

Report of Test

LLIA002240-001

Indoor Distribution Photometry Test Report

Catalog Number: HBC-24L-50K-PS - 95W 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



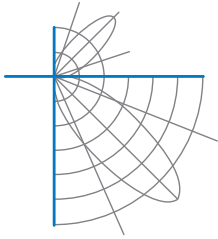
Prepared For:
Topaz Lighting Corp
925 Waverly Avenue
Holtsville, NY 11742, USA

Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	15845.3 Lumens
Input Current	0.7565 A	Total Efficacy	175.5 Lm/W
Input Power	90.28 W	Downward Flux	15845.3 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.995		
Current THD	4.3 %		

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

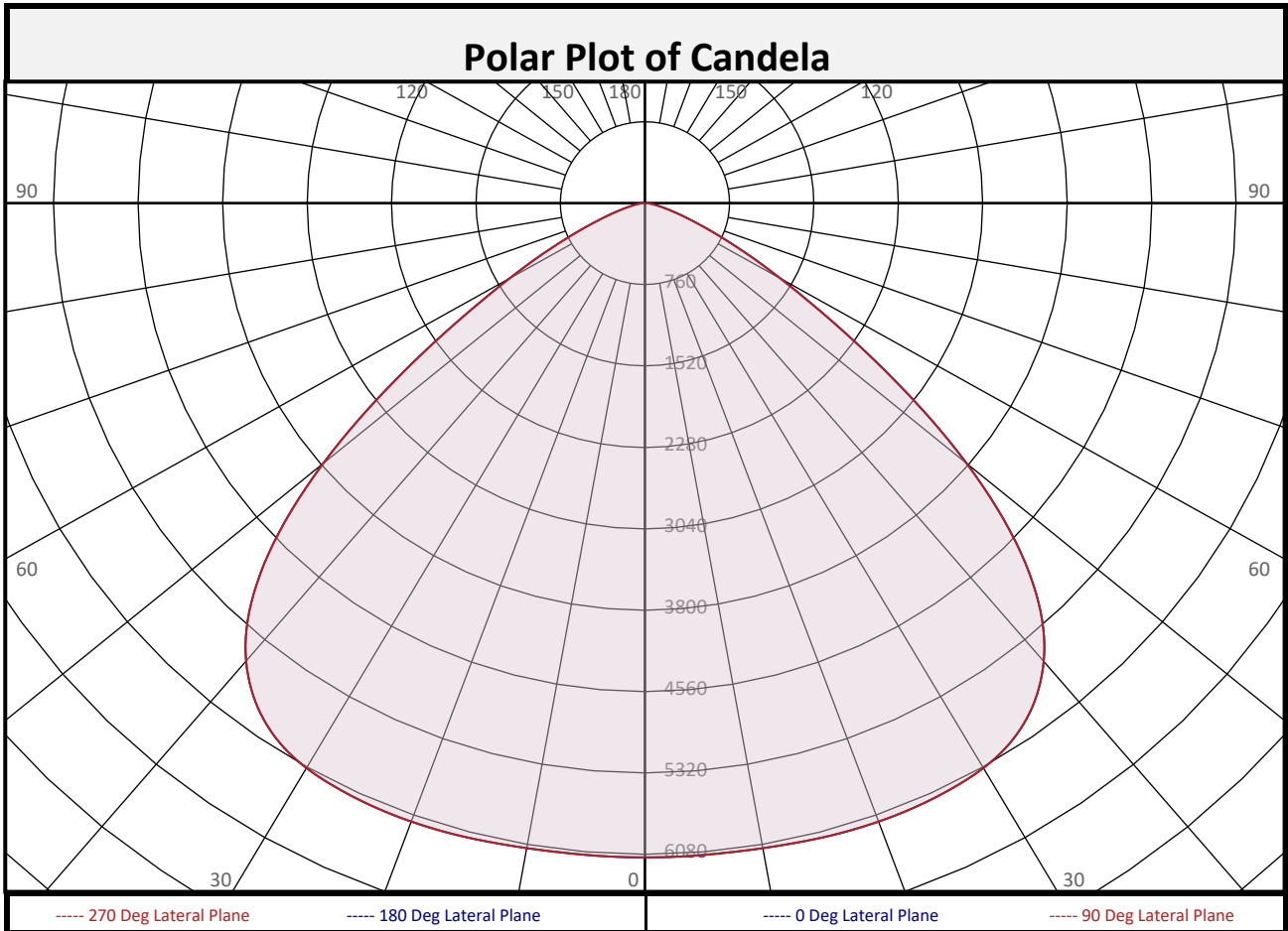
Test date: 10/16/2023
Report date: 10/18/2023

Signed: _____



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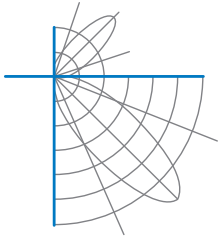
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Zonal Flux Summary										
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	583.7	3.7%		90-100	0.0	0.0%		0-20	2323	14.7%
10-20	1739	11.0%		100-110	0.0	0.0%		0-30	5159	32.6%
20-30	2836	17.9%		110-120	0.0	0.0%		0-40	8862	55.9%
30-40	3703	23.4%		120-130	0.0	0.0%		0-60	14786	93.3%
40-50	3713	23.4%		130-140	0.0	0.0%		0-80	15807	99.8%
50-60	2212	14.0%		140-150	0.0	0.0%		10-90	15262	96.3%
60-70	803.2	5.1%		150-160	0.0	0.0%		20-50	10252	64.7%
70-80	217.7	1.4%		160-170	0.0	0.0%		40-90	6984	44.1%
80-90	38.1	0.2%		170-180	0.0	0.0%		60-90	1059	6.7%
0-90	15845	100.0%		90-180	0.0	0.0%		0-180	15845	100.0%

North America (issuing laboratory)

Australasia & S.E. Asia



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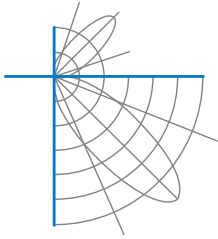
Luminous Intensity (Candela) Table

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.	0	6109	6109	6109	6109	6109	6109	6109	6109	6109
	2.5	6109	6109	6109	6109	6109	6109	6109	6109	6109
	5	6109	6109	6109	6109	6109	6109	6109	6109	6109
	7.5	6110	6110	6110	6110	6110	6110	6110	6110	6110
	10	6116	6116	6116	6116	6116	6116	6116	6116	6116
	12.5	6124	6124	6124	6124	6124	6124	6124	6124	6124
	15	6134	6134	6134	6134	6134	6134	6134	6134	6134
	17.5	6142	6142	6142	6142	6142	6142	6142	6142	6142
	20	6145	6145	6145	6145	6145	6145	6145	6145	6145
	22.5	6144	6144	6144	6144	6144	6144	6144	6144	6144
	25	6135	6135	6135	6135	6135	6135	6135	6135	6135
	27.5	6119	6119	6119	6119	6119	6119	6119	6119	6119
	30	6091	6091	6091	6091	6091	6091	6091	6091	6091
	32.5	6035	6035	6035	6035	6035	6035	6035	6035	6035
	35	5939	5939	5939	5939	5939	5939	5939	5939	5939
	37.5	5792	5792	5792	5792	5792	5792	5792	5792	5792
	40	5582	5582	5582	5582	5582	5582	5582	5582	5582
	42.5	5292	5292	5292	5292	5292	5292	5292	5292	5292
	45	4894	4894	4894	4894	4894	4894	4894	4894	4894
	47.5	4385	4385	4385	4385	4385	4385	4385	4385	4385
50	3776	3776	3776	3776	3776	3776	3776	3776	3776	
52.5	3101	3101	3101	3101	3101	3101	3101	3101	3101	
55	2434	2434	2434	2434	2434	2434	2434	2434	2434	
57.5	1856	1856	1856	1856	1856	1856	1856	1856	1856	
60	1408	1408	1408	1408	1408	1408	1408	1408	1408	
62.5	1059	1059	1059	1059	1059	1059	1059	1059	1059	
65	772	772	772	772	772	772	772	772	772	
67.5	553	553	553	553	553	553	553	553	553	
70	393	393	393	393	393	393	393	393	393	
72.5	275	275	275	275	275	275	275	275	275	
75	189	189	189	189	189	189	189	189	189	
77.5	131	131	131	131	131	131	131	131	131	
80	90	90	90	90	90	90	90	90	90	
82.5	60	60	60	60	60	60	60	60	60	
85	31	31	31	31	31	31	31	31	31	
87.5	7	7	7	7	7	7	7	7	7	
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



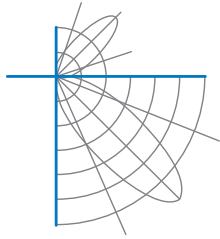
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Luminous Intensity (Candela) Table

		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	70	50	30	10	70	50	30	10	70	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	111	106	106	106	106	102	102	102	102	100
1	111	107	104	101	108	105	102	99	101	98	96	96	97	95	93	93	94	92	90	90	88
2	103	96	90	85	100	94	89	84	91	86	82	82	87	84	81	81	85	82	79	77	77
3	95	86	79	73	92	84	78	72	81	76	71	71	79	74	70	70	76	72	69	67	67
4	87	77	69	63	85	76	68	63	73	67	62	62	71	66	61	61	69	64	60	58	58
5	81	69	61	55	79	68	61	55	66	59	54	54	64	58	54	54	62	57	53	51	51
6	75	63	54	49	73	62	54	48	60	53	48	48	58	52	48	48	57	51	47	45	45
7	69	57	49	43	68	56	48	43	55	48	43	43	53	47	42	42	52	46	42	40	40
8	65	52	44	39	63	51	44	38	50	43	38	38	49	43	38	38	48	42	38	36	36
9	60	48	40	35	59	47	40	35	46	39	34	34	45	39	34	34	44	38	34	32	32
10	57	44	36	31	55	43	36	31	42	36	31	31	42	35	31	31	41	35	31	29	29

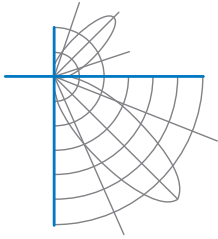
For absolute test reports, RUs are expressed as a percentage of total lumen output. For relative test reports, CUs are expressed as a percentage of total lamp output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are 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	169.7	8.85	8.85
8.0	95.5	11.80	11.80
10.0	61.1	14.76	14.76
12.0	42.4	17.71	17.71
14.0	31.2	20.66	20.66
16.0	23.9	23.61	23.61

Spacing Criterion	
SC:	1.5

Average Luminance (cd/m ²)			
	0 deg Plane	45 deg Plane	90 deg Plane
0	299888	299888	299888
45	339771	339771	339771
55	208280	208280	208280
65	89678	89678	89678
75	35849	35849	35849
85	17377	17377	17377

Beam and Field Angle	
0-180 Degree Plane	
Beam Angle:	105.2°
Field Angle:	133.5°
90-270 Degree Plane	
Beam Angle:	105.2°
Field Angle:	133.5°



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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

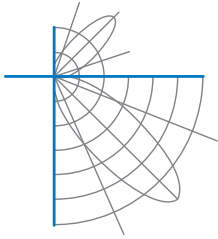
Room Size

UGR Viewed Crosswise

UGR Viewed Endwise

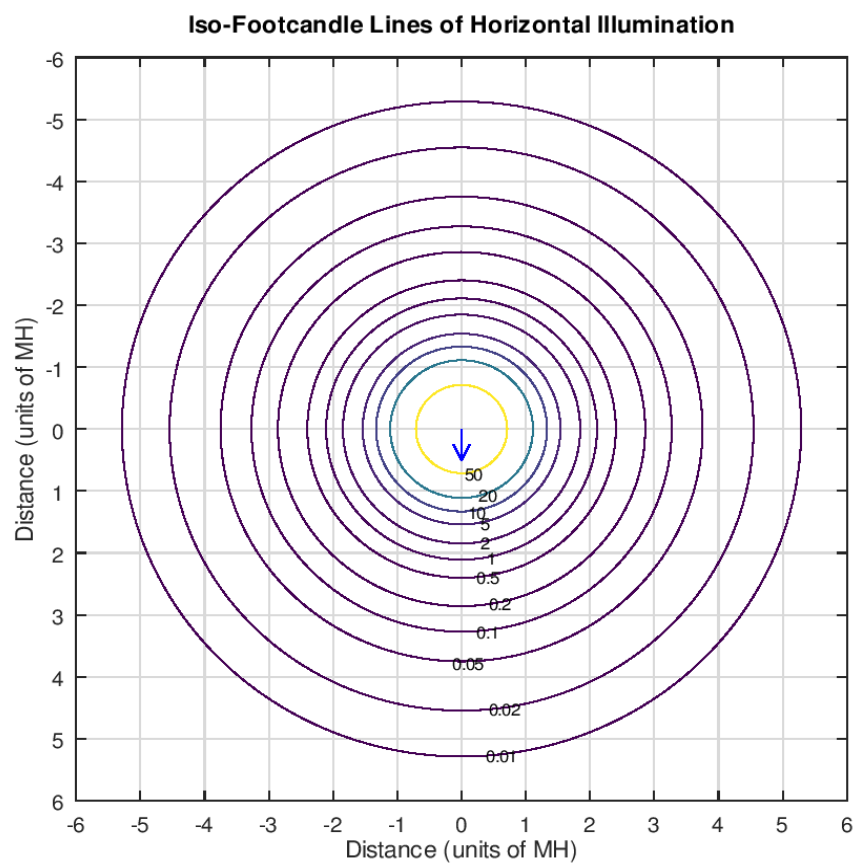
X=2H	Y=2H	27.3	28.7	27.6	29.0	29.4	27.3	28.7	27.6	29.0	29.4
		3H	27.6	28.9	28.0	29.2	29.6	27.6	28.9	28.0	29.2
	4H	27.6	28.8	28.0	29.2	29.6	27.6	28.8	28.0	29.2	29.6
	6H	27.6	28.7	28.0	29.1	29.5	27.6	28.7	28.0	29.1	29.5
	8H	27.6	28.6	28.0	29.0	29.4	27.6	28.6	28.0	29.0	29.4
	12H	27.5	28.6	28.0	28.9	29.4	27.5	28.6	28.0	28.9	29.4
4H	2H	27.4	28.6	27.8	28.9	29.3	27.4	28.6	27.8	28.9	29.3
	3H	27.8	28.8	28.2	29.2	29.6	27.8	28.8	28.2	29.2	29.6
	4H	27.8	28.7	28.3	29.1	29.6	27.8	28.7	28.3	29.1	29.6
	6H	27.8	28.6	28.3	29.0	29.5	27.8	28.6	28.3	29.0	29.5
	8H	27.8	28.5	28.3	29.0	29.4	27.8	28.5	28.3	29.0	29.4
	12H	27.8	28.4	28.3	28.9	29.4	27.8	28.4	28.3	28.9	29.4
8H	4H	27.8	28.5	28.3	28.9	29.4	27.8	28.5	28.3	28.9	29.4
	6H	27.8	28.4	28.3	28.9	29.3	27.8	28.4	28.3	28.9	29.3
	8H	27.8	28.3	28.3	28.8	29.3	27.8	28.3	28.3	28.8	29.3
	12H	27.8	28.2	28.3	28.7	29.3	27.8	28.2	28.3	28.7	29.3
12H	4H	27.7	28.4	28.2	28.9	29.3	27.7	28.4	28.2	28.9	29.3
	6H	27.8	28.3	28.3	28.7	29.3	27.8	28.3	28.3	28.7	29.3
	8H	27.8	28.2	28.3	28.7	29.3	27.8	28.2	28.3	28.7	29.3

Maximum UGR = 29.6

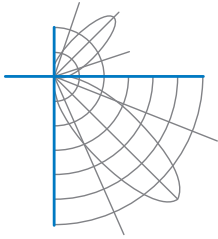


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Iso-Illuminance Plot

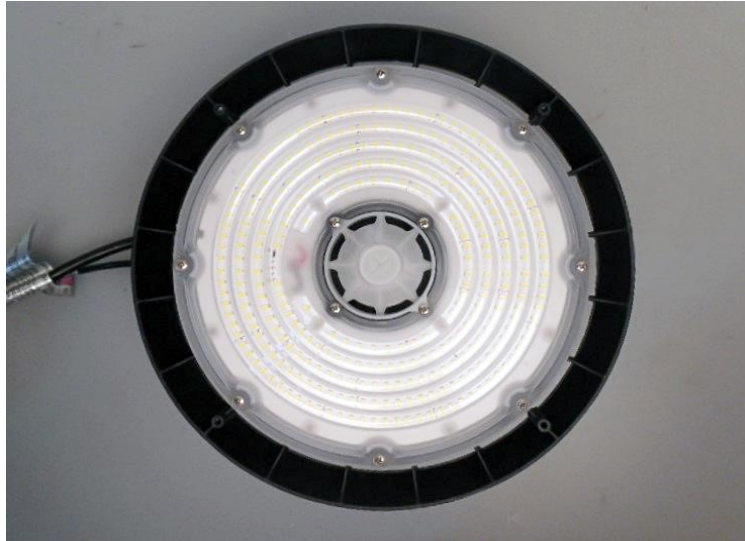


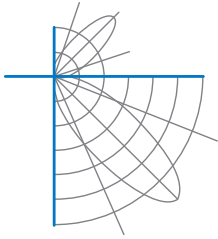
The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution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