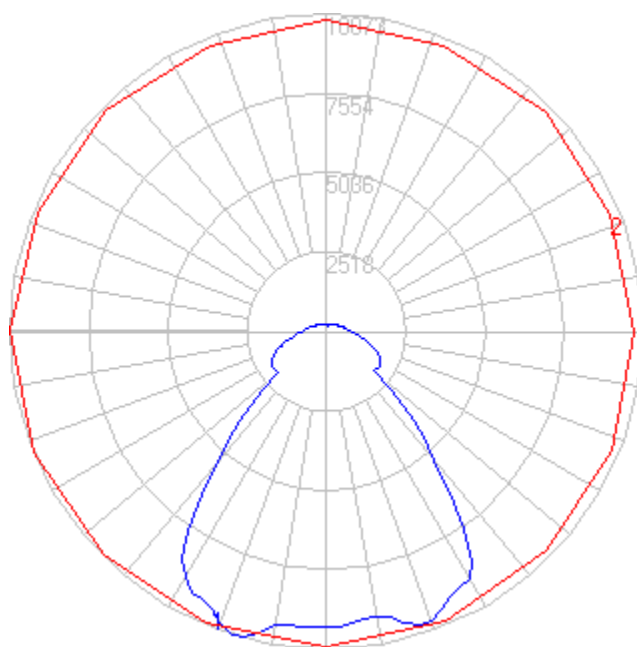




10163 US HWY 31 North, Charlevoix, MI 49720 231-547-6584

Test Report Number	05764
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 AND LUMIEO S16
Lamp	HL200W-350L
Operating Orientation	PENDENT
Driver Type	INTERNAL
Test Time	105 MINUTES
Ambient Temperature (C)	24.8
Stabilization Time	46 MINUTES
Power Factor	.992
Power (W)	198.23
Voltage(V)	120.01
Current(A)	1.6654
Notes	DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120Vac, 60Hz)
Luminous Flux	24586.34
Luminous Efficacy	124.03
Test Distance	22.25 FEET
Test Equipment	GONIOPHOTOMETER
LAB Test Method Reference	IESNA LM-79-08
Technician	CG
Spacing Criterion(0-180)	1.34
Spacing Criterion(90-270)	1.32
Spacing Criterion(diagonal)	1.22
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	116	116	116	116	112	112	112	112	105	105	105		98	98	98		92	92	92		89
1	106	101	97	93	102	98	94	91	92	89	86		86	83	81		81	79	77		74
2	97	89	83	78	94	87	81	76	81	76	72		76	73	69		72	69	66		63
3	90	80	72	66	86	77	70	65	73	67	62		69	64	60		65	61	57		55
4	83	72	64	57	80	70	62	56	66	59	54		62	57	53		59	54	51		48
5	77	65	57	51	74	63	56	50	60	53	48		57	51	47		54	49	45		43
6	71	59	51	45	69	58	50	44	55	48	43		52	46	42		50	45	41		39
7	67	54	46	40	64	53	45	40	50	44	39		48	42	38		46	41	37		35
8	62	50	42	36	60	49	41	36	46	40	35		44	39	34		43	37	34		32
9	59	46	38	33	57	45	38	33	43	37	32		41	36	31		40	34	31		29
10	55	43	35	30	53	42	35	30	40	34	29		38	33	29		37	32	28		26

Zonal Lumen Summary

	Summary Zonal Lumens	Zonal Lumens-% Lamp	Zonal Lumens-% Fixture
0-30	7979.22		32.45%
0-40	12790.01		52.02%
0-60	17477.65		71.09%
0-90	21815.39		88.73%
90-110	1338.31		5.44%
90-130	2089.39		8.50%
90-150	2584.09		10.51%
90-180	2770.95		11.27%

	Zonal Lumens		Zonal Lumens
0-10	886.94	170-180	15.68
10-20	2770.29	160-170	59.16
20-30	4321.99	150-160	112.02
30-40	4810.79	140-150	172.29
40-50	2866.09	130-140	322.41
50-60	1821.55	120-130	322.41
60-70	1845.82	110-120	428.67
70-80	1451.79	100-110	580.62
80-90	1040.13	90-100	757.69

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	9395.7	9395.7	9395.7	9395.7	9395.7	9395.7	9395.7	9395.7	9395.7	9395.7	9395.7	9395.7	9395.7	9395.7	9395.7	9395.7	9395.7
2.50	9382.5	9379.8	9380.0	9380.0	9378.8	9376.7	9375.0	9378.1	9385.8	9386.5	9383.1	9383.7	9380.8	9378.7	9376.1	9376.5	9382.5
5.00	9305.4	9304.5	9301.5	9298.1	9296.6	9297.3	9302.2	9303.1	9384.3	9382.6	9380.1	9376.5	9371.6	9369.6	9369.0	9368.4	9305.4
7.50	9219.7	9221.0	9210.4	9212.1	9214.5	9216.7	9218.8	9226.1	9374.7	9374.0	9371.9	9367.5	9358.4	9355.3	9352.7	9351.5	9219.7
10.00	9200.6	9196.3	9191.0	9194.7	9202.2	9215.1	9258.4	9263.0	9424.0	9378.8	9358.6	9345.9	9330.6	9316.9	9309.9	9308.1	9200.6
12.50	9280.4	9377.2	9413.1	9501.4	9558.5	9619.2	9666.6	9651.1	9785.8	9763.9	9743.0	9595.9	9505.4	9495.9	9477.2	9463.9	9280.4
15.00	9541.7	9576.2	9599.5	9800.1	9692.5	9852.8	9932.3	9927.4	10056.3	9950.2	9918.8	9905.8	9854.5	9820.5	9753.7	9689.2	9541.7
17.50	9769.8	9777.6	9842.0	9803.0	9854.9	9778.5	9907.7	9906.7	10072.6	10046.9	9986.6	10005.3	9990.0	9928.9	9868.6	9840.8	9769.8
20.00	9768.7	9747.9	9668.9	9621.8	9578.3	9637.2	9640.9	9751.0	9833.5	9864.4	9814.0	9777.1	9844.6	9793.9	9723.1	9723.7	9768.7
22.50	9505.7	9464.5	9507.5	9432.6	9431.1	9418.8	9470.0	9516.8	9529.9	9541.3	9596.0	9562.3	9490.2	9500.7	9537.9	9573.0	9505.7
25.00	9301.5	9284.3	9250.5	9298.1	9350.3	9380.3	9363.6	9342.7	9367.9	9411.4	9337.9	9368.8	9386.7	9339.1	9319.0	9287.3	9301.5
27.50	9160.1	9192.1	9208.0	9249.4	9272.8	9287.9	9324.2	9349.2	9322.6	9318.9	9280.3	9244.3	9215.5	9207.1	9190.7	9182.5	9160.1
30.00	9070.3	9058.3	9040.7	8989.3	8952.8	8957.0	8951.4	9014.9	8976.8	9031.4	9077.4	9096.5	9045.3	9039.1	9057.2	9059.2	9070.3
32.50	8635.6	8552.1	8465.6	8412.4	8411.6	8463.9	8512.4	8550.3	8531.6	8564.6	8591.7	8615.6	8609.8	8612.6	8604.5	8606.4	8635.6
35.00	7647.9	7495.4	7444.3	7396.1	7423.4	7506.9	7619.5	7743.4	7681.6	7792.3	7846.6	7924.1	7883.3	7833.3	7716.0	7626.4	7647.9
37.50	6433.6	6313.6	6274.3	6232.5	6273.9	6350.3	6436.1	6604.5	6499.4	6635.2	6776.6	6848.4	6792.8	6737.6	6571.7	6427.4	6433.6
40.00	5356.3	5239.4	5197.2	5212.5	5316.6	5377.9	5382.8	5474.8	5396.9	5510.8	5674.4	5727.9	5649.8	5611.5	5520.6	5375.5	5356.3
42.50	4538.8	4389.6	4400.2	4397.3	4348.6	4404.4	4511.4	4603.1	4547.8	4669.9	4732.6	4756.8	4768.7	4695.1	4597.1	4528.0	4538.8
45.00	3710.1	3604.9	3520.8	3461.0	3529.7	3561.3	3603.0	3739.2	3762.4	3845.1	3916.8	3919.0	3848.8	3819.9	3727.7	3670.5	3710.1
47.50	2718.0	2601.5	2553.5	2502.4	2521.6	2578.8	2636.7	2769.8	2711.1	2813.1	2897.0	2948.3	2928.2	2900.1	2766.7	2663.1	2718.0
50.00	1976.7	1964.0	1967.8	1968.3	1976.7	1989.9	2007.3	2031.8	2024.4	2048.7	2079.8	2096.6	2082.0	2059.4	2005.0	1956.9	1976.7
52.50	1976.9	1988.2	1997.6	1997.6	2006.3	2017.5	2029.4	2035.5	2038.0	2032.5	2020.0	2003.6	1986.3	1973.9	1972.4	1973.1	1976.9
55.00	2008.3	2018.6	2025.7	2026.0	2031.3	2041.6	2053.1	2059.7	2062.0	2058.0	2048.5	2036.6	2020.4	2008.7	2007.8	2007.6	2008.3
57.50	2015.1	2021.2	2025.8	2023.0	2027.4	2036.6	2048.0	2054.5	2056.4	2052.8	2048.3	2040.2	2023.2	2013.2	2012.2	2012.3	2015.1
60.00	1988.6	1992.7	1995.8	1994.1	1998.7	2009.0	2017.4	2026.3	2027.2	2026.4	2024.1	2017.3	2001.8	1992.3	1988.7	1985.3	1988.6
62.50	1934.8	1935.3	1936.5	1934.8	1939.8	1948.9	1955.5	1966.0	1965.6	1966.2	1968.0	1964.5	1952.4	1943.2	1936.1	1931.3	1934.8
65.00	1852.4	1846.5	1846.9	1842.5	1848.7	1856.7	1861.5	1872.1	1870.8	1872.8	1877.5	1876.8	1868.1	1859.4	1849.8	1845.3	1852.4
67.50	1738.9	1731.2	1730.3	1724.0	1731.0	1738.8	1740.0	1751.1	1751.0	1752.3	1760.7	1765.1	1754.9	1748.9	1736.9	1732.4	1738.9
70.00	1610.7	1604.4	1602.0	1599.0	1602.7	1610.6	1610.3	1620.0	1621.3	1620.8	1630.6	1634.7	1626.0	1622.7	1612.6	1608.0	1610.7
72.50	1489.1	1482.5	1481.4	1478.9	1480.7	1488.5	1488.3	1495.2	1496.9	1495.2	1505.2	1508.7	1502.1	1498.6	1492.2	1488.6	1489.1
75.00	1372.7	1365.2	1365.9	1361.2	1365.8	1369.0	1368.5	1372.6	1374.4	1372.8	1381.7	1385.8	1381.2	1377.8	1372.0	1368.1	1372.7
77.50	1259.9	1251.2	1250.4	1245.6	1252.3	1253.7	1250.1	1253.9	1254.8	1254.8	1263.3	1267.6	1264.1	1262.3	1255.9	1254.2	1259.9
80.00	1150.5	1142.2	1139.2	1137.6	1141.7	1142.6	1138.8	1144.5	1145.5	1144.1	1153.5	1156.2	1155.2	1154.2	1149.8	1147.2	1150.5
82.50	1047.9	1040.3	1038.8	1037.1	1039.0	1039.8	1037.6	1041.7	1045.4	1044.1	1052.9	1054.0	1054.7	1054.1	1051.0	1047.9	1047.9
85.00	955.5	947.5	948.1	943.7	947.4	946.9	944.8	946.8	954.5	952.7	960.8	961.3	962.7	962.5	960.2	956.4	955.5
87.50	872.1	863.6	863.6	859.4	863.7	863.4	859.4	861.6	870.2	868.9	876.2	877.5	879.0	879.1	876.8	873.9	872.1
90.00	794.4	788.6	787.2	787.5	791.6	792.2	787.9	789.3	795.1	793.8	798.8	799.0	801.0	801.2	800.2	797.9	794.4
92.50	738.8	736.0	735.7	737.2	740.5	741.3	738.3	739.5	742.5	741.8	743.4	742.6	743.2	743.8	743.4	741.9	738.8
95.00	692.2	689.8	691.2	693.4	697.5	698.0	695.5	694.2	696.9	694.8	695.0	694.4	694.8	696.5	695.7	694.3	692.2
97.50	651.6	650.5	653.6	657.2	665.0	666.3	661.1	657.1	659.1	655.7	654.2	653.5	653.5	655.0	654.3	653.9	651.6
100.00	614.4	613.5	616.1	619.0	624.8	626.5	622.0	618.3	621.4	617.0	616.2	616.2	616.0	617.5	616.9	617.4	614.4
102.50	579.5	579.0	579.9	582.1	585.7	586.9	584.5	582.0	584.4	581.1	580.6	580.2	580.8	581.8	582.0	582.9	579.5
105.00	546.9	546.3	547.4	548.7	551.3	552.0	550.1	547.6	551.7	548.0	547.4	547.0	548.2	549.4	550.1	550.5	546.9
107.50	514.9	514.2	515.6	515.7	518.0	517.7	516.1	514.8	518.7	516.3	515.7	515.6	516.7	518.6	519.5	519.4	514.9
110.00	484.1	483.6	483.7	483.8	485.4	485.1	483.5	482.7	487.1	484.9	485.1	485.4	486.2	488.0	488.7	488.9	484.1
112.50	456.3	456.1	455.6	455.8	456.9	456.9	455.4	454.3	457.0	455.6	455.8	456.1	456.5	458.0	459.1	459.7	456.3
115.00	431.5	431.0	431.6	431.7	432.0	432.3	431.1	429.9	432.1	430.5	430.6	431.0	431.4	432.8	433.7	434.1	431.5

117.50	410.5	409.9	410.7	410.9	411.4	411.1	410.4	408.8	411.0	409.8	409.1	409.3	409.7	411.7	412.8	413.4	410.5
120.00	391.3	390.9	392.0	392.1	393.1	392.1	391.2	390.5	392.0	390.7	390.0	390.2	390.6	392.4	393.5	394.0	391.3
122.50	374.4	374.2	375.1	375.5	375.9	375.6	374.6	373.8	375.2	373.9	373.2	372.8	373.3	375.4	376.9	377.1	374.4
125.00	359.0	359.2	360.2	360.4	360.6	360.3	359.3	358.8	359.6	358.5	357.6	356.6	358.3	360.3	360.9	361.8	359.0
127.50	345.4	345.6	346.6	347.2	347.1	346.8	345.5	345.3	344.6	343.4	342.8	341.9	343.1	345.2	345.8	346.7	345.4
130.00	333.4	333.5	334.6	334.9	334.9	334.5	333.4	333.0	332.2	331.2	330.3	329.5	330.3	332.5	333.5	333.8	333.4
132.50	322.2	322.6	323.4	323.9	323.6	323.2	321.9	321.8	320.0	319.4	318.7	317.7	318.9	320.9	321.7	321.7	322.2
135.00	312.0	312.6	313.3	313.3	313.2	312.6	311.9	311.8	308.1	308.0	307.2	306.5	307.7	309.4	310.4	310.5	312.0
137.50	302.2	302.9	303.6	303.7	303.4	302.3	302.0	302.0	297.9	298.1	297.2	296.3	297.7	299.3	300.4	300.6	302.2
140.00	293.6	293.9	294.6	294.8	294.4	292.9	293.2	292.7	288.2	288.7	287.8	286.9	288.2	290.3	290.9	291.1	293.6
142.50	285.2	285.2	285.6	286.0	285.5	284.0	284.3	284.4	279.6	280.0	279.4	277.9	280.2	281.4	282.3	282.6	285.2
145.00	276.1	276.6	276.9	277.2	276.5	275.1	275.4	276.3	271.4	271.7	271.2	269.4	272.1	273.4	274.0	274.4	276.1
147.50	267.5	267.9	268.0	268.2	268.1	266.2	267.0	267.2	263.3	263.4	263.1	261.3	264.2	265.5	266.1	266.7	267.5
150.00	259.1	259.1	259.4	259.7	258.9	257.1	258.0	258.5	255.7	255.3	255.2	253.6	256.2	257.5	258.4	259.0	259.1
152.50	250.4	250.5	251.0	250.8	250.2	248.2	249.7	249.9	248.4	248.0	248.1	246.6	248.8	250.5	251.4	251.9	250.4
155.00	242.4	242.5	242.5	242.5	241.2	239.8	241.2	241.7	241.2	240.8	241.0	239.8	241.3	243.4	244.2	245.0	242.4
157.50	234.2	234.5	234.6	234.2	232.1	231.3	233.0	233.5	233.7	233.6	233.4	232.4	233.4	236.0	237.1	237.8	234.2
160.00	226.9	227.1	227.0	226.6	223.3	223.0	225.0	225.3	226.3	226.2	225.9	225.0	225.8	228.4	229.7	230.4	226.9
162.50	218.9	219.2	219.1	218.8	215.2	215.6	217.1	217.0	218.3	218.3	218.6	217.6	218.1	221.0	222.0	223.4	218.9
165.00	209.2	209.3	208.9	207.8	205.3	206.1	207.5	207.6	208.3	208.9	209.1	208.9	208.9	211.6	212.7	214.3	209.2
167.50	198.1	197.7	197.3	195.2	193.9	195.0	196.2	196.5	196.5	197.3	197.9	197.7	198.1	199.8	201.5	202.8	198.1
170.00	185.1	184.6	184.0	181.8	181.2	182.2	183.4	183.9	183.1	184.2	184.9	185.0	185.3	186.7	188.5	189.9	185.1
172.50	171.3	170.7	169.5	168.0	167.7	168.3	169.8	170.2	168.5	170.1	171.1	171.5	172.0	173.2	174.3	176.3	171.3
175.00	165.4	166.1	166.2	164.7	165.0	164.4	164.1	163.2	161.2	161.6	162.4	163.7	165.4	167.4	169.0	171.1	165.4
177.50	166.7	166.9	167.4	167.8	167.9	168.3	167.9	167.6	164.4	165.2	165.6	166.5	167.2	168.4	170.3	171.8	166.7
180.00	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6	167.6