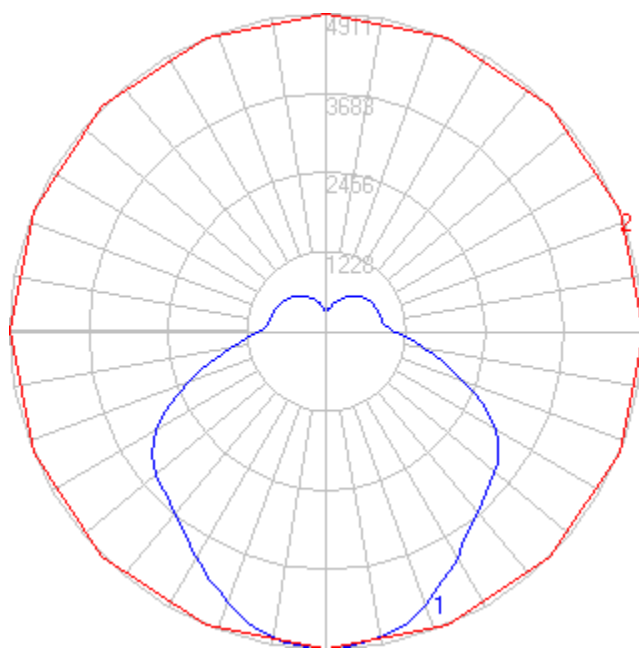




10163 US HWY 31 North, Charlevoix, MI 49720 231-547-6584

Test Report Number	05765
Date of Test	8/31/2016
Manufacturer	BETOP
Catalog Number	BT-HL200W
Test Item	BETOP LED POD WITH 350 LEDS IN A CIRCULAR PATTERN WITH FLAT CLEAR LENS, LUMIEO S16 AND LUMIEO 16" C.D.L.
Lamp	HL200W-350L
Operating Orientation	PENDENT
Driver Type	INTERNAL
Test Time	105 MINUTES
Ambient Temperature (C)	25.5
Stabilization Time	59 MINUTES
Power Factor	.992
Power (W)	198.01
Voltage(V)	120.01
Current(A)	1.6639
Notes	DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120Vac, 60Hz)
Luminous Flux	22950.84
Luminous Efficacy	115.91
Test Distance	22.25 FEET
Test Equipment	GONIOPHOTOMETER
LAB Test Method Reference	IESNA LM-79-08
Technician	CG
Spacing Criterion(0-180)	1.24
Spacing Criterion(90-270)	1.24
Spacing Criterion(diagonal)	1.44
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		
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0	0				
0		114	114	114	114		109	109	109	109		99	99	99		90	90	90		82	82	82	78
1		101	96	90	86		96	91	86	82		83	79	76		75	72	70		68	66	64	60
2		91	82	74	68		86	78	71	65		71	65	60		64	60	56		58	54	51	48
3		82	71	62	55		78	68	60	53		61	55	49		56	50	46		50	46	42	39
4		75	62	53	46		71	59	51	44		54	47	41		49	43	38		44	40	36	33
5		69	55	46	39		65	53	44	38		48	41	35		44	38	33		40	35	30	28
6		63	49	40	33		60	47	39	32		43	36	30		39	33	28		36	31	26	24
7		58	44	35	29		55	43	34	28		39	32	27		36	29	25		33	27	23	21
8		54	40	32	26		51	39	31	25		36	28	23		33	26	22		30	25	21	18
9		50	37	28	23		48	35	28	22		33	26	21		30	24	20		27	22	19	16
10		47	34	26	21		45	33	25	20		30	23	19		28	22	18		25	20	17	15

Zonal Lumen Summary

	Summary Zonal Lumens	Zonal Lumens-% Lamp	Zonal Lumens-% Fixture
0-30	3757.27		16.37%
0-40	6156.67		26.83%
0-60	11821.60		51.51%
0-90	17844.30		77.75%
90-110	1948.12		8.49%
90-130	3531.14		15.39%
90-150	4684.76		20.41%
90-180	5106.54		22.25%

	Zonal Lumens		Zonal Lumens
0-10	463.35	170-180	32.68
10-20	1322.32	160-170	128.65
20-30	1971.60	150-160	260.45
30-40	2399.40	140-150	418.40
40-50	2726.96	130-140	735.22
50-60	2937.97	120-130	735.22
60-70	2667.24	110-120	847.80
70-80	1985.22	100-110	928.82
80-90	1370.24	90-100	1019.30

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	4911.0	4911.0	4911.0	4911.0	4911.0	4911.0	4911.0	4911.0	4911.0	4911.0	4911.0	4911.0	4911.0	4911.0	4911.0	4911.0	4911.0
2.50	4903.2	4900.9	4900.5	4898.3	4896.6	4895.5	4895.4	4898.2	4902.4	4905.1	4904.8	4906.1	4906.3	4906.6	4907.6	4906.9	4903.2
5.00	4874.4	4870.3	4868.8	4863.7	4863.0	4862.3	4861.6	4865.0	4882.1	4886.2	4885.7	4890.6	4892.6	4892.3	4891.8	4890.8	4874.4
7.50	4839.2	4832.7	4828.8	4823.1	4822.6	4822.1	4822.1	4825.3	4851.0	4856.7	4858.9	4862.1	4864.3	4865.3	4864.6	4861.3	4839.2
10.00	4800.6	4795.9	4790.4	4785.3	4783.4	4783.1	4781.8	4786.9	4803.6	4810.1	4815.0	4819.6	4823.7	4824.0	4818.9	4817.8	4800.6
12.50	4758.0	4747.7	4741.0	4733.9	4731.5	4732.9	4731.9	4738.6	4739.5	4749.3	4751.6	4762.0	4765.2	4761.8	4763.1	4756.2	4758.0
15.00	4692.5	4677.6	4669.7	4659.2	4657.9	4657.8	4659.9	4665.8	4656.2	4665.8	4671.7	4682.0	4686.2	4682.3	4680.8	4675.0	4692.5
17.50	4596.2	4582.1	4574.3	4562.1	4559.9	4560.8	4563.3	4570.6	4557.4	4566.5	4574.6	4585.0	4590.2	4585.8	4582.5	4575.5	4596.2
20.00	4484.5	4475.6	4467.0	4456.1	4453.7	4454.8	4456.7	4466.4	4454.5	4464.3	4471.4	4480.7	4483.8	4478.8	4475.9	4466.4	4484.5
22.50	4372.9	4367.4	4361.4	4353.2	4348.8	4350.0	4353.0	4364.6	4350.2	4361.7	4366.8	4376.0	4376.4	4371.0	4367.1	4355.0	4372.9
25.00	4268.1	4259.9	4260.4	4252.6	4247.5	4249.6	4253.8	4265.9	4246.4	4257.0	4262.1	4268.0	4268.4	4263.0	4257.3	4243.3	4268.1
27.50	4160.1	4152.2	4156.5	4148.2	4145.5	4147.1	4151.6	4163.7	4140.1	4148.3	4152.8	4158.0	4156.3	4149.8	4144.8	4129.2	4160.1
30.00	4043.0	4038.9	4042.4	4036.5	4034.8	4035.3	4039.7	4052.3	4030.4	4039.3	4041.3	4047.5	4043.9	4035.5	4028.4	4015.4	4043.0
32.50	3930.3	3921.8	3925.4	3922.0	3919.5	3920.9	3924.6	3938.3	3923.9	3934.0	3934.0	3937.6	3933.5	3924.5	3915.2	3905.1	3930.3
35.00	3817.9	3812.1	3817.2	3815.1	3813.0	3813.6	3818.8	3832.5	3827.0	3835.2	3835.8	3834.1	3828.1	3821.1	3810.8	3801.6	3817.9
37.50	3720.4	3719.5	3725.6	3725.8	3724.1	3723.6	3729.1	3742.9	3741.0	3746.8	3743.8	3740.7	3733.8	3725.9	3714.9	3705.9	3720.4
40.00	3641.3	3644.9	3651.1	3652.5	3650.6	3650.4	3656.2	3670.3	3665.3	3669.1	3663.5	3657.4	3649.8	3638.9	3628.8	3621.2	3641.3
42.50	3573.2	3579.6	3587.1	3587.6	3585.7	3586.8	3592.6	3607.5	3599.5	3604.0	3594.8	3586.3	3575.4	3565.5	3555.9	3549.5	3573.2
45.00	3510.8	3519.1	3528.5	3528.7	3527.9	3528.7	3534.6	3549.9	3545.0	3548.2	3536.5	3525.9	3514.1	3504.3	3493.9	3487.6	3510.8
47.50	3454.9	3466.4	3477.4	3477.1	3477.2	3477.8	3485.0	3500.3	3498.1	3499.6	3487.7	3474.4	3460.9	3449.2	3438.4	3431.5	3454.9
50.00	3405.2	3418.1	3428.0	3427.1	3427.3	3429.2	3437.9	3455.4	3452.1	3454.0	3441.4	3427.7	3412.3	3398.7	3386.9	3380.2	3405.2
52.50	3342.9	3352.9	3359.3	3358.6	3358.8	3362.9	3372.9	3394.1	3388.2	3394.7	3382.6	3371.3	3354.3	3339.3	3326.2	3318.8	3342.9
55.00	3257.6	3264.8	3268.9	3267.5	3267.7	3274.1	3285.3	3307.3	3304.3	3311.6	3303.1	3291.7	3275.8	3260.5	3246.1	3236.6	3257.6
57.50	3150.1	3153.7	3156.6	3153.6	3155.1	3162.7	3174.8	3194.5	3192.0	3199.0	3194.3	3185.6	3171.5	3154.4	3140.7	3129.0	3150.1
60.00	3019.8	3021.2	3021.1	3018.3	3019.8	3028.5	3040.1	3057.2	3050.2	3057.5	3055.6	3052.8	3040.3	3020.5	3007.8	2996.6	3019.8
62.50	2867.9	2865.5	2861.8	2858.3	2860.1	2871.7	2880.6	2896.9	2879.6	2890.7	2890.6	2890.4	2879.0	2862.3	2848.3	2838.5	2867.9
65.00	2689.7	2684.1	2677.3	2673.3	2672.9	2687.0	2693.9	2713.5	2686.0	2698.9	2703.8	2703.5	2691.3	2677.6	2665.2	2655.1	2689.7
67.50	2487.1	2482.1	2473.8	2470.4	2466.9	2480.8	2487.6	2505.6	2476.9	2486.1	2494.6	2499.9	2488.5	2474.4	2463.5	2451.8	2487.1
70.00	2279.2	2274.5	2265.3	2263.7	2258.7	2270.8	2276.0	2288.9	2262.3	2269.7	2279.4	2287.7	2277.1	2265.2	2256.1	2245.8	2279.2
72.50	2081.7	2076.5	2065.9	2064.7	2060.7	2072.3	2073.6	2085.6	2056.8	2065.8	2074.4	2083.1	2073.2	2064.3	2055.6	2050.5	2081.7
75.00	1892.1	1884.5	1874.6	1873.2	1869.8	1880.1	1878.9	1890.6	1858.5	1869.3	1879.1	1883.7	1876.0	1870.8	1863.6	1861.7	1892.1
77.50	1709.7	1702.5	1694.1	1692.4	1689.7	1696.7	1696.8	1704.2	1676.5	1684.2	1694.9	1697.4	1692.3	1689.6	1685.3	1679.8	1709.7
80.00	1543.1	1536.6	1528.2	1526.8	1525.9	1529.8	1529.1	1534.8	1514.0	1520.7	1528.2	1532.9	1528.7	1527.0	1521.2	1515.2	1543.1
82.50	1396.4	1389.1	1382.1	1381.4	1381.5	1383.1	1382.3	1387.3	1369.1	1376.0	1382.9	1388.0	1383.2	1382.2	1376.8	1372.3	1396.4
85.00	1267.3	1259.7	1254.2	1254.6	1253.5	1256.4	1254.8	1258.8	1244.5	1250.1	1257.2	1260.4	1255.7	1255.3	1252.5	1248.9	1267.3
87.50	1153.9	1147.1	1143.6	1143.9	1143.7	1145.9	1145.1	1146.9	1139.2	1142.7	1148.0	1150.3	1147.6	1147.2	1144.8	1141.7	1153.9
90.00	1059.0	1053.3	1050.4	1051.9	1052.9	1054.5	1053.1	1054.3	1051.3	1054.0	1056.5	1058.0	1056.5	1055.8	1052.8	1050.1	1059.0
92.50	983.5	980.5	979.6	982.5	985.8	988.1	986.3	986.4	985.0	985.7	985.9	986.6	983.7	982.4	979.1	978.4	983.5
95.00	930.3	928.7	930.0	935.2	940.2	942.9	941.0	939.2	940.5	937.5	935.6	935.4	931.5	929.9	927.0	927.5	930.3
97.50	895.8	897.7	901.9	909.6	919.5	924.5	921.0	916.3	918.3	912.1	907.6	904.3	900.7	898.7	896.4	897.4	895.8
100.00	878.4	880.4	886.7	894.3	902.3	907.3	905.5	900.9	905.3	898.2	892.0	888.6	885.2	883.0	882.1	883.2	878.4
102.50	870.7	872.8	878.1	884.8	891.9	895.9	894.8	893.0	897.0	890.3	885.2	881.5	877.8	875.6	875.2	876.4	870.7
105.00	866.0	868.4	873.4	879.2	885.0	888.4	888.0	885.8	891.8	886.1	880.7	876.9	873.3	871.3	871.3	872.8	866.0
107.50	861.4	863.5	868.0	873.3	878.4	881.2	881.4	880.1	886.2	881.3	876.4	872.4	869.3	867.8	867.9	868.5	861.4
110.00	855.7	857.3	861.3	865.6	869.9	872.8	873.3	872.5	879.2	875.4	871.0	867.8	864.9	863.0	863.0	863.6	855.7
112.50	851.1	852.1	855.8	859.4	863.3	865.8	866.2	865.8	870.1	867.2	863.1	860.1	857.5	855.9	855.5	855.7	851.1
115.00	846.1	847.1	850.2	853.8	856.9	859.0	859.8	859.7	862.9	860.1	856.7	854.6	851.7	849.9	849.6	850.0	846.1

117.50	841.3	841.9	845.0	848.1	851.0	852.7	853.4	853.3	857.1	854.1	851.1	848.5	846.3	845.3	845.1	845.4	841.3
120.00	834.3	834.4	838.0	841.0	843.3	844.3	845.1	845.0	848.5	846.5	843.4	840.7	839.1	838.1	838.5	838.4	834.3
122.50	825.0	825.2	828.8	831.1	833.2	833.9	834.9	835.0	838.6	836.8	833.6	831.4	829.7	829.7	829.5	829.3	825.0
125.00	814.3	814.2	817.3	819.9	821.5	821.6	822.5	823.0	825.9	824.6	821.9	819.7	818.4	818.5	818.3	818.1	814.3
127.50	801.9	801.4	804.3	806.3	807.8	808.0	809.2	809.9	810.5	809.3	807.5	805.2	803.8	804.3	804.3	804.0	801.9
130.00	788.0	787.4	789.7	791.3	792.5	793.0	794.3	795.1	795.6	794.8	792.2	790.5	789.4	790.0	790.5	789.4	788.0
132.50	772.1	771.5	773.6	774.9	776.1	776.1	777.9	778.9	777.6	777.6	775.5	773.5	772.8	773.9	773.9	772.3	772.1
135.00	754.7	753.4	755.6	756.5	757.4	757.4	758.3	760.1	757.2	757.5	756.2	754.4	753.7	754.7	754.4	752.9	754.7
137.50	734.6	733.9	735.1	736.6	737.0	737.1	737.7	739.7	735.8	736.5	735.8	733.8	733.8	734.5	734.4	732.6	734.6
140.00	713.6	713.0	713.7	715.5	715.9	714.7	715.7	717.9	713.2	714.2	713.5	710.9	711.9	712.6	712.5	710.8	713.6
142.50	691.0	689.6	690.9	691.7	692.3	690.5	692.6	695.5	689.8	690.3	689.9	687.3	689.3	690.0	689.2	687.6	691.0
145.00	666.7	665.8	666.1	667.6	667.8	665.3	667.2	671.4	665.4	665.4	665.9	663.8	666.0	666.4	664.8	663.8	666.7
147.50	641.3	640.4	640.3	641.8	642.5	639.9	641.9	645.9	640.3	640.0	641.2	638.9	641.0	641.5	640.3	639.6	641.3
150.00	615.2	614.5	614.2	615.2	615.9	613.4	616.1	619.4	614.8	613.9	615.8	613.9	615.6	616.4	615.8	614.7	615.2
152.50	588.1	587.3	587.4	588.3	588.5	585.4	588.7	592.2	589.3	588.4	590.2	588.9	590.5	591.6	591.2	590.2	588.1
155.00	560.4	560.0	560.6	560.6	560.3	557.4	560.8	564.1	563.3	562.8	564.8	564.1	564.6	566.7	566.3	565.6	560.4
157.50	532.7	533.1	533.0	533.5	531.7	529.6	533.3	536.1	536.8	536.7	539.1	538.9	538.4	541.6	541.5	541.3	532.7
160.00	506.2	506.8	507.1	506.9	503.4	502.3	506.2	508.2	510.2	510.3	513.0	512.8	512.3	514.8	515.9	516.0	506.2
162.50	479.9	480.6	480.8	480.4	475.8	475.1	478.9	480.5	483.1	483.5	486.5	487.4	486.4	489.2	489.7	490.1	479.9
165.00	451.9	452.2	452.6	451.7	447.3	448.1	450.5	452.0	453.8	454.6	457.9	459.6	459.2	461.4	461.5	461.8	451.9
167.50	422.1	422.2	422.7	420.4	417.3	418.3	421.3	422.5	423.0	423.9	427.1	429.3	429.5	430.9	431.6	431.8	422.1
170.00	390.8	391.4	391.3	387.6	386.5	387.7	390.9	391.9	391.1	391.8	394.8	396.5	397.3	397.9	400.3	400.2	390.8
172.50	359.3	359.5	359.3	354.6	354.5	356.1	359.5	361.1	358.3	359.7	362.7	363.5	365.2	365.8	367.5	369.1	359.3
175.00	342.1	342.8	344.7	340.1	339.0	339.2	339.8	340.5	339.8	340.0	341.5	344.1	347.0	351.5	354.9	358.1	342.1
177.50	344.9	346.4	348.6	347.0	347.2	347.0	349.1	349.1	343.3	344.0	345.6	347.1	348.8	353.2	357.4	360.4	344.9
180.00	353.3	353.3	353.3	353.3	353.3	353.3	353.3	353.3	353.3	353.3	353.3	353.3	353.3	353.3	353.3	353.3	353.3