

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: P196761

Luminaire Tested: **NAV-AF-03-D-UNV-T2R-7030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196761
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-03-D-UNV-T2R-7030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 3000K, 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: 14833 lumens
Efficiency: N/A
Efficacy: 119.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

Input Watts (W): 124
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

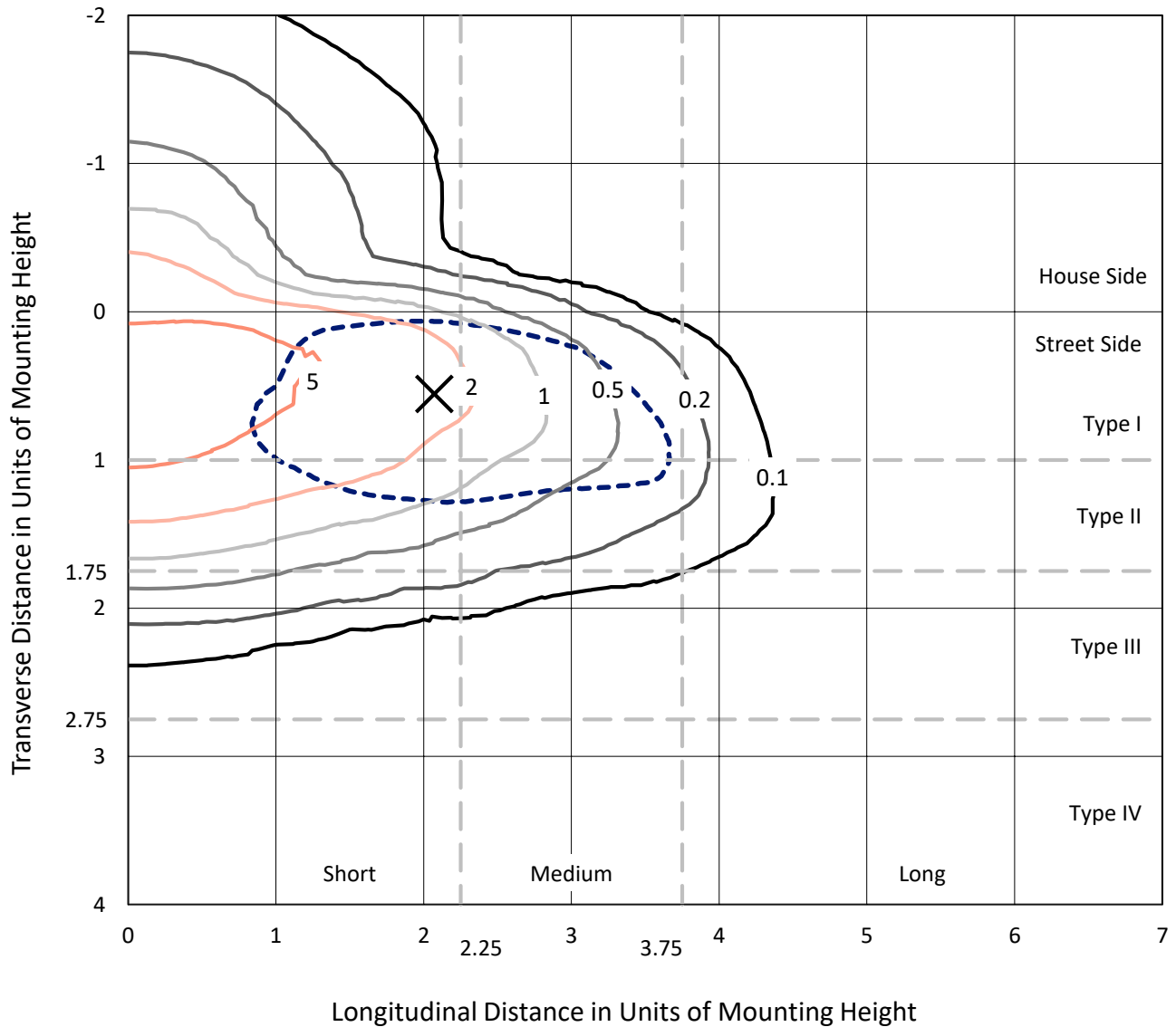


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

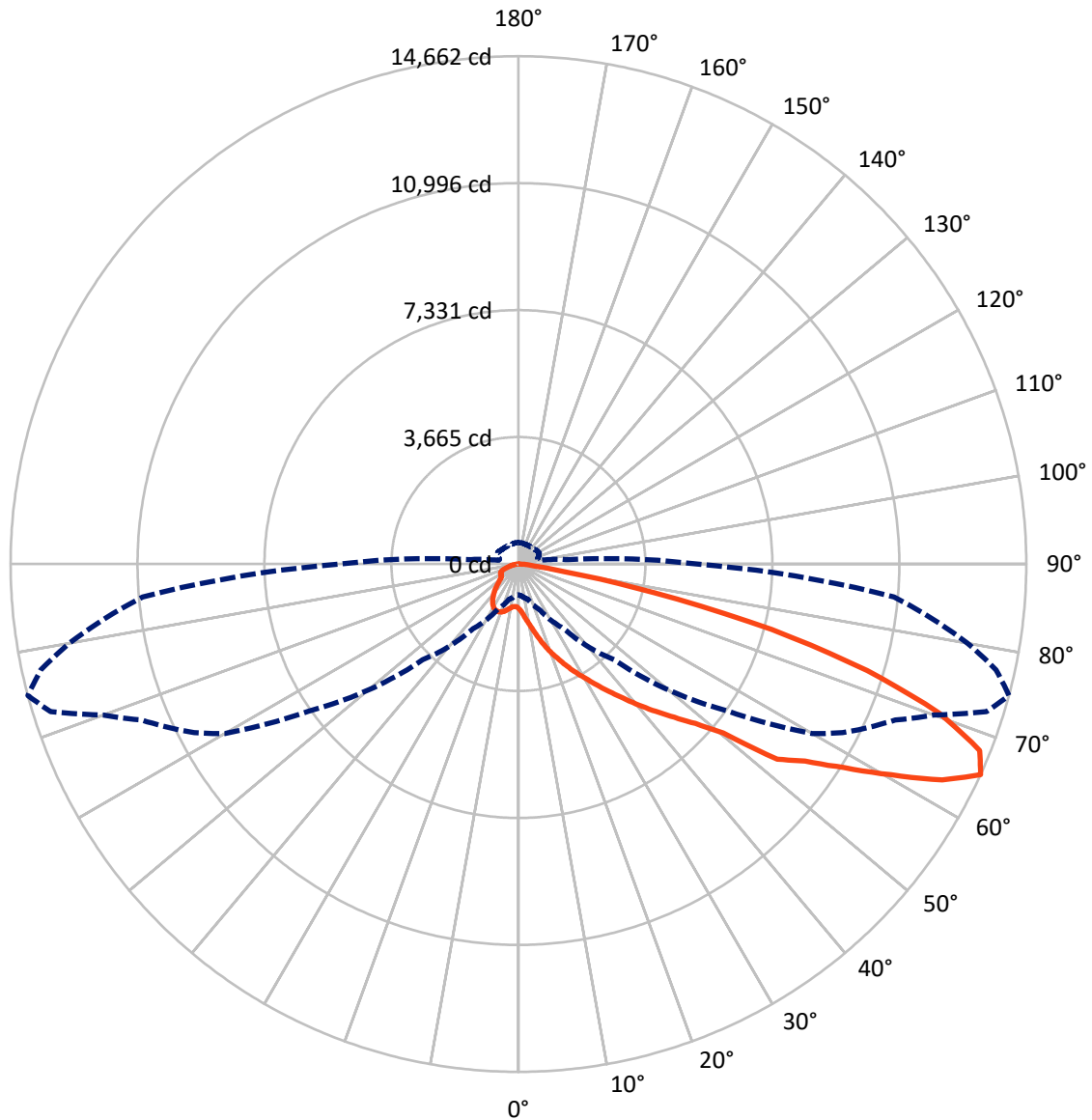


Based on 20 foot mounting height. Maximum calculated value = 9.2 fc
 Type II - Short - Semi-Cutoff

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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	2228.9	0.0	2228.9
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	12604.1	0.0	12604.1
	% Fixture	85.0	0.0	85.0
Total	Lumens	14833.0	0.0	14833.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.7	1.0
10°-20°	579.5	3.9
20°-30°	1169.5	7.9
30°-40°	1986.2	13.4
40°-50°	2770.2	18.7
50°-60°	3395.3	22.9
60°-70°	3194.5	21.5
70°-80°	1400.8	9.4
80°-90°	185.3	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°	14833.0	100.0
0°-180°	14833.0	100.0

Coefficient of Utilization



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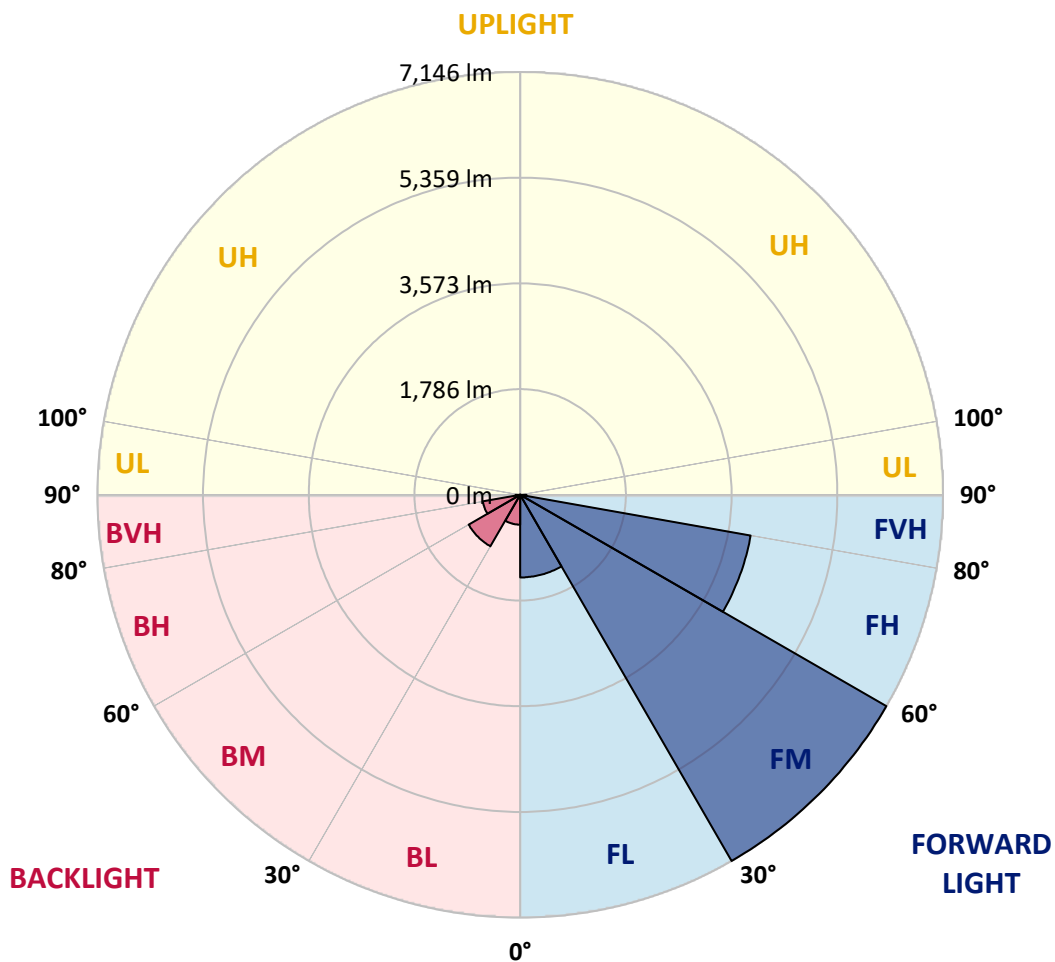
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1396.2	9.4			
FM (30°-60°)	7145.9	48.2			
FH (60°-80°)	3954.6	26.7			G2/5000
FVH (80°-90°)	107.4	0.7			G2/225
BL (0°-30°)	504.6	3.4	B2/1000		
BM (30°-60°)	1005.8	6.8	B2/2500		
BH (60°-80°)	640.6	4.3	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-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2
2.5°	1618.2	1599.4	1601.3	1574.9	1536.1	1493.7	1458.8	1439.9	1423.8	1419.2	1392.7
5°	2116.5	2093.0	2084.4	2024.0	1933.5	1825.8	1719.3	1677.7	1643.8	1623.0	1572.0
7.5°	2524.1	2511.9	2500.5	2444.9	2355.2	2217.5	2045.8	1984.3	1927.8	1865.5	1804.2
10°	2801.5	2796.8	2792.1	2753.5	2678.9	2559.1	2374.1	2307.1	2236.3	2157.1	2076.9
12.5°	3011.0	3011.0	3014.8	2982.8	2937.4	2845.0	2677.0	2614.7	2543.0	2460.0	2368.4
15°	3151.7	3155.4	3175.2	3184.7	3161.1	3101.7	2954.5	2899.7	2831.8	2749.6	2659.1
17.5°	3245.1	3252.6	3281.8	3313.0	3343.3	3322.5	3213.0	3162.1	3100.7	3025.2	2940.2
20°	3462.1	3452.7	3453.5	3444.2	3488.5	3504.6	3444.2	3401.7	3352.6	3283.8	3206.3
22.5°	3917.8	3899.9	3853.7	3735.7	3681.9	3676.2	3640.4	3617.8	3580.0	3536.6	3459.2
25°	4512.3	4491.5	4400.1	4205.6	4045.3	3897.1	3831.0	3816.9	3792.4	3763.1	3707.3
27.5°	5126.7	5103.9	4986.0	4740.6	4531.2	4232.0	4026.4	4007.5	3984.9	3972.5	3946.1
30°	5667.3	5642.8	5526.7	5277.6	5024.8	4668.0	4289.6	4223.6	4184.8	4188.7	4173.6
32.5°	6141.9	6120.2	5990.0	5736.2	5479.6	5133.2	4631.2	4528.4	4441.6	4409.4	4420.8
35°	6540.2	6520.4	6377.8	6122.2	5863.6	5575.7	5070.9	4916.2	4774.6	4685.9	4675.5
37.5°	6774.2	6762.8	6662.8	6445.7	6189.1	5977.8	5563.5	5391.7	5183.3	5054.0	4997.3
40°	6761.0	6773.2	6756.3	6658.0	6459.0	6305.2	6076.8	5907.0	5703.2	5510.7	5395.6
42.5°	6568.4	6585.4	6661.9	6712.8	6659.1	6565.6	6525.1	6398.6	6215.5	6011.7	5852.3
45°	6304.3	6319.3	6418.4	6602.4	6756.3	6782.6	6917.5	6854.4	6699.6	6525.9	6350.4
47.5°	5899.5	5928.6	6043.7	6336.3	6702.4	6957.2	7246.9	7276.1	7186.5	7043.1	6878.9
50°	5313.5	5352.2	5513.4	5929.6	6498.6	7136.5	7736.6	7848.0	7812.1	7666.8	7500.7
52.5°	4713.3	4752.0	4967.2	5409.7	6170.2	7210.1	8218.8	8503.7	8709.5	8859.5	8888.8
55°	4088.7	4132.0	4367.9	4877.6	5732.4	7116.7	8563.2	8886.9	9095.4	9252.1	9315.3
57.5°	3383.8	3432.8	3661.2	4176.4	5113.5	6741.1	8946.3	9404.9	9715.4	9956.9	10092.9
60°	2575.1	2636.4	2873.3	3392.3	4300.0	6022.1	9117.1	9795.5	10289.1	10651.4	10866.6
62.5°	1632.5	1694.7	1941.0	2479.7	3374.4	5039.8	8634.0	9623.9	10465.5	11001.6	11396.0
65°	890.8	918.1	1054.9	1460.7	2275.0	3910.3	7409.2	8576.5	9789.0	10548.6	11154.4
67.5°	668.1	671.8	686.0	785.0	1211.5	2640.2	5792.8	6861.9	8208.4	9186.0	9909.7
70°	585.1	585.1	586.9	587.9	657.7	1430.5	3924.5	4908.7	6142.9	7131.8	8031.0
72.5°	524.7	519.0	517.2	505.8	515.1	733.1	2136.3	3020.5	4061.2	5170.9	6009.8
75°	452.9	452.0	452.0	440.7	446.4	516.1	926.6	1449.5	2256.2	3289.4	4115.0
77.5°	391.5	385.0	385.9	379.3	397.2	395.4	439.8	597.3	982.2	1727.7	2412.8
80°	322.8	318.0	320.7	317.1	345.4	292.5	296.3	365.2	487.9	757.7	1068.1
82.5°	238.7	240.6	258.5	256.6	290.6	197.2	217.0	272.7	328.4	377.5	410.5
85°	139.7	142.5	185.8	195.3	213.3	103.8	133.1	162.2	183.0	202.9	211.4
87.5°	15.1	19.7	103.8	106.6	95.3	31.1	53.7	68.0	72.6	77.3	68.0
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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CANDELA DISTRIBUTION (continued):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2
2.5°	1384.4	1372.0	1358.7	1351.2	1338.0	1326.7	1305.9	1288.9	1270.1	1256.9	1251.2
5°	1546.6	1517.3	1486.2	1463.5	1435.2	1410.6	1363.5	1306.8	1288.9	1251.2	1241.7
7.5°	1758.0	1705.1	1652.2	1608.9	1559.7	1519.2	1439.9	1338.0	1324.9	1264.4	1251.2
10°	2006.1	1928.8	1850.5	1783.4	1711.6	1649.4	1532.5	1389.0	1374.8	1297.5	1284.3
12.5°	2283.5	2189.1	2088.2	1988.2	1903.3	1815.5	1656.1	1468.2	1445.6	1354.0	1336.1
15°	2569.4	2467.5	2350.5	2229.8	2125.0	2009.0	1807.9	1572.0	1530.5	1423.0	1398.4
17.5°	2851.5	2741.2	2618.5	2483.6	2360.9	2222.3	1972.1	1688.2	1616.4	1491.0	1459.8
20°	3124.3	3012.0	2882.7	2750.6	2597.7	2439.2	2140.1	1802.3	1692.9	1547.5	1506.9
22.5°	3372.4	3276.2	3146.8	2995.1	2840.3	2661.9	2311.0	1916.5	1759.8	1591.0	1539.0
25°	3633.9	3546.1	3417.7	3271.4	3091.3	2893.0	2487.4	2025.0	1813.6	1614.6	1550.4
27.5°	3898.1	3822.6	3701.8	3547.9	3354.5	3134.6	2666.6	2125.0	1857.0	1622.1	1544.7
30°	4180.2	4121.7	4010.4	3838.6	3643.2	3399.8	2861.9	2223.1	1884.4	1611.7	1519.2
32.5°	4447.2	4445.3	4346.3	4167.9	3957.5	3689.4	3067.7	2322.2	1898.5	1582.4	1474.9
35°	4724.6	4763.3	4688.8	4519.0	4297.1	4000.0	3295.0	2427.8	1899.5	1530.5	1417.3
37.5°	5039.8	5108.6	5075.6	4914.3	4681.2	4353.8	3562.1	2546.9	1893.8	1458.8	1333.3
40°	5398.4	5492.7	5491.8	5355.9	5106.8	4750.1	3872.5	2679.8	1880.6	1369.1	1234.2
42.5°	5808.9	5921.1	5952.2	5818.3	5566.3	5183.3	4228.4	2826.1	1859.8	1280.5	1129.5
45°	6278.8	6377.8	6436.4	6311.8	6058.9	5655.0	4636.9	2992.2	1834.4	1166.4	1009.7
47.5°	6781.7	6896.8	6984.6	6878.0	6608.1	6193.0	5121.0	3206.3	1824.9	1036.1	880.4
50°	7405.4	7524.3	7714.0	7665.8	7517.7	7183.7	6144.7	3712.2	1828.7	912.5	771.9
52.5°	8952.9	9225.7	9465.3	9358.7	9006.7	8433.9	6977.1	3993.3	1749.5	811.5	696.4
55°	9420.0	9729.5	10083.4	10039.1	9701.2	9123.7	7634.7	4228.4	1673.0	737.9	647.4
57.5°	10237.1	10602.4	11096.8	11087.4	10673.1	10023.0	8481.1	4509.4	1640.0	695.4	622.8
60°	11102.5	11567.8	12250.8	12357.4	11907.4	11230.8	9481.4	4854.8	1644.7	671.8	608.6
62.5°	11734.7	12416.9	13410.5	13729.5	13199.2	12453.7	10519.4	5200.2	1616.4	644.5	591.6
65°	11773.3	12755.7	14165.5	14661.7	14124.8	13167.1	10885.4	5132.2	1446.6	607.7	564.4
67.5°	10829.8	12109.3	13822.0	14366.4	13817.3	12727.4	10243.8	4486.8	1175.7	543.6	517.2
70°	9019.9	10505.2	12282.9	12889.7	12435.8	11332.7	8915.2	3583.8	878.5	458.6	446.4
72.5°	6970.4	8355.6	9970.1	10531.6	10184.4	9214.3	7031.7	2612.0	627.4	371.8	362.3
75°	4983.2	6162.7	7334.7	7548.8	7206.3	6315.5	4562.3	1631.5	439.8	304.9	291.6
77.5°	3085.6	3852.7	4273.5	3998.1	3561.2	2960.1	1857.0	805.8	292.5	248.1	234.9
80°	1369.1	1606.9	1500.3	1337.2	1055.9	868.1	567.0	357.6	188.7	191.5	184.0
82.5°	460.5	486.9	473.6	470.9	424.6	371.8	240.6	154.7	105.7	122.7	119.8
85°	224.5	234.9	235.9	244.4	212.3	165.1	65.1	61.3	45.4	66.1	68.9
87.5°	68.0	68.9	62.3	68.0	54.7	37.7	12.2	16.9	8.5	16.1	16.1
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°	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2
2.5°	1240.8	1237.1	1230.5	1222.9	1221.0	1211.5	1208.7	1204.0	1201.2	1196.5	1192.7
5°	1229.5	1222.9	1215.4	1206.9	1206.9	1193.6	1187.9	1182.3	1182.3	1173.9	1170.0
7.5°	1240.8	1232.3	1223.8	1216.3	1219.2	1204.0	1198.3	1192.7	1191.8	1183.3	1179.5
10°	1273.0	1264.4	1254.1	1246.5	1243.7	1231.4	1224.8	1216.3	1210.6	1205.0	1199.3
12.5°	1322.0	1310.7	1297.5	1281.4	1274.8	1264.4	1254.1	1242.8	1229.5	1223.8	1215.4
15°	1380.5	1361.6	1343.7	1323.9	1305.9	1295.6	1281.4	1263.5	1245.5	1238.0	1226.7
17.5°	1428.7	1408.8	1383.3	1359.7	1327.6	1319.2	1299.3	1277.7	1248.4	1245.5	1228.6
20°	1469.2	1439.1	1408.0	1379.5	1330.4	1325.8	1301.3	1275.7	1234.2	1234.2	1213.5
22.5°	1491.8	1450.3	1413.5	1375.8	1314.5	1310.7	1282.3	1252.1	1201.2	1203.1	1177.6
25°	1495.6	1445.6	1399.4	1354.0	1283.4	1276.7	1240.8	1207.9	1152.1	1148.4	1122.0
27.5°	1480.6	1422.0	1368.3	1313.6	1237.1	1222.9	1183.3	1143.6	1088.9	1079.5	1051.2
30°	1445.6	1376.7	1316.3	1253.1	1172.9	1150.3	1108.8	1068.1	1012.5	1000.3	973.8
32.5°	1389.9	1311.6	1244.6	1181.4	1092.7	1064.4	1022.8	982.2	928.4	919.1	894.5
35°	1316.3	1228.6	1157.8	1090.9	1002.1	972.9	933.2	897.3	848.3	844.6	827.5
37.5°	1223.8	1132.4	1056.9	992.6	908.7	893.6	853.0	826.5	786.0	789.8	781.3
40°	1119.2	1025.7	954.0	897.3	824.7	811.5	787.0	767.1	732.2	742.6	743.5
42.5°	1013.4	920.0	855.0	803.9	741.7	733.1	716.2	704.8	678.5	699.3	707.7
45°	893.6	806.8	751.1	712.4	666.2	666.2	657.7	656.7	638.8	668.1	676.6
47.5°	777.5	709.6	670.9	647.4	615.2	630.3	627.4	635.1	621.8	652.1	659.6
50°	689.8	642.6	619.0	607.7	585.1	608.6	614.2	624.6	613.4	639.7	645.4
52.5°	634.1	603.0	589.8	586.9	570.9	600.2	609.5	619.0	605.9	630.3	629.4
55°	603.0	582.3	577.4	583.1	570.9	599.2	608.6	615.2	603.8	620.9	619.9
57.5°	591.6	580.2	583.1	591.6	583.1	606.7	611.5	619.0	607.7	615.2	619.0
60°	590.6	590.6	602.0	613.4	607.7	624.6	627.4	626.6	616.2	617.1	619.0
62.5°	585.1	599.2	618.1	636.0	634.1	654.9	656.7	644.5	636.0	626.6	623.8
65°	567.0	590.6	618.1	642.6	646.4	678.5	682.3	670.0	664.3	648.2	636.0
67.5°	527.5	557.7	589.8	619.9	626.6	670.0	678.5	683.2	686.0	675.7	659.6
70°	460.5	491.6	524.7	559.5	569.0	617.1	635.1	656.7	673.7	688.9	683.2
72.5°	374.6	402.9	431.2	463.3	477.5	527.5	551.1	588.8	615.2	653.9	670.0
75°	297.1	314.2	331.2	351.0	362.3	411.4	440.7	485.9	521.8	575.6	611.5
77.5°	234.1	242.5	251.0	259.5	264.2	291.6	315.2	360.4	402.0	470.0	522.8
80°	180.3	184.9	185.8	188.7	186.9	200.1	208.5	235.9	271.7	338.7	401.0
82.5°	116.1	119.8	121.8	126.4	117.0	134.0	139.7	142.5	161.3	210.5	254.8
85°	65.1	66.1	66.9	68.9	55.7	72.6	73.6	68.9	66.9	86.9	98.2
87.5°	16.1	15.1	16.1	16.1	6.5	15.1	15.1	10.4	7.5	14.2	11.4
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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CANDELA DISTRIBUTION (continued):

	135°	145°	155°	165°	175°	180°
0°	1285.2	1285.2	1285.2	1285.2	1285.2	1285.2
2.5°	1184.3	1182.3	1183.3	1178.6	1176.7	1177.6
5°	1165.4	1161.5	1161.5	1158.7	1155.0	1155.0
7.5°	1173.9	1166.4	1163.5	1157.8	1152.1	1153.1
10°	1187.1	1173.9	1164.3	1156.0	1149.3	1149.3
12.5°	1195.6	1172.0	1157.8	1146.4	1138.9	1138.9
15°	1197.5	1161.5	1140.7	1128.5	1121.0	1121.0
17.5°	1186.1	1140.7	1114.5	1098.4	1089.9	1091.7
20°	1157.8	1102.1	1071.0	1054.1	1045.5	1046.4
22.5°	1113.5	1049.3	1013.4	993.6	985.1	985.1
25°	1053.0	983.3	944.5	928.4	920.9	920.9
27.5°	984.2	912.5	878.5	866.2	861.5	861.5
30°	906.9	847.3	822.8	814.3	806.8	806.8
32.5°	841.8	799.2	790.7	779.4	759.6	758.7
35°	789.8	785.0	778.5	744.5	716.2	712.4
37.5°	761.5	789.8	748.3	689.8	667.1	666.2
40°	746.4	772.8	701.1	672.8	670.0	670.0
42.5°	710.5	729.5	698.2	682.3	682.3	683.2
45°	672.8	688.9	704.8	690.7	695.4	696.4
47.5°	646.4	678.5	704.8	692.6	702.0	707.7
50°	621.8	669.0	690.7	690.7	701.1	702.0
52.5°	616.2	655.8	677.5	687.9	688.9	684.1
55°	617.1	645.4	667.1	680.3	674.6	674.6
57.5°	616.2	639.7	658.7	663.3	666.2	666.2
60°	617.1	632.2	647.4	645.4	654.9	654.9
62.5°	619.9	621.8	629.4	627.4	641.7	641.7
65°	626.6	608.6	603.8	605.9	622.8	621.8
67.5°	638.8	590.6	575.6	576.6	601.0	597.3
70°	656.7	566.2	543.6	537.9	579.4	572.7
72.5°	662.4	537.9	502.0	496.4	520.8	502.0
75°	636.0	515.1	457.7	438.7	428.4	422.8
77.5°	567.0	501.1	411.4	371.8	355.7	352.0
80°	470.0	471.8	351.0	303.8	352.9	352.0
82.5°	354.8	407.6	281.3	263.4	255.6	213.3
85°	171.7	306.7	216.2	181.2	108.5	102.8
87.5°	15.1	128.4	124.5	81.2	36.8	35.0
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)