

## Report of Test

LLIA002240-002

Indoor Distribution Photometry Test Report

Catalog Number: HBC-24L-50K-PS - 125W Setting  
Suspended downlight, cast aluminum luminaire and driver housings, clear plastic enclosure with concentric lenses.  
312 white LEDs on white circuit board  
One Sosen SS-150CNL-E260BHB LED driver



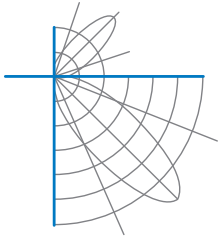
Prepared For:  
Topaz Lighting Corp  
925 Waverly Avenue  
Holtsville, NY 11742, USA

Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	20487.7 Lumens
Input Current	1.011 A	Total Efficacy	169.5 Lm/W
Input Power	120.9 W	Downward Flux	20487.7 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.997		
Current THD	3.8 %		

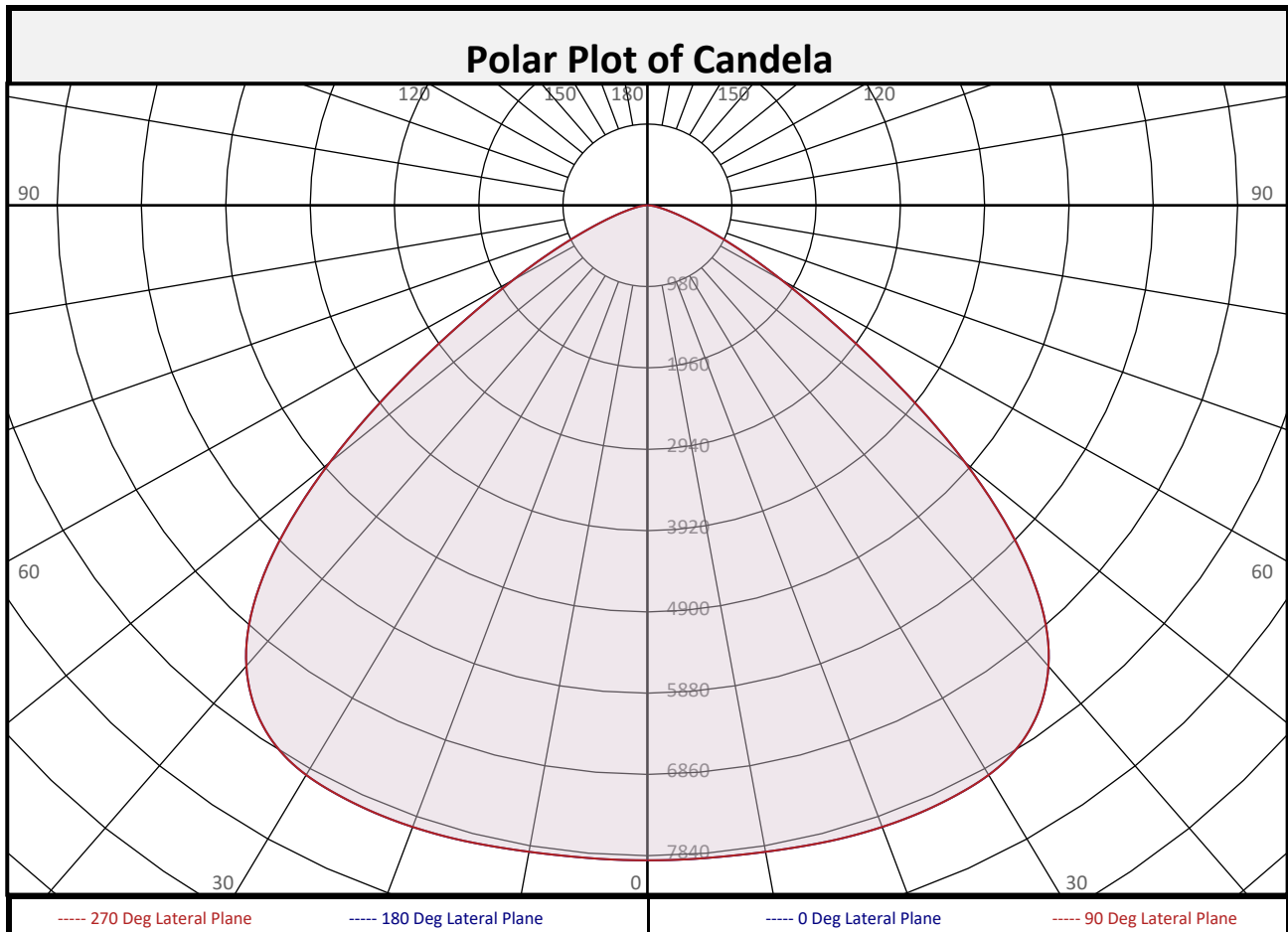
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 10/16/2023  
Report date: 10/18/2023

Signed: \_\_\_\_\_

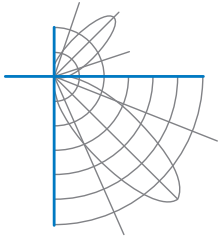


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### Zonal Flux Summary

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	754.9	3.7%	90-100	0.0	0.0%	0-20	3009	14.7%
10-20	2254	11.0%	100-110	0.0	0.0%	0-30	6696	32.7%
20-30	3688	18.0%	110-120	0.0	0.0%	0-40	11516	56.2%
30-40	4820	23.5%	120-130	0.0	0.0%	0-60	19116	93.3%
40-50	4785	23.4%	130-140	0.0	0.0%	0-80	20436	99.7%
50-60	2815	13.7%	140-150	0.0	0.0%	10-90	19733	96.3%
60-70	1036	5.1%	150-160	0.0	0.0%	20-50	13293	64.9%
70-80	285.0	1.4%	160-170	0.0	0.0%	40-90	8972	43.8%
80-90	51.4	0.3%	170-180	0.0	0.0%	60-90	1372	6.7%
0-90	20488	100.0%	90-180	0.0	0.0%	0-180	20488	100.0%



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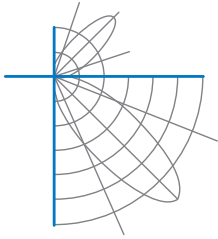
#### Luminous Intensity (Candela) Table

Lateral (C-Plane) Angles										
	0	22.5	45	67.5	90	112.5	135	157.5	180	
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	0	7896	7896	7896	7896	7896	7896	7896	7896	7896
	2.5	7897	7897	7897	7897	7897	7897	7897	7897	7897
	5	7898	7898	7898	7898	7898	7898	7898	7898	7898
	7.5	7903	7903	7903	7903	7903	7903	7903	7903	7903
	10	7914	7914	7914	7914	7914	7914	7914	7914	7914
	12.5	7929	7929	7929	7929	7929	7929	7929	7929	7929
	15	7949	7949	7949	7949	7949	7949	7949	7949	7949
	17.5	7965	7965	7965	7965	7965	7965	7965	7965	7965
	20	7975	7975	7975	7975	7975	7975	7975	7975	7975
	22.5	7980	7980	7980	7980	7980	7980	7980	7980	7980
	25	7975	7975	7975	7975	7975	7975	7975	7975	7975
	27.5	7961	7961	7961	7961	7961	7961	7961	7961	7961
	30	7931	7931	7931	7931	7931	7931	7931	7931	7931
	32.5	7861	7861	7861	7861	7861	7861	7861	7861	7861
	35	7734	7734	7734	7734	7734	7734	7734	7734	7734
	37.5	7536	7536	7536	7536	7536	7536	7536	7536	7536
	40	7252	7252	7252	7252	7252	7252	7252	7252	7252
	42.5	6852	6852	6852	6852	6852	6852	6852	6852	6852
	45	6310	6310	6310	6310	6310	6310	6310	6310	6310
	47.5	5622	5622	5622	5622	5622	5622	5622	5622	5622
50	4815	4815	4815	4815	4815	4815	4815	4815	4815	
52.5	3936	3936	3936	3936	3936	3936	3936	3936	3936	
55	3088	3088	3088	3088	3088	3088	3088	3088	3088	
57.5	2368	2368	2368	2368	2368	2368	2368	2368	2368	
60	1806	1806	1806	1806	1806	1806	1806	1806	1806	
62.5	1363	1363	1363	1363	1363	1363	1363	1363	1363	
65	997	997	997	997	997	997	997	997	997	
67.5	716	716	716	716	716	716	716	716	716	
70	510	510	510	510	510	510	510	510	510	
72.5	359	359	359	359	359	359	359	359	359	
75	248	248	248	248	248	248	248	248	248	
77.5	173	173	173	173	173	173	173	173	173	
80	120	120	120	120	120	120	120	120	120	
82.5	81	81	81	81	81	81	81	81	81	
85	42	42	42	42	42	42	42	42	42	
87.5	10	10	10	10	10	10	10	10	10	
90	0	0	0	0	0	0	0	0	0	

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

**North America (issuing laboratory)**

**Australasia & S.E. Asia**



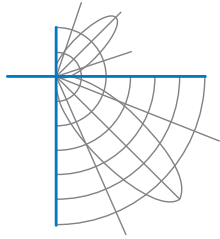
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Luminous Intensity (Candela) Table

		Lateral (C-Plane) Angles								
		0	22.5	45	67.5	90	112.5	135	157.5	180
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.	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	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	111	107	104	101	108	105	102	99	101	98	96	97	95	93	94	92	90	89			
2	103	96	90	85	100	94	89	84	91	86	83	87	84	81	85	82	79	77			
3	95	86	79	73	92	84	78	73	81	76	71	79	74	70	76	72	69	67			
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	58			
5	81	69	61	55	79	68	61	55	66	59	54	64	58	54	62	57	53	51			
6	75	63	55	49	73	62	54	48	60	53	48	58	52	48	57	51	47	45			
7	69	57	49	43	68	56	48	43	55	48	43	53	47	42	52	46	42	40			
8	65	52	44	39	63	51	44	39	50	43	38	49	43	38	48	42	38	36			
9	60	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	32			
10	57	44	37	31	55	44	36	31	43	36	31	42	36	31	41	35	31	29			

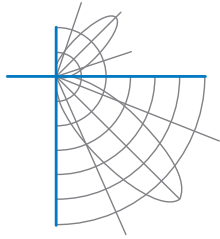
For absolute test reports, RUs are expressed as a percentage of total lumen output. For relative test reports, CUs are expressed as a percentage of total lamp output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are 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	219.3	8.90	8.90
8.0	123.4	11.87	11.87
10.0	79.0	14.83	14.83
12.0	54.8	17.80	17.80
14.0	40.3	20.77	20.77
16.0	30.8	23.73	23.73

Spacing Criterion	
SC:	1.5

Average Luminance (cd/m <sup>2</sup> )			
	0 deg Plane	45 deg Plane	90 deg Plane
0	387613	387613	387613
45	438032	438032	438032
55	264309	264309	264309
65	115776	115776	115776
75	47035	47035	47035
85	23745	23745	23745

Beam and Field Angle	
0-180 Degree Plane	
Beam Angle:	104.7°
Field Angle:	133.4°
90-270 Degree Plane	
Beam Angle:	104.7°
Field Angle:	133.4°



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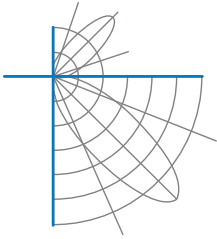
#### UGR Table - Corrected

##### 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

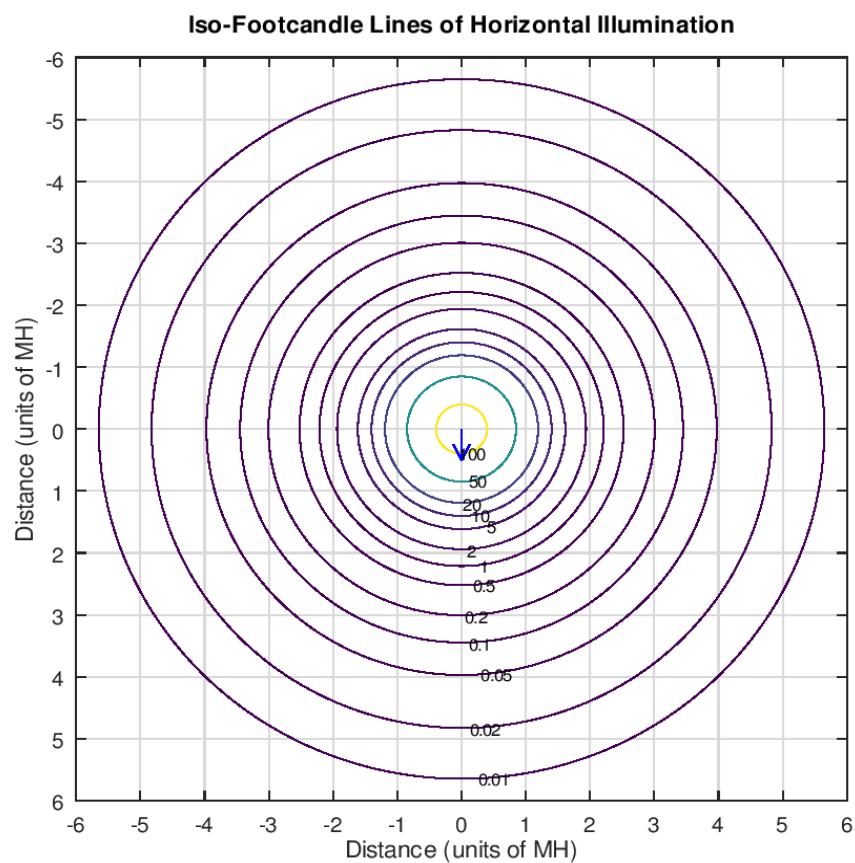
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	28.1	29.5	28.4	29.9	30.2	28.1	29.5	28.4	29.9	30.2
	3H	28.4	29.7	28.8	30.0	30.4	28.4	29.7	28.8	30.0	30.4
	4H	28.5	29.7	28.9	30.0	30.4	28.5	29.7	28.9	30.0	30.4
	6H	28.4	29.5	28.8	29.9	30.3	28.4	29.5	28.8	29.9	30.3
	8H	28.4	29.5	28.8	29.9	30.3	28.4	29.5	28.8	29.9	30.3
	12H	28.4	29.4	28.8	29.8	30.2	28.4	29.4	28.8	29.8	30.2
4H	2H	28.2	29.4	28.6	29.8	30.1	28.2	29.4	28.6	29.8	30.1
	3H	28.6	29.6	29.0	30.0	30.4	28.6	29.6	29.0	30.0	30.4
	4H	28.7	29.6	29.1	30.0	30.4	28.7	29.6	29.1	30.0	30.4
	6H	28.7	29.4	29.1	29.9	30.4	28.7	29.4	29.1	29.9	30.4
	8H	28.7	29.4	29.1	29.8	30.3	28.7	29.4	29.1	29.8	30.3
	12H	28.6	29.3	29.1	29.8	30.2	28.6	29.3	29.1	29.8	30.2
8H	4H	28.6	29.3	29.1	29.8	30.2	28.6	29.3	29.1	29.8	30.2
	6H	28.6	29.2	29.1	29.7	30.2	28.6	29.2	29.1	29.7	30.2
	8H	28.6	29.2	29.1	29.7	30.2	28.6	29.2	29.1	29.7	30.2
	12H	28.6	29.1	29.1	29.6	30.1	28.6	29.1	29.1	29.6	30.1
12H	4H	28.6	29.2	29.1	29.7	30.2	28.6	29.2	29.1	29.7	30.2
	6H	28.6	29.1	29.1	29.6	30.1	28.6	29.1	29.1	29.6	30.1
	8H	28.6	29.1	29.1	29.6	30.1	28.6	29.1	29.1	29.6	30.1

Maximum UGR = 30.4

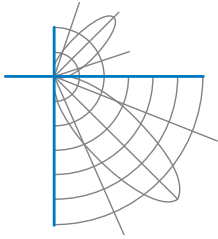


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### Iso-Illuminance Plot



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.

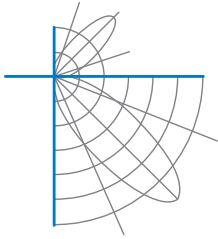


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**Additional Pictures of Test Subject**







## Report of Test

### LLIA002240-002

Test Distance                    9.5 m  
Ambient Temperature        24.8 °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.