

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: P146881

Luminaire Tested: **LDRL-T4-E05-E-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P146881
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33696)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-T4-E05-E-7050
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(5) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 SHORT
Light Source: (105) 5000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15076.6 lumens
Efficiency: N/A
Efficacy: 118.4 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

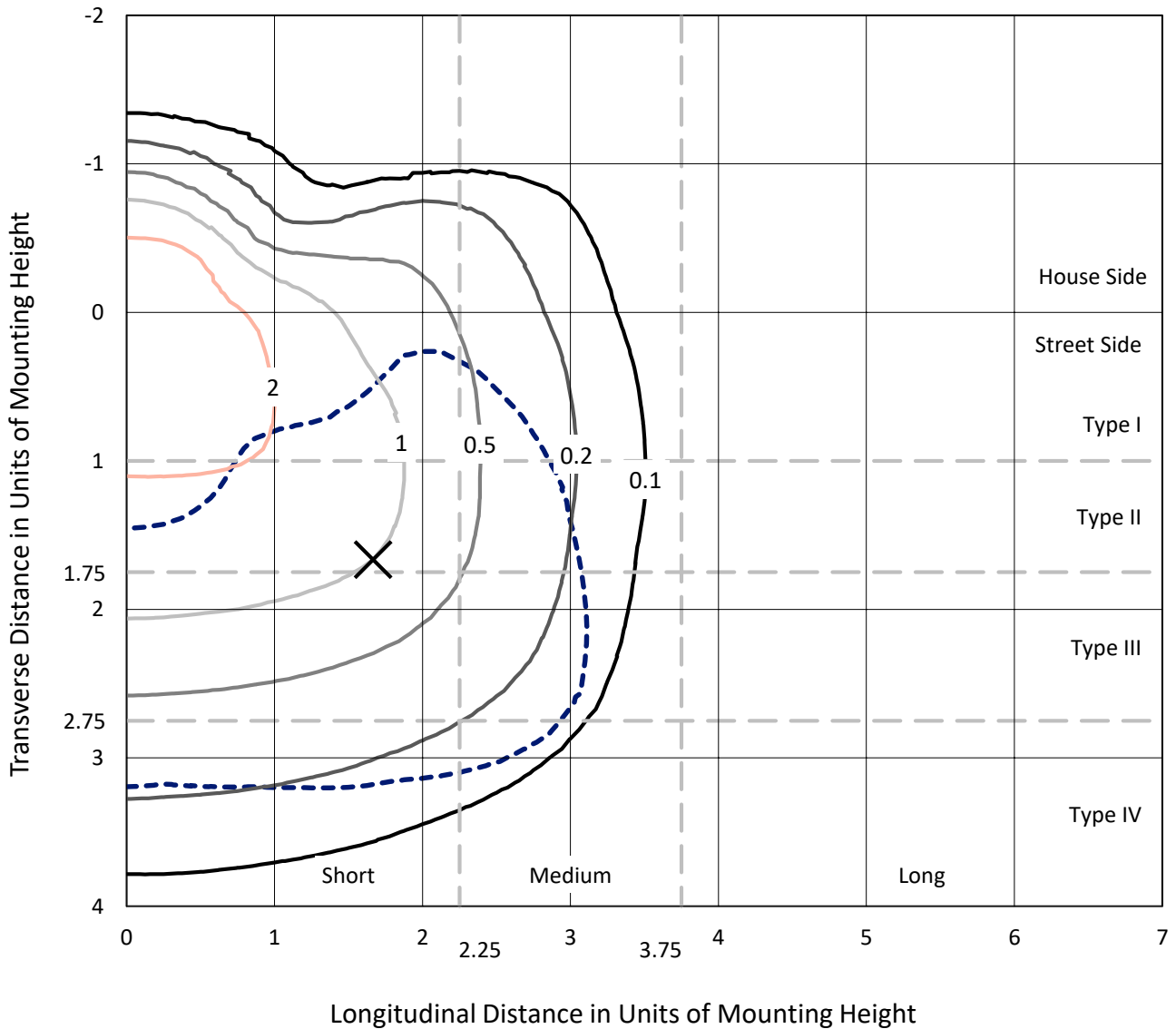
Input Watts (W): 127.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

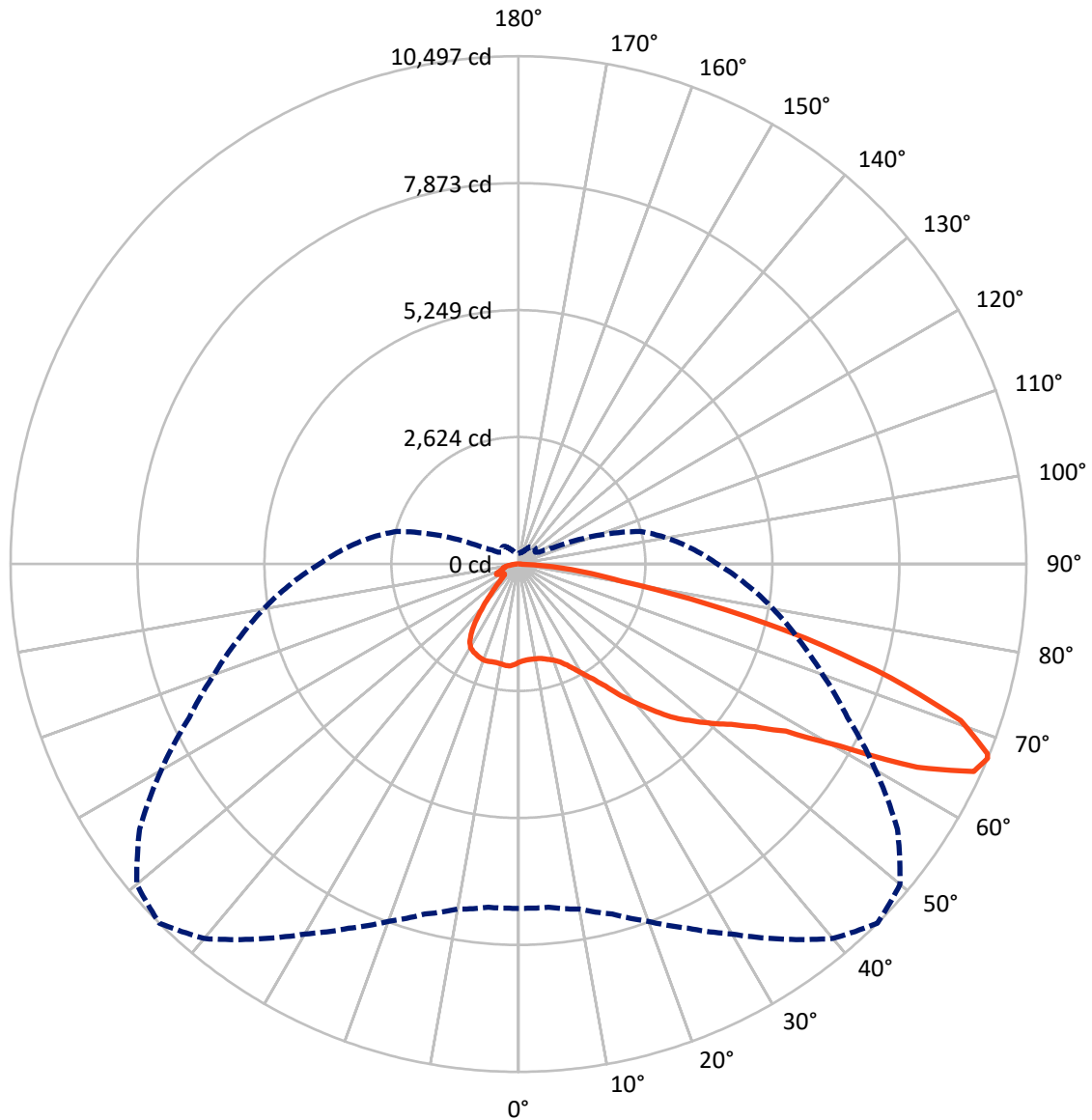
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.3 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3054.9	0.0	3054.9
	% Fixture	20.3	0.0	20.3
Street Side	Lumens	12021.7	0.0	12021.7
	% Fixture	79.7	0.0	79.7
Total	Lumens	15076.6	0.0	15076.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.6	1.3
10°-20°	587.4	3.9
20°-30°	998.3	6.6
30°-40°	1500.4	10.0
40°-50°	1951.0	12.9
50°-60°	2678.6	17.8
60°-70°	4225.5	28.0
70°-80°	2553.1	16.9
80°-90°	386.8	2.6
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°	15076.6	100.0
0°-180°	15076.6	100.0



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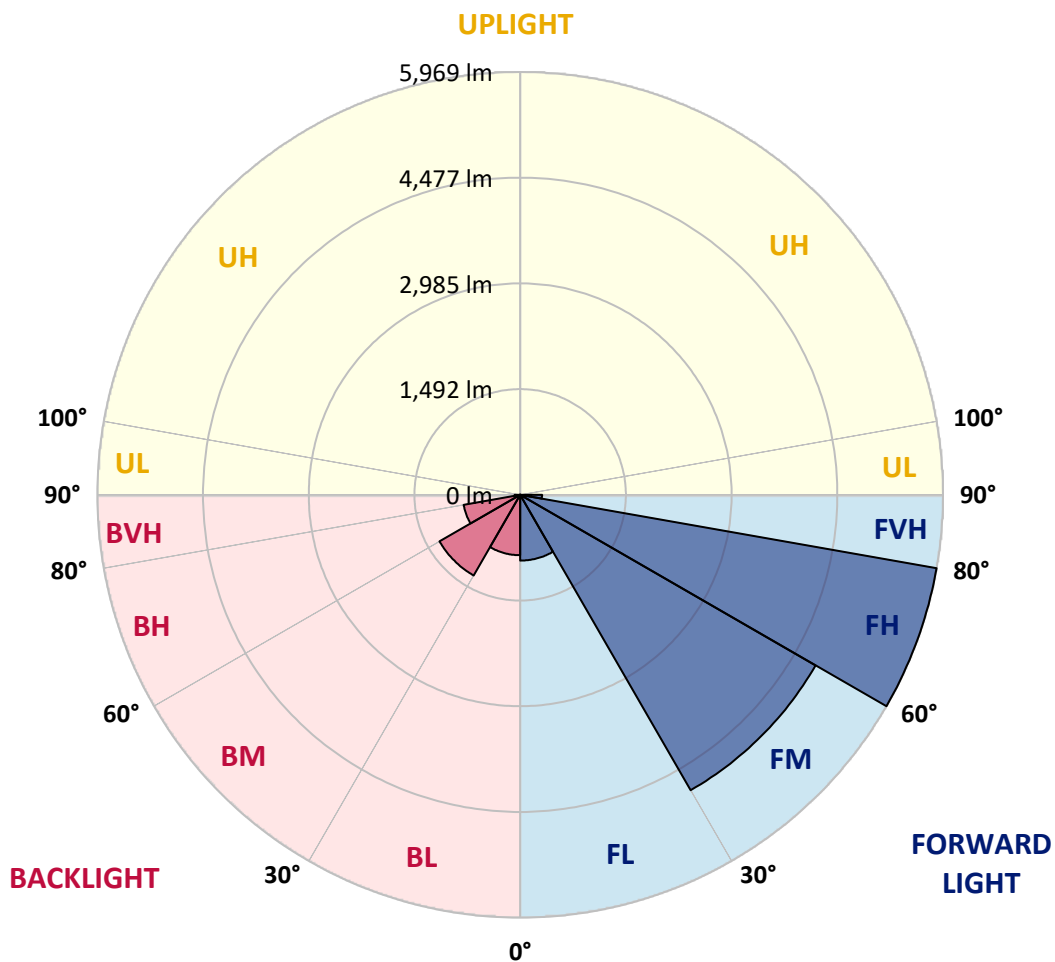
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	928.4	6.2			
FM	(30°-60°)	4815.3	31.9			
FH	(60°-80°)	5969.1	39.6			G3/7500
FVH	(80°-90°)	308.9	2.0			G3/500
BL	(0°-30°)	852.9	5.7	B2/1000		
BM	(30°-60°)	1314.6	8.7	B2/2500		
BH	(60°-80°)	809.5	5.4	B2/1000		G2/1000
BVH	(80°-90°)	77.9	0.5			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°	45°	50°
0°	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6
2.5°	1984.5	1988.6	1985.5	1985.5	1986.5	1987.6	1989.6	1993.7	1994.7	2000.9	2001.9
5°	1944.5	1945.5	1945.5	1946.5	1952.7	1957.8	1962.9	1970.1	1976.3	1987.6	1994.7
7.5°	1930.1	1934.2	1933.2	1935.2	1941.4	1946.5	1952.7	1962.9	1978.3	1987.6	1997.8
10°	1953.7	1956.8	1953.7	1954.7	1955.8	1960.9	1962.9	1970.1	1982.4	1990.6	1999.9
12.5°	2008.1	2008.1	2005.0	2003.0	1999.9	2000.9	1996.8	1995.8	2001.9	2003.0	2004.0
15°	2079.9	2088.1	2077.9	2069.7	2065.6	2061.4	2048.1	2043.0	2041.9	2032.7	2023.5
17.5°	2152.8	2154.8	2148.7	2139.4	2133.3	2124.0	2112.8	2102.5	2090.2	2075.8	2057.3
20°	2233.8	2234.9	2226.6	2213.3	2206.1	2194.8	2180.5	2163.0	2147.6	2125.1	2104.5
22.5°	2346.7	2345.7	2329.3	2318.0	2307.7	2294.4	2273.8	2250.2	2225.6	2198.9	2170.2
25°	2476.0	2476.0	2464.7	2446.2	2441.1	2421.6	2399.0	2371.3	2345.7	2307.7	2272.8
27.5°	2623.8	2624.8	2604.3	2594.0	2582.7	2562.2	2546.8	2525.2	2490.4	2452.4	2416.5
30°	2799.2	2794.1	2777.7	2756.1	2752.0	2735.6	2714.0	2698.7	2655.6	2628.9	2588.9
32.5°	2965.4	2973.7	2969.5	2944.9	2949.0	2932.6	2914.1	2902.9	2857.7	2832.1	2795.1
35°	3213.8	3220.9	3227.1	3217.9	3223.0	3213.8	3198.4	3168.6	3131.7	3097.8	3046.5
37.5°	3406.7	3413.9	3418.0	3440.5	3473.4	3505.2	3519.5	3504.2	3506.2	3454.9	3386.1
40°	3564.7	3582.1	3606.8	3649.9	3715.5	3776.1	3808.9	3834.6	3847.9	3799.7	3710.4
42.5°	3722.7	3741.2	3775.0	3843.8	3934.1	4021.3	4090.1	4169.1	4183.4	4171.1	4095.2
45°	3887.9	3909.5	3951.5	4029.5	4135.2	4249.1	4359.9	4471.8	4528.2	4537.4	4445.1
47.5°	4087.0	4117.8	4156.8	4245.0	4347.6	4475.9	4614.4	4758.1	4846.3	4846.3	4739.6
50°	4335.3	4370.2	4403.0	4491.3	4593.9	4726.2	4886.3	5046.4	5166.4	5173.6	5044.3
52.5°	4683.1	4688.3	4707.8	4788.8	4878.1	5025.9	5177.7	5363.5	5502.0	5508.1	5359.3
55°	5105.9	5105.9	5128.5	5196.2	5279.3	5401.4	5558.4	5764.7	5910.4	5942.2	5751.3
57.5°	5662.0	5682.6	5693.9	5772.9	5829.3	5958.6	6089.9	6314.7	6500.4	6520.9	6327.0
60°	6567.1	6528.1	6590.7	6660.5	6792.8	6887.2	7110.9	7336.7	7573.7	7630.1	7421.8
62.5°	7458.8	7500.8	7577.8	7704.0	7930.8	8142.1	8462.3	8805.0	9173.4	9249.3	9090.3
65°	7514.2	7539.8	7646.5	7864.1	8174.0	8550.5	8991.8	9507.9	10056.9	10341.1	10074.3
67°	7116.0	7123.2	7244.3	7491.6	7863.0	8309.4	8831.7	9461.7	10106.1	10497.1	10298.0
67.5°	6989.8	7003.2	7122.2	7374.6	7750.2	8206.8	8739.3	9386.8	10046.6	10455.0	10275.4
70°	6249.0	6249.0	6377.2	6631.7	6983.7	7429.0	7986.2	8639.8	9357.1	9700.8	9547.9
72.5°	5319.3	5285.5	5430.2	5623.1	5910.4	6299.3	6747.7	7263.8	7803.5	8053.9	7993.4
75°	3866.4	3930.0	4004.9	4147.5	4396.9	4703.7	4966.4	5427.1	5850.9	6127.9	6055.0
77.5°	2109.7	2134.3	2341.6	2426.7	2645.3	2873.1	3161.4	3484.7	3818.1	3992.6	3921.8
80°	1253.9	1302.1	1425.3	1526.8	1644.8	1818.3	2027.6	2098.4	2164.1	2160.0	2031.7
82.5°	792.2	850.6	984.0	1071.3	1132.8	1233.4	1347.3	1436.5	1456.0	1359.6	1210.8
85°	128.3	212.4	555.1	652.6	691.6	746.0	830.1	868.1	810.6	708.0	733.7
87.5°	50.3	60.5	169.3	214.5	226.8	119.0	206.2	242.2	123.1	62.6	141.6
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6
2.5°	2008.1	2013.2	2018.3	2024.5	2026.6	2031.7	2040.9	2039.9	2047.1	2050.2	2055.3
5°	2004.0	2015.3	2023.5	2034.8	2038.9	2050.2	2062.5	2066.6	2075.8	2083.0	2089.2
7.5°	2012.2	2024.5	2034.8	2048.1	2057.3	2066.6	2075.8	2087.1	2095.3	2100.4	2104.5
10°	2015.3	2028.6	2040.9	2052.2	2062.5	2069.7	2079.9	2089.2	2097.4	2100.4	2101.5
12.5°	2016.3	2025.5	2037.8	2050.2	2059.4	2068.6	2075.8	2086.1	2092.2	2093.3	2091.2
15°	2024.5	2025.5	2033.7	2048.1	2057.3	2066.6	2071.7	2076.8	2080.9	2077.9	2074.8
17.5°	2049.1	2041.9	2041.9	2049.1	2054.3	2058.4	2059.4	2058.4	2054.3	2048.1	2043.0
20°	2089.2	2074.8	2063.5	2059.4	2051.2	2040.9	2027.6	2015.3	1999.9	1992.7	1991.7
22.5°	2151.7	2130.2	2109.7	2089.2	2062.5	2032.7	2001.9	1975.3	1953.7	1942.4	1943.4
25°	2258.5	2226.6	2203.0	2167.1	2124.0	2082.0	2041.9	2006.0	1980.4	1959.9	1964.0
27.5°	2402.1	2366.2	2345.7	2304.6	2255.4	2202.0	2154.8	2105.6	2068.6	2043.0	2048.1
30°	2570.4	2560.1	2526.3	2485.2	2439.1	2378.5	2307.7	2233.8	2167.1	2125.1	2116.9
32.5°	2773.6	2762.3	2725.3	2690.4	2630.9	2564.2	2471.9	2354.9	2250.2	2170.2	2135.3
35°	3023.9	2996.2	2951.1	2917.2	2850.5	2764.3	2645.3	2487.3	2328.2	2208.2	2121.0
37.5°	3335.9	3267.1	3192.2	3104.0	3005.5	2900.8	2763.3	2578.6	2381.6	2211.3	2056.3
40°	3633.4	3522.6	3398.5	3258.9	3138.9	3012.6	2870.0	2658.6	2417.5	2189.7	1958.8
42.5°	3964.9	3792.5	3624.2	3432.3	3274.3	3124.5	2961.3	2715.1	2424.7	2131.2	1832.6
45°	4284.0	4062.4	3836.6	3599.6	3398.5	3232.2	3046.5	2763.3	2422.6	2069.7	1707.4
47.5°	4568.2	4303.5	4024.4	3757.6	3523.6	3341.0	3137.8	2829.0	2450.3	2052.2	1624.3
50°	4834.0	4528.2	4200.9	3904.3	3649.9	3463.1	3253.8	2932.6	2535.5	2092.2	1612.0
52.5°	5108.0	4775.5	4401.0	4081.8	3816.1	3599.6	3388.2	3065.0	2654.5	2174.3	1639.7
55°	5465.0	5083.3	4684.2	4330.2	4025.4	3792.5	3548.3	3225.0	2782.8	2269.7	1692.0
57.5°	5996.6	5550.2	5096.7	4716.0	4364.0	4073.6	3805.8	3435.4	2995.2	2413.4	1807.0
60°	6950.8	6456.3	5930.9	5433.2	5027.9	4688.3	4347.6	3887.9	3387.2	2739.7	2070.7
62.5°	8509.5	7825.1	7098.6	6443.9	5886.8	5427.1	4946.9	4394.8	3811.0	3135.8	2469.8
65°	9446.3	8502.3	7577.8	6818.5	6159.7	5570.7	4990.0	4396.9	3831.5	3241.5	2649.4
67°	9562.3	8526.9	7503.9	6695.3	5989.4	5348.1	4718.0	4111.6	3605.7	3111.2	2600.2
67.5°	9527.4	8477.7	7434.1	6617.4	5904.2	5283.4	4663.6	4042.9	3550.3	3055.7	2563.2
70°	8839.9	7812.8	6780.5	5986.3	5302.9	4667.8	4081.8	3460.0	3079.3	2725.3	2299.5
72.5°	7336.7	6535.3	5670.3	5008.4	4418.4	3868.4	3353.3	2833.1	2527.3	2276.9	1977.3
75°	5440.4	4705.7	3974.1	3576.0	3118.3	2678.1	2280.0	1895.2	1777.2	1717.7	1541.2
77.5°	3359.5	2699.7	2148.7	1788.5	1422.2	1114.4	886.6	721.4	752.1	875.3	931.7
80°	1672.6	1235.4	956.3	760.3	614.6	496.6	364.3	266.8	319.1	378.6	428.9
82.5°	1006.6	795.2	629.0	532.5	433.0	334.5	237.0	180.6	200.1	268.8	295.5
85°	624.9	500.7	400.2	334.5	277.0	205.2	134.4	133.4	141.6	178.5	204.2
87.5°	183.7	124.2	98.5	102.6	113.9	94.4	70.8	60.5	74.9	102.6	114.9
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6	2029.6
2.5°	2056.3	2063.5	2066.6	2067.6	2068.6	2074.8	2074.8	2080.9	2083.0	2083.0	2085.0
5°	2095.3	2102.5	2105.6	2106.6	2108.6	2111.7	2110.7	2114.8	2116.9	2115.8	2115.8
7.5°	2109.7	2111.7	2111.7	2114.8	2117.9	2114.8	2112.8	2114.8	2113.8	2114.8	2114.8
10°	2104.5	2102.5	2102.5	2100.4	2103.5	2097.4	2097.4	2099.4	2098.4	2100.4	2103.5
12.5°	2092.2	2091.2	2088.1	2087.1	2091.2	2087.1	2088.1	2091.2	2093.3	2097.4	2102.5
15°	2074.8	2071.7	2071.7	2075.8	2086.1	2089.2	2093.3	2098.4	2099.4	2101.5	2103.5
17.5°	2045.0	2050.2	2062.5	2076.8	2096.3	2103.5	2105.6	2102.5	2092.2	2084.0	2075.8
20°	2004.0	2026.6	2058.4	2089.2	2112.8	2111.7	2098.4	2078.9	2054.3	2036.8	2025.5
22.5°	1969.1	2013.2	2062.5	2099.4	2114.8	2095.3	2064.5	2034.8	2006.0	1980.4	1957.8
25°	1993.7	2035.8	2077.9	2100.4	2099.4	2065.6	2024.5	1991.7	1952.7	1916.8	1878.8
27.5°	2073.8	2099.4	2111.7	2104.5	2083.0	2037.8	1992.7	1946.5	1896.2	1853.1	1809.0
30°	2128.1	2128.1	2115.8	2087.1	2049.1	1998.9	1943.4	1883.9	1824.4	1774.1	1723.9
32.5°	2110.7	2070.7	2034.8	1995.8	1952.7	1898.3	1834.7	1770.0	1702.3	1643.8	1600.7
35°	2034.8	1948.6	1873.7	1818.3	1773.1	1708.5	1634.6	1560.7	1505.3	1465.3	1440.7
37.5°	1899.3	1761.8	1653.1	1585.3	1515.6	1448.9	1363.7	1329.8	1280.6	1256.0	1246.7
40°	1735.1	1534.0	1397.6	1310.3	1236.5	1153.3	1095.9	1074.3	1055.9	1050.7	1046.6
42.5°	1546.3	1294.9	1132.8	1042.5	953.3	892.7	867.1	853.7	850.6	850.6	855.8
45°	1350.4	1051.8	865.0	792.2	718.3	686.5	680.3	674.2	675.2	672.1	674.2
47.5°	1198.5	844.5	652.6	585.9	547.9	537.7	530.5	528.4	528.4	523.3	517.2
50°	1119.5	706.0	512.0	459.7	438.1	431.0	431.0	426.9	418.7	413.5	400.2
52.5°	1099.0	634.1	443.3	398.1	379.7	373.5	367.3	361.2	348.9	337.6	322.2
55°	1115.4	611.6	421.7	379.7	359.1	352.0	346.8	336.6	319.1	302.7	285.3
57.5°	1184.1	625.9	429.9	384.8	366.3	361.2	356.1	340.7	319.1	295.5	276.0
60°	1371.9	693.6	464.8	412.5	397.1	398.1	390.9	371.5	340.7	306.8	278.1
62.5°	1614.1	788.0	510.0	451.5	449.4	459.7	459.7	425.8	375.6	324.2	285.3
65°	1752.6	817.8	516.1	456.6	474.1	503.8	501.8	456.6	387.9	324.2	282.2
67°	1717.7	786.0	490.5	426.9	447.4	481.2	477.1	434.0	369.4	310.9	274.0
67.5°	1690.0	775.7	484.3	419.7	440.2	467.9	467.9	424.8	361.2	306.8	270.9
70°	1487.9	685.4	453.5	392.0	392.0	399.2	394.0	363.2	320.1	282.2	258.6
72.5°	1240.6	599.2	428.9	372.5	353.0	348.9	341.7	320.1	292.4	265.8	245.2
75°	961.5	530.5	409.4	352.0	326.3	317.1	309.9	293.5	271.9	249.3	231.9
77.5°	673.1	454.6	383.8	334.5	306.8	299.6	288.3	269.9	252.4	232.9	216.5
80°	417.6	375.6	334.5	301.7	272.9	262.7	248.3	231.9	217.5	206.2	193.9
82.5°	297.6	276.0	249.3	231.9	202.1	171.4	183.7	184.7	175.5	168.3	165.2
85°	199.1	179.6	166.2	150.8	133.4	120.1	123.1	132.4	133.4	130.3	130.3
87.5°	108.8	92.3	89.3	92.3	80.0	75.9	77.0	85.2	86.2	86.2	87.2
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):

	165°	170°	175°	180°
0°	2029.6	2029.6	2029.6	2029.6
2.5°	2086.1	2089.2	2088.1	2090.2
5°	2117.9	2119.9	2118.9	2119.9
7.5°	2112.8	2116.9	2118.9	2115.8
10°	2104.5	2110.7	2114.8	2114.8
12.5°	2106.6	2116.9	2123.0	2123.0
15°	2104.5	2112.8	2114.8	2114.8
17.5°	2072.7	2072.7	2073.8	2069.7
20°	2017.3	2011.2	2009.1	2001.9
22.5°	1938.3	1923.9	1914.7	1909.6
25°	1848.0	1825.4	1811.1	1802.9
27.5°	1773.1	1753.6	1739.2	1731.0
30°	1690.0	1667.4	1659.2	1653.1
32.5°	1569.9	1548.4	1542.2	1537.1
35°	1414.0	1406.8	1390.4	1379.1
37.5°	1233.4	1224.1	1218.0	1213.9
40°	1044.6	1045.6	1040.5	1031.2
42.5°	855.8	866.0	855.8	853.7
45°	672.1	683.4	683.4	686.5
47.5°	518.2	516.1	520.2	521.3
50°	392.0	385.8	383.8	380.7
52.5°	310.9	303.7	299.6	294.5
55°	274.0	265.8	261.7	260.6
57.5°	261.7	251.4	245.2	244.2
60°	258.6	244.2	236.0	234.0
62.5°	258.6	241.1	231.9	228.8
65°	255.5	238.1	229.8	226.8
67°	251.4	236.0	227.8	225.7
67.5°	249.3	235.0	227.8	224.7
70°	244.2	231.9	223.7	220.6
72.5°	232.9	222.7	214.5	212.4
75°	220.6	211.4	206.2	204.2
77.5°	206.2	198.0	191.9	186.8
80°	184.7	175.5	166.2	164.2
82.5°	157.0	146.7	139.6	138.5
85°	126.2	118.0	109.8	109.8
87.5°	88.2	83.1	78.0	72.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)