

Report of Test

LLIA002240-009

Indoor Distribution Photometry Test Report

Catalog Number: HBC-40L-50K-PS - 240W 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



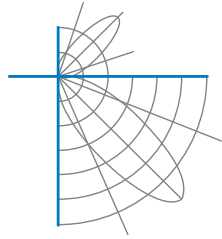
Prepared For:
Topaz Lighting Corp
925 Waverly Avenue
Holtsville, NY 11742, USA

Performance Summary			
Input Voltage	120.0 Vac	Luminous Flux	39811.7 Lumens
Input Current	1.963 A	Total Efficacy	169.3 lm/W
Input Power	235.2 W	Downward Flux	39811.7 Lumens
Frequency	60.00 Hz	Downward Flux	100.0 % of Total
Power Factor	0.999		
Current THD	2.4 %		

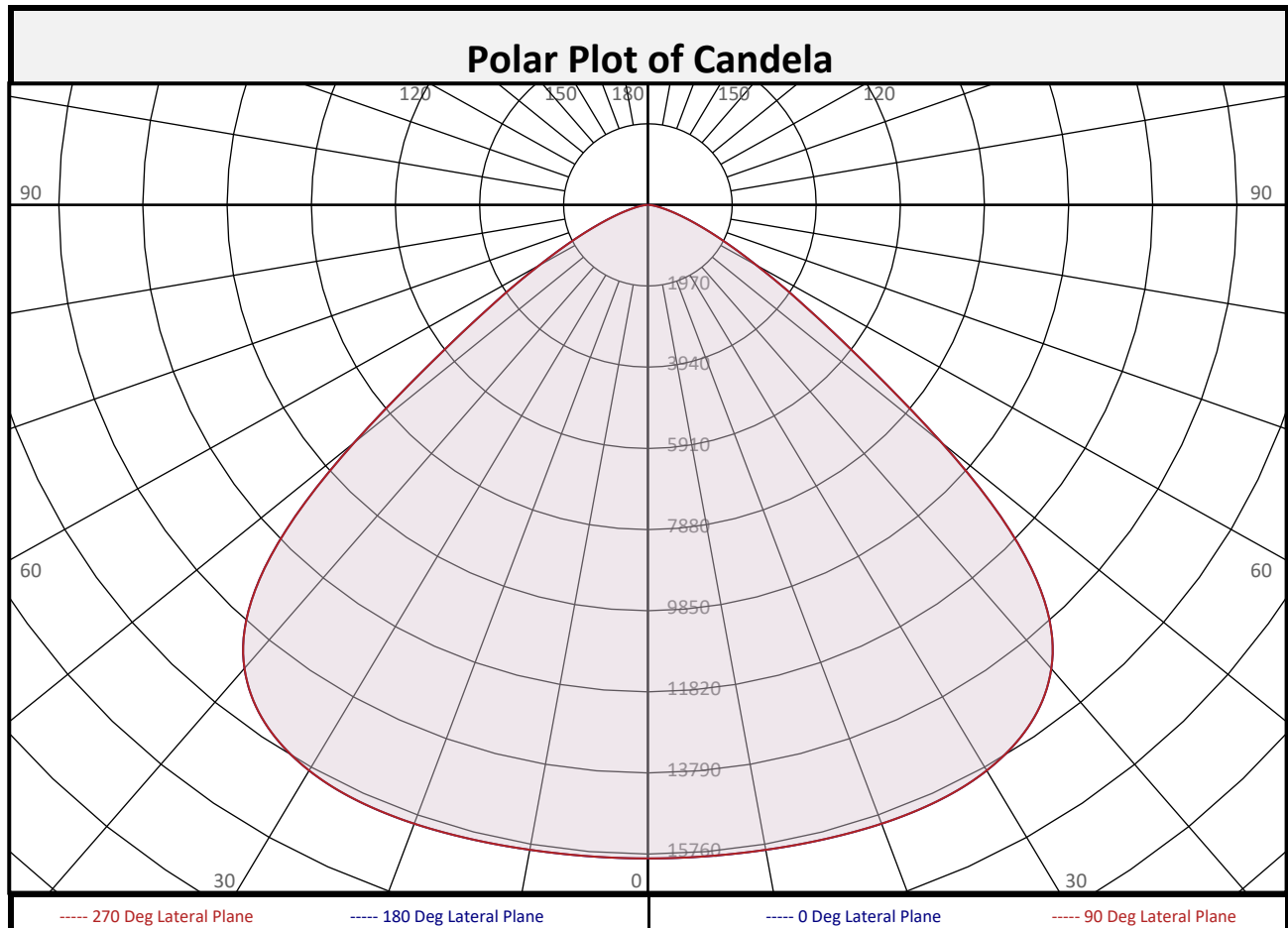
This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

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

Signed: _____



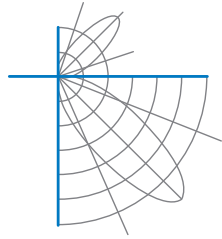
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Zonal Flux Summary										
Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total		Zone (Deg Vert)	Flux (Lumens)	Percent of Total
0-10	1517	3.8%		90-100	0.0	0.0%		0-20	6038	15.2%
10-20	4521	11.4%		100-110	0.0	0.0%		0-30	13426	33.7%
20-30	7387	18.6%		110-120	0.0	0.0%		0-40	23099	58.0%
30-40	9673	24.3%		120-130	0.0	0.0%		0-60	37458	94.1%
40-50	9615	24.2%		130-140	0.0	0.0%		0-80	39729	99.8%
50-60	4745	11.9%		140-150	0.0	0.0%		10-90	38295	96.2%
60-70	1748	4.4%		150-160	0.0	0.0%		20-90	26675	67.0%
70-80	523.2	1.3%		160-170	0.0	0.0%		40-90	16713	42.0%
80-90	82.4	0.2%		170-180	0.0	0.0%		60-90	2353	5.9%
0-90	39812	100.0%		90-180	0.0	0.0%		0-180	39812	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	15867	15867	15867	15867	15867	15867	15867	15867	15867
	2.5	15869	15869	15869	15869	15869	15869	15869	15869	15869
	5	15875	15875	15875	15875	15875	15875	15875	15875	15875
	7.5	15884	15884	15884	15884	15884	15884	15884	15884	15884
	10	15900	15900	15900	15900	15900	15900	15900	15900	15900
	12.5	15921	15921	15921	15921	15921	15921	15921	15921	15921
	15	15945	15945	15945	15945	15945	15945	15945	15945	15945
	17.5	15968	15968	15968	15968	15968	15968	15968	15968	15968
	20	15988	15988	15988	15988	15988	15988	15988	15988	15988
	22.5	15995	15995	15995	15995	15995	15995	15995	15995	15995
	25	15984	15984	15984	15984	15984	15984	15984	15984	15984
	27.5	15944	15944	15944	15944	15944	15944	15944	15944	15944
	30	15857	15857	15857	15857	15857	15857	15857	15857	15857
	32.5	15714	15714	15714	15714	15714	15714	15714	15714	15714
	35	15496	15496	15496	15496	15496	15496	15496	15496	15496
	37.5	15170	15170	15170	15170	15170	15170	15170	15170	15170
	40	14688	14688	14688	14688	14688	14688	14688	14688	14688
	42.5	13967	13967	13967	13967	13967	13967	13967	13967	13967
	45	12854	12854	12854	12854	12854	12854	12854	12854	12854
	47.5	11198	11198	11198	11198	11198	11198	11198	11198	11198
	50	8953	8953	8953	8953	8953	8953	8953	8953	8953
	52.5	6684	6684	6684	6684	6684	6684	6684	6684	6684
	55	5042	5042	5042	5042	5042	5042	5042	5042	5042
	57.5	3870	3870	3870	3870	3870	3870	3870	3870	3870
	60	2936	2936	2936	2936	2936	2936	2936	2936	2936
	62.5	2242	2242	2242	2242	2242	2242	2242	2242	2242
	65	1697	1697	1697	1697	1697	1697	1697	1697	1697
	67.5	1264	1264	1264	1264	1264	1264	1264	1264	1264
	70	926	926	926	926	926	926	926	926	926
	72.5	662	662	662	662	662	662	662	662	662
	75	460	460	460	460	460	460	460	460	460
	77.5	315	315	315	315	315	315	315	315	315
	80	214	214	214	214	214	214	214	214	214
	82.5	131	131	131	131	131	131	131	131	131
	85	62	62	62	62	62	62	62	62	62
	87.5	9	9	9	9	9	9	9	9	9
	90	0	0	0	0	0	0	0	0	0

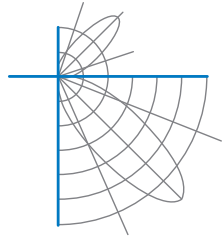
16 lateral half-planes of data were acquired, 22.5 degree increments shown.

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)

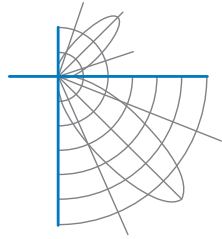
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Coefficients of Utilization/Room Utilization - Zonal Cavity Method

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	108	104	101		109	105	102	100		101	99	96		97	95	94		94	92	91	89			
2	103	96	91	86		101	95	89	85		91	87	83		88	84	81		85	82	80	78			
3	95	86	79	74		93	85	79	73		82	77	72		79	75	71		77	73	70	68			
4	88	78	70	64		86	76	69	64		74	68	63		72	66	62		70	65	61	59			
5	81	70	62	56		79	69	62	56		67	60	55		65	59	55		63	58	54	52			
6	76	64	55	50		74	63	55	49		61	54	49		59	53	49		58	52	48	46			
7	70	58	50	44		69	57	49	44		56	49	44		54	48	43		53	47	43	41			
8	65	53	45	40		64	52	45	39		51	44	39		50	44	39		49	43	39	37			
9	61	49	41	36		60	48	41	36		47	40	35		46	40	35		45	39	35	33			
10	57	45	37	32		56	44	37	32		43	37	32		42	36	32		42	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	440.8	8.90	8.90
8.0	247.9	11.86	11.86
10.0	158.7	14.83	14.83
12.0	110.2	17.80	17.80
14.0	81.0	20.76	20.76
16.0	62.0	23.73	23.73

Spacing Criterion

SC: 1.5

Average Luminance (cd/m²)

	0 deg Plane	45 deg Plane	90 deg Plane
0	465536	465536	465536
45	533348	533348	533348
55	257923	257923	257923
65	117814	117814	117814
75	52145	52145	52145
85	20816	20816	20816

Beam and Field Angle

0-180 Degree Plane

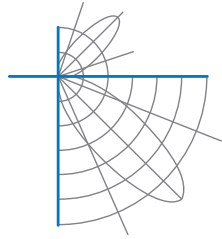
Beam Angle: 102.0°

Field Angle: 131.0°

90-270 Degree Plane

Beam Angle: 102.0°

Field Angle: 131.0°



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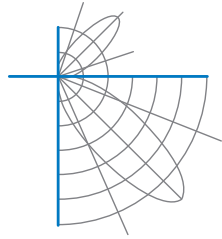
UGR Table - Corrected

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

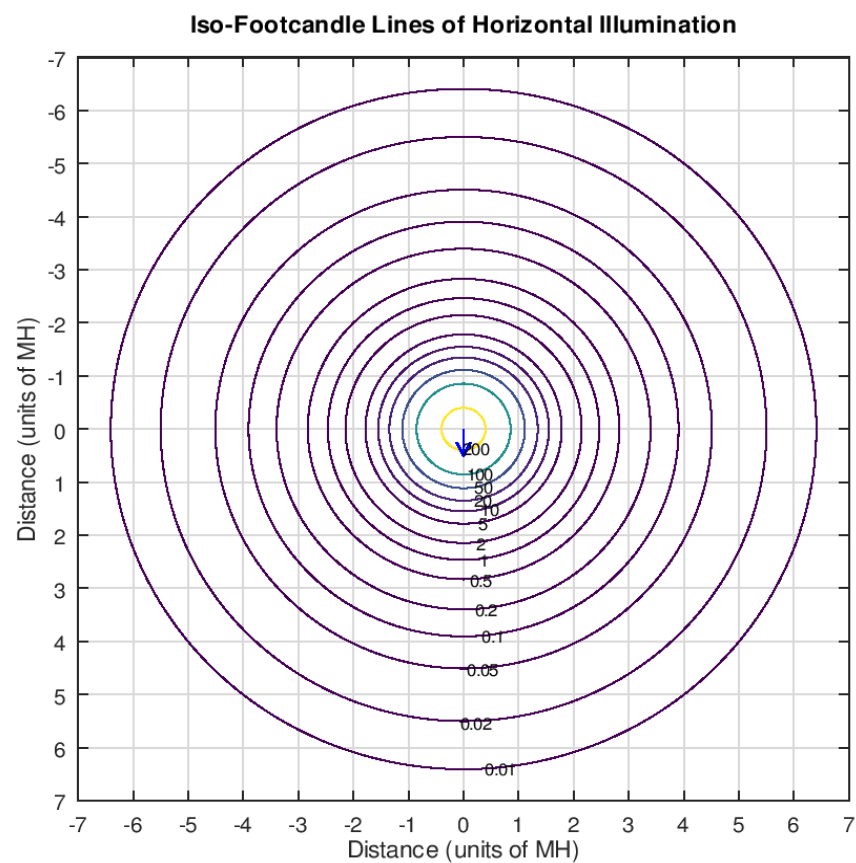
Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	27.5	28.9	27.9	29.2	29.6	27.5	28.9	27.9	29.2	29.6
	3H	27.9	29.2	28.3	29.5	29.9	27.9	29.2	28.3	29.5	29.9
	4H	28.0	29.1	28.4	29.5	29.9	28.0	29.1	28.4	29.5	29.9
	6H	28.0	29.0	28.4	29.4	29.8	28.0	29.0	28.4	29.4	29.8
	8H	27.9	29.0	28.4	29.4	29.8	27.9	29.0	28.4	29.4	29.8
	12H	27.9	28.9	28.3	29.3	29.7	27.9	28.9	28.3	29.3	29.7
4H	2H	27.6	28.8	28.0	29.2	29.5	27.6	28.8	28.0	29.2	29.5
	3H	28.1	29.1	28.5	29.5	29.9	28.1	29.1	28.5	29.5	29.9
	4H	28.2	29.1	28.7	29.5	30.0	28.2	29.1	28.7	29.5	30.0
	6H	28.3	29.0	28.7	29.4	29.9	28.3	29.0	28.7	29.4	29.9
	8H	28.2	28.9	28.7	29.4	29.8	28.2	28.9	28.7	29.4	29.8
	12H	28.2	28.8	28.7	29.3	29.8	28.2	28.8	28.7	29.3	29.8
8H	4H	28.2	28.9	28.7	29.3	29.8	28.2	28.9	28.7	29.3	29.8
	6H	28.2	28.8	28.7	29.3	29.8	28.2	28.8	28.7	29.3	29.8
	8H	28.2	28.7	28.7	29.2	29.7	28.2	28.7	28.7	29.2	29.7
	12H	28.2	28.6	28.7	29.1	29.7	28.2	28.6	28.7	29.1	29.7
12H	4H	28.2	28.8	28.6	29.3	29.7	28.2	28.8	28.6	29.3	29.7
	6H	28.2	28.7	28.7	29.2	29.7	28.2	28.7	28.7	29.2	29.7
	8H	28.2	28.6	28.7	29.1	29.7	28.2	28.6	28.7	29.1	29.7

Maximum UGR = 30.0

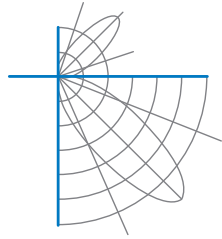


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Iso-Illuminance Plot

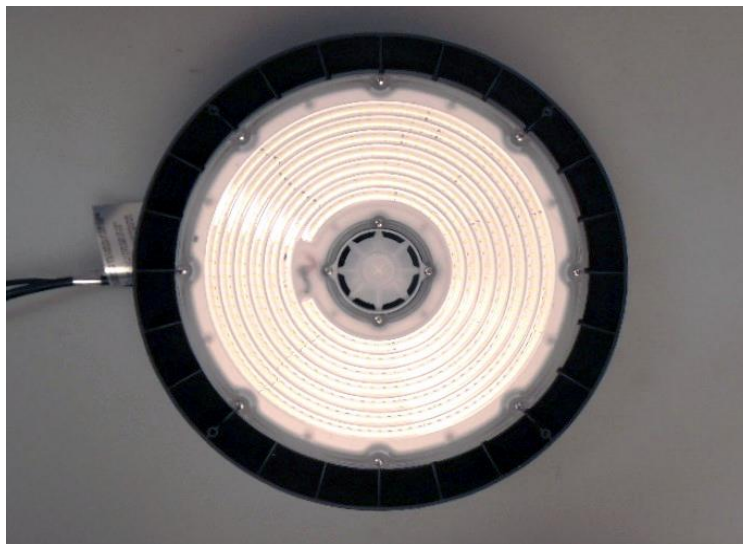


The isofootcandle values shown in the plot above are based on a mounting height of $h = 8.0$ feet. Grid values show multiples of mounting height. The isoilluminance contour lines are expressed in units of footcandles. The values expressed are based on the direct light from a single unit without the contribution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



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Additional Pictures of Test Subject

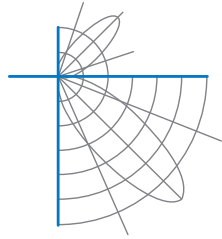


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Test Distance 9.5 m
Ambient Temperature 25.0 °C

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.