LightLab INTERNATIONAL ALLENTOWN LLC

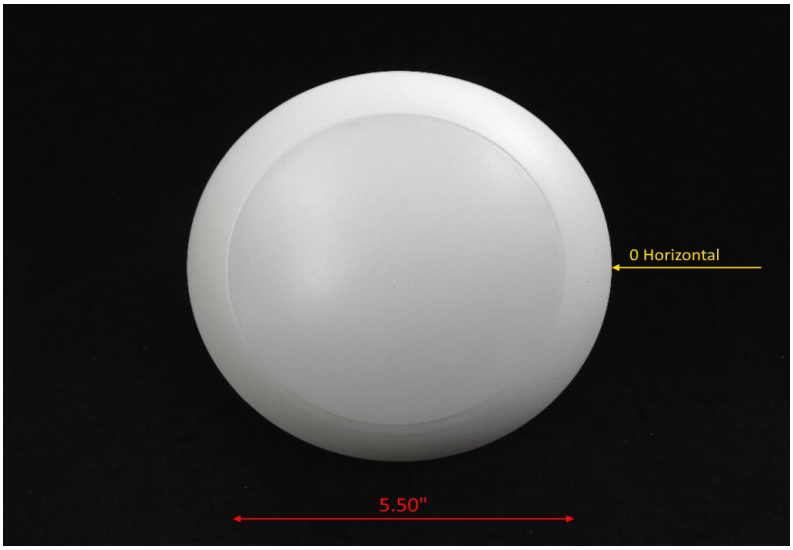
NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA001285-003

Indoor Distribution Photometry Test Report

Catalog Number: SDL6/15W/WH/D/CTS-46 - 3000K Setting
Recessed mounted, formed aluminum housing, clear plastic enclosure over LEDs, translucent white plastic outer enclosure.
40 white LEDs, one AL19020E LED board
One internal LED driver



Prepared For:
Topaz Lighting Corp
925 Waverly Avenue
Holtsville, NY 11742, USA

Performance Summary					
Input Voltage	120.0	V	Luminous Flux	1181.7	Lumens
Input Current	0.1311	A	Total Efficacy	75.9	Lm/W
Input Power	15.57	W	Downward Flux	1173.4	Lumens
Frequency	60.00	Hz	Downward Flux	99.3	% of Total
Power Factor	0.989				
Current THD	6.6	%			

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

Test date: 07/20/2020
Report date: 07/21/2020

Signed: Michael L. Grather

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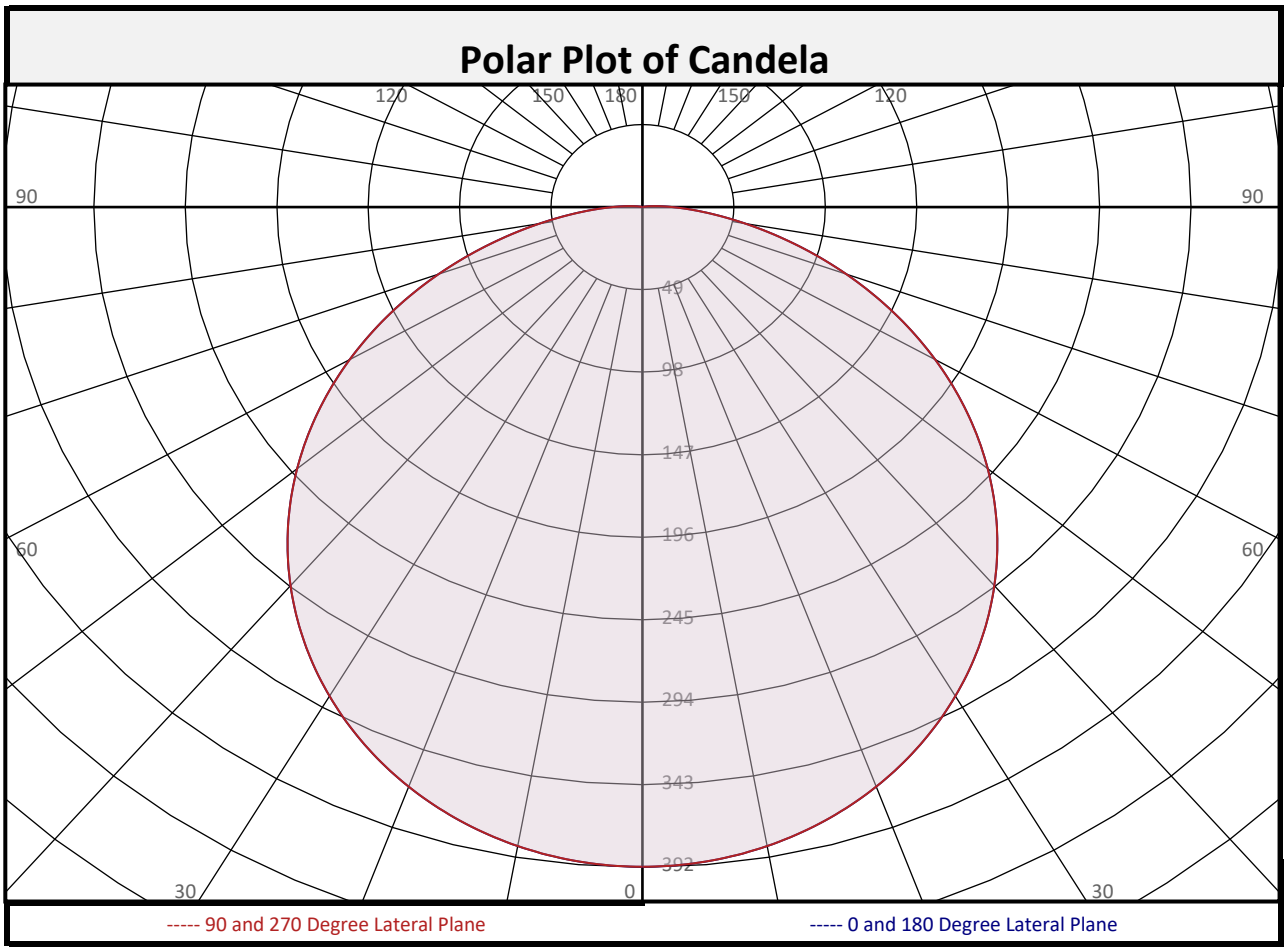

Zonal Flux Summary									
Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total	Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	37.1	3.1%	90-100	7.7	0.7%	0-20	143.6	12.2%
10-20	106.5	9.0%	100-110	0.6	0.1%	0-30	306.0	25.9%
20-30	162.4	13.7%	110-120	0.0	0.0%	0-40	503.6	42.6%
30-40	197.5	16.7%	120-130	0.0	0.0%	0-60	900.4	76.2%
40-50	207.2	17.5%	130-140	0.0	0.0%	0-80	1137	96.2%
50-60	189.7	16.1%	140-150	0.0	0.0%	10-90	1136	96.1%
60-70	147.2	12.5%	150-160	0.0	0.0%	20-50	567.1	48.0%
70-80	89.4	7.6%	160-170	0.0	0.0%	40-90	669.9	56.7%
80-90	36.4	3.1%	170-180	0.0	0.0%	60-90	273.0	23.1%
0-90	1173	99.3%	90-180	8.3	0.7%	0-180	1182	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	392	392	392	392	392	392	392	392	392
	2.5	391	391	391	391	391	391	391	391	391
	5	390	390	390	390	390	390	390	390	390
	7.5	388	388	388	388	388	388	388	388	388
	10	385	385	385	385	385	385	385	385	385
	12.5	382	382	382	382	382	382	382	382	382
	15	377	377	377	377	377	377	377	377	377
	17.5	372	372	372	372	372	372	372	372	372
	20	366	366	366	366	366	366	366	366	366
	22.5	360	360	360	360	360	360	360	360	360
	25	352	352	352	352	352	352	352	352	352
	27.5	344	344	344	344	344	344	344	344	344
	30	335	335	335	335	335	335	335	335	335
	32.5	326	326	326	326	326	326	326	326	326
	35	316	316	316	316	316	316	316	316	316
	37.5	305	305	305	305	305	305	305	305	305
	40	293	293	293	293	293	293	293	293	293
	42.5	281	281	281	281	281	281	281	281	281
	45	269	269	269	269	269	269	269	269	269
	47.5	255	255	255	255	255	255	255	255	255
	50	242	242	242	242	242	242	242	242	242
	52.5	227	227	227	227	227	227	227	227	227
	55	212	212	212	212	212	212	212	212	212
	57.5	197	197	197	197	197	197	197	197	197
	60	181	181	181	181	181	181	181	181	181
	62.5	165	165	165	165	165	165	165	165	165
	65	149	149	149	149	149	149	149	149	149
	67.5	132	132	132	132	132	132	132	132	132
	70	116	116	116	116	116	116	116	116	116
	72.5	100	100	100	100	100	100	100	100	100
	75	84	84	84	84	84	84	84	84	84
	77.5	69	69	69	69	69	69	69	69	69
	80	55	55	55	55	55	55	55	55	55
	82.5	43	43	43	43	43	43	43	43	43
	85	32	32	32	32	32	32	32	32	32
	87.5	23	23	23	23	23	23	23	23	23
	90	16	16	16	16	16	16	16	16	16

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Luminous Intensity (Candela) Table

Vertical (Gamma) Angles	Lateral (C-Plane) Angles									
	0	22.5	45	67.5	90	112.5	135	157.5	180
90	16	16	16	16	16	16	16	16	16
92.5	10	10	10	10	10	10	10	10	10
95	6	6	6	6	6	6	6	6	6
97.5	3	3	3	3	3	3	3	3	3
100	2	2	2	2	2	2	2	2	2
102.5	1	1	1	1	1	1	1	1	1
105	1	1	1	1	1	1	1	1	1
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		101	101	101	99
1	108	103	98	94		105	100	96	93		96	93	90		92	89	87		88	86	84	82
2	98	89	82	76		95	87	81	75		84	78	73		80	76	72		77	73	70	68
3	89	78	70	63		86	76	69	62		73	67	61		70	65	60		68	63	59	57
4	81	69	60	53		79	68	59	53		65	58	52		63	56	51		60	55	50	48
5	75	62	52	46		73	60	52	45		58	51	45		56	49	44		54	48	44	41
6	69	55	46	40		67	54	46	40		52	45	39		51	44	39		49	43	38	36
7	64	50	41	35		62	49	41	35		48	40	35		46	39	34		45	39	34	32
8	59	46	37	31		58	45	37	31		44	36	31		42	36	31		41	35	30	28
9	56	42	34	28		54	41	33	28		40	33	28		39	32	28		38	32	27	25
10	52	39	31	25		51	38	30	25		37	30	25		36	30	25		35	29	25	23

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	10.9	7.63	7.63
8.0	6.1	10.18	10.18
10.0	3.9	12.72	12.72
12.0	2.7	15.27	15.27
14.0	2.0	17.81	17.81
16.0	1.5	20.36	20.36

Average Luminance (cd/m^2)

	0 deg Plane	45 deg Plane	90 deg Plane
0	25559	25559	25559
45	22223	22223	22223
55	20724	20724	20724
65	18407	18407	18407
75	14817	14817	14817
85	10382	10382	10382

Spacing Criterion

Spacing Criterion: 1.3

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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	21.8	23.4	22.1	23.7	24.1	21.8	23.4	22.1	23.7	24.1
	3H	23.5	25.0	23.9	25.4	25.8	23.5	25.0	23.9	25.4	25.8
	4H	24.2	25.6	24.6	26.0	26.4	24.2	25.6	24.6	26.0	26.4
	6H	24.7	26.0	25.1	26.4	26.8	24.7	26.0	25.1	26.4	26.8
	8H	24.9	26.1	25.3	26.5	27.0	24.9	26.1	25.3	26.5	27.0
	12H	25.0	26.2	25.5	26.6	27.1	25.0	26.2	25.5	26.6	27.1
4H	2H	22.3	23.8	22.8	24.1	24.5	22.3	23.8	22.8	24.1	24.5
	3H	24.3	25.5	24.8	26.0	26.4	24.3	25.5	24.8	26.0	26.4
	4H	25.1	26.2	25.6	26.6	27.1	25.1	26.2	25.6	26.6	27.1
	6H	25.8	26.7	26.2	27.2	27.7	25.8	26.7	26.2	27.2	27.7
	8H	26.0	26.9	26.5	27.4	27.8	26.0	26.9	26.5	27.4	27.8
	12H	26.2	27.0	26.7	27.5	28.0	26.2	27.0	26.7	27.5	28.0
8H	4H	25.4	26.3	25.9	26.8	27.3	25.4	26.3	25.9	26.8	27.3
	6H	26.2	26.9	26.7	27.4	27.9	26.2	26.9	26.7	27.4	27.9
	8H	26.5	27.2	27.0	27.7	28.2	26.5	27.2	27.0	27.7	28.2
	12H	26.8	27.4	27.3	27.9	28.5	26.8	27.4	27.3	27.9	28.5
12H	4H	25.5	26.3	26.0	26.8	27.2	25.5	26.3	26.0	26.8	27.2
	6H	26.2	26.9	26.8	27.4	28.0	26.2	26.9	26.8	27.4	28.0
	8H	26.6	27.2	27.1	27.7	28.3	26.6	27.2	27.1	27.7	28.3

Maximum UGR = 28.5

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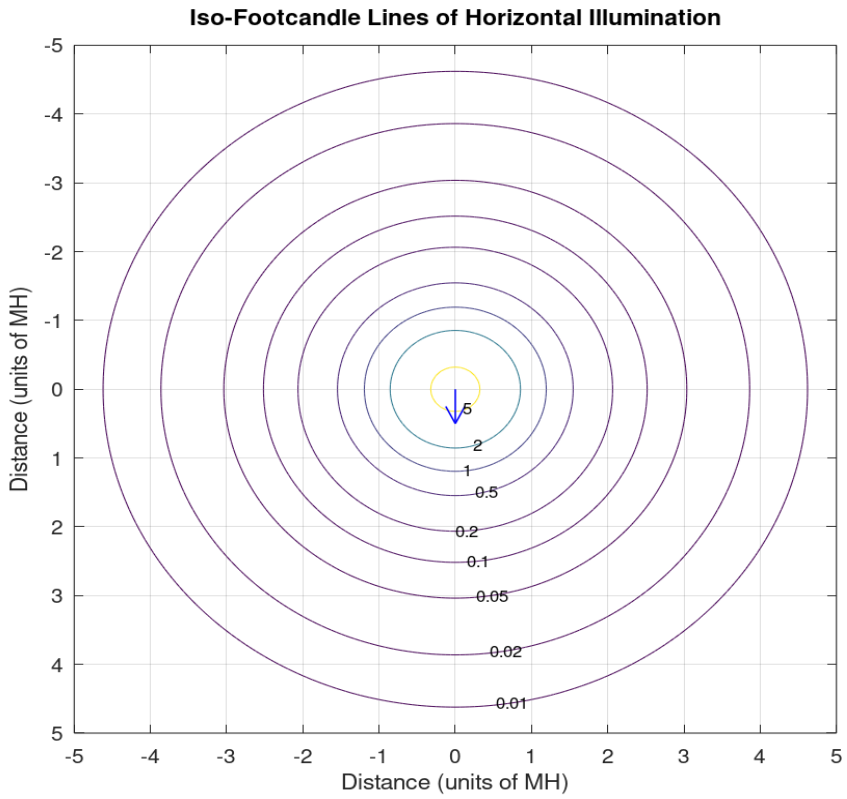
Iso-Illuminance Plot



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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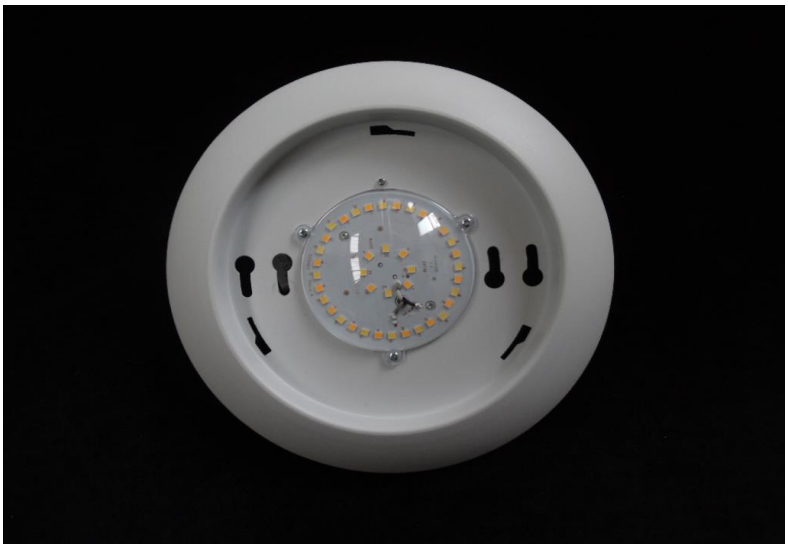
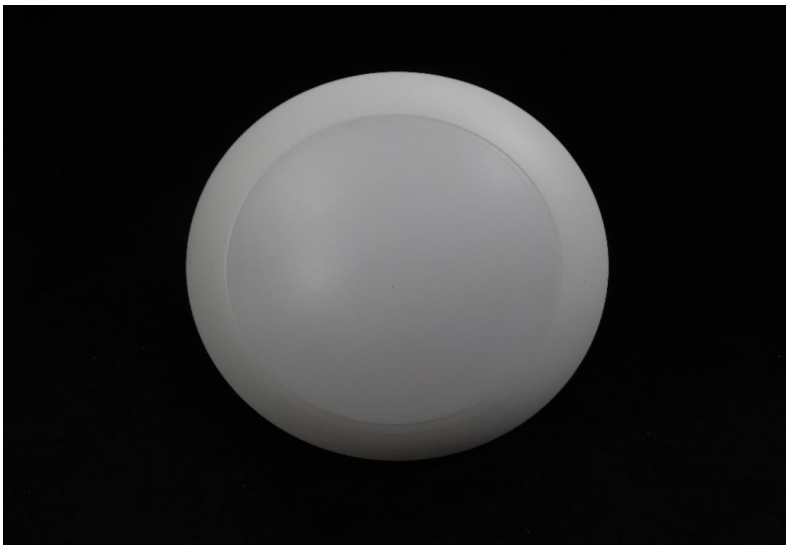
Additional Pictures of Test Subject





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Test Distance	9.5 m
Ambient Temperature	25.1 °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-41-14 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.