

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: P195318

Luminaire Tested: **NAV-AF-06-D-UNV-T2R-7060-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195318
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24459)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-06-D-UNV-T2R-7060-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 5700K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 24871 lumens
Efficiency: N/A
Efficacy: 128.9 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G3

Input Watts (W): 193
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

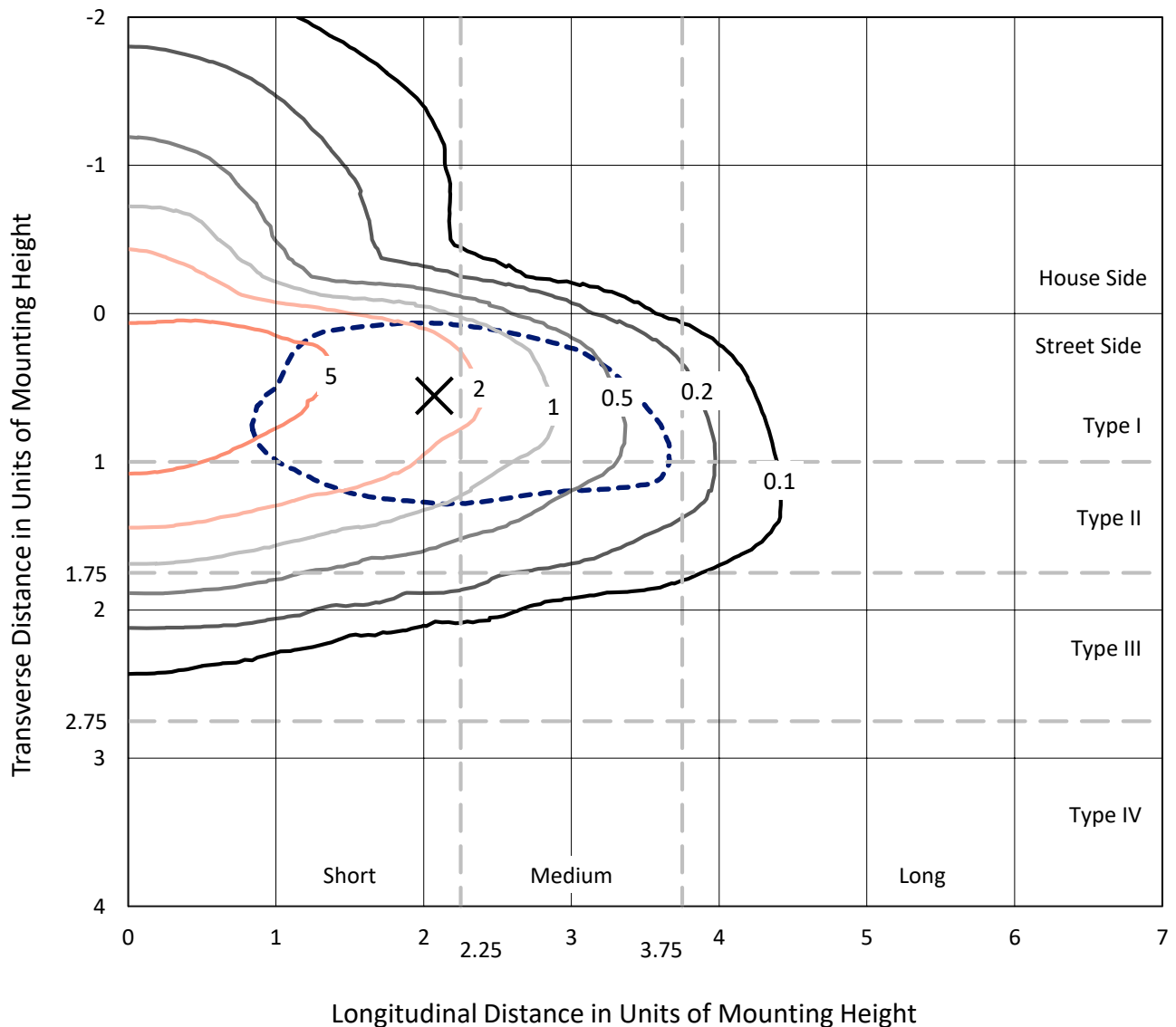


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Iso-Footcandle Lines of Horizontal Illumination

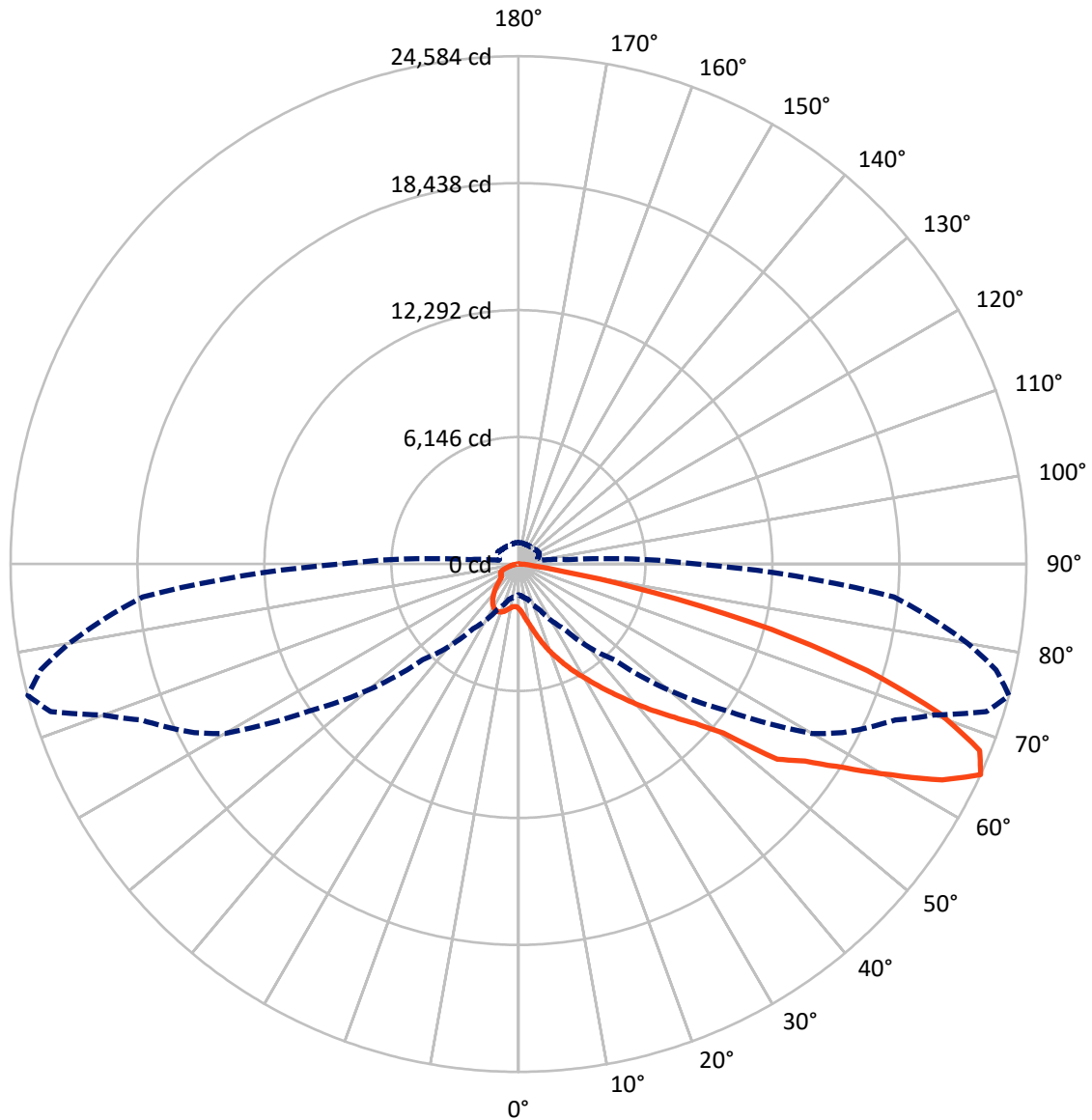
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.9 fc
 Type II - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3737.2	0.0	3737.2
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	21133.8	0.0	21133.8
	% Fixture	85.0	0.0	85.0
Total	Lumens	24871.0	0.0	24871.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	254.4	1.0
10°-20°	971.7	3.9
20°-30°	1961.0	7.9
30°-40°	3330.3	13.4
40°-50°	4644.9	18.7
50°-60°	5693.0	22.9
60°-70°	5356.3	21.5
70°-80°	2348.7	9.4
80°-90°	310.8	1.2
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°	24871.0	100.0
0°-180°	24871.0	100.0



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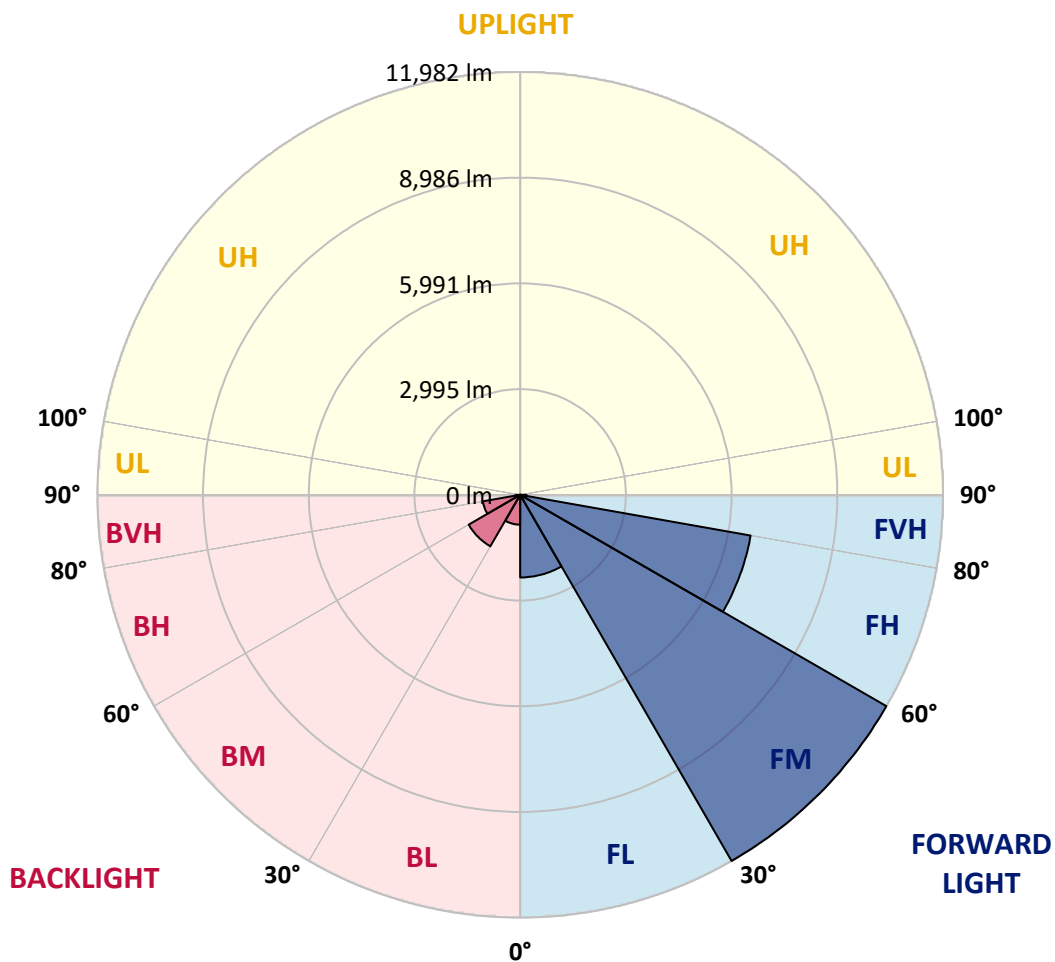
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2341.0	9.4			
FM (30°-60°)	11981.7	48.2			
FH (60°-80°)	6630.8	26.7			G3/7500
FVH (80°-90°)	180.2	0.7			G2/225
BL (0°-30°)	846.0	3.4	B2/1000		
BM (30°-60°)	1686.5	6.8	B2/2500		
BH (60°-80°)	1074.1	4.3	B3/2500		G3/2500
BVH (80°-90°)	130.6	0.5			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9
2.5°	2713.4	2681.8	2684.9	2640.6	2575.8	2504.6	2446.0	2414.4	2387.5	2379.6	2335.3
5°	3548.8	3509.3	3495.0	3393.8	3241.9	3061.5	2882.7	2813.1	2756.1	2721.3	2635.9
7.5°	4232.3	4211.7	4192.8	4099.4	3949.1	3718.1	3430.2	3327.3	3232.4	3128.0	3025.1
10°	4697.5	4689.6	4681.7	4616.8	4491.8	4290.9	3980.7	3868.4	3749.8	3616.8	3482.4
12.5°	5048.7	5048.7	5055.0	5001.2	4925.3	4770.3	4488.6	4384.2	4264.0	4124.7	3971.3
15°	5284.5	5290.8	5324.0	5339.8	5300.3	5200.6	4953.8	4862.0	4748.1	4610.5	4458.6
17.5°	5441.1	5453.8	5502.8	5555.0	5605.6	5570.8	5387.3	5301.9	5199.0	5072.4	4930.1
20°	5805.0	5789.2	5790.8	5774.9	5849.3	5876.2	5774.9	5703.7	5621.5	5506.0	5376.2
22.5°	6569.2	6539.1	6461.6	6263.8	6173.6	6164.1	6104.0	6066.1	6002.8	5930.0	5800.2
25°	7566.0	7531.1	7377.7	7051.7	6782.8	6534.4	6423.6	6399.9	6358.8	6309.7	6216.4
27.5°	8595.9	8558.0	8360.2	7948.8	7597.6	7096.0	6751.1	6719.5	6681.5	6660.9	6616.6
30°	9502.5	9461.4	9266.8	8849.1	8425.1	7827.0	7192.6	7081.8	7016.9	7023.3	6998.0
32.5°	10298.4	10262.0	10043.6	9618.0	9187.7	8607.0	7765.3	7592.8	7447.3	7393.5	7412.5
35°	10966.0	10932.8	10693.9	10265.1	9831.6	9349.1	8502.6	8243.1	8005.8	7857.1	7839.7
37.5°	11358.4	11339.4	11171.7	10807.8	10377.5	10023.1	9328.5	9040.5	8690.9	8474.1	8379.2
40°	11336.3	11356.8	11328.4	11163.8	10830.0	10572.1	10189.2	9904.4	9562.7	9239.9	9046.9
42.5°	11013.5	11042.0	11170.1	11255.6	11165.4	11008.8	10940.7	10728.7	10421.8	10080.0	9812.6
45°	10570.5	10595.8	10761.9	11070.5	11328.4	11372.7	11598.9	11492.9	11233.4	10942.3	10648.0
47.5°	9891.7	9940.8	10133.8	10624.3	11238.2	11665.4	12151.1	12200.1	12049.8	11809.3	11534.0
50°	8909.2	8974.1	9244.6	9942.4	10896.4	11966.0	12972.2	13158.9	13098.8	12855.2	12576.7
52.5°	7903.0	7967.8	8328.6	9070.6	10345.8	12089.4	13780.7	14258.5	14603.5	14855.0	14904.1
55°	6855.6	6928.3	7323.9	8178.3	9611.7	11932.8	14358.2	14900.9	15250.6	15513.2	15619.2
57.5°	5673.7	5755.9	6138.8	7002.7	8573.8	11303.0	15000.6	15769.5	16290.1	16695.1	16922.9
60°	4317.8	4420.6	4817.7	5687.9	7210.0	10097.4	15287.0	16424.5	17252.0	17859.6	18220.3
62.5°	2737.2	2841.6	3254.5	4158.0	5657.9	8450.4	14476.9	16136.6	17547.9	18446.6	19107.9
65°	1493.6	1539.5	1768.9	2449.2	3814.6	6556.5	12423.2	14380.4	16413.5	17687.1	18702.9
67.5°	1120.2	1126.5	1150.2	1316.4	2031.5	4426.9	9713.0	11505.6	13763.3	15402.5	16616.0
70°	980.9	980.9	984.1	985.7	1102.8	2398.6	6580.3	8230.5	10299.9	11958.1	13465.9
72.5°	879.7	870.2	867.0	848.0	863.9	1229.3	3582.0	5064.5	6809.7	8670.3	10076.9
75°	759.4	757.9	757.9	738.9	748.4	865.4	1553.7	2430.2	3783.0	5515.5	6899.9
77.5°	656.6	645.5	647.1	636.0	666.1	662.9	737.3	1001.5	1647.0	2897.0	4045.6
80°	541.1	533.2	537.9	531.6	579.1	490.5	496.8	612.3	818.0	1270.5	1791.0
82.5°	400.3	403.5	433.5	430.4	487.3	330.7	363.9	457.2	550.6	632.9	688.2
85°	234.2	238.9	311.7	327.5	357.6	174.0	223.1	272.1	306.9	340.2	354.4
87.5°	25.3	33.2	174.0	178.8	159.8	52.2	90.2	113.9	121.8	129.7	113.9
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9
2.5°	2321.0	2300.5	2278.3	2265.7	2243.5	2224.5	2189.7	2161.2	2129.6	2107.5	2098.0
5°	2593.2	2544.1	2491.9	2454.0	2406.5	2365.3	2286.2	2191.3	2161.2	2098.0	2082.1
7.5°	2947.6	2859.0	2770.4	2697.6	2615.3	2547.3	2414.4	2243.5	2221.4	2120.1	2098.0
10°	3363.7	3234.0	3102.6	2990.3	2870.1	2765.6	2569.4	2329.0	2305.2	2175.5	2153.3
12.5°	3828.9	3670.6	3501.3	3333.6	3191.2	3044.1	2776.7	2461.9	2423.9	2270.4	2240.4
15°	4308.3	4137.4	3941.2	3738.7	3563.1	3368.4	3031.4	2635.9	2566.3	2385.9	2344.8
17.5°	4781.3	4596.2	4390.5	4164.3	3958.6	3726.0	3306.7	2830.5	2710.3	2499.8	2447.6
20°	5238.6	5050.3	4833.5	4612.0	4355.7	4089.9	3588.4	3022.0	2838.4	2594.8	2526.7
22.5°	5654.7	5493.3	5276.5	5021.8	4762.3	4463.3	3874.7	3213.4	2950.8	2667.5	2580.5
25°	6092.9	5945.8	5730.6	5485.4	5183.2	4850.9	4170.6	3395.3	3040.9	2707.1	2599.5
27.5°	6536.0	6409.4	6206.9	5949.0	5624.6	5256.0	4471.2	3563.1	3113.7	2719.8	2590.0
30°	7009.0	6910.9	6724.2	6436.3	6108.8	5700.6	4798.7	3727.6	3159.6	2702.4	2547.3
32.5°	7456.8	7453.6	7287.5	6988.5	6635.6	6186.3	5143.6	3893.7	3183.3	2653.3	2472.9
35°	7921.9	7986.8	7861.8	7577.0	7205.2	6706.8	5524.9	4070.9	3184.9	2566.3	2376.4
37.5°	8450.4	8565.9	8510.5	8240.0	7849.2	7300.1	5972.7	4270.3	3175.4	2446.0	2235.6
40°	9051.6	9209.8	9208.2	8980.4	8562.7	7964.7	6493.2	4493.4	3153.3	2295.7	2069.5
42.5°	9739.9	9928.1	9980.3	9755.7	9333.2	8690.9	7089.7	4738.6	3118.5	2147.0	1893.9
45°	10527.8	10693.9	10792.0	10583.2	10159.1	9482.0	7774.8	5017.1	3075.7	1955.6	1692.9
47.5°	11371.1	11564.1	11711.2	11532.5	11080.0	10383.8	8586.5	5376.2	3059.9	1737.2	1476.2
50°	12416.9	12616.2	12934.3	12853.6	12605.2	12045.1	10303.1	6224.3	3066.3	1530.0	1294.2
52.5°	15011.7	15468.9	15870.8	15692.0	15101.8	14141.5	11698.6	6695.8	2933.3	1360.7	1167.6
55°	15794.8	16313.8	16907.1	16832.7	16266.3	15298.0	12801.4	7089.7	2805.2	1237.3	1085.4
57.5°	17165.0	17777.3	18606.4	18590.5	17896.0	16805.8	14220.6	7561.2	2749.8	1166.1	1044.2
60°	18615.9	19395.9	20541.4	20720.1	19965.4	18831.0	15897.7	8140.3	2757.7	1126.5	1020.5
62.5°	19675.9	20819.8	22485.8	23020.6	22131.4	20881.5	17638.1	8719.4	2710.3	1080.6	992.0
65°	19740.8	21387.8	23751.6	24583.8	23683.6	22077.6	18252.0	8605.4	2425.5	1018.9	946.1
67.5°	18158.6	20304.0	23175.7	24088.6	23167.8	21340.4	17176.1	7523.2	1971.4	911.3	867.0
70°	15124.0	17614.3	20595.1	21612.5	20851.5	19001.9	14948.4	6009.1	1473.0	768.9	748.4
72.5°	11687.5	14010.1	16717.2	17658.6	17076.4	15449.9	11790.4	4379.5	1052.1	623.4	607.6
75°	8355.5	10333.2	12298.2	12657.4	12083.1	10589.5	7649.8	2735.6	737.3	511.0	488.9
77.5°	5173.7	6460.0	7165.7	6703.7	5971.1	4963.3	3113.7	1351.2	490.5	416.1	394.0
80°	2295.7	2694.4	2515.7	2241.9	1770.5	1455.6	950.9	599.6	316.4	321.2	308.5
82.5°	772.1	816.4	794.3	789.5	712.0	623.4	403.5	259.5	177.2	205.7	200.9
85°	376.6	394.0	395.5	409.8	356.0	276.9	109.2	102.8	75.9	110.8	115.5
87.5°	113.9	115.5	104.4	113.9	91.8	63.3	20.6	28.5	14.2	26.9	26.9
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9
2.5°	2080.6	2074.2	2063.2	2050.5	2047.3	2031.5	2026.8	2018.9	2014.1	2006.2	1999.9
5°	2061.6	2050.5	2037.8	2023.6	2023.6	2001.4	1992.0	1982.5	1982.5	1968.2	1961.9
7.5°	2080.6	2066.3	2052.1	2039.4	2044.2	2018.9	2009.4	1999.9	1998.3	1984.0	1977.7
10°	2134.4	2120.1	2102.7	2090.1	2085.3	2064.7	2053.7	2039.4	2029.9	2020.4	2010.9
12.5°	2216.6	2197.6	2175.5	2148.6	2137.5	2120.1	2102.7	2083.7	2061.6	2052.1	2037.8
15°	2314.7	2283.1	2253.0	2219.8	2189.7	2172.3	2148.6	2118.5	2088.5	2075.8	2056.8
17.5°	2395.4	2362.2	2319.5	2279.9	2226.1	2211.9	2178.7	2142.3	2093.2	2088.5	2060.0
20°	2463.4	2412.8	2360.6	2313.1	2230.9	2223.0	2181.8	2139.1	2069.5	2069.5	2034.7
22.5°	2501.4	2431.8	2370.1	2306.8	2204.0	2197.6	2150.2	2099.5	2014.1	2017.3	1974.6
25°	2507.7	2423.9	2346.4	2270.4	2151.8	2140.7	2080.6	2025.2	1931.8	1925.5	1881.2
27.5°	2482.4	2384.3	2294.2	2202.4	2074.2	2050.5	1984.0	1917.6	1825.8	1810.0	1762.5
30°	2423.9	2308.4	2207.1	2101.1	1966.6	1928.7	1859.1	1791.0	1697.7	1677.1	1632.8
32.5°	2330.5	2199.2	2086.9	1980.9	1832.2	1784.7	1715.1	1647.0	1556.9	1541.0	1499.9
35°	2207.1	2060.0	1941.3	1829.0	1680.3	1631.2	1564.8	1504.6	1422.4	1416.0	1387.6
37.5°	2052.1	1898.6	1772.0	1664.4	1523.6	1498.3	1430.3	1386.0	1318.0	1324.3	1310.0
40°	1876.5	1719.8	1599.6	1504.6	1382.8	1360.7	1319.5	1286.3	1227.8	1245.2	1246.8
42.5°	1699.3	1542.6	1433.4	1348.0	1243.6	1229.3	1200.9	1181.9	1137.6	1172.4	1186.6
45°	1498.3	1352.8	1259.4	1194.5	1117.0	1117.0	1102.8	1101.2	1071.1	1120.2	1134.4
47.5°	1303.7	1189.8	1124.9	1085.4	1031.6	1056.9	1052.1	1064.8	1042.7	1093.3	1105.9
50°	1156.6	1077.5	1037.9	1018.9	980.9	1020.5	1030.0	1047.4	1028.4	1072.7	1082.2
52.5°	1063.2	1011.0	988.9	984.1	957.2	1006.3	1022.1	1037.9	1015.8	1056.9	1055.3
55°	1011.0	976.2	968.3	977.8	957.2	1004.7	1020.5	1031.6	1012.6	1041.1	1039.5
57.5°	992.0	973.0	977.8	992.0	977.8	1017.3	1025.2	1037.9	1018.9	1031.6	1037.9
60°	990.4	990.4	1009.4	1028.4	1018.9	1047.4	1052.1	1050.6	1033.2	1034.7	1037.9
62.5°	980.9	1004.7	1036.3	1066.4	1063.2	1098.0	1101.2	1080.6	1066.4	1050.6	1045.8
65°	950.9	990.4	1036.3	1077.5	1083.8	1137.6	1143.9	1123.3	1113.8	1087.0	1066.4
67.5°	884.4	935.1	988.9	1039.5	1050.6	1123.3	1137.6	1145.5	1150.2	1132.8	1105.9
70°	772.1	824.3	879.7	938.2	954.1	1034.7	1064.8	1101.2	1129.7	1155.0	1145.5
72.5°	628.1	675.6	723.1	776.8	800.6	884.4	924.0	987.3	1031.6	1096.4	1123.3
75°	498.4	526.9	555.3	588.6	607.6	689.8	738.9	814.8	874.9	965.1	1025.2
77.5°	392.4	406.6	420.9	435.1	443.0	488.9	528.4	604.4	674.0	787.9	876.5
80°	302.2	310.1	311.7	316.4	313.3	335.4	349.7	395.5	455.7	568.0	672.4
82.5°	194.6	200.9	204.1	212.0	196.2	224.7	234.2	238.9	270.6	352.8	427.2
85°	109.2	110.8	112.3	115.5	93.3	121.8	123.4	115.5	112.3	145.6	164.5
87.5°	26.9	25.3	26.9	26.9	11.1	25.3	25.3	17.4	12.7	23.7	19.0
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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	135°	145°	155°	165°	175°	180°
0°	2154.9	2154.9	2154.9	2154.9	2154.9	2154.9
2.5°	1985.6	1982.5	1984.0	1976.1	1973.0	1974.6
5°	1954.0	1947.7	1947.7	1942.9	1936.6	1936.6
7.5°	1968.2	1955.6	1950.8	1941.3	1931.8	1933.4
10°	1990.4	1968.2	1952.4	1938.2	1927.1	1927.1
12.5°	2004.6	1965.1	1941.3	1922.3	1909.7	1909.7
15°	2007.8	1947.7	1912.8	1892.3	1879.6	1879.6
17.5°	1988.8	1912.8	1868.5	1841.6	1827.4	1830.6
20°	1941.3	1848.0	1795.8	1767.3	1753.0	1754.6
22.5°	1867.0	1759.4	1699.3	1666.0	1651.8	1651.8
25°	1765.7	1648.6	1583.8	1556.9	1544.2	1544.2
27.5°	1650.2	1530.0	1473.0	1452.4	1444.5	1444.5
30°	1520.5	1420.8	1379.7	1365.4	1352.8	1352.8
32.5°	1411.3	1340.1	1325.9	1306.9	1273.6	1272.1
35°	1324.3	1316.4	1305.3	1248.3	1200.9	1194.5
37.5°	1276.8	1324.3	1254.7	1156.6	1118.6	1117.0
40°	1251.5	1295.8	1175.6	1128.1	1123.3	1123.3
42.5°	1191.4	1223.0	1170.8	1143.9	1143.9	1145.5
45°	1128.1	1155.0	1181.9	1158.2	1166.1	1167.6
47.5°	1083.8	1137.6	1181.9	1161.3	1177.1	1186.6
50°	1042.7	1121.8	1158.2	1158.2	1175.6	1177.1
52.5°	1033.2	1099.6	1136.0	1153.4	1155.0	1147.1
55°	1034.7	1082.2	1118.6	1140.7	1131.3	1131.3
57.5°	1033.2	1072.7	1104.4	1112.3	1117.0	1117.0
60°	1034.7	1060.1	1085.4	1082.2	1098.0	1098.0
62.5°	1039.5	1042.7	1055.3	1052.1	1075.9	1075.9
65°	1050.6	1020.5	1012.6	1015.8	1044.2	1042.7
67.5°	1071.1	990.4	965.1	966.7	1007.8	1001.5
70°	1101.2	949.3	911.3	901.8	971.5	960.4
72.5°	1110.7	901.8	841.7	832.2	873.4	841.7
75°	1066.4	863.9	767.4	735.7	718.3	708.8
77.5°	950.9	840.1	689.8	623.4	596.5	590.2
80°	787.9	791.1	588.6	509.5	591.7	590.2
82.5°	594.9	683.5	471.5	441.4	428.8	357.6
85°	288.0	514.2	362.3	303.8	181.9	172.5
87.5°	25.3	215.2	208.8	136.1	61.7	58.5
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)