

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: P197253

Luminaire Tested: **NAV-AF-03-D-UNV-T2R-8030-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197253
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-8030-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 80 CRI, 3000K, 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: 16992 lumens
Efficiency: N/A
Efficacy: 89.0 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

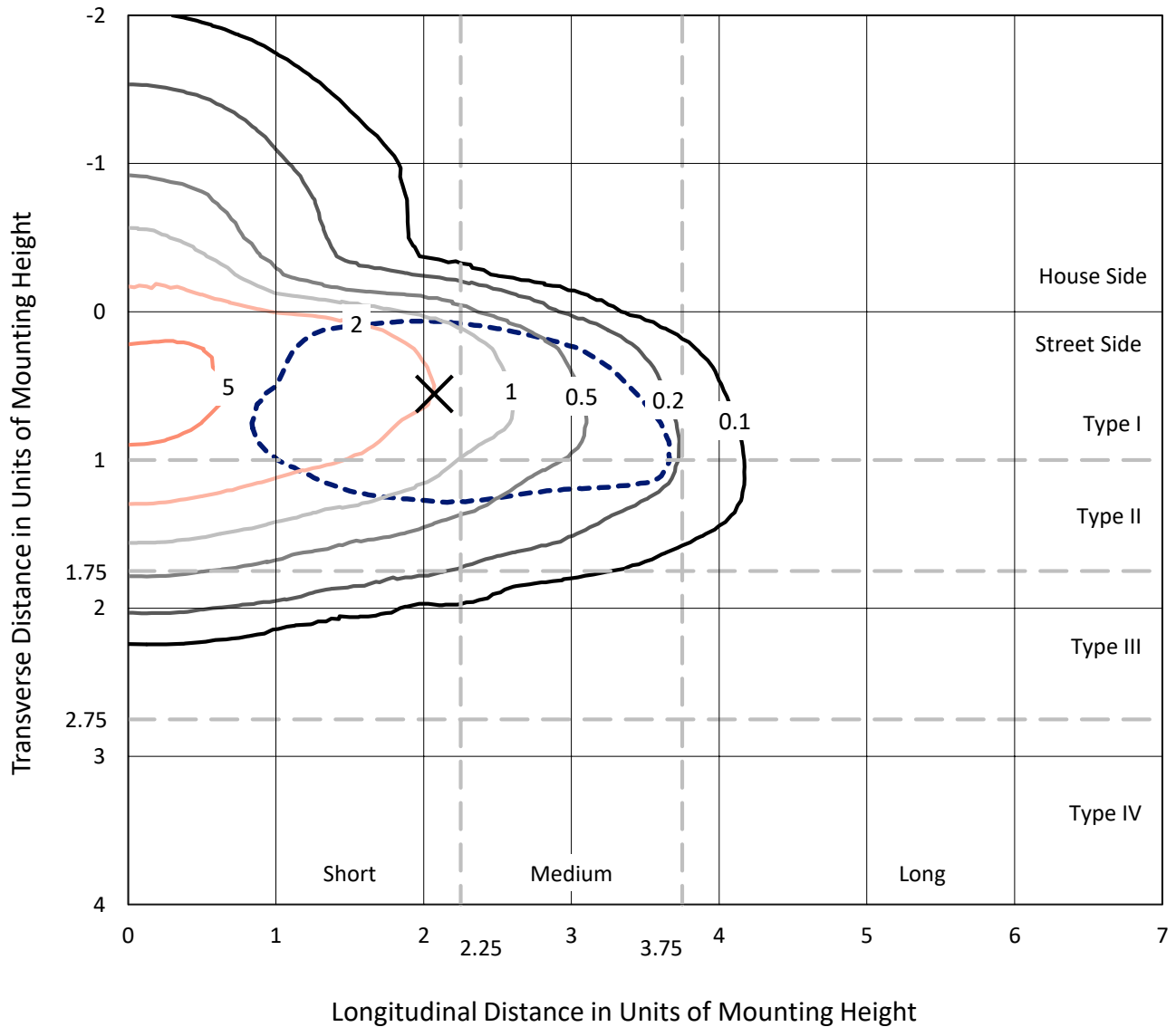
Input Watts (W): 191
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

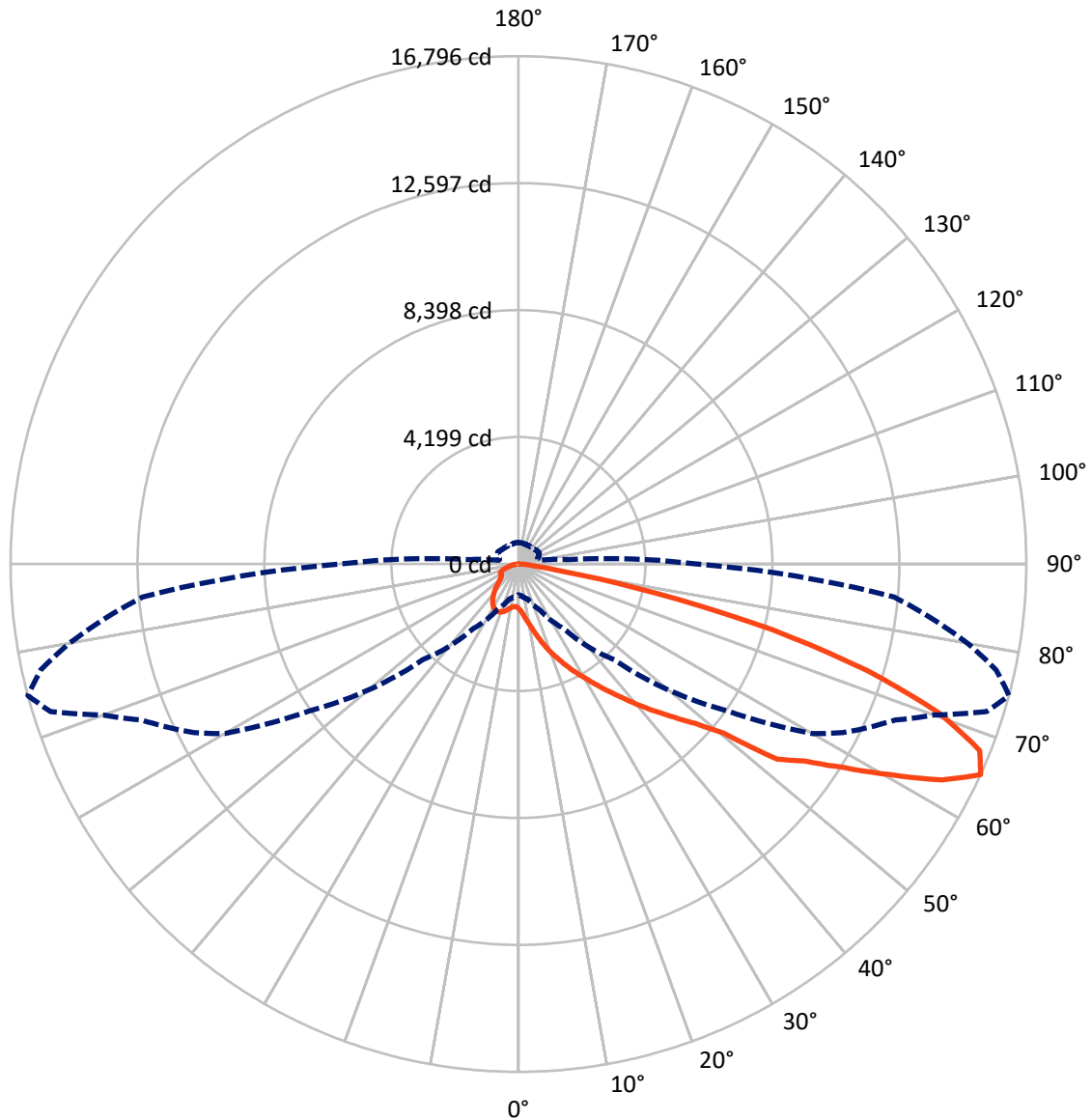
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.8 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	2553.3	0.0	2553.3
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	14438.7	0.0	14438.7
	% Fixture	85.0	0.0	85.0
Total	Lumens	16992.0	0.0	16992.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	173.8	1.0
10°-20°	663.9	3.9
20°-30°	1339.8	7.9
30°-40°	2275.3	13.4
40°-50°	3173.4	18.7
50°-60°	3889.5	22.9
60°-70°	3659.4	21.5
70°-80°	1604.6	9.4
80°-90°	212.3	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°	16992.0	100.0
0°-180°	16992.0	100.0



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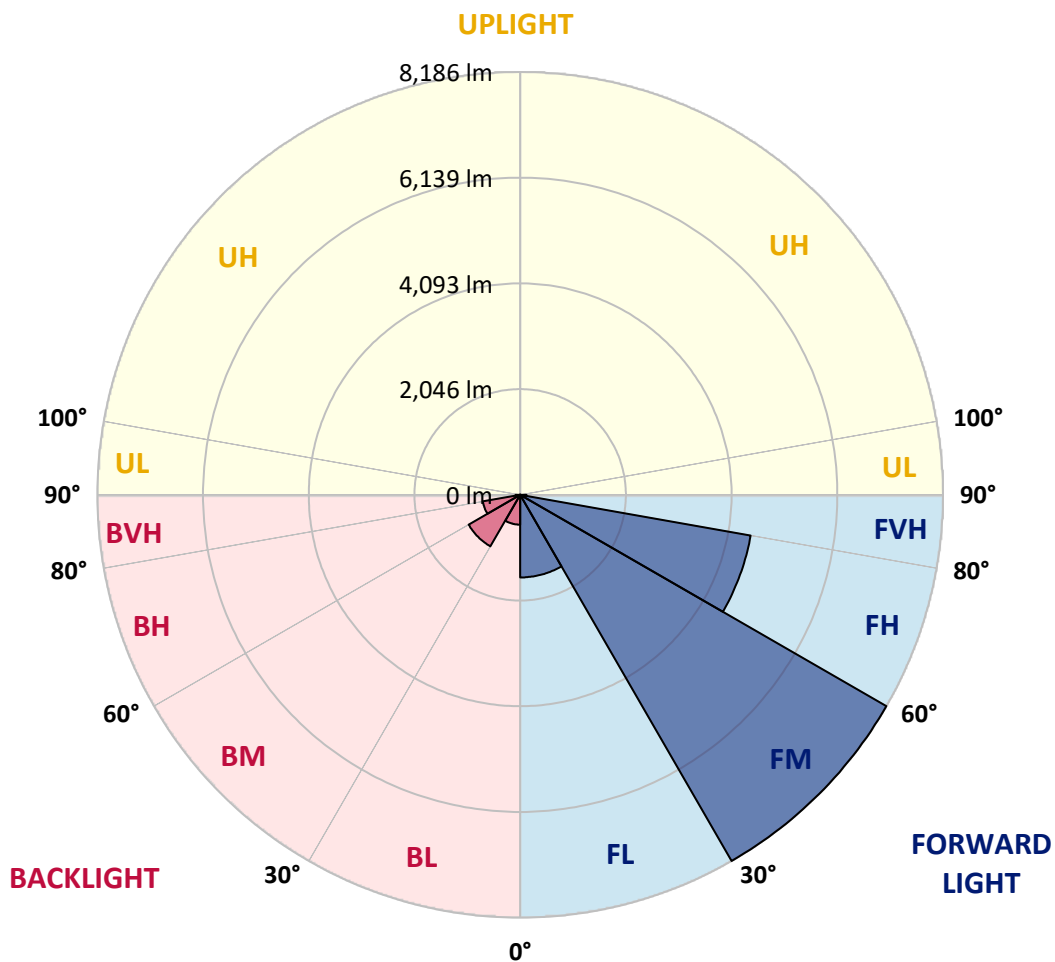
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1599.4	9.4			
FM (30°-60°)	8186.0	48.2			
FH (60°-80°)	4530.2	26.7			G2/5000
FVH (80°-90°)	123.1	0.7			G2/225
BL (0°-30°)	578.0	3.4	B2/1000		
BM (30°-60°)	1152.2	6.8	B2/2500		
BH (60°-80°)	733.9	4.3	B2/1000		G2/1000
BVH (80°-90°)	89.2	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°	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3
2.5°	1853.8	1832.2	1834.4	1804.1	1759.8	1711.1	1671.1	1649.5	1631.2	1625.7	1595.5
5°	2424.6	2397.5	2387.8	2318.6	2214.9	2091.6	1969.5	1921.9	1883.0	1859.2	1800.9
7.5°	2891.5	2877.5	2864.5	2800.7	2698.0	2540.2	2343.5	2273.2	2208.4	2137.0	2066.8
10°	3209.3	3203.9	3198.5	3154.2	3068.8	2931.5	2719.7	2642.9	2561.8	2471.0	2379.2
12.5°	3449.3	3449.3	3453.6	3416.9	3365.0	3259.1	3066.7	2995.3	2913.2	2818.0	2713.2
15°	3610.4	3614.7	3637.4	3648.2	3621.2	3553.1	3384.5	3321.8	3243.9	3149.9	3046.1
17.5°	3717.4	3726.0	3759.5	3795.2	3829.8	3806.0	3680.6	3622.3	3552.0	3465.5	3368.2
20°	3966.0	3955.2	3956.3	3945.5	3996.3	4014.6	3945.5	3896.8	3840.6	3761.7	3673.1
22.5°	4488.1	4467.6	4414.6	4279.5	4217.9	4211.4	4170.3	4144.4	4101.1	4051.4	3962.8
25°	5169.1	5145.3	5040.5	4817.8	4634.0	4464.3	4388.7	4372.4	4344.3	4310.8	4247.0
27.5°	5872.8	5846.9	5711.7	5430.7	5190.7	4848.1	4612.4	4590.8	4564.8	4550.8	4520.5
30°	6492.2	6464.1	6331.1	6045.7	5756.1	5347.5	4914.0	4838.3	4794.0	4798.3	4781.0
32.5°	7035.9	7011.0	6861.9	6571.1	6277.1	5880.4	5305.3	5187.5	5088.0	5051.3	5064.2
35°	7492.1	7469.4	7306.1	7013.2	6717.0	6387.3	5809.0	5631.7	5469.6	5368.0	5356.1
37.5°	7760.1	7747.2	7632.6	7384.0	7089.9	6847.8	6373.3	6176.5	5937.7	5789.6	5724.7
40°	7745.0	7759.1	7739.6	7627.2	7399.1	7222.9	6961.3	6766.7	6533.3	6312.7	6180.9
42.5°	7524.5	7543.9	7631.5	7689.9	7628.3	7521.2	7474.8	7329.9	7120.2	6886.7	6704.0
45°	7221.8	7239.1	7352.6	7563.4	7739.6	7769.9	7924.4	7852.0	7674.7	7475.8	7274.8
47.5°	6758.1	6791.6	6923.5	7258.6	7678.0	7969.8	8301.7	8335.2	8232.5	8068.2	7880.1
50°	6086.8	6131.1	6316.0	6792.7	7444.5	8175.2	8862.7	8990.3	8949.2	8782.7	8592.5
52.5°	5399.3	5443.7	5690.1	6197.1	7068.3	8259.5	9415.1	9741.5	9977.2	10149.0	10182.5
55°	4683.8	4733.5	5003.7	5587.4	6566.8	8152.5	9809.6	10180.4	10419.3	10598.7	10671.1
57.5°	3876.3	3932.5	4194.1	4784.3	5857.7	7722.3	10248.5	10773.8	11129.5	11406.2	11561.8
60°	2949.9	3020.2	3291.5	3886.0	4925.9	6898.6	10444.1	11221.3	11786.7	12201.8	12448.2
62.5°	1870.0	1941.4	2223.5	2840.7	3865.5	5773.3	9890.7	11024.6	11988.8	12602.8	13054.6
65°	1020.4	1051.8	1208.5	1673.3	2606.2	4479.5	8487.6	9824.7	11213.8	12083.9	12777.9
67.5°	765.3	769.6	785.9	899.3	1387.9	3024.5	6635.9	7860.7	9403.2	10523.0	11352.1
70°	670.2	670.2	672.4	673.4	753.4	1638.7	4495.7	5623.1	7037.0	8169.8	9200.0
72.5°	601.0	594.5	592.4	579.4	590.2	839.9	2447.3	3460.1	4652.4	5923.6	6884.6
75°	518.9	517.8	517.8	504.8	511.3	591.3	1061.5	1660.3	2584.5	3768.2	4714.0
77.5°	448.6	441.0	442.1	434.5	455.1	452.9	503.7	684.2	1125.3	1979.2	2764.0
80°	369.7	364.3	367.5	363.2	395.6	335.1	339.4	418.3	558.9	868.0	1223.6
82.5°	273.5	275.6	296.2	294.0	332.9	225.9	248.6	312.4	376.2	432.4	470.2
85°	160.0	163.2	212.9	223.8	244.3	118.9	152.4	185.9	209.7	232.4	242.1
87.5°	17.3	22.7	118.9	122.1	109.2	35.7	61.6	77.8	83.2	88.6	77.8
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°	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3
2.5°	1585.8	1571.7	1556.6	1547.9	1532.8	1519.8	1496.0	1476.6	1455.0	1439.8	1433.3
5°	1771.7	1738.2	1702.5	1676.6	1644.1	1616.0	1562.0	1497.1	1476.6	1433.3	1422.5
7.5°	2013.8	1953.3	1892.7	1843.0	1786.8	1740.3	1649.5	1532.8	1517.7	1448.5	1433.3
10°	2298.1	2209.5	2119.7	2043.0	1960.8	1889.5	1755.5	1591.2	1574.9	1486.3	1471.2
12.5°	2615.9	2507.8	2392.1	2277.6	2180.3	2079.7	1897.1	1682.0	1656.0	1551.2	1530.6
15°	2943.4	2826.7	2692.6	2554.3	2434.3	2301.3	2071.1	1800.9	1753.3	1630.1	1602.0
17.5°	3266.6	3140.2	2999.6	2845.1	2704.5	2545.6	2259.2	1933.8	1851.7	1707.9	1672.2
20°	3579.0	3450.4	3302.3	3151.0	2975.9	2794.3	2451.6	2064.6	1939.2	1772.8	1726.3
22.5°	3863.3	3753.1	3605.0	3430.9	3253.7	3049.4	2647.2	2195.4	2016.0	1822.5	1763.0
25°	4162.7	4062.2	3915.2	3747.7	3541.2	3314.2	2849.4	2319.7	2077.6	1849.5	1776.0
27.5°	4465.4	4378.9	4240.6	4064.4	3842.8	3590.9	3054.8	2434.3	2127.3	1858.2	1769.5
30°	4788.6	4721.6	4594.0	4397.3	4173.5	3894.7	3278.5	2546.7	2158.7	1846.3	1740.3
32.5°	5094.5	5092.4	4978.9	4774.6	4533.5	4226.5	3514.2	2660.2	2174.9	1812.8	1689.5
35°	5412.3	5456.6	5371.2	5176.7	4922.6	4582.1	3774.7	2781.3	2176.0	1753.3	1623.6
37.5°	5773.3	5852.3	5814.4	5629.6	5362.6	4987.5	4080.6	2917.5	2169.5	1671.1	1527.4
40°	6184.1	6292.2	6291.1	6135.5	5850.1	5441.5	4436.2	3069.9	2154.3	1568.5	1413.9
42.5°	6654.3	6783.0	6818.6	6665.1	6376.5	5937.7	4843.7	3237.4	2130.6	1466.8	1293.9
45°	7192.6	7306.1	7373.2	7230.5	6940.8	6478.1	5311.8	3427.7	2101.4	1336.1	1156.6
47.5°	7768.8	7900.7	8001.2	7879.0	7569.9	7094.3	5866.3	3673.1	2090.6	1186.9	1008.5
50°	8483.3	8619.5	8836.8	8781.6	8611.9	8229.3	7039.1	4252.5	2094.9	1045.3	884.2
52.5°	10256.0	10568.4	10843.0	10720.9	10317.7	9661.5	7992.5	4574.6	2004.1	929.6	797.7
55°	10791.1	11145.7	11551.0	11500.2	11113.2	10451.7	8746.0	4843.7	1916.5	845.3	741.5
57.5°	11727.2	12145.5	12712.0	12701.2	12226.6	11481.8	9715.6	5165.9	1878.7	796.7	713.4
60°	12718.4	13251.4	14034.0	14156.1	13640.5	12865.5	10861.4	5561.5	1884.1	769.6	697.2
62.5°	13442.7	14224.2	15362.5	15727.8	15120.3	14266.4	12050.4	5957.1	1851.7	738.3	677.8
65°	13487.0	14612.3	16227.2	16795.8	16180.7	15083.6	12469.8	5879.3	1657.1	696.1	646.4
67.5°	12406.1	13871.8	15833.7	16457.5	15828.3	14579.8	11734.8	5139.9	1346.9	622.6	592.4
70°	10332.8	12034.2	14070.7	14765.8	14245.8	12982.2	10212.8	4105.4	1006.4	525.3	511.3
72.5°	7985.0	9571.8	11421.3	12064.5	11666.7	10555.5	8055.2	2992.1	718.8	425.9	415.1
75°	5708.5	7059.7	8402.2	8647.6	8255.2	7234.8	5226.4	1869.0	503.7	349.1	334.0
77.5°	3534.7	4413.5	4895.6	4580.0	4079.5	3390.9	2127.3	923.1	335.1	284.3	269.2
80°	1568.5	1840.9	1718.7	1531.7	1209.6	994.5	649.7	409.7	216.2	219.4	210.8
82.5°	527.5	557.8	542.6	539.4	486.4	425.9	275.6	177.3	121.1	140.5	137.3
85°	257.3	269.2	270.2	280.0	243.2	189.2	74.6	70.3	51.9	75.7	78.9
87.5°	77.8	78.9	71.3	77.8	62.7	43.2	14.1	19.5	9.7	18.4	18.4
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3
2.5°	1421.4	1417.1	1409.6	1400.9	1398.7	1387.9	1384.7	1379.3	1376.0	1370.6	1366.3
5°	1408.5	1400.9	1392.3	1382.5	1382.5	1367.4	1360.9	1354.4	1354.4	1344.7	1340.4
7.5°	1421.4	1411.7	1402.0	1393.3	1396.6	1379.3	1372.8	1366.3	1365.2	1355.5	1351.2
10°	1458.2	1448.5	1436.6	1427.9	1424.7	1410.6	1403.1	1393.3	1386.9	1380.4	1373.9
12.5°	1514.4	1501.4	1486.3	1467.9	1460.4	1448.5	1436.6	1423.6	1408.5	1402.0	1392.3
15°	1581.4	1559.8	1539.3	1516.6	1496.0	1484.1	1467.9	1447.4	1426.9	1418.2	1405.2
17.5°	1636.6	1613.9	1584.7	1557.6	1520.9	1511.2	1488.5	1463.6	1430.1	1426.9	1407.4
20°	1683.0	1648.4	1612.8	1580.3	1524.1	1518.7	1490.6	1461.4	1413.9	1413.9	1390.1
22.5°	1709.0	1661.4	1619.3	1576.0	1505.8	1501.4	1469.0	1434.4	1376.0	1378.2	1349.0
25°	1713.3	1656.0	1603.0	1551.2	1470.1	1462.5	1421.4	1383.6	1319.8	1315.5	1285.2
27.5°	1696.0	1629.0	1567.4	1504.7	1417.1	1400.9	1355.5	1310.1	1247.4	1236.6	1204.2
30°	1656.0	1577.1	1507.9	1435.5	1343.6	1317.7	1270.1	1223.6	1159.9	1145.8	1115.5
32.5°	1592.2	1502.5	1425.8	1353.3	1251.7	1219.3	1171.7	1125.3	1063.7	1052.8	1024.7
35°	1507.9	1407.4	1326.3	1249.6	1148.0	1114.5	1069.1	1028.0	971.8	967.4	948.0
37.5°	1402.0	1297.1	1210.7	1137.2	1041.0	1023.7	977.2	946.9	900.4	904.8	895.0
40°	1282.0	1175.0	1092.8	1028.0	944.7	929.6	901.5	878.8	838.8	850.7	851.8
42.5°	1160.9	1053.9	979.3	921.0	849.6	839.9	820.4	807.5	777.2	801.0	810.7
45°	1023.7	924.2	860.4	816.1	763.2	763.2	753.4	752.3	731.8	765.3	775.0
47.5°	890.7	812.9	768.6	741.5	704.8	722.1	718.8	727.5	712.3	746.9	755.6
50°	790.2	736.1	709.1	696.1	670.2	697.2	703.7	715.6	702.6	732.9	739.4
52.5°	726.4	690.7	675.6	672.4	654.0	687.5	698.3	709.1	694.0	722.1	721.0
55°	690.7	666.9	661.5	668.0	654.0	686.4	697.2	704.8	691.8	711.3	710.2
57.5°	677.8	664.8	668.0	677.8	668.0	695.1	700.5	709.1	696.1	704.8	709.1
60°	676.7	676.7	689.6	702.6	696.1	715.6	718.8	717.8	705.9	706.9	709.1
62.5°	670.2	686.4	708.0	728.6	726.4	750.2	752.3	738.3	728.6	717.8	714.5
65°	649.7	676.7	708.0	736.1	740.5	777.2	781.5	767.5	761.0	742.6	728.6
67.5°	604.3	638.8	675.6	710.2	717.8	767.5	777.2	782.6	785.9	774.0	755.6
70°	527.5	563.2	601.0	641.0	651.8	706.9	727.5	752.3	771.8	789.1	782.6
72.5°	429.1	461.6	494.0	530.7	547.0	604.3	631.3	674.5	704.8	749.1	767.5
75°	340.5	360.0	379.4	402.1	415.1	471.3	504.8	556.7	597.8	659.4	700.5
77.5°	268.1	277.8	287.5	297.3	302.7	334.0	361.0	412.9	460.5	538.3	598.8
80°	206.5	211.9	212.9	216.2	214.0	229.2	238.9	270.2	311.3	388.1	459.4
82.5°	133.0	137.3	139.4	144.8	134.0	153.5	160.0	163.2	184.8	241.1	291.9
85°	74.6	75.7	76.7	78.9	63.8	83.2	84.3	78.9	76.7	99.4	112.4
87.5°	18.4	17.3	18.4	18.4	7.6	17.3	17.3	11.9	8.6	16.2	13.0
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):

	135°	145°	155°	165°	175°	180°
0°	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3
2.5°	1356.6	1354.4	1355.5	1350.1	1347.9	1349.0
5°	1335.0	1330.6	1330.6	1327.4	1323.1	1323.1
7.5°	1344.7	1336.1	1332.8	1326.3	1319.8	1320.9
10°	1359.8	1344.7	1333.9	1324.2	1316.6	1316.6
12.5°	1369.6	1342.5	1326.3	1313.4	1304.7	1304.7
15°	1371.7	1330.6	1306.9	1292.8	1284.2	1284.2
17.5°	1358.8	1306.9	1276.6	1258.2	1248.5	1250.7
20°	1326.3	1262.5	1226.9	1207.4	1197.7	1198.8
22.5°	1275.5	1202.0	1160.9	1138.2	1128.5	1128.5
25°	1206.3	1126.3	1082.0	1063.7	1055.0	1055.0
27.5°	1127.4	1045.3	1006.4	992.3	986.9	986.9
30°	1038.8	970.7	942.6	932.9	924.2	924.2
32.5°	964.2	915.6	905.8	892.9	870.2	869.1
35°	904.8	899.3	891.8	852.9	820.4	816.1
37.5°	872.3	904.8	857.2	790.2	764.2	763.2
40°	855.0	885.3	803.1	770.7	767.5	767.5
42.5°	814.0	835.6	799.9	781.5	781.5	782.6
45°	770.7	789.1	807.5	791.3	796.7	797.7
47.5°	740.5	777.2	807.5	793.4	804.2	810.7
50°	712.3	766.4	791.3	791.3	803.1	804.2
52.5°	705.9	751.3	776.1	788.0	789.1	783.7
55°	706.9	739.4	764.2	779.4	772.9	772.9
57.5°	705.9	732.9	754.5	759.9	763.2	763.2
60°	706.9	724.2	741.5	739.4	750.2	750.2
62.5°	710.2	712.3	721.0	718.8	735.0	735.0
65°	717.8	697.2	691.8	694.0	713.4	712.3
67.5°	731.8	676.7	659.4	660.5	688.6	684.2
70°	752.3	648.6	622.6	616.1	663.7	656.1
72.5°	758.8	616.1	575.1	568.6	596.7	575.1
75°	728.6	590.2	524.3	502.6	490.8	484.3
77.5°	649.7	574.0	471.3	425.9	407.5	403.2
80°	538.3	540.5	402.1	348.1	404.3	403.2
82.5°	406.4	467.0	322.1	301.6	292.9	244.3
85°	196.7	351.3	247.5	207.5	124.3	117.8
87.5°	17.3	147.0	142.7	93.0	42.2	40.0
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)