

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: P144556

Luminaire Tested: **LDRL-RW-F04-E-7050**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P144556  
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-7050  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(4) LIGHTBARS WITH AccuLED OPTICS - RECTANGULAR WIDE  
Light Source: (28) 5000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10177.3 lumens  
Efficiency: N/A  
Efficacy: 99.6 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

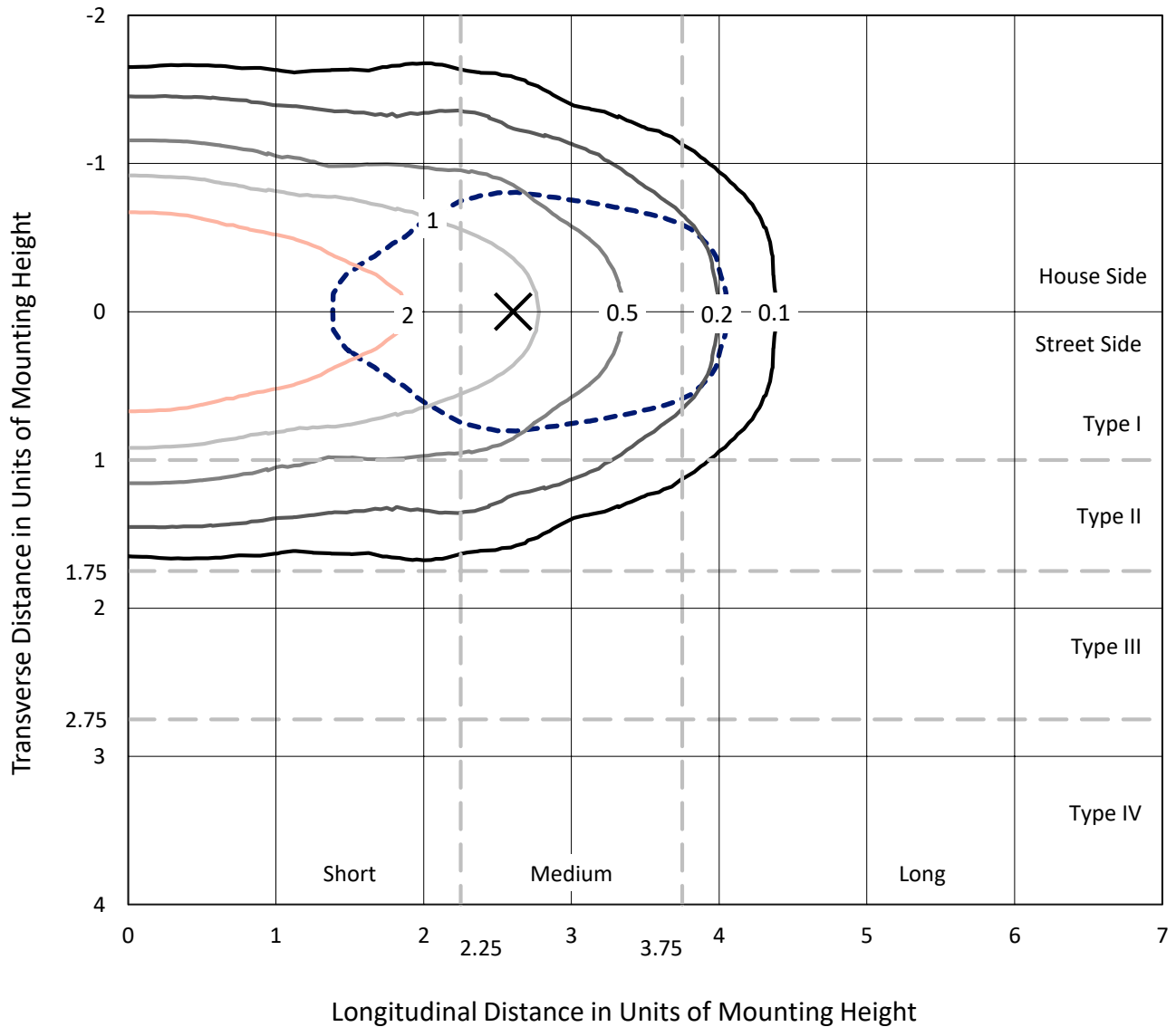
Input Watts (W): 102.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

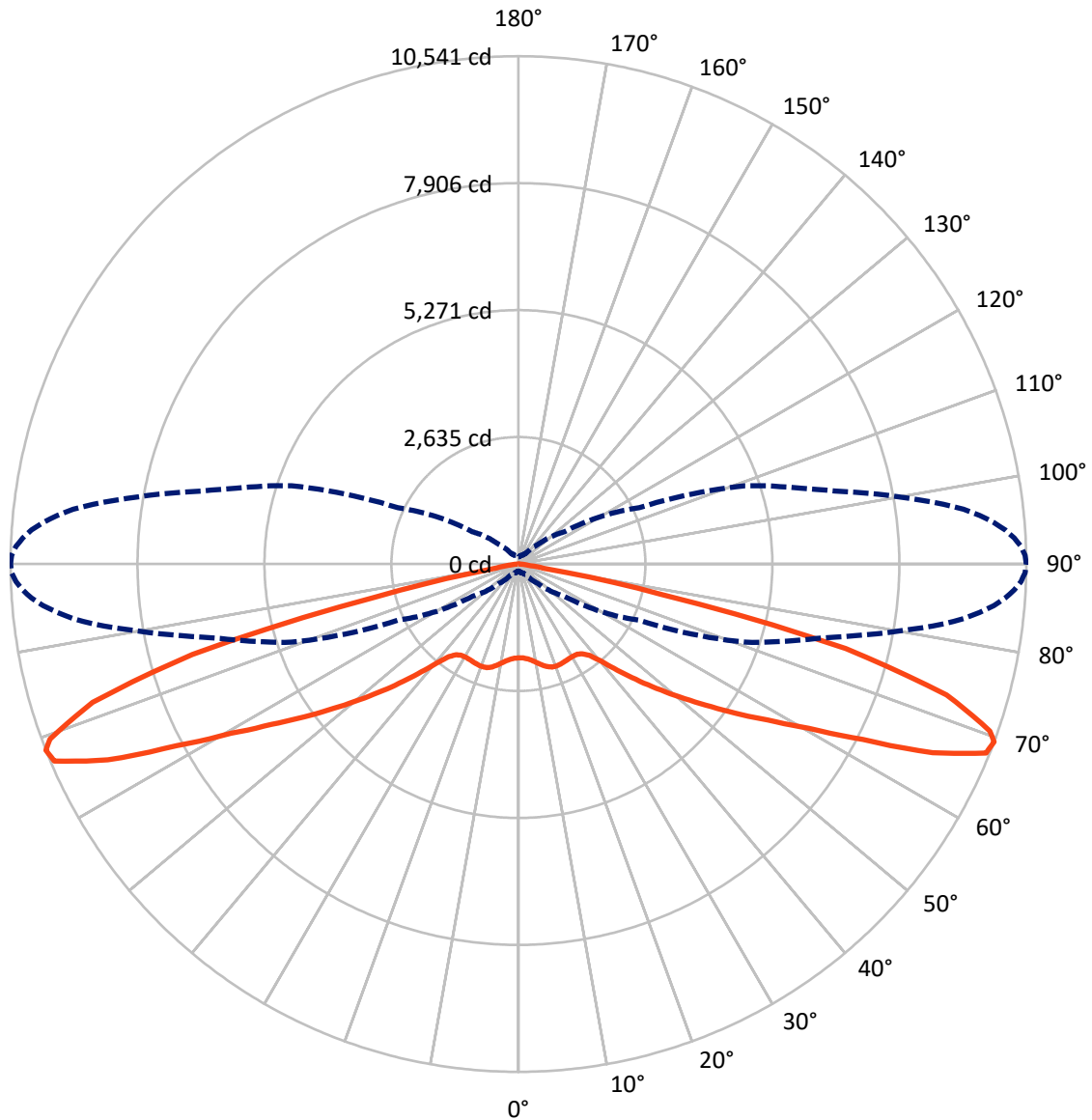
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5 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	5088.7	0.0	5088.7
	% Fixture	50.0	0.0	50.0
<b>Street Side</b>	Lumens	5088.7	0.0	5088.7
	% Fixture	50.0	0.0	50.0
<b>Total</b>	Lumens	10177.3	0.0	10177.3
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	190.7	1.9
10°-20°	600.5	5.9
20°-30°	972.6	9.6
30°-40°	1211.6	11.9
40°-50°	1508.4	14.8
50°-60°	1850.8	18.2
60°-70°	2282.6	22.4
70°-80°	1419.0	13.9
80°-90°	140.9	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°	10177.3	100.0
0°-180°	10177.3	100.0



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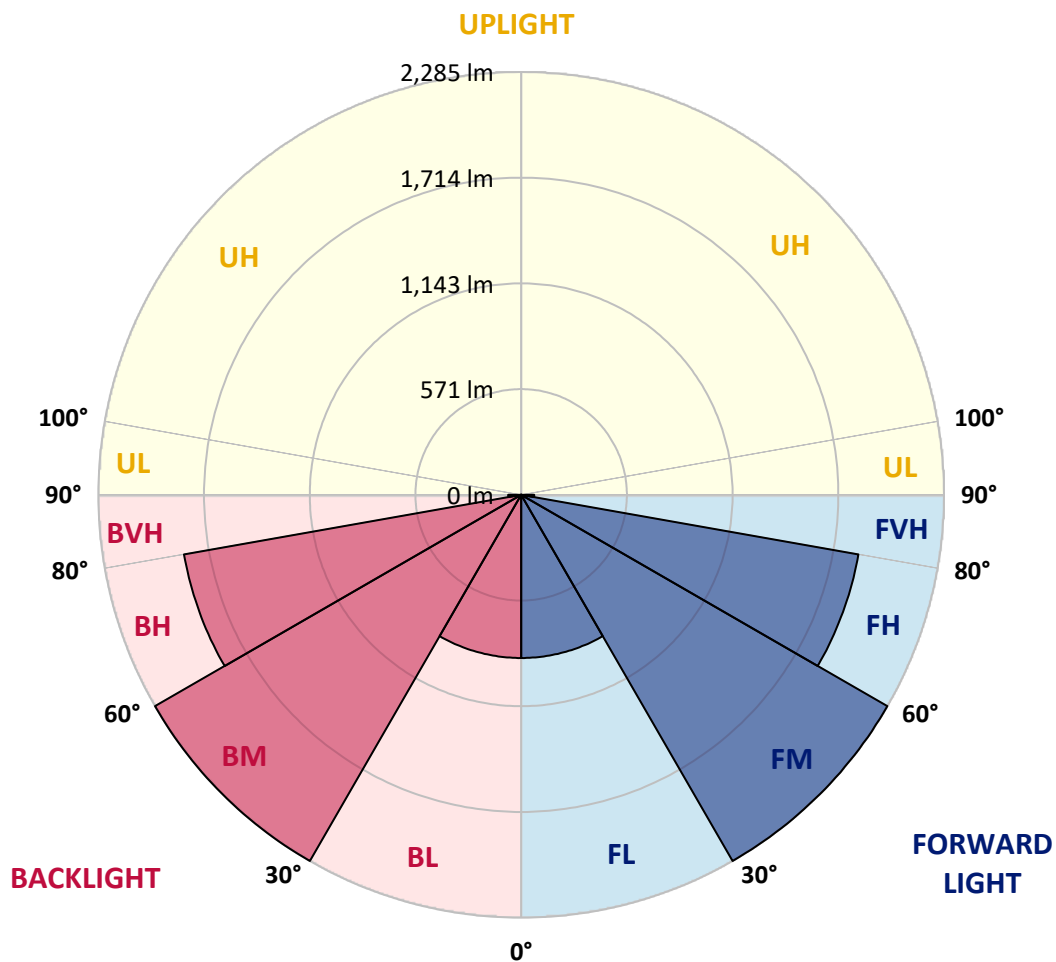
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	881.9	8.7			
FM	(30°-60°)	2285.4	22.5			
FH	(60°-80°)	1850.8	18.2			G2/5000
FVH	(80°-90°)	70.5	0.7			G1/100
BL	(0°-30°)	881.9	8.7	B2/1000		
BM	(30°-60°)	2285.4	22.5	B2/2500		
BH	(60°-80°)	1850.8	18.2	B3/2500		G3/2500
BVH	(80°-90°)	70.5	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°	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0
2.5°	1954.0	1952.0	1955.7	1959.2	1958.1	1958.8	1957.4	1955.8	1955.9	1956.0	1956.1
5°	1969.3	1967.2	1970.6	1973.7	1974.7	1977.0	1977.8	1976.8	1977.2	1977.7	1978.2
7.5°	1987.6	1985.9	1990.3	1994.4	2002.1	2006.2	2010.3	2014.4	2014.7	2015.0	2015.4
10°	2004.8	2003.8	2011.0	2019.8	2032.3	2041.8	2053.3	2064.5	2065.4	2066.3	2067.1
12.5°	2016.0	2016.0	2026.9	2042.8	2064.5	2083.8	2103.4	2122.4	2124.2	2126.0	2127.7
15°	2015.4	2016.7	2033.3	2062.4	2099.8	2134.0	2158.0	2178.6	2180.4	2182.0	2183.8
17.5°	2001.4	2001.8	2025.5	2072.0	2130.2	2181.0	2212.2	2223.4	2224.0	2224.6	2225.2
20°	1962.5	1965.2	1998.8	2066.2	2154.0	2224.0	2253.6	2248.8	2247.8	2246.8	2245.8
22.5°	1895.8	1899.2	1943.9	2034.4	2158.4	2251.8	2282.4	2261.0	2257.8	2254.5	2251.2
25°	1803.0	1808.7	1857.1	1973.0	2128.5	2260.0	2301.0	2266.8	2261.7	2256.6	2251.5
27.5°	1695.5	1698.2	1755.5	1877.2	2059.0	2232.9	2309.4	2278.6	2272.3	2265.9	2259.5
30°	1571.2	1578.3	1637.9	1765.0	1961.2	2169.9	2306.1	2301.6	2294.5	2287.4	2280.3
32.5°	1447.4	1453.6	1512.2	1649.1	1848.3	2082.1	2289.2	2336.6	2330.6	2324.7	2318.7
35°	1322.8	1330.2	1390.6	1537.6	1736.2	1982.5	2262.4	2386.4	2383.8	2381.2	2378.7
37.5°	1213.4	1218.1	1277.4	1430.2	1637.9	1891.4	2227.4	2453.2	2459.0	2464.8	2470.6
40°	1101.9	1106.6	1168.6	1325.2	1547.4	1813.4	2195.2	2537.1	2553.1	2569.0	2584.9
42.5°	994.8	998.8	1058.8	1215.0	1446.8	1746.0	2176.0	2638.8	2669.4	2699.9	2730.5
45°	885.0	887.8	944.0	1096.2	1331.9	1667.4	2170.9	2753.0	2797.1	2841.2	2885.4
47.5°	776.9	783.4	841.4	985.6	1200.8	1554.8	2163.4	2879.4	2937.8	2996.3	3054.8
50°	673.6	680.7	740.3	877.2	1074.1	1421.4	2125.5	3022.7	3094.0	3165.3	3236.6
52.5°	568.2	575.3	635.0	765.8	956.5	1270.9	2019.8	3173.2	3257.9	3342.7	3427.5
55°	455.7	458.4	519.8	650.9	839.0	1144.9	1851.4	3311.0	3413.7	3516.4	3619.0
57.5°	331.4	340.6	401.2	523.2	719.0	1033.4	1637.2	3381.5	3509.6	3637.8	3766.0
60°	239.2	245.4	298.5	394.4	583.1	924.0	1447.1	3330.0	3501.0	3672.1	3843.2
62.5°	189.1	195.8	236.8	297.2	451.0	803.7	1323.1	3188.7	3428.7	3668.6	3908.6
65°	167.4	173.4	211.4	241.2	344.9	680.0	1245.2	3048.8	3372.7	3696.5	4020.4
67.5°	152.9	159.2	192.4	212.8	285.0	600.4	1208.2	2943.1	3317.1	3691.1	4065.1
69°	146.0	151.8	182.3	201.2	268.6	573.3	1168.6	2764.2	3135.0	3505.8	3876.6
70°	142.3	147.4	175.1	194.1	262.2	551.0	1110.0	2551.4	2909.2	3267.0	3624.8
72.5°	131.8	135.2	158.6	176.2	239.9	439.8	837.2	1800.2	2103.6	2406.9	2710.2
75°	116.9	121.0	141.6	157.9	183.0	264.3	524.2	1044.9	1252.8	1460.6	1668.5
77.5°	100.3	105.0	122.0	147.7	147.4	172.1	318.2	600.0	701.0	802.0	903.0
80°	86.1	90.1	105.4	146.0	123.3	136.2	237.2	447.6	488.3	528.9	569.6
82.5°	67.4	70.8	88.4	120.6	98.6	103.7	180.6	407.6	435.2	462.8	490.4
85°	42.4	43.7	64.4	83.4	70.2	62.6	116.2	313.8	333.8	353.9	373.9
87.5°	17.0	20.6	31.2	29.8	30.2	25.1	37.6	113.2	123.4	133.8	144.0
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°	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0
2.5°	1956.3	1956.4	1955.7	1954.7	1955.7	1954.7	1955.0	1956.0	1955.7	1955.8	1955.0
5°	1978.6	1979.1	1979.1	1977.0	1978.1	1978.4	1978.8	1978.1	1978.4	1979.1	1977.8
7.5°	2015.7	2016.0	2017.0	2018.0	2017.4	2017.8	2018.4	2017.8	2016.7	2019.1	2017.4
10°	2068.0	2068.9	2068.9	2072.0	2070.6	2071.6	2074.6	2074.6	2073.0	2075.4	2074.6
12.5°	2129.5	2131.2	2130.9	2130.6	2132.0	2133.0	2136.3	2137.0	2137.7	2141.4	2140.0
15°	2185.4	2187.1	2188.5	2189.2	2191.6	2192.2	2194.2	2195.6	2196.6	2198.0	2198.6
17.5°	2225.8	2226.4	2228.5	2227.5	2230.8	2230.2	2232.6	2233.6	2234.6	2236.2	2237.2
20°	2244.8	2243.8	2244.0	2243.0	2243.0	2243.8	2244.0	2245.4	2244.8	2246.4	2247.8
22.5°	2248.0	2244.8	2242.7	2240.4	2239.3	2237.3	2237.3	2238.0	2235.6	2237.2	2239.3
25°	2246.4	2241.4	2237.6	2233.6	2229.8	2226.4	2224.4	2223.8	2222.0	2222.0	2223.8
27.5°	2253.2	2246.8	2241.4	2234.6	2229.8	2225.1	2220.6	2217.3	2214.0	2213.2	2213.2
30°	2273.2	2266.1	2260.0	2251.6	2244.0	2238.0	2231.9	2227.2	2220.7	2218.0	2215.0
32.5°	2312.7	2306.8	2298.3	2290.9	2282.0	2274.6	2266.4	2259.0	2251.6	2244.8	2242.0
35°	2376.1	2373.5	2368.8	2363.7	2355.2	2345.7	2339.0	2330.1	2321.6	2311.8	2309.1
37.5°	2476.4	2482.2	2479.6	2475.9	2473.4	2470.4	2461.2	2455.5	2449.8	2441.6	2439.9
40°	2600.8	2616.8	2632.7	2643.2	2639.5	2652.0	2654.0	2655.0	2650.0	2656.8	2658.2
42.5°	2761.1	2791.6	2820.4	2841.4	2865.8	2884.1	2907.9	2918.0	2937.3	2957.3	2968.8
45°	2929.5	2973.6	3014.9	3058.0	3100.3	3146.7	3191.8	3223.6	3270.0	3304.6	3326.3
47.5°	3113.3	3171.8	3221.3	3285.6	3347.0	3401.9	3480.8	3544.2	3600.8	3654.6	3711.2
50°	3307.9	3379.2	3440.2	3518.8	3593.3	3679.4	3771.8	3852.5	3941.3	4027.0	4103.2
52.5°	3512.2	3597.0	3679.4	3760.0	3850.4	3944.0	4044.3	4160.8	4267.2	4396.4	4488.8
55°	3721.7	3824.4	3912.1	3996.5	4092.4	4196.1	4315.4	4453.2	4588.5	4729.8	4870.0
57.5°	3894.1	4022.2	4118.2	4216.7	4320.1	4422.8	4570.8	4712.1	4883.6	5057.0	5232.6
60°	4014.2	4185.2	4301.4	4426.2	4545.8	4670.4	4830.0	5008.6	5223.0	5433.1	5671.7
62.5°	4148.6	4388.5	4551.6	4717.8	4863.2	5013.0	5226.5	5432.2	5707.6	5949.5	6249.8
65°	4344.2	4668.1	4908.0	5132.2	5327.5	5531.4	5784.5	6041.6	6356.8	6691.2	7067.7
67.5°	4439.1	4813.1	5127.2	5404.0	5653.4	5913.2	6174.5	6478.8	6833.8	7236.4	7649.8
69°	4247.4	4618.2	4979.4	5259.3	5521.9	5799.4	6079.0	6386.0	6735.6	7153.4	7591.5
70°	3982.6	4340.4	4724.3	5004.8	5269.8	5557.8	5842.4	6152.5	6486.9	6917.2	7360.4
72.5°	3013.5	3316.8	3689.5	3986.0	4264.6	4555.6	4848.6	5117.7	5456.8	5870.9	6279.2
75°	1876.3	2084.1	2419.2	2717.1	2941.0	3190.4	3465.6	3720.3	4060.8	4354.4	4747.0
77.5°	1003.9	1104.9	1300.4	1513.9	1638.6	1760.2	1939.4	2077.7	2221.0	2390.8	2553.1
80°	610.2	650.9	717.6	763.7	746.4	696.6	680.7	630.9	648.8	618.4	596.4
82.5°	518.0	545.6	586.2	614.0	593.6	514.0	423.8	356.8	309.4	264.0	224.3
85°	394.0	414.0	435.0	447.6	446.6	407.0	323.2	250.4	195.1	151.1	125.7
87.5°	154.4	164.6	179.9	177.6	185.4	186.7	146.0	112.8	80.4	54.2	47.4
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°	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0	1949.0
2.5°	1953.7	1953.4	1953.7	1954.8	1954.7	1955.4	1954.7	1955.0	1954.0	1953.0	1953.7
5°	1977.8	1977.1	1977.8	1978.4	1978.4	1977.8	1979.4	1979.4	1978.8	1977.8	1978.1
7.5°	2019.0	2019.4	2018.4	2021.8	2018.8	2019.1	2021.1	2020.8	2020.1	2020.4	2020.8
10°	2076.7	2076.4	2077.0	2079.1	2076.0	2078.0	2080.4	2081.1	2079.4	2079.4	2079.7
12.5°	2140.4	2143.1	2143.4	2144.8	2144.8	2146.5	2146.9	2147.1	2148.6	2148.8	2146.8
15°	2201.4	2203.4	2204.8	2206.2	2204.4	2206.8	2209.5	2209.5	2209.2	2210.5	2208.5
17.5°	2239.0	2240.7	2243.0	2242.7	2243.1	2245.0	2246.8	2247.4	2248.1	2248.1	2248.5
20°	2250.9	2251.9	2253.2	2254.6	2255.2	2257.3	2258.6	2259.6	2260.4	2259.7	2260.0
22.5°	2241.4	2242.8	2245.4	2246.4	2246.8	2249.8	2251.2	2252.2	2252.8	2253.6	2252.5
25°	2225.1	2226.4	2229.2	2230.2	2230.9	2233.6	2235.3	2237.6	2238.4	2238.6	2239.0
27.5°	2213.9	2214.6	2216.6	2218.0	2218.3	2221.4	2223.8	2225.4	2225.8	2226.2	2226.1
30°	2214.3	2214.2	2216.6	2217.0	2216.6	2219.4	2220.7	2221.7	2222.4	2222.4	2222.7
32.5°	2237.6	2236.3	2238.3	2235.2	2235.6	2235.2	2234.9	2236.0	2235.2	2235.6	2234.2
35°	2303.7	2300.0	2297.0	2298.2	2293.6	2286.8	2290.5	2288.8	2285.0	2285.4	2286.4
37.5°	2430.4	2426.7	2430.1	2427.0	2428.0	2418.6	2420.9	2412.4	2410.1	2413.2	2404.3
40°	2655.4	2653.7	2660.2	2657.4	2659.1	2661.8	2664.2	2656.1	2642.6	2654.8	2655.1
42.5°	2967.1	2982.4	2988.4	2997.0	3006.1	3002.0	3010.2	3012.5	2997.6	3008.8	3011.5
45°	3358.2	3374.4	3393.4	3399.2	3414.1	3416.1	3422.2	3423.8	3410.3	3411.6	3414.7
47.5°	3767.8	3797.6	3820.0	3835.6	3851.2	3854.2	3857.6	3851.2	3852.2	3855.2	3855.2
50°	4170.3	4234.0	4273.7	4304.5	4331.3	4317.4	4329.2	4330.2	4334.3	4325.8	4330.9
52.5°	4593.5	4677.9	4744.3	4796.2	4812.4	4861.9	4841.5	4857.1	4867.6	4852.0	4862.2
55°	5006.8	5127.2	5233.9	5309.2	5362.0	5412.1	5419.9	5460.2	5455.5	5470.8	5464.0
57.5°	5399.9	5568.0	5720.4	5832.0	5907.8	5984.4	6036.2	6080.4	6084.7	6128.4	6103.7
60°	5875.3	6109.4	6305.7	6471.6	6583.8	6697.7	6787.4	6859.6	6876.2	6951.1	6926.4
62.5°	6516.7	6802.4	7053.1	7248.0	7497.6	7618.0	7792.8	7901.8	7970.0	7988.6	8023.5
65°	7418.4	7790.4	8121.1	8432.8	8713.7	8908.5	9110.8	9273.4	9403.9	9393.0	9446.6
67.5°	8088.2	8512.4	8910.6	9284.2	9586.6	9837.3	10069.7	10245.6	10362.1	10436.3	10467.8
69°	8018.4	8473.8	8912.9	9312.0	9623.8	9904.0	10130.3	10303.4	10437.0	10517.6	10541.0
70°	7786.3	8254.2	8712.0	9103.7	9421.5	9729.2	9959.6	10152.4	10279.4	10367.5	10381.1
72.5°	6735.0	7241.8	7646.7	8074.0	8380.0	8691.3	8836.4	9075.2	9240.9	9294.4	9293.4
75°	5079.8	5502.6	5858.4	6174.2	6448.0	6659.0	6727.5	6897.6	7035.1	7033.4	7020.6
77.5°	2735.4	2835.0	2968.2	3012.9	3097.2	3095.9	3011.2	3038.0	3115.9	2964.8	3013.6
80°	586.8	578.0	570.6	566.2	563.8	564.8	567.8	548.6	567.6	559.1	523.2
82.5°	204.3	199.6	194.9	198.2	195.8	197.9	197.2	199.6	199.2	198.6	193.8
85°	114.9	110.8	108.4	110.2	106.4	103.0	100.6	99.6	99.2	96.9	95.6
87.5°	43.7	43.3	43.0	41.3	37.3	34.2	32.2	28.2	26.4	24.0	22.4
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)