



IES INDOOR REPORT

PHOTOMETRIC FILENAME : IHB4-LED-09L-LL-40.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] 3588

[TESTLAB] TUV SUD America

[TESTDATE] 12/3/2018 3:42:36 PM

[ISSUEDATE] 04/19/21

[MANUFAC] LSI INDUSTRIES, INC

[LUMCAT] IHB4-LED-09L-LL-40

[OTHER] TEST PROCEDURE: IESNA LM-79-08

[ABSOLUTE] NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED

[OTHER] SCALED FROM ORIGINAL TEST DATA

[SEARCH_SOURCETYPE] LED

[SEARCH_APPLICATION] Indoor

[SEARCH_COLORTEMP] 4000

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	9452
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	155
Total Luminaire Watts	61
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.28
Spacing Criterion (90-270)	1.32
Spacing Criterion (Diagonal)	1.44
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	4.00 ft
Luminous Width (90-270)	0.60 ft
Luminous Height	0.00 ft



LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	14258	14598	14761
55	13719	14243	14278
65	6534	13474	13209
75	5690	5902	10688
85	2194	4521	5535

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CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>	<u>202.5</u>
0.0	3250.677	3250.677	3250.677	3250.677	3250.677	3250.677	3250.677	3250.677	3250.677	3250.677
2.5	3279.448	3269.116	3237.572	3219.761	3212.282	3221.451	3241.660	3275.299	3295.741	3275.299
5.0	3265.118	3258.591	3227.725	3212.758	3208.922	3214.772	3237.460	3270.998	3291.683	3270.998
7.5	3247.580	3241.316	3211.290	3198.894	3199.025	3205.714	3227.492	3262.416	3283.921	3262.416
10.0	3240.911	3224.456	3188.237	3178.148	3184.483	3189.077	3209.904	3256.476	3277.495	3256.476
12.5	3218.921	3217.939	3162.563	3148.780	3165.781	3168.726	3195.068	3252.144	3277.353	3252.144
15.0	3164.304	3175.638	3148.810	3121.335	3137.698	3144.033	3189.593	3213.932	3235.072	3213.932
17.5	3109.150	3123.662	3120.191	3086.502	3103.523	3113.360	3158.606	3172.116	3188.683	3172.116
20.0	3056.304	3073.771	3066.748	3051.659	3067.112	3083.800	3118.248	3126.263	3140.977	3126.263
22.5	2999.622	3018.385	3009.064	3007.819	3022.534	3047.763	3067.901	3073.457	3087.311	3073.457
25.0	2934.804	2954.710	2951.057	2966.834	2970.315	3016.857	3012.768	3017.575	3038.463	3017.575
27.5	2870.007	2889.325	2887.666	2932.163	2915.496	2970.740	2950.855	2953.445	2981.477	2953.445
30.0	2796.485	2819.539	2820.429	2874.105	2854.978	2903.736	2883.476	2883.729	2907.764	2883.729
32.5	2712.956	2743.619	2749.175	2795.554	2787.529	2827.351	2813.092	2809.500	2829.952	2809.500
35.0	2620.288	2663.317	2671.808	2718.481	2717.074	2751.543	2737.749	2730.726	2754.134	2730.726
37.5	2539.015	2576.711	2586.295	2632.664	2634.779	2666.303	2651.032	2646.913	2671.930	2646.913
40.0	2449.039	2489.376	2495.398	2538.863	2535.938	2574.242	2554.579	2556.775	2586.629	2556.775
42.5	2350.380	2392.833	2399.299	2430.033	2430.367	2463.631	2456.679	2460.393	2494.264	2460.393
45.0	2250.101	2290.034	2303.646	2317.227	2329.421	2348.335	2358.131	2356.796	2399.107	2356.796
47.5	2138.469	2183.300	2198.419	2208.640	2211.200	2240.882	2253.370	2252.945	2300.721	2252.945
50.0	2020.278	2067.396	2078.953	2083.244	2091.451	2113.675	2142.051	2137.204	2190.353	2137.204
52.5	1890.531	1945.209	1950.238	1956.098	1964.568	1985.334	2009.258	2011.970	2062.822	2011.970
55.0	1756.088	1818.720	1823.233	1820.643	1827.656	1853.644	1879.905	1886.857	1933.945	1886.857
57.5	1629.913	1694.144	1689.468	1685.431	1692.494	1712.269	1745.877	1759.954	1808.357	1759.954
60.0	1349.358	1558.041	1560.257	1542.932	1545.158	1572.148	1611.484	1628.729	1685.400	1628.729
62.5	791.316	1316.408	1418.285	1394.645	1397.256	1429.255	1476.960	1452.845	1436.289	1452.845
65.0	616.272	776.602	1270.879	1244.870	1245.812	1278.813	1327.176	1030.642	864.018	1030.642
67.5	533.795	584.698	1065.374	1094.519	1093.578	1124.029	1164.306	628.325	626.655	628.325
70.0	463.907	505.975	619.409	938.116	929.979	969.467	840.671	524.970	548.782	524.970
72.5	394.697	432.596	424.247	782.967	770.206	812.062	477.336	454.485	476.678	454.485
75.0	328.654	363.214	340.899	634.033	617.375	664.797	361.665	386.783	410.028	386.783
77.5	265.557	296.281	268.785	450.063	471.881	504.103	291.119	319.081	340.272	319.081
80.0	195.962	226.595	207.337	210.757	333.603	276.506	225.512	255.892	276.830	255.892
82.5	106.380	157.243	151.363	125.072	210.373	133.917	168.982	189.789	207.903	189.789
85.0	42.676	52.836	87.942	76.021	107.656	84.167	111.977	109.234	125.689	109.234
87.5	10.646	24.055	26.919	36.563	31.503	39.063	44.295	42.969	47.493	42.969
90.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
92.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
97.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
102.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
107.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
112.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
115.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
117.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
122.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
127.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
132.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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135.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
137.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
142.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
147.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
152.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
157.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
162.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
167.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
172.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
177.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Vert. Angles **Horizontal Angles**

	<u>225.0</u>	<u>247.5</u>	<u>270.0</u>	<u>292.5</u>	<u>315.0</u>	<u>337.5</u>	<u>360.0</u>
0.0	3250.677	3250.677	3250.677	3250.677	3250.677	3250.677	3250.677
2.5	3241.660	3221.451	3212.282	3219.761	3237.572	3269.116	3279.448
5.0	3237.460	3214.772	3208.922	3212.758	3227.725	3258.591	3265.118
7.5	3227.492	3205.714	3199.025	3198.894	3211.290	3241.316	3247.580
10.0	3209.904	3189.077	3184.483	3178.148	3188.237	3224.456	3240.911
12.5	3195.068	3168.726	3165.781	3148.780	3162.563	3217.939	3218.921
15.0	3189.593	3144.033	3137.698	3121.335	3148.810	3175.638	3164.304
17.5	3158.606	3113.360	3103.523	3086.502	3120.191	3123.662	3109.150
20.0	3118.248	3083.800	3067.112	3051.659	3066.748	3073.771	3056.304
22.5	3067.901	3047.763	3022.534	3007.819	3009.064	3018.385	2999.622
25.0	3012.768	3016.857	2970.315	2966.834	2951.057	2954.710	2934.804
27.5	2950.855	2970.740	2915.496	2932.163	2887.666	2889.325	2870.007
30.0	2883.476	2903.736	2854.978	2874.105	2820.429	2819.539	2796.485
32.5	2813.092	2827.351	2787.529	2795.554	2749.175	2743.619	2712.956
35.0	2737.749	2751.543	2717.074	2718.481	2671.808	2663.317	2620.288
37.5	2651.032	2666.303	2634.779	2632.664	2586.295	2576.711	2539.015
40.0	2554.579	2574.242	2535.938	2538.863	2495.398	2489.376	2449.039
42.5	2456.679	2463.631	2430.367	2430.033	2399.299	2392.833	2350.380
45.0	2358.131	2348.335	2329.421	2317.227	2303.646	2290.034	2250.101
47.5	2253.370	2240.882	2211.200	2208.640	2198.419	2183.300	2138.469
50.0	2142.051	2113.675	2091.451	2083.244	2078.953	2067.396	2020.278
52.5	2009.258	1985.334	1964.568	1956.098	1950.238	1945.209	1890.531
55.0	1879.905	1853.644	1827.656	1820.643	1823.233	1818.720	1756.088
57.5	1745.877	1712.269	1692.494	1685.431	1689.468	1694.144	1629.913
60.0	1611.484	1572.148	1545.158	1542.932	1560.257	1558.041	1349.358
62.5	1476.960	1429.255	1397.256	1394.645	1418.285	1316.408	791.316
65.0	1327.176	1278.813	1245.812	1244.870	1270.879	776.602	616.272
67.5	1164.306	1124.029	1093.578	1094.519	1065.374	584.698	533.795
70.0	840.671	969.467	929.979	938.116	619.409	505.975	463.907
72.5	477.336	812.062	770.206	782.967	424.247	432.596	394.697
75.0	361.665	664.797	617.375	634.033	340.899	363.214	328.654
77.5	291.119	504.103	471.881	450.063	268.785	296.281	265.557
80.0	225.512	276.506	333.603	210.757	207.337	226.595	195.962

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CANDELA TABULATION - (Cont.)

82.5	168.982	133.917	210.373	125.072	151.363	157.243	106.380
85.0	111.977	84.167	107.656	76.021	87.942	52.836	42.676
87.5	44.295	39.063	31.503	36.563	26.919	24.055	10.646
90.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
92.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
95.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
97.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
100.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
102.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
105.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
107.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
110.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
112.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
115.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
117.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
120.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
122.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
125.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
127.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
130.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
132.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
137.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
140.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
142.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
145.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
147.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
150.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
152.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
155.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
157.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
160.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
162.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
165.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
167.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
170.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
172.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
175.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000
177.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
180.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	1202.03	N.A.	12.70
0-30	2578.69	N.A.	27.30
0-40	4273.83	N.A.	45.20
0-60	7717.41	N.A.	81.70
0-80	9340.71	N.A.	98.80
0-90	9451.82	N.A.	100.00
10-90	9143.56	N.A.	96.70
20-40	3071.8	N.A.	32.50
20-50	4867.71	N.A.	51.50
40-70	4568.27	N.A.	48.30
60-80	1623.3	N.A.	17.20
70-80	498.60	N.A.	5.30
80-90	111.11	N.A.	1.20
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	9451.82	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	308.26
10-20	893.77
20-30	1376.66
30-40	1695.14
40-50	1795.91
50-60	1647.67
60-70	1124.69
70-80	498.60
80-90	111.11
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

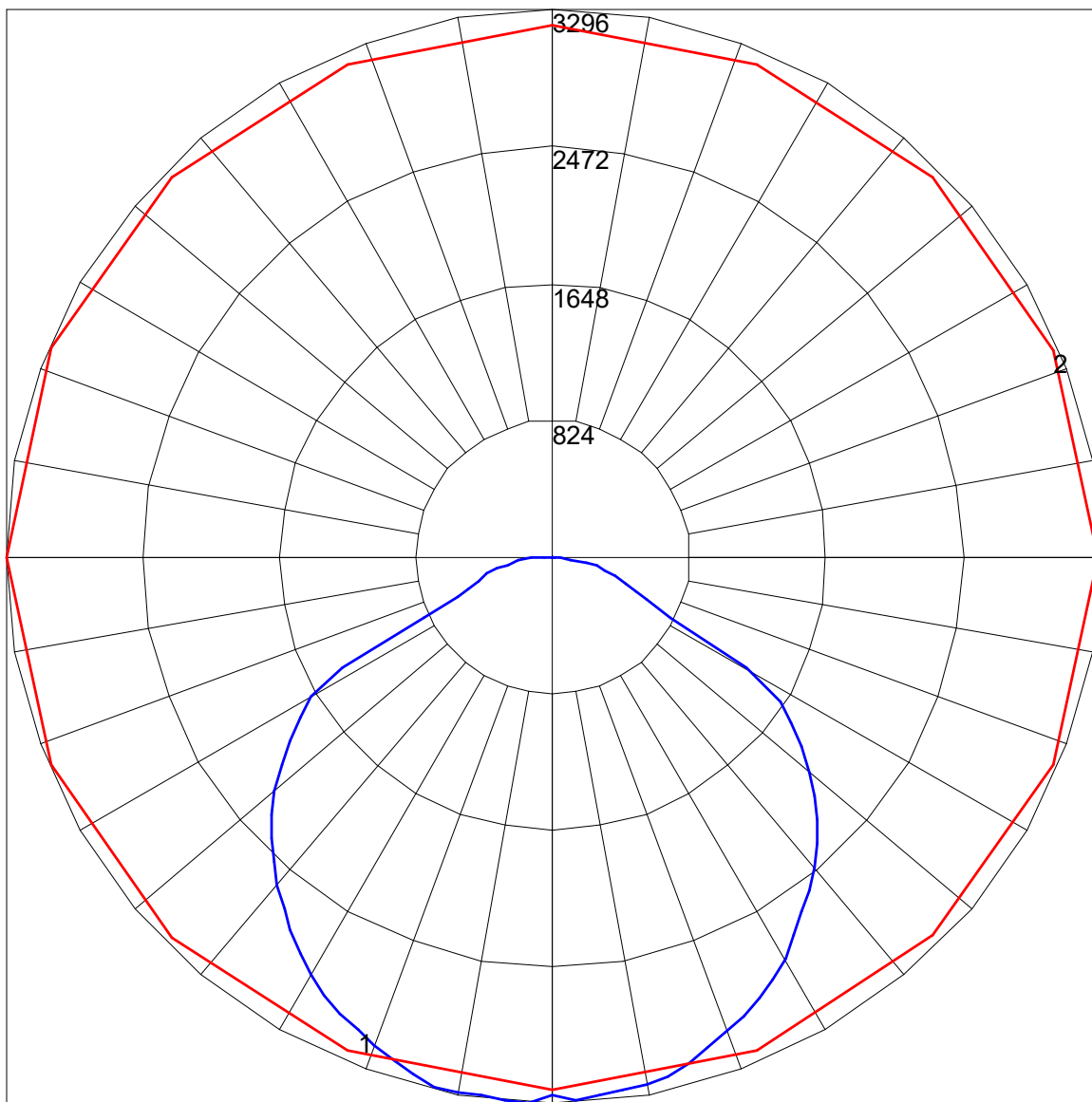
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	102	99	95	98	95	92	94	92	89	91	89	87	85
2	100	91	85	79	97	90	83	78	86	81	76	83	78	75	80	76	73	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	71	66	62	60
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	58	53	51
5	76	63	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44
6	70	57	48	42	68	56	48	42	54	47	41	53	46	41	51	45	40	38
7	65	52	43	37	63	51	43	37	49	42	36	48	41	36	47	40	36	34
8	61	47	39	33	59	46	38	33	45	38	32	44	37	32	43	37	32	30
9	57	43	35	29	55	43	35	29	41	34	29	40	34	29	39	33	29	27
10	53	40	32	27	52	39	32	27	38	31	26	37	31	26	36	30	26	24

POLAR GRAPH



Maximum Candela = 3295.741 Located At Horizontal Angle = 180, Vertical Angle = 2.5
1 - Vertical Plane Through Horizontal Angles (180 - 0) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)