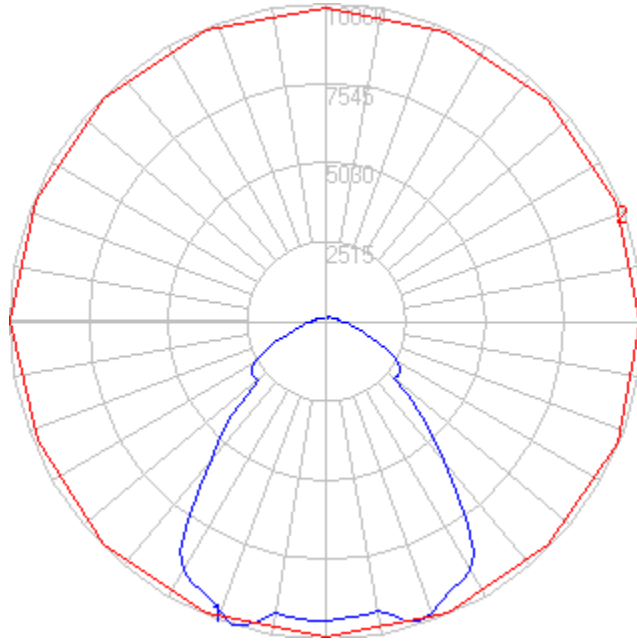




10163 US HWY 31 North, Charlevoix, MI 49720 231-547-6584

Test Report Number	05781
Date of Test	10/11/2016
Manufacturer	BETOP
Catalog Number	BT-HL200W
Test Item	BETOP LED POD WITH 350 LEDS IN A CIRCULAR PATTERN WITH FLAT CLEAR LENS, MOONGLOW S16
Lamp	HL200W-350L
Operating Orientation	PENDENT
Driver Type	INTERNAL
Test Time	90 MINUTES
Ambient Temperature (C)	25.1
Stabilization Time	64 MINUTES
Power Factor	.992
Power (W)	198.66
Voltage(V)	120.02
Current(A)	1.6687
Notes	DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120Vac, 60Hz)
Luminous Flux	24424.23
Luminous Efficacy	122.94
Test Distance	22.25 FEET
Test Equipment	GONIOPHOTOMETER
LAB Test Method Reference	IESNA LM-79-08
Technician	CG
Spacing Criterion(0-180)	1.36
Spacing Criterion(90-270)	1.36
Spacing Criterion(diagonal)	1.24
Sample Width(mm)	
Sample Height/Depth(mm)	
Luminous Diameter/Length(mm)	
Luminous Width(mm)	
Luminous Height/Depth(mm)	



Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

RC	80				70				50				30				10				0
RW70	50	30	10		70	50	30	10	50	30	10		50	30	10		50	30	10	0	
0	117	117	117	117	114	114	114	114	107	107	107		101	101	101		96	96	96		93
1	108	103	99	95	104	100	97	93	95	92	89		90	87	85		85	83	82		79
2	99	91	85	80	96	89	83	78	84	79	75		80	76	73		76	73	70		68
3	91	81	74	68	88	79	72	67	75	69	65		72	67	63		68	64	61		58
4	84	73	65	58	81	71	64	58	68	61	56		65	59	55		62	57	53		51
5	78	66	57	51	75	64	57	51	61	55	50		59	53	48		56	51	47		45
6	72	60	51	45	70	58	51	45	56	49	44		54	48	43		52	46	42		40
7	67	55	46	41	65	54	46	40	51	45	40		49	43	39		48	42	38		36
8	63	50	42	37	61	49	42	36	47	41	36		46	40	35		44	39	35		33
9	59	46	39	33	57	45	38	33	44	37	33		42	36	32		41	36	32		30
10	55	43	35	30	54	42	35	30	41	34	30		39	34	29		38	33	29		27

Zonal Lumen Summary

	Summary Zonal Lumens	Zonal Lumens-% Lamp	Zonal Lumens-% Fixture
0-30	8020.44		32.84%
0-40	12915.95		52.88%
0-60	18790.66		76.93%
0-90	22781.02		93.27%
90-110	804.29		3.29%
90-130	1248.56		5.11%
90-150	1534.12		6.28%
90-180	1643.21		6.73%

	Zonal Lumens		Zonal Lumens
0-10	897.34	170-180	9.63
10-20	2783.73	160-170	35.06
20-30	4339.37	150-160	64.40
30-40	4895.51	140-150	98.17
40-50	3306.42	130-140	187.39
50-60	2568.29	120-130	187.39
60-70	2131.49	110-120	256.88
70-80	1182.41	100-110	353.42
80-90	676.46	90-100	450.87

Candela Table

	0.00	22.50	45.00	67.50	90.00	112.50	135.00	157.50	180.00	202.50	225.00	247.50	270.00	292.50	315.00	337.50	360.00
0.00	9478.6	9478.6	9478.6	9478.6	9478.6	9478.6	9478.6	9478.6	9478.6	9478.6	9478.6	9478.6	9478.6	9478.6	9478.6	9478.6	9478.6
2.50	9464.6	9463.0	9464.5	9466.1	9466.1	9468.5	9469.8	9471.0	9473.7	9474.6	9471.7	9470.8	9470.6	9467.9	9467.4	9465.6	9464.6
5.00	9423.8	9423.1	9423.1	9425.4	9425.5	9430.5	9434.7	9433.0	9471.0	9469.0	9468.9	9468.6	9466.1	9464.4	9462.0	9463.6	9423.8
7.50	9374.8	9375.2	9376.5	9375.8	9380.5	9385.1	9389.2	9383.6	9446.6	9446.8	9443.1	9445.0	9443.2	9440.0	9439.1	9437.4	9374.8
10.00	9314.1	9311.4	9314.7	9316.2	9322.9	9331.0	9330.9	9323.6	9398.1	9397.0	9396.3	9395.7	9392.1	9393.3	9390.8	9391.3	9314.1
12.50	9504.5	9495.3	9498.9	9512.1	9516.7	9518.9	9524.5	9516.3	9689.4	9636.7	9683.6	9655.5	9654.6	9702.5	9672.8	9650.0	9504.5
15.00	9792.7	9735.4	9760.2	9777.9	9795.9	9791.0	9812.8	9842.3	9929.8	9867.7	9897.8	9882.5	9901.1	9844.5	9894.6	9901.4	9792.7
17.50	9943.3	9929.8	9939.3	9939.6	9962.7	9978.0	9976.6	9994.6	10059.5	9921.9	10028.4	10027.2	10024.0	10020.0	9977.6	9990.0	9943.3
20.00	9811.9	9818.4	9798.6	9797.8	9806.5	9880.8	9867.0	9826.7	9802.1	9787.2	9732.6	9823.9	9793.2	9841.1	9831.5	9794.6	9811.9
22.50	9562.8	9541.7	9526.3	9556.3	9622.4	9557.7	9572.7	9630.0	9573.4	9525.9	9540.8	9552.8	9606.0	9502.3	9530.2	9591.9	9562.8
25.00	9372.3	9384.7	9404.2	9384.6	9352.5	9354.6	9358.5	9336.7	9402.2	9430.5	9433.0	9356.4	9321.5	9359.7	9346.9	9358.5	9372.3
27.50	9271.4	9298.3	9291.2	9279.8	9272.7	9285.8	9268.4	9283.6	9306.6	9319.8	9331.6	9287.6	9277.8	9275.1	9267.6	9287.9	9271.4
30.00	9133.8	9145.4	9138.1	9139.1	9149.4	9172.4	9146.8	9189.1	9092.7	9102.8	9084.0	9082.4	9067.3	9038.9	9054.7	9046.8	9133.8
32.50	8728.2	8695.4	8691.9	8685.5	8695.4	8707.0	8716.3	8729.1	8627.2	8615.4	8598.9	8600.0	8570.3	8531.5	8532.1	8517.8	8728.2
35.00	7873.5	7872.2	7896.6	7883.2	7931.7	7996.6	7998.6	7990.1	7731.9	7722.2	7681.3	7682.6	7646.0	7608.8	7580.6	7552.5	7873.5
37.50	6786.1	6824.1	6851.7	6858.1	6894.3	6951.4	6962.8	6961.3	6637.9	6625.6	6598.4	6578.2	6550.6	6523.7	6493.9	6504.4	6786.1
40.00	5795.0	5843.4	5860.6	5883.8	5880.6	5873.1	5892.9	5917.4	5707.4	5722.4	5702.4	5634.4	5588.2	5559.1	5577.0	5565.0	5795.0
42.50	5020.3	5030.1	5055.1	5052.1	5081.1	5110.9	5114.3	5098.6	4976.5	4914.2	4906.1	4927.3	4890.3	4869.1	4866.5	4872.3	5020.3
45.00	4284.2	4281.1	4302.7	4314.4	4393.0	4441.5	4472.1	4425.0	4212.5	4217.6	4191.3	4165.6	4178.1	4178.7	4161.4	4118.2	4284.2
47.50	3471.1	3483.5	3502.8	3510.0	3531.8	3599.8	3639.3	3644.5	3399.1	3387.2	3360.9	3370.8	3329.7	3294.1	3274.5	3266.7	3471.1
50.00	2829.9	2843.5	2842.9	2841.8	2845.3	2876.5	2914.0	2933.3	2869.7	2883.9	2870.3	2853.1	2826.4	2812.0	2800.4	2793.9	2829.9
52.50	2855.1	2847.4	2831.2	2825.2	2824.1	2835.6	2863.2	2886.7	2918.9	2936.5	2928.9	2905.5	2876.8	2867.2	2853.2	2844.8	2855.1
55.00	2856.4	2851.8	2837.6	2832.2	2828.1	2839.6	2873.0	2892.0	2902.3	2918.0	2913.0	2891.7	2863.4	2849.7	2839.1	2830.1	2856.4
57.50	2775.0	2771.1	2758.0	2755.6	2739.7	2755.4	2788.9	2807.6	2794.1	2809.2	2807.4	2789.6	2758.6	2747.4	2737.7	2735.1	2775.0
60.00	2626.5	2621.7	2611.1	2610.9	2592.9	2603.7	2634.4	2653.6	2630.6	2648.9	2645.6	2625.1	2598.8	2589.5	2584.8	2580.6	2626.5
62.50	2421.6	2424.8	2419.9	2417.0	2398.4	2408.4	2433.1	2447.9	2408.0	2429.9	2427.6	2403.6	2382.8	2381.4	2379.0	2370.4	2421.6
65.00	2166.2	2165.2	2163.3	2167.9	2153.5	2159.0	2180.0	2189.3	2130.1	2142.4	2140.8	2126.8	2107.1	2113.5	2114.9	2104.5	2166.2
67.50	1863.9	1865.5	1862.5	1871.6	1853.4	1859.2	1873.8	1877.8	1809.9	1817.2	1814.9	1800.3	1784.4	1795.1	1798.3	1792.0	1863.9
70.00	1565.3	1568.4	1564.5	1571.5	1553.1	1552.0	1559.8	1564.7	1509.2	1514.9	1510.4	1498.1	1489.2	1497.8	1506.2	1503.2	1565.3
72.50	1337.3	1340.4	1338.1	1339.5	1327.5	1324.3	1326.3	1326.7	1286.0	1288.7	1281.8	1272.2	1267.3	1276.0	1283.5	1282.6	1337.3
75.00	1144.2	1148.7	1149.9	1148.0	1140.5	1136.4	1134.9	1130.0	1095.3	1095.7	1089.9	1083.0	1079.9	1088.2	1093.0	1097.3	1144.2
77.50	977.7	983.3	983.2	981.6	975.3	972.0	968.5	962.1	934.0	932.8	928.2	923.7	920.5	929.1	933.4	937.1	977.7
80.00	838.9	843.8	841.8	841.1	834.6	833.1	827.6	823.1	801.2	800.5	797.2	794.3	792.3	799.4	804.0	807.2	838.9
82.50	725.6	729.1	727.3	726.3	720.4	719.1	714.1	711.2	695.9	695.1	691.4	689.9	690.1	695.2	698.0	701.4	725.6
85.00	631.9	636.3	634.9	634.4	628.9	626.8	624.0	620.2	609.2	608.8	604.9	605.1	606.9	610.7	611.4	614.4	631.9
87.50	556.5	561.1	559.5	559.3	554.9	553.0	551.1	548.0	538.4	538.6	535.3	535.9	536.7	540.6	540.2	543.5	556.5
90.00	493.5	496.6	495.3	495.5	491.3	489.7	488.0	486.4	479.2	478.9	476.8	477.5	477.8	481.6	482.3	483.9	493.5
92.50	451.7	453.4	452.5	452.7	449.3	447.2	446.5	445.2	440.0	439.4	438.1	438.7	439.2	441.9	442.8	443.9	451.7
95.00	418.5	419.5	418.7	418.5	415.9	413.7	413.5	412.9	408.6	408.1	406.9	407.9	408.8	411.4	411.8	412.2	418.5
97.50	392.5	393.5	392.4	391.8	390.2	387.7	388.3	388.2	385.1	384.4	383.8	384.7	385.1	387.4	388.2	388.4	392.5
100.00	371.2	371.8	371.0	370.6	368.7	367.0	367.6	367.4	365.0	364.8	364.9	365.9	366.3	368.2	369.1	368.6	371.2
102.50	352.6	353.3	352.9	351.9	350.6	348.8	349.9	349.7	347.9	347.4	348.2	349.2	349.7	351.3	352.4	351.1	352.6
105.00	336.1	336.3	335.5	334.3	333.8	332.7	333.5	333.2	331.4	331.5	332.0	333.1	333.8	335.3	335.9	334.3	336.1
107.50	318.9	318.8	317.7	317.0	316.6	315.2	316.3	316.3	313.9	313.9	314.0	315.4	316.5	317.8	317.9	316.6	318.9
110.00	298.6	298.4	296.7	296.7	296.9	296.1	296.4	296.0	294.8	294.6	295.1	295.6	296.1	297.5	297.3	296.1	298.6
112.50	278.8	278.6	276.9	276.4	276.6	274.6	275.7	275.9	275.6	275.0	275.0	275.3	275.8	278.0	278.0	276.6	278.8
115.00	260.9	260.4	259.3	258.6	258.4	257.0	257.5	257.5	258.0	256.4	256.8	257.8	258.4	260.9	260.3	258.6	260.9
117.50	245.6	245.8	244.5	243.8	244.0	242.3	243.0	242.6	242.1	241.2	241.2	242.5	243.5	245.6	245.2	243.5	245.6

120.00	232.4	232.2	231.4	230.8	230.6	229.8	229.7	229.4	228.5	228.3	228.6	229.2	230.2	232.6	232.0	230.7	232.4
122.50	220.9	220.9	220.2	219.5	219.2	218.1	218.7	218.2	217.6	216.9	217.4	217.9	219.2	221.5	221.1	219.5	220.9
125.00	210.5	210.8	210.1	209.6	208.7	208.0	208.6	208.3	206.8	206.3	206.6	207.5	209.0	210.8	210.5	208.8	210.5
127.50	201.5	202.1	201.4	200.2	199.9	199.1	199.7	199.1	197.5	196.9	197.2	198.3	199.5	201.4	200.8	199.5	201.5
130.00	193.5	194.3	193.8	192.5	192.1	191.3	192.1	191.6	189.6	189.2	189.7	190.7	191.8	192.9	192.7	191.8	193.5
132.50	186.8	187.3	187.1	185.6	185.3	184.7	185.1	184.5	182.2	182.1	182.7	183.6	184.7	185.8	185.4	184.9	186.8
135.00	180.2	180.8	180.6	179.0	178.5	178.0	178.1	177.9	174.7	174.8	175.2	176.3	177.7	178.5	178.4	177.6	180.2
137.50	174.6	175.0	174.8	173.2	172.6	171.8	172.4	171.7	167.9	168.2	169.1	169.9	170.9	172.1	171.6	171.4	174.6
140.00	170.0	169.9	169.2	167.6	166.9	166.7	167.0	166.3	162.3	162.7	163.6	164.6	165.6	166.6	166.2	166.1	170.0
142.50	164.8	164.9	164.2	162.5	161.8	161.6	162.0	161.3	157.2	157.8	158.5	159.4	160.3	161.1	161.1	160.9	164.8
145.00	160.0	159.9	159.0	157.2	156.4	156.0	156.4	156.4	152.4	152.3	153.4	154.2	155.2	156.1	156.4	156.1	160.0
147.50	155.0	154.7	153.7	152.2	151.4	151.0	151.0	150.8	147.1	147.7	148.5	149.5	150.3	151.0	151.3	151.5	155.0
150.00	150.3	149.6	148.9	147.4	146.5	146.1	146.0	145.8	142.8	143.5	144.0	145.1	146.0	146.5	147.0	147.5	150.3
152.50	145.9	145.1	144.6	143.3	142.3	141.9	141.7	141.5	139.4	140.1	140.9	141.4	142.1	142.9	143.6	144.0	145.9
155.00	141.8	141.2	140.4	139.6	138.1	138.0	137.8	137.7	136.5	136.5	137.5	138.2	138.9	139.7	140.2	140.6	141.8
157.50	137.8	137.7	136.6	135.8	134.8	134.2	134.3	134.0	133.1	133.6	134.4	135.2	136.1	136.3	136.9	137.2	137.8
160.00	134.3	134.0	133.0	132.1	131.5	130.6	130.4	130.4	130.0	130.5	131.1	132.0	132.5	132.6	133.6	134.0	134.3
162.50	130.0	130.1	129.2	128.4	128.0	126.7	126.7	126.5	126.8	127.2	127.9	128.7	129.3	129.3	129.9	130.4	130.0
165.00	125.3	125.4	124.5	123.7	123.0	122.5	122.5	121.9	122.1	122.7	123.2	123.9	124.4	124.8	125.2	125.4	125.3
167.50	119.5	119.6	118.7	117.9	117.2	117.1	116.9	116.1	116.4	117.3	117.6	117.9	118.6	118.9	119.1	119.2	119.5
170.00	112.5	112.3	111.7	111.0	110.9	110.6	110.2	110.1	110.3	110.9	111.0	111.6	111.8	112.2	112.2	112.1	112.5
172.50	104.9	104.7	104.2	103.7	103.6	103.5	103.1	103.2	103.4	103.7	103.9	104.3	104.6	104.7	104.7	104.8	104.9
175.00	101.3	101.1	100.5	100.0	99.8	99.6	99.0	99.6	100.7	101.4	102.1	102.5	103.2	103.3	103.7	103.3	101.3
177.50	102.4	102.6	102.4	102.4	102.1	101.8	101.9	102.2	102.0	102.3	102.8	102.7	103.3	103.5	103.6	104.4	102.4
180.00	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7