

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: P144551

Luminaire Tested: **LDRL-RW-E04-E-7050**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P144551  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33700)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: LDRL-RW-E04-E-7050  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(4) LIGHTBARS WITH AccuLED OPTICS - RECTANGULAR WIDE  
Light Source: (84) 5000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12328.3 lumens  
Efficiency: N/A  
Efficacy: 126.8 lumens/watt  
Luminous Opening: Rectangular (W 0.67' x L: 1' x H: 0')  
IES Classification: Type I - Short - Full Cutoff  
BUG Rating: B3 - U0 - G3

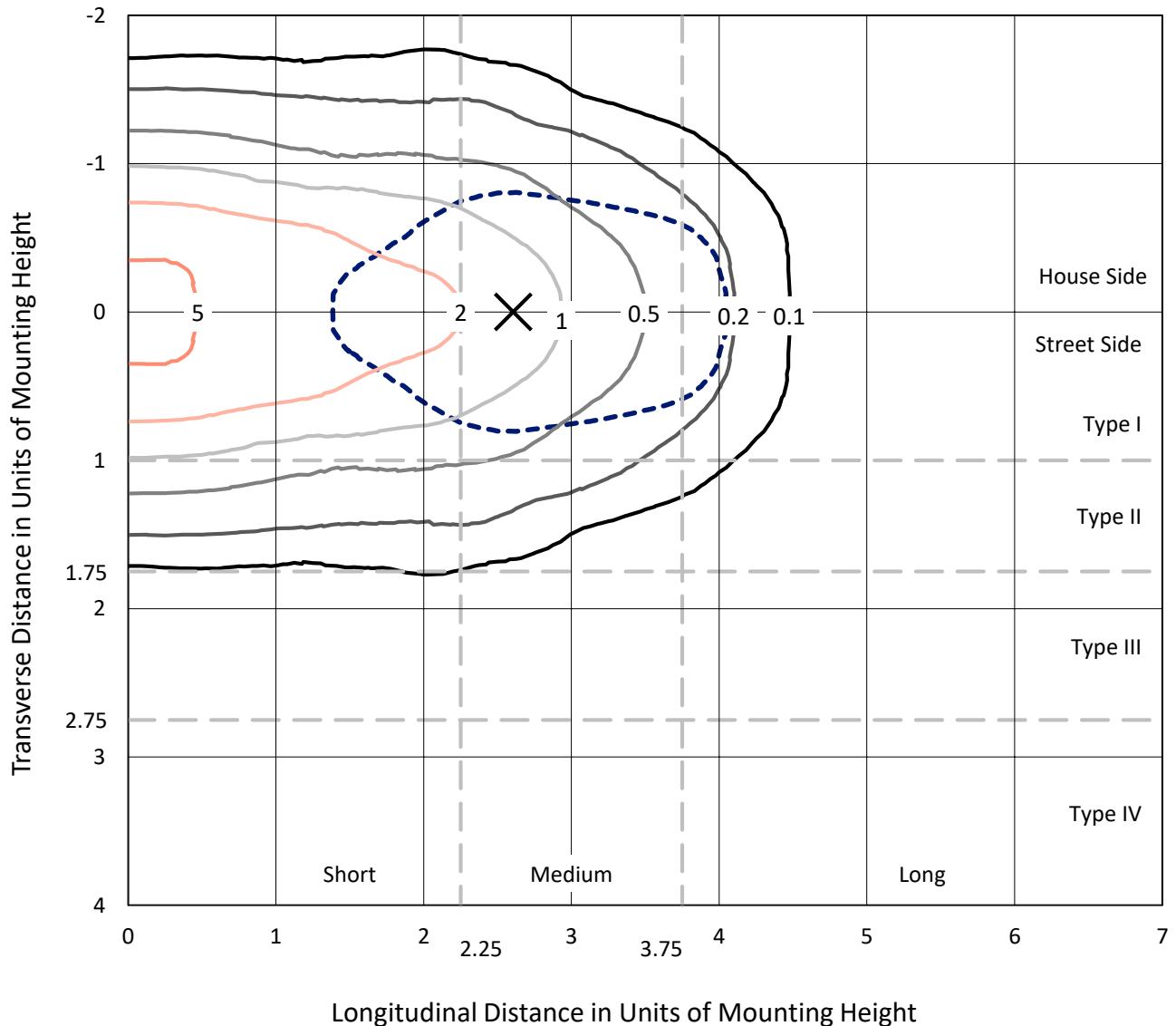
Input Watts (W): 97.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

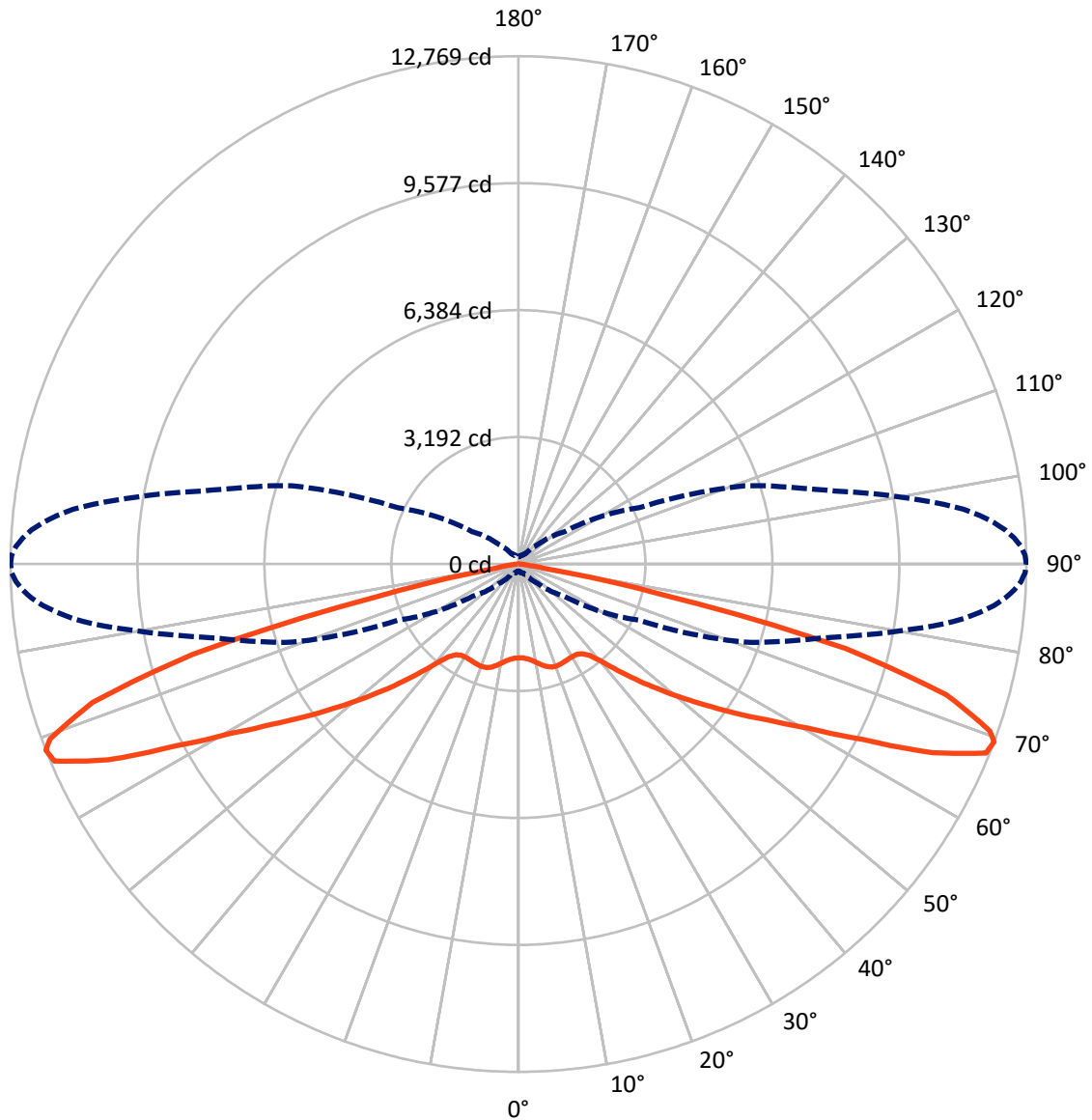
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6 fc  
 Type I - Short - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 90-Deg Lateral      - - - Horizontal Cone Through 69-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	6164.2	0.0	6164.2
	% Fixture	50.0	0.0	50.0
<b>Street Side</b>	Lumens	6164.2	0.0	6164.2
	% Fixture	50.0	0.0	50.0
<b>Total</b>	Lumens	12328.3	0.0	12328.3
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	231.0	1.9
10°-20°	727.5	5.9
20°-30°	1178.2	9.6
30°-40°	1467.7	11.9
40°-50°	1827.2	14.8
50°-60°	2242.0	18.2
60°-70°	2765.1	22.4
70°-80°	1719.0	13.9
80°-90°	170.7	1.4
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°	12328.3	100.0
0°-180°	12328.3	100.0



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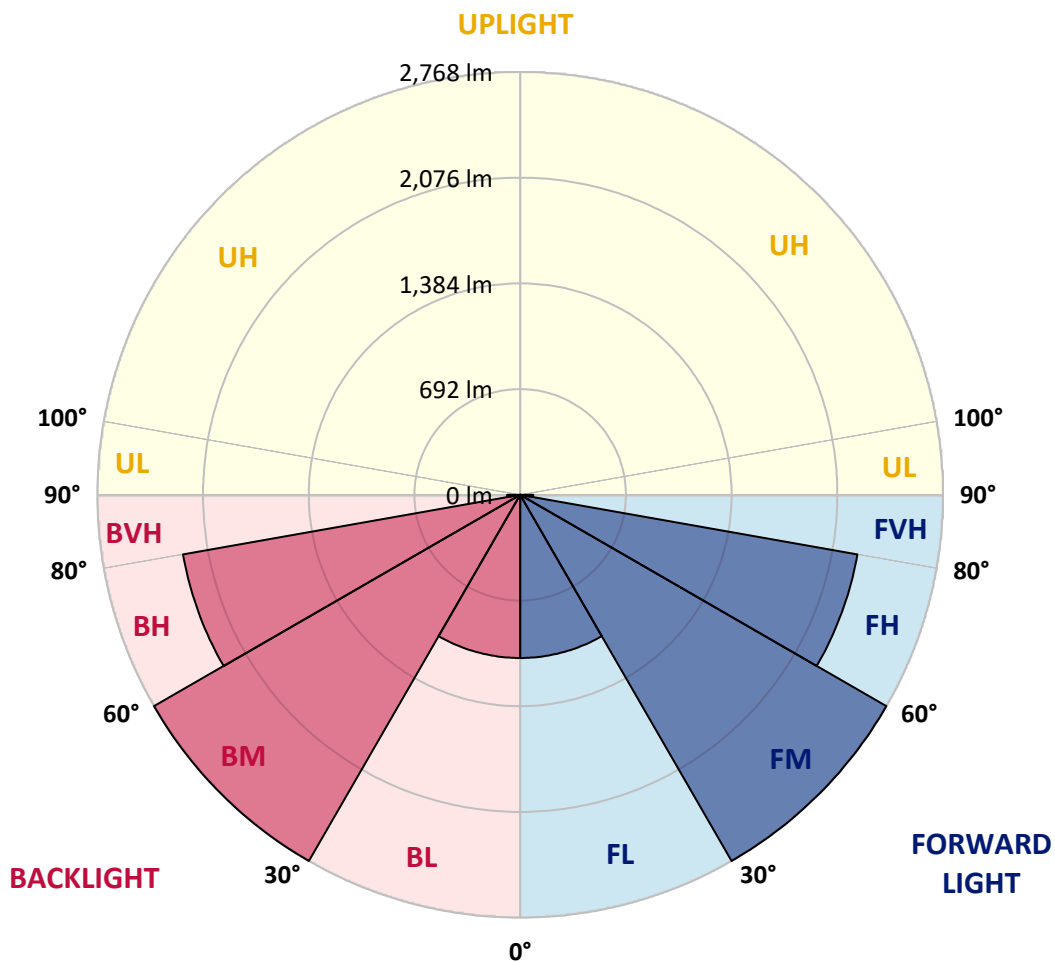
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1068.3	8.7			
FM	(30°-60°)	2768.5	22.5			
FH	(60°-80°)	2242.0	18.2			G2/5000
FVH	(80°-90°)	85.4	0.7			G1/100
BL	(0°-30°)	1068.3	8.7	B3/2500		
BM	(30°-60°)	2768.5	22.5	B3/5000		
BH	(60°-80°)	2242.0	18.2	B3/2500		G3/2500
BVH	(80°-90°)	85.4	0.7			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G3**

Type I Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	66°	67°	68°
0°	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9
2.5°	2367.0	2364.6	2369.1	2373.2	2372.0	2372.8	2371.1	2369.1	2369.3	2369.4	2369.6
5°	2385.5	2383.0	2387.1	2390.8	2392.0	2395.0	2395.8	2394.5	2395.1	2395.7	2396.2
7.5°	2407.6	2405.6	2411.0	2415.9	2425.3	2430.2	2435.1	2440.0	2440.5	2440.9	2441.3
10°	2428.6	2427.4	2436.0	2446.6	2461.8	2473.4	2487.2	2500.8	2501.9	2502.9	2504.0
12.5°	2442.2	2442.1	2455.3	2474.6	2500.8	2524.2	2548.0	2571.0	2573.1	2575.3	2577.4
15°	2441.3	2443.0	2463.0	2498.4	2543.5	2585.0	2614.1	2639.1	2641.2	2643.3	2645.3
17.5°	2424.4	2424.9	2453.6	2509.9	2580.4	2642.0	2679.8	2693.4	2694.1	2694.8	2695.5
20°	2377.3	2380.6	2421.2	2502.9	2609.2	2694.1	2729.9	2724.1	2722.9	2721.6	2720.4
22.5°	2296.4	2300.6	2354.7	2464.3	2614.6	2727.8	2764.7	2738.9	2735.0	2731.0	2727.1
25°	2184.0	2191.0	2249.6	2390.0	2578.4	2737.6	2787.3	2745.9	2739.7	2733.5	2727.4
27.5°	2053.9	2057.2	2126.5	2273.9	2494.2	2704.8	2797.6	2760.2	2752.5	2744.8	2737.0
30°	1903.2	1911.8	1984.0	2138.0	2375.6	2628.5	2793.5	2788.1	2779.5	2770.9	2762.3
32.5°	1753.4	1760.8	1831.8	1997.6	2239.0	2522.2	2773.0	2830.4	2823.2	2816.0	2808.7
35°	1602.4	1611.4	1684.4	1862.6	2103.1	2401.5	2740.5	2890.8	2887.6	2884.5	2881.4
37.5°	1469.8	1475.6	1547.4	1732.4	1984.0	2291.1	2698.2	2971.6	2978.7	2985.7	2992.8
40°	1334.8	1340.5	1415.6	1605.2	1874.5	2196.6	2659.2	3073.4	3092.7	3112.0	3131.3
42.5°	1205.0	1210.0	1282.6	1471.8	1752.6	2115.0	2635.9	3196.5	3233.5	3270.6	3307.6
45°	1072.1	1075.4	1143.5	1327.8	1613.4	2019.8	2629.7	3334.8	3388.3	3441.7	3495.2
47.5°	941.1	949.0	1019.1	1194.0	1454.6	1883.5	2620.6	3488.0	3558.8	3629.6	3700.5
50°	816.0	824.6	896.8	1062.6	1301.1	1721.8	2574.7	3661.6	3748.0	3834.3	3920.6
52.5°	688.3	696.9	769.2	927.6	1158.7	1539.6	2446.6	3843.8	3946.5	4049.2	4151.9
55°	552.0	555.4	629.6	788.4	1016.2	1386.8	2242.6	4010.8	4135.2	4259.5	4383.9
57.5°	401.4	412.5	486.0	633.7	871.0	1251.8	1983.2	4096.2	4251.4	4406.7	4561.9
60°	289.8	297.2	361.6	477.8	706.4	1119.2	1753.0	4033.8	4241.0	4448.2	4655.4
62.5°	229.0	237.2	286.9	360.0	546.3	973.6	1602.8	3862.6	4153.3	4444.0	4734.7
65°	202.8	210.2	256.1	292.2	417.8	823.8	1508.4	3693.2	4085.4	4477.8	4870.0
67.5°	185.1	192.9	233.2	257.8	345.2	727.3	1463.6	3565.1	4018.1	4471.2	4924.2
69°	176.9	183.9	220.8	243.8	325.5	694.4	1415.6	3348.4	3797.5	4246.7	4695.9
70°	172.4	178.5	212.2	235.2	317.7	667.4	1344.6	3090.6	3524.0	3957.5	4390.9
72.5°	159.6	163.8	192.0	213.4	290.6	532.8	1014.2	2180.7	2548.1	2915.5	3283.0
75°	141.6	146.6	171.6	191.2	221.6	320.2	635.0	1265.8	1517.6	1769.3	2021.1
77.5°	121.5	127.2	147.8	179.0	178.6	208.5	385.4	726.9	849.2	971.5	1093.9
80°	104.3	109.2	127.6	176.9	149.4	165.0	287.3	542.2	591.4	640.7	689.9
82.5°	81.6	85.8	107.2	146.1	119.4	125.6	218.8	493.8	527.2	560.6	594.0
85°	51.3	53.0	78.0	101.0	85.0	76.0	140.8	380.0	404.4	428.6	452.9
87.5°	20.5	25.0	37.8	36.1	36.6	30.4	45.6	137.1	149.6	162.0	174.5
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):**

	69°	70°	71°	72°	73°	74°	75°	76°	77°	78°	79°
0°	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9
2.5°	2369.7	2369.9	2369.0	2367.8	2369.1	2367.8	2368.2	2369.5	2369.0	2369.0	2368.2
5°	2396.8	2397.4	2397.4	2395.0	2396.1	2396.6	2397.0	2396.2	2396.6	2397.4	2395.8
7.5°	2441.7	2442.2	2443.4	2444.6	2443.8	2444.2	2445.0	2444.2	2443.0	2445.8	2443.8
10°	2505.1	2506.1	2506.1	2509.8	2508.2	2509.4	2513.2	2513.1	2511.1	2514.0	2513.2
12.5°	2579.6	2581.7	2581.3	2580.9	2582.5	2583.8	2587.8	2588.6	2589.5	2594.0	2592.4
15°	2647.4	2649.4	2651.0	2651.9	2654.7	2655.6	2658.0	2659.6	2660.9	2662.6	2663.4
17.5°	2696.3	2697.0	2699.5	2698.2	2702.4	2701.6	2704.4	2705.6	2706.9	2708.9	2710.2
20°	2719.2	2718.0	2718.4	2717.2	2717.1	2718.0	2718.4	2720.0	2719.2	2721.2	2722.8
22.5°	2723.1	2719.2	2716.7	2713.9	2712.6	2710.2	2710.2	2711.0	2708.1	2710.2	2712.6
25°	2721.2	2715.0	2710.6	2705.6	2701.2	2697.0	2694.6	2693.7	2691.7	2691.6	2693.7
27.5°	2729.3	2721.6	2715.0	2706.9	2701.1	2695.4	2690.0	2686.0	2681.8	2681.0	2681.0
30°	2753.7	2745.0	2737.6	2727.4	2718.4	2711.0	2703.6	2697.8	2690.0	2686.8	2683.0
32.5°	2801.5	2794.3	2784.0	2775.0	2764.3	2755.3	2745.4	2736.4	2727.4	2719.2	2715.9
35°	2878.3	2875.2	2869.4	2863.2	2853.0	2841.5	2833.2	2822.6	2812.4	2800.5	2797.1
37.5°	2999.8	3006.9	3003.6	2999.1	2996.2	2992.5	2981.4	2974.5	2967.5	2957.6	2955.6
40°	3150.6	3169.9	3189.1	3201.9	3197.4	3212.5	3215.0	3216.2	3210.0	3218.3	3220.0
42.5°	3344.6	3381.6	3416.5	3442.0	3471.6	3493.7	3522.4	3534.7	3558.1	3582.4	3596.3
45°	3548.6	3602.0	3652.1	3704.2	3755.6	3811.8	3866.4	3905.0	3961.2	4003.0	4029.3
47.5°	3771.3	3842.2	3902.0	3980.0	4054.4	4120.8	4216.5	4293.2	4361.8	4427.0	4495.6
50°	4007.0	4093.4	4167.2	4262.5	4352.8	4457.0	4569.0	4666.7	4774.2	4878.1	4970.5
52.5°	4254.6	4357.2	4457.0	4554.7	4664.2	4777.6	4899.0	5040.2	5169.2	5325.4	5437.6
55°	4508.3	4632.6	4739.0	4841.2	4957.4	5083.0	5227.4	5394.4	5558.2	5729.4	5899.3
57.5°	4717.1	4872.4	4988.5	5108.0	5233.1	5357.5	5536.8	5708.0	5915.7	6125.8	6338.5
60°	4862.6	5069.8	5210.6	5361.6	5506.5	5657.5	5850.8	6067.2	6327.0	6581.4	6870.4
62.5°	5025.4	5316.0	5513.5	5715.0	5891.0	6072.5	6331.0	6580.2	6913.9	7207.0	7570.6
65°	5262.4	5654.7	5945.2	6217.0	6453.4	6700.5	7007.1	7318.6	7700.3	8105.4	8561.4
67.5°	5377.3	5830.3	6210.8	6546.2	6848.2	7163.0	7479.5	7848.0	8278.2	8765.8	9266.6
69°	5145.1	5594.3	6031.8	6370.9	6689.0	7025.1	7363.8	7735.6	8159.2	8665.2	9196.0
70°	4824.3	5257.8	5722.8	6062.6	6383.6	6732.4	7077.2	7452.8	7857.9	8379.2	8916.0
72.5°	3650.4	4017.8	4469.3	4828.4	5165.8	5518.4	5873.4	6199.3	6610.2	7111.7	7606.4
75°	2272.9	2524.6	2930.6	3291.4	3562.6	3864.8	4198.0	4506.6	4919.2	5274.6	5750.3
77.5°	1216.2	1338.5	1575.3	1833.9	1984.9	2132.2	2349.4	2516.8	2690.5	2896.0	3092.7
80°	739.2	788.4	869.3	925.1	904.2	843.8	824.6	764.2	786.0	749.0	722.3
82.5°	627.4	660.8	710.1	743.8	719.1	622.6	513.4	432.2	374.8	319.8	271.7
85°	477.2	501.6	527.0	542.2	541.0	493.0	391.5	303.4	236.4	183.0	152.2
87.5°	187.0	199.4	218.0	215.0	224.6	226.2	176.9	136.7	97.3	65.6	57.4
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):**

	80°	81°	82°	83°	84°	85°	86°	87°	88°	89°	90°
0°	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9	2360.9
2.5°	2366.6	2366.2	2366.6	2367.8	2367.9	2368.6	2367.9	2368.2	2367.0	2365.8	2366.6
5°	2395.8	2395.0	2395.8	2396.6	2396.6	2395.8	2397.8	2397.8	2397.0	2395.8	2396.2
7.5°	2445.8	2446.2	2445.0	2449.1	2445.4	2445.8	2448.3	2447.9	2447.1	2447.4	2447.9
10°	2515.6	2515.2	2516.0	2518.4	2514.8	2517.2	2520.1	2521.0	2518.9	2518.9	2519.3
12.5°	2592.8	2596.0	2596.4	2598.0	2598.1	2600.2	2600.6	2601.0	2602.6	2603.0	2600.6
15°	2666.6	2669.1	2670.8	2672.4	2670.4	2673.2	2676.5	2676.5	2676.1	2677.7	2675.3
17.5°	2712.2	2714.2	2717.2	2716.7	2717.1	2719.6	2721.6	2722.5	2723.3	2723.3	2723.7
20°	2726.6	2727.8	2729.4	2731.0	2731.9	2734.4	2736.0	2737.2	2738.1	2737.2	2737.6
22.5°	2715.0	2716.7	2720.0	2721.2	2721.6	2725.3	2727.0	2728.2	2729.0	2729.9	2728.6
25°	2695.4	2697.0	2700.3	2701.5	2702.4	2705.6	2707.7	2710.6	2711.4	2711.8	2712.2
27.5°	2681.8	2682.6	2685.1	2686.8	2687.2	2690.9	2693.7	2695.8	2696.2	2696.6	2696.6
30°	2682.2	2682.2	2685.1	2685.5	2685.1	2688.4	2690.0	2691.3	2692.1	2692.1	2692.5
32.5°	2710.6	2709.0	2711.4	2707.7	2708.1	2707.7	2707.3	2708.5	2707.7	2708.1	2706.5
35°	2790.6	2786.1	2782.4	2784.0	2778.2	2770.0	2774.6	2772.5	2768.0	2768.4	2769.7
37.5°	2944.1	2939.6	2943.6	2940.0	2941.2	2929.7	2932.6	2922.4	2919.5	2923.2	2912.5
40°	3216.6	3214.6	3222.4	3219.1	3221.2	3224.4	3227.3	3217.4	3201.0	3215.8	3216.2
42.5°	3594.2	3612.8	3620.1	3630.4	3641.4	3636.5	3646.4	3649.2	3631.2	3644.8	3648.0
45°	4067.9	4087.6	4110.6	4117.6	4135.6	4138.1	4145.4	4147.5	4131.1	4132.8	4136.4
47.5°	4564.1	4600.2	4627.4	4646.2	4665.0	4668.8	4672.8	4665.1	4666.4	4670.0	4670.0
50°	5051.7	5128.9	5177.0	5214.2	5246.7	5229.8	5244.2	5245.4	5250.4	5240.1	5246.3
52.5°	5564.4	5666.6	5747.0	5809.8	5829.5	5889.4	5864.8	5883.7	5896.4	5877.5	5889.8
55°	6065.1	6210.8	6340.1	6431.2	6495.2	6556.0	6565.4	6614.2	6608.6	6627.0	6618.8
57.5°	6541.2	6744.8	6929.5	7064.6	7156.5	7249.2	7312.0	7365.4	7370.7	7423.6	7393.7
60°	7117.0	7400.6	7638.4	7839.4	7975.3	8113.2	8222.0	8309.4	8329.6	8420.2	8390.3
62.5°	7894.0	8240.0	8543.8	8779.8	9082.2	9228.0	9439.8	9571.9	9654.4	9677.0	9719.3
65°	8986.2	9436.9	9837.5	10215.0	10555.4	10791.3	11036.4	11233.4	11391.4	11378.3	11443.1
67.5°	9797.6	10311.6	10793.8	11246.5	11612.6	11916.3	12197.9	12411.0	12552.2	12642.0	12680.2
69°	9713.1	10264.8	10796.7	11280.2	11657.8	11997.2	12271.4	12481.2	12642.8	12740.6	12768.9
70°	9432.0	9998.8	10553.3	11027.8	11412.8	11785.4	12064.6	12298.0	12452.0	12558.7	12575.1
72.5°	8158.4	8772.4	9262.8	9780.4	10151.0	10528.2	10703.9	10993.2	11194.0	11258.8	11257.6
75°	6153.4	6665.6	7096.6	7479.0	7810.7	8066.4	8149.4	8355.4	8522.0	8520.0	8504.4
77.5°	3313.5	3434.2	3595.5	3649.7	3751.8	3750.2	3647.6	3680.0	3774.4	3591.4	3650.5
80°	710.9	700.2	691.2	685.8	683.0	684.2	687.9	664.5	687.5	677.2	633.7
82.5°	247.5	241.8	236.0	240.1	237.2	239.7	238.9	241.8	241.4	240.6	234.8
85°	139.1	134.2	131.4	133.4	128.8	124.8	121.9	120.7	120.2	117.4	115.7
87.5°	53.0	52.6	52.2	50.1	45.2	41.4	39.0	34.1	32.0	29.2	27.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)