

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: P144555

Luminaire Tested: **LDRL-RW-F04-E**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P144555
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-F04-E
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(4) LIGHTBARS WITH AccuLED OPTICS - RECTANGULAR WIDE
Light Source: (28) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9918.4 lumens
Efficiency: N/A
Efficacy: 97.0 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

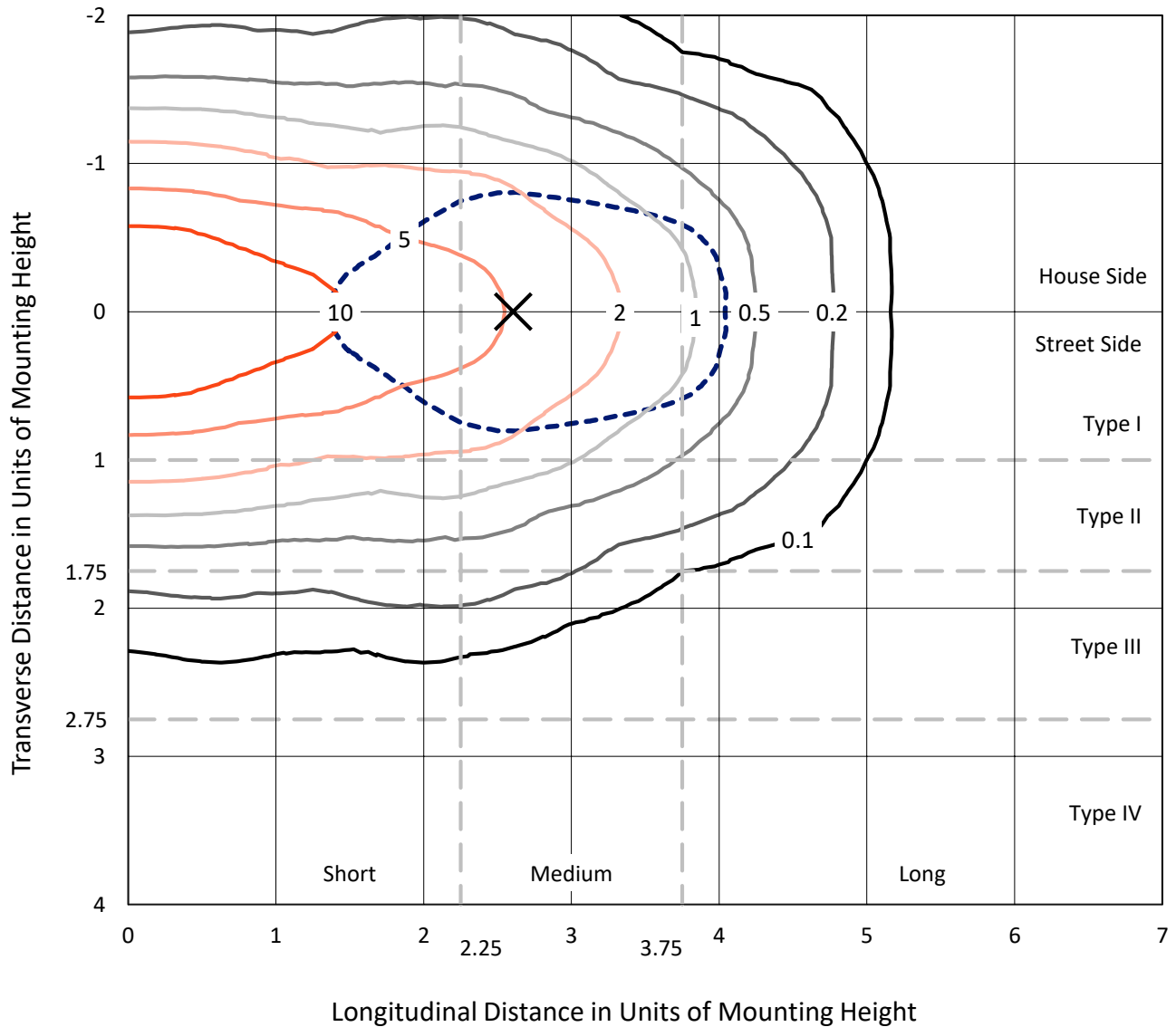
Input Watts (W): 102.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

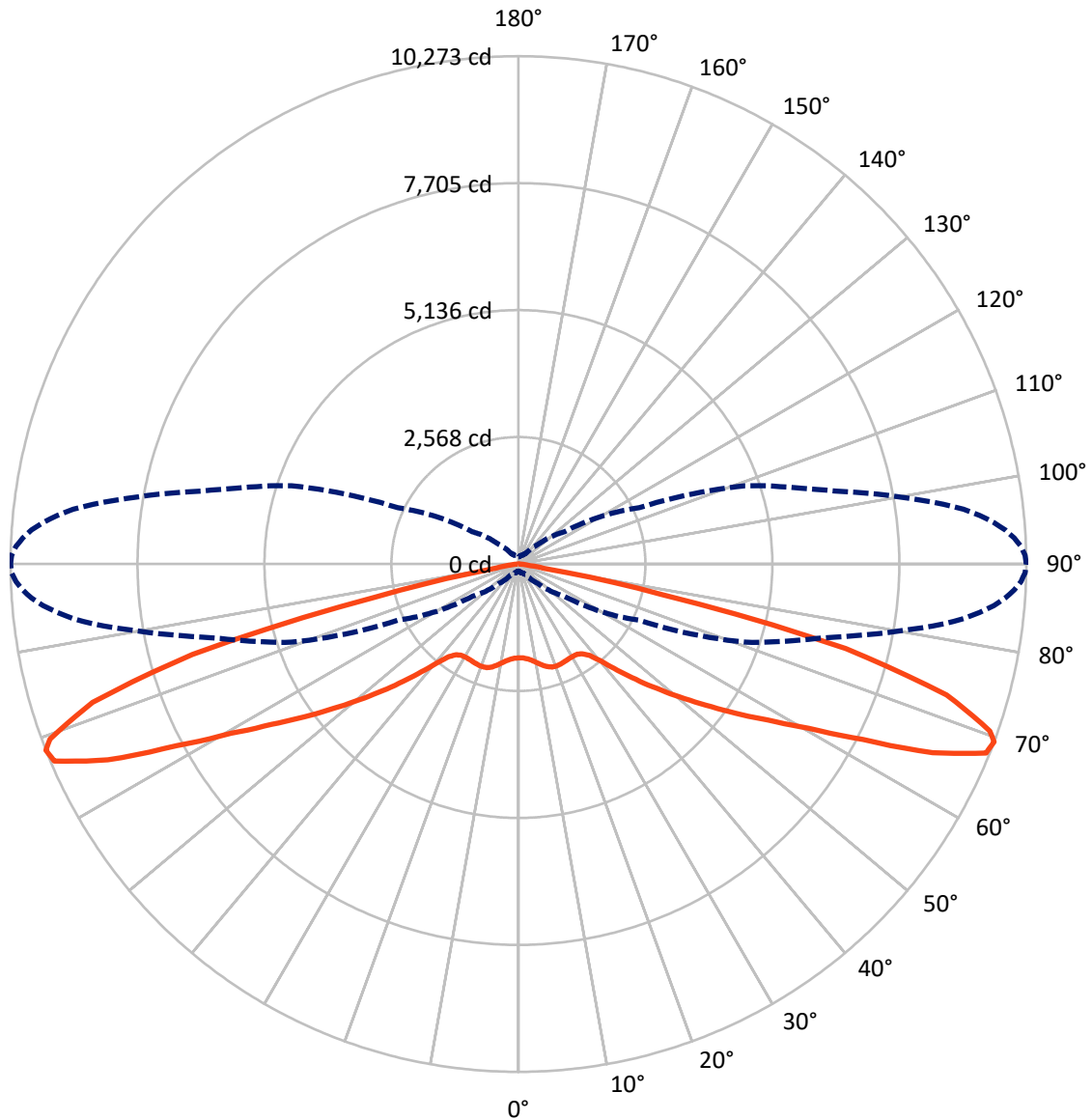
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 19.4 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
House Side	Lumens	4959.2	0.0	4959.2
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	4959.2	0.0	4959.2
	% Fixture	50.0	0.0	50.0
Total	Lumens	9918.4	0.0	9918.4
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	185.8	1.9
10°-20°	585.3	5.9
20°-30°	947.9	9.6
30°-40°	1180.8	11.9
40°-50°	1470.0	14.8
50°-60°	1803.8	18.2
60°-70°	2224.6	22.4
70°-80°	1382.9	13.9
80°-90°	137.4	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°	9918.4	100.0
0°-180°	9918.4	100.0



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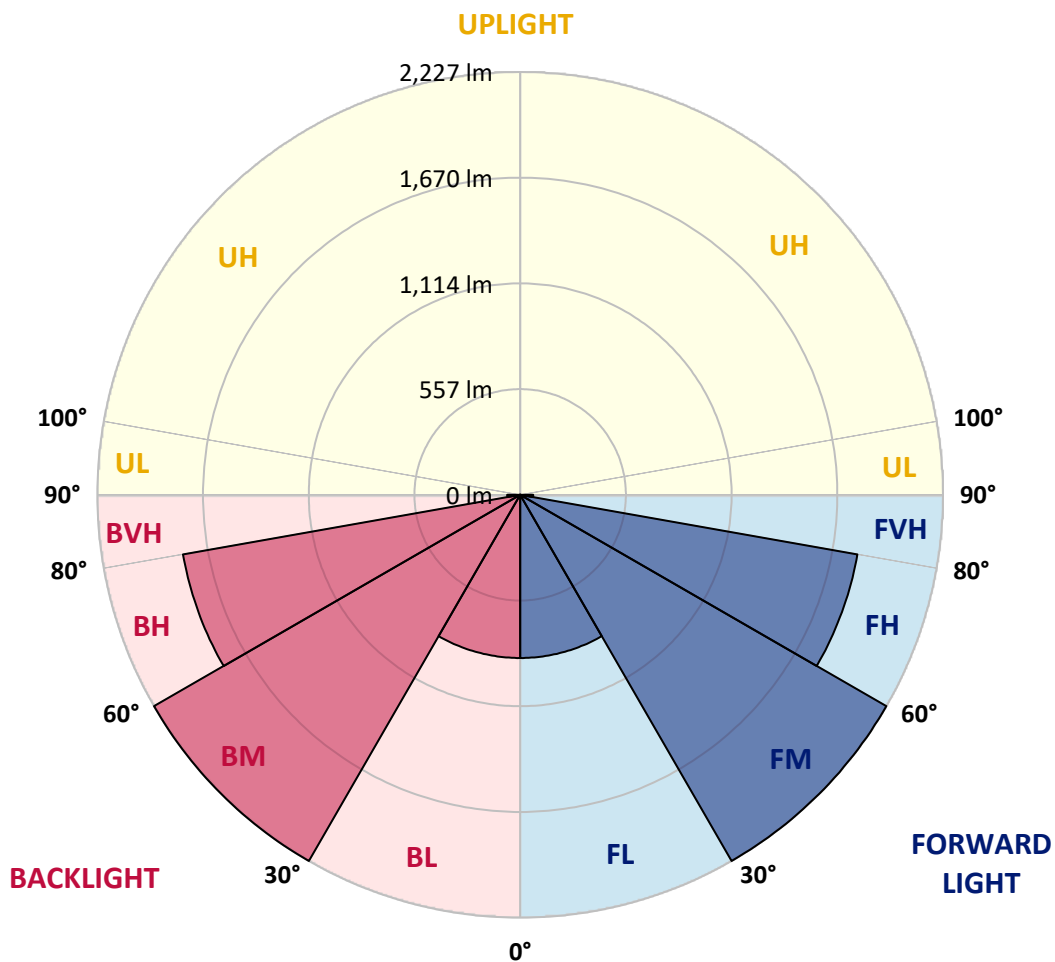
CATALOG NUMBER: LDRL-RW-F04-E

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	859.5	8.7			
FM	(30°-60°)	2227.3	22.5			
FH	(60°-80°)	1803.8	18.2			G2/5000
FVH	(80°-90°)	68.7	0.7			G1/100
BL	(0°-30°)	859.5	8.7	B2/1000		
BM	(30°-60°)	2227.3	22.5	B2/2500		
BH	(60°-80°)	1803.8	18.2	B3/2500		G3/2500
BVH	(80°-90°)	68.7	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°	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4
2.5°	1904.4	1902.4	1906.0	1909.2	1908.2	1909.0	1907.6	1906.0	1906.1	1906.3	1906.4
5°	1919.2	1917.2	1920.5	1923.5	1924.4	1926.8	1927.4	1926.4	1926.9	1927.4	1927.8
7.5°	1937.0	1935.4	1939.6	1943.6	1951.2	1955.2	1959.2	1963.1	1963.4	1963.8	1964.1
10°	1953.8	1952.8	1959.8	1968.4	1980.6	1989.8	2001.1	2012.0	2012.8	2013.7	2014.5
12.5°	1964.8	1964.8	1975.4	1990.8	2012.0	2030.8	2049.9	2068.4	2070.1	2071.9	2073.6
15°	1964.1	1965.4	1981.6	2010.0	2046.3	2079.7	2103.1	2123.2	2124.9	2126.6	2128.2
17.5°	1950.6	1950.9	1974.0	2019.2	2076.0	2125.6	2156.0	2166.8	2167.4	2168.0	2168.6
20°	1912.6	1915.2	1947.9	2013.6	2099.1	2167.5	2196.2	2191.6	2190.6	2189.6	2188.6
22.5°	1847.6	1850.8	1894.4	1982.6	2103.4	2194.6	2224.3	2203.5	2200.3	2197.2	2194.0
25°	1757.0	1762.7	1809.8	1922.8	2074.4	2202.5	2242.4	2209.1	2204.1	2199.2	2194.2
27.5°	1652.4	1655.0	1710.8	1829.4	2006.6	2176.1	2250.7	2220.6	2214.4	2208.2	2202.0
30°	1531.2	1538.1	1596.2	1720.1	1911.2	2114.7	2247.4	2243.1	2236.2	2229.3	2222.3
32.5°	1410.6	1416.6	1473.8	1607.2	1801.3	2029.2	2230.9	2277.2	2271.3	2265.5	2259.7
35°	1289.2	1296.4	1355.2	1498.5	1692.0	1932.0	2204.8	2325.7	2323.2	2320.7	2318.2
37.5°	1182.4	1187.1	1244.9	1393.8	1596.2	1843.2	2170.8	2390.7	2396.4	2402.1	2407.7
40°	1073.8	1078.4	1138.9	1291.4	1508.0	1767.3	2139.4	2472.6	2488.1	2503.6	2519.2
42.5°	969.5	973.4	1031.9	1184.2	1410.0	1701.6	2120.6	2571.7	2601.5	2631.3	2661.0
45°	862.5	865.2	920.0	1068.2	1298.1	1625.0	2115.6	2683.0	2726.0	2769.0	2812.0
47.5°	757.2	763.4	819.9	960.6	1170.2	1515.4	2108.4	2806.2	2863.1	2920.1	2977.1
50°	656.4	663.3	721.5	854.9	1046.8	1385.2	2071.4	2945.8	3015.3	3084.7	3154.2
52.5°	553.8	560.7	618.8	746.2	932.2	1238.6	1968.4	3092.5	3175.1	3257.7	3340.3
55°	444.1	446.8	506.6	634.3	817.6	1115.8	1804.2	3226.8	3326.9	3426.9	3527.0
57.5°	323.0	331.9	391.0	509.8	700.7	1007.1	1595.6	3295.5	3420.4	3545.3	3670.2
60°	233.1	239.0	290.9	384.4	568.3	900.5	1410.4	3245.3	3412.0	3578.7	3745.4
62.5°	184.2	190.9	230.8	289.6	439.6	783.2	1289.5	3107.6	3341.5	3575.3	3809.2
65°	163.1	169.0	206.0	235.1	336.2	662.8	1213.6	2971.2	3286.9	3602.5	3918.1
67.5°	149.0	155.2	187.6	207.4	277.7	585.1	1177.6	2868.2	3232.7	3597.2	3961.7
69°	142.3	147.9	177.7	196.2	261.8	558.8	1138.9	2693.8	3055.2	3416.6	3778.0
70°	138.6	143.6	170.7	189.2	255.6	536.9	1081.8	2486.5	2835.2	3183.9	3532.6
72.5°	128.4	131.8	154.6	171.7	233.8	428.6	816.0	1754.4	2050.0	2345.6	2641.2
75°	114.0	117.8	138.0	153.9	178.3	257.6	510.8	1018.4	1220.9	1423.4	1626.0
77.5°	97.7	102.4	118.9	144.0	143.6	167.8	310.1	584.8	683.2	781.6	880.0
80°	83.9	87.8	102.7	142.4	120.2	132.8	231.2	436.2	475.8	515.5	555.1
82.5°	65.7	69.0	86.2	117.6	96.1	101.1	176.0	397.2	424.1	451.0	477.9
85°	41.2	42.6	62.8	81.2	68.4	61.1	113.2	305.8	325.3	344.8	364.4
87.5°	16.6	20.2	30.4	29.0	29.4	24.4	36.7	110.3	120.3	130.4	140.4
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):

	69°	70°	71°	72°	73°	74°	75°	76°	77°	78°	79°
0°	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4
2.5°	1906.5	1906.6	1906.0	1905.0	1906.0	1905.0	1905.4	1906.3	1906.0	1906.0	1905.3
5°	1928.3	1928.8	1928.8	1926.8	1927.8	1928.1	1928.4	1927.8	1928.1	1928.8	1927.4
7.5°	1964.4	1964.8	1965.8	1966.7	1966.0	1966.4	1967.0	1966.4	1965.4	1967.7	1966.1
10°	2015.4	2016.2	2016.3	2019.2	2018.0	2019.0	2021.9	2021.8	2020.2	2022.6	2021.8
12.5°	2075.3	2077.0	2076.7	2076.4	2077.6	2078.7	2082.0	2082.6	2083.3	2086.9	2085.6
15°	2129.8	2131.5	2132.8	2133.4	2135.8	2136.4	2138.4	2139.8	2140.8	2142.1	2142.8
17.5°	2169.2	2169.8	2171.8	2170.8	2174.1	2173.4	2175.8	2176.8	2177.7	2179.4	2180.4
20°	2187.6	2186.6	2187.0	2186.0	2186.0	2186.6	2187.0	2188.3	2187.6	2189.3	2190.6
22.5°	2190.8	2187.6	2185.6	2183.4	2182.4	2180.4	2180.4	2181.0	2178.8	2180.4	2182.4
25°	2189.3	2184.3	2180.7	2176.8	2173.1	2169.8	2167.8	2167.2	2165.5	2165.5	2167.1
27.5°	2195.8	2189.6	2184.3	2177.8	2173.2	2168.4	2164.2	2160.9	2157.6	2157.0	2157.0
30°	2215.4	2208.4	2202.5	2194.2	2187.0	2181.0	2175.1	2170.4	2164.2	2161.6	2158.6
32.5°	2253.9	2248.0	2239.8	2232.6	2224.0	2216.7	2208.8	2201.6	2194.2	2187.6	2185.0
35°	2315.7	2313.2	2308.5	2303.6	2295.3	2286.0	2279.4	2270.8	2262.6	2253.0	2250.4
37.5°	2413.4	2419.1	2416.4	2412.8	2410.6	2407.6	2398.6	2393.0	2387.4	2379.5	2377.8
40°	2534.7	2550.2	2565.8	2576.0	2572.3	2584.6	2586.6	2587.5	2582.6	2589.2	2590.5
42.5°	2690.8	2720.6	2748.7	2769.1	2792.9	2810.8	2833.8	2843.8	2862.6	2882.1	2893.3
45°	2855.0	2898.0	2938.2	2980.2	3021.5	3066.6	3110.6	3141.6	3186.8	3220.5	3241.6
47.5°	3034.1	3091.1	3139.4	3202.0	3261.8	3315.3	3392.2	3454.0	3509.2	3561.6	3616.8
50°	3223.7	3293.2	3352.6	3429.2	3501.9	3585.8	3675.8	3754.4	3841.0	3924.6	3998.8
52.5°	3422.9	3505.5	3585.8	3664.4	3752.5	3843.6	3941.4	4055.0	4158.6	4284.5	4374.6
55°	3627.0	3727.1	3812.6	3894.8	3988.2	4089.3	4205.6	4340.0	4471.7	4609.4	4746.1
57.5°	3795.1	3920.0	4013.3	4109.4	4210.2	4310.2	4454.5	4592.2	4759.3	4928.4	5099.5
60°	3912.1	4078.8	4192.0	4313.6	4430.1	4551.6	4707.2	4881.2	5090.2	5295.0	5527.4
62.5°	4043.0	4276.9	4435.8	4597.8	4739.5	4885.5	5093.4	5293.9	5562.4	5798.2	6090.7
65°	4233.7	4549.3	4783.1	5001.6	5191.9	5390.7	5637.4	5888.0	6195.0	6521.0	6887.8
67.5°	4326.2	4690.6	4996.7	5266.6	5509.6	5762.8	6017.4	6314.0	6660.0	7052.3	7455.2
69°	4139.4	4500.8	4852.8	5125.5	5381.4	5651.8	5924.3	6223.4	6564.2	6971.4	7398.4
70°	3881.3	4230.0	4604.2	4877.5	5135.8	5416.5	5693.8	5996.0	6321.9	6741.2	7173.2
72.5°	2936.8	3232.4	3595.6	3884.6	4156.0	4439.6	4725.3	4987.5	5318.0	5721.6	6119.4
75°	1828.6	2031.1	2357.7	2648.0	2866.2	3109.2	3377.4	3625.7	3957.6	4243.5	4626.2
77.5°	978.4	1076.8	1267.4	1475.4	1596.9	1715.4	1890.2	2024.8	2164.6	2330.0	2488.1
80°	594.7	634.3	699.4	744.3	727.4	678.9	663.3	614.8	632.3	602.6	581.2
82.5°	504.8	531.6	571.3	598.3	578.6	501.0	413.1	347.7	301.4	257.2	218.6
85°	384.0	403.5	424.0	436.2	435.2	396.6	315.0	244.0	190.2	147.2	122.5
87.5°	150.5	160.5	175.3	173.0	180.6	182.0	142.4	110.0	78.2	52.8	46.2
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°	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4
2.5°	1904.0	1903.6	1904.0	1905.0	1905.0	1905.6	1905.0	1905.4	1904.4	1903.3	1904.0
5°	1927.4	1926.8	1927.4	1928.1	1928.1	1927.4	1929.1	1929.1	1928.4	1927.4	1927.8
7.5°	1967.8	1968.0	1967.0	1970.4	1967.4	1967.8	1969.7	1969.4	1968.7	1969.0	1969.4
10°	2023.8	2023.6	2024.2	2026.2	2023.2	2025.2	2027.5	2028.2	2026.5	2026.4	2026.8
12.5°	2086.0	2088.6	2088.9	2090.2	2090.2	2091.9	2092.2	2092.6	2093.8	2094.2	2092.2
15°	2145.4	2147.4	2148.7	2150.0	2148.4	2150.6	2153.3	2153.3	2153.0	2154.3	2152.3
17.5°	2182.0	2183.7	2186.0	2185.7	2186.0	2188.0	2189.6	2190.3	2191.0	2191.0	2191.3
20°	2193.6	2194.6	2195.9	2197.2	2197.9	2199.9	2201.2	2202.2	2202.9	2202.2	2202.5
22.5°	2184.3	2185.6	2188.3	2189.3	2189.6	2192.6	2194.0	2195.0	2195.6	2196.2	2195.2
25°	2168.5	2169.8	2172.4	2173.4	2174.1	2176.8	2178.4	2180.7	2181.4	2181.7	2182.0
27.5°	2157.6	2158.2	2160.2	2161.6	2161.9	2164.9	2167.1	2168.8	2169.1	2169.5	2169.5
30°	2157.9	2158.0	2160.2	2160.6	2160.2	2162.9	2164.2	2165.2	2165.8	2165.8	2166.2
32.5°	2180.8	2179.4	2181.4	2178.4	2178.8	2178.4	2178.0	2179.0	2178.4	2178.7	2177.4
35°	2245.1	2241.5	2238.5	2239.8	2235.2	2228.6	2232.2	2230.6	2227.0	2227.3	2228.3
37.5°	2368.6	2365.0	2368.2	2365.3	2366.2	2357.0	2359.4	2351.0	2348.8	2351.8	2343.2
40°	2587.9	2586.2	2592.5	2589.8	2591.5	2594.1	2596.4	2588.5	2575.4	2587.2	2587.5
42.5°	2891.6	2906.5	2912.4	2920.8	2929.6	2925.6	2933.6	2935.9	2921.4	2932.2	2934.9
45°	3272.7	3288.6	3307.0	3312.6	3327.2	3329.2	3335.1	3336.8	3323.6	3324.9	3327.9
47.5°	3671.9	3701.0	3722.8	3738.0	3753.2	3756.2	3759.4	3753.2	3754.2	3757.2	3757.1
50°	4064.2	4126.3	4164.9	4195.0	4221.1	4207.6	4219.1	4220.1	4224.0	4215.8	4220.7
52.5°	4476.6	4558.9	4623.6	4674.2	4690.0	4738.2	4718.4	4733.5	4743.8	4728.6	4738.5
55°	4879.5	4996.8	5100.8	5174.0	5225.6	5274.4	5282.0	5321.3	5316.7	5331.6	5325.0
57.5°	5262.6	5426.4	5575.0	5683.6	5757.5	5832.2	5882.6	5925.6	5929.9	5972.5	5948.4
60°	5725.8	5954.0	6145.2	6307.0	6416.3	6527.2	6614.8	6685.1	6701.3	6774.2	6750.2
62.5°	6350.9	6629.3	6873.6	7063.5	7306.8	7424.1	7594.5	7700.8	7767.2	7785.4	7819.4
65°	7229.6	7592.2	7914.5	8218.2	8492.0	8681.9	8879.0	9037.6	9164.6	9154.1	9206.3
67.5°	7882.4	8295.8	8683.8	9048.0	9342.6	9587.0	9813.5	9984.9	10098.5	10170.8	10201.5
69°	7814.4	8258.2	8686.2	9075.2	9379.0	9652.0	9872.6	10041.4	10171.4	10250.0	10272.8
70°	7588.2	8044.2	8490.4	8872.0	9181.8	9481.7	9706.2	9894.0	10018.0	10103.8	10117.0
72.5°	6563.6	7057.6	7452.2	7868.6	8166.8	8470.2	8611.5	8844.4	9005.8	9058.0	9057.0
75°	4950.5	5362.6	5709.3	6017.1	6283.9	6489.6	6556.3	6722.0	6856.2	6854.5	6842.0
77.5°	2665.8	2762.9	2892.6	2936.2	3018.4	3017.2	2934.6	2960.6	3036.6	2889.4	2936.9
80°	572.0	563.4	556.0	551.8	549.5	550.4	553.4	534.6	553.1	544.8	509.8
82.5°	199.1	194.5	189.9	193.2	190.8	192.8	192.1	194.4	194.2	193.5	188.9
85°	111.9	108.0	105.6	107.3	103.7	100.4	98.1	97.1	96.8	94.4	93.1
87.5°	42.6	42.2	42.0	40.3	36.4	33.4	31.4	27.4	25.8	23.4	21.8
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)