

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: P196283

Luminaire Tested: **NAV-AF-05-D-UNV-T2R-800**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196283  
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-05-D-UNV-T2R-800  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(5) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II  
ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 26042.3 lumens  
Efficiency: N/A  
Efficacy: 124.0 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

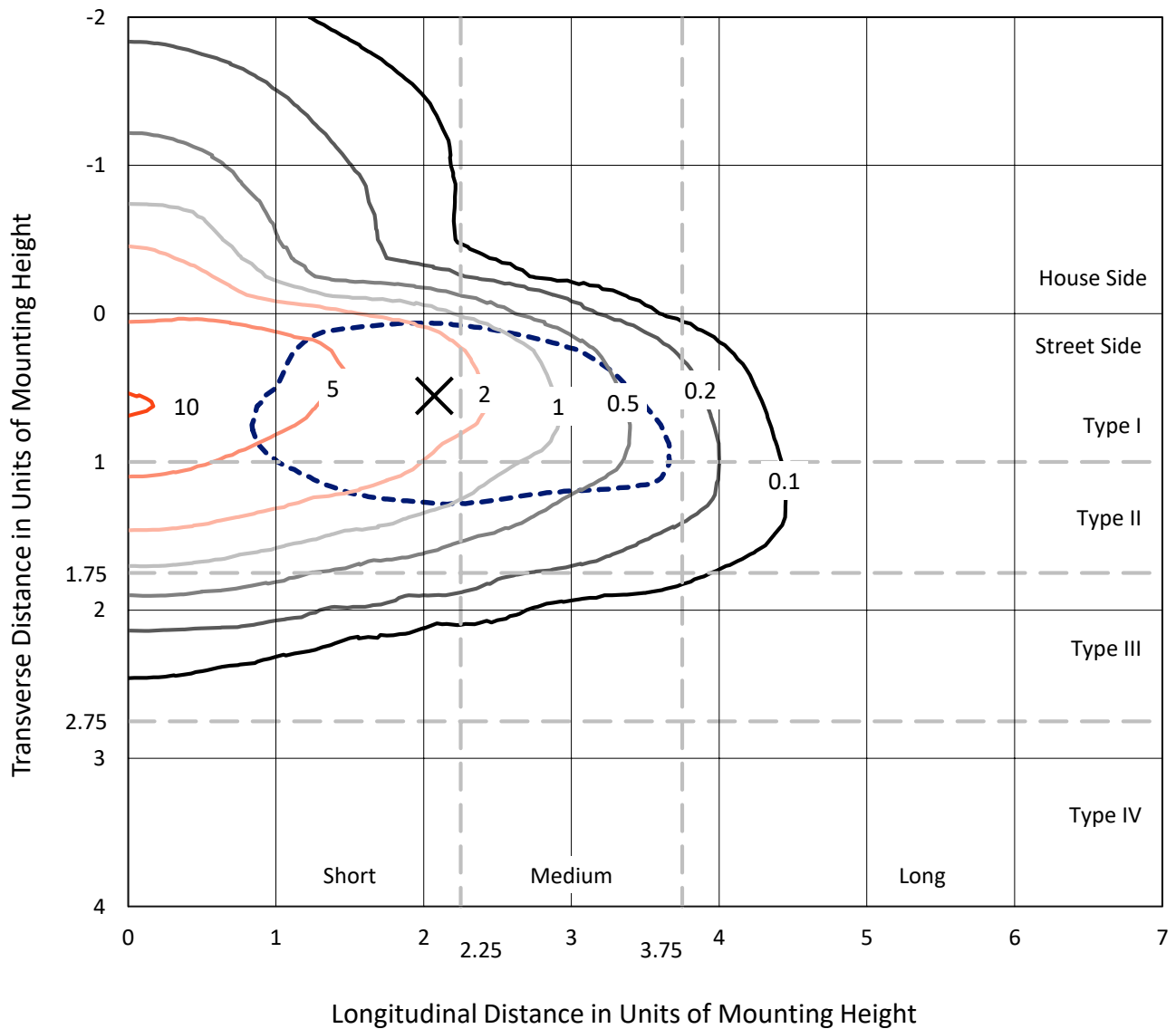
Input Watts (W): 210  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

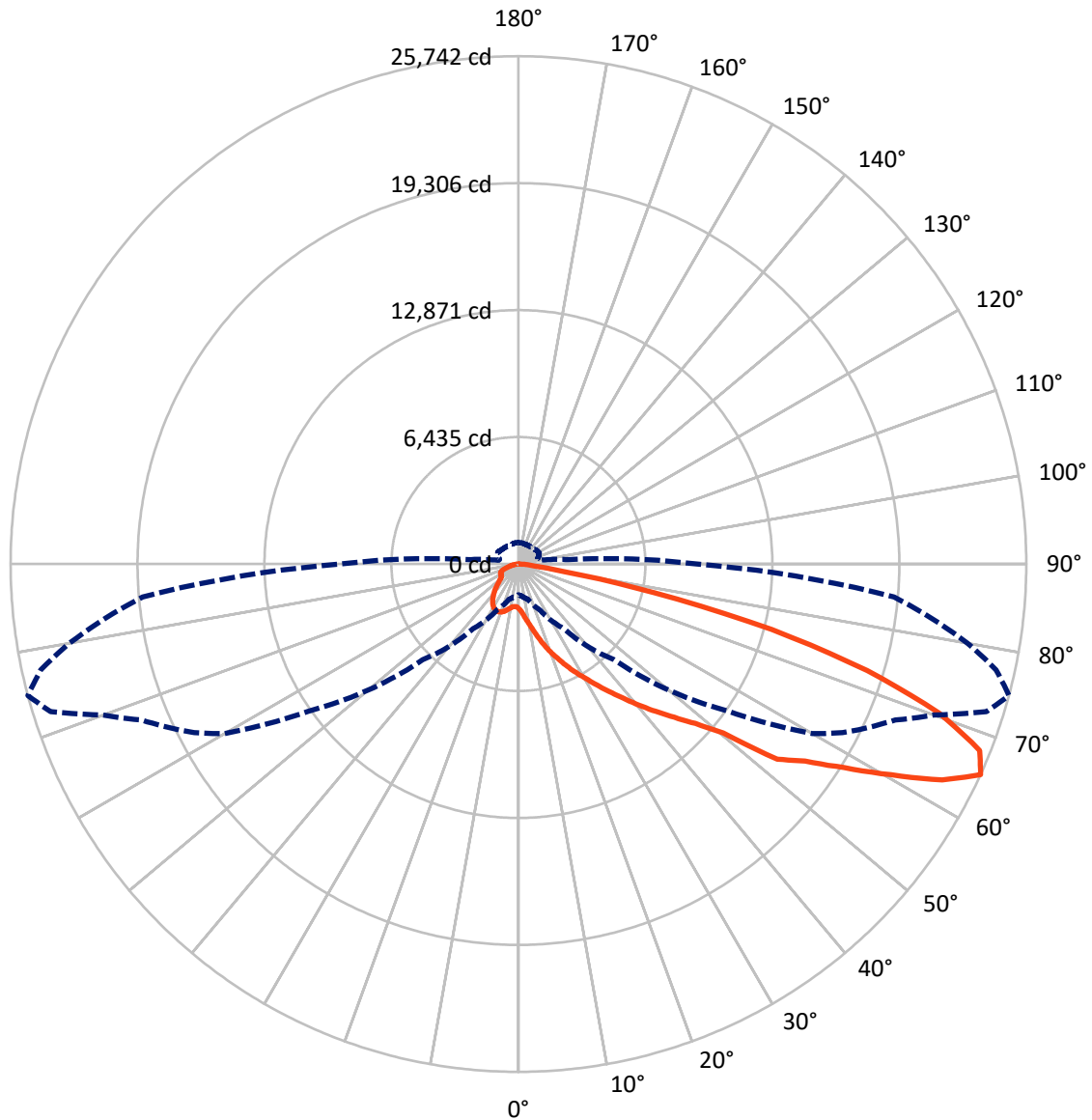
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10.4 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
<b>House Side</b>	Lumens	3913.3	0.0	3913.3
	% Fixture	15.0	0.0	15.0
<b>Street Side</b>	Lumens	22129.0	0.0	22129.0
	% Fixture	85.0	0.0	85.0
<b>Total</b>	Lumens	26042.3	0.0	26042.3
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	266.4	1.0
10°-20°	1017.5	3.9
20°-30°	2053.3	7.9
30°-40°	3487.1	13.4
40°-50°	4863.7	18.7
50°-60°	5961.1	22.9
60°-70°	5608.5	21.5
70°-80°	2459.3	9.4
80°-90°	325.4	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°	26042.3	100.0
0°-180°	26042.3	100.0

**Coefficient of Utilization**



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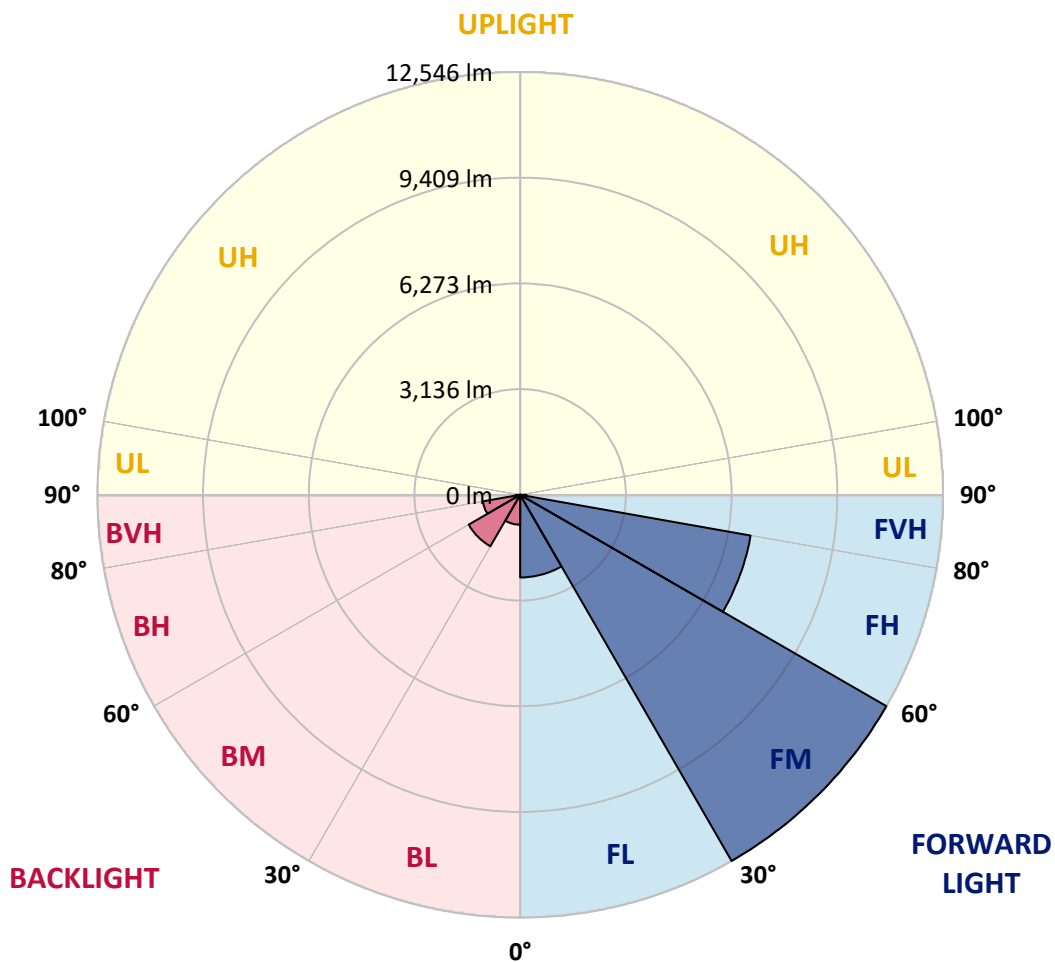
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2451.3	9.4			
FM (30°-60°)	12546.0	48.2			
FH (60°-80°)	6943.1	26.7			G3/7500
FVH (80°-90°)	188.6	0.7			G2/225
BL (0°-30°)	885.9	3.4	B2/1000		
BM (30°-60°)	1765.9	6.8	B2/2500		
BH (60°-80°)	1124.7	4.3	B3/2500		G3/2500
BVH (80°-90°)	136.8	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°	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4
2.5°	2841.2	2808.1	2811.4	2765.0	2697.1	2622.5	2561.3	2528.1	2499.9	2491.7	2445.3
5°	3716.0	3674.5	3659.6	3553.6	3394.6	3205.7	3018.5	2945.6	2885.9	2849.5	2760.0
7.5°	4431.6	4410.0	4390.2	4292.5	4135.1	3893.2	3591.7	3484.0	3384.6	3275.3	3167.6
10°	4918.7	4910.4	4902.1	4834.2	4703.3	4492.9	4168.2	4050.6	3926.4	3787.2	3646.4
12.5°	5286.5	5286.5	5293.2	5236.8	5157.3	4994.9	4700.0	4590.7	4464.8	4319.0	4158.3
15°	5533.3	5540.0	5574.8	5591.3	5549.9	5445.5	5187.1	5091.0	4971.7	4827.6	4668.5
17.5°	5697.3	5710.6	5762.0	5816.6	5869.6	5833.2	5641.0	5551.6	5443.8	5311.4	5162.2
20°	6078.4	6061.8	6063.4	6046.9	6124.7	6152.9	6046.9	5972.4	5886.2	5765.2	5629.4
22.5°	6878.5	6847.1	6765.9	6558.9	6464.3	6454.4	6391.5	6351.7	6285.4	6209.2	6073.4
25°	7922.2	7885.8	7725.1	7383.9	7102.2	6842.1	6726.1	6701.2	6658.2	6606.8	6509.1
27.5°	9000.7	8961.0	8753.9	8323.1	7955.4	7430.2	7069.1	7036.0	6996.2	6974.7	6928.2
30°	9950.0	9907.0	9703.2	9265.8	8821.8	8195.6	7531.3	7415.4	7347.4	7354.0	7327.5
32.5°	10783.3	10745.3	10516.7	10071.0	9620.3	9012.4	8131.0	7950.5	7798.1	7741.7	7761.5
35°	11482.5	11447.7	11197.5	10748.6	10294.7	9789.3	8903.0	8631.4	8382.8	8227.1	8208.9
37.5°	11893.3	11873.5	11697.9	11316.8	10866.2	10495.1	9767.9	9466.3	9100.2	8873.2	8773.8
40°	11870.1	11891.7	11861.8	11689.6	11340.0	11070.0	10669.1	10370.9	10013.1	9675.1	9472.9
42.5°	11532.1	11562.0	11696.2	11785.6	11691.2	11527.2	11455.9	11233.9	10912.5	10554.7	10274.7
45°	11068.3	11094.8	11268.7	11591.8	11861.8	11908.3	12145.2	12034.2	11762.5	11457.7	11149.4
47.5°	10357.6	10408.9	10611.1	11124.6	11767.4	12214.7	12723.4	12774.7	12617.3	12365.5	12077.3
50°	9328.8	9396.7	9680.0	10410.6	11409.6	12529.5	13583.2	13778.6	13715.7	13460.6	13169.0
52.5°	8275.2	8343.1	8720.8	9497.8	10833.0	12658.7	14429.7	14930.1	15291.2	15554.6	15605.9
55°	7178.5	7254.7	7668.8	8563.4	10064.4	12494.7	15034.4	15602.7	15968.8	16243.7	16354.8
57.5°	5940.9	6027.0	6427.9	7332.5	8977.6	11835.3	15707.0	16512.2	17057.2	17481.3	17719.9
60°	4521.1	4628.8	5044.6	5955.8	7549.5	10572.9	16006.9	17198.1	18064.5	18700.7	19078.3
62.5°	2866.1	2975.4	3407.8	4353.8	5924.3	8848.3	15158.7	16896.5	18374.2	19315.3	20007.8
65°	1563.9	1612.0	1852.2	2564.5	3994.3	6865.3	13008.3	15057.6	17186.5	18520.1	19583.7
67.5°	1172.9	1179.6	1204.4	1378.3	2127.2	4635.4	10170.4	12047.4	14411.5	16127.8	17398.6
70°	1027.1	1027.1	1030.4	1032.2	1154.7	2511.5	6890.2	8618.1	10785.0	12521.2	14100.0
72.5°	921.2	911.1	907.9	888.0	904.6	1287.3	3750.8	5303.1	7130.4	9078.6	10551.4
75°	795.2	793.5	793.5	773.7	783.6	906.2	1626.9	2544.7	3961.2	5775.2	7224.8
77.5°	687.5	676.0	677.6	665.9	697.4	694.2	772.0	1048.7	1724.6	3033.4	4236.1
80°	566.6	558.3	563.2	556.7	606.3	513.5	520.2	641.2	856.5	1330.3	1875.4
82.5°	419.1	422.5	453.9	450.6	510.2	346.3	381.0	478.7	576.5	662.7	720.7
85°	245.2	250.1	326.3	342.9	374.4	182.2	233.6	285.0	321.4	356.2	371.1
87.5°	26.5	34.8	182.2	187.2	167.4	54.6	94.4	119.3	127.6	135.8	119.3
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°	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4
2.5°	2430.3	2408.8	2385.6	2372.3	2349.2	2329.3	2292.8	2263.1	2229.9	2206.7	2196.8
5°	2715.3	2664.0	2609.2	2569.6	2519.8	2476.8	2393.9	2294.5	2263.1	2196.8	2180.2
7.5°	3086.4	2993.7	2900.9	2824.7	2738.5	2667.2	2528.1	2349.2	2326.0	2220.0	2196.8
10°	3522.1	3386.3	3248.8	3131.2	3005.2	2895.9	2690.5	2438.6	2413.8	2277.9	2254.8
12.5°	4009.1	3843.5	3666.3	3490.6	3341.6	3187.4	2907.4	2577.8	2538.0	2377.3	2345.8
15°	4511.1	4332.2	4126.8	3914.7	3730.8	3527.0	3174.2	2760.0	2687.2	2498.3	2455.2
17.5°	5006.5	4812.7	4597.3	4360.4	4145.0	3901.5	3462.5	2963.8	2837.9	2617.5	2562.9
20°	5485.3	5288.1	5061.2	4829.2	4560.8	4282.5	3757.4	3164.3	2972.1	2717.0	2645.8
22.5°	5920.9	5752.1	5525.1	5258.3	4986.6	4673.6	4057.2	3364.7	3089.7	2793.2	2702.0
25°	6379.9	6225.8	6000.5	5743.8	5427.3	5079.4	4367.0	3555.3	3184.1	2834.6	2722.0
27.5°	6843.7	6711.3	6499.2	6229.2	5889.5	5503.5	4681.8	3730.8	3260.3	2847.8	2711.9
30°	7339.2	7236.4	7040.9	6739.4	6396.4	5969.0	5024.7	3903.2	3308.4	2829.6	2667.2
32.5°	7808.0	7804.6	7630.7	7317.6	6948.1	6477.6	5385.8	4077.1	3333.3	2778.2	2589.4
35°	8295.0	8362.9	8232.1	7933.9	7544.6	7022.7	5785.1	4262.6	3334.9	2687.2	2488.3
37.5°	8848.3	8969.3	8911.3	8628.0	8218.8	7643.9	6254.0	4471.4	3325.0	2561.3	2340.9
40°	9477.8	9643.6	9641.9	9403.4	8966.0	8339.7	6799.0	4705.0	3301.8	2403.8	2166.9
42.5°	10198.5	10395.7	10450.4	10215.1	9772.8	9100.2	7423.6	4961.7	3265.4	2248.1	1983.1
45°	11023.6	11197.5	11300.2	11081.5	10637.6	9928.6	8140.9	5253.4	3220.6	2047.6	1772.7
47.5°	11906.6	12108.7	12262.8	12075.5	11601.8	10872.8	8990.8	5629.4	3204.0	1819.0	1545.7
50°	13001.7	13210.4	13543.4	13458.9	13198.8	12612.4	10788.3	6517.4	3210.6	1602.0	1355.2
52.5°	15718.7	16197.4	16618.2	16431.0	15813.1	14807.4	12249.5	7011.1	3071.5	1424.8	1222.6
55°	16538.7	17082.1	17703.3	17625.4	17032.3	16018.5	13404.2	7423.6	2937.3	1295.6	1136.5
57.5°	17973.3	18614.5	19482.6	19466.0	18738.7	17597.3	14890.3	7917.3	2879.3	1221.0	1093.4
60°	19492.5	20309.3	21508.8	21696.0	20905.7	19717.9	16646.4	8523.6	2887.6	1179.6	1068.6
62.5°	20602.5	21800.3	23544.8	24104.7	23173.7	21865.0	18468.8	9129.9	2837.9	1131.5	1038.7
65°	20670.5	22395.1	24870.2	25741.5	24798.9	23117.4	19111.5	9010.7	2539.7	1066.9	990.7
67.5°	19013.8	21260.2	24267.2	25223.0	24258.9	22345.3	17985.0	7877.5	2064.2	954.2	907.9
70°	15836.2	18443.9	21565.0	22630.3	21833.5	19896.8	15652.4	6292.1	1542.4	805.2	783.6
72.5°	12238.0	14669.9	17504.5	18490.2	17880.6	16177.6	12345.6	4585.7	1101.7	652.7	636.2
75°	8749.0	10819.9	12877.4	13253.5	12652.1	11088.2	8010.1	2864.4	772.0	535.1	511.9
77.5°	5417.3	6764.3	7503.1	7019.4	6252.4	5197.0	3260.3	1414.8	513.5	435.7	412.6
80°	2403.8	2821.3	2634.1	2347.6	1853.8	1524.2	995.6	627.9	331.3	336.3	323.0
82.5°	808.4	854.9	831.7	826.6	745.5	652.7	422.5	271.7	185.6	215.3	210.4
85°	394.2	412.6	414.2	429.1	372.8	289.9	114.3	107.7	79.5	116.0	120.9
87.5°	119.3	120.9	109.4	119.3	96.1	66.3	21.6	29.9	14.9	28.1	28.1
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°	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4
2.5°	2178.6	2171.9	2160.3	2147.1	2143.8	2127.2	2122.2	2113.9	2108.9	2100.6	2094.1
5°	2158.6	2147.1	2133.8	2118.9	2118.9	2095.7	2085.8	2075.9	2075.9	2060.9	2054.3
7.5°	2178.6	2163.6	2148.7	2135.5	2140.4	2113.9	2104.0	2094.1	2092.3	2077.5	2070.9
10°	2234.8	2220.0	2201.7	2188.5	2183.5	2162.0	2150.3	2135.5	2125.5	2115.6	2105.6
12.5°	2321.0	2301.1	2277.9	2249.8	2238.2	2220.0	2201.7	2181.9	2158.6	2148.7	2133.8
15°	2423.8	2390.6	2359.1	2324.3	2292.8	2274.6	2249.8	2218.3	2186.9	2173.6	2153.7
17.5°	2508.2	2473.4	2428.7	2387.3	2331.0	2316.1	2281.3	2243.1	2191.8	2186.9	2157.0
20°	2579.5	2526.5	2471.8	2422.0	2335.9	2327.6	2284.6	2239.9	2166.9	2166.9	2130.5
22.5°	2619.3	2546.3	2481.7	2415.5	2307.8	2301.1	2251.4	2198.4	2108.9	2112.3	2067.6
25°	2625.8	2538.0	2456.8	2377.3	2253.0	2241.5	2178.6	2120.6	2022.8	2016.2	1969.8
27.5°	2599.3	2496.6	2402.2	2306.1	2171.9	2147.1	2077.5	2008.0	1911.8	1895.2	1845.5
30°	2538.0	2417.1	2311.1	2200.1	2059.3	2019.5	1946.6	1875.4	1777.6	1756.1	1709.7
32.5°	2440.2	2302.8	2185.1	2074.1	1918.4	1868.7	1795.9	1724.6	1630.2	1613.6	1570.5
35°	2311.1	2157.0	2032.7	1915.2	1759.4	1708.0	1638.5	1575.5	1489.3	1482.8	1452.9
37.5°	2148.7	1988.0	1855.5	1742.8	1595.4	1568.9	1497.6	1451.3	1380.1	1386.6	1371.8
40°	1964.8	1800.8	1674.9	1575.5	1448.0	1424.8	1381.7	1346.9	1285.5	1303.9	1305.5
42.5°	1779.3	1615.2	1501.0	1411.5	1302.1	1287.3	1257.4	1237.6	1191.1	1227.6	1242.5
45°	1568.9	1416.5	1318.7	1250.8	1169.6	1169.6	1154.7	1153.1	1121.6	1172.9	1187.9
47.5°	1365.1	1245.9	1177.9	1136.5	1080.1	1106.6	1101.7	1114.9	1091.8	1144.8	1158.0
50°	1211.1	1128.2	1086.8	1066.9	1027.1	1068.6	1078.5	1096.7	1076.9	1123.2	1133.1
52.5°	1113.3	1058.7	1035.4	1030.4	1002.3	1053.6	1070.2	1086.8	1063.6	1106.6	1105.0
55°	1058.7	1022.1	1013.8	1023.9	1002.3	1052.0	1068.6	1080.1	1060.3	1090.1	1088.4
57.5°	1038.7	1018.9	1023.9	1038.7	1023.9	1065.2	1073.5	1086.8	1066.9	1080.1	1086.8
60°	1037.1	1037.1	1057.0	1076.9	1066.9	1096.7	1101.7	1100.1	1081.8	1083.5	1086.8
62.5°	1027.1	1052.0	1085.1	1116.7	1113.3	1149.7	1153.1	1131.5	1116.7	1100.1	1095.1
65°	995.6	1037.1	1085.1	1128.2	1134.9	1191.1	1197.8	1176.3	1166.3	1138.1	1116.7
67.5°	926.1	979.1	1035.4	1088.4	1100.1	1176.3	1191.1	1199.4	1204.4	1186.2	1158.0
70°	808.4	863.2	921.2	982.4	999.0	1083.5	1114.9	1153.1	1182.8	1209.3	1199.4
72.5°	657.7	707.4	757.1	813.5	838.3	926.1	967.5	1033.8	1080.1	1148.1	1176.3
75°	521.8	551.7	581.4	616.3	636.2	722.3	773.7	853.2	916.2	1010.6	1073.5
77.5°	410.8	425.8	440.7	455.6	463.9	511.9	553.3	632.9	705.7	825.0	917.8
80°	316.4	324.7	326.3	331.3	328.1	351.2	366.1	414.2	477.1	594.7	704.1
82.5°	203.8	210.4	213.7	222.0	205.4	235.3	245.2	250.1	283.3	369.5	447.3
85°	114.3	116.0	117.6	120.9	97.8	127.6	129.2	120.9	117.6	152.4	172.3
87.5°	28.1	26.5	28.1	28.1	11.6	26.5	26.5	18.2	13.3	24.9	19.8
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):**

	135°	145°	155°	165°	175°	180°
0°	2256.4	2256.4	2256.4	2256.4	2256.4	2256.4
2.5°	2079.1	2075.9	2077.5	2069.2	2065.8	2067.6
5°	2046.0	2039.4	2039.4	2034.4	2027.8	2027.8
7.5°	2060.9	2047.6	2042.7	2032.7	2022.8	2024.4
10°	2084.2	2060.9	2044.4	2029.4	2017.9	2017.9
12.5°	2099.0	2057.6	2032.7	2012.9	1999.7	1999.7
15°	2102.4	2039.4	2002.9	1981.4	1968.2	1968.2
17.5°	2082.4	2002.9	1956.5	1928.4	1913.4	1916.8
20°	2032.7	1935.0	1880.3	1850.5	1835.6	1837.2
22.5°	1954.9	1842.2	1779.3	1744.4	1729.6	1729.6
25°	1848.9	1726.2	1658.3	1630.2	1616.9	1616.9
27.5°	1728.0	1602.0	1542.4	1520.8	1512.5	1512.5
30°	1592.1	1487.7	1444.6	1429.7	1416.5	1416.5
32.5°	1477.8	1403.2	1388.3	1368.4	1333.6	1332.0
35°	1386.6	1378.3	1366.8	1307.1	1257.4	1250.8
37.5°	1336.9	1386.6	1313.8	1211.1	1171.3	1169.6
40°	1310.4	1356.8	1230.9	1181.2	1176.3	1176.3
42.5°	1247.5	1280.6	1225.9	1197.8	1197.8	1199.4
45°	1181.2	1209.3	1237.6	1212.7	1221.0	1222.6
47.5°	1134.9	1191.1	1237.6	1216.0	1232.6	1242.5
50°	1091.8	1174.6	1212.7	1212.7	1230.9	1232.6
52.5°	1081.8	1151.4	1189.5	1207.7	1209.3	1201.0
55°	1083.5	1133.1	1171.3	1194.5	1184.6	1184.6
57.5°	1081.8	1123.2	1156.3	1164.6	1169.6	1169.6
60°	1083.5	1110.0	1136.5	1133.1	1149.7	1149.7
62.5°	1088.4	1091.8	1105.0	1101.7	1126.6	1126.6
65°	1100.1	1068.6	1060.3	1063.6	1093.4	1091.8
67.5°	1121.6	1037.1	1010.6	1012.2	1055.3	1048.7
70°	1153.1	994.0	954.2	944.3	1017.2	1005.6
72.5°	1163.0	944.3	881.4	871.5	914.5	881.4
75°	1116.7	904.6	803.5	770.4	752.2	742.2
77.5°	995.6	879.7	722.3	652.7	624.6	618.0
80°	825.0	828.4	616.3	533.5	619.6	618.0
82.5°	622.9	715.7	493.7	462.2	449.0	374.4
85°	301.6	538.4	379.4	318.0	190.5	180.6
87.5°	26.5	225.4	218.7	142.5	64.7	61.3
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)