



IES INDOOR REPORT

PHOTOMETRIC FILENAME : IHB4-LED-18L-LL-40.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] 3128

[TESTLAB] TUV SUD America

[ISSUE DATE] 04/19/21

[MANUFAC] LSI INDUSTRIES, INC

[LUMCAT] IHB4-LED-18L-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	21403
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	138
Total Luminaire Watts	155.03
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	31610	32615	33298
55	30357	31483	32344
65	13454	28503	29957
75	11155	12024	24863
85	3779	6590	12571

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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	7388.08	7388.08	7388.08	7388.08	7388.08	7388.08	7388.08	7388.08	7388.08	7388.08
2.5	7362.48	7381.15	7356.77	7378.72	7398.23	7388.18	7380.27	7403.66	7388.63	7403.66
5.0	7339.18	7353.78	7331.76	7353.73	7384.53	7379.38	7370.55	7398.56	7385.98	7398.56
7.5	7368.49	7343.41	7298.54	7327.55	7355.23	7359.49	7350.32	7381.79	7369.40	7381.79
10.0	7295.60	7333.94	7273.63	7288.57	7314.83	7324.64	7322.39	7375.05	7365.02	7375.05
12.5	7207.86	7248.17	7244.20	7219.47	7260.81	7269.37	7291.17	7382.90	7368.54	7382.90
15.0	7102.75	7146.66	7156.43	7151.25	7191.23	7208.01	7293.78	7306.43	7299.36	7306.43
17.5	6984.91	7036.62	7056.41	7091.84	7115.15	7136.20	7205.04	7218.25	7208.55	7218.25
20.0	6865.50	6916.52	6932.23	7025.74	7022.74	7041.81	7113.13	7113.62	7109.49	7113.62
22.5	6725.34	6786.37	6812.26	6927.64	6912.57	6956.59	6997.94	7005.33	7002.48	7005.33
25.0	6585.48	6647.44	6675.96	6791.59	6793.02	6892.10	6878.23	6875.80	6889.76	6875.80
27.5	6435.86	6495.82	6527.65	6640.97	6655.05	6766.82	6743.12	6738.59	6761.43	6738.59
30.0	6262.54	6332.08	6362.43	6478.13	6505.40	6610.83	6591.12	6591.74	6624.20	6591.74
32.5	6090.48	6148.96	6186.12	6305.58	6340.45	6439.85	6423.58	6431.83	6483.49	6431.83
35.0	5898.98	5969.07	6002.44	6123.61	6165.18	6267.29	6248.40	6263.43	6323.08	6263.43
37.5	5693.61	5773.59	5806.18	5932.90	5950.41	6077.27	6059.49	6089.10	6155.89	6089.10
40.0	5478.60	5564.64	5594.03	5682.73	5714.67	5851.37	5860.67	5892.74	5982.32	5892.74
42.5	5245.20	5334.77	5377.23	5431.41	5498.45	5597.39	5653.69	5682.60	5775.83	5682.60
45.0	4988.33	5096.96	5146.97	5190.68	5254.69	5367.79	5435.94	5461.64	5554.18	5461.64
47.5	4735.61	4855.43	4893.14	4929.57	4985.78	5117.84	5205.51	5231.24	5318.40	5231.24
50.0	4468.88	4591.72	4609.96	4644.96	4722.93	4827.46	4920.07	4989.20	5069.46	4989.20
52.5	4171.11	4308.77	4324.06	4367.91	4429.12	4551.75	4641.98	4719.90	4818.21	4719.90
55.0	3885.91	4019.95	4030.12	4052.96	4140.36	4239.57	4374.70	4439.12	4550.94	4439.12
57.5	3257.88	3702.64	3742.44	3750.88	3825.90	3943.09	4088.87	4168.77	4280.43	4168.77
60.0	2174.80	3130.09	3443.26	3425.66	3501.25	3617.76	3808.61	3878.46	3992.92	3878.46
62.5	1454.07	2100.17	3123.86	3108.07	3166.22	3306.34	3488.79	3560.69	3629.54	3560.69
65.0	1268.96	1371.60	2688.38	2785.23	2825.47	2967.24	3157.15	2774.44	2294.67	2774.44
67.5	1097.12	1192.46	1862.75	2437.99	2479.90	2628.14	2809.11	1464.01	1489.75	1464.01
70.0	926.78	1030.58	1093.39	2104.19	2140.09	2283.07	2214.99	1266.65	1305.14	1266.65
72.5	787.66	866.03	858.10	1760.64	1776.28	1955.23	1087.98	1106.52	1149.93	1106.52
75.0	644.32	714.90	694.56	1390.88	1436.12	1613.51	884.32	945.17	989.85	945.17
77.5	494.43	567.57	542.28	827.38	1096.22	1288.17	713.52	782.42	835.96	782.42
80.0	339.68	408.00	407.53	404.45	787.15	620.45	556.70	630.56	684.90	630.56
82.5	151.99	234.61	272.94	254.02	493.16	331.77	419.75	477.17	527.01	477.17
85.0	73.51	103.57	128.19	146.75	244.51	203.08	282.61	320.11	367.26	320.11
87.5	3.76	27.77	47.37	62.67	67.78	115.45	140.79	149.25	184.75	149.25
90.0	0.48	7.81	14.47	22.12	6.86	41.34	60.52	70.66	93.38	70.66
92.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
117.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
122.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
132.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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135.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
137.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
142.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
147.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
152.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
157.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
162.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
172.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
177.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	7388.08	7388.08	7388.08	7388.08	7388.08	7388.08	7388.08
2.5	7380.27	7388.18	7398.23	7378.72	7356.77	7381.15	7362.48
5.0	7370.55	7379.38	7384.53	7353.73	7331.76	7353.78	7339.18
7.5	7350.32	7359.49	7355.23	7327.55	7298.54	7343.41	7368.49
10.0	7322.39	7324.64	7314.83	7288.57	7273.63	7333.94	7295.60
12.5	7291.17	7269.37	7260.81	7219.47	7244.20	7248.17	7207.86
15.0	7293.78	7208.01	7191.23	7151.25	7156.43	7146.66	7102.75
17.5	7205.04	7136.20	7115.15	7091.84	7056.41	7036.62	6984.91
20.0	7113.13	7041.81	7022.74	7025.74	6932.23	6916.52	6865.50
22.5	6997.94	6956.59	6912.57	6927.64	6812.26	6786.37	6725.34
25.0	6878.23	6892.10	6793.02	6791.59	6675.96	6647.44	6585.48
27.5	6743.12	6766.82	6655.05	6640.97	6527.65	6495.82	6435.86
30.0	6591.12	6610.83	6505.40	6478.13	6362.43	6332.08	6262.54
32.5	6423.58	6439.85	6340.45	6305.58	6186.12	6148.96	6090.48
35.0	6248.40	6267.29	6165.18	6123.61	6002.44	5969.07	5898.98
37.5	6059.49	6077.27	5950.41	5932.90	5806.18	5773.59	5693.61
40.0	5860.67	5851.37	5714.67	5682.73	5594.03	5564.64	5478.60
42.5	5653.69	5597.39	5498.45	5431.41	5377.23	5334.77	5245.20
45.0	5435.94	5367.79	5254.69	5190.68	5146.97	5096.96	4988.33
47.5	5205.51	5117.84	4985.78	4929.57	4893.14	4855.43	4735.61
50.0	4920.07	4827.46	4722.93	4644.96	4609.96	4591.72	4468.88
52.5	4641.98	4551.75	4429.12	4367.91	4324.06	4308.77	4171.11
55.0	4374.70	4239.57	4140.36	4052.96	4030.12	4019.95	3885.91
57.5	4088.87	3943.09	3825.90	3750.88	3742.44	3702.64	3257.88
60.0	3808.61	3617.76	3501.25	3425.66	3443.26	3130.09	2174.80
62.5	3488.79	3306.34	3166.22	3108.07	3123.86	2100.17	1454.07
65.0	3157.15	2967.24	2825.47	2785.23	2688.38	1371.60	1268.96
67.5	2809.11	2628.14	2479.90	2437.99	1862.75	1192.46	1097.12
70.0	2214.99	2283.07	2140.09	2104.19	1093.39	1030.58	926.78
72.5	1087.98	1955.23	1776.28	1760.64	858.10	866.03	787.66
75.0	884.32	1613.51	1436.12	1390.88	694.56	714.90	644.32
77.5	713.52	1288.17	1096.22	827.38	542.28	567.57	494.43
80.0	556.70	620.45	787.15	404.45	407.53	408.00	339.68

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CANDELA TABULATION - (Cont.)

82.5	419.75	331.77	493.16	254.02	272.94	234.61	151.99
85.0	282.61	203.08	244.51	146.75	128.19	103.57	73.51
87.5	140.79	115.45	67.78	62.67	47.37	27.77	3.76
90.0	60.52	41.34	6.86	22.12	14.47	7.81	0.48
92.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
117.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
122.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
132.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
137.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
142.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
147.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
152.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
157.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
162.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
172.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
177.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	2736.37	N.A.	12.80
0-30	5864.5	N.A.	27.40
0-40	9707.61	N.A.	45.40
0-60	17503.61	N.A.	81.80
0-80	21143.83	N.A.	98.80
0-90	21398.05	N.A.	100.00
10-90	20696.22	N.A.	96.70
20-40	6971.23	N.A.	32.60
20-50	11039.92	N.A.	51.60
40-70	10311.44	N.A.	48.20
60-80	3640.22	N.A.	17.00
70-80	1124.78	N.A.	5.30
80-90	254.22	N.A.	1.20
90-110	4.64	N.A.	0.00
90-120	4.64	N.A.	0.00
90-130	4.64	N.A.	0.00
90-150	4.64	N.A.	0.00
90-180	4.64	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	21402.69	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	701.83
10-20	2034.55
20-30	3128.12
30-40	3843.11
40-50	4068.68
50-60	3727.32
60-70	2515.44
70-80	1124.78
80-90	254.22
90-100	4.64
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

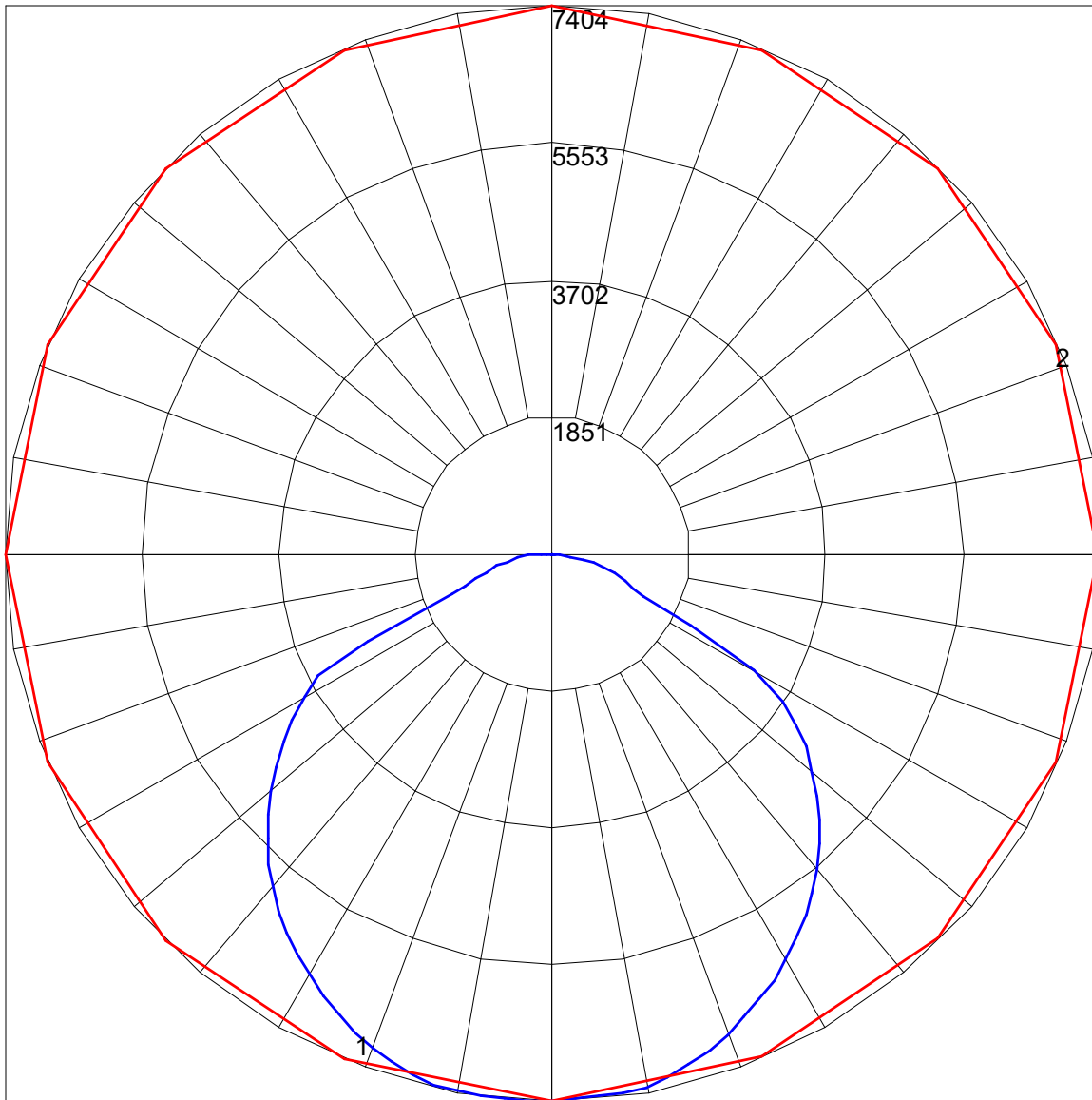
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	92	85	79	97	90	84	78	86	81	77	83	79	75	80	76	73	71
3	91	80	72	66	88	79	71	65	76	70	64	73	68	63	71	66	62	60
4	83	71	63	56	81	70	62	56	67	60	55	65	59	54	63	58	53	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44
6	70	57	48	42	69	56	48	42	54	47	41	53	46	41	51	45	41	39
7	65	52	43	37	64	51	43	37	49	42	36	48	41	36	47	41	36	34
8	61	47	39	33	59	46	38	33	45	38	33	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	31	26	24

POLAR GRAPH



Maximum Candela = 7403.66 Located At Horizontal Angle = 157.5, Vertical Angle = 2.5
1 - Vertical Plane Through Horizontal Angles (157.5 - 337.5) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)