

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: P197236

Luminaire Tested: **NAV-AF-04-D-UNV-T2R-8030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197236
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-04-D-UNV-T2R-8030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 80 CRI, 3000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13746 lumens
Efficiency: N/A
Efficacy: 106.6 lumens/watt
Luminous Opening: Rectangular (W 1' 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

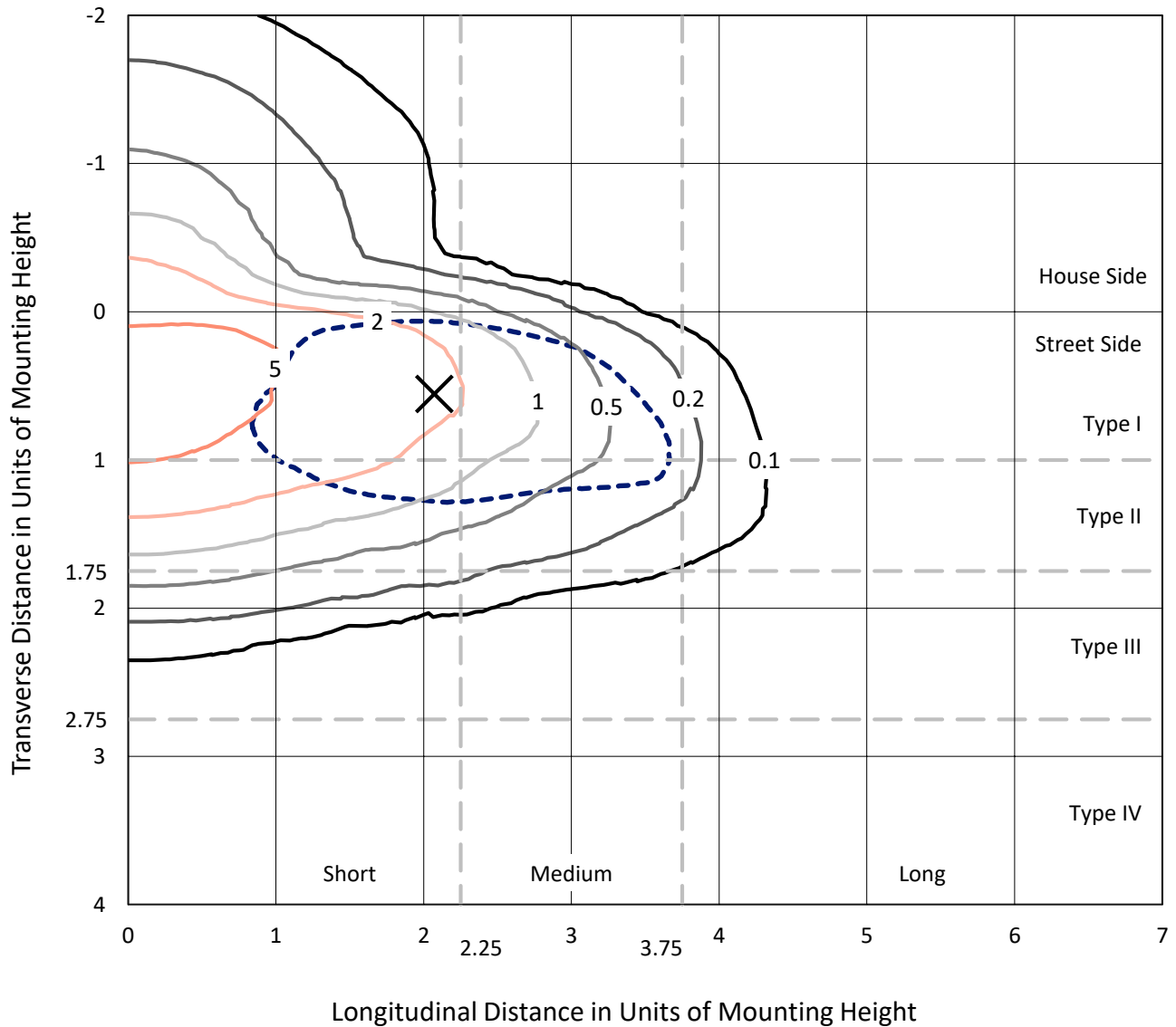


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Iso-Footcandle Lines of Horizontal Illumination

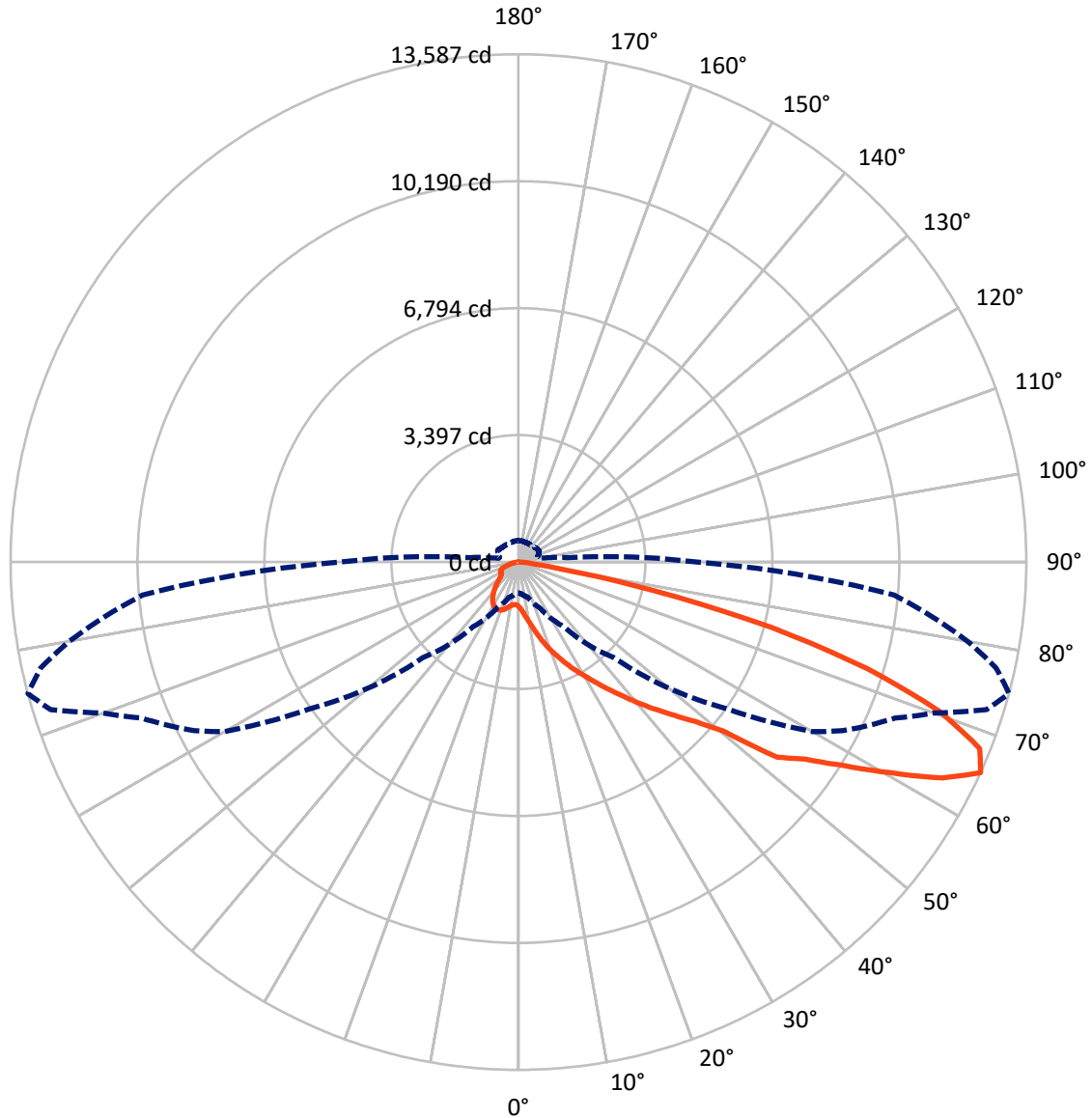
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 8.5 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	2065.5	0.0	2065.5
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	11680.5	0.0	11680.5
	% Fixture	85.0	0.0	85.0
Total	Lumens	13746.0	0.0	13746.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.6	1.0
10°-20°	537.1	3.9
20°-30°	1083.8	7.9
30°-40°	1840.6	13.4
40°-50°	2567.2	18.7
50°-60°	3146.5	22.9
60°-70°	2960.4	21.5
70°-80°	1298.1	9.4
80°-90°	171.8	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°	13746.0	100.0
0°-180°	13746.0	100.0

Coefficient of Utilization



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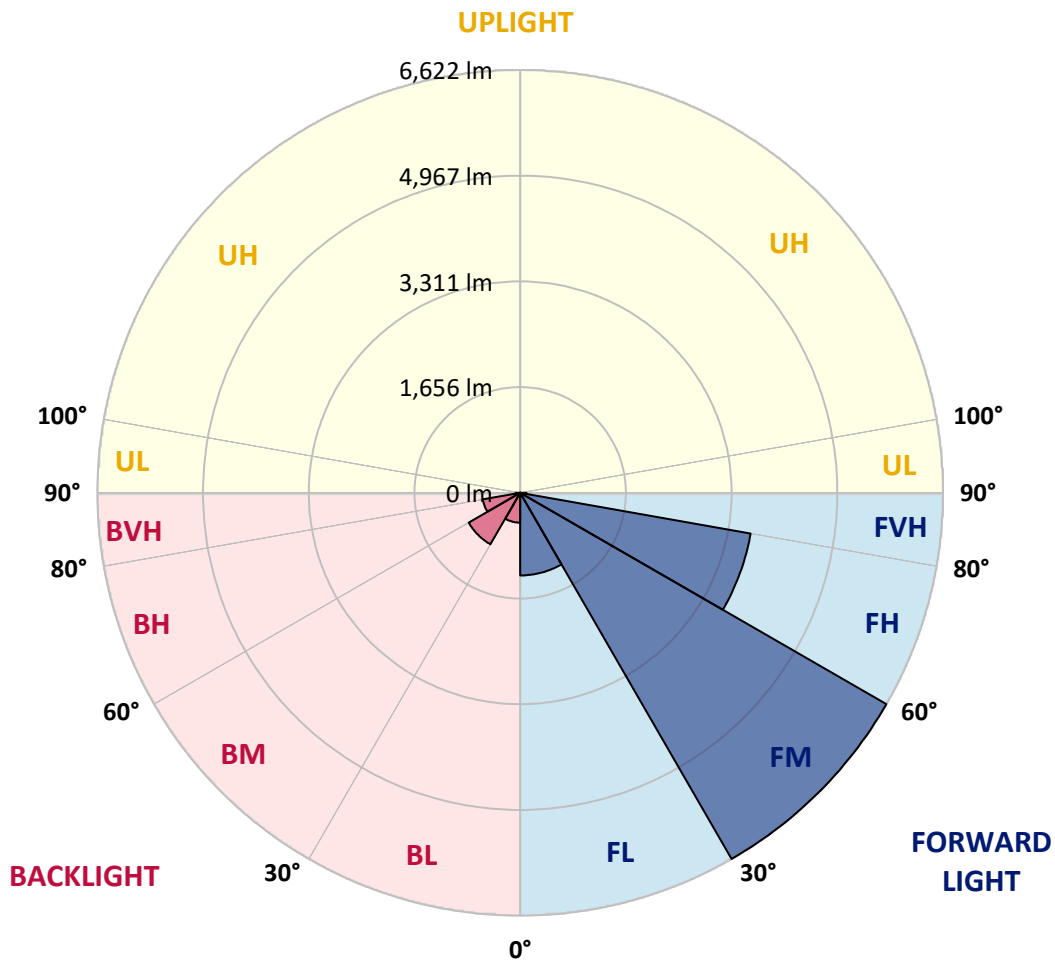
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1293.9	9.4			
FM (30°-60°)	6622.2	48.2			
FH (60°-80°)	3664.8	26.7			G2/5000
FVH (80°-90°)	99.6	0.7			G1/100
BL (0°-30°)	467.6	3.4	B1/500		
BM (30°-60°)	932.1	6.8	B1/1000		
BH (60°-80°)	593.7	4.3	B2/1000		G2/1000
BVH (80°-90°)	72.2	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°	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0
2.5°	1499.7	1482.2	1483.9	1459.5	1423.6	1384.3	1351.9	1334.4	1319.6	1315.2	1290.7
5°	1961.4	1939.5	1931.7	1875.7	1791.8	1692.1	1593.3	1554.8	1523.3	1504.1	1456.8
7.5°	2339.2	2327.8	2317.3	2265.7	2182.6	2055.0	1895.8	1839.0	1786.5	1728.8	1672.0
10°	2596.3	2591.9	2587.5	2551.7	2482.6	2371.5	2200.1	2138.0	2072.5	1999.0	1924.7
12.5°	2790.4	2790.4	2793.9	2764.2	2722.2	2636.5	2480.8	2423.1	2356.7	2279.7	2194.9
15°	2920.7	2924.2	2942.5	2951.3	2929.4	2874.3	2737.9	2687.2	2624.2	2548.2	2464.2
17.5°	3007.2	3014.2	3041.4	3070.2	3098.2	3079.0	2977.5	2930.3	2873.5	2803.5	2724.8
20°	3208.4	3199.6	3200.5	3191.8	3232.9	3247.7	3191.8	3152.4	3106.9	3043.1	2971.4
22.5°	3630.7	3614.1	3571.3	3462.0	3412.1	3406.9	3373.6	3352.7	3317.7	3277.5	3205.7
25°	4181.6	4162.4	4077.6	3897.4	3748.8	3611.5	3550.3	3537.2	3514.4	3487.3	3435.7
27.5°	4750.9	4729.9	4620.6	4393.3	4199.1	3921.9	3731.3	3713.8	3692.8	3681.5	3657.0
30°	5252.0	5229.2	5121.7	4890.8	4656.5	4325.9	3975.3	3914.1	3878.2	3881.7	3867.7
32.5°	5691.8	5671.7	5551.0	5315.8	5078.0	4757.0	4291.8	4196.5	4116.1	4086.3	4096.8
35°	6060.8	6042.5	5910.4	5673.5	5433.9	5167.2	4699.3	4555.9	4424.7	4342.5	4332.9
37.5°	6277.7	6267.2	6174.5	5973.4	5735.5	5539.7	5155.8	4996.6	4803.4	4683.6	4631.1
40°	6265.5	6276.8	6261.1	6170.1	5985.6	5843.1	5631.5	5474.1	5285.2	5106.8	5000.1
42.5°	6087.1	6102.8	6173.6	6220.9	6171.0	6084.5	6046.9	5929.7	5760.0	5571.1	5423.4
45°	5842.2	5856.2	5948.0	6118.6	6261.1	6285.6	6410.6	6352.0	6208.6	6047.7	5885.1
47.5°	5467.1	5494.2	5600.9	5872.0	6211.2	6447.4	6715.8	6742.9	6659.8	6526.9	6374.8
50°	4924.1	4959.9	5109.4	5495.1	6022.4	6613.5	7169.7	7272.8	7239.6	7104.9	6951.0
52.5°	4367.9	4403.8	4603.1	5013.2	5718.1	6681.7	7616.5	7880.6	8071.2	8210.3	8237.4
55°	3789.0	3829.2	4047.8	4520.1	5312.3	6595.1	7935.7	8235.6	8428.9	8574.0	8632.6
57.5°	3135.8	3181.3	3392.9	3870.3	4738.7	6247.1	8290.7	8715.7	9003.4	9227.2	9353.2
60°	2386.4	2443.2	2662.7	3143.7	3984.9	5580.8	8449.0	9077.7	9535.1	9870.8	10070.2
62.5°	1512.8	1570.5	1798.8	2298.1	3127.0	4670.5	8001.3	8918.6	9698.6	10195.3	10560.8
65°	825.5	850.8	977.6	1353.7	2108.3	3623.7	6866.2	7947.9	9071.6	9775.5	10336.9
67.5°	619.1	622.6	635.7	727.5	1122.8	2446.7	5368.3	6359.0	7606.9	8512.8	9183.5
70°	542.2	542.2	543.9	544.8	609.5	1325.7	3636.9	4548.9	5692.7	6609.1	7442.5
72.5°	486.2	480.9	479.2	468.7	477.5	679.5	1979.8	2799.1	3763.7	4792.0	5569.4
75°	419.7	418.9	418.9	408.4	413.6	478.3	858.7	1343.2	2090.8	3048.3	3813.5
77.5°	362.9	356.8	357.7	351.5	368.1	366.4	407.5	553.5	910.3	1601.1	2236.0
80°	299.1	294.7	297.3	293.8	320.1	271.1	274.6	338.4	452.1	702.2	989.9
82.5°	221.2	223.0	239.6	237.9	269.3	182.8	201.1	252.7	304.3	349.8	380.4
85°	129.4	132.0	172.3	181.0	197.6	96.2	123.3	150.4	169.6	188.0	195.9
87.5°	14.0	18.4	96.2	98.8	88.3	28.9	49.8	63.0	67.3	71.7	63.0
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°	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0
2.5°	1282.8	1271.5	1259.2	1252.2	1240.0	1229.5	1210.2	1194.5	1177.0	1164.8	1159.5
5°	1433.2	1406.1	1377.3	1356.3	1330.0	1307.3	1263.6	1211.1	1194.5	1159.5	1150.8
7.5°	1629.1	1580.1	1531.2	1490.9	1445.5	1407.9	1334.4	1240.0	1227.7	1171.8	1159.5
10°	1859.1	1787.4	1714.8	1652.7	1586.3	1528.5	1420.1	1287.2	1274.1	1202.4	1190.1
12.5°	2116.2	2028.7	1935.2	1842.5	1763.8	1682.5	1534.7	1360.7	1339.7	1254.8	1238.2
15°	2381.1	2286.7	2178.3	2066.3	1969.3	1861.7	1675.5	1456.8	1418.4	1318.7	1295.9
17.5°	2642.6	2540.3	2426.6	2301.6	2187.9	2059.3	1827.6	1564.4	1497.9	1381.6	1352.8
20°	2895.3	2791.3	2671.5	2549.0	2407.4	2260.5	1983.3	1670.2	1568.8	1434.1	1396.5
22.5°	3125.3	3036.1	2916.3	2775.5	2632.1	2466.8	2141.5	1776.0	1630.9	1474.3	1426.2
25°	3367.5	3286.2	3167.3	3031.7	2864.7	2681.1	2305.1	1876.6	1680.7	1496.2	1436.7
27.5°	3612.4	3542.4	3430.5	3287.9	3108.7	2904.9	2471.2	1969.3	1720.9	1503.2	1431.5
30°	3873.8	3819.6	3716.4	3557.3	3376.3	3150.7	2652.2	2060.2	1746.3	1493.6	1407.9
32.5°	4121.3	4119.6	4027.7	3862.5	3667.5	3419.1	2842.9	2152.0	1759.4	1466.5	1366.8
35°	4378.4	4414.2	4345.2	4187.8	3982.3	3706.8	3053.6	2250.0	1760.3	1418.4	1313.4
37.5°	4670.5	4734.3	4703.7	4554.2	4338.2	4034.7	3301.1	2360.2	1755.0	1351.9	1235.6
40°	5002.8	5090.2	5089.3	4963.4	4732.5	4402.0	3588.8	2483.5	1742.8	1268.8	1143.8
42.5°	5383.1	5487.2	5516.1	5391.9	5158.4	4803.4	3918.4	2619.0	1723.5	1186.6	1046.7
45°	5818.6	5910.4	5964.7	5849.2	5614.9	5240.6	4297.1	2772.9	1699.9	1080.8	935.7
47.5°	6284.7	6391.4	6472.7	6373.9	6123.8	5739.0	4745.7	2971.4	1691.2	960.2	815.9
50°	6862.7	6972.9	7148.7	7104.1	6966.8	6657.2	5694.4	3440.1	1694.7	845.6	715.3
52.5°	8296.8	8549.5	8771.7	8672.8	8346.7	7815.9	6465.7	3700.7	1621.2	752.0	645.3
55°	8729.7	9016.5	9344.4	9303.3	8990.3	8455.1	7075.2	3918.4	1550.4	683.8	599.9
57.5°	9487.0	9825.4	10283.6	10274.8	9891.0	9288.5	7859.6	4179.0	1519.8	644.5	577.1
60°	10288.8	10719.9	11353.0	11451.9	11034.7	10407.8	8786.5	4499.1	1524.2	622.6	564.0
62.5°	10874.7	11506.9	12427.7	12723.3	12231.9	11541.0	9748.4	4819.1	1497.9	597.3	548.3
65°	10910.6	11820.9	13127.3	13587.3	13089.7	12202.1	10087.7	4756.2	1340.5	563.1	522.9
67.5°	10036.1	11221.9	12809.0	13313.6	12804.6	11794.6	9493.1	4158.0	1089.6	503.7	479.2
70°	8358.9	9735.3	11382.8	11945.0	11524.4	10502.2	8261.8	3321.2	814.1	425.0	413.6
72.5°	6459.6	7743.3	9239.5	9759.8	9438.0	8539.0	6516.4	2420.5	581.5	344.5	335.8
75°	4618.0	5711.1	6797.1	6995.6	6678.2	5852.7	4228.0	1511.9	407.5	282.4	270.2
77.5°	2859.5	3570.4	3960.4	3705.1	3300.2	2743.2	1720.9	746.8	271.1	230.0	217.7
80°	1268.8	1489.2	1390.4	1239.1	978.5	804.5	525.5	331.4	174.9	177.5	170.5
82.5°	426.7	451.2	439.0	436.4	393.5	344.5	223.0	143.4	97.9	113.7	111.1
85°	208.1	217.7	218.6	226.5	196.8	153.0	60.3	56.8	42.0	61.2	63.8
87.5°	63.0	63.8	57.7	63.0	50.7	35.0	11.4	15.7	7.9	14.9	14.9
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°	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0
2.5°	1149.9	1146.4	1140.3	1133.3	1131.5	1122.8	1120.2	1115.8	1113.2	1108.8	1105.3
5°	1139.4	1133.3	1126.3	1118.4	1118.4	1106.2	1100.9	1095.7	1095.7	1087.8	1084.3
7.5°	1149.9	1142.0	1134.2	1127.2	1129.8	1115.8	1110.6	1105.3	1104.4	1096.6	1093.1
10°	1179.6	1171.8	1162.1	1155.2	1152.5	1141.2	1135.0	1127.2	1121.9	1116.7	1111.4
12.5°	1225.1	1214.6	1202.4	1187.5	1181.4	1171.8	1162.1	1151.7	1139.4	1134.2	1126.3
15°	1279.3	1261.8	1245.2	1226.9	1210.2	1200.6	1187.5	1170.9	1154.3	1147.3	1136.8
17.5°	1323.9	1305.6	1282.0	1260.1	1230.4	1222.5	1204.1	1184.0	1156.9	1154.3	1138.5
20°	1361.5	1333.5	1304.7	1278.5	1233.0	1228.6	1205.9	1182.3	1143.8	1143.8	1124.5
22.5°	1382.5	1344.0	1309.9	1275.0	1218.1	1214.6	1188.4	1160.4	1113.2	1114.9	1091.3
25°	1386.0	1339.7	1296.8	1254.8	1189.3	1183.1	1149.9	1119.3	1067.7	1064.2	1039.7
27.5°	1372.0	1317.8	1268.0	1217.2	1146.4	1133.3	1096.6	1059.8	1009.1	1000.4	974.1
30°	1339.7	1275.8	1219.9	1161.3	1086.9	1066.0	1027.5	989.9	938.3	926.9	902.4
32.5°	1288.1	1215.5	1153.4	1094.8	1012.6	986.4	947.9	910.3	860.5	851.7	829.0
35°	1219.9	1138.5	1073.0	1010.9	928.7	901.6	864.8	831.6	786.1	782.6	766.9
37.5°	1134.2	1049.3	979.4	919.9	842.1	828.1	790.5	766.0	728.4	731.9	724.0
40°	1037.1	950.5	884.1	831.6	764.3	752.0	729.3	710.9	678.6	688.2	689.1
42.5°	939.2	852.6	792.3	745.0	687.3	679.5	663.7	653.2	628.7	648.0	655.8
45°	828.1	747.7	696.1	660.2	617.4	617.4	609.5	608.6	592.0	619.1	627.0
47.5°	720.6	657.6	621.7	599.9	570.1	584.1	581.5	588.5	576.3	604.2	611.2
50°	639.2	595.5	573.6	563.1	542.2	564.0	569.3	578.9	568.4	592.9	598.1
52.5°	587.6	558.8	546.5	543.9	529.0	556.2	564.9	573.6	561.4	584.1	583.3
55°	558.8	539.5	535.2	540.4	529.0	555.3	564.0	570.1	559.7	575.4	574.5
57.5°	548.3	537.8	540.4	548.3	540.4	562.3	566.6	573.6	563.1	570.1	573.6
60°	547.4	547.4	557.9	568.4	563.1	578.9	581.5	580.6	571.0	571.9	573.6
62.5°	542.2	555.3	572.8	589.4	587.6	606.9	608.6	597.3	589.4	580.6	578.0
65°	525.5	547.4	572.8	595.5	599.0	628.7	632.2	620.9	615.6	600.8	589.4
67.5°	488.8	516.8	546.5	574.5	580.6	620.9	628.7	633.1	635.7	626.1	611.2
70°	426.7	455.6	486.2	518.6	527.3	571.9	588.5	608.6	624.4	638.4	633.1
72.5°	347.2	373.4	399.6	429.4	442.5	488.8	510.7	545.7	570.1	606.0	620.9
75°	275.5	291.2	306.9	325.3	335.8	381.3	408.4	450.3	483.6	533.4	566.6
77.5°	216.9	224.7	232.6	240.5	244.8	270.2	292.1	334.0	372.5	435.5	484.4
80°	167.0	171.4	172.3	174.9	173.1	185.4	193.3	218.6	251.8	313.9	371.6
82.5°	107.6	111.1	112.8	117.2	108.4	124.2	129.4	132.0	149.5	195.0	236.1
85°	60.3	61.2	62.1	63.8	51.6	67.3	68.2	63.8	62.1	80.4	90.9
87.5°	14.9	14.0	14.9	14.9	6.1	14.0	14.0	9.6	7.0	13.1	10.5
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):

	135°	145°	155°	165°	175°	180°
0°	1191.0	1191.0	1191.0	1191.0	1191.0	1191.0
2.5°	1097.4	1095.7	1096.6	1092.2	1090.4	1091.3
5°	1080.0	1076.5	1076.5	1073.8	1070.3	1070.3
7.5°	1087.8	1080.8	1078.2	1073.0	1067.7	1068.6
10°	1100.1	1087.8	1079.1	1071.2	1065.1	1065.1
12.5°	1107.9	1086.1	1073.0	1062.5	1055.5	1055.5
15°	1109.7	1076.5	1057.2	1045.8	1038.9	1038.9
17.5°	1099.2	1057.2	1032.7	1017.9	1010.0	1011.7
20°	1073.0	1021.4	992.5	976.8	968.9	969.8
22.5°	1031.9	972.4	939.2	920.8	912.9	912.9
25°	975.9	911.2	875.3	860.5	853.5	853.5
27.5°	912.1	845.6	814.1	802.7	798.4	798.4
30°	840.4	785.3	762.5	754.7	747.7	747.7
32.5°	780.0	740.7	732.8	722.3	703.9	703.1
35°	731.9	727.5	721.4	689.9	663.7	660.2
37.5°	705.7	731.9	693.4	639.2	618.2	617.4
40°	691.7	716.2	649.7	623.5	620.9	620.9
42.5°	658.5	676.0	647.1	632.2	632.2	633.1
45°	623.5	638.4	653.2	640.1	644.5	645.3
47.5°	599.0	628.7	653.2	641.8	650.6	655.8
50°	576.3	620.0	640.1	640.1	649.7	650.6
52.5°	571.0	607.7	627.9	637.5	638.4	634.0
55°	571.9	598.1	618.2	630.5	625.2	625.2
57.5°	571.0	592.9	610.4	614.7	617.4	617.4
60°	571.9	585.9	599.9	598.1	606.9	606.9
62.5°	574.5	576.3	583.3	581.5	594.6	594.6
65°	580.6	564.0	559.7	561.4	577.1	576.3
67.5°	592.0	547.4	533.4	534.3	557.0	553.5
70°	608.6	524.7	503.7	498.4	536.9	530.8
72.5°	613.9	498.4	465.2	460.0	482.7	465.2
75°	589.4	477.5	424.1	406.6	397.0	391.8
77.5°	525.5	464.3	381.3	344.5	329.7	326.2
80°	435.5	437.2	325.3	281.6	327.0	326.2
82.5°	328.8	377.8	260.6	244.0	237.0	197.6
85°	159.2	284.2	200.3	167.9	100.6	95.3
87.5°	14.0	118.9	115.4	75.2	34.1	32.4
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)