



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : HBPA48-LED186DMVFR50.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
 [TEST] HBPA48-LED186DMVFR50  
 [TESTDATE] 21-Sep-2017 14:16:22  
 [TESTLAB] Radiant Vision Systems ProSource  
 [ISSUEDATE] 9/22/2017 6:14:15 AM  
 [MANUFAC] Mobern Lighting Co.  
 [LUMINAIRE] Catalog Number: HBPA48-LED186DMVFR50  
 [LAMP] LED Module  
 [\_TOTALLUMINAIRELUMENS] 24515.5  
 [\_NUMBEROFRAYS]10000000  
 [DRIVER TYPE] (1) PHILIPS 190W  
 [BOARD TYPE] (6) PHILIPS "A"  
 [COLOR TEMP] 5,316  
 [LUMEN/WATT] 130 LM/WT  
 [CRI] 84.3  
 [OTHER] Absolute Photometry measurement

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	24529
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	130
Total Luminaire Watts	188
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.24
Spacing Criterion (90-270)	1.22
Spacing Criterion (Diagonal)	1.32
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	1.15 m
Luminous Width (90-270)	0.38 m
Luminous Height	0.11 m

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	17804	14798	14329
55	14391	11470	10989
65	11206	8184	7797
75	8629	5298	4964
85	5355	2467	2295

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**CANDELA TABULATION**

	<u>0</u>	<u>10</u>	<u>20</u>	<u>30</u>	<u>40</u>	<u>50</u>	<u>60</u>	<u>70</u>	<u>80</u>	<u>90</u>
<b>0</b>	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12
<b>3</b>	9945.72	9941.29	9935.63	9927.36	9921.05	9913.93	9909.59	9907.07	9906.14	9907.36
<b>6</b>	9937.33	9928.82	9915.50	9895.01	9875.54	9861.36	9856.51	9855.78	9858.72	9864.25
<b>9</b>	9876.10	9860.23	9842.61	9809.21	9780.12	9765.69	9768.39	9778.51	9786.07	9788.79
<b>12</b>	9759.60	9744.36	9728.24	9695.87	9665.92	9645.28	9659.46	9678.22	9682.26	9675.56
<b>15</b>	9595.48	9586.82	9581.85	9536.93	9472.09	9458.00	9492.54	9536.60	9534.11	9520.81
<b>18</b>	9399.38	9413.98	9383.10	9364.06	9279.90	9244.37	9289.11	9342.07	9345.92	9315.78
<b>21</b>	9180.48	9191.68	9186.20	9195.32	9112.56	9046.36	9076.72	9120.79	9097.08	9058.63
<b>24</b>	8917.86	8928.49	8941.47	8924.98	8867.43	8820.11	8817.60	8842.77	8811.69	8779.41
<b>27</b>	8593.28	8614.16	8595.62	8592.06	8544.35	8555.40	8546.54	8515.39	8501.74	8498.06
<b>30</b>	8228.50	8252.15	8205.88	8216.59	8155.55	8189.35	8209.53	8176.58	8155.42	8163.26
<b>33</b>	7847.31	7881.02	7817.86	7837.64	7771.85	7769.42	7779.43	7756.65	7739.50	7729.29
<b>36</b>	7439.42	7477.79	7414.07	7436.20	7362.25	7330.00	7313.70	7280.30	7275.51	7241.32
<b>39</b>	6992.26	7006.41	6983.61	6906.95	6902.79	6873.42	6807.14	6797.80	6799.88	6751.65
<b>42</b>	6519.73	6462.76	6458.98	6406.45	6409.43	6368.90	6305.58	6252.80	6263.98	6248.36
<b>45</b>	6030.43	5903.09	5906.03	5862.12	5823.23	5817.91	5729.93	5708.07	5672.74	5711.99
<b>48</b>	5486.22	5360.47	5361.31	5283.25	5231.20	5232.22	5135.15	5174.23	5076.52	5160.60
<b>51</b>	4866.85	4841.06	4737.94	4735.20	4715.15	4663.36	4602.53	4615.53	4538.42	4615.35
<b>54</b>	4266.94	4272.73	4241.70	4150.80	4212.81	4123.40	4059.45	4089.16	3994.91	4074.06
<b>57</b>	3771.19	3733.89	3714.94	3637.11	3712.00	3584.61	3546.90	3559.76	3506.17	3536.35
<b>60</b>	3310.58	3255.60	3196.57	3134.30	3162.42	3085.17	3043.52	3045.94	3045.21	3035.19
<b>63</b>	2811.54	2797.14	2772.02	2688.35	2655.82	2662.82	2617.33	2588.33	2604.32	2598.42
<b>66</b>	2336.96	2322.00	2306.67	2296.46	2261.63	2264.96	2215.07	2178.74	2164.45	2203.06
<b>69</b>	1957.22	1921.59	1912.45	1870.88	1879.82	1853.77	1829.30	1810.02	1783.32	1823.33
<b>72</b>	1636.96	1603.82	1564.59	1526.53	1548.99	1518.78	1491.09	1484.12	1474.76	1473.02
<b>75</b>	1324.90	1297.90	1230.76	1228.71	1193.75	1223.72	1172.52	1177.02	1172.95	1168.51
<b>78</b>	1018.86	986.09	945.84	985.73	894.33	928.29	900.90	892.88	887.59	897.01
<b>81</b>	768.34	732.77	750.95	738.00	711.43	719.40	683.24	691.31	666.39	674.89
<b>84</b>	509.80	494.40	477.98	484.74	465.41	460.65	439.89	447.05	451.27	451.00
<b>87</b>	261.89	245.91	236.11	228.69	237.70	229.72	219.90	209.54	252.26	228.27
<b>90</b>	87.41	58.68	75.52	78.03	66.34	71.24	80.26	81.10	77.68	89.08
<b>93</b>	7.18	6.65	5.78	16.75	9.33	10.88	10.83	13.68	11.92	13.92
<b>96</b>	0.38	0.57	1.09	1.46	1.79	1.16	0.33	0.77	1.16	0.95
<b>99</b>	0.14	0.23	0.32	1.45	0.48	0.39	0.11	0.09	0.18	0.04
<b>102</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>105</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>108</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>111</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>114</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>117</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>120</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>123</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>126</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>129</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>132</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>135</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>138</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>141</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>144</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>147</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>150</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>153</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>156</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>159</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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**CANDELA TABULATION - (Cont.)**

162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
168	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
171	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
174	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
177	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	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>100</u>	<u>110</u>	<u>120</u>	<u>130</u>	<u>140</u>	<u>150</u>	<u>160</u>	<u>170</u>	<u>180</u>	<u>190</u>
0	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12
3	9909.00	9912.37	9916.49	9921.10	9926.32	9929.61	9933.44	9935.14	9935.87	9935.75
6	9869.36	9874.89	9882.49	9889.58	9899.51	9909.79	9916.29	9913.98	9910.88	9898.96
9	9790.50	9792.01	9796.10	9803.95	9812.13	9817.91	9829.38	9823.93	9826.30	9814.26
12	9665.97	9664.32	9678.57	9696.91	9708.18	9690.40	9680.76	9686.95	9704.75	9709.85
15	9498.58	9499.10	9517.59	9552.55	9553.70	9520.57	9496.83	9517.35	9570.13	9567.56
18	9309.52	9296.11	9307.83	9348.70	9351.50	9312.31	9255.79	9332.09	9391.78	9384.49
21	9090.64	9093.38	9065.56	9080.89	9112.99	9087.87	9048.78	9105.29	9140.78	9130.06
24	8842.25	8845.26	8761.09	8761.63	8780.73	8773.45	8821.03	8853.90	8845.93	8851.37
27	8527.43	8504.32	8433.83	8424.87	8421.42	8425.27	8476.09	8538.41	8538.31	8552.79
30	8147.15	8136.26	8081.72	8079.17	8072.16	8069.50	8066.21	8130.88	8198.71	8201.33
33	7707.40	7728.01	7703.72	7736.46	7752.09	7736.71	7651.99	7673.02	7803.59	7803.83
36	7243.13	7286.63	7258.19	7293.42	7309.96	7354.72	7220.15	7191.35	7359.77	7343.36
39	6770.19	6798.76	6701.51	6741.56	6724.58	6788.86	6791.87	6715.80	6881.35	6826.25
42	6236.31	6217.71	6172.15	6195.82	6186.58	6226.96	6282.51	6212.54	6378.42	6276.78
45	5668.43	5655.52	5624.98	5681.71	5654.50	5642.73	5715.71	5680.54	5854.76	5742.56
48	5110.96	5105.77	5051.58	5131.67	5134.21	5090.61	5136.58	5147.53	5295.47	5213.99
51	4592.37	4510.03	4512.24	4571.14	4583.38	4599.67	4498.55	4647.09	4696.59	4703.44
54	4034.52	3966.24	3992.26	4046.48	3982.66	4007.42	4015.50	4117.98	4116.44	4166.07
57	3506.02	3477.98	3525.92	3534.55	3493.00	3459.80	3511.54	3592.06	3607.62	3653.73
60	3009.69	3025.83	3033.79	3027.47	3050.89	2967.33	3026.25	3089.20	3140.14	3167.74
63	2578.60	2583.08	2582.85	2577.48	2569.35	2554.82	2641.23	2634.84	2676.92	2709.09
66	2176.18	2154.72	2152.70	2182.75	2153.09	2187.98	2208.37	2204.76	2236.14	2259.12
69	1802.35	1787.95	1760.55	1795.04	1788.56	1789.82	1832.39	1822.48	1843.39	1855.25
72	1481.67	1470.34	1441.67	1480.68	1496.61	1456.42	1502.21	1482.88	1497.04	1502.21
75	1188.32	1154.34	1145.34	1206.57	1167.04	1151.12	1184.93	1167.72	1187.48	1188.45
78	919.52	857.87	889.90	917.69	897.56	895.49	903.63	876.58	901.75	900.84
81	678.72	656.20	654.01	662.18	657.68	656.83	643.89	593.04	610.73	600.76
84	451.92	444.61	435.24	418.21	404.06	426.43	376.43	392.76	375.48	397.27
87	229.02	231.18	199.75	215.99	208.41	198.90	188.80	192.20	164.72	182.47
90	81.18	78.59	74.49	70.23	59.22	52.09	59.83	37.02	33.98	20.83
93	13.31	21.22	22.11	15.52	14.14	14.54	15.67	15.32	7.44	15.58
96	1.11	1.39	1.49	2.08	2.64	0.17	1.03	3.82	1.41	2.97
99	0.04	0.10	0.31	0.71	0.50	0.37	0.07	0.87	0.50	1.15
102	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
108	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
111	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
114	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
117	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
123	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
129	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
132	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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**CANDELA TABULATION - (Cont.)**

135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
138	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
141	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
144	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
147	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
156	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
159	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
168	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
171	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
174	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
177	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	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>200</u>	<u>210</u>	<u>220</u>	<u>230</u>	<u>240</u>	<u>250</u>	<u>260</u>	<u>270</u>	<u>280</u>	<u>290</u>
0	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12
3	9934.66	9937.03	9936.71	9940.73	9946.33	9951.94	9956.61	9959.41	9960.44	9959.41
6	9890.15	9879.69	9874.41	9877.42	9894.82	9913.76	9927.89	9938.12	9937.31	9931.13
9	9803.24	9781.24	9772.65	9782.82	9808.91	9829.16	9838.53	9843.27	9850.65	9854.15
12	9708.12	9698.24	9700.37	9715.88	9744.72	9749.71	9737.03	9732.54	9749.37	9775.95
15	9563.86	9551.46	9549.96	9588.92	9621.14	9631.10	9635.53	9651.30	9645.26	9651.07
18	9329.63	9344.17	9350.03	9408.46	9433.87	9424.26	9471.57	9512.24	9489.51	9442.71
21	9102.41	9136.09	9173.43	9236.25	9259.14	9209.82	9206.48	9237.58	9261.51	9243.77
24	8857.25	8860.52	8919.52	9000.90	9024.08	8970.46	8914.61	8920.23	9009.97	9027.62
27	8521.52	8545.85	8592.29	8667.33	8707.06	8653.42	8624.51	8653.60	8718.91	8737.27
30	8128.54	8206.55	8214.80	8270.22	8322.81	8292.59	8319.90	8363.98	8374.38	8422.29
33	7719.01	7890.06	7867.50	7910.06	7928.71	7912.31	7985.40	7968.07	7975.19	8020.67
36	7299.60	7531.06	7439.00	7507.31	7499.72	7532.34	7603.25	7513.12	7536.75	7531.93
39	6903.40	6969.40	6897.42	7006.71	6945.65	7065.55	7114.70	7056.41	7067.12	7033.88
42	6434.88	6399.46	6401.65	6465.80	6402.43	6460.51	6504.62	6564.55	6526.30	6484.89
45	5881.86	5824.30	5913.28	5946.03	5864.79	5893.14	5887.54	5999.54	5935.52	5930.71
48	5300.00	5276.13	5372.75	5373.16	5307.14	5375.80	5309.53	5395.56	5347.49	5368.96
51	4652.63	4757.21	4757.46	4778.18	4745.30	4812.69	4770.88	4796.31	4811.62	4766.63
54	4138.09	4159.86	4129.55	4239.75	4170.68	4249.16	4192.57	4208.99	4243.43	4205.47
57	3593.81	3627.56	3635.08	3710.18	3656.61	3687.58	3649.88	3637.72	3694.52	3663.50
60	3096.73	3115.15	3167.33	3156.13	3150.11	3168.77	3130.24	3113.26	3162.47	3154.14
63	2710.49	2660.02	2673.76	2666.65	2702.58	2708.91	2664.64	2660.62	2695.77	2689.71
66	2269.23	2259.37	2249.62	2253.96	2251.56	2283.45	2236.87	2257.60	2266.48	2243.62
69	1879.01	1839.62	1851.69	1843.48	1821.27	1894.28	1851.48	1877.44	1862.97	1838.73
72	1525.52	1512.24	1535.52	1501.55	1490.96	1540.47	1514.29	1523.86	1507.90	1510.93
75	1182.63	1218.67	1215.29	1218.98	1193.44	1201.77	1183.37	1204.20	1188.80	1217.21
78	896.94	949.55	919.57	927.07	911.79	897.24	900.36	909.35	908.57	919.99
81	639.42	656.10	624.11	641.14	596.68	621.94	583.09	602.59	604.37	626.96
84	390.03	412.87	368.67	381.56	365.44	370.55	349.59	368.79	374.13	366.42
87	175.36	160.89	179.63	164.52	146.85	148.73	159.62	156.51	152.67	148.49
90	31.80	30.00	36.91	36.69	49.96	29.11	52.83	30.17	28.12	23.33
93	14.73	11.29	24.31	21.60	17.96	20.89	17.29	21.94	14.17	18.96
96	0.95	0.60	4.54	2.49	0.64	0.56	2.48	2.34	2.89	0.77
99	0.54	0.91	1.88	0.98	0.68	0.75	0.70	0.29	1.35	0.38
102	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : HBPA48-LED186DMVFR50.IES**

**CANDELA TABULATION - (Cont.)**

108	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
111	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
114	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
117	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
123	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
129	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
132	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
138	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
141	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
144	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
147	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
156	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
159	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
162	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
168	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
171	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
174	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
177	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Vert. Horizontal Angles**  
**Angles**

	<b>300</b>	<b>310</b>	<b>320</b>	<b>330</b>	<b>340</b>	<b>350</b>	<b>360</b>
0	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12	9936.12
3	9957.36	9954.89	9952.72	9952.17	9950.59	9948.76	9945.72
6	9921.10	9911.67	9913.11	9920.31	9929.92	9935.33	9937.33
9	9848.39	9838.45	9841.49	9858.22	9875.95	9877.80	9876.10
12	9789.32	9782.04	9786.41	9792.31	9789.55	9772.88	9759.60
15	9655.62	9645.71	9630.32	9627.71	9604.45	9578.10	9595.48
18	9447.64	9438.17	9411.14	9396.40	9322.90	9355.75	9399.38
21	9245.07	9217.88	9207.54	9195.08	9114.08	9134.83	9180.48
24	8988.07	8952.05	8940.15	8955.32	8933.83	8929.76	8917.86
27	8706.15	8676.70	8662.52	8684.43	8667.93	8676.62	8593.28
30	8381.67	8362.70	8352.13	8352.91	8321.17	8341.71	8228.50
33	7966.49	7989.29	7986.56	7968.74	7924.88	7937.43	7847.31
36	7507.06	7571.10	7538.37	7543.95	7485.11	7482.91	7439.42
39	7012.19	7108.43	7040.11	7020.84	7044.22	7007.45	6992.26
42	6514.19	6586.54	6553.18	6540.10	6528.00	6494.29	6519.73
45	5941.29	6029.70	5986.70	6015.11	5984.22	5951.58	6030.43
48	5345.49	5442.18	5396.77	5445.48	5455.61	5411.67	5486.22
51	4789.16	4848.77	4842.33	4869.89	4849.40	4895.89	4866.85
54	4211.72	4274.05	4279.00	4242.86	4349.57	4326.44	4266.94
57	3681.71	3722.19	3766.42	3739.26	3799.95	3770.88	3771.19
60	3166.83	3201.61	3233.25	3270.39	3251.05	3271.92	3310.58
63	2713.10	2734.01	2717.97	2817.63	2808.93	2809.05	2811.54
66	2267.67	2315.92	2307.64	2369.43	2335.86	2344.56	2336.96
69	1846.03	1895.17	1907.33	1889.06	1937.94	1948.34	1957.22
72	1487.01	1532.26	1569.88	1533.95	1585.21	1618.41	1636.96
75	1164.37	1226.21	1231.54	1231.69	1247.74	1294.01	1324.90
78	904.18	929.29	928.51	949.85	956.48	971.56	1018.86

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : HBPA48-LED186DMVFR50.IES**

**CANDELA TABULATION - (Cont.)**

<b>81</b>	622.00	655.79	674.76	689.24	726.59	711.43	768.34
<b>84</b>	373.09	386.33	401.08	441.88	446.92	489.03	509.80
<b>87</b>	156.49	167.13	195.95	168.55	207.77	233.24	261.89
<b>90</b>	41.15	33.34	32.17	24.02	29.86	44.77	87.41
<b>93</b>	16.08	12.92	16.11	11.62	5.40	5.77	7.18
<b>96</b>	1.41	3.82	3.28	1.37	0.67	0.75	0.38
<b>99</b>	0.52	1.62	1.86	1.83	0.78	0.17	0.14
<b>102</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>105</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>108</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>111</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>114</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>117</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>120</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>123</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>126</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>129</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>132</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>135</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>138</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>141</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>144</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>147</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>150</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>153</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>156</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>159</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>162</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>165</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>168</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>171</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>174</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>177</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>180</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : HBPA48-LED186DMVFR50.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	2975.47	N.A.	12.10
0-30	7683.54	N.A.	31.30
0-40	11917.62	N.A.	48.60
0-60	20456.17	N.A.	83.40
0-80	23941.14	N.A.	97.60
0-90	24515.03	N.A.	99.90
10-90	23750.18	N.A.	96.80
20-40	8942.15	N.A.	36.50
20-50	13071.97	N.A.	53.30
40-70	10732.26	N.A.	43.80
60-80	3484.97	N.A.	14.20
70-80	1291.26	N.A.	5.30
80-90	573.89	N.A.	2.30
90-110	14.03	N.A.	0.10
90-120	14.03	N.A.	0.10
90-130	14.03	N.A.	0.10
90-150	14.03	N.A.	0.10
90-180	14.03	N.A.	0.10
110-180	0.00	N.A.	0.00
0-180	24529.05	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	764.85
10-20	2210.61
20-30	4708.08
30-40	4234.07
40-50	4129.83
50-60	4408.72
60-70	2193.71
70-80	1291.26
80-90	573.89
90-100	13.92
100-110	0.10
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



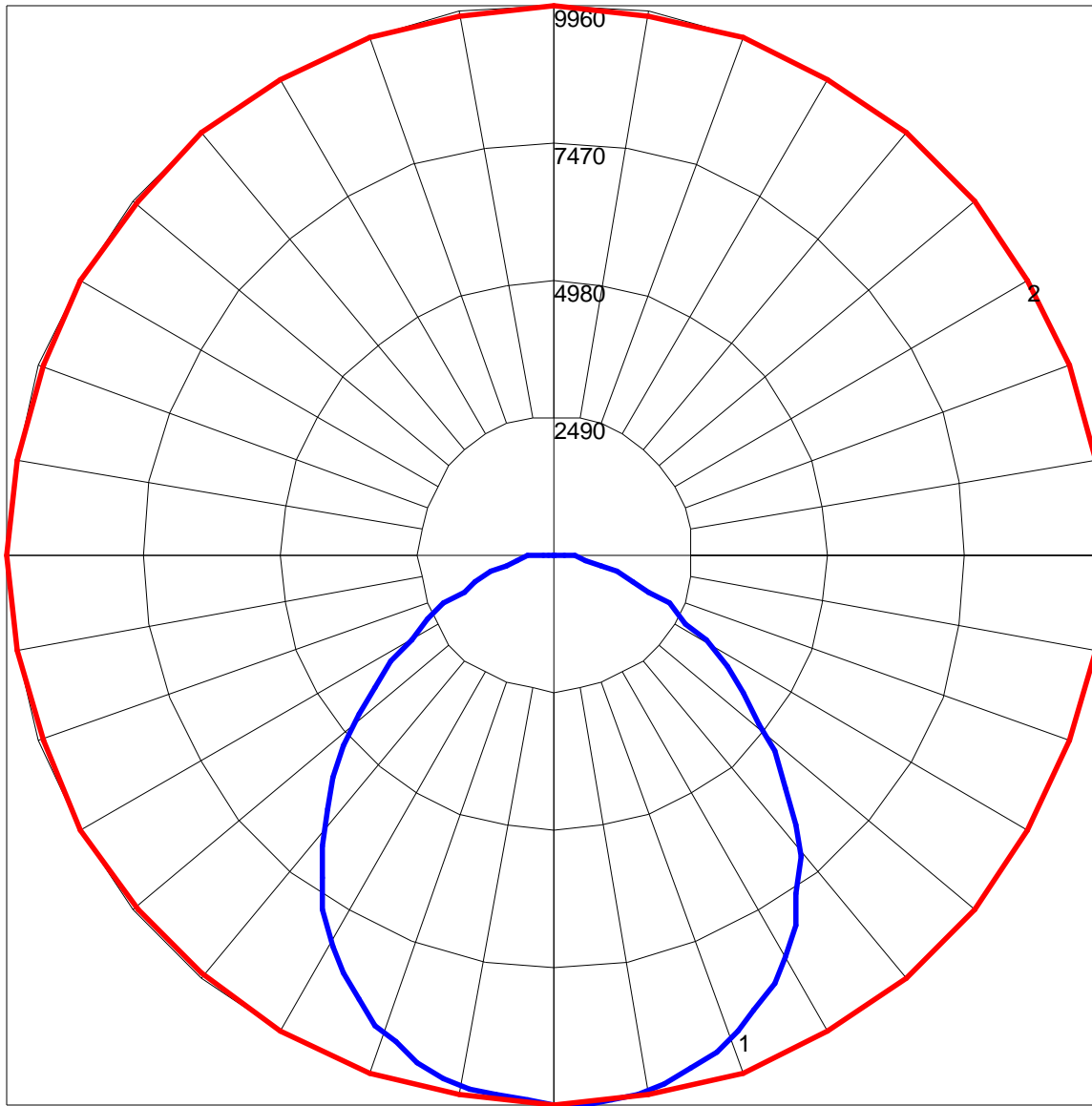
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : HBPA48-LED186DMVFR50.IES**

**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	104	100	97	106	102	98	95	98	95	92	94	92	89	90	88	87	84
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	76	73	71
3	91	81	73	67	89	79	72	66	76	70	65	74	68	64	71	67	63	61
4	84	72	63	57	81	71	63	57	68	61	56	66	60	55	64	59	54	52
5	77	64	56	49	75	63	55	49	61	54	48	59	53	48	57	52	47	45
6	71	58	49	43	69	57	49	43	55	48	43	54	47	42	52	46	42	40
7	66	53	44	38	64	52	44	38	50	43	38	49	42	37	48	42	37	35
8	62	48	40	34	60	47	39	34	46	39	34	45	38	33	44	38	33	31
9	57	44	36	31	56	44	36	31	42	35	30	41	35	30	40	34	30	28
10	54	41	33	28	53	40	33	28	39	32	28	38	32	27	37	32	27	26

POLAR GRAPH



Maximum Candela = 9960.44 Located At Horizontal Angle = 280, Vertical Angle = 3  
# 1 - Vertical Plane Through Horizontal Angles (280 - 100) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (3) (Through Max. Cd.)