



**IES INDOOR REPORT**

**PHOTOMETRIC FILENAME : HBPA48-LED215DMV50.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002

[TEST] LLI-17027-1-R01

[TESTLAB] LightLab international (www.LightLabInt.com)

[MANUFAC] Mobern Lighting Co

[LUMCAT] HBPA48-LED215DMV50

[LUMINAIRE] Mobern Lighting Co - 4' suspended high bay luminaire. Product ID: HBPA48-LED215DMV50

[MORE] White painted formed steel housing with no lens.

[MORE] 528 LEDs with 2 x 44 array on each of Six white PCBs mounted in two rows on ~ 7.5" centers.

[MORE] Two Philips Advance Xitanium LED driver. One Model: XI190C275V054BSG1 and One Model: XI095C275V054BSS1 to

[MORE] Operating at 120Vac and 60Hz.

[OTHER] Absolute test - lamp lumens value set to -1

[MORE] NA conventions used for C0 plane alignment and C-plane rotation direction.

[MORE] The sample was tested at a distance of 8m.

[MORE] This IES file extrapolated from LLI-17027-1-R01

[DATE] This file created: Tuesday, January 16, 2018

[ISSUEDATE] Tuesday, January 16, 2018

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	31380
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	146
Total Luminaire Watts	215
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.28
Spacing Criterion (90-270)	1.30
Spacing Criterion (Diagonal)	1.40
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.13 m
Luminous Width (90-270)	0.36 m
Luminous Height	0.00 m

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**LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	26540	26765	27347
55	25645	26150	26988
65	23794	24480	13262
75	19745	12060	13029
85	12339	6463	6779

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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>
0.0	11078.386	11078.386	11078.386	11078.386	11078.386
0.5	11102.856	11076.324	11089.649	11061.290	11068.833
1.0	11102.047	11074.588	11088.096	11061.916	11067.228
1.5	11099.946	11073.309	11085.316	11059.345	11064.683
2.0	11097.610	11070.569	11083.776	11057.283	11062.621
2.5	11094.347	11066.353	11079.782	11053.616	11059.189
3.0	11089.975	11062.673	11074.719	11049.101	11054.569
3.5	11084.846	11056.135	11068.872	11043.659	11049.375
4.0	11078.843	11050.327	11062.699	11037.107	11044.050
4.5	11072.213	11043.437	11055.887	11029.929	11035.920
5.0	11064.305	11036.376	11047.770	11023.143	11029.368
5.5	11056.187	11028.076	11039.039	11014.491	11022.138
6.0	11046.712	11019.254	11029.681	11004.664	11013.003
6.5	11036.403	11009.545	11019.620	10995.006	11002.719
7.0	11025.362	10997.812	11008.540	10983.861	10991.000
7.5	11013.760	10987.463	10996.598	10972.651	10978.054
8.0	11001.192	10974.987	10984.266	10958.908	10964.833
8.5	10987.646	10962.406	10970.380	10947.346	10951.966
9.0	10973.734	10948.690	10956.063	10932.834	10938.967
9.5	10958.974	10935.039	10940.990	10918.034	10923.985
10.0	10943.548	10919.391	10925.134	10902.883	10907.542
10.5	10927.130	10902.478	10908.442	10886.804	10891.437
11.0	10910.413	10885.656	10890.863	10869.630	10873.858
11.5	10891.463	10867.189	10871.940	10851.163	10854.374
12.0	10870.635	10848.410	10853.786	10832.214	10836.690
12.5	10847.744	10828.534	10834.158	10812.586	10816.762
13.0	10821.734	10806.557	10812.847	10791.770	10794.942
13.5	10793.584	10781.682	10792.044	10770.433	10773.082
14.0	10765.304	10754.876	10769.611	10748.338	10751.640
14.5	10736.358	10726.674	10747.138	10724.912	10728.697
15.0	10705.898	10696.841	10725.735	10701.408	10704.710
15.5	10672.619	10667.686	10706.942	10676.430	10680.528
16.0	10635.112	10636.639	10681.428	10650.772	10653.487
16.5	10597.813	10603.360	10651.738	10624.737	10626.851
17.0	10561.676	10567.758	10620.469	10598.740	10599.419
17.5	10526.975	10529.363	10589.565	10571.190	10571.086
18.0	10493.031	10492.757	10560.985	10543.601	10543.210
18.5	10456.202	10457.116	10528.920	10515.099	10513.272
19.0	10417.794	10424.032	10489.455	10482.890	10482.525
19.5	10380.914	10387.791	10450.107	10451.008	10451.034
20.0	10346.434	10347.426	10410.969	10420.835	10418.643
20.5	10311.994	10306.004	10372.300	10387.804	10384.033
21.0	10278.389	10266.212	10332.705	10353.912	10350.793
21.5	10245.084	10228.849	10291.726	10318.571	10316.405
22.0	10210.082	10191.942	10247.628	10283.596	10281.860
22.5	10175.550	10155.714	10203.218	10247.354	10247.041
23.0	10139.896	10119.355	10159.028	10210.617	10209.129
23.5	10103.198	10081.665	10114.657	10173.162	10170.043
24.0	10066.056	10043.701	10071.094	10135.107	10130.944
24.5	10028.119	10006.194	10028.680	10096.490	10093.802
25.0	9989.084	9965.959	9984.099	10055.838	10052.614
25.5	9949.019	9926.729	9938.409	10014.716	10013.424
26.0	9907.010	9885.920	9891.949	9971.675	9970.527
26.5	9862.285	9844.876	9845.163	9930.827	9927.186

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**CANDELA TABULATION - (Cont.)**

27.0	9814.116	9802.488	9798.795	9887.812	9885.228
27.5	9764.172	9760.074	9752.622	9844.628	9840.439
28.0	9713.000	9714.423	9706.580	9799.943	9796.145
28.5	9662.038	9665.483	9660.824	9754.697	9750.782
29.0	9607.565	9615.931	9614.404	9707.715	9704.531
29.5	9548.629	9561.823	9567.396	9658.645	9656.426
30.0	9489.928	9508.747	9520.740	9608.883	9608.753
30.5	9432.779	9454.587	9472.505	9558.091	9558.978
31.0	9377.223	9396.369	9423.031	9507.637	9509.425
31.5	9320.206	9337.432	9372.956	9456.244	9458.985
32.0	9261.661	9275.260	9323.781	9402.842	9408.258
32.5	9204.943	9214.131	9271.932	9347.546	9356.303
33.0	9150.549	9156.226	9220.304	9291.677	9304.571
33.5	9096.963	9096.885	9167.580	9235.795	9251.103
34.0	9044.135	9034.999	9112.781	9179.560	9197.635
34.5	8990.523	8975.476	9059.417	9122.425	9143.632
35.0	8936.311	8917.936	9003.078	9065.159	9088.807
35.5	8881.956	8859.679	8944.755	9005.061	9033.146
36.0	8827.300	8804.214	8883.744	8944.611	8975.737
36.5	8771.692	8747.640	8821.323	8887.045	8918.810
37.0	8713.774	8690.113	8757.676	8824.011	8858.987
37.5	8655.607	8632.756	8694.067	8761.617	8799.881
38.0	8592.391	8573.402	8628.945	8698.400	8740.527
38.5	8524.097	8513.448	8562.139	8633.017	8681.682
39.0	8455.660	8453.990	8491.862	8568.613	8620.449
39.5	8386.727	8393.083	8421.011	8503.686	8558.538
40.0	8312.796	8328.326	8349.833	8436.398	8494.290
40.5	8235.224	8260.594	8282.127	8371.693	8430.760
41.0	8160.235	8189.690	8213.234	8304.770	8368.130
41.5	8087.205	8117.234	8141.443	8236.790	8302.695
42.0	8011.381	8044.020	8071.113	8167.726	8238.121
42.5	7937.998	7966.383	8000.640	8100.686	8170.180
43.0	7868.412	7885.978	7932.243	8029.352	8102.813
43.5	7800.210	7808.785	7864.719	7959.805	8034.898
44.0	7733.757	7732.661	7797.235	7888.523	7966.983
44.5	7664.446	7655.924	7728.524	7818.011	7896.040
45.0	7596.048	7580.700	7660.413	7747.565	7826.977
45.5	7526.658	7508.453	7590.475	7676.622	7756.465
46.0	7456.068	7436.414	7520.838	7603.904	7683.865
46.5	7385.543	7366.098	7450.939	7532.453	7610.521
47.0	7306.757	7296.682	7380.218	7459.800	7538.169
47.5	7223.755	7222.907	7307.475	7387.005	7462.149
48.0	7142.385	7151.429	7234.091	7312.682	7387.840
48.5	7054.020	7078.816	7157.067	7238.777	7313.152
49.0	6963.828	7001.909	7076.271	7162.836	7236.349
49.5	6879.783	6921.244	6995.919	7087.939	7160.304
50.0	6793.662	6837.499	6914.432	7011.750	7083.280
50.5	6711.379	6750.491	6827.489	6934.047	7003.985
51.0	6633.963	6660.286	6740.090	6857.101	6926.034
51.5	6557.435	6572.090	6653.434	6778.876	6845.525
52.0	6478.570	6483.007	6566.844	6699.738	6765.186
52.5	6401.154	6395.543	6481.494	6619.594	6683.490
53.0	6321.598	6313.311	6397.174	6540.038	6601.637
53.5	6238.571	6232.750	6313.820	6457.467	6518.152
54.0	6147.413	6152.920	6233.821	6375.340	6435.203
54.5	6054.023	6072.764	6153.051	6291.608	6351.158

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**CANDELA TABULATION - (Cont.)**

55.0	5953.782	5991.537	6071.146	6205.162	6265.651
55.5	5858.579	5910.024	5989.436	6118.245	6179.074
56.0	5762.579	5820.771	5907.479	6029.697	6067.452
56.5	5674.266	5726.442	5823.238	5939.100	5944.817
57.0	5590.651	5628.863	5737.744	5849.495	5853.424
57.5	5507.128	5530.201	5646.325	5758.142	5766.977
58.0	5422.613	5431.996	5552.191	5650.423	5678.481
58.5	5335.344	5340.447	5457.092	5517.621	5589.829
59.0	5237.882	5254.313	5359.970	5412.942	5501.307
59.5	5135.149	5168.271	5262.874	5317.438	5406.782
60.0	5031.058	5083.090	5169.067	5224.453	5087.867
60.5	4931.234	4996.696	5078.836	5130.229	4345.187
61.0	4838.588	4897.655	4989.805	5036.669	3881.867
61.5	4752.207	4797.636	4903.136	4941.153	3781.861
62.0	4664.325	4693.049	4815.293	4617.108	3712.693
62.5	4573.180	4589.871	4724.970	3896.875	3643.447
63.0	4471.386	4498.074	4632.886	3533.849	3572.452
63.5	4362.492	4410.048	4532.762	3450.195	3410.717
64.0	4254.499	4321.122	4430.342	3380.374	2783.874
64.5	4159.374	4229.129	4320.717	3309.967	2338.799
65.0	4070.160	4125.573	4187.654	3236.088	2268.534
65.5	3978.872	4015.413	4076.933	2933.655	2220.561
66.0	3877.795	3912.953	3981.195	2294.596	2172.456
66.5	3766.905	3821.508	3888.144	2107.139	2125.396
67.0	3658.847	3731.225	3792.954	2055.276	2078.101
67.5	3568.211	3638.096	3692.452	2006.180	2034.003
68.0	3477.248	3532.035	3418.717	1957.345	1990.676
68.5	3374.697	3420.988	2791.430	1909.240	1948.040
69.0	3261.575	3325.732	2573.212	1863.929	1905.925
69.5	3160.212	3236.453	2498.407	1820.418	1864.477
70.0	3069.537	3136.851	2428.377	1778.748	1821.541
70.5	2971.292	3026.601	2353.011	1738.500	1779.257
71.0	2857.596	2925.041	2016.372	1698.853	1738.631
71.5	2760.109	2834.941	1583.590	1658.983	1695.668
72.0	2669.943	2735.665	1520.321	1618.318	1653.907
72.5	2560.697	2626.628	1475.897	1578.109	1605.032
73.0	2458.302	2533.499	1431.134	1536.530	1558.116
73.5	2369.363	2439.379	1384.413	1490.958	1513.940
74.0	2259.569	2329.924	1340.394	1442.031	1483.480
74.5	2166.819	2237.735	1302.847	1395.389	1420.916
75.0	2068.457	2140.313	1263.409	1358.456	1364.955
75.5	1969.586	2038.989	1220.786	1319.108	1313.431
76.0	1877.227	1943.955	1183.957	1254.547	1258.502
76.5	1778.004	1830.976	1144.192	1201.249	1203.324
77.0	1687.107	1741.593	1102.000	1145.067	1149.478
77.5	1593.913	1637.750	1060.891	1089.550	1096.271
78.0	1495.617	1475.897	1010.424	1037.191	1045.935
78.5	1412.929	1151.122	972.865	984.454	995.625
79.0	1322.006	1073.628	921.067	931.991	938.098
79.5	1236.107	998.796	868.904	882.738	881.537
80.0	1145.275	727.358	814.079	826.307	833.942
80.5	1065.250	680.089	759.410	763.430	733.544
81.0	981.700	648.259	709.153	719.228	431.933
81.5	903.880	621.036	660.318	495.163	289.944
82.0	826.190	595.939	611.535	290.205	282.622
82.5	755.130	567.685	555.665	281.135	276.815

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**CANDELA TABULATION - (Cont.)**

<b>83.0</b>	684.396	532.109	511.176	273.369	269.872
<b>83.5</b>	615.137	488.142	375.947	264.952	261.741
<b>84.0</b>	551.241	440.703	249.226	255.125	262.394
<b>84.5</b>	492.201	388.018	238.642	256.182	310.002
<b>85.0</b>	435.287	340.880	228.006	276.997	239.151
<b>85.5</b>	380.788	299.144	214.746	226.936	229.415
<b>86.0</b>	317.963	256.012	227.027	214.707	213.637
<b>86.5</b>	257.148	206.394	187.797	197.389	196.476
<b>87.0</b>	201.931	161.030	171.706	178.166	176.965
<b>87.5</b>	158.473	145.226	152.717	156.006	158.238
<b>88.0</b>	130.218	127.791	130.310	138.127	137.657
<b>88.5</b>	108.111	99.236	108.254	111.673	112.026
<b>89.0</b>	72.130	75.315	80.443	81.488	82.949
<b>89.5</b>	45.638	44.280	48.835	49.892	50.662
<b>90.0</b>	0.000	0.000	0.000	0.000	0.000

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	4071.83	N.A.	13.00
0-30	8685.62	N.A.	27.70
0-40	14316.87	N.A.	45.60
0-60	25672.34	N.A.	81.80
0-80	31016.98	N.A.	98.80
0-90	31379.99	N.A.	100.00
10-90	30330.14	N.A.	96.70
20-40	10245.03	N.A.	32.60
20-50	16168.7	N.A.	51.50
40-70	14994.78	N.A.	47.80
60-80	5344.63	N.A.	17.00
70-80	1705.33	N.A.	5.40
80-90	363.01	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	31379.99	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	1049.86
10-20	3021.97
20-30	4613.78
30-40	5631.25
40-50	5923.67
50-60	5431.81
60-70	3639.3
70-80	1705.33
80-90	363.01
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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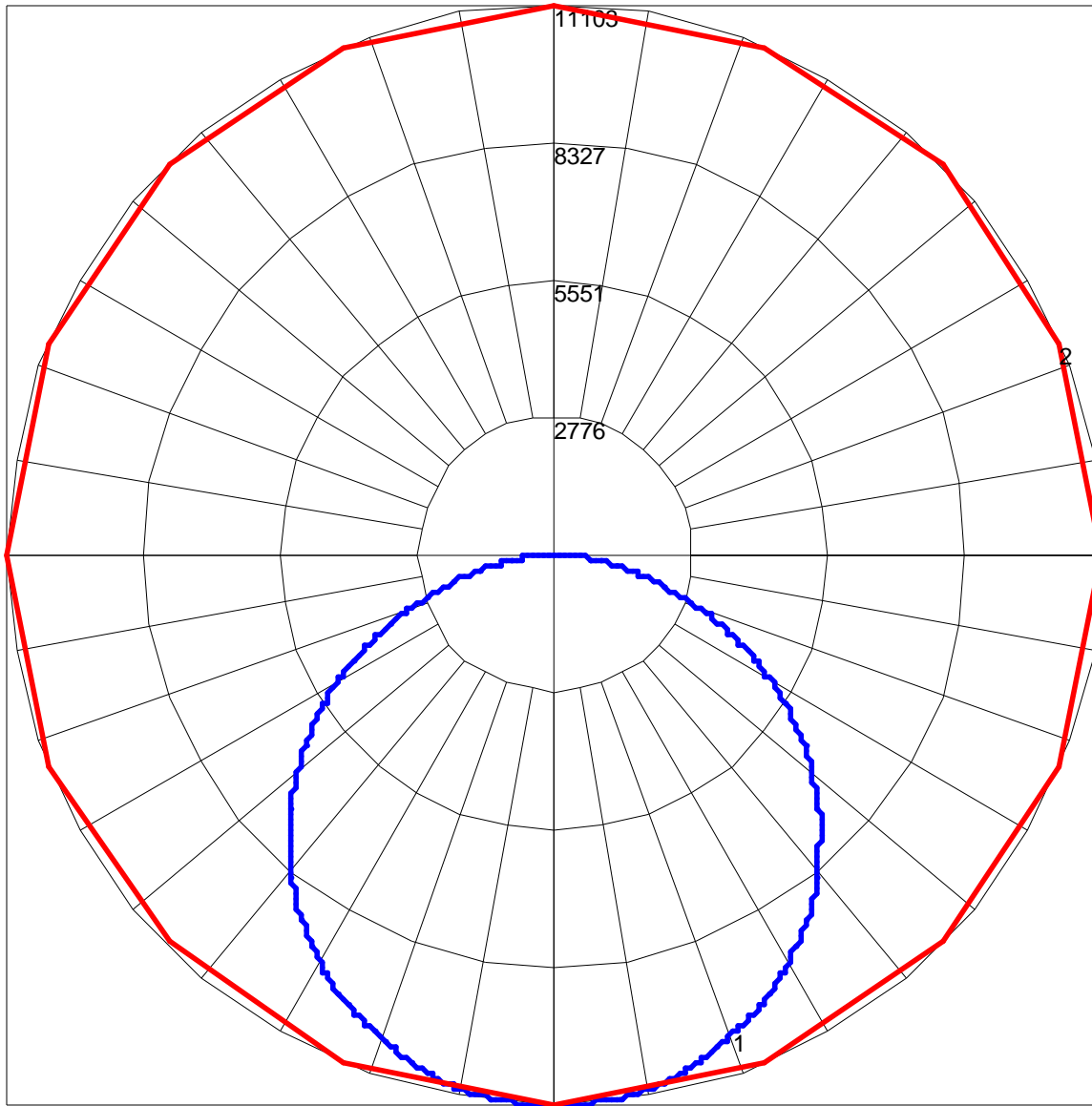
**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

Effective Floor Cavity Reflectance 0.20

RC RW	80				70				50			30			10			0
	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	90	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	63	54	48	60	53	47	58	52	47	57	51	46	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	32	43	37	32	30
9	57	43	35	30	55	43	35	30	42	34	29	41	34	29	40	33	29	27
10	53	40	32	27	52	39	32	27	38	31	27	38	31	27	37	31	26	25



POLAR GRAPH



Maximum Candela = 11102.856 Located At Horizontal Angle = 0, Vertical Angle = .5  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (.5) (Through Max. Cd.)