

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: P197249

Luminaire Tested: **NAV-AF-05-D-UNV-T2R-8030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197249
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-8030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 80 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 25712 lumens
Efficiency: N/A
Efficacy: 92.2 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

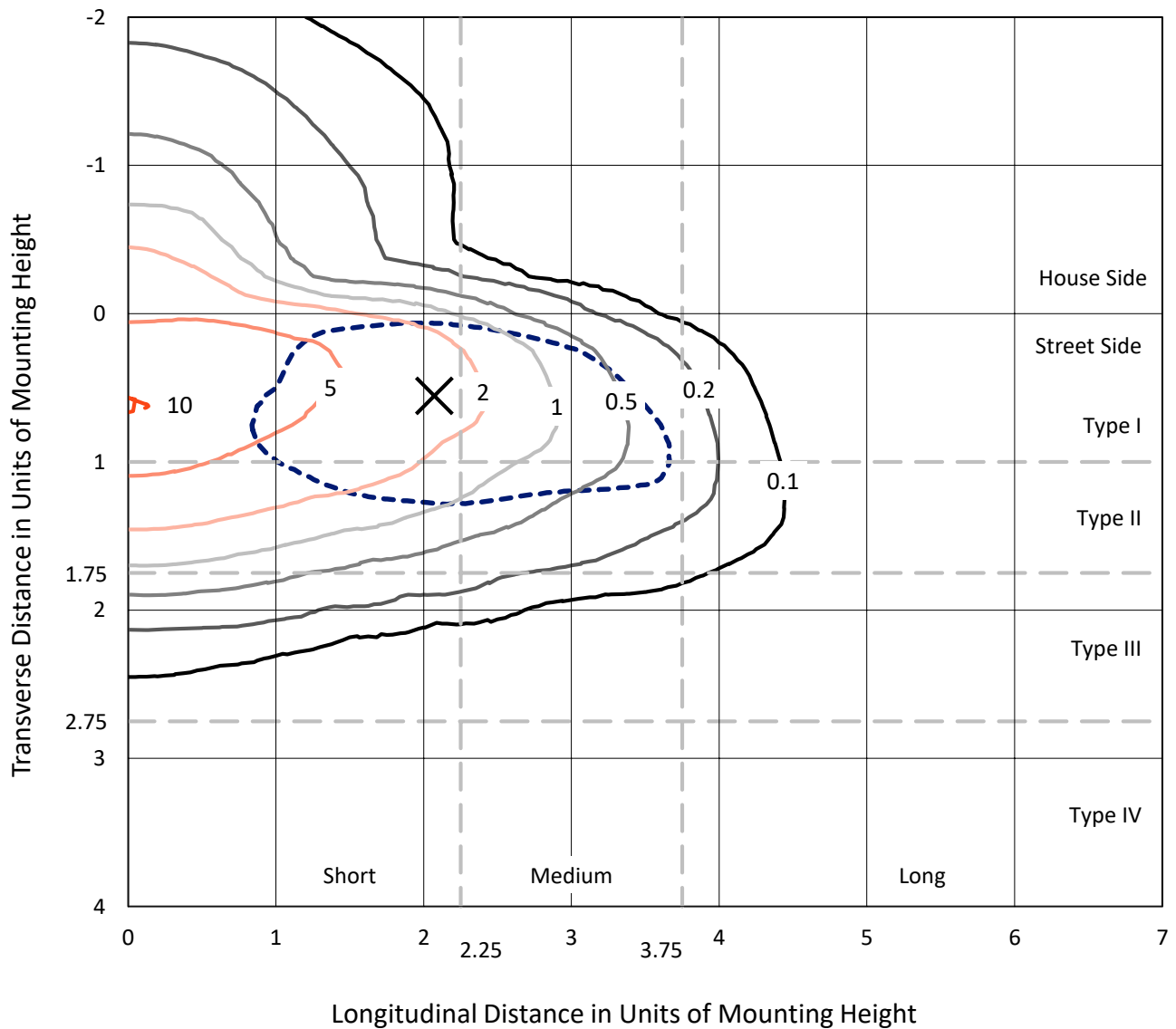
Input Watts (W): 279
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

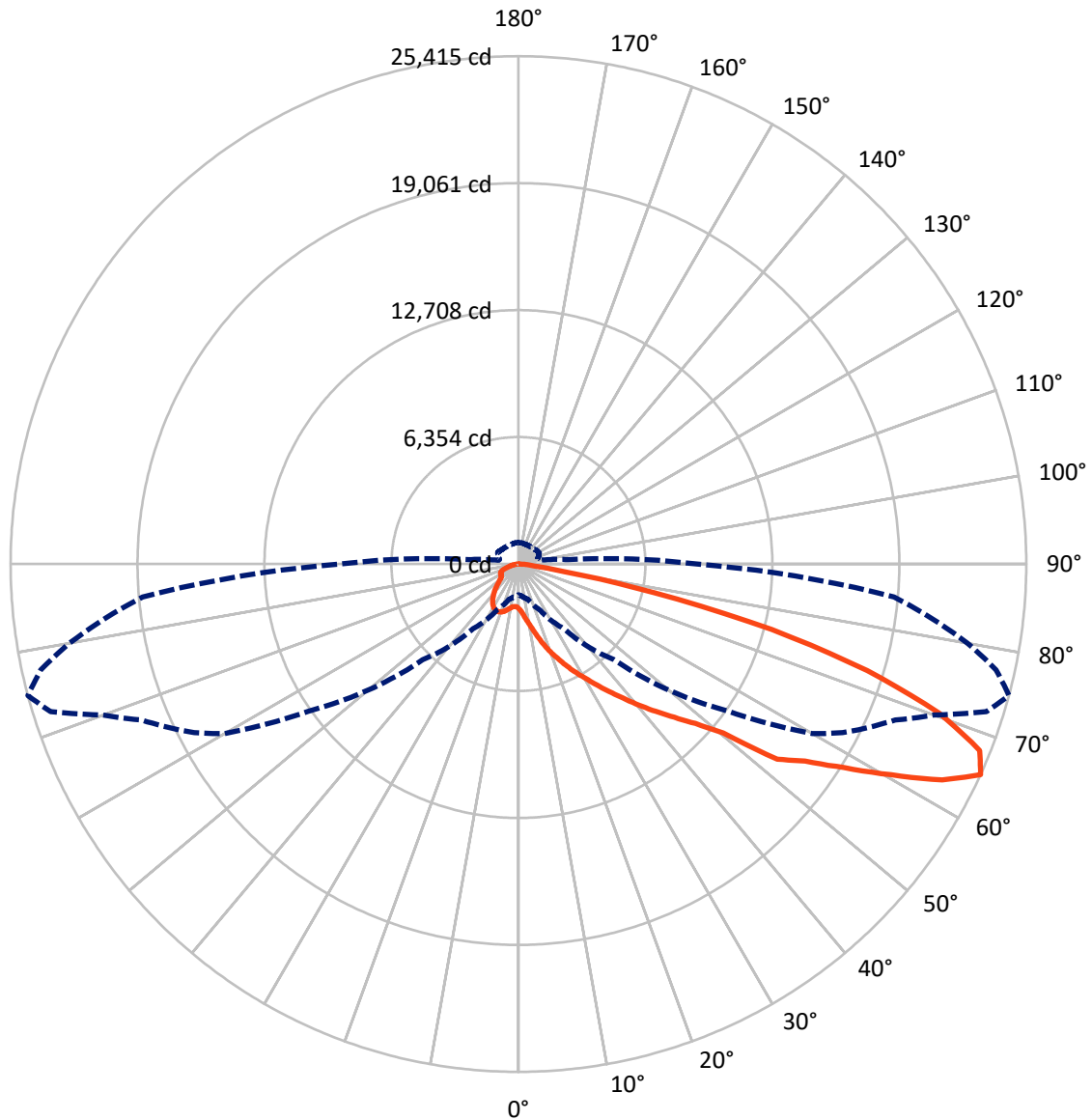
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10.2 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	3863.6	0.0	3863.6
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	21848.4	0.0	21848.4
	% Fixture	85.0	0.0	85.0
Total	Lumens	25712.0	0.0	25712.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	263.0	1.0
10°-20°	1004.6	3.9
20°-30°	2027.3	7.9
30°-40°	3442.9	13.4
40°-50°	4802.0	18.7
50°-60°	5885.5	22.9
60°-70°	5537.4	21.5
70°-80°	2428.1	9.4
80°-90°	321.3	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°	25712.0	100.0
0°-180°	25712.0	100.0



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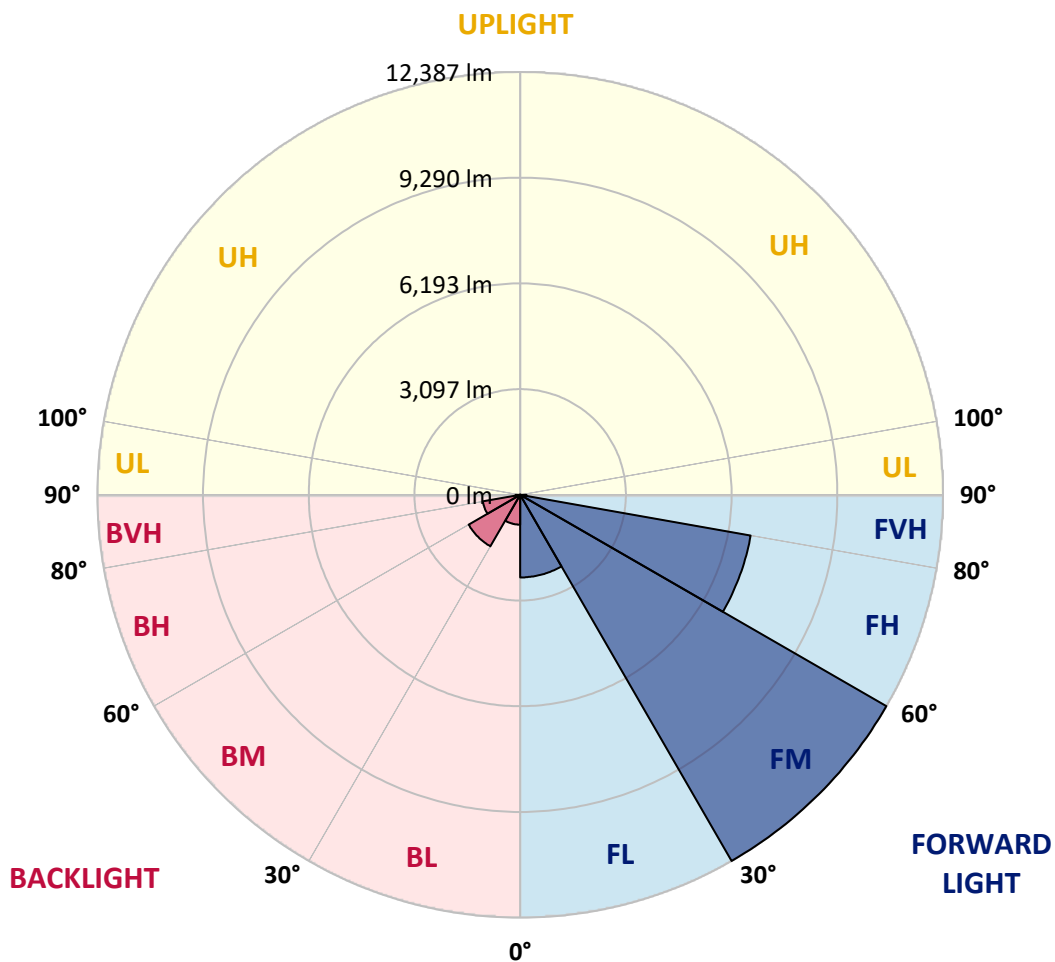
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	2420.2	9.4			
FM (30°-60°)	12386.9	48.2			
FH (60°-80°)	6855.0	26.7			G3/7500
FVH (80°-90°)	186.3	0.7			G2/225
BL (0°-30°)	874.6	3.4	B2/1000		
BM (30°-60°)	1743.5	6.8	B2/2500		
BH (60°-80°)	1110.5	4.3	B3/2500		G3/2500
BVH (80°-90°)	135.0	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°	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8
2.5°	2805.2	2772.5	2775.7	2729.9	2662.9	2589.3	2528.8	2496.0	2468.2	2460.1	2414.3
5°	3668.8	3627.9	3613.2	3508.5	3351.5	3165.0	2980.2	2908.2	2849.3	2813.4	2725.0
7.5°	4375.4	4354.2	4334.5	4238.0	4082.6	3843.8	3546.1	3439.8	3341.7	3233.7	3127.4
10°	4856.3	4848.1	4840.0	4772.9	4643.7	4435.9	4115.4	3999.2	3876.5	3739.1	3600.1
12.5°	5219.4	5219.4	5226.0	5170.4	5091.9	4931.6	4640.4	4532.5	4408.1	4264.2	4105.5
15°	5463.1	5469.7	5504.0	5520.4	5479.5	5376.5	5121.3	5026.4	4908.7	4766.4	4609.3
17.5°	5625.1	5638.2	5688.9	5742.9	5795.2	5759.2	5569.5	5481.1	5374.8	5244.0	5096.8
20°	6001.3	5984.9	5986.6	5970.2	6047.1	6074.9	5970.2	5896.6	5811.5	5692.1	5558.0
22.5°	6791.3	6760.2	6680.1	6475.6	6382.4	6372.6	6310.4	6271.2	6205.7	6130.5	5996.4
25°	7821.8	7785.8	7627.1	7290.2	7012.1	6755.3	6640.8	6616.3	6573.8	6523.1	6426.6
27.5°	8886.6	8847.4	8642.9	8217.6	7854.5	7336.0	6979.4	6946.7	6907.4	6886.2	6840.4
30°	9823.9	9781.3	9580.1	9148.3	8710.0	8091.7	7435.8	7321.3	7254.2	7260.8	7234.6
32.5°	10646.6	10609.0	10383.3	9943.3	9498.4	8898.1	8027.9	7849.6	7699.1	7643.5	7663.1
35°	11336.9	11302.5	11055.5	10612.3	10164.1	9665.2	8790.1	8521.9	8276.5	8122.8	8104.8
37.5°	11742.5	11722.9	11549.5	11173.3	10728.4	10362.0	9643.9	9346.2	8984.8	8760.7	8662.5
40°	11719.6	11740.9	11711.4	11541.3	11196.2	10929.6	10533.7	10239.3	9886.0	9552.3	9352.8
42.5°	11385.9	11415.4	11547.9	11636.2	11542.9	11381.0	11310.7	11091.5	10774.2	10420.9	10144.4
45°	10927.9	10954.1	11125.9	11444.8	11711.4	11757.2	11991.1	11881.5	11613.3	11312.3	11008.1
47.5°	10226.2	10276.9	10476.5	10983.5	11618.2	12059.8	12562.0	12612.7	12457.3	12208.7	11924.1
50°	9210.5	9277.5	9557.2	10278.6	11264.9	12370.6	13410.9	13603.9	13541.7	13289.8	13002.0
52.5°	8170.2	8237.3	8610.2	9377.3	10695.7	12498.2	14246.7	14740.7	15097.3	15357.3	15408.0
55°	7087.4	7162.6	7571.5	8454.8	9936.7	12336.3	14843.7	15404.8	15766.3	16037.8	16147.4
57.5°	5865.5	5950.6	6346.4	7239.5	8863.7	11685.3	15507.8	16302.8	16840.9	17259.6	17495.2
60°	4463.8	4570.1	4980.6	5880.2	7453.8	10438.9	15803.9	16979.9	17835.4	18463.5	18836.4
62.5°	2829.7	2937.7	3364.6	4298.6	5849.2	8736.1	14966.4	16682.2	18141.3	19070.3	19754.0
65°	1544.1	1591.5	1828.7	2532.0	3943.6	6778.2	12843.3	14866.6	16968.5	18285.2	19335.3
67.5°	1158.1	1164.6	1189.1	1360.9	2100.2	4576.6	10041.4	11894.6	14228.7	15923.3	17177.8
70°	1014.1	1014.1	1017.4	1019.0	1140.1	2479.7	6802.8	8508.8	10648.2	12362.4	13921.2
72.5°	909.4	899.6	896.3	876.7	893.1	1270.9	3703.2	5235.8	7039.9	8963.5	10417.6
75°	785.1	783.5	783.5	763.9	773.7	894.7	1606.2	2512.4	3910.9	5702.0	7133.2
77.5°	678.8	667.4	669.0	657.5	688.6	685.3	762.2	1035.4	1702.7	2994.9	4182.4
80°	559.4	551.2	556.1	549.6	598.7	507.1	513.6	633.0	845.6	1313.4	1851.6
82.5°	413.8	417.1	448.2	444.9	503.8	341.9	376.2	472.7	569.2	654.3	711.5
85°	242.1	247.0	322.2	338.6	369.7	179.9	230.6	281.3	317.3	351.7	366.4
87.5°	26.2	34.3	179.9	184.8	165.2	54.0	93.2	117.8	125.9	134.1	117.8
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8
2.5°	2399.5	2378.3	2355.4	2342.3	2319.4	2299.8	2263.8	2234.3	2201.6	2178.7	2168.9
5°	2680.9	2630.2	2576.2	2536.9	2487.9	2445.3	2363.5	2265.4	2234.3	2168.9	2152.5
7.5°	3047.3	2955.7	2864.1	2788.8	2703.8	2633.4	2496.0	2319.4	2296.5	2191.8	2168.9
10°	3477.4	3343.3	3207.6	3091.4	2967.1	2859.2	2656.3	2407.7	2383.2	2249.1	2226.2
12.5°	3958.3	3794.8	3619.7	3446.4	3299.2	3147.0	2870.6	2545.1	2505.9	2347.2	2316.1
15°	4453.9	4277.3	4074.5	3865.1	3683.5	3482.3	3134.0	2725.0	2653.1	2466.6	2424.1
17.5°	4943.0	4751.6	4539.0	4305.1	4092.5	3852.0	3418.6	2926.2	2801.9	2584.4	2530.4
20°	5415.7	5221.1	4997.0	4768.0	4503.0	4228.2	3709.7	3124.1	2934.4	2682.5	2612.2
22.5°	5845.9	5679.1	5455.0	5191.6	4923.4	4614.2	4005.8	3322.1	3050.5	2757.7	2667.8
25°	6299.0	6146.9	5924.4	5670.9	5358.5	5015.0	4311.6	3510.2	3143.8	2798.6	2687.4
27.5°	6757.0	6626.1	6416.7	6150.1	5814.8	5433.7	4622.4	3683.5	3219.0	2811.7	2677.6
30°	7246.0	7144.6	6951.6	6653.9	6315.3	5893.3	4961.0	3853.6	3266.4	2793.7	2633.4
32.5°	7708.9	7705.7	7533.9	7224.8	6860.0	6395.5	5317.6	4025.4	3291.0	2743.0	2556.6
35°	8189.8	8256.9	8127.7	7833.2	7448.9	6933.6	5711.8	4208.6	3292.6	2653.1	2456.8
37.5°	8736.1	8855.5	8798.3	8518.6	8114.6	7547.0	6174.7	4414.7	3282.8	2528.8	2311.2
40°	9357.7	9521.3	9519.6	9284.1	8852.3	8234.0	6712.8	4645.3	3259.9	2373.4	2139.5
42.5°	10069.2	10263.9	10317.8	10085.6	9648.8	8984.8	7329.5	4898.8	3223.9	2219.6	1957.9
45°	10883.8	11055.5	11156.9	10941.0	10502.7	9802.6	8037.7	5186.7	3179.7	2021.7	1750.2
47.5°	11755.6	11955.1	12107.3	11922.4	11454.6	10734.9	8876.8	5558.0	3163.4	1796.0	1526.1
50°	12836.8	13042.9	13371.6	13288.2	13031.4	12452.4	10651.5	6434.7	3169.9	1581.7	1338.0
52.5°	15519.3	15992.0	16407.4	16222.6	15612.5	14619.7	12094.2	6922.2	3032.5	1406.7	1207.1
55°	16328.9	16865.4	17478.8	17401.9	16816.4	15815.3	13234.2	7329.5	2900.0	1279.1	1122.1
57.5°	17745.4	18378.4	19235.5	19219.2	18501.1	17374.1	14701.4	7816.9	2842.8	1205.5	1079.5
60°	19245.3	20051.7	21236.0	21420.8	20640.6	19467.8	16435.2	8415.5	2851.0	1164.6	1055.0
62.5°	20341.2	21523.8	23246.2	23799.1	22879.8	21587.6	18234.5	9014.2	2801.9	1117.2	1025.6
65°	20408.3	22111.0	24554.7	25415.1	24484.4	22824.2	18869.1	8896.4	2507.5	1053.4	978.1
67.5°	18772.6	20990.6	23959.3	24903.1	23951.2	22062.0	17756.9	7777.6	2038.0	942.1	896.3
70°	15635.4	18210.0	21291.6	22343.3	21556.5	19644.4	15453.8	6212.3	1522.8	794.9	773.7
72.5°	12082.7	14483.9	17282.5	18255.8	17653.8	15972.4	12189.0	4527.5	1087.7	644.5	628.1
75°	8638.0	10682.6	12714.1	13085.4	12491.6	10947.6	7908.5	2828.1	762.2	528.3	505.4
77.5°	5348.7	6678.5	7408.0	6930.3	6173.0	5131.1	3219.0	1396.9	507.1	430.2	407.3
80°	2373.4	2785.6	2600.7	2317.7	1830.3	1504.8	983.0	619.9	327.1	332.0	319.0
82.5°	798.2	844.0	821.1	816.2	736.1	644.5	417.1	268.3	183.2	212.6	207.7
85°	389.3	407.3	408.9	423.6	368.0	286.2	112.9	106.3	78.5	114.5	119.4
87.5°	117.8	119.4	108.0	117.8	94.9	65.4	21.3	29.4	14.7	27.8	27.8
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8
2.5°	2150.9	2144.4	2132.9	2119.8	2116.6	2100.2	2095.3	2087.1	2082.2	2074.0	2067.5
5°	2131.3	2119.8	2106.7	2092.0	2092.0	2069.1	2059.3	2049.5	2049.5	2034.8	2028.2
7.5°	2150.9	2136.2	2121.5	2108.4	2113.3	2087.1	2077.3	2067.5	2065.9	2051.1	2044.6
10°	2206.5	2191.8	2173.8	2160.7	2155.8	2134.6	2123.1	2108.4	2098.6	2088.8	2078.9
12.5°	2291.6	2272.0	2249.1	2221.2	2209.8	2191.8	2173.8	2154.2	2131.3	2121.5	2106.7
15°	2393.0	2360.3	2329.2	2294.9	2263.8	2245.8	2221.2	2190.2	2159.1	2146.0	2126.4
17.5°	2476.4	2442.1	2397.9	2357.0	2301.4	2286.7	2252.3	2214.7	2164.0	2159.1	2129.6
20°	2546.7	2494.4	2440.4	2391.4	2306.3	2298.1	2255.6	2211.4	2139.5	2139.5	2103.5
22.5°	2586.0	2514.0	2450.2	2384.8	2278.5	2272.0	2222.9	2170.5	2082.2	2085.5	2041.3
25°	2592.5	2505.9	2425.7	2347.2	2224.5	2213.1	2150.9	2093.7	1997.2	1990.6	1944.8
27.5°	2566.4	2465.0	2371.7	2276.9	2144.4	2119.8	2051.1	1982.4	1887.6	1871.2	1822.1
30°	2505.9	2386.4	2281.8	2172.2	2033.1	1993.9	1921.9	1851.6	1755.1	1733.8	1688.0
32.5°	2409.3	2273.6	2157.5	2047.9	1894.1	1845.0	1773.1	1702.7	1609.5	1593.1	1550.6
35°	2281.8	2129.6	2007.0	1890.8	1737.1	1686.4	1617.7	1555.5	1470.5	1463.9	1434.5
37.5°	2121.5	1962.8	1832.0	1720.7	1575.2	1549.0	1478.6	1432.9	1362.5	1369.1	1354.3
40°	1939.9	1778.0	1653.7	1555.5	1429.6	1406.7	1364.2	1329.8	1269.3	1287.3	1288.9
42.5°	1756.7	1594.8	1481.9	1393.6	1285.6	1270.9	1241.5	1221.8	1176.0	1212.0	1226.8
45°	1549.0	1398.5	1302.0	1234.9	1154.8	1154.8	1140.1	1138.4	1107.4	1158.1	1172.8
47.5°	1347.8	1230.0	1163.0	1122.1	1066.5	1092.6	1087.7	1100.8	1077.9	1130.3	1143.3
50°	1195.7	1113.9	1073.0	1053.4	1014.1	1055.0	1064.8	1082.8	1063.2	1109.0	1118.8
52.5°	1099.2	1045.2	1022.3	1017.4	989.6	1040.3	1056.6	1073.0	1050.1	1092.6	1091.0
55°	1045.2	1009.2	1001.0	1010.8	989.6	1038.7	1055.0	1066.5	1046.8	1076.3	1074.6
57.5°	1025.6	1005.9	1010.8	1025.6	1010.8	1051.7	1059.9	1073.0	1053.4	1066.5	1073.0
60°	1023.9	1023.9	1043.6	1063.2	1053.4	1082.8	1087.7	1086.1	1068.1	1069.7	1073.0
62.5°	1014.1	1038.7	1071.4	1102.4	1099.2	1135.2	1138.4	1117.2	1102.4	1086.1	1081.2
65°	983.0	1023.9	1071.4	1113.9	1120.4	1176.0	1182.6	1161.3	1151.5	1123.7	1102.4
67.5°	914.3	966.7	1022.3	1074.6	1086.1	1161.3	1176.0	1184.2	1189.1	1171.1	1143.3
70°	798.2	852.2	909.4	970.0	986.3	1069.7	1100.8	1138.4	1167.9	1194.0	1184.2
72.5°	649.4	698.4	747.5	803.1	827.7	914.3	955.2	1020.7	1066.5	1133.5	1161.3
75°	515.2	544.7	574.1	608.5	628.1	713.2	763.9	842.4	904.5	997.8	1059.9
77.5°	405.6	420.4	435.1	449.8	458.0	505.4	546.3	624.8	696.8	814.6	906.2
80°	312.4	320.6	322.2	327.1	323.9	346.8	361.5	408.9	471.1	587.2	695.2
82.5°	201.2	207.7	211.0	219.2	202.8	232.3	242.1	247.0	279.7	364.8	441.6
85°	112.9	114.5	116.1	119.4	96.5	125.9	127.6	119.4	116.1	150.5	170.1
87.5°	27.8	26.2	27.8	27.8	11.4	26.2	26.2	18.0	13.1	24.5	19.6
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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	135°	145°	155°	165°	175°	180°
0°	2227.8	2227.8	2227.8	2227.8	2227.8	2227.8
2.5°	2052.8	2049.5	2051.1	2043.0	2039.7	2041.3
5°	2020.1	2013.5	2013.5	2008.6	2002.1	2002.1
7.5°	2034.8	2021.7	2016.8	2007.0	1997.2	1998.8
10°	2057.7	2034.8	2018.4	2003.7	1992.3	1992.3
12.5°	2072.4	2031.5	2007.0	1987.3	1974.3	1974.3
15°	2075.7	2013.5	1977.5	1956.3	1943.2	1943.2
17.5°	2056.0	1977.5	1931.7	1903.9	1889.2	1892.5
20°	2007.0	1910.5	1856.5	1827.0	1812.3	1814.0
22.5°	1930.1	1818.9	1756.7	1722.4	1707.6	1707.6
25°	1825.4	1704.4	1637.3	1609.5	1596.4	1596.4
27.5°	1706.0	1581.7	1522.8	1501.5	1493.4	1493.4
30°	1571.9	1468.8	1426.3	1411.6	1398.5	1398.5
32.5°	1459.0	1385.4	1370.7	1351.1	1316.7	1315.1
35°	1369.1	1360.9	1349.4	1290.5	1241.5	1234.9
37.5°	1320.0	1369.1	1297.1	1195.7	1156.4	1154.8
40°	1293.8	1339.6	1215.3	1166.2	1161.3	1161.3
42.5°	1231.7	1264.4	1210.4	1182.6	1182.6	1184.2
45°	1166.2	1194.0	1221.8	1197.3	1205.5	1207.1
47.5°	1120.4	1176.0	1221.8	1200.6	1216.9	1226.8
50°	1077.9	1159.7	1197.3	1197.3	1215.3	1216.9
52.5°	1068.1	1136.8	1174.4	1192.4	1194.0	1185.9
55°	1069.7	1118.8	1156.4	1179.3	1169.5	1169.5
57.5°	1068.1	1109.0	1141.7	1149.9	1154.8	1154.8
60°	1069.7	1095.9	1122.1	1118.8	1135.2	1135.2
62.5°	1074.6	1077.9	1091.0	1087.7	1112.3	1112.3
65°	1086.1	1055.0	1046.8	1050.1	1079.5	1077.9
67.5°	1107.4	1023.9	997.8	999.4	1041.9	1035.4
70°	1138.4	981.4	942.1	932.3	1004.3	992.9
72.5°	1148.2	932.3	870.2	860.4	902.9	870.2
75°	1102.4	893.1	793.3	760.6	742.6	732.8
77.5°	983.0	868.5	713.2	644.5	616.6	610.1
80°	814.6	817.8	608.5	526.7	611.7	610.1
82.5°	615.0	706.6	487.4	456.4	443.3	369.7
85°	297.7	531.6	374.6	314.0	188.1	178.3
87.5°	26.2	222.5	215.9	140.7	63.8	60.5
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)