

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: P195801

Luminaire Tested: **NAV-AF-03-D-UNV-T2R-7050-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195801
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-7050-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 5000K, 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: 15337 lumens
Efficiency: N/A
Efficacy: 123.7 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 (A_{in}): 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

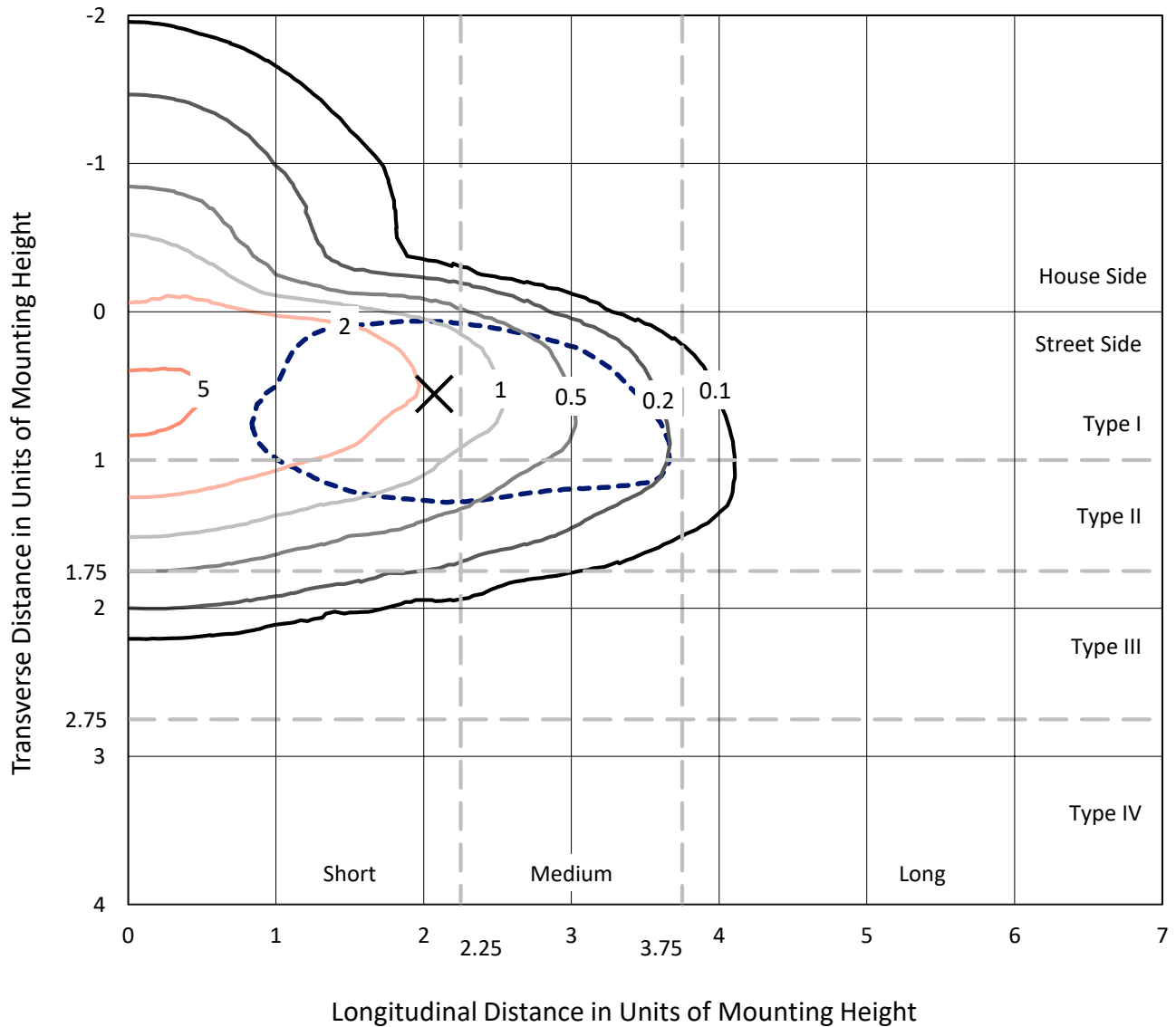


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Iso-Footcandle Lines of Horizontal Illumination

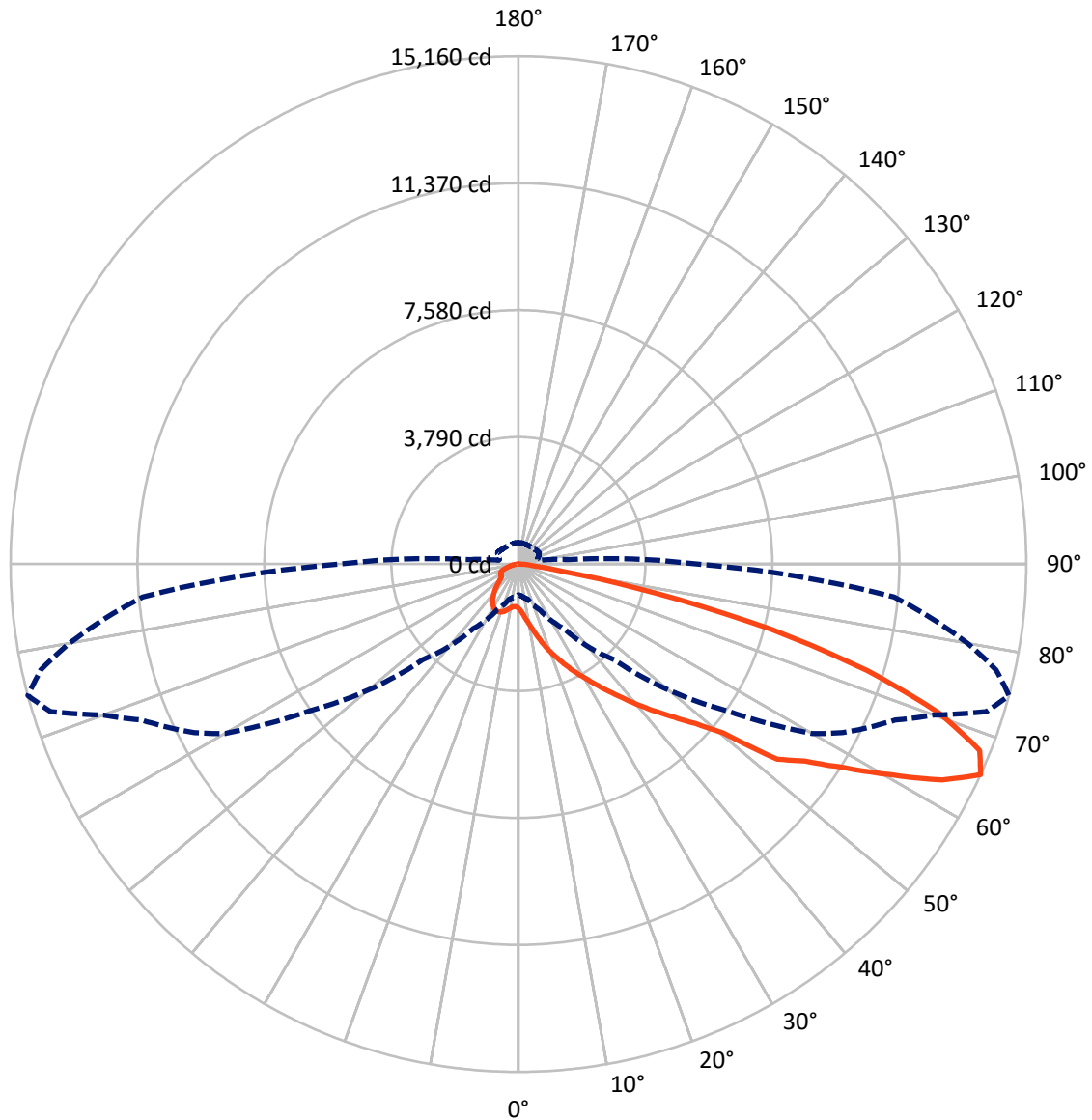
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.1 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	2304.6	0.0	2304.6
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	13032.4	0.0	13032.4
	% Fixture	85.0	0.0	85.0
Total	Lumens	15337.0	0.0	15337.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.9	1.0
10°-20°	599.2	3.9
20°-30°	1209.3	7.9
30°-40°	2053.7	13.4
40°-50°	2864.4	18.7
50°-60°	3510.6	22.9
60°-70°	3303.0	21.5
70°-80°	1448.3	9.4
80°-90°	191.6	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°	15337.0	100.0
0°-180°	15337.0	100.0



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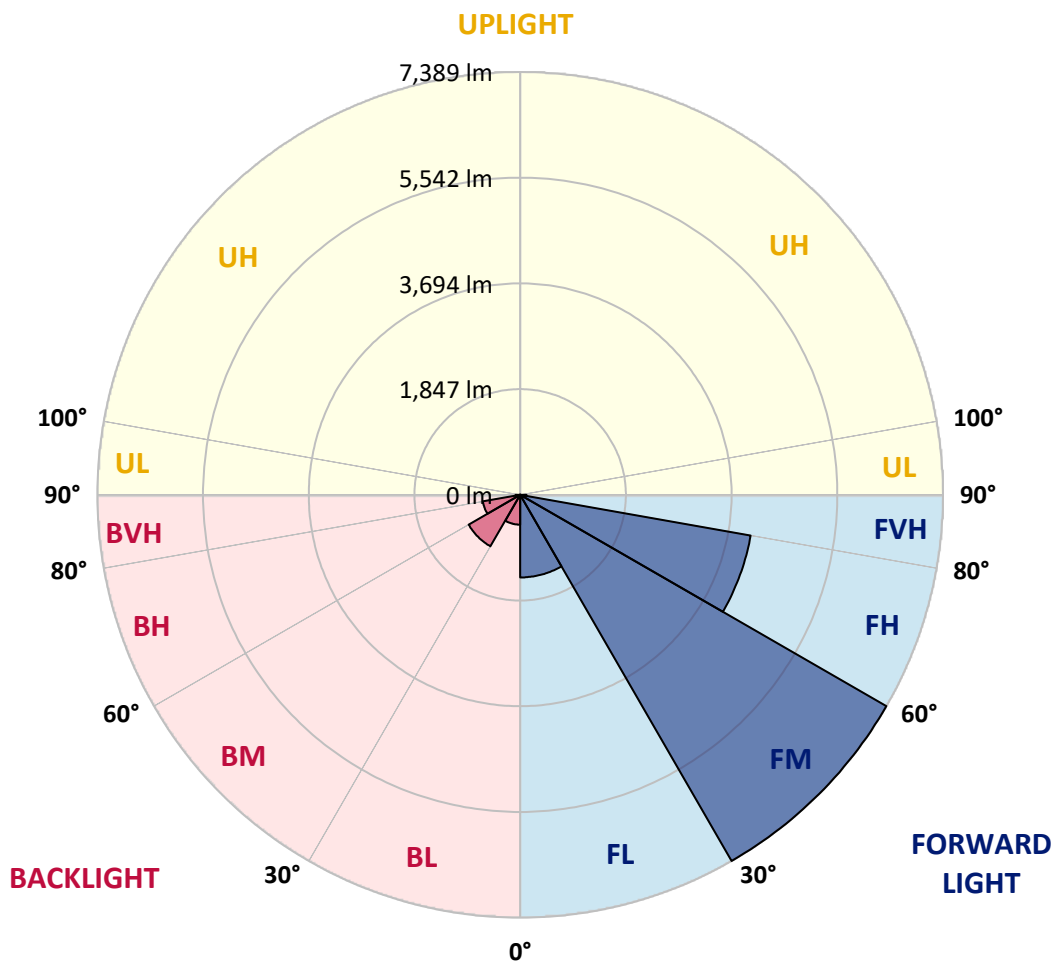
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1443.6	9.4			
FM (30°-60°)	7388.7	48.2			
FH (60°-80°)	4089.0	26.7			G2/5000
FVH (80°-90°)	111.1	0.7			G2/225
BL (0°-30°)	521.7	3.4	B2/1000		
BM (30°-60°)	1040.0	6.8	B2/2500		
BH (60°-80°)	662.4	4.3	B2/1000		G2/1000
BVH (80°-90°)	80.5	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°	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9
2.5°	1673.3	1653.8	1655.7	1628.4	1588.4	1544.5	1508.4	1488.9	1472.3	1467.4	1440.1
5°	2188.4	2164.0	2155.2	2092.8	1999.1	1887.9	1777.7	1734.7	1699.6	1678.1	1625.5
7.5°	2609.9	2597.2	2585.5	2528.0	2435.3	2292.8	2115.2	2051.8	1993.3	1928.9	1865.5
10°	2896.8	2891.9	2887.0	2847.0	2769.9	2646.0	2454.8	2385.5	2312.3	2230.4	2147.4
12.5°	3113.4	3113.4	3117.3	3084.1	3037.2	2941.6	2768.0	2703.6	2629.4	2543.6	2448.9
15°	3258.7	3262.6	3283.1	3292.9	3268.5	3207.0	3054.8	2998.2	2928.0	2843.1	2749.4
17.5°	3355.3	3363.1	3393.4	3425.6	3456.8	3435.3	3322.1	3269.5	3206.0	3128.0	3040.2
20°	3579.7	3570.0	3570.9	3561.2	3607.0	3623.6	3561.2	3517.3	3466.5	3395.3	3315.3
22.5°	4051.0	4032.4	3984.6	3862.7	3807.0	3801.2	3764.1	3740.7	3701.7	3656.8	3576.8
25°	4665.6	4644.2	4549.5	4348.5	4182.7	4029.5	3961.2	3946.6	3921.2	3891.0	3833.4
27.5°	5300.8	5277.4	5155.4	4901.7	4685.1	4375.9	4163.2	4143.7	4120.2	4107.6	4080.2
30°	5859.9	5834.5	5714.5	5456.9	5195.4	4826.6	4435.4	4367.1	4327.1	4331.0	4315.4
32.5°	6350.6	6328.2	6193.5	5931.1	5665.7	5307.6	4788.6	4682.2	4592.5	4559.3	4571.0
35°	6762.3	6741.9	6594.5	6330.1	6062.8	5765.2	5243.2	5083.2	4936.9	4845.2	4834.4
37.5°	7004.3	6992.6	6889.2	6664.8	6399.4	6180.8	5752.5	5575.0	5359.3	5225.7	5167.1
40°	6990.6	7003.3	6985.8	6884.3	6678.4	6519.4	6283.3	6107.7	5896.9	5697.9	5578.9
42.5°	6791.6	6809.2	6888.2	6940.9	6885.3	6788.7	6746.7	6616.0	6426.7	6216.0	6051.1
45°	6518.4	6534.0	6636.5	6826.7	6985.8	7013.1	7152.6	7087.2	6927.2	6747.7	6566.2
47.5°	6099.9	6130.1	6249.1	6551.6	6930.2	7193.6	7493.1	7523.4	7430.7	7282.4	7112.6
50°	5494.0	5534.0	5700.8	6131.1	6719.4	7379.0	7999.5	8114.6	8077.5	7927.3	7755.6
52.5°	4873.5	4913.5	5135.9	5593.5	6379.9	7455.1	8498.1	8792.7	9005.4	9160.5	9190.8
55°	4227.6	4272.4	4516.4	5043.2	5927.2	7358.5	8854.2	9188.8	9404.4	9566.4	9631.8
57.5°	3498.7	3549.5	3785.6	4318.3	5287.1	6970.2	9250.3	9724.5	10045.5	10295.2	10435.7
60°	2662.6	2726.0	2970.9	3507.5	4446.1	6226.7	9426.9	10128.4	10638.7	11013.3	11235.8
62.5°	1687.9	1752.3	2006.9	2564.1	3489.0	5211.0	8927.3	9950.8	10821.1	11375.3	11783.1
65°	921.0	949.3	1090.8	1510.3	2352.3	4043.2	7660.9	8867.8	10121.6	10907.0	11533.3
67.5°	690.8	694.7	709.3	811.8	1252.8	2729.9	5989.6	7095.0	8487.3	9498.1	10246.4
70°	604.9	604.9	606.9	607.8	680.0	1479.1	4057.8	5075.4	6351.6	7374.1	8303.9
72.5°	542.5	536.6	534.7	523.0	532.7	758.1	2208.9	3123.1	4199.3	5346.7	6214.0
75°	468.3	467.3	467.3	455.6	461.5	533.7	958.1	1498.6	2332.8	3401.2	4254.9
77.5°	404.9	398.1	399.0	392.2	410.8	408.8	454.7	617.6	1015.7	1786.4	2494.8
80°	333.7	328.8	331.7	327.8	357.1	302.5	306.4	377.6	504.4	783.5	1104.5
82.5°	246.8	248.8	267.3	265.4	300.5	203.9	224.4	282.0	339.5	390.3	424.4
85°	144.4	147.3	192.2	202.0	220.5	107.3	137.6	167.8	189.3	209.8	218.5
87.5°	15.6	20.5	107.3	110.3	98.5	32.2	55.6	70.2	75.1	80.0	70.2
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°	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9
2.5°	1431.3	1418.6	1405.0	1397.2	1383.5	1371.8	1350.3	1332.8	1313.2	1299.6	1293.7
5°	1599.1	1568.9	1536.7	1513.3	1484.0	1458.6	1409.8	1351.3	1332.8	1293.7	1284.0
7.5°	1817.7	1763.0	1708.4	1663.5	1612.8	1570.8	1488.9	1383.5	1369.8	1307.4	1293.7
10°	2074.3	1994.3	1913.3	1844.0	1769.9	1705.5	1584.5	1436.2	1421.5	1341.5	1327.9
12.5°	2361.1	2263.5	2159.1	2055.7	1967.9	1877.2	1712.3	1518.1	1494.7	1400.1	1381.5
15°	2656.7	2551.4	2430.4	2305.5	2197.2	2077.2	1869.4	1625.5	1582.5	1471.3	1445.9
17.5°	2948.5	2834.3	2707.5	2568.0	2441.1	2297.7	2039.1	1745.5	1671.3	1541.6	1509.4
20°	3230.4	3114.3	2980.7	2844.1	2686.0	2522.1	2212.8	1863.5	1750.3	1600.1	1558.1
22.5°	3487.0	3387.5	3253.8	3096.8	2936.8	2752.4	2389.4	1981.6	1819.6	1645.0	1591.3
25°	3757.3	3666.6	3533.9	3382.6	3196.3	2991.4	2571.9	2093.8	1875.2	1669.4	1603.0
27.5°	4030.5	3952.4	3827.5	3668.5	3468.5	3241.2	2757.2	2197.2	1920.1	1677.2	1597.2
30°	4322.2	4261.7	4146.6	3969.0	3767.0	3515.3	2959.2	2298.7	1948.4	1666.4	1570.8
32.5°	4598.3	4596.4	4493.9	4309.5	4091.9	3814.9	3171.9	2401.1	1963.0	1636.2	1525.0
35°	4885.2	4925.2	4848.1	4672.5	4443.2	4135.8	3407.0	2510.4	1964.0	1582.5	1465.5
37.5°	5211.0	5282.3	5248.1	5081.3	4840.3	4501.7	3683.1	2633.3	1958.2	1508.4	1378.6
40°	5581.8	5679.4	5678.4	5537.9	5280.3	4911.5	4004.1	2770.9	1944.5	1415.7	1276.2
42.5°	6006.2	6122.3	6154.5	6016.0	5755.5	5359.3	4372.0	2922.1	1923.0	1324.0	1167.9
45°	6492.1	6594.5	6655.0	6526.2	6264.8	5847.2	4794.4	3093.8	1896.7	1205.9	1044.0
47.5°	7012.1	7131.1	7221.9	7111.6	6832.6	6403.3	5294.9	3315.3	1886.9	1071.3	910.3
50°	7657.0	7780.0	7976.1	7926.3	7773.1	7427.7	6353.5	3838.3	1890.8	943.5	798.1
52.5°	9257.1	9539.1	9786.9	9676.7	9312.7	8720.5	7214.1	4129.0	1808.9	839.1	720.0
55°	9740.1	10060.1	10426.0	10380.1	10030.8	9433.7	7894.1	4372.0	1729.9	763.0	669.3
57.5°	10585.0	10962.6	11473.8	11464.1	11035.8	10363.5	8769.3	4662.7	1695.7	719.1	643.9
60°	11479.7	11960.7	12667.1	12777.3	12311.9	11612.4	9803.5	5019.8	1700.6	694.7	629.3
62.5°	12133.4	12838.8	13866.2	14195.9	13647.6	12876.8	10876.7	5376.9	1671.3	666.4	611.7
65°	12173.4	13189.1	14646.7	15159.9	14604.7	13614.4	11255.3	5306.6	1495.7	628.3	583.4
67.5°	11197.7	12520.7	14291.6	14854.5	14286.7	13159.8	10591.8	4639.3	1215.7	562.0	534.7
70°	9326.4	10862.1	12700.2	13327.6	12858.3	11717.7	9218.1	3705.6	908.3	474.2	461.5
72.5°	7207.2	8639.5	10308.9	10889.4	10530.4	9527.4	7270.7	2700.6	648.8	384.4	374.7
75°	5152.5	6372.1	7583.9	7805.3	7451.2	6530.1	4717.3	1686.9	454.7	315.1	301.5
77.5°	3190.4	3983.6	4418.8	4133.9	3682.2	3060.7	1920.1	833.2	302.5	256.6	242.9
80°	1415.7	1661.6	1551.3	1382.5	1091.8	897.6	586.4	369.8	195.1	198.1	190.3
82.5°	476.1	503.4	489.8	486.9	439.0	384.4	248.8	160.0	109.3	126.8	123.9
85°	232.2	242.9	243.9	252.7	219.5	170.7	67.3	63.4	46.8	68.3	71.2
87.5°	70.2	71.2	64.4	70.2	56.6	39.0	12.7	17.6	8.8	16.6	16.6
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°	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9
2.5°	1283.0	1279.1	1272.3	1264.5	1262.5	1252.8	1249.8	1244.9	1242.0	1237.1	1233.2
5°	1271.3	1264.5	1256.7	1247.9	1247.9	1234.2	1228.4	1222.5	1222.5	1213.7	1209.8
7.5°	1283.0	1274.2	1265.4	1257.6	1260.6	1244.9	1239.1	1233.2	1232.3	1223.5	1219.6
10°	1316.2	1307.4	1296.7	1288.9	1285.9	1273.2	1266.4	1257.6	1251.8	1245.9	1240.1
12.5°	1366.9	1355.2	1341.5	1325.0	1318.1	1307.4	1296.7	1285.0	1271.3	1265.4	1256.7
15°	1427.4	1407.9	1389.3	1368.9	1350.3	1339.6	1325.0	1306.4	1287.9	1280.1	1268.4
17.5°	1477.2	1456.7	1430.3	1405.9	1372.8	1364.0	1343.5	1321.1	1290.8	1287.9	1270.3
20°	1519.1	1487.9	1455.7	1426.4	1375.7	1370.8	1345.4	1319.1	1276.2	1276.2	1254.7
22.5°	1542.5	1499.6	1461.5	1422.5	1359.1	1355.2	1325.9	1294.7	1242.0	1244.0	1217.6
25°	1546.4	1494.7	1446.9	1400.1	1326.9	1320.1	1283.0	1248.9	1191.3	1187.4	1160.1
27.5°	1530.8	1470.3	1414.7	1358.1	1279.1	1264.5	1223.5	1182.5	1125.9	1116.2	1086.9
30°	1494.7	1423.5	1361.1	1295.7	1212.8	1189.3	1146.4	1104.5	1046.9	1034.2	1006.9
32.5°	1437.2	1356.2	1286.9	1221.5	1129.8	1100.6	1057.6	1015.7	960.1	950.3	924.9
35°	1361.1	1270.3	1197.1	1127.9	1036.2	1005.9	964.9	927.9	877.1	873.2	855.7
37.5°	1265.4	1170.8	1092.7	1026.4	939.6	924.0	882.0	854.7	812.7	816.6	807.9
40°	1157.1	1060.5	986.4	927.9	852.7	839.1	813.7	793.2	757.1	767.8	768.8
42.5°	1047.9	951.3	884.0	831.3	766.9	758.1	740.5	728.8	701.5	723.0	731.7
45°	924.0	834.2	776.6	736.6	688.8	688.8	680.0	679.1	660.5	690.8	699.6
47.5°	803.9	733.7	693.7	669.3	636.1	651.7	648.8	656.6	643.0	674.2	682.0
50°	713.2	664.4	640.0	628.3	604.9	629.3	635.2	645.9	634.2	661.5	667.4
52.5°	655.6	623.5	609.8	606.9	590.3	620.5	630.3	640.0	626.4	651.7	650.8
55°	623.5	602.0	597.1	603.0	590.3	619.5	629.3	636.1	624.4	642.0	641.0
57.5°	611.7	600.0	603.0	611.7	603.0	627.4	632.2	640.0	628.3	636.1	640.0
60°	610.8	610.8	622.5	634.2	628.3	645.9	648.8	647.8	637.1	638.1	640.0
62.5°	604.9	619.5	639.1	657.6	655.6	677.1	679.1	666.4	657.6	647.8	644.9
65°	586.4	610.8	639.1	664.4	668.3	701.5	705.4	692.7	686.9	670.3	657.6
67.5°	545.4	576.6	609.8	641.0	647.8	692.7	701.5	706.4	709.3	698.6	682.0
70°	476.1	508.3	542.5	578.6	588.3	638.1	656.6	679.1	696.6	712.2	706.4
72.5°	387.3	416.6	445.9	479.1	493.7	545.4	569.8	608.8	636.1	676.1	692.7
75°	307.3	324.9	342.5	362.9	374.7	425.4	455.6	502.5	539.5	595.2	632.2
77.5°	242.0	250.7	259.5	268.3	273.2	301.5	325.9	372.7	415.6	485.9	540.5
80°	186.4	191.2	192.2	195.1	193.2	206.8	215.6	243.9	281.0	350.3	414.7
82.5°	120.0	123.9	125.9	130.7	121.0	138.5	144.4	147.3	166.8	217.6	263.4
85°	67.3	68.3	69.3	71.2	57.6	75.1	76.1	71.2	69.3	89.8	101.5
87.5°	16.6	15.6	16.6	16.6	6.8	15.6	15.6	10.7	7.8	14.6	11.7
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°	1328.9	1328.9	1328.9	1328.9	1328.9	1328.9
2.5°	1224.5	1222.5	1223.5	1218.6	1216.7	1217.6
5°	1204.9	1201.0	1201.0	1198.1	1194.2	1194.2
7.5°	1213.7	1205.9	1203.0	1197.1	1191.3	1192.3
10°	1227.4	1213.7	1204.0	1195.2	1188.4	1188.4
12.5°	1236.2	1211.8	1197.1	1185.4	1177.6	1177.6
15°	1238.1	1201.0	1179.6	1166.9	1159.1	1159.1
17.5°	1226.4	1179.6	1152.3	1135.7	1126.9	1128.8
20°	1197.1	1139.6	1107.4	1089.8	1081.0	1082.0
22.5°	1151.3	1084.9	1047.9	1027.4	1018.6	1018.6
25°	1088.8	1016.6	976.6	960.1	952.3	952.3
27.5°	1017.6	943.5	908.3	895.7	890.8	890.8
30°	937.6	876.1	850.8	842.0	834.2	834.2
32.5°	870.3	826.4	817.6	805.9	785.4	784.4
35°	816.6	811.8	804.9	769.8	740.5	736.6
37.5°	787.4	816.6	773.7	713.2	689.8	688.8
40°	771.8	799.1	724.9	695.6	692.7	692.7
42.5°	734.7	754.2	722.0	705.4	705.4	706.4
45°	695.6	712.2	728.8	714.2	719.1	720.0
47.5°	668.3	701.5	728.8	716.1	725.9	731.7
50°	643.0	691.7	714.2	714.2	724.9	725.9
52.5°	637.1	678.1	700.5	711.3	712.2	707.4
55°	638.1	667.4	689.8	703.5	697.6	697.6
57.5°	637.1	661.5	681.0	685.9	688.8	688.8
60°	638.1	653.7	669.3	667.4	677.1	677.1
62.5°	641.0	643.0	650.8	648.8	663.5	663.5
65°	647.8	629.3	624.4	626.4	643.9	643.0
67.5°	660.5	610.8	595.2	596.1	621.5	617.6
70°	679.1	585.4	562.0	556.1	599.1	592.2
72.5°	684.9	556.1	519.1	513.2	538.6	519.1
75°	657.6	532.7	473.2	453.7	443.0	437.1
77.5°	586.4	518.1	425.4	384.4	367.8	363.9
80°	485.9	487.8	362.9	314.2	364.9	363.9
82.5°	366.9	421.5	290.7	272.2	264.4	220.5
85°	177.6	317.1	223.4	187.3	112.2	106.3
87.5°	15.6	132.7	128.8	83.9	38.1	36.1
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)