54	41	34	29		40	34	29		39	33	29		39	33	29	27

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	6.8	7.57	7.57
8.0	3.8	10.09	10.09
10.0	2.5	12.62	12.62
12.0	1.7	15.14	15.14
14.0	1.3	17.67	17.67
16.0	1.0	20.19	20.19

Spacing Criterion

SC: 1.3

Average Luminance (cd/m^2)

	0 deg Plane	45 deg Plane	90 deg Plane
0	53832	53832	53832
45	49726	49726	49726
55	44717	44717	44717
65	33301	33301	33301
75	13172	13172	13172
85	8042	8042	8042

Beam and Field Angle

0-180 Degree Plane

Beam Angle: 107.6°

Field Angle: 145.2°

90-270 Degree Plane

Beam Angle: 107.6°

Field Angle: 145.2°

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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	24.5	26.1	24.9	26.4	26.7	24.5	26.1	24.9	26.4	26.7
	3H	25.4	26.8	25.8	27.2	27.5	25.4	26.8	25.8	27.2	27.5
	4H	25.6	26.9	25.9	27.2	27.6	25.6	26.9	25.9	27.2	27.6
	6H	25.6	26.8	26.0	27.2	27.6	25.6	26.8	26.0	27.2	27.6
	8H	25.6	26.7	26.0	27.1	27.5	25.6	26.7	26.0	27.1	27.5
	12H	25.6	26.7	26.0	27.1	27.5	25.6	26.7	26.0	27.1	27.5
4H	2H	24.9	26.2	25.3	26.6	26.9	24.9	26.2	25.3	26.6	26.9
	3H	26.0	27.1	26.4	27.5	27.9	26.0	27.1	26.4	27.5	27.9
	4H	26.1	27.1	26.5	27.5	27.9	26.1	27.1	26.5	27.5	27.9
	6H	26.2	27.0	26.6	27.5	27.9	26.2	27.0	26.6	27.5	27.9
	8H	26.2	27.0	26.6	27.4	27.9	26.2	27.0	26.6	27.4	27.9
	12H	26.2	26.9	26.7	27.4	27.8	26.2	26.9	26.7	27.4	27.8
8H	4H	26.1	26.9	26.6	27.3	27.8	26.1	26.9	26.6	27.3	27.8
	6H	26.2	26.9	26.7	27.3	27.8	26.2	26.9	26.7	27.3	27.8
	8H	26.2	26.8	26.7	27.3	27.8	26.2	26.8	26.7	27.3	27.8
	12H	26.2	26.8	26.8	27.3	27.8	26.2	26.8	26.8	27.3	27.8
12H	4H	26.1	26.8	26.6	27.3	27.7	26.1	26.8	26.6	27.3	27.7
	6H	26.2	26.8	26.7	27.2	27.8	26.2	26.8	26.7	27.2	27.8
	8H	26.2	26.7	26.7	27.2	27.8	26.2	26.7	26.7	27.2	27.8

Maximum UGR = 27.9

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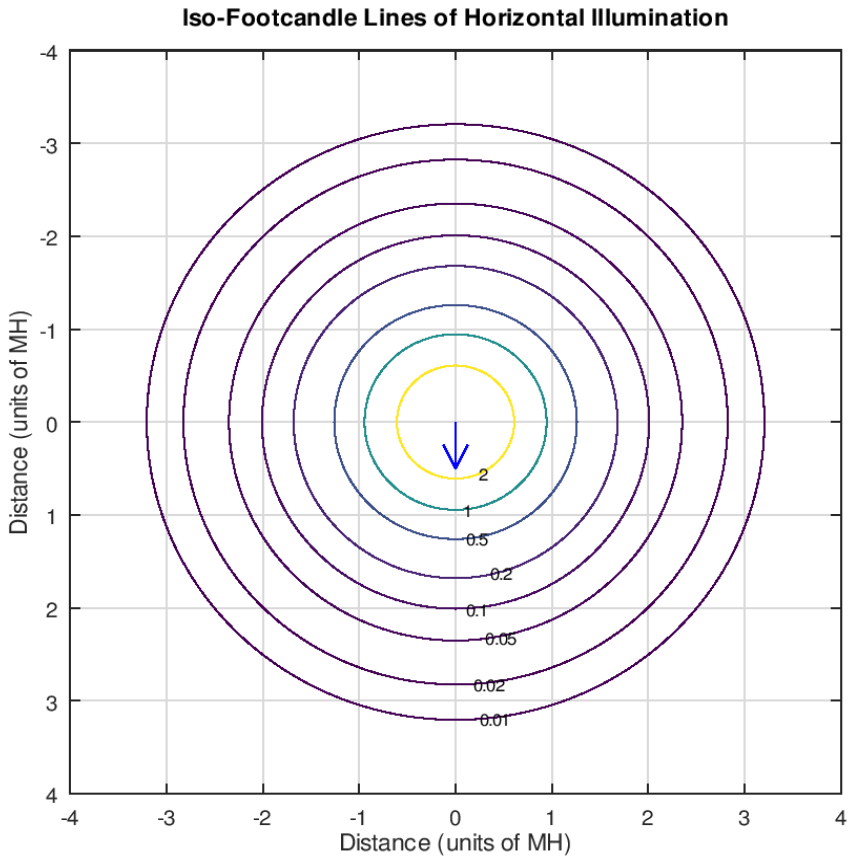
Iso-Illuminance Plot



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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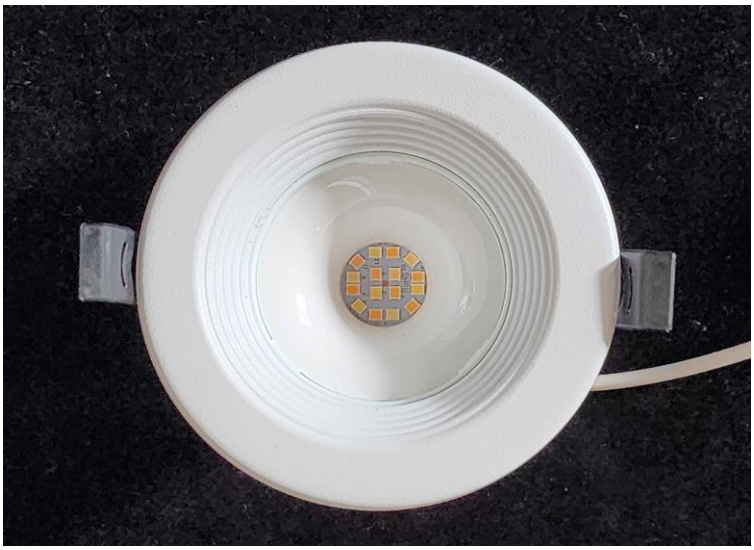
Additional Pictures of Test Subject



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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 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.