

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: P195803

Luminaire Tested: **NAV-AF-05-D-UNV-T2R-7050-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195803
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-7050-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 5000K, 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: 25458 lumens
Efficiency: N/A
Efficacy: 121.2 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

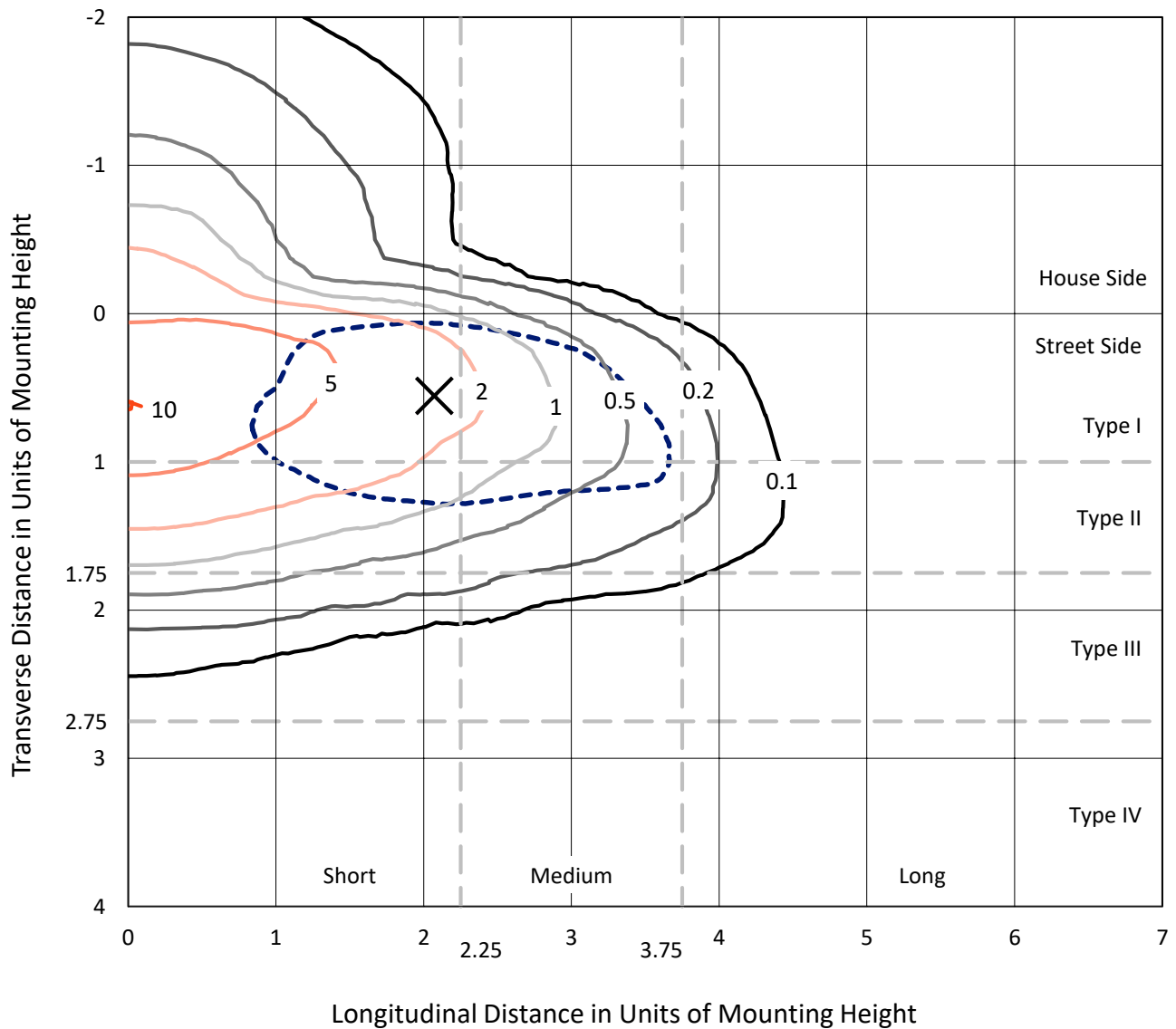
Input Watts (W): 210
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

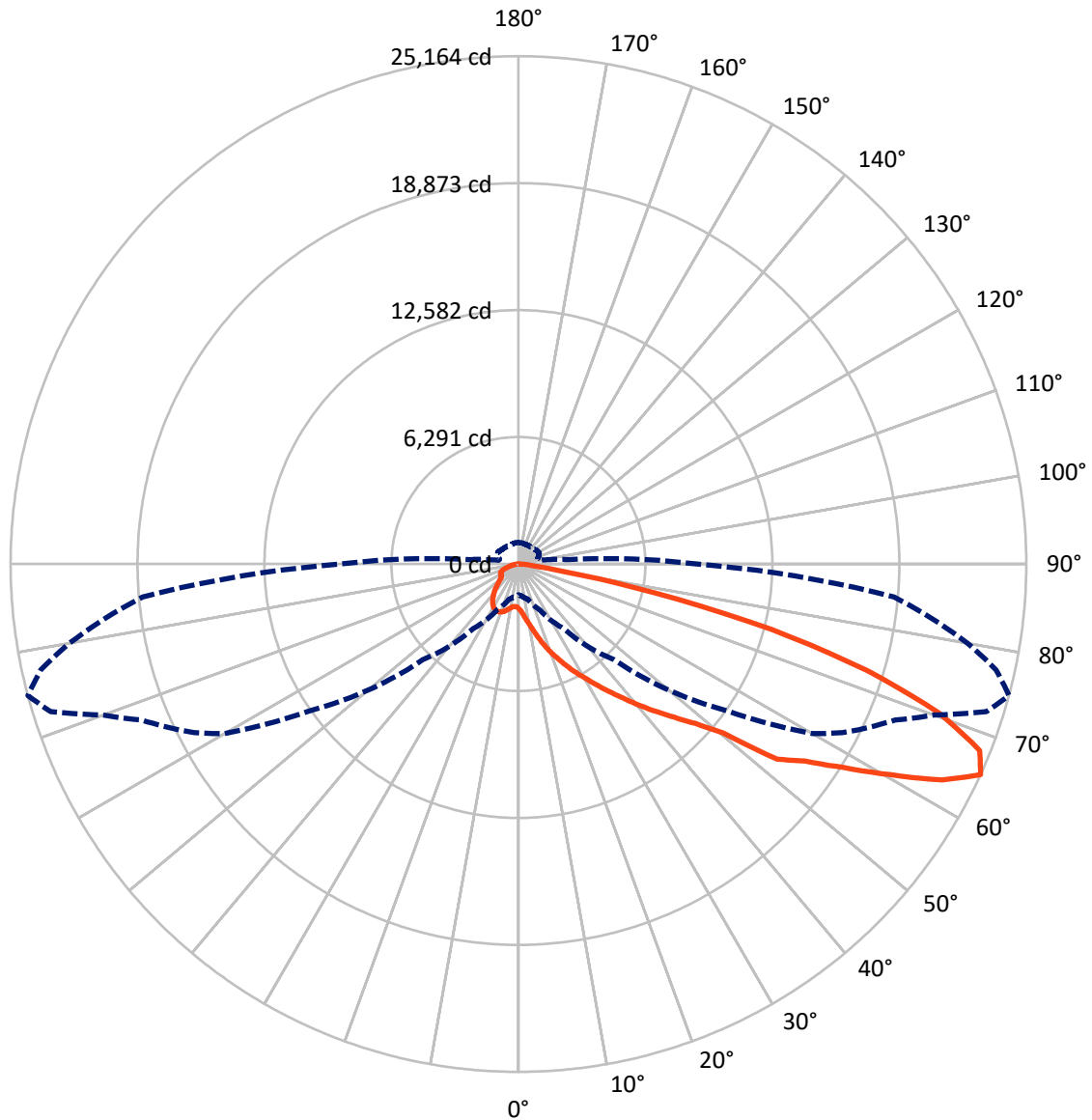
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10.1 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	3825.4	0.0	3825.4
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	21632.5	0.0	21632.5
	% Fixture	85.0	0.0	85.0
Total	Lumens	25458.0	0.0	25458.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	260.4	1.0
10°-20°	994.6	3.9
20°-30°	2007.3	7.9
30°-40°	3408.9	13.4
40°-50°	4754.6	18.7
50°-60°	5827.3	22.9
60°-70°	5482.7	21.5
70°-80°	2404.1	9.4
80°-90°	318.1	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°	25458.0	100.0
0°-180°	25458.0	100.0



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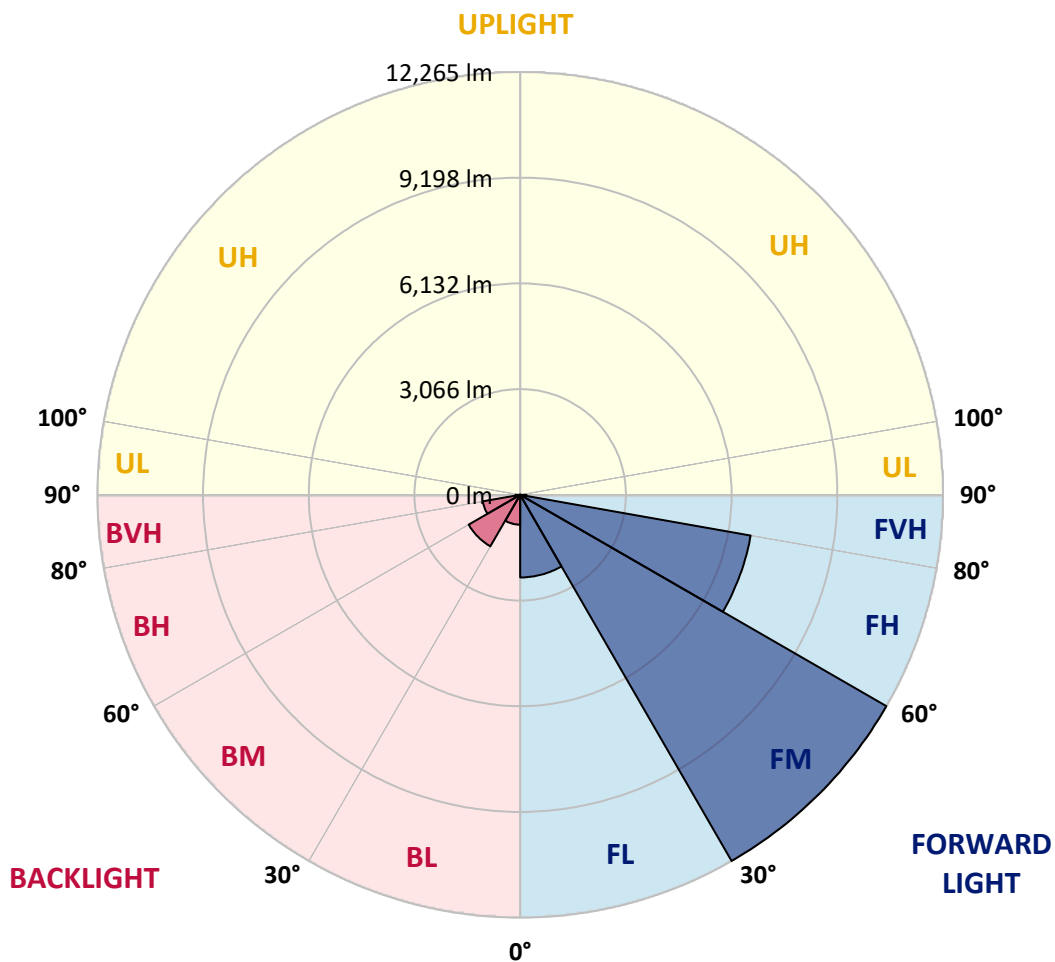
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2396.3	9.4			
FM (30°-60°)	12264.5	48.2			
FH (60°-80°)	6787.3	26.7			G3/7500
FVH (80°-90°)	184.4	0.7			G2/225
BL (0°-30°)	866.0	3.4	B2/1000		
BM (30°-60°)	1726.3	6.8	B2/2500		
BH (60°-80°)	1099.5	4.3	B3/2500		G3/2500
BVH (80°-90°)	133.7	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°	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8
2.5°	2777.5	2745.1	2748.3	2703.0	2636.6	2563.7	2503.8	2471.4	2443.8	2435.8	2390.4
5°	3632.6	3592.1	3577.5	3473.9	3318.4	3133.8	2950.8	2879.5	2821.2	2785.6	2698.1
7.5°	4332.2	4311.1	4291.7	4196.2	4042.3	3805.9	3511.1	3405.8	3308.7	3201.8	3096.5
10°	4808.3	4800.2	4792.1	4725.7	4597.8	4392.1	4074.7	3959.7	3838.3	3702.2	3564.6
12.5°	5167.9	5167.9	5174.4	5119.3	5041.6	4882.8	4594.6	4487.7	4364.6	4222.1	4065.0
15°	5409.2	5415.7	5449.7	5465.9	5425.4	5323.3	5070.7	4976.8	4860.2	4719.3	4563.8
17.5°	5569.5	5582.5	5632.7	5686.1	5737.9	5702.3	5514.4	5427.0	5321.7	5192.2	5046.4
20°	5942.0	5925.8	5927.4	5911.2	5987.3	6014.9	5911.2	5838.4	5754.1	5635.9	5503.1
22.5°	6724.2	6693.5	6614.1	6411.7	6319.3	6309.6	6248.1	6209.2	6144.4	6069.9	5937.1
25°	7744.5	7708.9	7551.8	7218.2	6942.9	6688.6	6575.2	6550.9	6508.8	6458.6	6363.1
27.5°	8798.8	8760.0	8557.5	8136.4	7776.9	7263.5	6910.5	6878.1	6839.2	6818.2	6772.8
30°	9726.8	9684.7	9485.5	9057.9	8623.9	8011.7	7362.3	7249.0	7182.6	7189.0	7163.1
32.5°	10541.4	10504.2	10280.7	9845.0	9404.5	8810.2	7948.6	7772.1	7623.1	7568.0	7587.4
35°	11224.9	11190.9	10946.3	10507.4	10063.7	9569.7	8703.3	8437.7	8194.7	8042.5	8024.7
37.5°	11626.5	11607.1	11435.4	11062.9	10622.4	10259.6	9548.7	9253.9	8896.0	8674.1	8577.0
40°	11603.8	11624.9	11595.7	11427.3	11085.6	10821.6	10429.7	10138.2	9788.4	9458.0	9260.4
42.5°	11273.4	11302.6	11433.8	11521.2	11428.9	11268.6	11198.9	10981.9	10667.7	10317.9	10044.2
45°	10820.0	10845.9	11015.9	11331.7	11595.7	11641.1	11872.7	11764.2	11498.6	11200.6	10899.3
47.5°	10125.2	10175.4	10373.0	10875.0	11503.4	11940.7	12437.9	12488.1	12334.2	12088.1	11806.3
50°	9119.5	9185.9	9462.8	10177.0	11153.6	12248.4	13278.4	13469.5	13408.0	13158.6	12873.5
52.5°	8089.5	8155.9	8525.1	9284.7	10590.0	12374.7	14106.0	14595.1	14948.1	15205.6	15255.8
55°	7017.4	7091.9	7496.7	8371.3	9838.6	12214.4	14697.1	15252.6	15610.5	15879.3	15987.9
57.5°	5807.6	5891.8	6283.7	7168.0	8776.2	11569.8	15354.6	16141.7	16674.5	17089.1	17322.3
60°	4419.7	4524.9	4931.4	5822.2	7380.1	10335.7	15647.8	16812.2	17659.2	18281.1	18650.3
62.5°	2801.8	2908.6	3331.3	4256.1	5791.4	8649.8	14818.6	16517.4	17962.0	18881.9	19558.9
65°	1528.8	1575.8	1810.6	2507.0	3904.7	6711.3	12716.4	14719.8	16800.9	18104.6	19144.3
67.5°	1146.6	1153.1	1177.4	1347.4	2079.5	4531.4	9942.2	11777.1	14088.2	15766.0	17008.2
70°	1004.1	1004.1	1007.3	1009.0	1128.8	2455.2	6735.6	8424.7	10543.0	12240.3	13783.7
72.5°	900.5	890.7	887.5	868.1	884.3	1258.4	3666.6	5184.1	6970.4	8874.9	10314.7
75°	777.4	775.7	775.7	756.3	766.0	885.9	1590.4	2487.6	3872.3	5645.6	7062.7
77.5°	672.1	660.8	662.4	651.0	681.8	678.6	754.7	1025.2	1685.9	2965.3	4141.1
80°	553.9	545.8	550.6	544.2	592.7	502.0	508.5	626.8	837.3	1300.5	1833.3
82.5°	409.7	413.0	443.7	440.5	498.8	338.5	372.5	468.0	563.6	647.8	704.5
85°	239.7	244.5	319.0	335.2	366.0	178.1	228.4	278.6	314.2	348.2	362.8
87.5°	25.9	34.0	178.1	183.0	163.6	53.4	92.3	116.6	124.7	132.8	116.6
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8
2.5°	2375.8	2354.8	2332.1	2319.1	2296.5	2277.0	2241.4	2212.3	2179.9	2157.2	2147.5
5°	2654.4	2604.2	2550.7	2511.9	2463.3	2421.2	2340.2	2243.0	2212.3	2147.5	2131.3
7.5°	3017.2	2926.5	2835.8	2761.3	2677.1	2607.4	2471.4	2296.5	2273.8	2170.2	2147.5
10°	3443.1	3310.3	3175.9	3060.9	2937.8	2830.9	2630.1	2383.9	2359.6	2226.8	2204.2
12.5°	3919.2	3757.3	3584.0	3412.3	3266.6	3115.9	2842.2	2520.0	2481.1	2324.0	2293.2
15°	4409.9	4235.0	4034.2	3826.9	3647.1	3447.9	3103.0	2698.1	2626.9	2442.2	2400.1
17.5°	4894.2	4704.7	4494.2	4262.6	4052.0	3814.0	3384.8	2897.3	2774.2	2558.8	2505.4
20°	5362.2	5169.5	4947.6	4720.9	4458.5	4186.4	3673.1	3093.3	2905.4	2656.0	2586.4
22.5°	5788.1	5623.0	5401.1	5140.3	4874.7	4568.7	3966.2	3289.2	3020.4	2730.5	2641.4
25°	6236.8	6086.1	5865.9	5614.9	5305.5	4965.4	4269.0	3475.5	3112.7	2771.0	2660.9
27.5°	6690.2	6560.7	6353.4	6089.4	5757.4	5380.0	4576.8	3647.1	3187.2	2783.9	2651.1
30°	7174.5	7074.0	6882.9	6588.2	6252.9	5835.1	4912.0	3815.6	3234.2	2766.1	2607.4
32.5°	7632.8	7629.5	7459.5	7153.4	6792.2	6332.3	5265.0	3985.6	3258.5	2715.9	2531.3
35°	8108.9	8175.3	8047.4	7755.9	7375.3	6865.1	5655.3	4167.0	3260.1	2626.9	2432.5
37.5°	8649.8	8768.1	8711.4	8434.4	8034.4	7472.4	6113.7	4371.1	3250.4	2503.8	2288.4
40°	9265.2	9427.2	9425.6	9192.4	8764.8	8152.6	6646.5	4599.4	3227.7	2349.9	2118.3
42.5°	9969.7	10162.5	10215.9	9985.9	9553.5	8896.0	7257.0	4850.4	3192.1	2197.7	1938.6
45°	10776.3	10946.3	11046.7	10832.9	10398.9	9705.8	7958.3	5135.5	3148.3	2001.7	1732.9
47.5°	11639.5	11837.0	11987.7	11804.6	11341.5	10628.9	8789.1	5503.1	3132.1	1778.2	1511.0
50°	12710.0	12914.0	13239.5	13156.9	12902.7	12329.4	10546.3	6371.2	3138.6	1566.1	1324.8
52.5°	15366.0	15834.0	16245.4	16062.4	15458.3	14475.2	11974.7	6853.8	3002.6	1392.8	1195.2
55°	16167.6	16698.8	17306.1	17230.0	16650.2	15659.1	13103.5	7257.0	2871.4	1266.5	1111.0
57.5°	17570.1	18196.9	19045.5	19029.3	18318.3	17202.5	14556.2	7739.7	2814.7	1193.6	1068.9
60°	19055.2	19853.6	21026.2	21209.2	20436.7	19275.5	16272.9	8332.4	2822.8	1153.1	1044.6
62.5°	20140.3	21311.2	23016.6	23563.9	22653.8	21374.4	18054.4	8925.1	2774.2	1106.1	1015.4
65°	20206.7	21892.6	24312.2	25164.0	24242.5	22598.7	18682.7	8808.5	2482.7	1043.0	968.5
67.5°	18587.2	20783.2	23722.7	24657.1	23714.6	21844.0	17581.5	7700.8	2017.9	932.8	887.5
70°	15480.9	18030.1	21081.2	22122.6	21343.6	19450.4	15301.2	6150.9	1507.8	787.1	766.0
72.5°	11963.4	14340.8	17111.8	18075.4	17479.4	15814.6	12068.6	4482.8	1077.0	638.1	621.9
75°	8552.7	10577.1	12588.5	12956.1	12368.2	10839.4	7830.4	2800.1	754.7	523.1	500.4
77.5°	5295.8	6612.5	7334.8	6861.9	6112.1	5080.4	3187.2	1383.1	502.0	425.9	403.3
80°	2349.9	2758.0	2575.0	2294.9	1812.2	1490.0	973.3	613.8	323.9	328.8	315.8
82.5°	790.3	835.7	813.0	808.1	728.8	638.1	413.0	265.6	181.4	210.5	205.7
85°	385.4	403.3	404.9	419.5	364.4	283.4	111.7	105.3	77.7	113.4	118.2
87.5°	116.6	118.2	106.9	116.6	93.9	64.8	21.1	29.2	14.6	27.5	27.5
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°	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8
2.5°	2129.7	2123.2	2111.8	2098.9	2095.7	2079.5	2074.6	2066.5	2061.6	2053.5	2047.1
5°	2110.2	2098.9	2085.9	2071.4	2071.4	2048.7	2039.0	2029.3	2029.3	2014.7	2008.2
7.5°	2129.7	2115.1	2100.5	2087.6	2092.4	2066.5	2056.8	2047.1	2045.4	2030.9	2024.4
10°	2184.7	2170.2	2152.3	2139.4	2134.5	2113.5	2102.1	2087.6	2077.8	2068.1	2058.4
12.5°	2268.9	2249.5	2226.8	2199.3	2188.0	2170.2	2152.3	2132.9	2110.2	2100.5	2085.9
15°	2369.4	2337.0	2306.2	2272.2	2241.4	2223.6	2199.3	2168.5	2137.8	2124.8	2105.4
17.5°	2451.9	2417.9	2374.2	2333.7	2278.7	2264.1	2230.1	2192.8	2142.6	2137.8	2108.6
20°	2521.6	2469.8	2416.3	2367.7	2283.5	2275.4	2233.3	2189.6	2118.3	2118.3	2082.7
22.5°	2560.5	2489.2	2426.0	2361.3	2256.0	2249.5	2200.9	2149.1	2061.6	2064.9	2021.2
25°	2566.9	2481.1	2401.7	2324.0	2202.5	2191.2	2129.7	2073.0	1977.4	1971.0	1925.6
27.5°	2541.0	2440.6	2348.3	2254.4	2123.2	2098.9	2030.9	1962.9	1868.9	1852.7	1804.1
30°	2481.1	2362.9	2259.2	2150.7	2013.1	1974.2	1902.9	1833.3	1737.7	1716.7	1671.3
32.5°	2385.5	2251.1	2136.1	2027.6	1875.4	1826.8	1755.6	1685.9	1593.6	1577.4	1535.3
35°	2259.2	2108.6	1987.1	1872.2	1719.9	1669.7	1601.7	1540.2	1455.9	1449.5	1420.3
37.5°	2100.5	1943.4	1813.9	1703.7	1559.6	1533.7	1464.0	1418.7	1349.1	1355.5	1341.0
40°	1920.7	1760.4	1637.3	1540.2	1415.5	1392.8	1350.7	1316.7	1256.7	1274.6	1276.2
42.5°	1739.4	1579.0	1467.3	1379.8	1272.9	1258.4	1229.2	1209.8	1164.4	1200.1	1214.6
45°	1533.7	1384.7	1289.1	1222.7	1143.4	1143.4	1128.8	1127.2	1096.4	1146.6	1161.2
47.5°	1334.5	1217.9	1151.5	1111.0	1055.9	1081.8	1077.0	1089.9	1067.3	1119.1	1132.0
50°	1183.9	1102.9	1062.4	1043.0	1004.1	1044.6	1054.3	1072.1	1052.7	1098.0	1107.7
52.5°	1088.3	1034.9	1012.2	1007.3	979.8	1030.0	1046.2	1062.4	1039.7	1081.8	1080.2
55°	1034.9	999.2	991.1	1000.9	979.8	1028.4	1044.6	1055.9	1036.5	1065.6	1064.0
57.5°	1015.4	996.0	1000.9	1015.4	1000.9	1041.3	1049.4	1062.4	1043.0	1055.9	1062.4
60°	1013.8	1013.8	1033.3	1052.7	1043.0	1072.1	1077.0	1075.4	1057.5	1059.2	1062.4
62.5°	1004.1	1028.4	1060.8	1091.6	1088.3	1123.9	1127.2	1106.1	1091.6	1075.4	1070.5
65°	973.3	1013.8	1060.8	1102.9	1109.4	1164.4	1170.9	1149.9	1140.1	1112.6	1091.6
67.5°	905.3	957.1	1012.2	1064.0	1075.4	1149.9	1164.4	1172.5	1177.4	1159.6	1132.0
70°	790.3	843.8	900.5	960.4	976.6	1059.2	1089.9	1127.2	1156.3	1182.2	1172.5
72.5°	642.9	691.5	740.1	795.2	819.5	905.3	945.8	1010.6	1055.9	1122.3	1149.9
75°	510.1	539.3	568.4	602.5	621.9	706.1	756.3	834.1	895.6	987.9	1049.4
77.5°	401.6	416.2	430.8	445.4	453.5	500.4	540.9	618.7	689.9	806.5	897.2
80°	309.3	317.4	319.0	323.9	320.7	343.3	357.9	404.9	466.4	581.4	688.3
82.5°	199.2	205.7	208.9	217.0	200.8	230.0	239.7	244.5	276.9	361.2	437.3
85°	111.7	113.4	115.0	118.2	95.6	124.7	126.3	118.2	115.0	149.0	168.4
87.5°	27.5	25.9	27.5	27.5	11.3	25.9	25.9	17.8	13.0	24.3	19.4
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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	135°	145°	155°	165°	175°	180°
0°	2205.8	2205.8	2205.8	2205.8	2205.8	2205.8
2.5°	2032.5	2029.3	2030.9	2022.8	2019.5	2021.2
5°	2000.1	1993.6	1993.6	1988.8	1982.3	1982.3
7.5°	2014.7	2001.7	1996.9	1987.1	1977.4	1979.0
10°	2037.4	2014.7	1998.5	1983.9	1972.6	1972.6
12.5°	2051.9	2011.4	1987.1	1967.7	1954.8	1954.8
15°	2055.2	1993.6	1958.0	1936.9	1924.0	1924.0
17.5°	2035.7	1958.0	1912.6	1885.1	1870.5	1873.8
20°	1987.1	1891.6	1838.1	1809.0	1794.4	1796.0
22.5°	1911.0	1800.9	1739.4	1705.3	1690.8	1690.8
25°	1807.4	1687.5	1621.1	1593.6	1580.6	1580.6
27.5°	1689.2	1566.1	1507.8	1486.7	1478.6	1478.6
30°	1556.4	1454.3	1412.2	1397.6	1384.7	1384.7
32.5°	1444.6	1371.7	1357.2	1337.7	1303.7	1302.1
35°	1355.5	1347.4	1336.1	1277.8	1229.2	1222.7
37.5°	1306.9	1355.5	1284.3	1183.9	1145.0	1143.4
40°	1281.0	1326.4	1203.3	1154.7	1149.9	1149.9
42.5°	1219.5	1251.9	1198.4	1170.9	1170.9	1172.5
45°	1154.7	1182.2	1209.8	1185.5	1193.6	1195.2
47.5°	1109.4	1164.4	1209.8	1188.7	1204.9	1214.6
50°	1067.3	1148.2	1185.5	1185.5	1203.3	1204.9
52.5°	1057.5	1125.6	1162.8	1180.6	1182.2	1174.1
55°	1059.2	1107.7	1145.0	1167.7	1158.0	1158.0
57.5°	1057.5	1098.0	1130.4	1138.5	1143.4	1143.4
60°	1059.2	1085.1	1111.0	1107.7	1123.9	1123.9
62.5°	1064.0	1067.3	1080.2	1077.0	1101.3	1101.3
65°	1075.4	1044.6	1036.5	1039.7	1068.9	1067.3
67.5°	1096.4	1013.8	987.9	989.5	1031.6	1025.2
70°	1127.2	971.7	932.8	923.1	994.4	983.0
72.5°	1136.9	923.1	861.6	851.9	894.0	861.6
75°	1091.6	884.3	785.5	753.1	735.3	725.5
77.5°	973.3	860.0	706.1	638.1	610.6	604.1
80°	806.5	809.8	602.5	521.5	605.7	604.1
82.5°	608.9	699.6	482.6	451.8	438.9	366.0
85°	294.8	526.3	370.9	310.9	186.2	176.5
87.5°	25.9	220.3	213.8	139.3	63.2	59.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)