

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: P201311

Luminaire Tested: **8LBLED-LD4-16-SYMW-UNV-L840-CD2-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P201311
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P28136)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 8LBLED-LD4-16-SYMW-UNV-L840-CD2-U
Description: 8 ft. Low Bay Linear, 16000 lm, Wht Sym lens, 4K
Light Source: (784) 4000K CCT, 80 CRI LEDS
2UT217098A8404C
Ballast/Driver: OSRAM
2x(OTi85W01280CC)

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15954.0 lumens
Efficiency: N/A
Efficacy: 139.5 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 2.12 / 1.93
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 8' x H: 0.21')
CIE Type: Semi-Direct

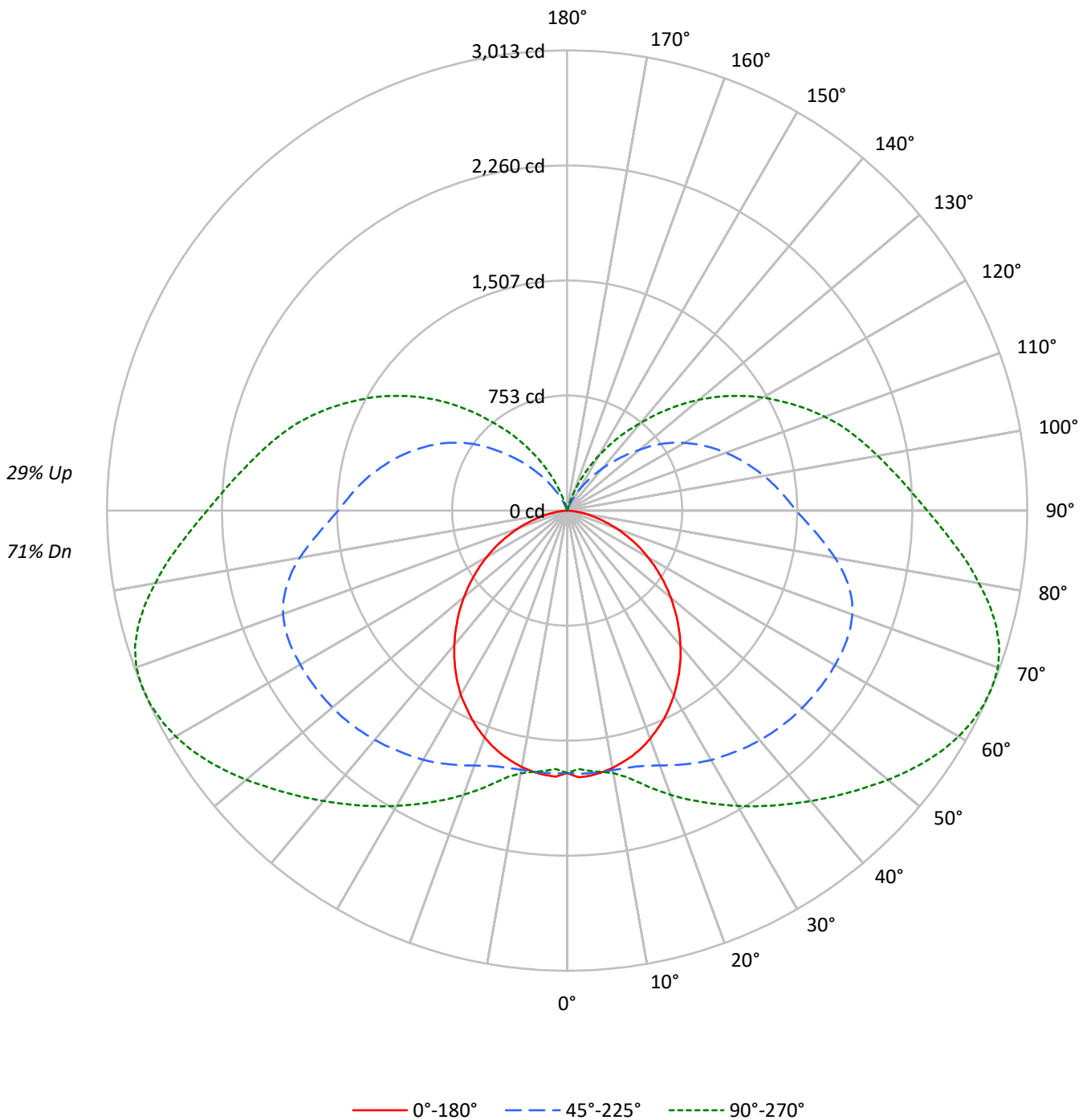
Input Watts (W): 114.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	50	30	10	0	
RCR																						
0	112	112	112	112	106	106	106	106	95	95	95	85	85	85	75	75	75	75	75	75	71	
1	97	90	84	79	91	85	80	75	75	71	67	66	63	60	58	55	53	53	53	53	49	
2	86	76	67	60	81	71	64	57	63	57	51	55	50	46	48	44	40	40	40	40	36	
3	77	65	55	48	72	61	52	45	54	47	41	47	41	36	41	36	32	32	32	32	28	
4	70	56	46	39	65	53	44	37	47	39	33	41	35	30	35	30	26	26	26	26	23	
5	64	50	40	32	60	47	38	31	41	34	28	36	30	25	31	26	22	22	22	22	19	
6	59	44	34	27	55	42	33	26	37	29	24	32	26	21	28	23	19	19	19	19	16	
7	54	40	30	24	50	37	29	23	33	26	20	29	23	18	25	20	16	16	16	16	14	
8	50	36	27	21	47	34	25	20	30	23	18	26	20	16	23	18	14	14	14	14	12	
9	47	33	24	18	44	31	23	17	27	21	16	24	18	14	21	16	13	13	13	13	10	
10	43	30	22	16	41	28	21	15	25	19	14	22	17	13	20	15	11	11	11	11	9	

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	13842	13842	13842
5°	14060	12477	14014
10°	13933	11717	13886
15°	13756	11551	13697
20°	13497	11683	13424
25°	13202	11846	13101
30°	12805	12082	12766
35°	12374	12384	12319
40°	11873	12763	11829
45°	11346	13247	11282
50°	10765	13837	10713
55°	10131	14479	10072
60°	9434	15101	9367
65°	8617	15627	8539
70°	7625	15991	7530
75°	6342	16023	6098
80°	4868	15756	4521
85°	2758	15440	2451



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	164.1	1.0
10°-20°	494.2	3.1
20°-30°	836.5	5.2
30°-40°	1169.7	7.3
40°-50°	1473.8	9.2
50°-60°	1730.6	10.8
60°-70°	1892.3	11.9
70°-80°	1869.5	11.7
80°-90°	1642.4	10.3
90°-100°	1398.0	8.8
100°-110°	1165.9	7.3
110°-120°	903.0	5.7
120°-130°	628.6	3.9
130°-140°	366.9	2.3
140°-150°	167.4	1.0
150°-160°	47.8	0.3
160°-170°	3.4	0.0
170°-180°	0.0	0.0
0°-30°	1494.8	9.4
0°-40°	2664.5	16.7
0°-60°	5868.9	36.8
0°-90°	11273.1	70.7
90°-120°	3466.9	21.7
90°-150°	4629.7	29.0
90°-180°	4681.0	29.3
0°-180°	15954.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1718	1718	1718	1718	1718	
5°	1742	1727	1711	1724	1737	165
15°	1661	1735	1847	1735	1654	468
25°	1503	1833	2106	1833	1492	691
35°	1281	1926	2357	1923	1275	800
45°	1022	1990	2611	1987	1016	788
55°	748	2020	2864	2015	744	669
65°	477	2019	3009	2012	473	473
75°	224	1910	2907	1902	215	240
85°	39	1634	2545	1629	34	49
90°	0	1499	2357	1499	0	2
95°	0	1404	2202	1406	0	1
105°	1	1208	1936	1212	0	1
115°	1	999	1641	1002	1	1
125°	3	764	1308	764	1	2
135°	3	484	938	484	1	2
145°	4	248	582	245	3	2
155°	4	70	258	66	3	2
165°	4	7	19	0	3	1
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0
2.5°	1748.1	1746.7	1739.5	1728.1	1723.8	1720.9	1719.5	1715.2	1713.7	1716.6	1725.2
5°	1742.4	1739.5	1733.8	1723.8	1719.5	1718.0	1716.6	1712.3	1710.9	1715.2	1726.6
7.5°	1729.5	1728.1	1722.3	1712.3	1710.9	1708.0	1708.0	1705.1	1705.1	1712.3	1725.2
10°	1710.9	1709.4	1703.7	1696.5	1695.1	1695.1	1695.1	1695.1	1698.0	1709.4	1725.2
12.5°	1686.5	1686.5	1682.2	1676.5	1677.9	1677.9	1679.4	1682.2	1690.8	1708.0	1728.1
15°	1660.7	1659.3	1655.0	1653.6	1657.9	1659.3	1663.6	1670.8	1685.1	1709.4	1735.2
17.5°	1627.8	1627.8	1623.5	1624.9	1633.5	1637.8	1645.0	1657.9	1680.8	1713.7	1751.0
20°	1589.1	1590.5	1589.1	1593.4	1607.7	1616.3	1624.9	1646.4	1679.4	1725.2	1775.4
22.5°	1546.1	1549.0	1549.0	1560.4	1579.1	1591.9	1604.8	1634.9	1682.2	1745.3	1804.0
25°	1503.1	1503.1	1507.4	1523.2	1549.0	1564.7	1584.8	1627.8	1692.3	1766.8	1832.7
27.5°	1451.5	1455.8	1463.0	1484.5	1520.3	1541.8	1566.2	1627.8	1703.7	1788.3	1861.3
30°	1397.1	1401.4	1412.8	1442.9	1488.8	1516.0	1550.4	1627.8	1713.7	1805.4	1885.7
32.5°	1339.8	1346.9	1362.7	1401.4	1457.3	1494.5	1538.9	1626.3	1722.3	1819.8	1905.8
35°	1281.0	1288.2	1312.5	1358.4	1431.5	1474.4	1526.0	1622.0	1726.6	1832.7	1925.8
37.5°	1219.4	1232.3	1259.5	1316.8	1405.7	1457.3	1511.7	1617.7	1730.9	1842.7	1945.9
40°	1153.5	1166.4	1205.1	1273.8	1379.9	1434.3	1494.5	1612.0	1733.8	1852.7	1963.1
42.5°	1089.0	1106.2	1150.6	1233.7	1354.1	1414.3	1477.3	1603.4	1732.4	1859.9	1977.4
45°	1021.7	1041.7	1096.2	1195.0	1325.4	1389.9	1457.3	1591.9	1729.5	1864.2	1990.3
47.5°	952.9	977.2	1041.7	1156.3	1296.8	1364.1	1437.2	1580.5	1725.2	1867.1	2001.8
50°	885.5	914.2	987.3	1117.7	1265.2	1336.9	1412.8	1567.6	1718.0	1868.5	2008.9
52.5°	818.2	849.7	935.7	1079.0	1232.3	1308.2	1388.5	1551.8	1709.4	1867.1	2016.1
55°	748.0	782.4	884.1	1037.4	1197.9	1276.7	1361.3	1531.8	1696.5	1861.3	2020.4
57.5°	680.6	719.3	835.4	997.3	1162.1	1245.2	1335.5	1510.3	1682.2	1857.0	2024.7
60°	611.8	656.3	785.2	951.4	1124.8	1210.8	1303.9	1485.9	1665.0	1847.0	2024.7
62.5°	544.5	594.7	736.5	909.9	1087.6	1176.4	1272.4	1458.7	1646.4	1837.0	2024.7
65°	477.2	534.5	686.4	864.0	1046.0	1139.2	1236.6	1430.0	1623.5	1822.6	2019.0
67.5°	411.2	477.2	634.8	816.8	1003.0	1099.0	1199.3	1397.1	1597.7	1804.0	2007.5
70°	346.8	419.8	583.2	766.6	958.6	1053.2	1157.8	1361.3	1567.6	1779.7	1987.4
72.5°	282.3	365.4	528.7	716.4	911.3	1008.8	1114.8	1319.7	1530.3	1746.7	1955.9
75°	223.5	310.9	477.2	664.9	862.6	961.5	1067.5	1273.8	1485.9	1703.7	1910.1
77.5°	170.5	260.8	427.0	614.7	811.0	914.2	1018.8	1223.7	1434.3	1649.3	1849.9
80°	120.4	212.1	376.9	563.1	759.4	861.2	964.3	1169.2	1379.9	1584.8	1781.1
82.5°	74.5	167.6	326.7	513.0	709.3	809.6	911.3	1114.8	1318.3	1517.4	1706.6
85°	38.7	126.1	279.4	465.7	660.6	759.4	859.7	1058.9	1255.2	1448.7	1633.5
87.5°	12.9	91.7	240.7	424.1	616.1	715.0	812.5	1005.9	1196.5	1381.3	1561.9
90°	0.0	68.8	212.1	391.2	578.9	674.9	772.3	958.6	1144.9	1326.9	1498.8
92.5°	0.0	58.7	193.4	368.3	553.1	647.7	742.2	927.1	1106.2	1282.4	1450.1
95°	0.0	47.3	177.7	345.3	525.9	619.0	712.1	892.7	1068.9	1240.9	1404.2
97.5°	0.0	37.3	160.5	323.8	498.6	588.9	679.2	858.3	1030.3	1199.3	1357.0
100°	1.4	28.7	141.9	296.6	470.0	558.8	646.2	821.0	988.7	1152.0	1308.2
102.5°	1.4	20.1	124.7	273.7	439.9	525.9	611.8	782.4	947.1	1109.1	1258.1
105°	1.4	14.3	107.5	249.3	411.2	494.3	578.9	745.1	905.6	1061.8	1207.9
107.5°	1.4	10.0	91.7	226.4	382.6	461.4	543.1	705.0	862.6	1014.5	1157.8
110°	1.4	7.2	77.4	202.0	351.1	429.9	508.7	664.9	818.2	965.8	1106.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	1.4	5.7	63.0	179.1	319.5	396.9	472.9	624.7	773.8	917.1	1053.2
115°	1.4	5.7	50.2	157.6	288.0	362.5	435.6	584.6	726.5	866.9	998.7
117.5°	1.4	4.3	38.7	136.1	259.4	328.1	398.3	540.2	680.6	816.8	944.3
120°	1.4	4.3	28.7	114.6	229.3	293.7	362.5	497.2	631.9	763.7	885.5
122.5°	2.9	4.3	21.5	96.0	202.0	260.8	326.7	454.2	580.3	707.9	828.2
125°	2.9	2.9	17.2	77.4	173.4	227.8	286.6	409.8	524.4	646.2	763.7
127.5°	2.9	2.9	12.9	58.7	144.7	194.9	247.9	362.5	474.3	583.2	695.0
130°	2.9	2.9	11.5	43.0	117.5	161.9	210.6	313.8	418.4	518.7	620.4
132.5°	2.9	2.9	8.6	31.5	93.1	133.3	176.2	268.0	364.0	461.4	553.1
135°	2.9	2.9	7.2	22.9	70.2	106.0	143.3	225.0	312.4	404.1	484.3
137.5°	2.9	2.9	7.2	17.2	51.6	80.2	113.2	187.7	265.1	346.8	419.8
140°	2.9	2.9	5.7	14.3	35.8	58.7	86.0	150.5	216.4	292.3	362.5
142.5°	2.9	2.9	4.3	11.5	25.8	41.6	61.6	116.1	174.8	240.7	302.3
145°	4.3	2.9	4.3	10.0	18.6	28.7	43.0	87.4	134.7	193.4	247.9
147.5°	2.9	2.9	2.9	7.2	14.3	20.1	28.7	60.2	101.7	150.5	196.3
150°	4.3	2.9	2.9	5.7	11.5	14.3	20.1	40.1	70.2	110.3	150.5
152.5°	4.3	2.9	2.9	5.7	8.6	11.5	14.3	25.8	45.9	74.5	107.5
155°	4.3	2.9	2.9	4.3	7.2	8.6	11.5	17.2	27.2	45.9	70.2
157.5°	4.3	4.3	4.3	4.3	5.7	7.2	8.6	12.9	15.8	25.8	40.1
160°	4.3	4.3	2.9	2.9	4.3	4.3	5.7	8.6	11.5	14.3	20.1
162.5°	4.3	4.3	4.3	2.9	2.9	2.9	4.3	5.7	7.2	10.0	12.9
165°	4.3	4.3	2.9	2.9	2.9	2.9	2.9	2.9	4.3	5.7	7.2
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0
2.5°	1728.1	1720.9	1718.0	1712.3	1708.0	1705.1	1700.8	1698.0	1695.1	1693.7	1693.7
5°	1729.5	1722.3	1719.5	1715.2	1713.7	1710.9	1708.0	1710.9	1709.4	1710.9	1709.4
7.5°	1730.9	1725.2	1725.2	1723.8	1722.3	1722.3	1719.5	1722.3	1723.8	1725.2	1723.8
10°	1735.2	1733.8	1736.7	1738.1	1738.1	1738.1	1738.1	1741.0	1746.7	1746.7	1745.3
12.5°	1742.4	1746.7	1755.3	1762.5	1765.3	1765.3	1771.1	1776.8	1784.0	1785.4	1784.0
15°	1756.7	1769.6	1788.3	1804.0	1811.2	1815.5	1826.9	1837.0	1844.1	1847.0	1844.1
17.5°	1782.5	1806.9	1835.5	1858.5	1867.1	1872.8	1888.6	1898.6	1907.2	1914.3	1911.5
20°	1816.9	1849.9	1884.3	1911.5	1922.9	1930.1	1947.3	1965.9	1974.5	1980.3	1978.8
22.5°	1854.2	1892.9	1931.5	1964.5	1977.4	1986.0	2007.5	2024.7	2037.6	2044.7	2043.3
25°	1890.0	1934.4	1981.7	2017.5	2033.3	2043.3	2066.2	2086.3	2100.6	2106.4	2104.9
27.5°	1925.8	1977.4	2029.0	2070.5	2086.3	2099.2	2126.4	2147.9	2165.1	2169.4	2169.4
30°	1954.5	2014.7	2070.5	2117.8	2135.0	2152.2	2182.3	2211.0	2226.7	2232.5	2231.0
32.5°	1981.7	2049.0	2112.1	2165.1	2186.6	2203.8	2239.6	2271.1	2289.8	2295.5	2289.8
35°	2008.9	2083.4	2153.6	2211.0	2233.9	2255.4	2295.5	2331.3	2351.4	2357.1	2354.2
37.5°	2034.7	2117.8	2193.8	2256.8	2284.0	2307.0	2348.5	2391.5	2413.0	2418.7	2413.0
40°	2059.1	2149.3	2232.5	2301.2	2331.3	2358.5	2407.3	2450.3	2474.6	2481.8	2478.9
42.5°	2082.0	2180.9	2271.1	2347.1	2381.5	2410.1	2464.6	2511.9	2537.7	2546.3	2539.1
45°	2102.1	2212.4	2309.8	2391.5	2428.8	2461.7	2523.3	2574.9	2600.7	2610.7	2602.1
47.5°	2122.1	2241.0	2345.7	2435.9	2478.9	2513.3	2582.1	2636.5	2666.6	2675.2	2666.6
50°	2140.7	2269.7	2384.3	2481.8	2527.6	2566.3	2640.8	2699.6	2729.7	2742.6	2731.1
52.5°	2157.9	2296.9	2420.2	2524.8	2574.9	2617.9	2698.1	2761.2	2797.0	2805.6	2794.1
55°	2175.1	2322.7	2451.7	2564.9	2619.3	2665.2	2752.6	2818.5	2854.3	2864.4	2852.9
57.5°	2189.5	2345.7	2481.8	2603.6	2659.5	2712.5	2799.9	2868.7	2905.9	2917.4	2905.9
60°	2199.5	2364.3	2509.0	2635.1	2693.8	2748.3	2841.4	2910.2	2947.5	2958.9	2947.5
62.5°	2206.7	2378.6	2527.6	2659.5	2722.5	2778.4	2873.0	2940.3	2979.0	2990.5	2979.0
65°	2208.1	2384.3	2537.7	2675.2	2739.7	2795.6	2891.6	2958.9	2999.1	3009.1	2997.6
67.5°	2199.5	2378.6	2537.7	2678.1	2742.6	2799.9	2895.9	2963.2	3001.9	3013.4	3001.9
70°	2182.3	2361.4	2523.3	2666.6	2731.1	2788.4	2883.0	2951.8	2990.5	3001.9	2989.0
72.5°	2149.3	2331.3	2493.2	2639.4	2701.0	2756.9	2850.0	2917.4	2954.6	2967.5	2953.2
75°	2102.1	2284.0	2446.0	2586.4	2650.9	2702.4	2795.6	2861.5	2895.9	2907.3	2894.4
77.5°	2040.4	2223.9	2380.0	2519.0	2583.5	2630.8	2721.1	2785.5	2819.9	2830.0	2817.1
80°	1968.8	2150.8	2301.2	2438.8	2499.0	2543.4	2633.7	2695.3	2728.2	2738.3	2731.1
82.5°	1890.0	2067.7	2213.8	2348.5	2405.8	2450.3	2539.1	2599.3	2632.2	2646.6	2635.1
85°	1809.7	1980.3	2123.6	2253.9	2311.3	2358.5	2440.2	2500.4	2533.4	2544.8	2537.7
87.5°	1729.5	1894.3	2033.3	2159.4	2212.4	2261.1	2342.8	2403.0	2435.9	2447.4	2438.8
90°	1662.2	1819.8	1953.0	2077.7	2132.1	2176.6	2255.4	2312.7	2345.7	2357.1	2349.9
92.5°	1607.7	1758.2	1887.1	2001.8	2053.3	2100.6	2176.6	2232.5	2265.4	2275.4	2268.3
95°	1556.1	1702.3	1826.9	1938.7	1988.9	2034.7	2106.4	2160.8	2192.3	2202.4	2196.6
97.5°	1507.4	1647.8	1768.2	1877.1	1928.7	1970.2	2039.0	2090.6	2122.1	2130.7	2122.1
100°	1453.0	1594.8	1712.3	1819.8	1864.2	1905.8	1974.5	2026.1	2053.3	2064.8	2057.6
102.5°	1401.4	1537.5	1653.6	1759.6	1806.9	1848.4	1911.5	1961.6	1993.2	2000.3	1993.2
105°	1348.4	1480.2	1593.4	1698.0	1745.3	1785.4	1848.4	1897.2	1927.2	1935.8	1928.7
107.5°	1293.9	1421.4	1534.6	1633.5	1679.4	1716.6	1781.1	1828.4	1854.2	1869.9	1858.5
110°	1235.2	1361.3	1470.2	1566.2	1610.6	1646.4	1709.4	1756.7	1781.1	1795.4	1785.4



TEST NUMBER: P201311

CATALOG NUMBER: 8LBLED-LD4-16-SYMW-UNV-L840-CD2-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	1180.7	1299.6	1404.2	1497.4	1538.9	1574.8	1636.4	1682.2	1705.1	1719.5	1709.4
115°	1123.4	1233.7	1336.9	1425.7	1467.3	1500.2	1561.9	1604.8	1627.8	1640.7	1632.1
117.5°	1061.8	1169.2	1266.7	1354.1	1392.8	1425.7	1484.5	1527.5	1549.0	1559.0	1550.4
120°	1001.6	1106.2	1197.9	1281.0	1319.7	1351.2	1408.5	1448.7	1468.7	1480.2	1471.6
122.5°	938.5	1040.3	1123.4	1206.5	1242.3	1272.4	1324.0	1367.0	1385.6	1395.6	1389.9
125°	871.2	971.5	1051.7	1127.7	1162.1	1190.7	1240.9	1276.7	1298.2	1308.2	1302.5
127.5°	801.0	897.0	978.7	1048.9	1081.8	1113.4	1154.9	1195.0	1209.4	1220.8	1215.1
130°	722.2	818.2	894.1	965.8	997.3	1023.1	1068.9	1101.9	1120.5	1130.6	1126.3
132.5°	644.8	733.6	813.9	878.4	908.5	935.7	977.2	1008.8	1034.6	1036.0	1030.3
135°	570.3	647.7	720.7	789.5	819.6	846.8	884.1	912.8	937.1	938.5	931.4
137.5°	498.6	570.3	633.3	697.8	729.3	758.0	792.4	819.6	842.5	846.8	836.8
140°	429.9	495.8	553.1	610.4	640.5	667.7	705.0	727.9	746.5	748.0	742.2
142.5°	364.0	424.1	474.3	527.3	554.5	578.9	620.4	643.4	660.6	664.9	656.3
145°	302.3	355.4	402.6	448.5	471.4	494.3	535.9	563.1	577.5	581.8	573.2
147.5°	243.6	288.0	329.6	371.1	391.2	412.7	447.1	481.5	494.3	497.2	490.1
150°	189.1	226.4	263.7	298.0	315.2	333.9	364.0	395.5	412.7	415.5	409.8
152.5°	139.0	170.5	200.6	229.3	243.6	257.9	283.7	313.8	335.3	336.7	331.0
155°	94.6	120.4	144.7	166.2	179.1	190.6	210.6	233.6	256.5	257.9	253.6
157.5°	57.3	74.5	94.6	111.8	120.4	130.4	144.7	161.9	182.0	186.3	182.0
160°	28.7	38.7	50.2	61.6	68.8	75.9	83.1	97.4	108.9	118.9	113.2
162.5°	14.3	17.2	20.1	25.8	28.7	33.0	38.7	44.4	50.2	60.2	53.0
165°	8.6	10.0	11.5	11.5	12.9	12.9	12.9	12.9	12.9	18.6	12.9
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P201311

CATALOG NUMBER: 8LBLED-LD4-16-SYMW-UNV-L840-CD2-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0
2.5°	1698.0	1700.8	1706.6	1709.4	1712.3	1715.2	1720.9	1729.5	1722.3	1715.2	1716.6
5°	1709.4	1709.4	1710.9	1715.2	1715.2	1716.6	1722.3	1730.9	1723.8	1713.7	1713.7
7.5°	1723.8	1722.3	1723.8	1725.2	1723.8	1723.8	1726.6	1730.9	1722.3	1710.9	1708.0
10°	1743.8	1739.5	1738.1	1739.5	1738.1	1733.8	1735.2	1735.2	1723.8	1706.6	1699.4
12.5°	1779.7	1772.5	1766.8	1765.3	1761.0	1753.9	1749.6	1743.8	1726.6	1706.6	1692.3
15°	1838.4	1826.9	1815.5	1811.2	1804.0	1786.8	1772.5	1759.6	1735.2	1706.6	1686.5
17.5°	1904.3	1890.0	1874.2	1868.5	1858.5	1834.1	1809.7	1785.4	1751.0	1710.9	1682.2
20°	1967.4	1950.2	1931.5	1921.5	1911.5	1881.4	1852.7	1821.2	1776.8	1723.8	1680.8
22.5°	2030.4	2010.4	1984.6	1976.0	1963.1	1928.7	1894.3	1858.5	1805.4	1742.4	1683.7
25°	2092.0	2069.1	2044.7	2030.4	2016.1	1977.4	1935.8	1892.9	1832.7	1763.9	1693.7
27.5°	2153.6	2127.9	2097.8	2082.0	2067.7	2024.7	1977.4	1928.7	1861.3	1784.0	1706.6
30°	2213.8	2185.2	2149.3	2132.1	2115.0	2066.2	2011.8	1957.3	1884.3	1801.2	1715.2
32.5°	2274.0	2242.5	2202.4	2182.3	2162.2	2106.4	2046.2	1984.6	1904.3	1816.9	1722.3
35°	2332.8	2298.4	2253.9	2229.6	2208.1	2147.9	2080.6	2011.8	1922.9	1829.8	1726.6
37.5°	2392.9	2354.2	2305.5	2278.3	2253.9	2188.0	2113.5	2036.1	1943.0	1839.8	1730.9
40°	2453.1	2411.6	2357.1	2328.5	2298.4	2226.7	2146.5	2060.5	1960.2	1849.9	1732.4
42.5°	2514.7	2468.9	2408.7	2377.2	2345.7	2265.4	2176.6	2082.0	1974.5	1857.0	1730.9
45°	2576.3	2524.8	2460.3	2424.5	2390.1	2302.7	2206.7	2100.6	1987.4	1861.3	1728.1
47.5°	2638.0	2583.5	2513.3	2474.6	2433.1	2339.9	2235.3	2120.7	1998.9	1862.8	1725.2
50°	2701.0	2642.3	2566.3	2523.3	2480.3	2375.7	2264.0	2137.9	2006.1	1864.2	1718.0
52.5°	2762.6	2699.6	2617.9	2572.0	2521.9	2411.6	2291.2	2155.1	2011.8	1862.8	1708.0
55°	2818.5	2752.6	2666.6	2617.9	2562.0	2444.5	2315.6	2169.4	2014.7	1858.5	1695.1
57.5°	2870.1	2802.7	2712.5	2658.0	2603.6	2476.0	2338.5	2185.2	2017.5	1851.3	1680.8
60°	2910.2	2842.9	2748.3	2693.8	2635.1	2501.8	2357.1	2193.8	2017.5	1841.3	1662.2
62.5°	2940.3	2873.0	2778.4	2721.1	2659.5	2523.3	2371.4	2202.4	2017.5	1831.2	1643.5
65°	2958.9	2893.0	2795.6	2738.3	2675.2	2533.4	2378.6	2203.8	2011.8	1816.9	1620.6
67.5°	2961.8	2895.9	2798.4	2742.6	2678.1	2533.4	2374.3	2196.6	2000.3	1798.3	1594.8
70°	2948.9	2883.0	2787.0	2729.7	2666.6	2520.5	2358.5	2179.4	1980.3	1773.9	1564.7
72.5°	2915.9	2848.6	2755.5	2696.7	2635.1	2490.4	2325.6	2147.9	1947.3	1739.5	1528.9
75°	2858.6	2792.7	2701.0	2646.6	2583.5	2441.7	2275.4	2102.1	1901.5	1696.5	1484.5
77.5°	2782.7	2718.2	2627.9	2573.5	2514.7	2375.7	2212.4	2040.4	1845.6	1643.5	1432.9
80°	2692.4	2630.8	2542.0	2488.9	2431.6	2296.9	2136.4	1968.8	1776.8	1580.5	1375.6
82.5°	2596.4	2536.2	2450.3	2395.8	2341.4	2211.0	2057.6	1891.4	1703.7	1513.1	1314.0
85°	2503.3	2438.8	2352.8	2302.7	2248.2	2120.7	1976.0	1811.2	1629.2	1444.4	1253.8
87.5°	2405.8	2342.8	2258.2	2211.0	2159.4	2030.4	1892.9	1732.4	1559.0	1382.7	1195.0
90°	2317.0	2255.4	2173.7	2126.4	2077.7	1953.0	1818.3	1666.5	1498.8	1328.3	1146.3
92.5°	2235.3	2178.0	2100.6	2054.8	2007.5	1888.6	1759.6	1612.0	1450.1	1285.3	1107.6
95°	2165.1	2109.2	2037.6	1993.2	1944.4	1831.2	1705.1	1560.4	1405.7	1245.2	1071.8
97.5°	2094.9	2041.9	1971.7	1928.7	1882.8	1772.5	1650.7	1511.7	1359.8	1200.8	1033.1
100°	2030.4	1978.8	1907.2	1868.5	1824.1	1718.0	1597.7	1461.6	1312.5	1156.3	991.6
102.5°	1967.4	1915.8	1847.0	1808.3	1765.3	1659.3	1541.8	1407.1	1262.4	1111.9	951.4
105°	1902.9	1852.7	1784.0	1745.3	1702.3	1599.1	1484.5	1354.1	1212.2	1066.1	909.9
107.5°	1832.7	1784.0	1718.0	1679.4	1639.2	1536.1	1425.7	1298.2	1162.1	1018.8	866.9
110°	1761.0	1712.3	1652.1	1610.6	1571.9	1471.6	1364.1	1242.3	1109.1	970.1	822.5



TEST NUMBER: P201311

CATALOG NUMBER: 8LBLED-LD4-16-SYMW-UNV-L840-CD2-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	1686.5	1639.2	1580.5	1541.8	1501.7	1405.7	1302.5	1185.0	1056.0	919.9	776.6
115°	1610.6	1563.3	1504.5	1465.9	1430.0	1338.3	1238.0	1126.3	1001.6	869.8	730.8
117.5°	1527.5	1485.9	1430.0	1395.6	1358.4	1266.7	1173.5	1066.1	947.1	816.8	683.5
120°	1450.1	1410.0	1355.5	1318.3	1285.3	1197.9	1109.1	1004.5	887.0	765.2	634.8
122.5°	1368.4	1325.4	1275.3	1243.8	1207.9	1127.7	1041.7	941.4	826.8	706.4	581.8
125°	1282.4	1242.3	1193.6	1163.5	1130.6	1054.6	972.9	872.6	763.7	647.7	527.3
127.5°	1195.0	1157.8	1110.5	1083.3	1051.7	977.2	898.4	801.0	692.1	583.2	471.4
130°	1106.2	1068.9	1026.0	997.3	967.2	897.0	819.6	723.6	620.4	518.7	417.0
132.5°	1013.1	977.2	934.2	908.5	881.2	813.9	735.1	641.9	550.2	458.5	364.0
135°	917.1	884.1	845.4	821.0	793.8	725.0	650.5	566.0	484.3	399.8	312.4
137.5°	823.9	793.8	756.6	732.2	702.1	637.6	571.7	495.8	421.3	342.5	260.8
140°	732.2	705.0	669.2	641.9	616.1	556.0	495.8	427.0	359.7	288.0	214.9
142.5°	646.2	621.9	581.8	556.0	531.6	478.6	425.6	361.1	300.9	236.4	173.4
145°	561.7	540.2	495.8	472.9	452.8	405.5	352.5	299.5	245.0	189.1	134.7
147.5°	480.0	454.2	412.7	392.6	374.0	332.4	288.0	239.3	194.9	146.2	98.9
150°	401.2	369.7	333.9	316.7	300.9	265.1	226.4	186.3	147.6	106.0	68.8
152.5°	319.5	286.6	262.2	245.0	230.7	202.0	170.5	136.1	104.6	71.6	43.0
155°	236.4	213.5	190.6	182.0	169.1	144.7	118.9	91.7	65.9	43.0	24.4
157.5°	163.4	146.2	131.8	123.2	113.2	94.6	73.1	53.0	37.3	22.9	11.5
160°	98.9	87.4	77.4	70.2	63.0	50.2	35.8	24.4	15.8	7.2	4.3
162.5°	44.4	37.3	33.0	28.7	24.4	18.6	11.5	5.7	2.9	1.4	1.4
165°	8.6	5.7	4.3	2.9	1.4	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P201311

CATALOG NUMBER: 8LBLED-LD4-16-SYMW-UNV-L840-CD2-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0	1718.0
2.5°	1718.0	1719.5	1720.9	1720.9	1725.2	1732.4	1742.4	1743.8
5°	1713.7	1715.2	1715.2	1716.6	1720.9	1726.6	1735.2	1736.7
7.5°	1706.6	1706.6	1706.6	1706.6	1709.4	1715.2	1722.3	1723.8
10°	1696.5	1693.7	1692.3	1690.8	1692.3	1698.0	1703.7	1705.1
12.5°	1685.1	1677.9	1675.1	1673.6	1673.6	1675.1	1680.8	1680.8
15°	1672.2	1660.7	1656.4	1653.6	1647.8	1647.8	1653.6	1653.6
17.5°	1659.3	1643.5	1634.9	1629.2	1620.6	1619.2	1622.0	1619.2
20°	1647.8	1623.5	1612.0	1602.0	1589.1	1584.8	1584.8	1580.5
22.5°	1636.4	1603.4	1587.6	1573.3	1553.3	1546.1	1541.8	1538.9
25°	1629.2	1581.9	1561.9	1544.7	1517.4	1501.7	1497.4	1491.6
27.5°	1627.8	1564.7	1537.5	1516.0	1478.7	1460.1	1448.7	1441.5
30°	1627.8	1547.5	1511.7	1481.6	1435.8	1407.1	1395.6	1392.8
32.5°	1626.3	1534.6	1491.6	1453.0	1394.2	1357.0	1339.8	1335.5
35°	1622.0	1521.7	1471.6	1424.3	1352.7	1305.4	1281.0	1275.3
37.5°	1616.3	1506.0	1453.0	1398.5	1309.7	1252.4	1222.3	1213.7
40°	1610.6	1490.2	1430.0	1371.3	1266.7	1197.9	1159.2	1149.2
42.5°	1600.5	1473.0	1410.0	1345.5	1226.6	1143.5	1099.0	1083.3
45°	1590.5	1453.0	1385.6	1316.8	1186.4	1087.6	1031.7	1015.9
47.5°	1577.6	1431.5	1361.3	1285.3	1149.2	1033.1	970.1	950.0
50°	1563.3	1410.0	1334.0	1255.2	1109.1	980.1	902.7	881.2
52.5°	1547.5	1385.6	1306.8	1223.7	1068.9	929.9	839.7	812.5
55°	1527.5	1358.4	1275.3	1187.9	1027.4	878.4	775.2	743.7
57.5°	1506.0	1331.2	1245.2	1154.9	985.8	829.6	712.1	676.3
60°	1480.2	1299.6	1207.9	1117.7	942.8	779.5	649.1	607.5
62.5°	1453.0	1268.1	1175.0	1079.0	899.9	730.8	587.5	540.2
65°	1424.3	1232.3	1137.7	1038.8	854.0	679.2	527.3	472.9
67.5°	1389.9	1193.6	1096.2	995.9	806.7	627.6	468.6	406.9
70°	1355.5	1152.0	1050.3	950.0	758.0	576.0	412.7	342.5
72.5°	1314.0	1107.6	1004.5	902.7	707.9	525.9	358.2	278.0
75°	1268.1	1061.8	957.2	854.0	656.3	472.9	303.8	214.9
77.5°	1219.4	1011.6	908.5	803.9	607.5	422.7	253.6	161.9
80°	1167.8	958.6	856.9	752.3	556.0	372.6	204.9	111.8
82.5°	1110.5	907.0	805.3	700.7	507.2	323.8	160.5	68.8
85°	1056.0	855.4	756.6	653.4	460.0	275.1	120.4	34.4
87.5°	1003.0	808.2	712.1	610.4	419.8	237.9	87.4	10.0
90°	960.0	769.5	674.9	576.0	388.3	210.6	65.9	0.0
92.5°	925.7	739.4	646.2	550.2	365.4	192.0	55.9	0.0
95°	892.7	707.9	619.0	523.0	342.5	176.2	44.4	0.0
97.5°	856.9	677.8	588.9	495.8	319.5	159.1	35.8	0.0
100°	821.0	644.8	558.8	468.6	293.7	141.9	25.8	0.0
102.5°	782.4	610.4	525.9	438.5	270.8	123.2	17.2	0.0
105°	745.1	576.0	494.3	408.4	246.5	107.5	11.5	0.0
107.5°	705.0	541.6	461.4	379.7	222.1	90.3	7.2	0.0
110°	664.9	507.2	428.4	349.6	199.2	74.5	5.7	0.0



TEST NUMBER: P201311

CATALOG NUMBER: 8LBLED-LD4-16-SYMW-UNV-L840-CD2-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	624.7	471.4	395.5	318.1	176.2	60.2	4.3	1.4
115°	581.8	434.2	361.1	286.6	153.3	47.3	4.3	1.4
117.5°	538.8	395.5	328.1	256.5	131.8	35.8	2.9	1.4
120°	494.3	361.1	292.3	227.8	111.8	25.8	2.9	1.4
122.5°	451.4	325.3	259.4	197.7	91.7	20.1	2.9	1.4
125°	406.9	283.7	226.4	170.5	73.1	15.8	2.9	1.4
127.5°	359.7	245.0	192.0	140.4	55.9	11.5	2.9	1.4
130°	310.9	206.3	159.1	114.6	40.1	8.6	2.9	1.4
132.5°	265.1	173.4	129.0	90.3	28.7	7.2	2.9	1.4
135°	223.5	140.4	101.7	67.3	20.1	5.7	1.4	1.4
137.5°	183.4	111.8	77.4	48.7	14.3	4.3	2.9	1.4
140°	147.6	84.5	55.9	34.4	10.0	2.9	2.9	1.4
142.5°	114.6	60.2	38.7	22.9	7.2	2.9	1.4	1.4
145°	84.5	40.1	25.8	14.3	5.7	2.9	2.9	2.9
147.5°	57.3	27.2	15.8	10.0	4.3	2.9	2.9	1.4
150°	37.3	17.2	10.0	7.2	2.9	2.9	2.9	1.4
152.5°	22.9	10.0	5.7	4.3	2.9	2.9	2.9	1.4
155°	11.5	5.7	4.3	2.9	2.9	2.9	2.9	2.9
157.5°	5.7	4.3	2.9	2.9	2.9	2.9	2.9	2.9
160°	2.9	2.9	1.4	1.4	2.9	2.9	2.9	2.9
162.5°	1.4	1.4	1.4	1.4	2.9	2.9	2.9	2.9
165°	0.0	1.4	1.4	1.4	2.9	2.9	2.9	2.9
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)