

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: P201338

Luminaire Tested: **8LBLED-LD4-22-SYMW-UNV-L835-CD2-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P201338
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-LD4-22-SYMW-UNV-L835-CD2-U
Description: 8 ft. Low Bay Linear, 22000 lm, Wht Sym lens, 3.3.5K
Light Source: (784) 3500K CCT, 80 CRI LEDS
2UT217098A8354C
Ballast/Driver: OSRAM
2x(OTi85W01920CC)

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 22004.5 lumens
Efficiency: N/A
Efficacy: 124.7 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

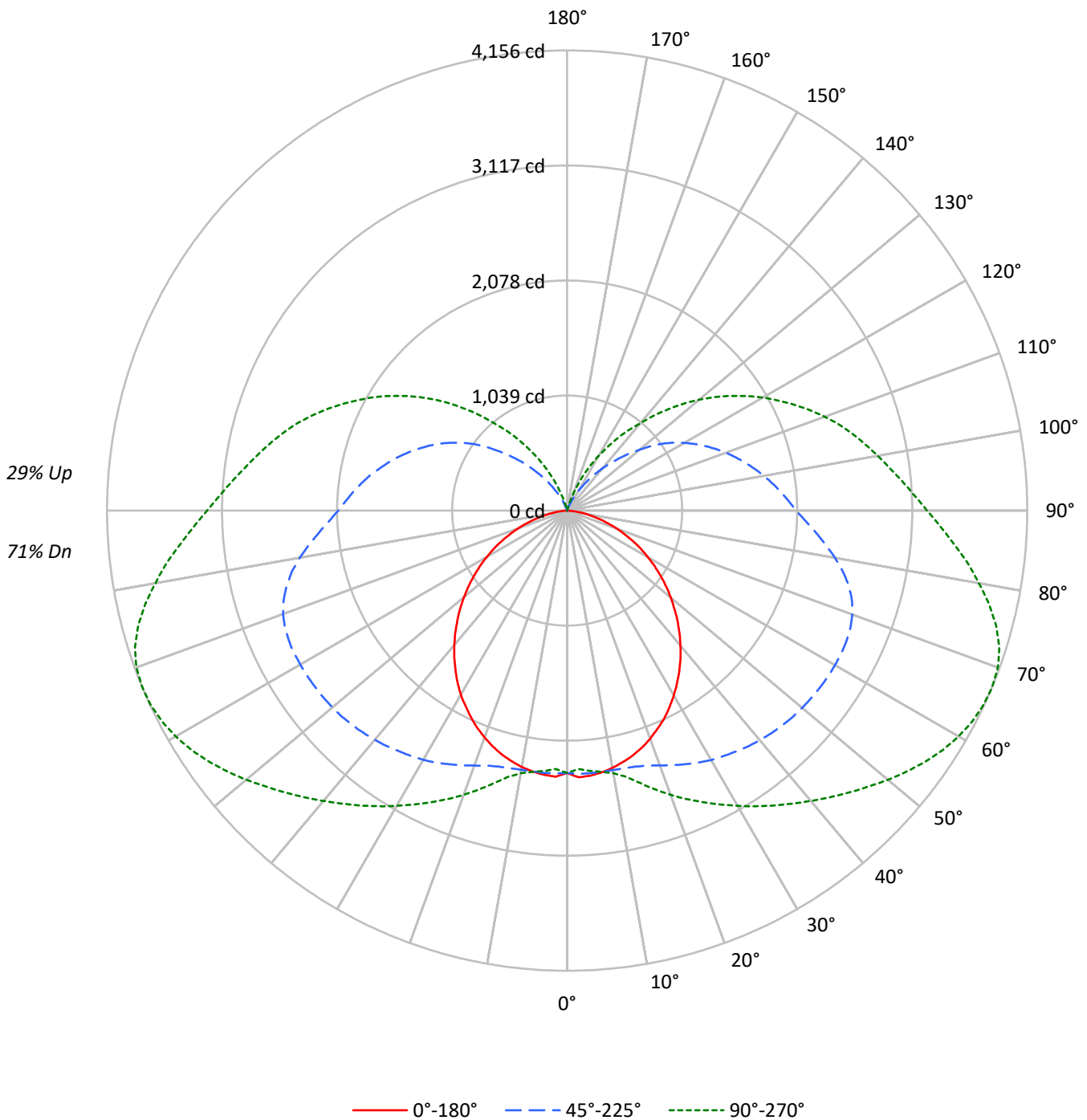
Input Watts (W): 176.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	19091	19091	19091
5°	19392	17209	19328
10°	19217	16160	19153
15°	18973	15932	18892
20°	18615	16113	18515
25°	18209	16338	18070
30°	17661	16663	17607
35°	17067	17080	16990
40°	16375	17604	16314
45°	15649	18271	15561
50°	14849	19085	14776
55°	13972	19971	13892
60°	13012	20828	12921
65°	11883	21553	11777
70°	10516	22056	10384
75°	8748	22100	8411
80°	6712	21731	6235
85°	3805	21295	3378



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	226.3	1.0
10°-20°	681.6	3.1
20°-30°	1153.8	5.2
30°-40°	1613.4	7.3
40°-50°	2032.8	9.2
50°-60°	2386.9	10.8
60°-70°	2609.9	11.9
70°-80°	2578.6	11.7
80°-90°	2265.3	10.3
90°-100°	1928.2	8.8
100°-110°	1608.1	7.3
110°-120°	1245.5	5.7
120°-130°	866.9	3.9
130°-140°	506.0	2.3
140°-150°	230.8	1.0
150°-160°	65.9	0.3
160°-170°	4.7	0.0
170°-180°	0.0	0.0
0°-30°	2061.7	9.4
0°-40°	3675.0	16.7
0°-60°	8094.6	36.8
0°-90°	15548.4	70.7
90°-120°	4781.7	21.7
90°-150°	6385.5	29.0
90°-180°	6456.0	29.3
0°-180°	22004.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2370	2370	2370	2370	2370	
5°	2403	2382	2360	2378	2395	228
15°	2290	2393	2548	2393	2281	645
25°	2073	2528	2905	2528	2057	953
35°	1767	2656	3251	2652	1759	1104
45°	1409	2745	3601	2741	1401	1086
55°	1032	2787	3951	2779	1026	923
65°	658	2785	4150	2775	652	652
75°	308	2634	4010	2623	296	331
85°	53	2253	3510	2247	47	67
90°	0	2067	3251	2067	0	2
95°	0	1937	3038	1939	0	1
105°	2	1666	2670	1672	0	2
115°	2	1378	2263	1381	2	2
125°	4	1053	1804	1053	2	3
135°	4	668	1294	668	2	3
145°	6	342	802	338	4	3
155°	6	97	356	91	4	3
165°	6	10	26	0	4	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°	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6
2.5°	2411.1	2409.1	2399.2	2383.4	2377.5	2373.6	2371.6	2365.6	2363.7	2367.6	2379.5
5°	2403.2	2399.2	2391.3	2377.5	2371.6	2369.6	2367.6	2361.7	2359.7	2365.6	2381.5
7.5°	2385.4	2383.4	2375.5	2361.7	2359.7	2355.8	2355.8	2351.8	2351.8	2361.7	2379.5
10°	2359.7	2357.7	2349.8	2340.0	2338.0	2338.0	2338.0	2338.0	2341.9	2357.7	2379.5
12.5°	2326.1	2326.1	2320.2	2312.3	2314.3	2314.3	2316.2	2320.2	2332.1	2355.8	2383.4
15°	2290.5	2288.6	2282.6	2280.7	2286.6	2288.6	2294.5	2304.4	2324.1	2357.7	2393.3
17.5°	2245.1	2245.1	2239.2	2241.1	2253.0	2258.9	2268.8	2286.6	2318.2	2363.7	2415.1
20°	2191.7	2193.7	2191.7	2197.7	2217.4	2229.3	2241.1	2270.8	2316.2	2379.5	2448.7
22.5°	2132.4	2136.4	2136.4	2152.2	2177.9	2195.7	2213.5	2255.0	2320.2	2407.2	2488.2
25°	2073.2	2073.2	2079.1	2100.8	2136.4	2158.1	2185.8	2245.1	2334.0	2436.8	2527.7
27.5°	2002.0	2007.9	2017.8	2047.5	2096.9	2126.5	2160.1	2245.1	2349.8	2466.4	2567.2
30°	1926.9	1932.8	1948.6	1990.1	2053.4	2090.9	2138.4	2245.1	2363.7	2490.2	2600.8
32.5°	1847.9	1857.7	1879.5	1932.8	2009.9	2061.3	2122.6	2243.1	2375.5	2509.9	2628.5
35°	1766.8	1776.7	1810.3	1873.5	1974.3	2033.6	2104.8	2237.2	2381.5	2527.7	2656.2
37.5°	1681.8	1699.6	1737.2	1816.2	1938.8	2009.9	2085.0	2231.3	2387.4	2541.5	2683.8
40°	1590.9	1608.7	1662.1	1756.9	1903.2	1978.3	2061.3	2223.4	2391.3	2555.4	2707.6
42.5°	1502.0	1525.7	1587.0	1701.6	1867.6	1950.6	2037.6	2211.5	2389.4	2565.3	2727.3
45°	1409.1	1436.8	1511.9	1648.2	1828.1	1917.0	2009.9	2195.7	2385.4	2571.2	2745.1
47.5°	1314.2	1347.8	1436.8	1594.9	1788.6	1881.5	1982.2	2179.9	2379.5	2575.1	2760.9
50°	1221.4	1260.9	1361.7	1541.5	1745.1	1843.9	1948.6	2162.1	2369.6	2577.1	2770.8
52.5°	1128.5	1172.0	1290.5	1488.2	1699.6	1804.4	1915.0	2140.3	2357.7	2575.1	2780.7
55°	1031.6	1079.1	1219.4	1430.9	1652.2	1760.9	1877.5	2112.7	2340.0	2567.2	2786.6
57.5°	938.7	992.1	1152.2	1375.5	1602.8	1717.4	1841.9	2083.0	2320.2	2561.3	2792.5
60°	843.9	905.2	1083.0	1312.3	1551.4	1670.0	1798.4	2049.4	2296.5	2547.5	2792.5
62.5°	751.0	820.2	1015.8	1255.0	1500.0	1622.6	1755.0	2011.9	2270.8	2533.6	2792.5
65°	658.1	737.2	946.7	1191.7	1442.7	1571.2	1705.6	1972.4	2239.2	2513.9	2784.6
67.5°	567.2	658.1	875.5	1126.5	1383.4	1515.8	1654.2	1926.9	2203.6	2488.2	2768.8
70°	478.3	579.1	804.4	1057.3	1322.2	1452.6	1596.9	1877.5	2162.1	2454.6	2741.1
72.5°	389.3	504.0	729.3	988.2	1256.9	1391.3	1537.6	1820.2	2110.7	2409.1	2697.7
75°	308.3	428.9	658.1	917.0	1189.7	1326.1	1472.4	1756.9	2049.4	2349.8	2634.4
77.5°	235.2	359.7	588.9	847.8	1118.6	1260.9	1405.2	1687.8	1978.3	2274.7	2551.4
80°	166.0	292.5	519.8	776.7	1047.4	1187.8	1330.1	1612.7	1903.2	2185.8	2456.6
82.5°	102.8	231.2	450.6	707.5	978.3	1116.6	1256.9	1537.6	1818.2	2092.9	2353.8
85°	53.4	173.9	385.4	642.3	911.1	1047.4	1185.8	1460.5	1731.3	1998.1	2253.0
87.5°	17.8	126.5	332.0	585.0	849.8	986.2	1120.6	1387.4	1650.2	1905.2	2154.2
90°	0.0	94.9	292.5	539.5	798.4	930.8	1065.2	1322.2	1579.1	1830.1	2067.2
92.5°	0.0	81.0	266.8	507.9	762.9	893.3	1023.7	1278.7	1525.7	1768.8	2000.0
95°	0.0	65.2	245.1	476.3	725.3	853.8	982.2	1231.2	1474.3	1711.5	1936.8
97.5°	0.0	51.4	221.3	446.6	687.8	812.3	936.8	1183.8	1421.0	1654.2	1871.6
100°	2.0	39.5	195.7	409.1	648.2	770.8	891.3	1132.4	1363.7	1589.0	1804.4
102.5°	2.0	27.7	171.9	377.5	606.7	725.3	843.9	1079.1	1306.3	1529.7	1735.2
105°	2.0	19.8	148.2	343.9	567.2	681.8	798.4	1027.7	1249.0	1464.4	1666.0
107.5°	2.0	13.8	126.5	312.3	527.7	636.4	749.0	972.3	1189.7	1399.2	1596.9
110°	2.0	9.9	106.7	278.7	484.2	592.9	701.6	917.0	1128.5	1332.0	1525.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	2.0	7.9	87.0	247.0	440.7	547.4	652.2	861.7	1067.2	1264.8	1452.6
115°	2.0	7.9	69.2	217.4	397.2	500.0	600.8	806.3	1002.0	1195.7	1377.5
117.5°	2.0	5.9	53.4	187.7	357.7	452.6	549.4	745.1	938.7	1126.5	1302.4
120°	2.0	5.9	39.5	158.1	316.2	405.1	500.0	685.8	871.6	1053.4	1221.4
122.5°	4.0	5.9	29.6	132.4	278.7	359.7	450.6	626.5	800.4	976.3	1142.3
125°	4.0	4.0	23.7	106.7	239.1	314.2	395.3	565.2	723.3	891.3	1053.4
127.5°	4.0	4.0	17.8	81.0	199.6	268.8	341.9	500.0	654.2	804.4	958.5
130°	4.0	4.0	15.8	59.3	162.1	223.3	290.5	432.8	577.1	715.4	855.7
132.5°	4.0	4.0	11.9	43.5	128.5	183.8	243.1	369.6	502.0	636.4	762.9
135°	4.0	4.0	9.9	31.6	96.8	146.2	197.6	310.3	430.8	557.3	668.0
137.5°	4.0	4.0	9.9	23.7	71.1	110.7	156.1	258.9	365.6	478.3	579.1
140°	4.0	4.0	7.9	19.8	49.4	81.0	118.6	207.5	298.4	403.2	500.0
142.5°	4.0	4.0	5.9	15.8	35.6	57.3	85.0	160.1	241.1	332.0	417.0
145°	5.9	4.0	5.9	13.8	25.7	39.5	59.3	120.6	185.8	266.8	341.9
147.5°	4.0	4.0	4.0	9.9	19.8	27.7	39.5	83.0	140.3	207.5	270.8
150°	5.9	4.0	4.0	7.9	15.8	19.8	27.7	55.3	96.8	152.2	207.5
152.5°	5.9	4.0	4.0	7.9	11.9	15.8	19.8	35.6	63.2	102.8	148.2
155°	5.9	4.0	4.0	5.9	9.9	11.9	15.8	23.7	37.5	63.2	96.8
157.5°	5.9	5.9	5.9	5.9	7.9	9.9	11.9	17.8	21.7	35.6	55.3
160°	5.9	5.9	4.0	4.0	5.9	5.9	7.9	11.9	15.8	19.8	27.7
162.5°	5.9	5.9	5.9	4.0	4.0	4.0	5.9	7.9	9.9	13.8	17.8
165°	5.9	5.9	4.0	4.0	4.0	4.0	4.0	4.0	5.9	7.9	9.9
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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6
2.5°	2383.4	2373.6	2369.6	2361.7	2355.8	2351.8	2345.9	2341.9	2338.0	2336.0	2336.0
5°	2385.4	2375.5	2371.6	2365.6	2363.7	2359.7	2355.8	2359.7	2357.7	2359.7	2357.7
7.5°	2387.4	2379.5	2379.5	2377.5	2375.5	2375.5	2371.6	2375.5	2377.5	2379.5	2377.5
10°	2393.3	2391.3	2395.3	2397.3	2397.3	2397.3	2397.3	2401.2	2409.1	2409.1	2407.2
12.5°	2403.2	2409.1	2421.0	2430.9	2434.8	2434.8	2442.7	2450.6	2460.5	2462.5	2460.5
15°	2423.0	2440.7	2466.4	2488.2	2498.1	2504.0	2519.8	2533.6	2543.5	2547.5	2543.5
17.5°	2458.5	2492.1	2531.7	2563.3	2575.1	2583.0	2604.8	2618.6	2630.5	2640.4	2636.4
20°	2506.0	2551.4	2598.9	2636.4	2652.2	2662.1	2685.8	2711.5	2723.4	2731.3	2729.3
22.5°	2557.4	2610.7	2664.1	2709.5	2727.3	2739.2	2768.8	2792.5	2810.3	2820.2	2818.2
25°	2606.8	2668.0	2733.2	2782.7	2804.4	2818.2	2849.8	2877.5	2897.3	2905.2	2903.2
27.5°	2656.2	2727.3	2798.5	2855.8	2877.5	2895.3	2932.9	2962.5	2986.2	2992.1	2992.1
30°	2695.7	2778.7	2855.8	2921.0	2944.7	2968.4	3009.9	3049.5	3071.2	3079.1	3077.1
32.5°	2733.2	2826.1	2913.1	2986.2	3015.9	3039.6	3089.0	3132.5	3158.2	3166.1	3158.2
35°	2770.8	2873.6	2970.4	3049.5	3081.1	3110.7	3166.1	3215.5	3243.1	3251.0	3247.1
37.5°	2806.4	2921.0	3025.7	3112.7	3150.2	3181.9	3239.2	3298.5	3328.1	3336.0	3328.1
40°	2840.0	2964.5	3079.1	3174.0	3215.5	3253.0	3320.2	3379.5	3413.1	3423.0	3419.0
42.5°	2871.6	3008.0	3132.5	3237.2	3284.6	3324.2	3399.3	3464.5	3500.1	3511.9	3502.0
45°	2899.3	3051.4	3185.8	3298.5	3349.9	3395.3	3480.3	3551.4	3587.0	3600.8	3589.0
47.5°	2926.9	3091.0	3235.2	3359.7	3419.0	3466.5	3561.3	3636.4	3677.9	3689.8	3677.9
50°	2952.6	3130.5	3288.6	3423.0	3486.2	3539.6	3642.3	3723.4	3764.9	3782.7	3766.9
52.5°	2976.3	3168.0	3338.0	3482.3	3551.4	3610.7	3721.4	3808.4	3857.8	3869.6	3853.8
55°	3000.0	3203.6	3381.5	3537.6	3612.7	3675.9	3796.5	3887.4	3936.8	3950.7	3934.8
57.5°	3019.8	3235.2	3423.0	3591.0	3668.0	3741.2	3861.7	3956.6	4008.0	4023.8	4008.0
60°	3033.6	3260.9	3460.5	3634.4	3715.5	3790.6	3919.0	4013.9	4065.3	4081.1	4065.3
62.5°	3043.5	3280.7	3486.2	3668.0	3755.0	3832.1	3962.5	4055.4	4108.8	4124.6	4108.8
65°	3045.5	3288.6	3500.1	3689.8	3778.7	3855.8	3988.2	4081.1	4136.4	4150.3	4134.4
67.5°	3033.6	3280.7	3500.1	3693.7	3782.7	3861.7	3994.1	4087.0	4140.4	4156.2	4140.4
70°	3009.9	3257.0	3480.3	3677.9	3766.9	3845.9	3976.3	4071.2	4124.6	4140.4	4122.6
72.5°	2964.5	3215.5	3438.8	3640.4	3725.4	3802.4	3930.9	4023.8	4075.2	4092.9	4073.2
75°	2899.3	3150.2	3373.6	3567.2	3656.2	3727.3	3855.8	3946.7	3994.1	4009.9	3992.2
77.5°	2814.3	3067.2	3282.7	3474.4	3563.3	3628.5	3753.0	3842.0	3889.4	3903.2	3885.4
80°	2715.5	2966.4	3174.0	3363.7	3446.7	3508.0	3632.5	3717.4	3762.9	3776.7	3766.9
82.5°	2606.8	2851.8	3053.4	3239.2	3318.2	3379.5	3502.0	3585.0	3630.5	3650.3	3634.4
85°	2496.1	2731.3	2928.9	3108.7	3187.8	3253.0	3365.7	3448.7	3494.1	3509.9	3500.1
87.5°	2385.4	2612.7	2804.4	2978.3	3051.4	3118.6	3231.3	3314.3	3359.7	3375.5	3363.7
90°	2292.5	2509.9	2693.7	2865.7	2940.8	3002.0	3110.7	3189.8	3235.2	3251.0	3241.2
92.5°	2217.4	2424.9	2602.8	2760.9	2832.1	2897.3	3002.0	3079.1	3124.6	3138.4	3128.5
95°	2146.3	2347.9	2519.8	2674.0	2743.1	2806.4	2905.2	2980.3	3023.8	3037.6	3029.7
97.5°	2079.1	2272.8	2438.8	2589.0	2660.1	2717.4	2812.3	2883.4	2926.9	2938.8	2926.9
100°	2004.0	2199.6	2361.7	2509.9	2571.2	2628.5	2723.4	2794.5	2832.1	2847.9	2838.0
102.5°	1932.8	2120.6	2280.7	2426.9	2492.1	2549.4	2636.4	2705.6	2749.1	2758.9	2749.1
105°	1859.7	2041.5	2197.7	2341.9	2407.2	2462.5	2549.4	2616.6	2658.1	2670.0	2660.1
107.5°	1784.6	1960.5	2116.6	2253.0	2316.2	2367.6	2456.6	2521.8	2557.4	2579.1	2563.3
110°	1703.6	1877.5	2027.7	2160.1	2221.4	2270.8	2357.7	2423.0	2456.6	2476.3	2462.5



TEST NUMBER: P201338

CATALOG NUMBER: 8LBLED-LD4-22-SYMW-UNV-L835-CD2-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	1628.5	1792.5	1936.8	2065.2	2122.6	2172.0	2257.0	2320.2	2351.8	2371.6	2357.7
115°	1549.4	1701.6	1843.9	1966.4	2023.7	2069.2	2154.2	2213.5	2245.1	2262.9	2251.0
117.5°	1464.4	1612.7	1747.1	1867.6	1921.0	1966.4	2047.5	2106.8	2136.4	2150.2	2138.4
120°	1381.4	1525.7	1652.2	1766.8	1820.2	1863.7	1942.7	1998.1	2025.7	2041.5	2029.7
122.5°	1294.5	1434.8	1549.4	1664.1	1713.5	1755.0	1826.1	1885.4	1911.1	1924.9	1917.0
125°	1201.6	1339.9	1450.6	1555.4	1602.8	1642.3	1711.5	1760.9	1790.5	1804.4	1796.5
127.5°	1104.8	1237.2	1349.8	1446.7	1492.1	1535.6	1592.9	1648.2	1668.0	1683.8	1675.9
130°	996.1	1128.5	1233.2	1332.0	1375.5	1411.1	1474.3	1519.8	1545.5	1559.3	1553.4
132.5°	889.3	1011.9	1122.5	1211.5	1253.0	1290.5	1347.8	1391.3	1426.9	1428.9	1421.0
135°	786.6	893.3	994.1	1088.9	1130.5	1168.0	1219.4	1258.9	1292.5	1294.5	1284.6
137.5°	687.8	786.6	873.5	962.5	1005.9	1045.5	1092.9	1130.5	1162.1	1168.0	1154.2
140°	592.9	683.8	762.9	841.9	883.4	921.0	972.3	1004.0	1029.7	1031.6	1023.7
142.5°	502.0	585.0	654.2	727.3	764.8	798.4	855.7	887.4	911.1	917.0	905.2
145°	417.0	490.1	555.3	618.6	650.2	681.8	739.1	776.7	796.5	802.4	790.5
147.5°	336.0	397.2	454.6	511.9	539.5	569.2	616.6	664.0	681.8	685.8	675.9
150°	260.9	312.3	363.6	411.1	434.8	460.5	502.0	545.5	569.2	573.1	565.2
152.5°	191.7	235.2	276.7	316.2	336.0	355.7	391.3	432.8	462.5	464.4	456.5
155°	130.4	166.0	199.6	229.3	247.0	262.8	290.5	322.1	353.8	355.7	349.8
157.5°	79.1	102.8	130.4	154.2	166.0	179.8	199.6	223.3	251.0	256.9	251.0
160°	39.5	53.4	69.2	85.0	94.9	104.7	114.6	134.4	150.2	164.0	156.1
162.5°	19.8	23.7	27.7	35.6	39.5	45.5	53.4	61.3	69.2	83.0	73.1
165°	11.9	13.8	15.8	15.8	17.8	17.8	17.8	17.8	17.8	25.7	17.8
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: P201338

CATALOG NUMBER: 8LBLELD4-22-SYMW-UNV-L835-CD2-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6
2.5°	2341.9	2345.9	2353.8	2357.7	2361.7	2365.6	2373.6	2385.4	2375.5	2365.6	2367.6
5°	2357.7	2357.7	2359.7	2365.6	2365.6	2367.6	2375.5	2387.4	2377.5	2363.7	2363.7
7.5°	2377.5	2375.5	2377.5	2379.5	2377.5	2377.5	2381.5	2387.4	2375.5	2359.7	2355.8
10°	2405.2	2399.2	2397.3	2399.2	2397.3	2391.3	2393.3	2393.3	2377.5	2353.8	2343.9
12.5°	2454.6	2444.7	2436.8	2434.8	2428.9	2419.0	2413.1	2405.2	2381.5	2353.8	2334.0
15°	2535.6	2519.8	2504.0	2498.1	2488.2	2464.5	2444.7	2426.9	2393.3	2353.8	2326.1
17.5°	2626.5	2606.8	2585.0	2577.1	2563.3	2529.7	2496.1	2462.5	2415.1	2359.7	2320.2
20°	2713.5	2689.8	2664.1	2650.2	2636.4	2594.9	2555.4	2511.9	2450.6	2377.5	2318.2
22.5°	2800.4	2772.8	2737.2	2725.3	2707.6	2660.1	2612.7	2563.3	2490.2	2403.2	2322.2
25°	2885.4	2853.8	2820.2	2800.4	2780.7	2727.3	2670.0	2610.7	2527.7	2432.8	2336.0
27.5°	2970.4	2934.8	2893.3	2871.6	2851.8	2792.5	2727.3	2660.1	2567.2	2460.5	2353.8
30°	3053.4	3013.9	2964.5	2940.8	2917.0	2849.8	2774.7	2699.6	2598.9	2484.2	2365.6
32.5°	3136.4	3092.9	3037.6	3009.9	2982.3	2905.2	2822.2	2737.2	2626.5	2506.0	2375.5
35°	3217.4	3170.0	3108.7	3075.1	3045.5	2962.5	2869.6	2774.7	2652.2	2523.8	2381.5
37.5°	3300.4	3247.1	3179.9	3142.3	3108.7	3017.8	2915.1	2808.3	2679.9	2537.6	2387.4
40°	3383.5	3326.1	3251.0	3211.5	3170.0	3071.2	2960.5	2841.9	2703.6	2551.4	2389.4
42.5°	3468.4	3405.2	3322.2	3278.7	3235.2	3124.6	3002.0	2871.6	2723.4	2561.3	2387.4
45°	3553.4	3482.3	3393.3	3343.9	3296.5	3175.9	3043.5	2897.3	2741.1	2567.2	2383.4
47.5°	3638.4	3563.3	3466.5	3413.1	3355.8	3227.3	3083.1	2924.9	2757.0	2569.2	2379.5
50°	3725.4	3644.3	3539.6	3480.3	3421.0	3276.7	3122.6	2948.7	2766.8	2571.2	2369.6
52.5°	3810.3	3723.4	3610.7	3547.5	3478.3	3326.1	3160.1	2972.4	2774.7	2569.2	2355.8
55°	3887.4	3796.5	3677.9	3610.7	3533.7	3371.6	3193.7	2992.1	2778.7	2563.3	2338.0
57.5°	3958.6	3865.7	3741.2	3666.1	3591.0	3415.1	3225.3	3013.9	2782.7	2553.4	2318.2
60°	4013.9	3921.0	3790.6	3715.5	3634.4	3450.6	3251.0	3025.7	2782.7	2539.6	2292.5
62.5°	4055.4	3962.5	3832.1	3753.0	3668.0	3480.3	3270.8	3037.6	2782.7	2525.7	2266.8
65°	4081.1	3990.2	3855.8	3776.7	3689.8	3494.1	3280.7	3039.6	2774.7	2506.0	2235.2
67.5°	4085.0	3994.1	3859.7	3782.7	3693.7	3494.1	3274.8	3029.7	2758.9	2480.3	2199.6
70°	4067.3	3976.3	3843.9	3764.9	3677.9	3476.3	3253.0	3006.0	2731.3	2446.7	2158.1
72.5°	4021.8	3928.9	3800.5	3719.4	3634.4	3434.8	3207.6	2962.5	2685.8	2399.2	2108.7
75°	3942.7	3851.8	3725.4	3650.3	3563.3	3367.6	3138.4	2899.3	2622.6	2340.0	2047.5
77.5°	3838.0	3749.1	3624.6	3549.5	3468.4	3276.7	3051.4	2814.3	2545.5	2266.8	1976.3
80°	3713.5	3628.5	3506.0	3432.9	3353.8	3168.0	2946.7	2715.5	2450.6	2179.9	1897.3
82.5°	3581.1	3498.1	3379.5	3304.4	3229.3	3049.5	2838.0	2608.7	2349.8	2087.0	1812.3
85°	3452.6	3363.7	3245.1	3175.9	3100.8	2924.9	2725.3	2498.1	2247.1	1992.1	1729.3
87.5°	3318.2	3231.3	3114.7	3049.5	2978.3	2800.4	2610.7	2389.4	2150.2	1907.1	1648.2
90°	3195.7	3110.7	2998.1	2932.9	2865.7	2693.7	2507.9	2298.5	2067.2	1832.0	1581.1
92.5°	3083.1	3004.0	2897.3	2834.0	2768.8	2604.8	2426.9	2223.4	2000.0	1772.8	1527.7
95°	2986.2	2909.1	2810.3	2749.1	2681.9	2525.7	2351.8	2152.2	1938.8	1717.4	1478.3
97.5°	2889.4	2816.2	2719.4	2660.1	2596.9	2444.7	2276.7	2085.0	1875.5	1656.2	1424.9
100°	2800.4	2729.3	2630.5	2577.1	2515.8	2369.6	2203.6	2015.8	1810.3	1594.9	1367.6
102.5°	2713.5	2642.3	2547.5	2494.1	2434.8	2288.6	2126.5	1940.7	1741.1	1533.6	1312.3
105°	2624.5	2555.4	2460.5	2407.2	2347.9	2205.6	2047.5	1867.6	1672.0	1470.4	1255.0
107.5°	2527.7	2460.5	2369.6	2316.2	2260.9	2118.6	1966.4	1790.5	1602.8	1405.2	1195.7
110°	2428.9	2361.7	2278.7	2221.4	2168.0	2029.7	1881.5	1713.5	1529.7	1338.0	1134.4



TEST NUMBER: P201338

CATALOG NUMBER: 8LBLED-LD4-22-SYMW-UNV-L835-CD2-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	2326.1	2260.9	2179.9	2126.5	2071.2	1938.8	1796.5	1634.4	1456.5	1268.8	1071.2
115°	2221.4	2156.2	2075.1	2021.8	1972.4	1845.9	1707.5	1553.4	1381.4	1199.6	1007.9
117.5°	2106.8	2049.4	1972.4	1924.9	1873.5	1747.1	1618.6	1470.4	1306.3	1126.5	942.7
120°	2000.0	1944.7	1869.6	1818.2	1772.8	1652.2	1529.7	1385.4	1223.3	1055.4	875.5
122.5°	1887.4	1828.1	1758.9	1715.4	1666.0	1555.4	1436.8	1298.4	1140.3	974.3	802.4
125°	1768.8	1713.5	1646.3	1604.8	1559.3	1454.6	1341.9	1203.6	1053.4	893.3	727.3
127.5°	1648.2	1596.9	1531.6	1494.1	1450.6	1347.8	1239.1	1104.8	954.6	804.4	650.2
130°	1525.7	1474.3	1415.0	1375.5	1334.0	1237.2	1130.5	998.0	855.7	715.4	575.1
132.5°	1397.3	1347.8	1288.6	1253.0	1215.4	1122.5	1013.8	885.4	758.9	632.4	502.0
135°	1264.8	1219.4	1166.0	1132.4	1094.9	1000.0	897.2	780.6	668.0	551.4	430.8
137.5°	1136.4	1094.9	1043.5	1009.9	968.4	879.5	788.5	683.8	581.0	472.3	359.7
140°	1009.9	972.3	922.9	885.4	849.8	766.8	683.8	588.9	496.1	397.2	296.4
142.5°	891.3	857.7	802.4	766.8	733.2	660.1	587.0	498.0	415.0	326.1	239.1
145°	774.7	745.1	683.8	652.2	624.5	559.3	486.2	413.0	337.9	260.9	185.8
147.5°	662.1	626.5	569.2	541.5	515.8	458.5	397.2	330.0	268.8	201.6	136.4
150°	553.4	509.9	460.5	436.8	415.0	365.6	312.3	256.9	203.6	146.2	94.9
152.5°	440.7	395.3	361.7	337.9	318.2	278.7	235.2	187.7	144.3	98.8	59.3
155°	326.1	294.5	262.8	251.0	233.2	199.6	164.0	126.5	90.9	59.3	33.6
157.5°	225.3	201.6	181.8	170.0	156.1	130.4	100.8	73.1	51.4	31.6	15.8
160°	136.4	120.6	106.7	96.8	87.0	69.2	49.4	33.6	21.7	9.9	5.9
162.5°	61.3	51.4	45.5	39.5	33.6	25.7	15.8	7.9	4.0	2.0	2.0
165°	11.9	7.9	5.9	4.0	2.0	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: P201338

CATALOG NUMBER: 8LBLED-LD4-22-SYMW-UNV-L835-CD2-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6	2369.6
2.5°	2369.6	2371.6	2373.6	2373.6	2379.5	2389.4	2403.2	2405.2
5°	2363.7	2365.6	2365.6	2367.6	2373.6	2381.5	2393.3	2395.3
7.5°	2353.8	2353.8	2353.8	2353.8	2357.7	2365.6	2375.5	2377.5
10°	2340.0	2336.0	2334.0	2332.1	2334.0	2341.9	2349.8	2351.8
12.5°	2324.1	2314.3	2310.3	2308.3	2308.3	2310.3	2318.2	2318.2
15°	2306.4	2290.5	2284.6	2280.7	2272.8	2272.8	2280.7	2280.7
17.5°	2288.6	2266.8	2255.0	2247.1	2235.2	2233.2	2237.2	2233.2
20°	2272.8	2239.2	2223.4	2209.5	2191.7	2185.8	2185.8	2179.9
22.5°	2257.0	2211.5	2189.8	2170.0	2142.3	2132.4	2126.5	2122.6
25°	2247.1	2181.9	2154.2	2130.5	2092.9	2071.2	2065.2	2057.3
27.5°	2245.1	2158.1	2120.6	2090.9	2039.6	2013.9	1998.1	1988.2
30°	2245.1	2134.4	2085.0	2043.5	1980.3	1940.7	1924.9	1921.0
32.5°	2243.1	2116.6	2057.3	2004.0	1923.0	1871.6	1847.9	1841.9
35°	2237.2	2098.8	2029.7	1964.5	1865.6	1800.4	1766.8	1758.9
37.5°	2229.3	2077.1	2004.0	1928.9	1806.4	1727.3	1685.8	1673.9
40°	2221.4	2055.4	1972.4	1891.3	1747.1	1652.2	1598.8	1585.0
42.5°	2207.5	2031.7	1944.7	1855.8	1691.7	1577.1	1515.8	1494.1
45°	2193.7	2004.0	1911.1	1816.2	1636.4	1500.0	1422.9	1401.2
47.5°	2175.9	1974.3	1877.5	1772.8	1585.0	1424.9	1338.0	1310.3
50°	2156.2	1944.7	1839.9	1731.3	1529.7	1351.8	1245.1	1215.4
52.5°	2134.4	1911.1	1802.4	1687.8	1474.3	1282.6	1158.1	1120.6
55°	2106.8	1873.5	1758.9	1638.4	1417.0	1211.5	1069.2	1025.7
57.5°	2077.1	1836.0	1717.4	1592.9	1359.7	1144.3	982.2	932.8
60°	2041.5	1792.5	1666.0	1541.5	1300.4	1075.1	895.3	838.0
62.5°	2004.0	1749.0	1620.6	1488.2	1241.1	1007.9	810.3	745.1
65°	1964.5	1699.6	1569.2	1432.8	1177.9	936.8	727.3	652.2
67.5°	1917.0	1646.3	1511.9	1373.5	1112.7	865.6	646.3	561.3
70°	1869.6	1589.0	1448.6	1310.3	1045.5	794.5	569.2	472.3
72.5°	1812.3	1527.7	1385.4	1245.1	976.3	725.3	494.1	383.4
75°	1749.0	1464.4	1320.2	1177.9	905.2	652.2	419.0	296.4
77.5°	1681.8	1395.3	1253.0	1108.7	838.0	583.0	349.8	223.3
80°	1610.7	1322.2	1181.8	1037.6	766.8	513.8	282.6	154.2
82.5°	1531.6	1251.0	1110.7	966.4	699.6	446.6	221.3	94.9
85°	1456.5	1179.9	1043.5	901.2	634.4	379.5	166.0	47.4
87.5°	1383.4	1114.6	982.2	841.9	579.1	328.1	120.6	13.8
90°	1324.1	1061.3	930.8	794.5	535.6	290.5	90.9	0.0
92.5°	1276.7	1019.8	891.3	758.9	504.0	264.8	77.1	0.0
95°	1231.2	976.3	853.8	721.4	472.3	243.1	61.3	0.0
97.5°	1181.8	934.8	812.3	683.8	440.7	219.4	49.4	0.0
100°	1132.4	889.3	770.8	646.3	405.1	195.7	35.6	0.0
102.5°	1079.1	841.9	725.3	604.8	373.5	170.0	23.7	0.0
105°	1027.7	794.5	681.8	563.2	339.9	148.2	15.8	0.0
107.5°	972.3	747.0	636.4	523.7	306.3	124.5	9.9	0.0
110°	917.0	699.6	590.9	482.2	274.7	102.8	7.9	0.0



TEST NUMBER: P201338

CATALOG NUMBER: 8LBLED-LD4-22-SYMW-UNV-L835-CD2-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	861.7	650.2	545.5	438.7	243.1	83.0	5.9	2.0
115°	802.4	598.8	498.0	395.3	211.5	65.2	5.9	2.0
117.5°	743.1	545.5	452.6	353.8	181.8	49.4	4.0	2.0
120°	681.8	498.0	403.2	314.2	154.2	35.6	4.0	2.0
122.5°	622.5	448.6	357.7	272.7	126.5	27.7	4.0	2.0
125°	561.3	391.3	312.3	235.2	100.8	21.7	4.0	2.0
127.5°	496.1	337.9	264.8	193.7	77.1	15.8	4.0	2.0
130°	428.9	284.6	219.4	158.1	55.3	11.9	4.0	2.0
132.5°	365.6	239.1	177.9	124.5	39.5	9.9	4.0	2.0
135°	308.3	193.7	140.3	92.9	27.7	7.9	2.0	2.0
137.5°	253.0	154.2	106.7	67.2	19.8	5.9	4.0	2.0
140°	203.6	116.6	77.1	47.4	13.8	4.0	4.0	2.0
142.5°	158.1	83.0	53.4	31.6	9.9	4.0	2.0	2.0
145°	116.6	55.3	35.6	19.8	7.9	4.0	4.0	4.0
147.5°	79.1	37.5	21.7	13.8	5.9	4.0	4.0	2.0
150°	51.4	23.7	13.8	9.9	4.0	4.0	4.0	2.0
152.5°	31.6	13.8	7.9	5.9	4.0	4.0	4.0	2.0
155°	15.8	7.9	5.9	4.0	4.0	4.0	4.0	4.0
157.5°	7.9	5.9	4.0	4.0	4.0	4.0	4.0	4.0
160°	4.0	4.0	2.0	2.0	4.0	4.0	4.0	4.0
162.5°	2.0	2.0	2.0	2.0	4.0	4.0	4.0	4.0
165°	0.0	2.0	2.0	2.0	4.0	4.0	4.0	4.0
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)