

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: P195332

Luminaire Tested: **NAV-AF-02-D-UNV-T2R-7060-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195332
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-02-D-UNV-T2R-7060-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5700K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14003 lumens
Efficiency: N/A
Efficacy: 108.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

Input Watts (W): 129
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

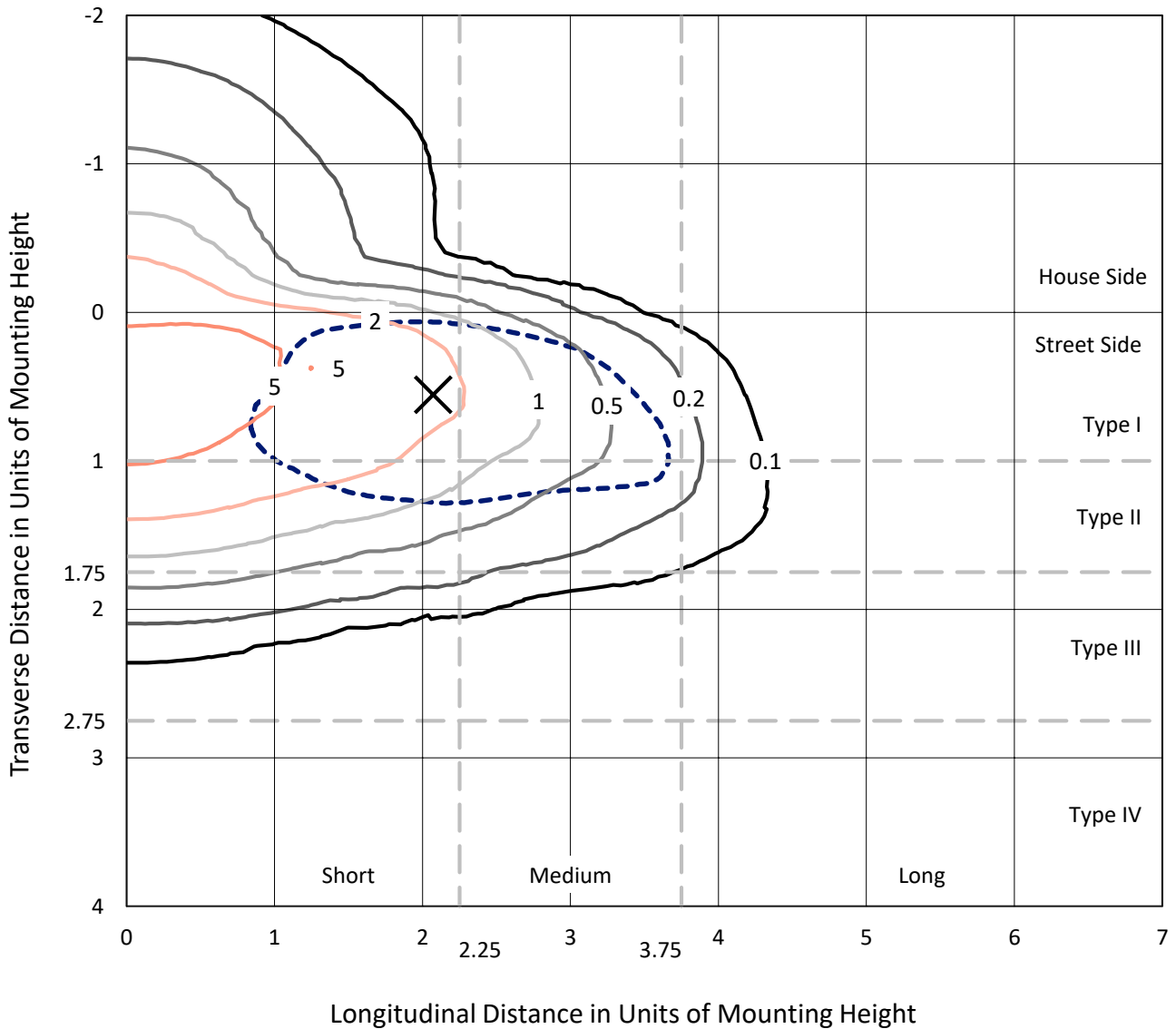


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Iso-Footcandle Lines of Horizontal Illumination

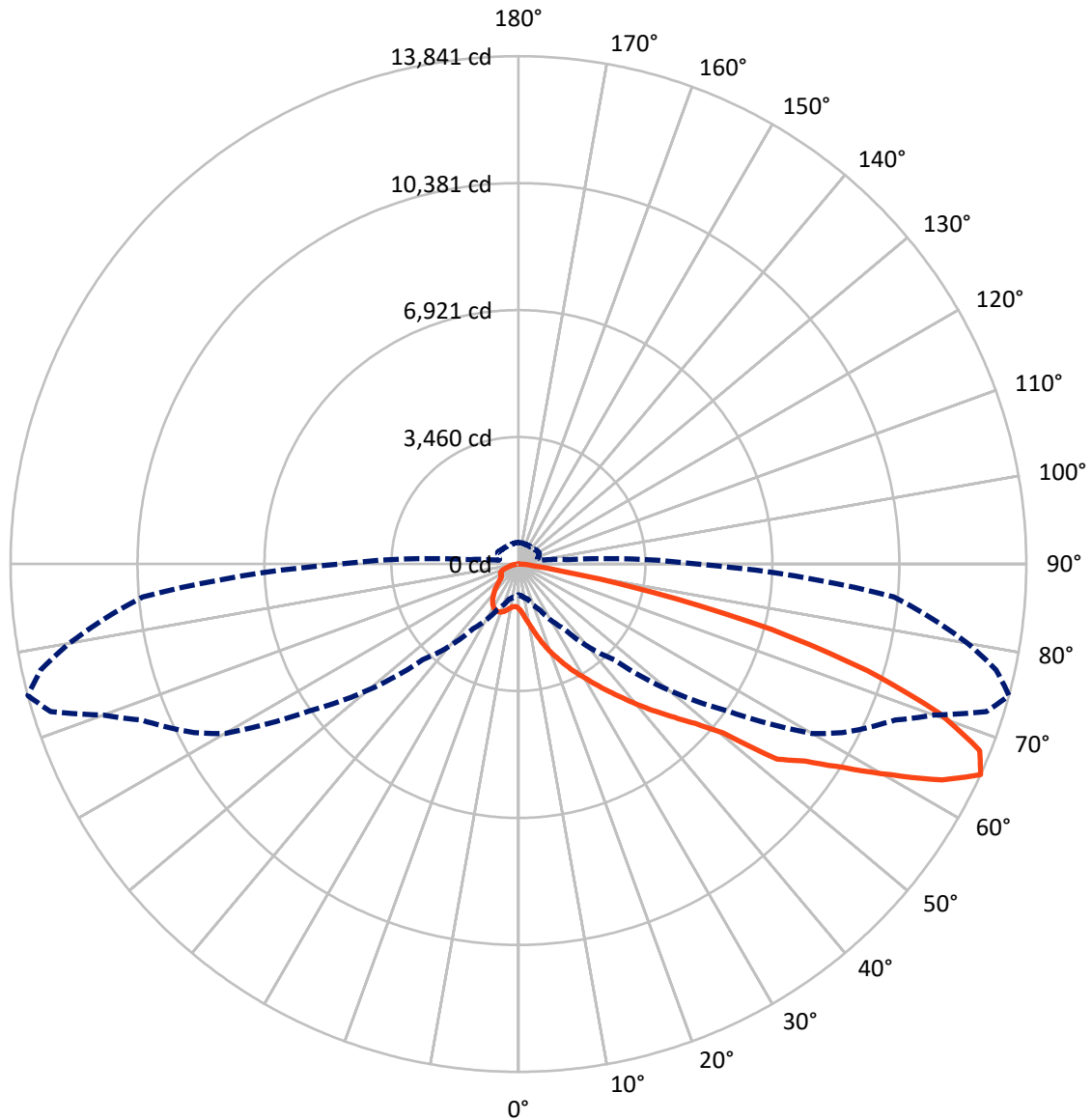
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 8.7 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	2104.2	0.0	2104.2
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	11898.8	0.0	11898.8
	% Fixture	85.0	0.0	85.0
Total	Lumens	14003.0	0.0	14003.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	143.2	1.0
10°-20°	547.1	3.9
20°-30°	1104.1	7.9
30°-40°	1875.0	13.4
40°-50°	2615.2	18.7
50°-60°	3205.3	22.9
60°-70°	3015.7	21.5
70°-80°	1322.4	9.4
80°-90°	175.0	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°	14003.0	100.0
0°-180°	14003.0	100.0

Coefficient of Utilization



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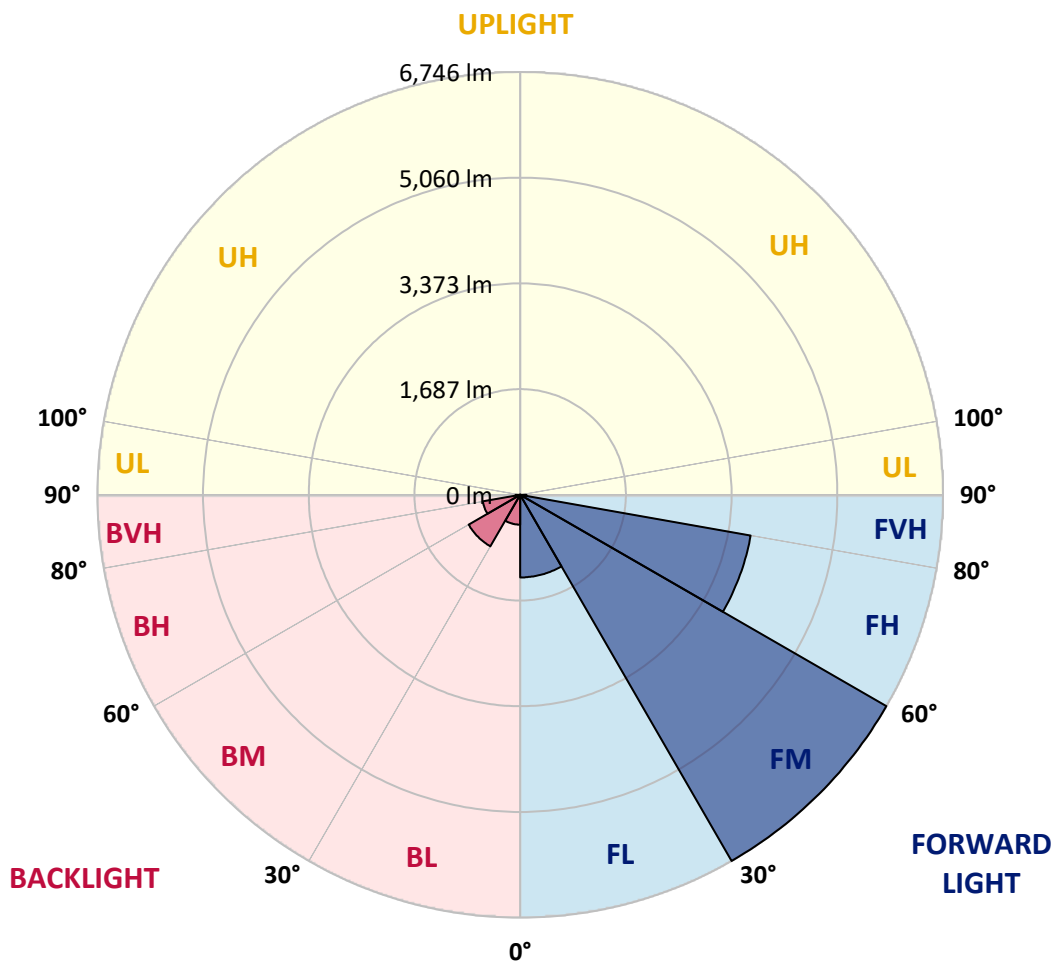
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1318.1	9.4			
FM (30°-60°)	6746.0	48.2			
FH (60°-80°)	3733.3	26.7			G2/5000
FVH (80°-90°)	101.4	0.7			G2/225
BL (0°-30°)	476.3	3.4	B1/500		
BM (30°-60°)	949.5	6.8	B1/1000		
BH (60°-80°)	604.8	4.3	B2/1000		G2/1000
BVH (80°-90°)	73.5	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°	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3
2.5°	1527.7	1509.9	1511.7	1486.8	1450.2	1410.1	1377.2	1359.4	1344.2	1339.8	1314.8
5°	1998.1	1975.8	1967.8	1910.8	1825.3	1723.7	1623.0	1583.8	1551.8	1532.2	1484.1
7.5°	2382.9	2371.3	2360.6	2308.1	2223.4	2093.4	1931.3	1873.4	1819.9	1761.1	1703.2
10°	2644.8	2640.3	2635.9	2599.4	2529.0	2415.9	2241.3	2178.0	2111.2	2036.4	1960.7
12.5°	2842.6	2842.6	2846.1	2815.8	2773.1	2685.8	2527.2	2468.4	2400.7	2322.3	2235.9
15°	2975.3	2978.8	2997.6	3006.5	2984.2	2928.1	2789.1	2737.4	2673.3	2595.8	2510.3
17.5°	3063.5	3070.6	3098.2	3127.6	3156.1	3136.5	3033.2	2985.1	2927.2	2855.9	2775.7
20°	3268.4	3259.4	3260.3	3251.4	3293.3	3308.4	3251.4	3211.3	3165.0	3100.0	3027.0
22.5°	3698.6	3681.7	3638.0	3526.7	3475.9	3470.6	3436.7	3415.3	3379.7	3338.7	3265.7
25°	4259.8	4240.2	4153.8	3970.3	3818.9	3679.0	3616.7	3603.3	3580.1	3552.5	3500.0
27.5°	4839.7	4818.4	4707.0	4475.4	4277.6	3995.3	3801.1	3783.2	3761.9	3750.3	3725.3
30°	5350.2	5327.0	5217.4	4982.3	4743.5	4406.8	4049.6	3987.2	3950.7	3954.3	3940.0
32.5°	5798.2	5777.8	5654.8	5415.2	5172.9	4846.0	4372.1	4275.0	4193.0	4162.7	4173.4
35°	6174.2	6155.5	6020.9	5779.5	5535.5	5263.8	4787.2	4641.1	4507.5	4423.7	4413.9
37.5°	6395.1	6384.4	6290.0	6085.1	5842.8	5643.2	5252.2	5090.1	4893.2	4771.1	4717.7
40°	6382.6	6394.2	6378.2	6285.5	6097.5	5952.3	5736.8	5576.4	5384.0	5202.3	5093.6
42.5°	6200.9	6216.9	6289.1	6337.2	6286.4	6198.2	6159.9	6040.5	5867.7	5675.3	5524.8
45°	5951.5	5965.7	6059.2	6233.0	6378.2	6403.1	6530.5	6470.8	6324.7	6160.8	5995.1
47.5°	5569.3	5596.9	5705.6	5981.7	6327.4	6567.9	6841.4	6869.0	6784.4	6649.0	6494.0
50°	5016.1	5052.6	5205.0	5597.8	6135.0	6737.1	7303.7	7408.8	7375.0	7237.8	7081.0
52.5°	4449.6	4486.1	4689.2	5107.0	5825.0	6806.6	7758.9	8027.9	8222.1	8363.8	8391.4
55°	3859.9	3900.8	4123.5	4604.6	5411.6	6718.4	8084.0	8389.6	8586.5	8734.3	8794.0
57.5°	3194.4	3240.7	3456.3	3942.7	4827.3	6363.9	8445.7	8878.6	9171.7	9399.8	9528.0
60°	2431.0	2488.9	2712.5	3202.4	4059.4	5685.1	8606.9	9247.4	9713.3	10055.4	10258.5
62.5°	1541.1	1599.9	1832.4	2341.0	3185.5	4757.8	8150.9	9085.3	9879.9	10385.9	10758.2
65°	840.9	866.8	995.9	1379.0	2147.7	3691.5	6994.6	8096.5	9241.2	9958.3	10530.2
67.5°	630.7	634.3	647.6	741.1	1143.8	2492.5	5468.6	6477.9	7749.1	8672.0	9355.2
70°	552.3	552.3	554.1	555.0	620.9	1350.5	3704.9	4634.0	5799.1	6732.7	7581.6
72.5°	495.3	489.9	488.2	477.5	486.4	692.2	2016.8	2851.5	3834.0	4881.6	5673.5
75°	427.6	426.7	426.7	416.0	421.4	487.3	874.8	1368.3	2129.9	3105.3	3884.8
77.5°	369.7	363.4	364.3	358.1	375.0	373.2	415.1	563.9	927.3	1631.1	2277.8
80°	304.7	300.2	302.9	299.3	326.0	276.1	279.7	344.7	460.5	715.3	1008.4
82.5°	225.4	227.2	244.1	242.3	274.4	186.2	204.9	257.4	310.0	356.3	387.5
85°	131.8	134.5	175.5	184.4	201.3	98.0	125.6	153.2	172.8	191.5	199.5
87.5°	14.3	18.7	98.0	100.7	90.0	29.4	50.8	64.1	68.6	73.0	64.1
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3
2.5°	1306.8	1295.2	1282.8	1275.6	1263.2	1252.5	1232.9	1216.8	1199.0	1186.6	1181.2
5°	1460.0	1432.4	1403.0	1381.6	1354.9	1331.8	1287.2	1233.8	1216.8	1181.2	1172.3
7.5°	1659.6	1609.7	1559.8	1518.8	1472.5	1434.2	1359.4	1263.2	1250.7	1193.7	1181.2
10°	1893.8	1820.8	1746.9	1683.6	1615.9	1557.1	1446.7	1311.3	1297.9	1224.9	1212.4
12.5°	2155.7	2066.7	1971.3	1876.9	1796.8	1713.9	1563.4	1386.1	1364.7	1278.3	1261.4
15°	2425.7	2329.5	2219.0	2105.0	2006.1	1896.5	1706.8	1484.1	1444.9	1343.3	1320.2
17.5°	2692.0	2587.8	2472.0	2344.6	2228.8	2097.8	1861.8	1593.6	1525.9	1407.5	1378.1
20°	2949.5	2843.4	2721.4	2596.7	2452.4	2302.7	2020.3	1701.4	1598.1	1460.9	1422.6
22.5°	3183.7	3092.9	2970.8	2827.4	2681.3	2513.0	2181.6	1809.2	1661.3	1501.9	1452.9
25°	3430.5	3347.6	3226.5	3088.4	2918.3	2731.2	2348.2	1911.7	1712.1	1524.2	1463.6
27.5°	3679.9	3608.6	3494.6	3349.4	3166.8	2959.2	2517.4	2006.1	1753.1	1531.3	1458.2
30°	3946.3	3891.0	3785.9	3623.8	3439.4	3209.6	2701.8	2098.7	1778.9	1521.5	1434.2
32.5°	4198.4	4196.6	4103.0	3934.7	3736.0	3483.0	2896.0	2192.3	1792.3	1493.9	1392.3
35°	4460.3	4496.8	4426.4	4266.1	4056.7	3776.1	3110.7	2292.0	1793.2	1444.9	1338.0
37.5°	4757.8	4822.8	4791.6	4639.3	4419.3	4110.2	3362.8	2404.3	1787.8	1377.2	1258.7
40°	5096.3	5185.4	5184.5	5056.2	4821.0	4484.3	3655.9	2529.9	1775.4	1292.6	1165.2
42.5°	5483.8	5589.8	5619.2	5492.7	5254.8	4893.2	3991.7	2668.0	1755.8	1208.8	1066.3
45°	5927.4	6020.9	6076.2	5958.6	5719.8	5338.6	4377.4	2824.7	1731.7	1101.0	953.2
47.5°	6402.2	6510.9	6593.7	6493.1	6238.3	5846.3	4834.4	3027.0	1722.8	978.1	831.1
50°	6991.0	7103.3	7282.3	7236.9	7097.0	6781.7	5800.9	3504.4	1726.4	861.4	728.7
52.5°	8451.9	8709.4	8935.6	8835.0	8502.7	7962.0	6586.6	3769.9	1651.5	766.1	657.4
55°	8892.9	9185.1	9519.1	9477.3	9158.4	8613.2	7207.5	3991.7	1579.4	696.6	611.1
57.5°	9664.3	10009.1	10475.8	10466.9	10075.9	9462.1	8006.5	4257.1	1548.2	656.5	587.9
60°	10481.2	10920.4	11565.3	11666.0	11241.0	10602.3	8950.8	4583.2	1552.7	634.3	574.6
62.5°	11078.0	11722.1	12660.1	12961.2	12460.6	11756.8	9930.7	4909.2	1525.9	608.4	558.5
65°	11114.6	12041.9	13372.7	13841.3	13334.4	12430.3	10276.3	4845.1	1365.6	573.7	532.7
67.5°	10223.8	11431.7	13048.5	13562.5	13044.0	12015.2	9670.6	4235.8	1109.9	513.1	488.2
70°	8515.2	9917.3	11595.6	12168.4	11739.9	10698.5	8416.3	3383.3	829.3	432.9	421.4
72.5°	6580.4	7888.1	9412.2	9942.3	9614.4	8698.7	6638.3	2465.7	592.4	351.0	342.1
75°	4704.3	5817.8	6924.2	7126.4	6803.1	5962.1	4307.0	1540.2	415.1	287.7	275.3
77.5°	2912.9	3637.2	4034.4	3774.3	3361.9	2794.5	1753.1	760.7	276.1	234.3	221.8
80°	1292.6	1517.0	1416.4	1262.3	996.8	819.5	535.4	337.6	178.2	180.8	173.7
82.5°	434.7	459.7	447.2	444.5	400.9	351.0	227.2	146.1	99.8	115.8	113.1
85°	212.0	221.8	222.7	230.7	200.4	155.9	61.5	57.9	42.8	62.4	65.0
87.5°	64.1	65.0	58.8	64.1	51.7	35.6	11.6	16.0	8.0	15.1	15.1
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°	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3
2.5°	1171.4	1167.8	1161.6	1154.5	1152.7	1143.8	1141.1	1136.7	1134.0	1129.5	1126.0
5°	1160.7	1154.5	1147.4	1139.3	1139.3	1126.9	1121.5	1116.2	1116.2	1108.2	1104.6
7.5°	1171.4	1163.4	1155.4	1148.2	1150.9	1136.7	1131.3	1126.0	1125.1	1117.1	1113.5
10°	1201.7	1193.7	1183.9	1176.8	1174.1	1162.5	1156.3	1148.2	1142.9	1137.6	1132.2
12.5°	1248.0	1237.3	1224.9	1209.7	1203.5	1193.7	1183.9	1173.2	1160.7	1155.4	1147.4
15°	1303.2	1285.4	1268.5	1249.8	1232.9	1223.1	1209.7	1192.8	1175.9	1168.7	1158.0
17.5°	1348.7	1330.0	1305.9	1283.6	1253.4	1245.3	1226.6	1206.1	1178.5	1175.9	1159.8
20°	1387.0	1358.5	1329.1	1302.4	1256.0	1251.6	1228.4	1204.4	1165.2	1165.2	1145.6
22.5°	1408.4	1369.2	1334.4	1298.8	1240.9	1237.3	1210.6	1182.1	1134.0	1135.8	1111.7
25°	1411.9	1364.7	1321.1	1278.3	1211.5	1205.3	1171.4	1140.2	1087.7	1084.1	1059.2
27.5°	1397.7	1342.4	1291.7	1240.0	1167.8	1154.5	1117.1	1079.7	1028.0	1019.1	992.4
30°	1364.7	1299.7	1242.7	1183.0	1107.3	1085.9	1046.7	1008.4	955.8	944.3	919.3
32.5°	1312.2	1238.2	1175.0	1115.3	1031.6	1004.8	965.6	927.3	876.6	867.6	844.5
35°	1242.7	1159.8	1093.0	1029.8	946.0	918.4	881.0	847.2	800.8	797.3	781.2
37.5°	1155.4	1069.0	997.7	937.1	857.8	843.6	805.3	780.3	742.0	745.6	737.6
40°	1056.5	968.3	900.6	847.2	778.6	766.1	742.9	724.2	691.3	701.1	702.0
42.5°	956.7	868.5	807.1	759.0	700.2	692.2	676.1	665.4	640.5	660.1	668.1
45°	843.6	761.6	709.1	672.6	628.9	628.9	620.9	620.0	603.1	630.7	638.7
47.5°	734.0	669.9	633.4	611.1	580.8	595.1	592.4	599.5	587.0	615.5	622.7
50°	651.2	606.6	584.4	573.7	552.3	574.6	579.9	589.7	579.0	604.0	609.3
52.5°	598.6	569.2	556.8	554.1	538.9	566.6	575.5	584.4	571.9	595.1	594.2
55°	569.2	549.6	545.2	550.5	538.9	565.7	574.6	580.8	570.1	586.1	585.3
57.5°	558.5	547.8	550.5	558.5	550.5	572.8	577.2	584.4	573.7	580.8	584.4
60°	557.6	557.6	568.3	579.0	573.7	589.7	592.4	591.5	581.7	582.6	584.4
62.5°	552.3	565.7	583.5	600.4	598.6	618.2	620.0	608.4	600.4	591.5	588.8
65°	535.4	557.6	583.5	606.6	610.2	640.5	644.1	632.5	627.1	612.0	600.4
67.5°	498.0	526.5	556.8	585.3	591.5	632.5	640.5	644.9	647.6	637.8	622.7
70°	434.7	464.1	495.3	528.2	537.2	582.6	599.5	620.0	636.0	650.3	644.9
72.5°	353.6	380.4	407.1	437.4	450.7	498.0	520.2	555.9	580.8	617.3	632.5
75°	280.6	296.6	312.7	331.4	342.1	388.4	416.0	458.8	492.6	543.4	577.2
77.5°	220.9	228.9	237.0	245.0	249.4	275.3	297.5	340.3	379.5	443.6	493.5
80°	170.1	174.6	175.5	178.2	176.4	188.9	196.9	222.7	256.6	319.8	378.6
82.5°	109.6	113.1	114.9	119.4	110.5	126.5	131.8	134.5	152.3	198.6	240.5
85°	61.5	62.4	63.2	65.0	52.6	68.6	69.5	65.0	63.2	82.0	92.6
87.5°	15.1	14.3	15.1	15.1	6.2	14.3	14.3	9.8	7.1	13.4	10.7
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°	1213.3	1213.3	1213.3	1213.3	1213.3	1213.3
2.5°	1118.0	1116.2	1117.1	1112.6	1110.8	1111.7
5°	1100.1	1096.6	1096.6	1093.9	1090.3	1090.3
7.5°	1108.2	1101.0	1098.4	1093.0	1087.7	1088.6
10°	1120.6	1108.2	1099.3	1091.2	1085.0	1085.0
12.5°	1128.6	1106.4	1093.0	1082.3	1075.2	1075.2
15°	1130.4	1096.6	1077.0	1065.4	1058.3	1058.3
17.5°	1119.7	1077.0	1052.0	1036.9	1028.9	1030.7
20°	1093.0	1040.5	1011.1	995.0	987.0	987.9
22.5°	1051.1	990.6	956.7	938.0	930.0	930.0
25°	994.1	928.2	891.7	876.6	869.4	869.4
27.5°	929.1	861.4	829.3	817.8	813.3	813.3
30°	856.1	799.9	776.8	768.8	761.6	761.6
32.5°	794.6	754.5	746.5	735.8	717.1	716.2
35°	745.6	741.1	734.9	702.8	676.1	672.6
37.5°	718.9	745.6	706.4	651.2	629.8	628.9
40°	704.6	729.6	661.9	635.1	632.5	632.5
42.5°	670.8	688.6	659.2	644.1	644.1	644.9
45°	635.1	650.3	665.4	652.1	656.5	657.4
47.5°	610.2	640.5	665.4	653.8	662.8	668.1
50°	587.0	631.6	652.1	652.1	661.9	662.8
52.5°	581.7	619.1	639.6	649.4	650.3	645.8
55°	582.6	609.3	629.8	642.3	636.9	636.9
57.5°	581.7	604.0	621.8	626.2	628.9	628.9
60°	582.6	596.8	611.1	609.3	618.2	618.2
62.5°	585.3	587.0	594.2	592.4	605.7	605.7
65°	591.5	574.6	570.1	571.9	587.9	587.0
67.5°	603.1	557.6	543.4	544.3	567.4	563.9
70°	620.0	534.5	513.1	507.8	547.0	540.7
72.5°	625.3	507.8	473.9	468.6	491.7	473.9
75°	600.4	486.4	432.0	414.2	404.4	399.1
77.5°	535.4	473.0	388.4	351.0	335.8	332.3
80°	443.6	445.4	331.4	286.8	333.2	332.3
82.5°	334.9	384.8	265.5	248.5	241.4	201.3
85°	162.1	289.5	204.0	171.0	102.4	97.1
87.5°	14.3	121.1	117.6	76.6	34.7	33.0
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)