LightLab INTERNATIONAL ALLENTOWN LLC

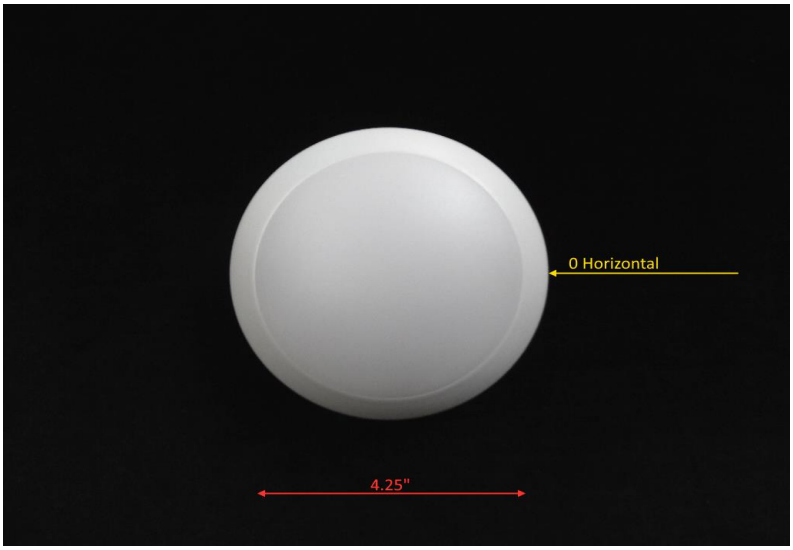
NVLAP TESTING Lab Code: 201079-0

Report of Test

LLIA001285-001

Indoor Distribution Photometry Test Report

Catalog Number: SDL4/8W/WH/D/CTS-46 - 3000K Setting
Recessed mounted, formed aluminum housing, clear plastic enclosure over LEDs, translucent white plastic outer enclosure.
26 white LEDs, one AL19021D 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	635.8	Lumens
Input Current	0.0666	A	Total Efficacy	81.8	Lm/W
Input Power	7.77	W	Downward Flux	623.1	Lumens
Frequency	60.00	Hz	Downward Flux	98.0	% of Total
Power Factor	0.973				
Current THD	11.5	%			

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

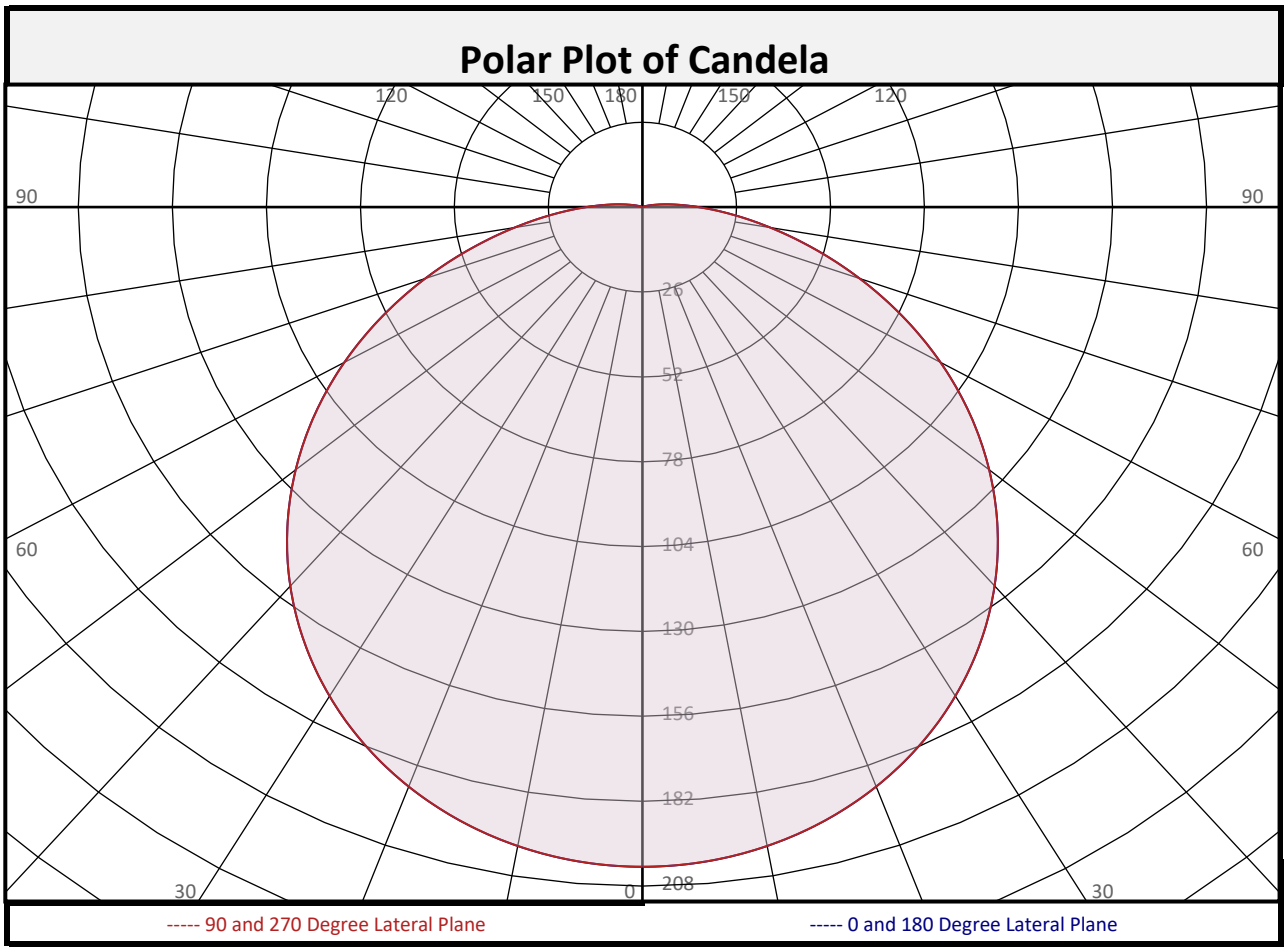
Test date: 07/20/2020
Report date: 07/21/2020

Signed: Michael L. Grather

USA west coast LightLab International, LLC, 24825 N. 16th Avenue, Suite 125, Phoenix, AZ, 85085, Ph : +1 623-434-1499, Fx : +1 623-434-1492, www.lightlabint.com
USA east coast LightLab Int'l Allentown LLC, 905 Harrison Street, Suite 135, Allentown, PA 18103, Ph: +1 484-273-0705, www.lightlaballentown.com (issuing laboratory)
Australasia & S.E. Asia LightLab International, 50 Redcliffe Gardens Drive, Clontarf, Queensland, 4019, Australia, Ph : +61 7 3283 7862, Fx : +61 7 3283 8751, www.lightlabint.com

Report of Test

LLIA001285-001



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	19.1	3.0%	90-100	10.0	1.6%	0-20	74.1	11.7%
10-20	54.9	8.6%	100-110	2.3	0.4%	0-30	157.9	24.8%
20-30	83.8	13.2%	110-120	0.3	0.0%	0-40	259.7	40.8%
30-40	101.9	16.0%	120-130	0.0	0.0%	0-60	465.5	73.2%
40-50	107.1	16.8%	130-140	0.0	0.0%	0-80	596.1	93.8%
50-60	98.7	15.5%	140-150	0.0	0.0%	10-90	604.0	95.0%
60-70	78.6	12.4%	150-160	0.0	0.0%	20-50	292.7	46.0%
70-80	52.0	8.2%	160-170	0.0	0.0%	40-90	363.4	57.2%
80-90	27.0	4.2%	170-180	0.0	0.0%	60-90	157.6	24.8%
0-90	623.1	98.0%	90-180	12.6	2.0%	0-180	635.8	100.0%

Report of Test

LLIA001285-001

Luminous Intensity (Candela) Table

Vertical (Gamma) Angles	Lateral (C-Plane) Angles									
		0	22.5	45	67.5	90	112.5	135	157.5	180
	0	202	202	202	202	202	202	202	202	202
	2.5	202	202	202	202	202	202	202	202	202
	5	201	201	201	201	201	201	201	201	201
	7.5	200	200	200	200	200	200	200	200	200
	10	199	199	199	199	199	199	199	199	199
	12.5	197	197	197	197	197	197	197	197	197
	15	195	195	195	195	195	195	195	195	195
	17.5	192	192	192	192	192	192	192	192	192
	20	189	189	189	189	189	189	189	189	189
	22.5	186	186	186	186	186	186	186	186	186
	25	182	182	182	182	182	182	182	182	182
	27.5	178	178	178	178	178	178	178	178	178
	30	173	173	173	173	173	173	173	173	173
	32.5	168	168	168	168	168	168	168	168	168
	35	163	163	163	163	163	163	163	163	163
	37.5	157	157	157	157	157	157	157	157	157
	40	151	151	151	151	151	151	151	151	151
	42.5	145	145	145	145	145	145	145	145	145
	45	139	139	139	139	139	139	139	139	139
	47.5	132	132	132	132	132	132	132	132	132
	50	125	125	125	125	125	125	125	125	125
	52.5	118	118	118	118	118	118	118	118	118
	55	110	110	110	110	110	110	110	110	110
	57.5	103	103	103	103	103	103	103	103	103
	60	95	95	95	95	95	95	95	95	95
	62.5	87	87	87	87	87	87	87	87	87
	65	79	79	79	79	79	79	79	79	79
	67.5	72	72	72	72	72	72	72	72	72
	70	64	64	64	64	64	64	64	64	64
	72.5	56	56	56	56	56	56	56	56	56
	75	49	49	49	49	49	49	49	49	49
	77.5	42	42	42	42	42	42	42	42	42
	80	36	36	36	36	36	36	36	36	36
	82.5	30	30	30	30	30	30	30	30	30
	85	24	24	24	24	24	24	24	24	24
	87.5	20	20	20	20	20	20	20	20	20
	90	15	15	15	15	15	15	15	15	15

Report of Test

LLIA001285-001

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	15	15	15	15	15	15	15	15	15
92.5	12	12	12	12	12	12	12	12	12
95	9	9	9	9	9	9	9	9	9
97.5	6	6	6	6	6	6	6	6	6
100	4	4	4	4	4	4	4	4	4
102.5	3	3	3	3	3	3	3	3	3
105	2	2	2	2	2	2	2	2	2
107.5	1	1	1	1	1	1	1	1	1
110	1	1	1	1	1	1	1	1	1
112.5	1	1	1	1	1	1	1	1	1
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

LightLab
INTERNATIONAL
ALLENTOWN LLC

NVLAP TESTING
Lab Code: 201079-0

Report of Test

LLIA001285-001

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		110	110	110		105	105	105		100	100	100	98
1	107	102	97	93		104	99	95	91		95	91	88		90	87	85		86	84	82	79
2	97	88	81	75		94	86	79	74		82	76	71		78	74	70		75	71	68	65
3	88	77	68	62		85	75	67	61		72	65	59		69	63	58		66	61	57	55
4	80	68	59	52		78	66	58	51		64	56	50		61	55	49		59	53	49	46
5	74	61	51	44		72	59	51	44		57	49	43		55	48	43		53	47	42	40
6	68	54	45	39		66	53	45	38		51	44	38		49	43	37		48	42	37	35
7	63	49	40	34		61	48	40	34		47	39	33		45	38	33		43	37	33	31
8	59	45	36	30		57	44	36	30		43	35	30		41	34	29		40	34	29	27
9	55	41	33	27		53	41	33	27		39	32	27		38	31	27		37	31	26	24
10	51	38	30	25		50	37	30	25		36	29	24		35	29	24		34	28	24	22

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	5.6	7.63	7.63
8.0	3.2	10.17	10.17
10.0	2.0	12.72	12.72
12.0	1.4	15.26	15.26
14.0	1.0	17.81	17.81
16.0	0.8	20.35	20.35

Average Luminance (cd/m^2)

	0 deg Plane	45 deg Plane	90 deg Plane
0	22085	22085	22085
45	18064	18064	18064
55	16600	16600	16600
65	14644	14644	14644
75	12171	12171	12171
85	9742	9742	9742

Spacing Criterion

Spacing Criterion: 1.3

USA west coast LightLab International, LLC, 24825 N. 16th Avenue, Suite 125, Phoenix, AZ, 85085, Ph : +1 623-434-1499, Fx : +1 623-434-1492, www.lightlabint.com
USA east coast LightLab Int'l Allentown LLC, 905 Harrison Street, Suite 135, Allentown, PA 18103, Ph: +1 484-273-0705, www.lightlaballentown.com (issuing laboratory)
Australasia & S.E. Asia LightLab International, 50 Redcliffe Gardens Drive, Clontarf, Queensland, 4019, Australia, Ph : +61 7 3283 7862, Fx : +61 7 3283 8751, www.lightlabint.com

Report of Test

LLIA001285-001

UGR TABLE - CORRECTED

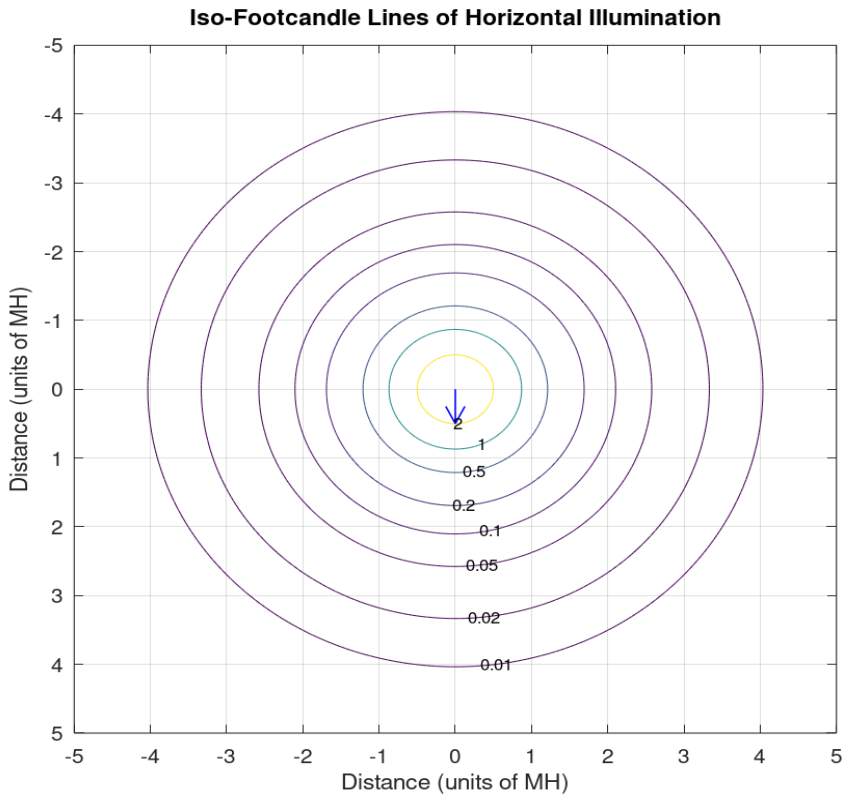
Reflectances											
Ceiling Cavity		70	70	50	50	30	70	70	50	50	30
Walls		50	30	50	30	30	50	30	50	30	30
Floor Cavity		20	20	20	20	20	20	20	20	20	20
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	20.8	22.4	21.2	22.8	23.1	20.8	22.4	21.2	22.8	23.1
	3H	22.6	24.1	23.0	24.5	24.9	22.6	24.1	23.0	24.5	24.9
	4H	23.3	24.8	23.8	25.1	25.6	23.3	24.8	23.8	25.1	25.6
	6H	24.0	25.3	24.4	25.7	26.1	24.0	25.3	24.4	25.7	26.1
	8H	24.2	25.5	24.7	25.9	26.4	24.2	25.5	24.7	25.9	26.4
	12H	24.5	25.7	24.9	26.1	26.6	24.5	25.7	24.9	26.1	26.6
4H	2H	21.4	22.8	21.8	23.2	23.6	21.4	22.8	21.8	23.2	23.6
	3H	23.4	24.6	23.9	25.1	25.5	23.4	24.6	23.9	25.1	25.5
	4H	24.3	25.4	24.8	25.8	26.3	24.3	25.4	24.8	25.8	26.3
	6H	25.1	26.0	25.5	26.5	27.0	25.1	26.0	25.5	26.5	27.0
	8H	25.4	26.3	25.9	26.8	27.3	25.4	26.3	25.9	26.8	27.3
	12H	25.7	26.5	26.2	27.0	27.5	25.7	26.5	26.2	27.0	27.5
8H	4H	24.6	25.5	25.1	26.0	26.5	24.6	25.5	25.1	26.0	26.5
	6H	25.5	26.3	26.1	26.8	27.3	25.5	26.3	26.1	26.8	27.3
	8H	26.0	26.6	26.5	27.2	27.7	26.0	26.6	26.5	27.2	27.7
	12H	26.4	27.0	26.9	27.5	28.1	26.4	27.0	26.9	27.5	28.1
12H	4H	24.7	25.5	25.2	26.0	26.5	24.7	25.5	25.2	26.0	26.5
	6H	25.6	26.3	26.2	26.8	27.4	25.6	26.3	26.2	26.8	27.4
	8H	26.1	26.7	26.6	27.2	27.8	26.1	26.7	26.6	27.2	27.8

Maximum UGR = 28.1

Report of Test

LLIA001285-001

Iso-Illuminance Plot

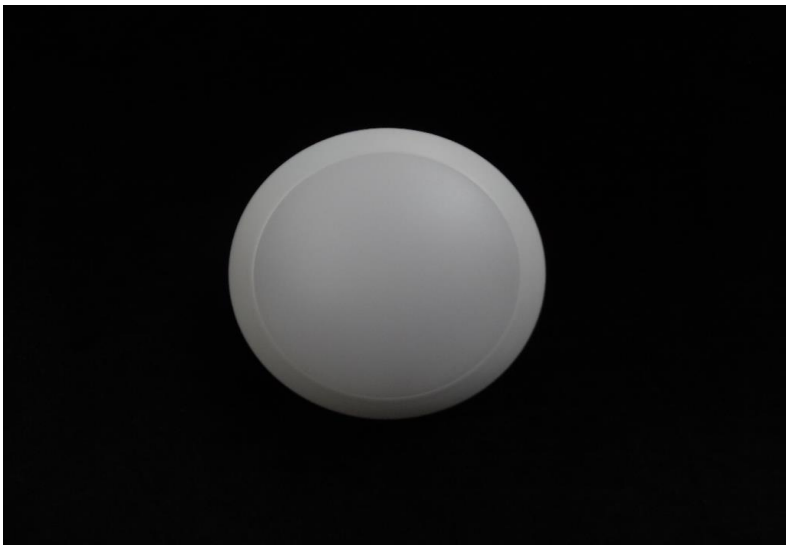


The isofootcandle values shown in the plot above are based on a mounting height of h = 8.0 feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution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

Report of Test

LLIA001285-001

Additional Pictures of Test Subject



Report of Test

LLIA001285-001

Test Distance	9.5 m
Ambient Temperature	25.2 °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.