

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: LUMARK

Report Number: P145461

Luminaire Tested: **LDRL-SL4-E05-E-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P145461
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33703)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-SL4-E05-E-7050
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(5) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (105) 5000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14786.3 lumens
Efficiency: N/A
Efficacy: 116.2 lumens/watt
Luminous Opening: Rectangular (W 0.83' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G3

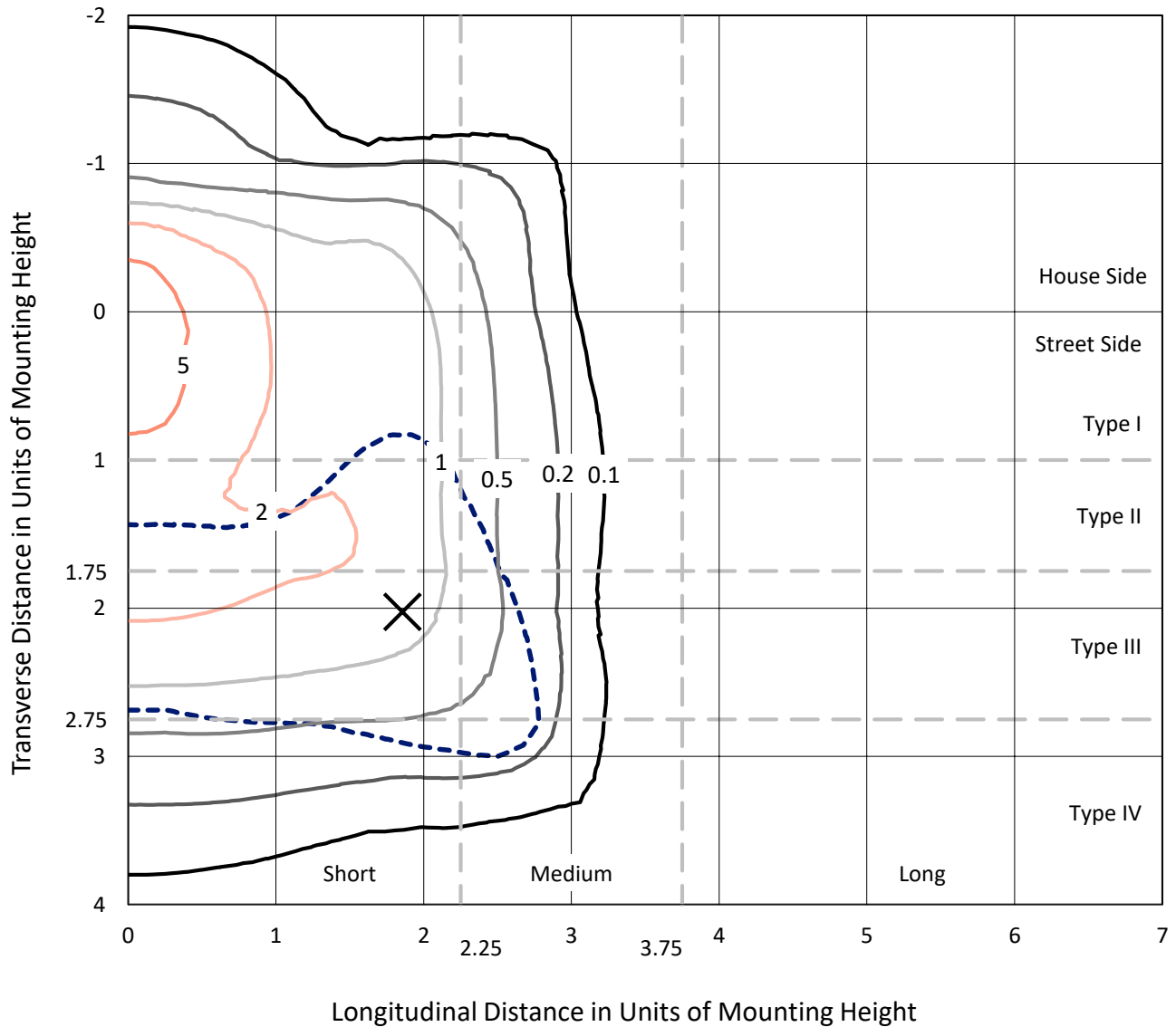
Input Watts (W): 127.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

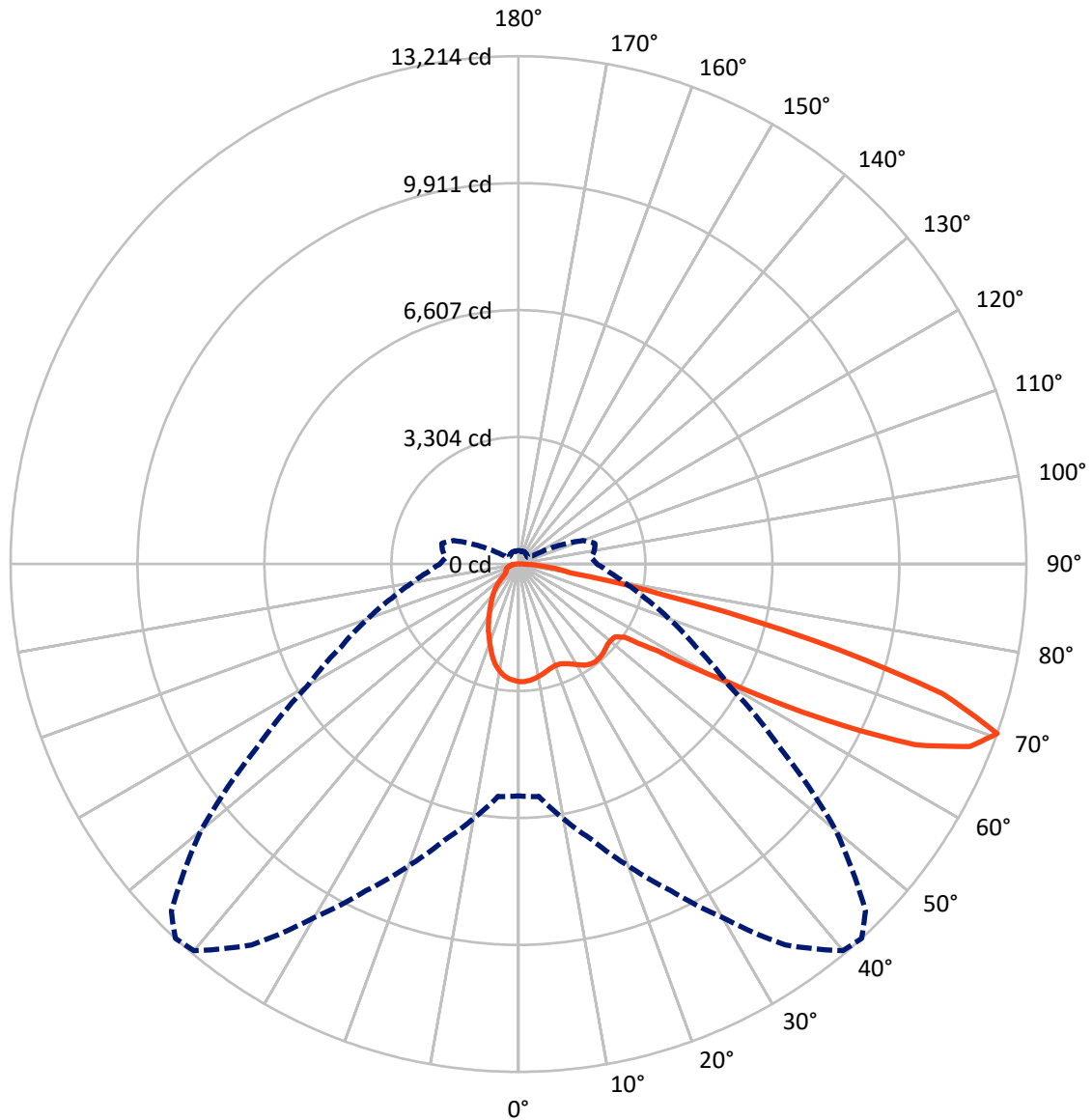
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.6 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 42.5-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3194.1	0.0	3194.1
	% Fixture	21.6	0.0	21.6
Street Side	Lumens	11592.2	0.0	11592.2
	% Fixture	78.4	0.0	78.4
Total	Lumens	14786.3	0.0	14786.3
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	284.5	1.9
10°-20°	766.4	5.2
20°-30°	1117.9	7.6
30°-40°	1425.8	9.6
40°-50°	1664.2	11.3
50°-60°	2545.1	17.2
60°-70°	4613.6	31.2
70°-80°	2051.3	13.9
80°-90°	317.4	2.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	14786.3	100.0
0°-180°	14786.3	100.0



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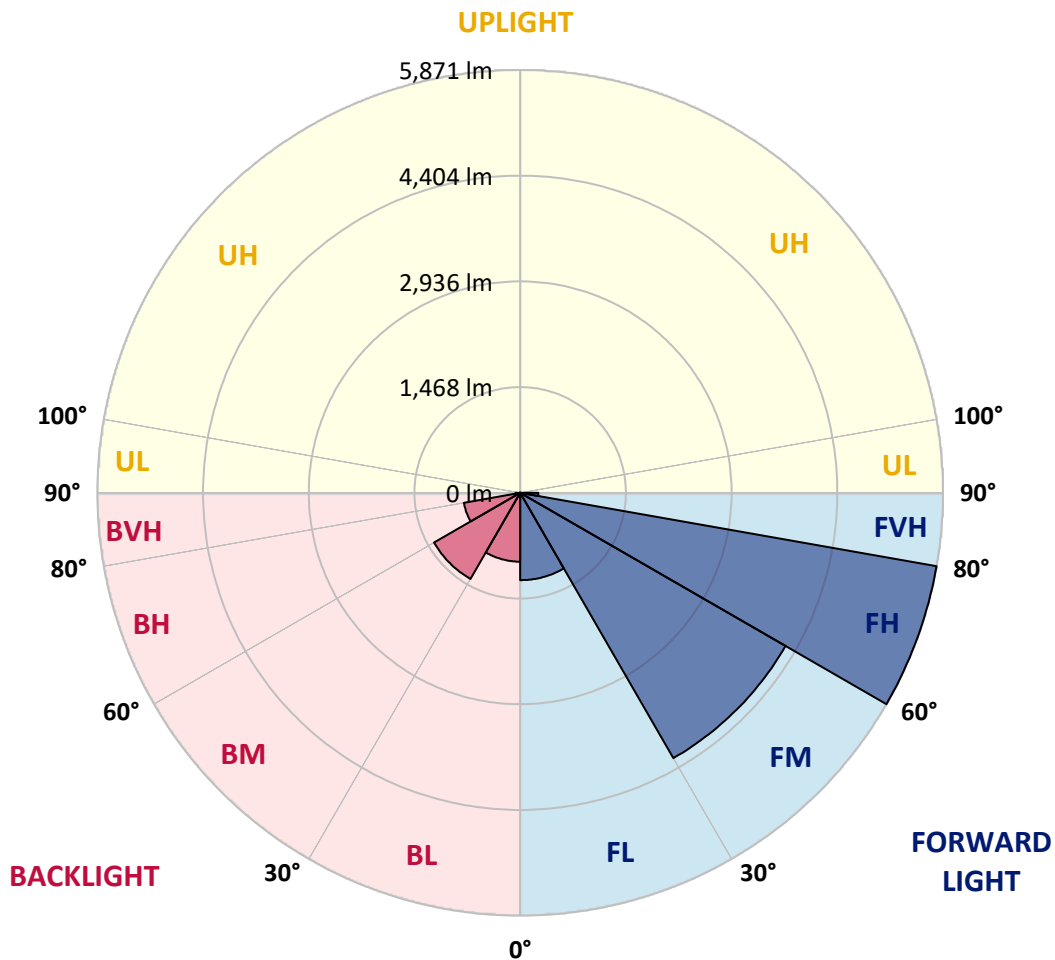
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1212.9	8.2			
FM	(30°-60°)	4254.4	28.8			
FH	(60°-80°)	5871.3	39.7			G3/7500
FVH	(80°-90°)	253.6	1.7			G3/500
BL	(0°-30°)	956.0	6.5	B2/1000		
BM	(30°-60°)	1380.8	9.3	B2/2500		
BH	(60°-80°)	793.5	5.4	B2/1000		G2/1000
BVH	(80°-90°)	63.8	0.4			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	42.5°	45°
0°	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8
2.5°	3072.2	3069.1	3071.1	3073.2	3073.2	3074.2	3065.0	3066.0	3061.9	3062.9	3064.0
5°	3060.9	3057.8	3059.8	3059.8	3059.8	3058.8	3046.5	3045.5	3040.4	3040.4	3038.3
7.5°	3039.3	3028.0	3034.2	3035.2	3033.2	3028.0	3020.9	3013.7	3010.6	3010.6	3003.4
10°	3006.5	2994.2	2997.3	2999.3	2998.3	2988.0	2984.9	2977.8	2969.5	2966.5	2958.3
12.5°	2964.4	2956.2	2960.3	2959.3	2959.3	2950.1	2944.9	2934.7	2924.4	2919.3	2909.0
15°	2937.7	2927.5	2931.6	2931.6	2927.5	2918.2	2911.1	2892.6	2875.1	2869.0	2855.7
17.5°	2954.2	2943.9	2948.0	2944.9	2937.7	2918.2	2899.8	2870.0	2842.3	2825.9	2808.5
20°	3019.8	3009.6	3012.6	3010.6	3000.3	2968.5	2934.7	2883.4	2832.1	2807.4	2780.7
22.5°	3124.5	3116.3	3121.4	3118.3	3101.9	3060.9	3010.6	2936.7	2859.8	2822.8	2784.9
25°	3279.4	3277.4	3285.6	3276.4	3252.8	3191.2	3118.3	3018.8	2918.2	2872.1	2818.7
27.5°	3466.2	3448.7	3461.1	3452.8	3436.4	3358.4	3259.9	3133.7	3005.5	2944.9	2881.3
30°	3634.5	3619.1	3641.6	3637.5	3612.9	3532.9	3408.7	3261.0	3116.3	3039.3	2966.5
32.5°	3829.4	3809.9	3827.4	3827.4	3790.4	3682.7	3541.1	3371.8	3219.9	3137.8	3050.6
35°	4033.6	4013.1	4029.5	4024.4	3958.7	3816.1	3638.6	3454.9	3287.6	3203.5	3114.2
37.5°	4223.4	4220.4	4224.5	4190.6	4099.3	3916.6	3704.2	3499.0	3321.5	3233.3	3139.9
40°	4413.3	4406.1	4388.7	4329.1	4195.7	3976.2	3738.1	3514.4	3323.6	3231.2	3136.8
42.5°	4532.3	4519.0	4489.2	4408.1	4240.9	3990.5	3727.8	3490.8	3298.9	3204.5	3112.2
45°	4573.4	4560.0	4524.1	4432.8	4241.9	3967.9	3687.8	3443.6	3252.8	3166.6	3073.2
47.5°	4539.5	4531.3	4498.4	4407.1	4209.1	3925.9	3637.5	3396.4	3208.6	3124.5	3037.3
50°	4482.0	4476.9	4448.2	4364.0	4178.3	3900.2	3613.9	3373.8	3196.3	3118.3	3036.2
52.5°	4625.7	4610.3	4559.0	4459.5	4242.9	3946.4	3650.9	3407.7	3225.0	3146.0	3061.9
55°	6391.6	6277.7	6023.2	5546.1	4878.1	4359.9	3923.8	3630.4	3433.3	3356.4	3276.4
57.5°	8405.9	8286.8	8181.1	7816.9	7023.7	6044.8	5164.4	4649.3	4296.3	4262.4	4230.6
60°	9181.6	9219.6	9210.3	9074.9	8668.5	8203.7	7467.0	6858.5	6184.3	6156.6	6196.7
62.5°	9716.2	9748.0	9752.1	9711.1	9578.7	9423.8	9269.8	9074.9	8946.6	8891.2	8533.1
65°	9936.8	9983.0	10084.6	10160.5	10182.0	10235.4	10375.0	10905.4	11347.7	11344.6	10924.9
67.5°	9094.4	9149.8	9534.6	9912.2	10229.2	10596.6	11162.0	12024.9	12690.9	12670.4	12326.6
70°	6035.6	6070.4	6724.1	7435.2	8357.6	9377.6	10613.0	12100.9	13133.1	13214.2	12770.9
72.5°	3702.2	3782.2	3995.7	4284.0	4776.5	5721.6	7558.3	10101.0	11615.5	11539.6	11186.6
75°	2499.6	2503.7	2497.5	2528.3	2556.0	2746.9	3486.7	5554.3	7868.2	7909.2	7757.4
77.5°	1708.5	1731.0	1743.4	1735.1	1762.8	1754.6	1797.7	1903.4	3015.7	3848.9	3537.0
80°	1493.0	1502.2	1515.6	1496.1	1444.8	1416.0	1456.0	1418.1	1336.0	1380.1	1321.6
82.5°	945.0	972.7	975.8	1043.5	1144.1	1148.2	1199.5	1161.6	1056.9	988.1	904.0
85°	679.3	689.5	708.0	712.1	677.2	647.5	665.9	634.1	571.5	534.6	473.0
87.5°	396.1	406.3	424.8	413.5	378.6	335.5	302.7	260.6	206.2	192.9	170.3
90°	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°	70°	75°	80°	85°	90°	95°	100°
0°	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8
2.5°	3065.0	3059.8	3055.7	3053.7	3057.8	3053.7	3049.6	3047.5	3043.4	3044.5	3039.3
5°	3036.2	3029.1	3022.9	3017.8	3021.9	3014.7	3008.5	3004.4	2999.3	2998.3	2993.1
7.5°	2996.2	2984.9	2976.7	2967.5	2957.2	2951.1	2943.9	2936.7	2925.4	2924.4	2922.3
10°	2943.9	2934.7	2918.2	2903.9	2889.5	2874.1	2858.7	2847.4	2834.1	2829.0	2821.8
12.5°	2891.6	2873.1	2853.6	2831.0	2813.6	2789.0	2768.4	2746.9	2727.4	2715.1	2701.7
15°	2830.0	2810.5	2782.8	2761.2	2736.6	2708.9	2682.2	2650.4	2618.6	2599.1	2580.7
17.5°	2776.6	2752.0	2729.4	2698.7	2674.0	2642.2	2602.2	2568.3	2530.4	2498.6	2464.7
20°	2735.6	2707.9	2681.2	2653.5	2623.8	2587.8	2543.7	2495.5	2447.3	2402.1	2351.8
22.5°	2719.2	2675.1	2645.3	2619.6	2588.9	2547.8	2498.6	2439.1	2379.5	2322.1	2263.6
25°	2733.5	2667.9	2621.7	2593.0	2565.3	2523.2	2467.8	2400.1	2330.3	2257.4	2187.7
27.5°	2772.5	2689.4	2623.8	2578.6	2546.8	2505.7	2444.2	2373.4	2294.4	2212.3	2137.4
30°	2829.0	2725.3	2643.2	2578.6	2531.4	2484.2	2417.5	2337.5	2254.4	2168.2	2084.0
32.5°	2890.5	2765.4	2666.8	2581.7	2508.8	2449.3	2379.5	2301.6	2213.3	2122.0	2031.7
35°	2936.7	2794.1	2677.1	2570.4	2477.0	2402.1	2327.2	2251.3	2165.1	2072.7	1982.4
37.5°	2956.2	2805.4	2675.1	2546.8	2432.9	2350.8	2272.8	2196.9	2113.8	2026.6	1943.4
40°	2957.2	2805.4	2662.7	2515.0	2386.7	2297.5	2215.4	2144.6	2066.6	1991.7	1917.8
42.5°	2937.7	2791.0	2640.2	2485.2	2352.9	2252.3	2168.2	2095.3	2032.7	1966.0	1903.4
45°	2902.9	2762.3	2619.6	2468.8	2340.5	2241.0	2150.7	2082.0	2025.5	1966.0	1911.6
47.5°	2876.2	2745.9	2620.7	2492.4	2370.3	2267.7	2170.2	2097.4	2049.1	2001.9	1962.9
50°	2881.3	2752.0	2633.0	2510.9	2390.8	2287.2	2192.8	2130.2	2101.5	2086.1	2076.8
52.5°	2908.0	2776.6	2686.3	2605.3	2566.3	2502.7	2450.3	2403.1	2410.3	2373.4	2326.2
55°	3183.0	3138.9	3242.5	3317.4	3354.3	3419.0	3512.4	3423.1	3410.8	3296.9	2958.3
57.5°	4273.7	4378.4	4537.4	4650.3	4661.6	4642.1	4565.1	4491.3	4371.2	4199.8	3725.8
60°	6103.3	6078.6	5930.9	5732.9	5578.9	5376.8	5173.6	5002.3	4809.4	4546.7	4041.8
62.5°	8027.2	7434.1	6907.7	6459.3	6078.6	5741.1	5434.3	5176.7	4912.0	4534.4	3996.7
65°	9580.7	8439.7	7512.1	6790.8	6224.4	5747.2	5351.1	4996.1	4642.1	4205.0	3683.7
67.5°	10691.0	8880.9	7481.3	6466.5	5672.3	5015.6	4438.9	4034.6	3671.4	3327.7	3092.7
70°	10779.2	8270.4	6329.0	5087.4	4171.1	3399.5	2801.3	2360.0	2044.0	1901.4	2003.0
72.5°	9211.3	6118.7	4208.1	3114.2	2471.9	1920.9	1544.3	1234.4	979.9	854.7	872.2
75°	5425.0	2937.7	1895.2	1411.9	1153.3	921.4	797.3	673.1	594.1	476.1	380.7
77.5°	2065.6	1277.5	956.3	794.2	566.4	407.4	321.2	277.0	254.5	251.4	238.1
80°	1190.3	936.8	655.7	428.9	314.0	265.8	227.8	195.0	181.6	178.5	183.7
82.5°	752.1	583.9	360.2	276.0	228.8	197.0	164.2	142.6	131.3	127.2	134.4
85°	388.9	292.4	219.6	188.8	175.5	160.1	131.3	109.8	108.8	113.9	131.3
87.5°	143.7	125.2	98.5	85.2	91.3	85.2	61.6	53.4	48.2	63.6	92.3
90°	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):

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8	3057.8
2.5°	3039.3	3037.3	3038.3	3036.2	3036.2	3039.3	3035.2	3032.1	3037.3	3037.3	3040.4
5°	2992.1	2994.2	2994.2	2993.1	2995.2	3000.3	2999.3	2999.3	3007.5	3010.6	3014.7
7.5°	2917.2	2920.3	2921.3	2924.4	2925.4	2932.6	2937.7	2943.9	2956.2	2959.3	2968.5
10°	2815.6	2813.6	2820.8	2819.7	2829.0	2835.1	2839.2	2852.6	2871.0	2881.3	2890.5
12.5°	2695.6	2695.6	2699.7	2700.7	2708.9	2717.1	2722.3	2738.7	2754.1	2767.4	2787.9
15°	2568.3	2564.2	2555.0	2554.0	2557.1	2565.3	2576.6	2588.9	2612.5	2632.0	2649.4
17.5°	2434.9	2422.6	2411.3	2397.0	2396.0	2394.9	2401.1	2410.3	2447.3	2466.8	2491.4
20°	2316.9	2290.3	2263.6	2233.8	2216.4	2208.2	2211.3	2223.6	2258.5	2284.1	2309.8
22.5°	2211.3	2171.2	2129.2	2082.0	2053.2	2035.8	2037.8	2043.0	2068.6	2084.0	2097.4
25°	2121.0	2065.6	2007.1	1946.5	1906.5	1879.8	1878.8	1878.8	1867.5	1869.6	1862.4
27.5°	2059.4	1982.4	1907.5	1836.7	1784.4	1757.7	1721.8	1696.2	1673.6	1642.8	1629.5
30°	1999.9	1920.9	1835.7	1757.7	1695.1	1642.8	1576.1	1520.7	1476.6	1434.5	1398.6
32.5°	1946.5	1864.4	1783.4	1698.2	1612.0	1521.7	1434.5	1370.9	1308.3	1243.6	1200.5
35°	1899.3	1822.4	1741.3	1644.8	1523.8	1405.8	1307.3	1221.1	1147.2	1069.2	1006.6
37.5°	1872.6	1802.9	1718.7	1587.4	1435.5	1301.1	1191.3	1094.9	996.3	903.0	826.0
40°	1859.3	1797.7	1695.1	1528.9	1356.5	1212.9	1090.8	974.8	858.9	749.1	669.0
42.5°	1857.3	1797.7	1660.2	1469.4	1288.8	1134.9	998.4	858.9	718.3	611.6	540.8
45°	1875.7	1795.7	1623.3	1416.0	1228.2	1065.1	900.9	736.7	592.1	498.7	459.7
47.5°	1929.1	1802.9	1594.6	1370.9	1170.8	988.1	790.1	601.3	478.2	436.1	435.1
50°	2015.3	1835.7	1588.4	1338.0	1114.4	891.7	659.8	481.2	421.7	419.7	431.0
52.5°	2151.7	1897.3	1603.8	1315.5	1046.6	766.5	522.3	415.6	404.3	415.6	429.9
55°	2452.4	2007.1	1624.3	1275.4	936.8	607.5	429.9	394.0	399.2	412.5	425.8
57.5°	2999.3	2234.9	1645.9	1185.2	759.3	466.9	386.8	385.8	395.1	406.3	418.7
60°	3346.1	2516.0	1698.2	1051.8	573.6	385.8	370.4	380.7	392.0	400.2	410.4
62.5°	3357.4	2589.9	1725.9	909.1	426.9	353.0	356.1	375.6	388.9	392.0	397.1
65°	3140.9	2450.3	1600.7	739.8	354.0	334.5	345.8	363.2	376.6	378.6	382.7
67.5°	2743.8	2161.0	1356.5	558.2	322.2	320.1	332.5	345.8	355.0	363.2	369.4
70°	2066.6	1783.4	1090.8	433.0	302.7	300.6	313.0	324.2	332.5	342.7	353.0
72.5°	1047.7	1234.4	827.0	354.0	276.0	278.1	291.4	301.7	307.8	317.1	327.3
75°	357.1	538.7	523.3	286.3	246.3	254.5	260.6	271.9	281.2	287.3	292.4
77.5°	223.7	234.0	269.9	230.9	217.5	219.6	229.8	240.1	250.4	254.5	256.5
80°	186.8	187.8	188.8	184.7	185.7	191.9	198.0	209.3	219.6	221.6	222.7
82.5°	147.8	158.0	157.0	156.0	161.1	167.3	171.4	175.5	179.6	181.6	184.7
85°	130.3	128.3	129.3	132.4	128.3	124.2	123.1	123.1	129.3	136.5	139.6
87.5°	119.0	101.6	75.9	71.8	71.8	69.8	65.7	65.7	71.8	78.0	81.1
90°	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):

	160°	165°	170°	175°	180°
0°	3057.8	3057.8	3057.8	3057.8	3057.8
2.5°	3039.3	3040.4	3039.3	3039.3	3044.5
5°	3016.8	3020.9	3018.8	3021.9	3025.0
7.5°	2970.6	2980.8	2982.9	2991.1	2988.0
10°	2903.9	2911.1	2921.3	2929.5	2926.5
12.5°	2798.2	2815.6	2831.0	2840.3	2838.2
15°	2663.8	2688.4	2708.9	2716.1	2707.9
17.5°	2520.1	2535.5	2560.1	2565.3	2573.5
20°	2338.5	2337.5	2359.0	2359.0	2354.9
22.5°	2101.5	2116.9	2116.9	2102.5	2095.3
25°	1859.3	1864.4	1849.0	1852.1	1832.6
27.5°	1616.1	1602.8	1590.5	1595.6	1581.2
30°	1384.2	1355.5	1343.2	1345.2	1329.8
32.5°	1161.6	1127.7	1115.4	1099.0	1085.6
35°	959.4	906.1	874.2	866.0	875.3
37.5°	761.4	723.4	685.4	657.7	660.8
40°	602.3	563.3	538.7	527.4	525.4
42.5°	497.7	475.1	470.0	471.0	471.0
45°	451.5	452.5	456.6	460.7	461.7
47.5°	442.3	448.4	455.6	460.7	461.7
50°	441.2	447.4	452.5	458.7	460.7
52.5°	440.2	444.3	447.4	450.5	453.5
55°	436.1	438.1	437.1	439.2	442.3
57.5°	425.8	426.9	424.8	425.8	432.0
60°	416.6	417.6	413.5	418.7	419.7
62.5°	405.3	404.3	402.2	405.3	405.3
65°	388.9	382.7	384.8	387.9	388.9
67.5°	369.4	363.2	363.2	365.3	368.4
70°	344.8	341.7	341.7	345.8	349.9
72.5°	317.1	319.1	325.3	331.4	337.6
75°	294.5	299.6	305.8	321.2	330.4
77.5°	265.8	266.8	271.9	287.3	303.7
80°	225.7	224.7	225.7	227.8	230.9
82.5°	178.5	176.5	170.3	172.4	168.3
85°	131.3	128.3	121.1	115.9	114.9
87.5°	75.9	75.9	72.9	68.7	64.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)