

Report of Test

LLIA002240-007

Indoor Distribution Photometry Test Report

Catalog Number: HBC-40L-50K-PS - 175W Setting
Suspended downlight, cast aluminum luminaire and driver
 housings, clear plastic enclosure with concentric lenses.
468 white LEDs on white circuit board
One Sosen SS-200CNL-E260BHB LED driver



Prepared For:

Topaz Lighting Corp
925 Waverly Avenue
Holtsville, NY 11742, USA

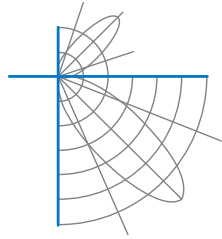
Performance Summary

Input Voltage	120.0 Vac	Luminous Flux	29847.7 Lumens
Input Current	1.398 A	Total Efficacy	178.4 lm/W
Input Power	167.3 W	Downward Flux	29847.7 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.997		
Current THD	2.6 %		

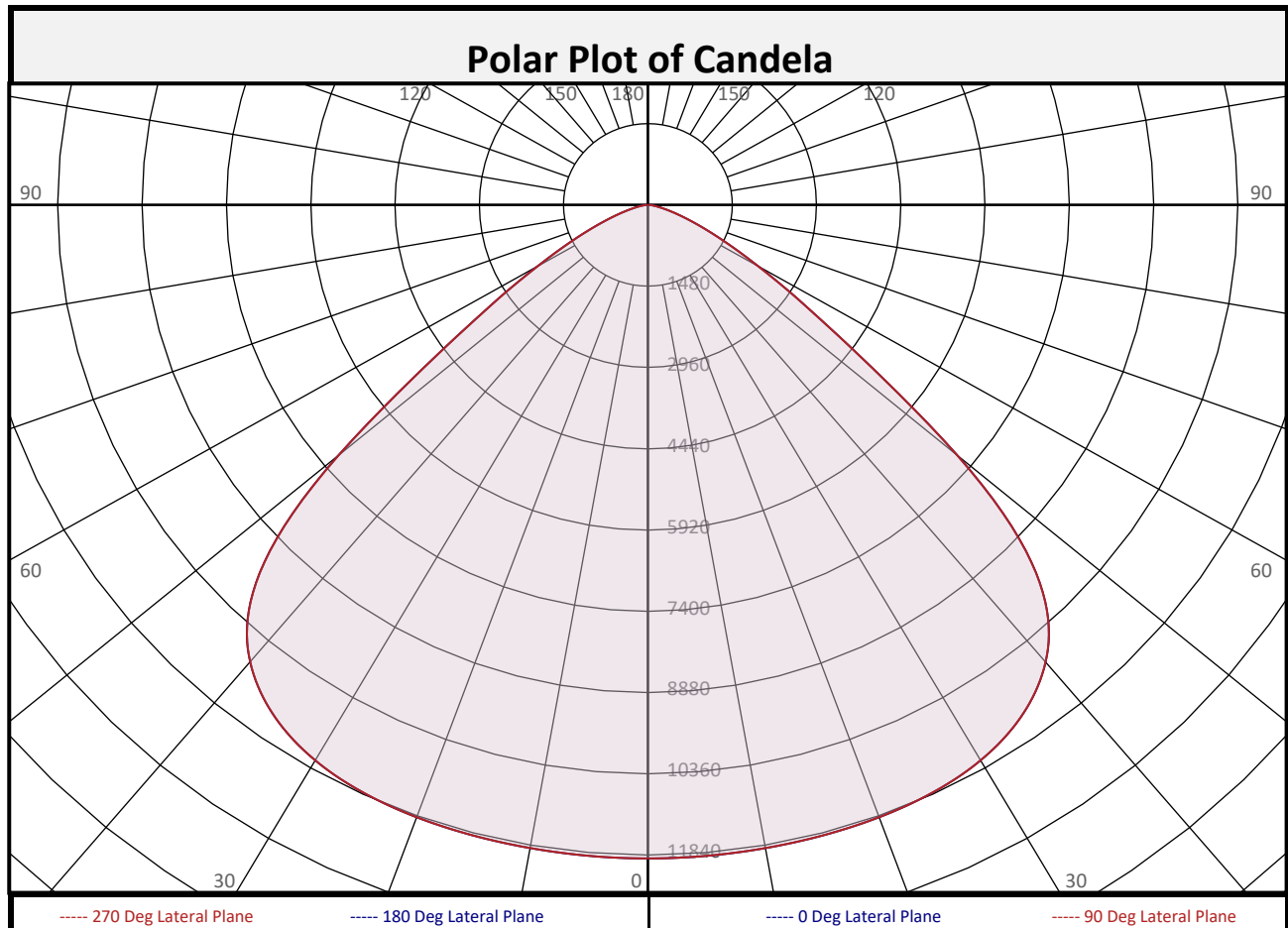
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 10/17/2023
Report date: 10/18/2023

Signed: _____



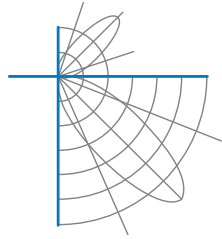
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Zonal Flux Summary										
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	1136	3.8%		90-100	0.0	0.0%		0-20	4505	15.1%
10-20	3369	11.3%		100-110	0.0	0.0%		0-30	9965	33.4%
20-30	5460	18.3%		110-120	0.0	0.0%		0-40	17092	57.3%
30-40	7127	23.9%		120-130	0.0	0.0%		0-60	28079	94.1%
40-50	7298	24.5%		130-140	0.0	0.0%		0-80	29790	99.8%
50-60	3689	12.4%		140-150	0.0	0.0%		10-90	28711	96.2%
60-70	1323	4.4%		150-160	0.0	0.0%		20-50	19885	66.6%
70-80	387.1	1.3%		160-170	0.0	0.0%		40-90	12756	42.7%
80-90	58.0	0.2%		170-180	0.0	0.0%		60-90	1769	5.9%
0-90	29848	100.0%		90-180	0.0	0.0%		0-180	29848	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	11903	11903	11903	11903	11903	11903	11903	11903	11903
	2.5	11902	11902	11902	11902	11902	11902	11902	11902	11902
	5	11900	11900	11900	11900	11900	11900	11900	11900	11900
	7.5	11898	11898	11898	11898	11898	11898	11898	11898	11898
	10	11895	11895	11895	11895	11895	11895	11895	11895	11895
	12.5	11892	11892	11892	11892	11892	11892	11892	11892	11892
	15	11888	11888	11888	11888	11888	11888	11888	11888	11888
	17.5	11881	11881	11881	11881	11881	11881	11881	11881	11881
	20	11869	11869	11869	11869	11869	11869	11869	11869	11869
	22.5	11848	11848	11848	11848	11848	11848	11848	11848	11848
	25	11814	11814	11814	11814	11814	11814	11814	11814	11814
	27.5	11762	11762	11762	11762	11762	11762	11762	11762	11762
	30	11682	11682	11682	11682	11682	11682	11682	11682	11682
	32.5	11567	11567	11567	11567	11567	11567	11567	11567	11567
	35	11404	11404	11404	11404	11404	11404	11404	11404	11404
	37.5	11178	11178	11178	11178	11178	11178	11178	11178	11178
	40	10865	10865	10865	10865	10865	10865	10865	10865	10865
	42.5	10420	10420	10420	10420	10420	10420	10420	10420	10420
	45	9732	9732	9732	9732	9732	9732	9732	9732	9732
	47.5	8664	8664	8664	8664	8664	8664	8664	8664	8664
	50	7087	7087	7087	7087	7087	7087	7087	7087	7087
	52.5	5247	5247	5247	5247	5247	5247	5247	5247	5247
	55	3878	3878	3878	3878	3878	3878	3878	3878	3878
	57.5	2958	2958	2958	2958	2958	2958	2958	2958	2958
	60	2238	2238	2238	2238	2238	2238	2238	2238	2238
	62.5	1702	1702	1702	1702	1702	1702	1702	1702	1702
	65	1283	1283	1283	1283	1283	1283	1283	1283	1283
	67.5	953	953	953	953	953	953	953	953	953
	70	695	695	695	695	695	695	695	695	695
	72.5	494	494	494	494	494	494	494	494	494
	75	339	339	339	339	339	339	339	339	339
	77.5	229	229	229	229	229	229	229	229	229
	80	152	152	152	152	152	152	152	152	152
	82.5	93	93	93	93	93	93	93	93	93
	85	43	43	43	43	43	43	43	43	43
	87.5	6	6	6	6	6	6	6	6	6
	90	0	0	0	0	0	0	0	0	0

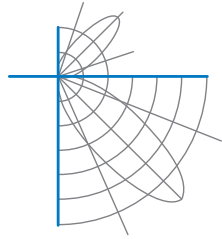
16 lateral half-planes of data were acquired, 22.5 degree increments shown.

North America (issuing laboratory)

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Luminous Intensity (Candela) Table

Lateral (C-Plane) Angles										
Vertical (Gamma) Angles - Data was acquired in 0.5° increments, 2.5° increments shown.		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.

North America (issuing laboratory)

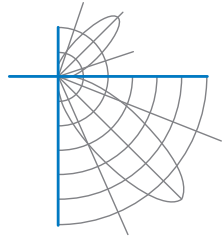
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Coefficients of Utilization/Room Utilization - Zonal Cavity Method

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	111	107	104	101		109	105	102	99		101	99	96			97	95	93			94	92	91			89
2	103	96	91	86		101	94	89	85		91	87	83			88	84	81			85	82	79			78
3	95	86	79	74		93	85	78	73		82	76	72			79	75	71			77	73	70			68
4	88	77	70	64		86	76	69	64		74	68	63			72	66	62			70	65	61			59
5	81	70	62	56		79	69	61	56		67	60	55			65	59	55			63	58	54			52
6	75	63	55	49		74	62	55	49		61	54	49			59	53	48			58	52	48			46
7	70	58	50	44		68	57	49	44		55	49	44			54	48	43			53	47	43			41
8	65	53	45	39		64	52	44	39		51	44	39			50	43	39			48	43	39			37
9	61	48	41	35		60	48	40	35		47	40	35			46	39	35			45	39	35			33
10	57	45	37	32		56	44	37	32		43	37	32			42	36	32			41	36	32			30

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	330.6	8.77	8.77
8.0	186.0	11.69	11.69
10.0	119.0	14.62	14.62
12.0	82.7	17.54	17.54
14.0	60.7	20.46	20.46
16.0	46.5	23.39	23.39

Spacing Criterion

SC: 1.5

Average Luminance (cd/m²)

	0 deg Plane	45 deg Plane	90 deg Plane
0	349214	349214	349214
45	403811	403811	403811
55	198381	198381	198381
65	89088	89088	89088
75	38415	38415	38415
85	14494	14494	14494

Beam and Field Angle

0-180 Degree Plane

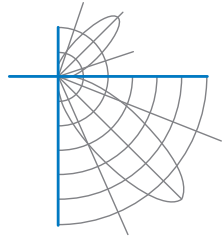
Beam Angle: 103.0°

Field Angle: 131.3°

90-270 Degree Plane

Beam Angle: 103.0°

Field Angle: 131.3°



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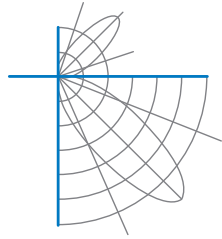
UGR Table - Corrected

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

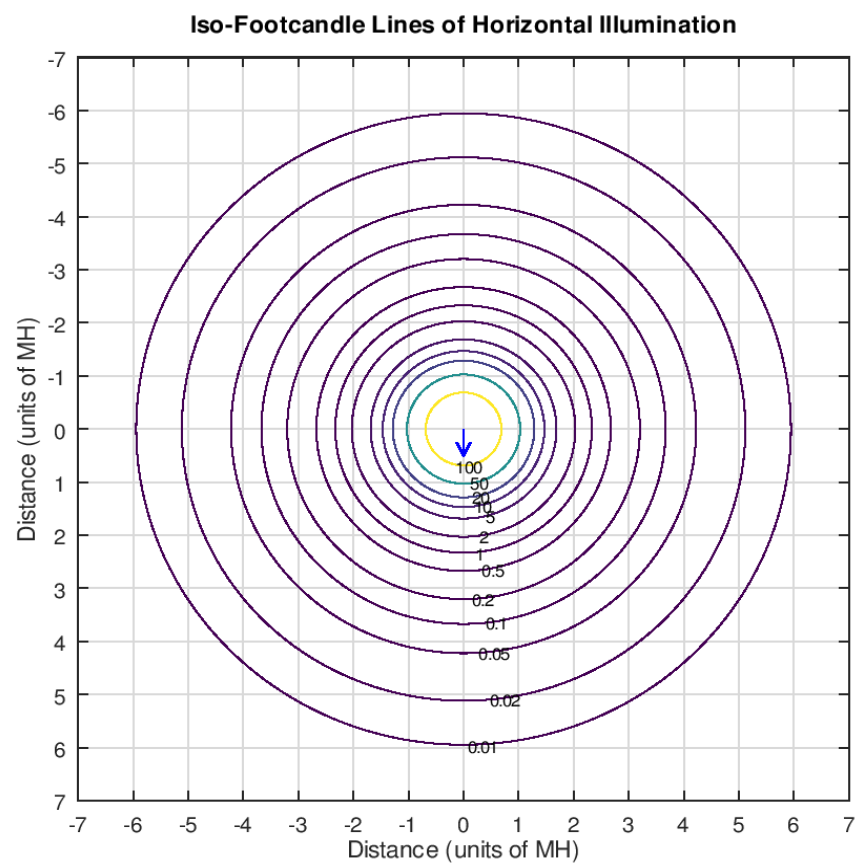
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	26.6	28.1	27.0	28.4	28.7	26.6	28.1	27.0	28.4	28.7
	3H	27.0	28.3	27.4	28.6	29.0	27.0	28.3	27.4	28.6	29.0
	4H	27.0	28.3	27.5	28.6	29.0	27.0	28.3	27.5	28.6	29.0
	6H	27.0	28.1	27.5	28.5	28.9	27.0	28.1	27.5	28.5	28.9
	8H	27.0	28.1	27.5	28.5	28.9	27.0	28.1	27.5	28.5	28.9
	12H	27.0	28.0	27.4	28.4	28.8	27.0	28.0	27.4	28.4	28.8
4H	2H	26.7	27.9	27.1	28.3	28.7	26.7	27.9	27.1	28.3	28.7
	3H	27.2	28.2	27.7	28.6	29.0	27.2	28.2	27.7	28.6	29.0
	4H	27.3	28.2	27.7	28.6	29.0	27.3	28.2	27.7	28.6	29.0
	6H	27.3	28.1	27.8	28.5	29.0	27.3	28.1	27.8	28.5	29.0
	8H	27.3	28.0	27.8	28.5	28.9	27.3	28.0	27.8	28.5	28.9
	12H	27.3	27.9	27.8	28.4	28.9	27.3	27.9	27.8	28.4	28.9
8H	4H	27.3	28.0	27.7	28.4	28.9	27.3	28.0	27.7	28.4	28.9
	6H	27.3	27.9	27.8	28.4	28.9	27.3	27.9	27.8	28.4	28.9
	8H	27.3	27.8	27.8	28.3	28.8	27.3	27.8	27.8	28.3	28.8
	12H	27.2	27.7	27.8	28.2	28.8	27.2	27.7	27.8	28.2	28.8
12H	4H	27.2	27.9	27.7	28.3	28.8	27.2	27.9	27.7	28.3	28.8
	6H	27.3	27.8	27.8	28.2	28.8	27.3	27.8	27.8	28.2	28.8
	8H	27.2	27.7	27.8	28.2	28.8	27.2	27.7	27.8	28.2	28.8

Maximum UGR = 29.0

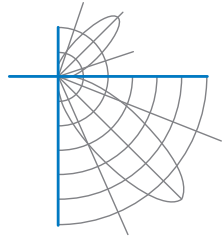


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Iso-Illuminance Plot

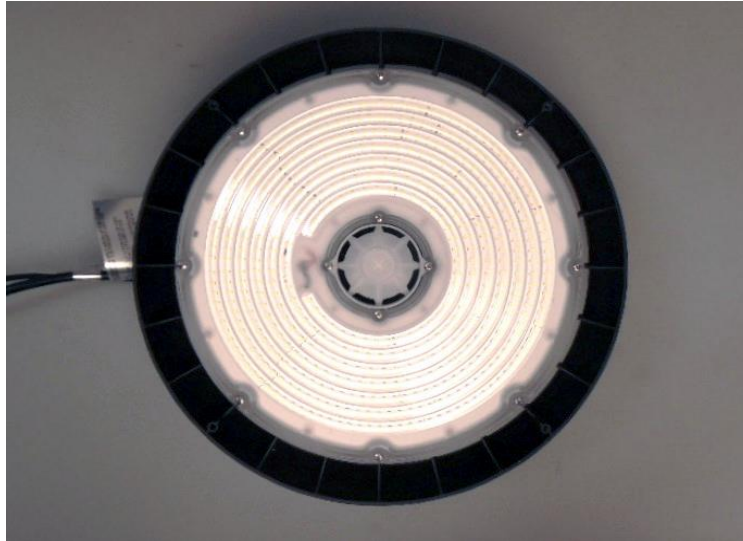


The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution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



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Additional Pictures of Test Subject

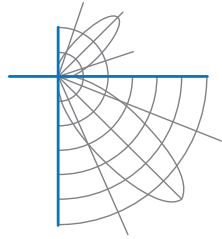


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Test Distance 9.5 m
Ambient Temperature 25.0 °C

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.

North America (issuing laboratory)

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