

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: P196756

Luminaire Tested: **NAV-AF-04-D-UNV-T2R-7030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196756
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-7030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 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: 16291.7 lumens
Efficiency: N/A
Efficacy: 126.3 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

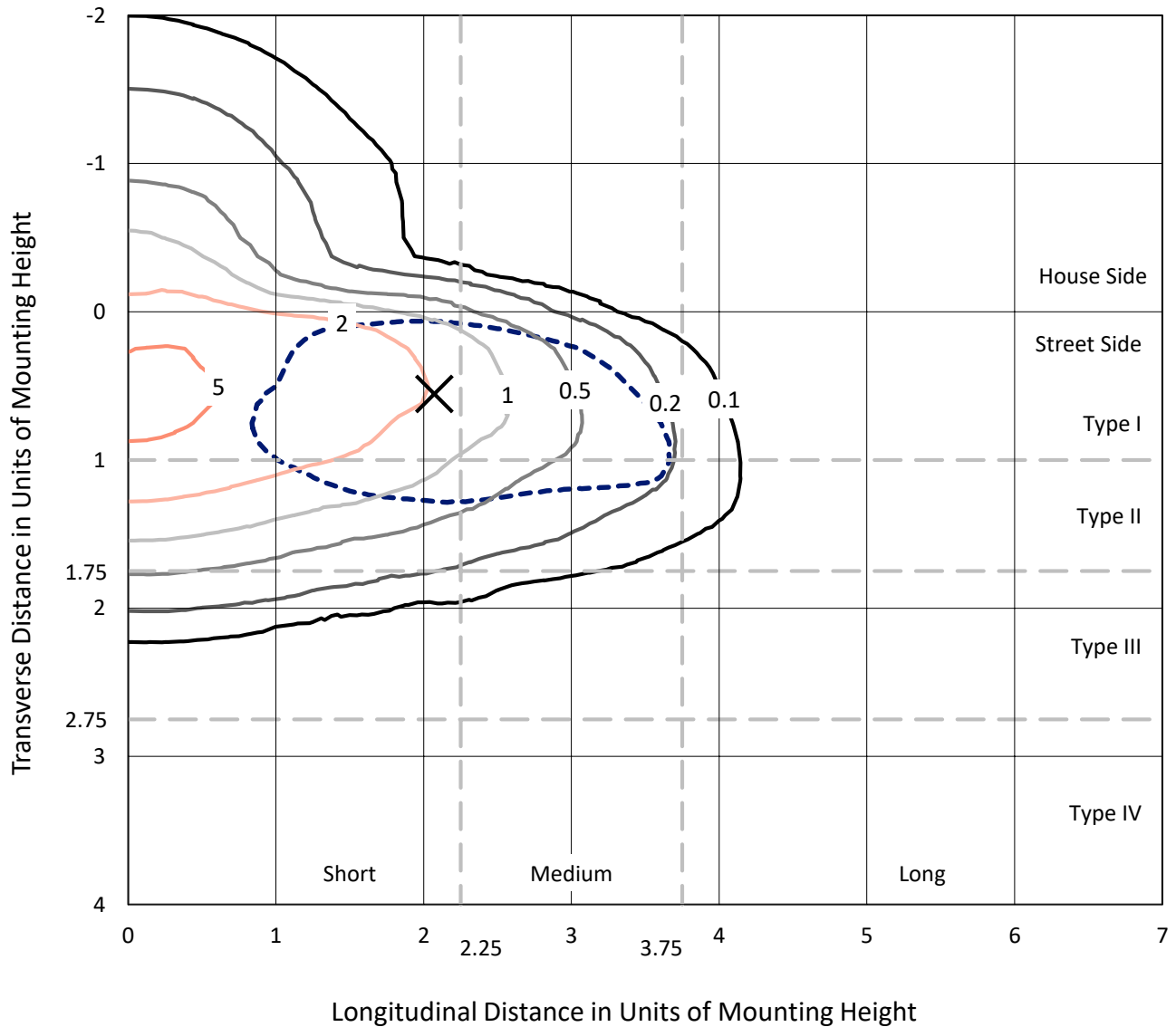


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Iso-Footcandle Lines of Horizontal Illumination

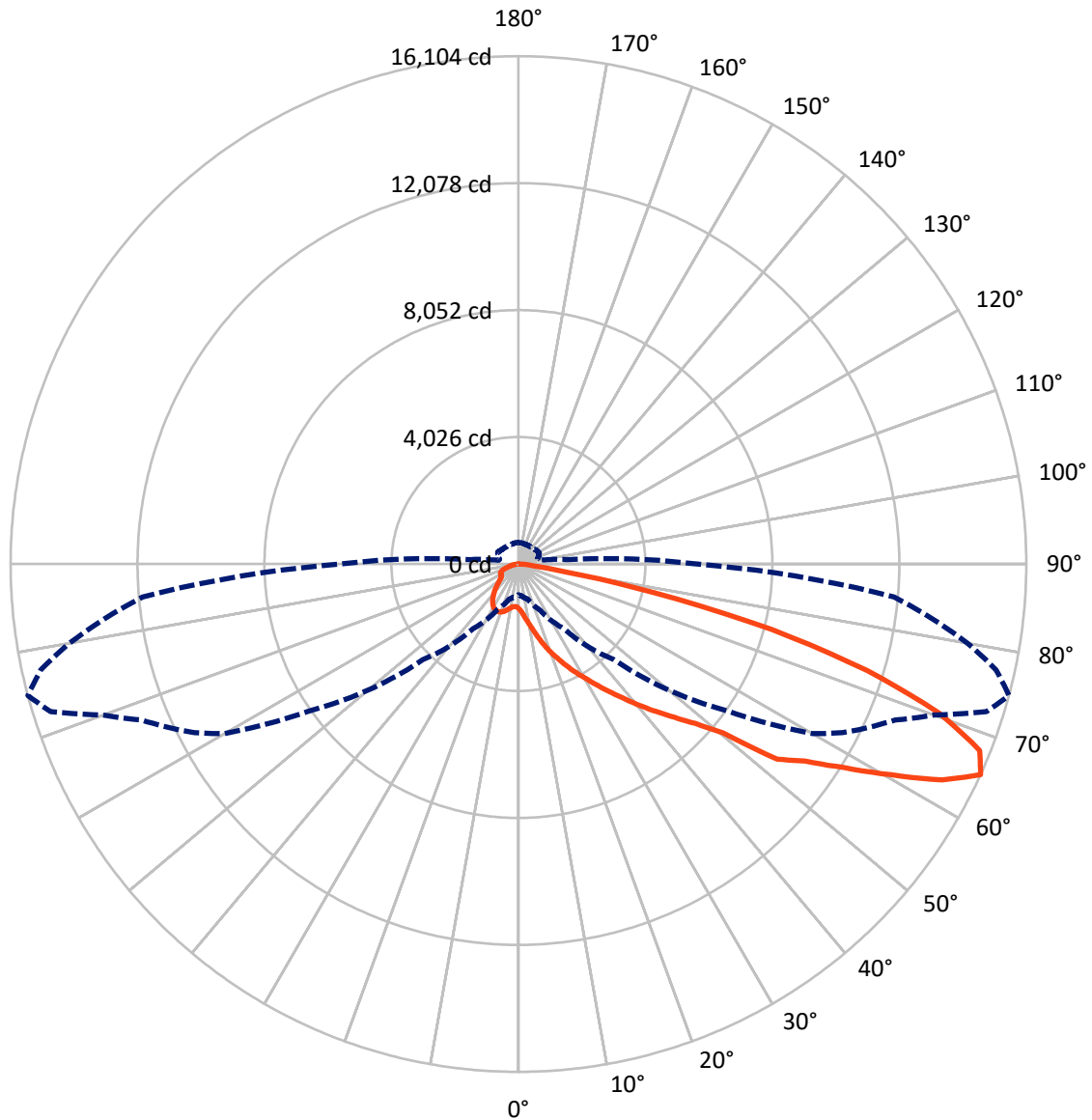
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.5 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	2448.1	0.0	2448.1
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	13843.6	0.0	13843.6
	% Fixture	85.0	0.0	85.0
Total	Lumens	16291.7	0.0	16291.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.6	1.0
10°-20°	636.5	3.9
20°-30°	1284.5	7.9
30°-40°	2181.5	13.4
40°-50°	3042.7	18.7
50°-60°	3729.2	22.9
60°-70°	3508.6	21.5
70°-80°	1538.5	9.4
80°-90°	203.6	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°	16291.7	100.0
0°-180°	16291.7	100.0



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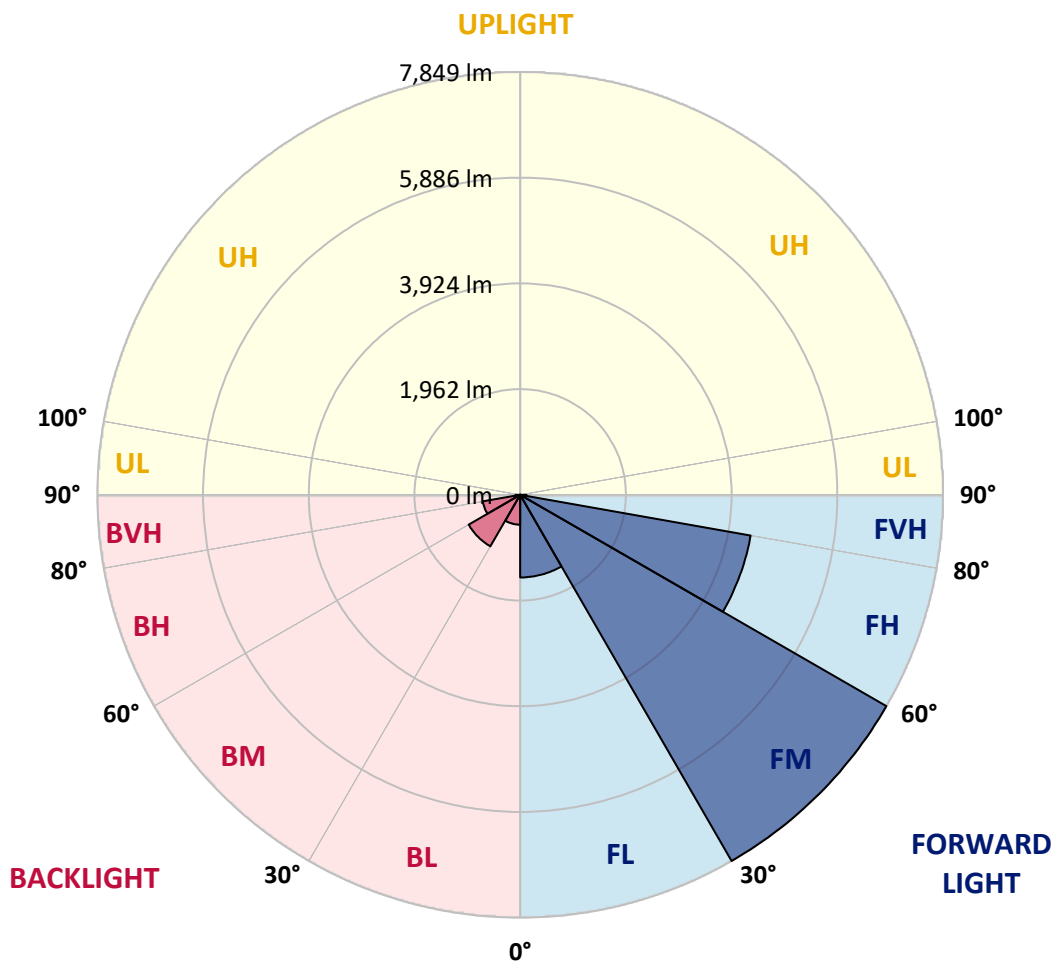
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1533.5	9.4			
FM (30°-60°)	7848.6	48.2			
FH (60°-80°)	4343.5	26.7			G2/5000
FVH (80°-90°)	118.0	0.7			G2/225
BL (0°-30°)	554.2	3.4	B2/1000		
BM (30°-60°)	1104.7	6.8	B2/2500		
BH (60°-80°)	703.6	4.3	B2/1000		G2/1000
BVH (80°-90°)	85.6	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°	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5
2.5°	1777.4	1756.7	1758.7	1729.8	1687.3	1640.6	1602.3	1581.5	1563.9	1558.7	1529.7
5°	2324.6	2298.7	2289.4	2223.1	2123.6	2005.5	1888.3	1842.7	1805.4	1782.6	1726.7
7.5°	2772.4	2758.9	2746.4	2685.3	2586.8	2435.5	2246.9	2179.5	2117.3	2048.9	1981.6
10°	3077.1	3071.9	3066.7	3024.2	2942.4	2810.7	2607.6	2533.9	2456.2	2369.2	2281.2
12.5°	3307.2	3307.2	3311.3	3276.0	3226.3	3124.7	2940.2	2871.9	2793.1	2701.9	2601.4
15°	3461.6	3465.7	3487.4	3497.8	3471.9	3406.6	3245.0	3184.8	3110.2	3020.0	2920.6
17.5°	3564.1	3572.4	3604.6	3638.8	3671.9	3649.2	3529.0	3473.0	3405.6	3322.7	3229.3
20°	3802.6	3792.2	3793.3	3782.9	3831.5	3849.2	3782.9	3736.2	3682.4	3606.6	3521.7
22.5°	4303.0	4283.4	4232.6	4103.1	4044.0	4037.7	3998.5	3973.5	3932.1	3884.3	3799.4
25°	4956.0	4933.3	4832.7	4619.3	4443.0	4280.3	4207.8	4192.2	4165.3	4133.2	4072.0
27.5°	5630.7	5605.9	5476.3	5206.9	4976.8	4648.2	4422.3	4401.6	4376.7	4363.3	4334.2
30°	6224.6	6197.6	6070.2	5796.5	5518.8	5127.1	4711.5	4638.9	4596.4	4600.6	4584.0
32.5°	6745.8	6722.0	6579.0	6300.2	6018.3	5638.0	5086.7	4973.7	4878.3	4843.0	4855.5
35°	7183.2	7161.5	7005.0	6724.2	6440.2	6124.1	5569.6	5399.6	5244.1	5146.7	5135.3
37.5°	7440.3	7427.9	7317.9	7079.7	6797.7	6565.6	6110.6	5922.0	5693.0	5550.9	5488.7
40°	7425.8	7439.3	7420.6	7312.8	7094.1	6925.2	6674.4	6487.9	6264.0	6052.5	5926.1
42.5°	7214.4	7233.0	7317.0	7373.0	7313.9	7211.2	7166.7	7027.8	6826.7	6602.9	6427.7
45°	6924.2	6940.7	7049.5	7251.6	7420.6	7449.7	7597.8	7528.4	7358.4	7167.7	6974.9
47.5°	6479.5	6511.7	6638.1	6959.4	7361.6	7641.4	7959.5	7991.7	7893.2	7735.7	7555.3
50°	5836.0	5878.4	6055.7	6512.7	7137.7	7838.3	8497.4	8619.7	8580.3	8420.7	8238.3
52.5°	5176.8	5219.4	5455.7	5941.6	6777.1	7919.1	9027.0	9340.0	9565.9	9730.7	9762.9
55°	4490.7	4538.4	4797.5	5357.1	6296.1	7816.5	9405.2	9760.7	9989.8	10161.8	10231.2
57.5°	3716.6	3770.4	4021.2	4587.1	5616.3	7404.1	9826.1	10329.8	10670.7	10936.1	11085.3
60°	2828.2	2895.7	3155.9	3725.8	4722.8	6614.2	10013.6	10758.9	11300.9	11698.8	11935.2
62.5°	1793.0	1861.3	2131.8	2723.7	3706.2	5535.4	9483.0	10570.2	11494.6	12083.3	12516.5
65°	978.3	1008.5	1158.7	1604.4	2498.8	4294.9	8137.7	9419.8	10751.5	11585.9	12251.2
67.5°	733.7	737.9	753.5	862.3	1330.8	2899.8	6362.3	7536.7	9015.6	10089.3	10884.2
70°	642.6	642.6	644.6	645.7	722.4	1571.1	4310.4	5391.3	6747.0	7833.2	8820.7
72.5°	576.3	570.0	567.9	555.5	565.9	805.2	2346.5	3317.5	4460.6	5679.4	6600.8
75°	497.4	496.5	496.5	484.0	490.2	566.9	1017.7	1591.9	2478.0	3612.8	4519.7
77.5°	430.2	422.9	423.9	416.6	436.3	434.2	482.9	656.0	1078.9	1897.7	2650.1
80°	354.4	349.3	352.4	348.2	379.3	321.3	325.4	401.1	535.8	832.2	1173.2
82.5°	262.2	264.3	284.0	281.9	319.2	216.7	238.4	299.5	360.7	414.5	450.8
85°	153.4	156.5	204.2	214.5	234.3	113.9	146.1	178.3	201.0	222.8	232.1
87.5°	16.6	21.8	113.9	117.1	104.7	34.2	59.1	74.7	79.8	85.0	74.7
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5
2.5°	1520.4	1506.9	1492.4	1484.1	1469.6	1457.2	1434.3	1415.7	1395.0	1380.5	1374.3
5°	1698.7	1666.5	1632.4	1607.4	1576.4	1549.4	1497.6	1435.4	1415.7	1374.3	1363.9
7.5°	1930.8	1872.8	1814.7	1767.0	1713.1	1668.6	1581.5	1469.6	1455.2	1388.8	1374.3
10°	2203.4	2118.4	2032.3	1958.8	1880.1	1811.6	1683.1	1525.6	1510.1	1425.1	1410.5
12.5°	2508.0	2404.5	2293.6	2183.6	2090.4	1994.0	1818.8	1612.6	1587.7	1487.2	1467.6
15°	2822.0	2710.1	2581.7	2449.0	2334.0	2206.5	1985.8	1726.7	1681.1	1562.9	1535.9
17.5°	3132.0	3010.7	2876.0	2727.7	2593.0	2440.8	2166.1	1854.1	1775.4	1637.5	1603.3
20°	3431.5	3308.2	3166.3	3021.1	2853.2	2679.0	2350.5	1979.6	1859.3	1699.6	1655.2
22.5°	3704.1	3598.4	3456.4	3289.5	3119.6	2923.7	2538.1	2104.9	1932.9	1747.4	1690.4
25°	3991.1	3894.8	3753.8	3593.2	3395.2	3177.6	2731.9	2224.1	1991.9	1773.3	1702.8
27.5°	4281.4	4198.4	4065.7	3896.8	3684.4	3442.9	2928.8	2334.0	2039.7	1781.6	1696.6
30°	4591.2	4526.9	4404.7	4216.1	4001.5	3734.2	3143.4	2441.7	2069.7	1770.2	1668.6
32.5°	4884.6	4882.5	4773.6	4577.8	4346.7	4052.3	3369.3	2550.5	2085.2	1738.0	1619.9
35°	5189.3	5231.8	5149.8	4963.3	4719.8	4393.4	3619.1	2666.7	2086.3	1681.1	1556.6
37.5°	5535.4	5611.0	5574.7	5397.5	5141.5	4781.9	3912.3	2797.2	2080.1	1602.3	1464.4
40°	5929.2	6032.9	6031.8	5882.6	5609.0	5217.2	4253.4	2943.3	2065.5	1503.9	1355.6
42.5°	6380.0	6503.4	6537.6	6390.5	6113.7	5693.0	4644.1	3104.0	2042.7	1406.3	1240.5
45°	6896.2	7005.0	7069.3	6932.5	6654.7	6211.2	5092.9	3286.4	2014.7	1280.9	1109.0
47.5°	7448.5	7575.1	7671.4	7554.3	7257.9	6801.8	5624.5	3521.7	2004.4	1137.9	967.0
50°	8133.6	8264.3	8472.5	8419.7	8256.9	7890.0	6749.1	4077.2	2008.5	1002.2	847.8
52.5°	9833.4	10132.8	10396.1	10279.0	9892.5	9263.3	7663.1	4386.0	1921.5	891.3	764.9
55°	10346.3	10686.3	11074.9	11026.2	10655.2	10020.9	8385.4	4644.1	1837.5	810.4	710.9
57.5°	11243.9	11645.0	12188.0	12177.7	11722.7	11008.6	9315.1	4952.9	1801.2	763.8	684.1
60°	12194.2	12705.2	13455.5	13572.6	13078.4	12335.2	10413.7	5332.3	1806.5	737.9	668.4
62.5°	12888.7	13638.0	14729.2	15079.5	14497.1	13678.3	11553.7	5711.5	1775.4	707.9	649.9
65°	12931.2	14010.0	15558.4	16103.5	15513.8	14461.9	11955.9	5637.0	1588.8	667.5	619.7
67.5°	11894.7	13300.0	15181.1	15779.1	15176.0	13978.9	11251.1	4928.0	1291.3	597.0	567.9
70°	9906.9	11538.3	13490.8	14157.2	13658.7	12447.2	9792.0	3936.3	964.9	503.6	490.2
72.5°	7655.9	9177.3	10950.5	11567.2	11185.9	10120.3	7723.2	2868.7	689.2	408.3	397.9
75°	5473.3	6768.7	8055.9	8291.1	7915.0	6936.7	5010.9	1792.0	482.9	334.8	320.2
77.5°	3389.0	4231.6	4693.9	4391.2	3911.4	3251.2	2039.7	885.1	321.3	272.6	258.1
80°	1503.9	1765.0	1647.8	1468.6	1159.7	953.5	622.9	392.8	207.3	210.5	202.1
82.5°	505.8	534.9	520.3	517.2	466.4	408.3	264.3	170.0	116.1	134.7	131.6
85°	246.7	258.1	259.1	268.4	233.2	181.4	71.6	67.4	49.7	72.5	75.6
87.5°	74.7	75.6	68.4	74.7	60.1	41.4	13.4	18.7	9.3	17.6	17.6
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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CANDELA DISTRIBUTION (continued):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5
2.5°	1362.9	1358.7	1351.4	1343.2	1341.0	1330.8	1327.6	1322.5	1319.3	1314.2	1310.0
5°	1350.5	1343.2	1334.9	1325.6	1325.6	1311.0	1304.8	1298.6	1298.6	1289.3	1285.1
7.5°	1362.9	1353.5	1344.2	1335.9	1339.0	1322.5	1316.2	1310.0	1308.9	1299.6	1295.5
10°	1398.1	1388.8	1377.3	1369.1	1366.0	1352.5	1345.2	1335.9	1329.6	1323.4	1317.2
12.5°	1451.9	1439.6	1425.1	1407.5	1400.1	1388.8	1377.3	1364.9	1350.5	1344.2	1334.9
15°	1516.3	1495.5	1475.9	1454.0	1434.3	1423.0	1407.5	1387.7	1368.0	1359.7	1347.2
17.5°	1569.1	1547.3	1519.4	1493.5	1458.2	1448.9	1427.2	1403.3	1371.2	1368.0	1349.4
20°	1613.6	1580.6	1546.3	1515.2	1461.4	1456.1	1429.2	1401.2	1355.6	1355.6	1332.9
22.5°	1638.6	1592.9	1552.6	1511.0	1443.8	1439.6	1408.5	1375.2	1319.3	1321.4	1293.4
25°	1642.7	1587.7	1537.0	1487.2	1409.5	1402.3	1362.9	1326.6	1265.4	1261.3	1232.2
27.5°	1626.1	1561.9	1502.8	1442.7	1358.7	1343.2	1299.6	1256.2	1196.0	1185.7	1154.6
30°	1587.7	1512.1	1445.7	1376.3	1288.2	1263.4	1217.8	1173.2	1112.0	1098.6	1069.5
32.5°	1526.6	1440.6	1367.1	1297.6	1200.1	1169.1	1123.4	1078.9	1019.8	1009.4	982.5
35°	1445.7	1349.4	1271.7	1198.0	1100.7	1068.5	1025.0	985.6	931.8	927.6	908.9
37.5°	1344.2	1243.7	1160.8	1090.3	998.1	981.4	936.9	907.8	863.3	867.4	858.1
40°	1229.1	1126.6	1047.8	985.6	905.8	891.3	864.4	842.6	804.2	815.6	816.7
42.5°	1113.2	1010.5	939.0	883.1	814.6	805.2	786.6	774.2	745.1	768.0	777.3
45°	981.4	886.1	825.0	782.6	731.7	731.7	722.4	721.3	701.7	733.7	743.1
47.5°	854.0	779.3	736.9	710.9	675.8	692.2	689.2	697.5	683.0	716.2	724.4
50°	757.6	705.9	679.9	667.5	642.6	668.4	674.6	686.1	673.7	702.6	708.9
52.5°	696.4	662.2	647.8	644.6	627.0	659.2	669.5	679.9	665.4	692.2	691.3
55°	662.2	639.5	634.2	640.5	627.0	658.1	668.4	675.8	663.3	682.0	680.9
57.5°	649.9	637.4	640.5	649.9	640.5	666.4	671.6	679.9	667.5	675.8	679.9
60°	648.8	648.8	661.2	673.7	667.5	686.1	689.2	688.2	676.8	677.9	679.9
62.5°	642.6	658.1	678.8	698.5	696.4	719.3	721.3	707.9	698.5	688.2	685.0
65°	622.9	648.8	678.8	705.9	709.9	745.1	749.3	735.9	729.7	712.1	698.5
67.5°	579.3	612.5	647.8	680.9	688.2	735.9	745.1	750.4	753.5	742.1	724.4
70°	505.8	540.0	576.3	614.6	625.0	677.9	697.5	721.3	740.0	756.6	750.4
72.5°	411.5	442.5	473.6	508.8	524.5	579.3	605.3	646.7	675.8	718.3	735.9
75°	326.4	345.2	363.8	385.5	397.9	451.9	484.0	533.7	573.2	632.2	671.6
77.5°	257.0	266.4	275.7	285.0	290.2	320.2	346.2	395.9	441.5	516.1	574.1
80°	198.0	203.1	204.2	207.3	205.2	219.7	229.0	259.1	298.5	372.0	440.5
82.5°	127.5	131.6	133.8	138.9	128.5	147.2	153.4	156.5	177.2	231.1	279.8
85°	71.6	72.5	73.5	75.6	61.1	79.8	80.9	75.6	73.5	95.4	107.8
87.5°	17.6	16.6	17.6	17.6	7.2	16.6	16.6	11.4	8.3	15.6	12.4
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°	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5
2.5°	1300.7	1298.6	1299.6	1294.5	1292.4	1293.4
5°	1280.0	1275.8	1275.8	1272.7	1268.5	1268.5
7.5°	1289.3	1280.9	1277.9	1271.7	1265.4	1266.5
10°	1303.8	1289.3	1278.9	1269.6	1262.4	1262.4
12.5°	1313.1	1287.2	1271.7	1259.2	1250.9	1250.9
15°	1315.2	1275.8	1252.9	1239.5	1231.3	1231.3
17.5°	1302.7	1252.9	1224.0	1206.3	1197.1	1199.1
20°	1271.7	1210.5	1176.2	1157.6	1148.4	1149.4
22.5°	1222.9	1152.4	1113.2	1091.3	1082.0	1082.0
25°	1156.6	1079.9	1037.4	1019.8	1011.5	1011.5
27.5°	1081.0	1002.2	964.9	951.4	946.1	946.1
30°	996.0	930.7	903.7	894.4	886.1	886.1
32.5°	924.5	877.8	868.5	856.0	834.3	833.2
35°	867.4	862.3	855.1	817.7	786.6	782.6
37.5°	836.4	867.4	821.8	757.6	732.7	731.7
40°	819.8	848.8	770.1	738.9	735.9	735.9
42.5°	780.4	801.1	766.9	749.3	749.3	750.4
45°	738.9	756.6	774.2	758.7	763.8	764.9
47.5°	709.9	745.1	774.2	760.7	771.1	777.3
50°	683.0	734.8	758.7	758.7	770.1	771.1
52.5°	676.8	720.3	744.2	755.5	756.6	751.3
55°	677.9	708.9	732.7	747.3	741.0	741.0
57.5°	676.8	702.6	723.4	728.5	731.7	731.7
60°	677.9	694.4	710.9	708.9	719.3	719.3
62.5°	680.9	683.0	691.3	689.2	704.7	704.7
65°	688.2	668.4	663.3	665.4	684.1	683.0
67.5°	701.7	648.8	632.2	633.2	660.2	656.0
70°	721.3	621.8	597.0	590.8	636.3	629.2
72.5°	727.5	590.8	551.3	545.1	572.1	551.3
75°	698.5	565.9	502.7	482.0	470.5	464.4
77.5°	622.9	550.3	451.9	408.3	390.7	386.6
80°	516.1	518.2	385.5	333.7	387.7	386.6
82.5°	389.7	447.8	308.8	289.1	280.9	234.3
85°	188.6	336.8	237.3	199.0	119.2	113.0
87.5°	16.6	141.0	136.8	89.1	40.4	38.4
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)