



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : HZCAS310HTHOWT50120-277V.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST]

[TESTLAB]

[TESTDATE] 2017-11-15

[ISSUEDATE] 2017-11-15 18:54:36

[NEARFIELD]

[LAMPPOSITION] 0,0

[OTHER]

[MANUFAC] BEGHELLI

[LUMINAIRE] HZCAS310HTHOWT50120-277V

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	21389
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	138
Total Luminaire Watts	155.2
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.30
Spacing Criterion (90-270)	1.30
Spacing Criterion (Diagonal)	1.38
Basic Luminous Shape	Point
Luminous Length (0-180)	0.00 m
Luminous Width (90-270)	0.00 m
Luminous Height	0.00 m

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	0	0	0
55	0	0	0
65	0	0	0
75	0	0	0
85	0	0	0

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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	8024.60	8024.60	8024.60	8024.60	8024.60	8024.60	8024.60	8024.60	8024.60	8024.60
1	8023.50	8021.83	8017.39	8023.51	8017.55	8026.72	8024.48	8027.85	8025.15	8026.14
2	8018.54	8016.29	8009.62	8021.30	8016.94	8025.05	8020.13	8027.83	8025.13	8022.85
3	8014.76	8009.82	8000.48	8018.61	8011.43	8021.19	8016.80	8026.70	8024.00	8018.43
4	8009.23	8000.96	7991.02	8013.15	8005.70	8016.04	8009.92	8021.60	8020.03	8012.22
5	8002.66	7987.88	7981.13	8005.53	7997.06	8007.91	7998.55	8015.64	8015.15	8005.73
6	7993.31	7973.50	7970.65	7992.39	7990.28	7998.35	7989.49	8005.54	8007.24	7993.94
7	7979.10	7956.37	7956.86	7974.79	7979.46	7985.93	7973.77	7993.07	7994.70	7979.29
8	7959.34	7934.48	7942.57	7962.19	7964.88	7972.36	7959.15	7977.94	7977.35	7963.64
9	7937.76	7910.34	7926.66	7941.26	7954.10	7956.14	7945.82	7960.52	7958.36	7947.41
10	7914.09	7888.65	7908.52	7919.83	7934.68	7938.18	7935.50	7939.28	7938.79	7930.08
11	7891.02	7862.89	7889.88	7896.88	7917.87	7914.35	7913.29	7913.83	7916.04	7908.89
12	7867.00	7839.48	7867.04	7866.59	7894.87	7891.34	7893.58	7888.68	7893.15	7882.18
13	7840.64	7814.23	7840.28	7838.11	7867.77	7864.35	7865.41	7859.40	7870.34	7852.84
14	7809.88	7788.66	7809.55	7805.08	7838.30	7838.11	7836.45	7828.91	7840.27	7819.63
15	7777.77	7757.09	7774.18	7770.58	7804.83	7805.30	7806.93	7797.64	7807.95	7783.89
16	7741.54	7719.91	7737.54	7735.74	7767.69	7773.95	7772.60	7765.06	7769.78	7745.25
17	7701.05	7676.66	7697.56	7691.72	7728.10	7739.65	7735.81	7728.20	7728.60	7704.69
18	7653.48	7632.82	7657.10	7649.78	7684.79	7697.51	7694.14	7686.63	7686.28	7665.98
19	7605.53	7590.31	7611.92	7604.92	7632.87	7653.62	7646.94	7642.96	7640.45	7625.57
20	7554.42	7547.51	7565.81	7557.28	7584.81	7605.65	7594.81	7598.22	7592.95	7580.88
21	7502.26	7503.85	7517.77	7509.57	7529.57	7551.16	7543.75	7547.75	7539.62	7531.73
22	7452.38	7457.14	7464.76	7464.16	7467.80	7495.27	7488.48	7497.79	7486.43	7483.82
23	7403.37	7405.74	7404.69	7412.79	7414.51	7439.25	7433.28	7444.20	7437.22	7429.74
24	7356.59	7350.87	7342.61	7361.40	7351.52	7383.98	7376.39	7390.44	7383.98	7377.64
25	7307.69	7293.84	7280.74	7300.14	7293.28	7324.55	7318.54	7331.69	7328.48	7317.25
26	7247.38	7234.58	7221.88	7241.71	7234.27	7259.22	7258.61	7272.28	7267.92	7256.24
27	7180.20	7170.79	7167.40	7174.53	7178.20	7200.12	7197.37	7208.38	7203.44	7192.38
28	7110.84	7105.01	7107.54	7104.76	7113.53	7126.62	7131.89	7141.42	7135.86	7122.65
29	7040.49	7035.74	7042.43	7033.63	7051.82	7064.39	7066.33	7073.58	7066.91	7051.67
30	6970.08	6965.79	6970.34	6956.83	6985.98	6999.22	6993.27	7001.30	6995.18	6974.78
31	6892.88	6893.85	6897.25	6882.43	6911.55	6918.23	6915.80	6922.00	6921.44	6898.58
32	6812.82	6817.91	6820.03	6809.39	6837.93	6845.10	6834.28	6839.10	6845.19	6820.77
33	6732.97	6735.36	6741.77	6734.48	6756.21	6761.30	6749.63	6753.28	6765.70	6740.04
34	6649.19	6651.07	6657.27	6657.42	6673.36	6676.59	6665.20	6671.80	6682.59	6658.37
35	6561.39	6562.32	6573.33	6576.33	6584.80	6591.83	6579.04	6583.86	6596.74	6569.40
36	6463.56	6461.83	6480.18	6487.08	6490.41	6498.59	6485.41	6495.95	6502.60	6478.45
37	6351.18	6349.60	6368.78	6388.73	6390.96	6401.86	6382.73	6400.40	6402.35	6379.70
38	6232.93	6228.62	6249.42	6267.23	6276.73	6287.08	6268.22	6293.74	6294.27	6273.94
39	6109.45	6102.16	6117.88	6137.11	6152.01	6161.02	6146.49	6176.12	6177.26	6153.92
40	5973.92	5966.23	5979.57	6005.42	6022.86	6029.75	6019.94	6051.67	6050.35	6032.01
41	5826.06	5824.58	5836.44	5861.90	5885.17	5897.20	5896.00	5925.02	5923.10	5900.55
42	5672.11	5677.53	5690.48	5714.38	5746.75	5759.29	5759.27	5783.75	5785.08	5762.28
43	5535.41	5541.59	5556.24	5570.23	5610.15	5621.11	5618.83	5639.71	5643.62	5619.24
44	5404.88	5413.76	5423.54	5431.60	5469.19	5482.89	5484.93	5499.72	5501.88	5477.04
45	5274.40	5284.80	5290.14	5297.44	5340.04	5354.35	5355.08	5361.60	5362.82	5341.33
46	5137.37	5147.96	5159.26	5163.53	5199.66	5215.53	5225.87	5224.88	5228.01	5204.38
47	5007.80	5014.28	5026.42	5036.61	5067.31	5080.43	5090.25	5082.82	5088.02	5074.77
48	4878.24	4885.85	4896.23	4909.87	4937.37	4951.07	4961.42	4944.67	4949.77	4941.84
49	4746.58	4753.85	4765.10	4779.44	4799.63	4811.56	4825.74	4806.48	4809.12	4803.75
50	4610.08	4625.68	4635.33	4639.83	4668.83	4683.66	4697.31	4669.16	4680.15	4667.05
51	4469.52	4491.98	4501.27	4500.91	4525.63	4543.70	4558.46	4535.95	4543.56	4531.20
52	4333.62	4346.17	4362.79	4362.42	4389.54	4402.65	4418.94	4398.72	4407.60	4395.14
53	4193.90	4213.13	4225.24	4217.77	4257.61	4268.82	4282.20	4262.62	4262.83	4258.62

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**CANDELA TABULATION - (Cont.)**

54	4052.46	4070.66	4089.46	4075.02	4112.32	4123.80	4140.09	4121.03	4122.38	4120.41
55	3914.89	3930.55	3947.54	3937.30	3971.26	3981.50	3994.30	3976.44	3976.85	3975.80
56	3776.12	3785.41	3808.12	3794.79	3825.78	3835.61	3853.13	3831.60	3832.10	3831.88
57	3635.63	3644.07	3661.01	3653.60	3677.71	3686.09	3707.31	3684.19	3686.69	3691.57
58	3484.32	3496.62	3509.92	3504.96	3530.34	3545.62	3563.18	3537.32	3537.16	3542.77
59	3327.87	3333.37	3346.49	3344.30	3376.40	3393.40	3411.33	3384.90	3385.04	3388.55
60	3155.85	3164.13	3170.35	3170.53	3199.28	3213.71	3230.40	3214.54	3214.16	3214.14
61	2977.98	2986.58	2987.42	2993.15	3022.16	3034.02	3049.46	3044.17	3043.28	3039.73
62	2794.06	2802.87	2805.27	2815.40	2845.16	2854.36	2868.77	2873.52	2872.18	2865.18
63	2621.65	2625.79	2629.74	2646.06	2671.93	2675.89	2695.49	2694.04	2694.56	2686.55
64	2452.43	2459.02	2472.40	2482.76	2501.58	2506.83	2529.09	2522.75	2530.30	2521.16
65	2282.03	2294.20	2307.57	2321.41	2338.09	2342.96	2361.62	2357.58	2366.98	2357.78
66	2118.80	2134.06	2143.43	2155.17	2176.61	2185.40	2195.16	2191.70	2200.17	2200.68
67	1962.71	1979.31	1985.31	1995.48	2009.05	2027.69	2030.40	2035.02	2041.44	2045.32
68	1808.25	1829.92	1830.78	1843.04	1849.01	1871.67	1873.21	1881.64	1884.68	1891.04
69	1659.51	1674.16	1679.84	1690.53	1699.74	1721.30	1726.41	1727.83	1731.27	1735.50
70	1502.72	1516.10	1524.08	1535.77	1546.72	1570.35	1579.51	1574.14	1578.09	1576.10
71	1345.69	1358.04	1368.30	1380.99	1385.28	1415.21	1422.06	1412.41	1418.70	1406.72
72	1188.66	1199.98	1212.51	1226.21	1222.58	1252.15	1263.93	1250.50	1257.69	1253.24
73	1047.35	1058.09	1065.69	1078.14	1078.83	1104.01	1109.59	1107.02	1111.34	1117.16
74	914.71	925.17	932.00	942.03	948.88	969.36	977.59	976.77	976.00	978.03
75	789.10	802.29	811.07	812.21	823.12	840.31	847.38	844.35	842.90	843.77
76	666.21	676.25	684.74	691.67	698.33	714.50	721.32	718.21	715.02	717.32
77	549.04	559.09	567.83	571.74	576.46	594.23	601.46	597.60	597.51	595.83
78	448.26	461.91	469.03	471.62	474.91	489.62	496.10	490.89	489.42	492.47
79	354.33	369.35	373.03	375.39	381.55	395.09	401.69	396.36	391.65	393.67
80	273.64	285.24	289.36	291.86	294.87	307.58	312.62	310.73	305.76	304.60
81	205.19	214.71	214.49	217.84	223.99	233.53	237.06	235.10	229.70	226.29
82	147.29	154.83	157.45	157.35	162.66	166.59	172.95	172.42	165.94	165.41
83	99.92	105.34	106.75	108.38	114.86	118.17	121.76	118.61	116.81	114.51
84	66.00	69.00	70.77	71.69	76.13	80.44	80.29	80.79	79.30	76.49
85	42.16	43.51	44.65	45.13	47.19	50.07	51.79	52.26	51.59	48.66
86	26.43	26.80	27.20	27.75	30.23	31.85	32.97	33.65	33.37	32.27
87	17.20	17.69	18.01	18.56	20.35	21.67	22.67	23.13	23.02	22.66
88	9.33	9.67	10.28	10.58	11.79	12.49	13.34	13.74	13.74	13.19
89	2.83	3.33	3.99	4.30	4.72	5.12	5.56	5.62	5.48	5.21
90	1.70	1.71	1.91	1.71	1.32	1.27	1.37	1.42	1.32	1.42
91	1.48	1.58	1.68	1.57	1.17	1.22	1.22	1.17	1.06	1.22
92	1.47	1.52	1.58	1.47	1.12	1.17	1.27	1.07	0.97	1.17
93	1.37	1.47	1.52	1.47	1.12	1.17	1.17	1.12	1.02	1.17
94	1.42	1.47	1.52	1.47	1.17	1.17	1.22	1.07	1.17	1.22
95	1.37	1.47	1.52	1.47	1.27	1.17	1.27	1.17	1.12	1.27
96	1.37	1.52	1.57	1.47	1.22	1.22	1.42	1.27	1.27	1.37
97	1.62	1.62	1.72	1.67	1.32	1.42	1.47	1.42	1.32	1.37
98	1.78	1.92	1.97	1.77	1.58	1.48	1.58	1.38	1.52	1.43
99	2.02	2.17	2.23	2.07	1.68	1.63	1.73	1.63	1.52	1.73
100	2.33	2.53	2.53	2.28	1.88	1.78	1.83	1.78	1.73	1.78
101	2.73	2.73	2.79	2.79	2.09	2.09	2.09	2.09	1.94	2.03
102	2.84	2.94	2.94	3.09	2.39	2.19	2.24	2.23	2.14	2.18
103	3.25	3.20	3.30	3.29	2.55	2.54	2.39	2.29	2.44	2.39
104	3.65	3.44	3.69	3.64	2.95	2.85	2.74	2.39	2.49	2.64
105	3.81	3.80	4.05	4.20	3.21	2.90	2.91	2.65	2.75	2.70
106	4.26	4.35	4.40	4.50	3.47	3.31	3.36	2.96	2.96	3.00
107	4.62	4.51	4.81	4.81	3.86	3.51	3.66	3.30	3.20	3.25
108	5.13	5.02	5.22	5.27	4.12	3.87	3.86	3.61	3.56	3.46
109	5.48	5.27	5.52	5.57	4.37	4.12	3.96	3.91	3.87	3.71

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**CANDELA TABULATION - (Cont.)**

110	5.84	5.53	5.63	5.88	4.73	4.52	4.22	4.12	4.27	3.97
111	5.99	5.83	6.03	6.43	5.18	4.69	4.32	4.42	4.53	4.32
112	6.15	6.08	6.29	6.84	5.54	5.13	4.52	4.62	4.83	4.52
113	6.44	6.14	6.88	7.19	5.74	5.49	4.78	4.72	5.08	4.77
114	6.75	6.34	7.00	7.65	5.85	5.90	5.03	4.98	5.39	5.08
115	7.00	6.59	7.39	8.05	6.20	6.10	5.34	5.08	5.59	5.43
116	7.31	6.79	7.75	8.36	6.55	6.35	5.76	5.13	5.95	5.48
117	7.62	6.80	8.06	8.77	6.71	6.41	6.15	5.08	6.21	5.43
118	7.62	6.50	8.51	9.07	6.91	6.61	6.35	5.13	6.66	5.43
119	7.67	6.74	8.77	9.43	7.11	6.81	6.66	5.44	6.61	5.55
120	7.92	7.68	9.32	9.73	7.37	6.96	6.70	6.17	6.76	6.21
121	8.97	8.60	9.33	10.18	7.47	7.11	6.66	7.01	6.92	6.81
122	10.15	9.33	9.49	11.50	7.83	7.22	6.66	7.67	7.59	7.31
123	11.36	10.38	9.64	12.16	8.03	7.48	6.71	7.93	8.36	7.37
124	12.13	11.15	9.79	11.67	8.18	7.73	6.81	8.13	9.05	7.82
125	12.64	11.85	9.94	11.66	8.19	8.03	6.96	8.33	9.35	8.27
126	12.90	12.47	10.04	11.86	8.49	8.24	7.07	8.53	9.55	8.63
127	13.31	12.68	10.09	12.02	8.90	8.59	7.37	8.79	9.71	9.14
128	13.41	13.03	10.19	12.12	9.16	8.64	7.67	9.04	10.07	9.55
129	13.62	13.34	10.40	12.22	9.60	8.94	7.93	9.04	10.26	9.84
130	13.76	13.34	10.79	12.17	9.81	8.99	8.33	9.24	10.26	9.95
131	13.92	13.49	10.86	12.17	10.06	9.04	8.79	9.39	10.26	10.20
132	13.97	13.69	10.91	12.17	10.32	9.14	8.85	9.70	10.32	10.60
133	14.07	14.05	11.11	12.17	10.62	9.15	9.25	10.00	10.42	10.66
134	14.33	14.10	11.52	12.27	10.83	9.30	9.25	10.16	10.67	11.06
135	14.43	14.30	11.76	12.32	11.08	9.56	9.40	10.26	10.88	11.21
136	14.73	14.41	11.72	12.47	11.23	9.91	9.30	10.41	11.08	11.21
137	14.93	14.65	11.72	12.72	11.49	9.91	9.35	10.61	11.18	11.21
138	14.94	14.66	11.77	12.73	11.79	10.31	9.30	10.71	11.43	11.21
139	14.99	14.66	11.82	12.83	11.84	10.57	9.45	10.97	11.74	11.21
140	14.74	14.66	11.47	12.83	11.94	10.82	9.65	11.42	11.95	11.27
141	14.48	14.66	11.16	12.83	12.19	10.77	9.86	11.64	12.25	11.48
142	14.38	14.71	10.71	12.83	12.35	10.82	9.86	12.08	12.50	12.09
143	13.68	14.61	10.40	12.83	12.76	11.02	9.91	12.34	12.44	12.54
144	13.32	14.61	10.30	12.83	13.11	11.03	10.01	12.70	11.42	12.94
145	13.26	14.61	10.25	12.83	13.26	11.18	10.06	13.05	10.73	13.19
146	14.12	14.71	10.40	12.83	13.42	11.44	10.42	13.57	13.40	13.76
147	14.97	14.76	10.84	12.83	13.56	11.74	10.58	13.97	14.54	14.06
148	15.23	14.92	11.25	12.83	13.56	11.99	11.03	14.27	15.09	14.56
149	15.59	15.07	11.71	12.83	13.56	12.29	11.53	14.37	15.55	14.97
150	15.80	15.17	12.12	12.83	13.56	12.40	11.74	14.37	15.65	15.17
151	16.00	15.12	12.42	12.88	13.46	12.75	12.35	14.31	15.65	15.17
152	16.00	15.12	12.73	12.93	13.41	12.81	12.40	14.21	15.65	15.17
153	16.00	15.12	12.94	13.33	13.36	13.06	12.55	14.01	15.64	15.17
154	16.00	15.12	13.34	13.49	13.41	13.47	12.55	13.61	15.34	15.17
155	16.00	15.12	13.49	13.54	13.26	13.82	12.50	13.56	14.78	15.01
156	15.95	15.12	13.69	13.79	12.95	14.07	12.30	13.61	14.06	14.50
157	15.80	15.12	14.04	13.94	12.85	14.17	12.30	13.56	13.41	14.04
158	15.55	15.17	14.15	14.14	12.70	14.17	12.30	13.61	13.26	13.75
159	15.55	15.22	14.20	14.15	12.71	14.12	12.29	13.61	13.31	13.75
160	15.40	15.22	14.30	13.84	12.96	14.02	12.24	13.71	13.31	14.00
161	15.34	15.27	14.36	13.84	13.27	13.82	12.19	13.71	13.57	14.11
162	15.34	15.27	14.56	13.79	13.87	13.82	12.19	13.81	13.72	14.21
163	15.29	15.27	14.76	13.74	14.28	13.82	12.24	13.81	13.67	14.46
164	15.29	15.57	14.76	13.74	14.63	13.82	12.30	13.91	13.67	14.51
165	15.09	15.58	14.71	13.69	14.68	13.93	12.35	13.86	13.67	14.46

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**CANDELA TABULATION - (Cont.)**

166	14.94	15.73	14.86	13.69	14.84	14.34	12.46	14.08	13.72	14.52
167	14.94	16.49	15.17	13.89	15.55	15.11	12.86	14.74	13.90	14.74
168	15.93	17.58	15.96	14.30	15.90	15.95	13.17	15.85	15.20	15.99
169	17.16	18.36	16.58	14.55	16.11	16.11	13.84	17.11	16.22	17.21
170	18.21	18.56	17.03	14.70	16.66	16.62	14.74	17.37	17.34	18.23
171	19.10	18.87	17.40	15.01	17.43	17.38	15.35	17.93	18.55	19.09
172	19.85	18.97	17.55	15.16	17.37	17.42	15.80	18.13	19.10	19.74
173	20.02	19.03	17.60	15.26	17.27	17.38	15.85	18.43	19.15	20.09
174	20.07	18.98	17.55	15.31	17.38	17.43	15.90	18.38	19.15	20.29
175	20.17	19.07	18.05	15.67	17.78	17.79	15.90	18.43	19.15	20.24
176	20.27	19.18	18.11	15.77	17.83	17.98	15.95	18.27	19.15	20.29
177	20.27	19.28	18.11	15.77	17.83	17.88	15.70	17.92	18.99	20.09
178	20.32	19.28	18.11	15.77	17.37	17.48	15.50	17.46	18.44	19.84
179	20.17	19.18	18.11	15.77	16.97	17.07	15.50	17.01	18.24	19.58
180	20.02	20.02	20.02	20.02	20.02	20.02	20.02	20.02	20.02	20.02

**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	8024.60	8024.60	8024.60	8024.60	8024.60	8024.60	8024.60
1	8029.54	8024.51	8022.57	8022.37	8024.60	8022.89	8023.50
2	8032.75	8021.20	8022.00	8019.59	8021.85	8019.02	8018.54
3	8031.08	8014.62	8018.77	8015.28	8017.55	8012.03	8014.76
4	8026.97	8007.24	8010.01	8006.50	8006.09	8003.73	8009.23
5	8016.15	7998.04	8000.17	8002.54	7994.02	7993.36	8002.66
6	8005.49	7986.24	7986.88	7990.56	7981.24	7980.65	7993.31
7	7992.50	7969.93	7971.97	7975.64	7971.14	7965.73	7979.10
8	7977.30	7953.20	7959.79	7964.00	7951.06	7948.68	7959.34
9	7957.15	7934.21	7939.60	7942.75	7938.66	7933.82	7937.76
10	7932.69	7915.13	7921.86	7927.14	7921.70	7915.12	7914.09
11	7908.34	7888.63	7897.66	7906.28	7899.20	7894.82	7891.02
12	7880.40	7861.28	7869.83	7877.33	7877.35	7869.24	7867.00
13	7846.45	7829.23	7841.22	7850.23	7846.11	7841.25	7840.64
14	7808.36	7799.33	7807.05	7817.24	7812.40	7811.63	7809.88
15	7768.92	7768.61	7771.64	7784.56	7773.34	7777.36	7777.77
16	7730.39	7730.06	7733.99	7749.72	7730.12	7739.04	7741.54
17	7693.04	7691.63	7692.52	7707.17	7685.35	7701.81	7701.05
18	7653.06	7648.49	7652.96	7663.73	7639.10	7660.83	7653.48
19	7610.43	7605.45	7608.13	7613.35	7596.81	7617.00	7605.53
20	7566.05	7561.86	7560.76	7560.93	7554.39	7567.10	7554.42
21	7522.95	7512.83	7517.49	7515.55	7506.33	7514.45	7502.26
22	7477.74	7468.17	7460.19	7457.94	7464.11	7462.27	7452.38
23	7426.91	7417.28	7408.98	7409.31	7410.21	7406.17	7403.37
24	7371.58	7357.80	7350.29	7358.14	7356.06	7352.03	7356.59
25	7314.11	7302.74	7287.52	7302.39	7301.64	7294.96	7307.69
26	7252.28	7236.63	7236.67	7247.50	7240.44	7236.74	7247.38
27	7183.59	7170.83	7171.72	7185.52	7179.57	7178.56	7180.20
28	7117.53	7100.95	7112.37	7120.56	7115.54	7115.73	7110.84
29	7046.69	7030.10	7049.42	7052.16	7045.67	7048.30	7040.49
30	6974.52	6956.55	6978.44	6976.31	6972.94	6974.00	6970.08
31	6899.96	6881.34	6911.15	6907.52	6896.00	6898.03	6892.88
32	6821.50	6806.26	6828.47	6824.11	6819.20	6821.28	6812.82
33	6743.13	6730.82	6744.47	6745.39	6739.08	6742.96	6732.97
34	6656.79	6644.32	6658.07	6664.73	6648.95	6659.49	6649.19
35	6566.21	6554.85	6569.94	6570.76	6555.20	6569.08	6561.39
36	6474.37	6459.62	6469.36	6471.62	6453.34	6467.92	6463.56

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**CANDELA TABULATION - (Cont.)**

37	6371.86	6350.65	6360.71	6361.68	6340.92	6354.52	6351.18
38	6263.63	6239.07	6240.77	6241.50	6220.82	6235.26	6232.93
39	6146.04	6111.13	6114.32	6116.28	6091.61	6108.75	6109.45
40	6018.40	5983.55	5980.63	5975.04	5951.66	5970.89	5973.92
41	5885.81	5850.50	5843.72	5834.90	5806.82	5824.75	5826.06
42	5743.72	5710.71	5702.30	5690.74	5669.29	5679.56	5672.11
43	5605.80	5574.94	5570.38	5558.42	5542.61	5544.28	5535.41
44	5471.38	5435.68	5447.05	5433.78	5411.34	5410.01	5404.88
45	5333.44	5306.86	5311.67	5298.25	5281.76	5269.90	5274.40
46	5199.08	5178.97	5178.39	5162.60	5146.93	5136.49	5137.37
47	5063.11	5043.07	5041.89	5027.34	5010.95	5002.07	5007.80
48	4928.40	4913.96	4903.39	4896.28	4878.88	4867.26	4878.24
49	4792.50	4780.35	4766.20	4765.18	4748.39	4740.10	4746.58
50	4654.22	4643.19	4624.41	4629.84	4619.32	4602.47	4610.08
51	4521.65	4506.25	4484.58	4491.98	4481.83	4470.49	4469.52
52	4383.40	4365.76	4345.10	4357.07	4337.51	4334.31	4333.62
53	4245.81	4229.69	4210.10	4223.44	4202.92	4194.64	4193.90
54	4104.88	4090.78	4077.77	4082.65	4065.15	4061.28	4052.46
55	3960.36	3944.55	3929.74	3935.85	3924.06	3917.45	3914.89
56	3818.46	3798.26	3789.37	3787.13	3780.42	3773.59	3776.12
57	3671.08	3648.46	3636.97	3632.79	3628.15	3627.37	3635.63
58	3520.68	3501.37	3482.64	3476.91	3478.62	3471.53	3484.32
59	3364.14	3346.08	3332.98	3325.71	3330.57	3314.19	3327.87
60	3184.65	3169.66	3167.69	3159.97	3166.51	3141.04	3155.85
61	3005.16	2993.24	2992.54	2982.51	2983.75	2957.69	2977.98
62	2826.00	2816.92	2816.48	2811.31	2812.17	2781.87	2794.06
63	2657.15	2644.21	2640.08	2637.76	2640.23	2620.33	2621.65
64	2492.45	2480.73	2473.03	2472.05	2467.18	2455.76	2452.43
65	2329.89	2313.64	2306.26	2304.65	2298.58	2293.48	2282.03
66	2174.44	2156.63	2150.61	2143.41	2134.73	2132.01	2118.80
67	2018.38	1998.58	1994.84	1987.89	1978.88	1971.32	1962.71
68	1857.70	1840.39	1833.32	1830.88	1821.19	1808.67	1808.25
69	1697.76	1685.06	1680.00	1680.62	1666.25	1650.88	1659.51
70	1540.67	1528.14	1525.94	1525.71	1506.48	1494.90	1502.72
71	1375.94	1370.06	1371.88	1370.77	1346.66	1338.98	1345.69
72	1229.14	1225.30	1217.82	1215.84	1186.84	1183.05	1188.66
73	1086.95	1083.75	1068.08	1071.75	1047.26	1042.42	1047.35
74	954.58	951.74	935.65	934.81	914.83	911.24	914.71
75	826.77	818.75	808.56	799.69	787.52	783.70	789.10
76	702.39	690.02	672.90	666.21	658.48	663.35	666.21
77	591.09	566.57	556.60	555.70	545.65	549.69	549.04
78	483.60	465.28	451.61	451.95	448.39	447.76	448.26
79	385.64	365.94	351.32	352.58	351.85	354.63	354.33
80	293.85	283.26	269.91	269.59	271.05	273.39	273.64
81	220.77	209.35	201.00	200.03	199.41	203.26	205.19
82	159.09	149.19	142.15	141.37	142.30	143.11	147.29
83	108.52	102.14	97.01	96.45	96.69	98.38	99.92
84	72.12	67.55	63.27	62.61	63.19	64.57	66.00
85	46.29	42.74	40.43	40.02	39.83	40.73	42.16
86	31.25	29.47	27.80	27.09	26.55	26.05	26.43
87	21.79	20.47	18.57	17.74	17.23	17.06	17.20
88	12.41	11.02	10.07	9.59	9.50	9.32	9.33
89	4.52	3.93	3.45	2.99	2.90	2.80	2.83
90	1.42	1.37	1.65	1.69	1.74	1.70	1.70
91	1.27	1.27	1.58	1.58	1.53	1.48	1.48
92	1.22	1.32	1.43	1.53	1.47	1.32	1.47

**IES INDOOR REPORT**  
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**CANDELA TABULATION - (Cont.)**

93	1.22	1.27	1.42	1.42	1.42	1.32	1.37
94	1.22	1.22	1.42	1.42	1.42	1.32	1.42
95	1.27	1.22	1.42	1.42	1.42	1.37	1.37
96	1.32	1.27	1.47	1.47	1.47	1.42	1.37
97	1.57	1.47	1.62	1.62	1.62	1.72	1.62
98	1.57	1.57	1.83	1.88	1.98	1.88	1.78
99	1.63	1.73	2.13	2.08	2.08	1.98	2.02
100	1.93	1.88	2.44	2.33	2.33	2.43	2.33
101	2.09	2.09	2.69	2.74	2.74	2.59	2.73
102	2.39	2.38	2.99	3.04	2.89	2.89	2.84
103	2.64	2.59	3.45	3.50	3.25	3.20	3.25
104	2.89	2.94	3.70	3.80	3.65	3.60	3.65
105	3.05	3.10	4.21	4.01	4.11	3.76	3.81
106	3.46	3.46	4.46	5.84	4.31	4.10	4.26
107	3.65	3.75	4.97	6.34	4.77	4.46	4.62
108	3.96	4.01	5.23	5.69	5.08	4.77	5.13
109	4.11	4.36	5.73	5.74	5.23	5.17	5.48
110	4.42	4.77	6.14	6.04	5.54	5.28	5.84
111	4.52	5.12	6.54	6.44	5.93	5.33	5.99
112	4.72	5.38	6.91	6.85	6.15	5.53	6.15
113	4.88	5.74	7.36	7.21	6.40	5.78	6.44
114	5.08	6.14	7.62	7.51	6.80	5.99	6.75
115	5.28	6.29	7.97	7.92	7.15	6.04	7.00
116	5.54	6.39	8.37	8.22	7.61	6.14	7.31
117	5.89	6.49	8.63	8.48	7.97	6.14	7.62
118	6.09	6.74	9.23	8.73	8.32	6.19	7.62
119	6.39	6.85	9.35	9.24	8.68	6.39	7.67
120	6.60	7.00	9.69	9.50	8.84	7.98	7.92
121	6.70	7.05	10.05	9.80	9.29	9.16	8.97
122	6.75	7.35	10.46	10.16	9.50	9.95	10.15
123	6.75	7.36	10.82	10.51	9.65	10.30	11.36
124	6.75	7.56	11.02	10.82	9.60	10.86	12.13
125	6.95	7.76	11.42	11.26	9.60	11.21	12.64
126	7.05	8.27	11.73	11.53	9.60	11.67	12.90
127	7.26	8.47	12.23	11.78	9.60	11.88	13.31
128	7.52	8.63	12.54	11.94	9.65	12.23	13.41
129	7.77	8.88	12.60	11.94	9.60	12.54	13.62
130	8.12	9.28	12.70	12.09	9.90	12.69	13.76
131	8.73	9.33	12.85	12.04	10.16	12.84	13.92
132	9.19	9.54	13.15	12.04	10.11	13.04	13.97
133	9.49	9.74	13.41	12.19	10.21	13.30	14.07
134	9.79	9.89	13.41	12.19	10.62	13.45	14.33
135	9.79	9.94	13.56	12.19	10.87	13.40	14.43
136	9.79	10.19	13.77	12.29	11.02	13.55	14.73
137	9.79	10.29	14.02	12.49	11.02	13.80	14.93
138	9.79	10.40	14.12	12.60	11.02	13.76	14.94
139	9.94	10.65	14.12	12.65	11.12	14.06	14.99
140	9.89	10.80	14.12	12.65	11.13	14.21	14.74
141	9.90	10.85	14.17	12.70	11.23	14.22	14.48
142	10.25	10.90	14.02	12.55	11.18	14.22	14.38
143	10.35	10.95	14.02	12.20	11.23	14.22	13.68
144	10.46	11.00	14.02	11.84	11.43	14.27	13.32
145	10.91	11.05	14.17	11.59	11.78	14.12	13.26
146	11.33	11.32	14.28	11.53	12.09	13.81	14.12
147	11.84	11.62	14.23	11.43	12.44	13.81	14.97
148	12.48	11.81	14.22	11.38	12.79	13.76	15.23

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**CANDELA TABULATION - (Cont.)**

149	13.24	11.76	14.22	11.38	13.00	13.76	15.59
150	13.65	11.76	14.22	11.38	13.41	14.11	15.80
151	14.21	11.92	14.13	11.38	13.71	14.41	16.00
152	14.66	11.97	14.07	11.38	13.97	14.72	16.00
153	14.66	12.12	13.97	11.43	14.28	14.88	16.00
154	14.41	12.07	13.77	11.68	14.38	14.98	16.00
155	14.15	12.07	13.46	11.74	14.43	15.03	16.00
156	14.00	12.07	13.41	11.78	14.48	15.08	15.95
157	14.01	12.07	13.36	11.89	14.58	15.08	15.80
158	14.15	12.07	13.41	11.94	14.68	15.08	15.55
159	14.15	12.12	13.61	11.99	14.63	15.13	15.55
160	14.15	12.32	13.76	12.19	14.73	15.03	15.40
161	14.20	12.53	14.12	12.24	14.98	15.03	15.34
162	14.25	12.73	14.27	12.34	15.04	15.03	15.34
163	14.25	13.19	14.28	12.45	15.04	14.98	15.29
164	14.31	13.35	14.28	12.55	15.09	14.93	15.29
165	14.46	13.84	14.33	12.55	15.09	14.28	15.09
166	14.72	14.11	14.48	12.80	15.19	13.87	14.94
167	15.14	14.62	15.08	12.95	15.75	14.16	14.94
168	16.39	15.62	15.68	13.65	16.59	15.70	15.93
169	17.01	16.54	15.90	14.17	17.27	17.24	17.16
170	17.81	17.04	16.05	14.22	17.47	18.05	18.21
171	18.32	17.60	16.40	14.48	17.83	18.58	19.10
172	18.72	18.01	16.85	14.73	18.08	18.78	19.85
173	18.82	18.35	16.87	15.13	18.14	18.79	20.02
174	18.97	18.30	16.92	15.29	18.14	18.79	20.07
175	18.97	18.30	17.22	15.54	18.29	18.79	20.17
176	18.92	18.20	17.27	15.80	18.34	18.79	20.27
177	18.87	18.10	17.17	15.80	18.19	18.83	20.27
178	18.41	17.80	17.02	15.80	17.89	18.79	20.32
179	18.21	17.60	16.92	15.85	17.68	18.64	20.17
180	20.02	20.02	20.02	20.02	20.02	20.02	20.02

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	2958.71	N.A.	13.80
0-30	6327.17	N.A.	29.60
0-40	10425.44	N.A.	48.70
0-60	18052.21	N.A.	84.40
0-80	21252.28	N.A.	99.40
0-90	21340.08	N.A.	99.80
10-90	20578.81	N.A.	96.20
20-40	7466.73	N.A.	34.90
20-50	11570.61	N.A.	54.10
40-70	9935.63	N.A.	46.50
60-80	3200.06	N.A.	15.00
70-80	891.20	N.A.	4.20
80-90	87.80	N.A.	0.40
90-110	5.37	N.A.	0.00
90-120	11.72	N.A.	0.10
90-130	20.21	N.A.	0.10
90-150	37.00	N.A.	0.20
90-180	49.20	N.A.	0.20
110-180	43.83	N.A.	0.20
0-180	21389.28	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	761.27
10-20	2197.44
20-30	3368.46
30-40	4098.27
40-50	4103.87
50-60	3522.9
60-70	2308.87
70-80	891.20
80-90	87.80
90-100	1.63
100-110	3.74
110-120	6.35
120-130	8.49
130-140	8.89
140-150	7.90
150-160	6.39
160-170	4.11
170-180	1.69

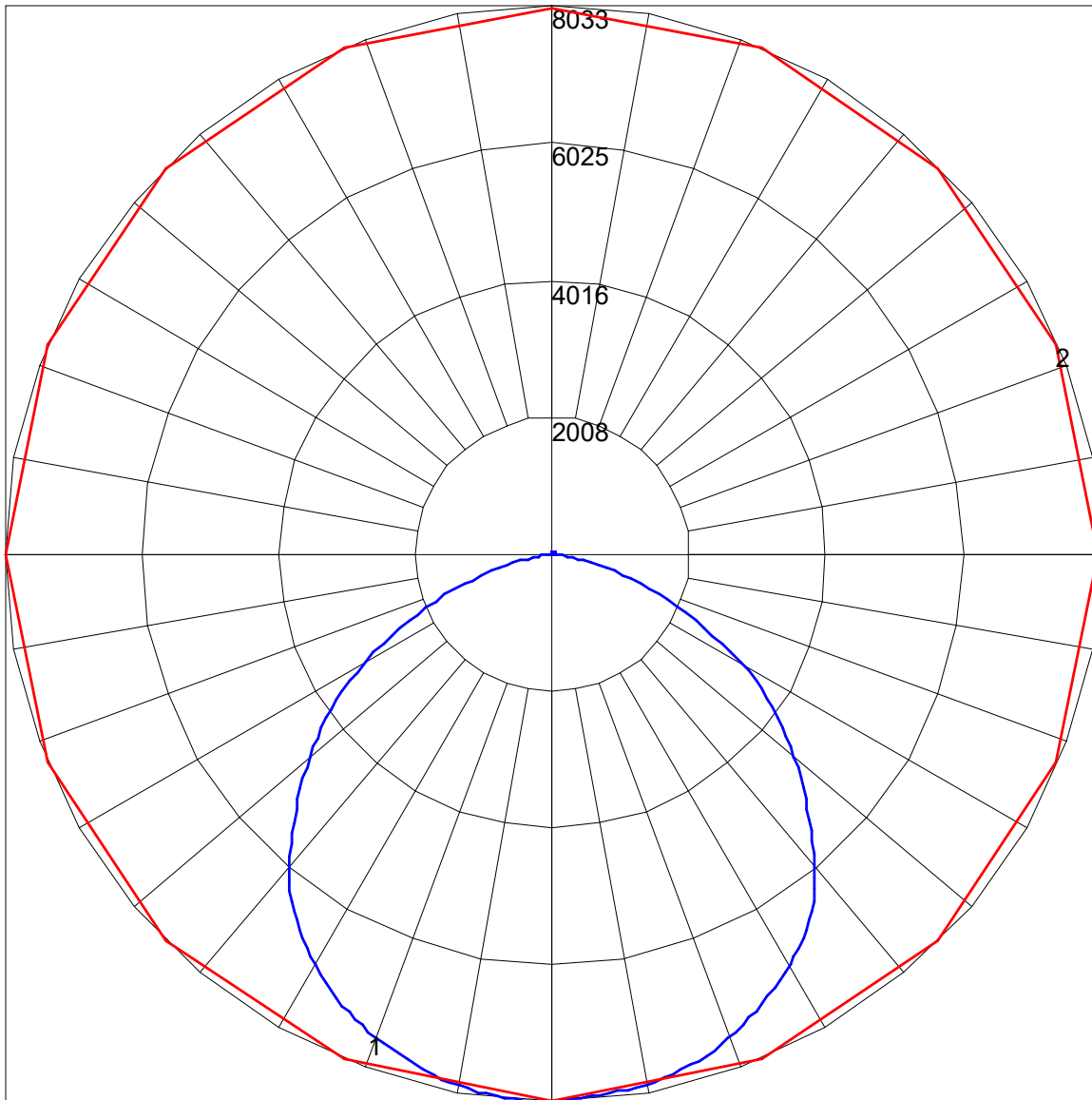
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : HZCAS310HTHOWT50120-277V.IES**

**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	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	100	93	87	81	98	91	85	80	87	83	78	84	80	77	81	78	75	73
3	92	82	74	68	90	80	73	68	77	71	66	75	70	65	72	68	64	62
4	84	73	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	44	39	51	44	38	50	43	38	48	42	38	36
8	62	49	40	35	60	48	40	35	47	39	34	45	39	34	44	38	34	32
9	58	45	37	31	56	44	36	31	43	36	31	42	35	31	41	35	31	29
10	54	41	33	28	53	41	33	28	40	33	28	39	32	28	38	32	28	26

POLAR GRAPH



Maximum Candela = 8032.75 Located At Horizontal Angle = 225, Vertical Angle = 2  
# 1 - Vertical Plane Through Horizontal Angles (225 - 45) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (2) (Through Max. Cd.)