

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: P195815

Luminaire Tested: **NAV-AF-05-D-UNV-T2R-7050-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195815
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-05-D-UNV-T2R-7050-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 5000K, 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: 34566 lumens
Efficiency: N/A
Efficacy: 108.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G4

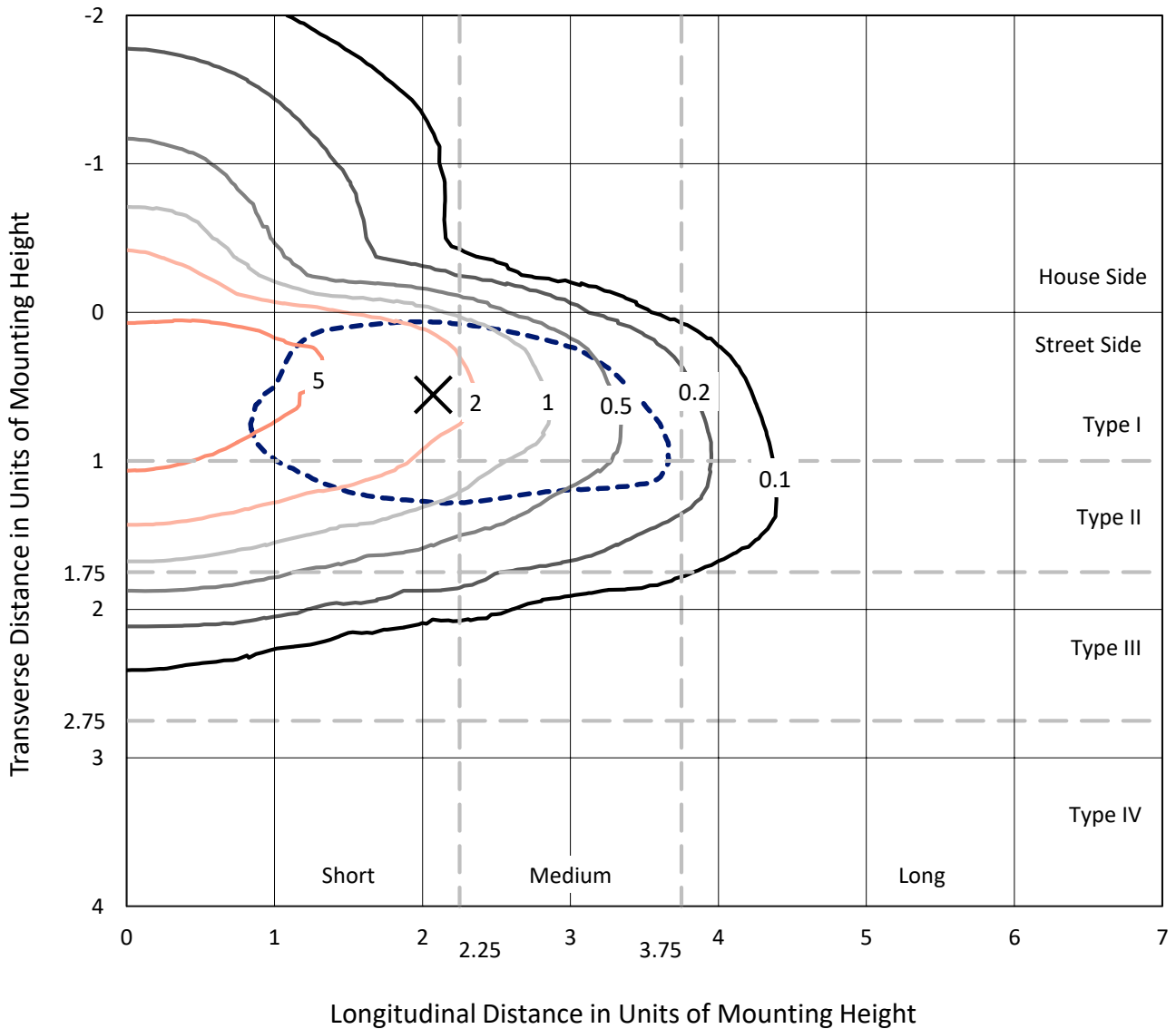
Input Watts (W): 320
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

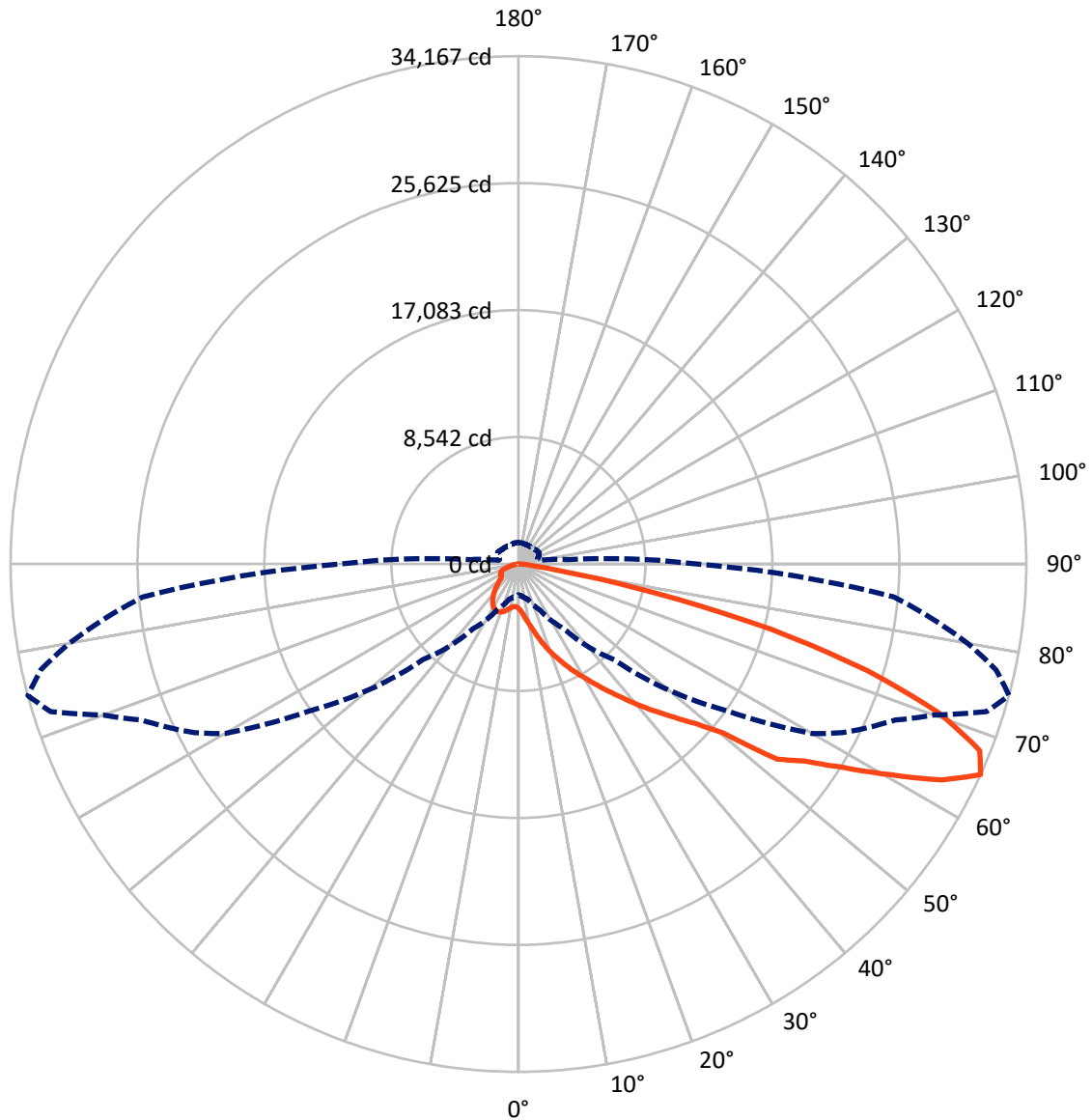
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 9.5 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	5194.1	0.0	5194.1
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	29371.9	0.0	29371.9
	% Fixture	85.0	0.0	85.0
Total	Lumens	34566.0	0.0	34566.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	353.6	1.0
10°-20°	1350.5	3.9
20°-30°	2725.4	7.9
30°-40°	4628.5	13.4
40°-50°	6455.6	18.7
50°-60°	7912.1	22.9
60°-70°	7444.2	21.5
70°-80°	3264.2	9.4
80°-90°	431.9	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°	34566.0	100.0
0°-180°	34566.0	100.0



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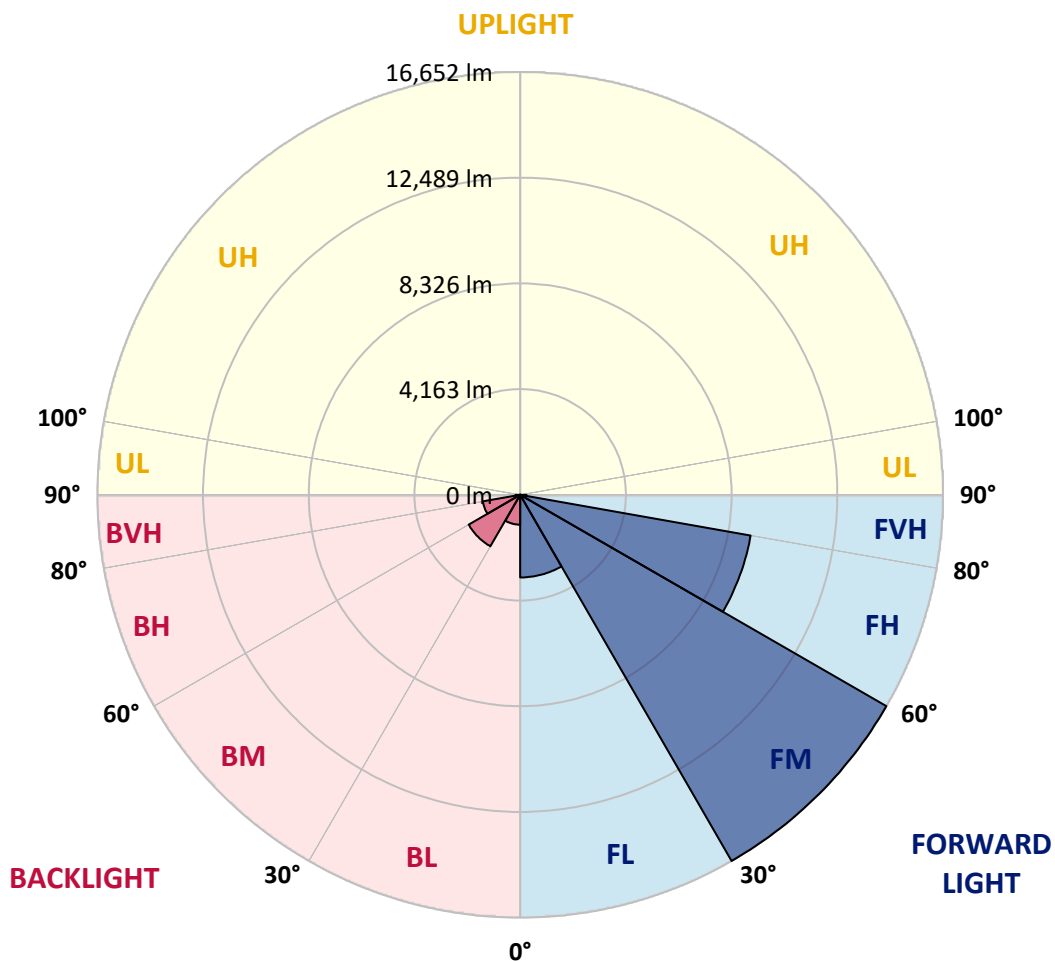
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	3253.6	9.4			
FM	(30°-60°)	16652.3	48.2			
FH	(60°-80°)	9215.6	26.7			G4/12000
FVH	(80°-90°)	250.4	0.7			G3/500
BL	(0°-30°)	1175.8	3.4	B3/2500		
BM	(30°-60°)	2343.8	6.8	B2/2500		
BH	(60°-80°)	1492.9	4.3	B3/2500		G3/2500
BVH	(80°-90°)	181.5	0.5			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G4

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9
2.5°	3771.2	3727.2	3731.6	3670.0	3579.8	3480.9	3399.5	3355.6	3318.2	3307.2	3245.6
5°	4932.2	4877.2	4857.4	4716.7	4505.6	4254.9	4006.4	3909.7	3830.5	3782.1	3663.4
7.5°	5882.1	5853.5	5827.1	5697.4	5488.5	5167.5	4767.3	4624.3	4492.4	4347.3	4204.3
10°	6528.6	6517.6	6506.6	6416.5	6242.7	5963.5	5532.5	5376.4	5211.4	5026.7	4839.8
12.5°	7016.8	7016.8	7025.6	6950.8	6845.2	6629.8	6238.3	6093.2	5926.1	5732.6	5519.3
15°	7344.4	7353.2	7399.4	7421.4	7366.4	7227.9	6884.8	6757.3	6599.0	6407.7	6196.6
17.5°	7562.1	7579.7	7647.9	7720.4	7790.8	7742.4	7487.3	7368.6	7225.7	7049.7	6851.8
20°	8067.8	8045.9	8048.1	8026.1	8129.4	8166.8	8026.1	7927.1	7812.8	7652.3	7471.9
22.5°	9129.9	9088.1	8980.4	8705.5	8580.2	8567.0	8483.4	8430.7	8342.7	8241.6	8061.2
25°	10515.2	10466.9	10253.6	9800.6	9426.8	9081.5	8927.6	8894.6	8837.5	8769.3	8639.6
27.5°	11946.7	11894.0	11619.1	11047.4	10559.2	9862.2	9382.8	9338.8	9286.0	9257.5	9195.9
30°	13206.7	13149.6	12879.1	12298.6	11709.3	10878.1	9996.3	9842.4	9752.2	9761.0	9725.8
32.5°	14312.8	14262.2	13958.8	13367.2	12769.1	11962.1	10792.3	10552.6	10350.3	10275.6	10302.0
35°	15240.7	15194.6	14862.5	14266.6	13664.1	12993.4	11817.0	11456.4	11126.5	10919.8	10895.7
37.5°	15786.1	15759.7	15526.6	15020.8	14422.7	13930.2	12964.8	12564.6	12078.7	11777.4	11645.5
40°	15755.3	15783.9	15744.3	15515.6	15051.6	14693.2	14161.1	13765.3	13290.3	12841.7	12573.4
42.5°	15306.7	15346.3	15524.4	15643.1	15517.8	15300.1	15205.5	14910.9	14484.3	14009.3	13637.7
45°	14691.0	14726.2	14957.1	15385.9	15744.3	15805.9	16120.3	15973.0	15612.3	15207.7	14798.7
47.5°	13747.7	13815.8	14084.1	14765.8	15618.9	16212.7	16887.7	16955.9	16747.0	16412.8	16030.1
50°	12382.1	12472.3	12848.3	13818.0	15144.0	16630.5	18029.0	18288.4	18204.9	17866.2	17479.2
52.5°	10983.6	11073.8	11575.1	12606.4	14378.8	16802.0	19152.6	19816.7	20296.1	20645.7	20713.8
55°	9527.9	9629.1	10178.8	11366.2	13358.5	16584.3	19955.2	20709.5	21195.4	21560.4	21707.8
57.5°	7885.3	7999.7	8531.8	9732.4	11916.0	15709.1	20848.0	21916.7	22640.1	23203.0	23519.7
60°	6000.9	6143.8	6695.7	7905.1	10020.5	14033.5	21246.0	22827.0	23977.1	24821.4	25322.8
62.5°	3804.1	3949.3	4523.2	5778.8	7863.3	11744.4	20120.1	22426.8	24388.2	25637.2	26556.4
65°	2075.8	2139.6	2458.4	3403.9	5301.6	9112.3	17265.9	19986.0	22811.6	24581.8	25993.5
67.5°	1556.8	1565.6	1598.6	1829.5	2823.4	6152.6	13499.2	15990.6	19128.4	21406.5	23093.1
70°	1363.3	1363.3	1367.7	1369.9	1532.6	3333.6	9145.3	11438.8	14315.0	16619.5	18715.0
72.5°	1222.6	1209.4	1205.0	1178.6	1200.6	1708.6	4978.4	7038.8	9464.2	12050.1	14004.9
75°	1055.5	1053.3	1053.3	1026.9	1040.1	1202.8	2159.3	3377.5	5257.6	7665.4	9589.5
77.5°	912.6	897.2	899.4	884.0	925.7	921.3	1024.7	1391.9	2289.1	4026.2	5622.6
80°	752.0	741.0	747.6	738.8	804.8	681.7	690.5	851.0	1136.8	1765.7	2489.2
82.5°	556.3	560.7	602.5	598.1	677.3	459.6	505.8	635.5	765.2	879.6	956.5
85°	325.4	332.0	433.2	455.2	497.0	241.9	310.0	378.2	426.6	472.8	492.6
87.5°	35.2	46.2	241.9	248.5	222.1	72.6	125.3	158.3	169.3	180.3	158.3
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°	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9
2.5°	3225.8	3197.2	3166.4	3148.9	3118.1	3091.7	3043.3	3003.7	2959.7	2929.0	2915.8
5°	3604.0	3535.9	3463.3	3410.5	3344.6	3287.4	3177.4	3045.5	3003.7	2915.8	2893.8
7.5°	4096.6	3973.5	3850.3	3749.2	3634.8	3540.3	3355.6	3118.1	3087.3	2946.6	2915.8
10°	4674.9	4494.6	4312.1	4156.0	3988.8	3843.7	3571.1	3236.8	3203.8	3023.5	2992.7
12.5°	5321.4	5101.5	4866.2	4633.1	4435.2	4230.7	3859.1	3421.5	3368.7	3155.5	3113.7
15°	5987.7	5750.2	5477.5	5196.1	4952.0	4681.5	4213.1	3663.4	3566.7	3316.0	3258.8
17.5°	6645.1	6387.9	6102.0	5787.6	5501.7	5178.5	4595.7	3933.9	3766.8	3474.3	3401.7
20°	7280.6	7019.0	6717.7	6409.9	6053.6	5684.2	4987.2	4199.9	3944.9	3606.2	3511.7
22.5°	7858.9	7634.7	7333.4	6979.4	6618.8	6203.2	5385.2	4466.0	4101.0	3707.4	3586.4
25°	8468.1	8263.6	7964.5	7623.7	7203.7	6741.9	5796.4	4718.9	4226.3	3762.4	3612.8
27.5°	9083.7	8907.8	8626.4	8267.9	7817.2	7304.8	6214.2	4952.0	4327.5	3779.9	3599.6
30°	9741.2	9604.9	9345.4	8945.2	8490.0	7922.7	6669.3	5180.7	4391.2	3755.8	3540.3
32.5°	10363.5	10359.1	10128.2	9712.6	9222.3	8597.8	7148.7	5411.5	4424.2	3687.6	3436.9
35°	11010.0	11100.2	10926.4	10530.6	10013.9	9321.2	7678.6	5657.8	4426.4	3566.7	3302.8
37.5°	11744.4	11905.0	11828.0	11452.0	10908.9	10145.8	8300.9	5934.9	4413.2	3399.5	3107.1
40°	12580.0	12799.9	12797.7	12481.1	11900.6	11069.4	9024.4	6244.9	4382.5	3190.6	2876.2
42.5°	13536.6	13798.2	13870.8	13558.6	12971.4	12078.7	9853.4	6585.8	4334.1	2983.9	2632.1
45°	14631.6	14862.5	14998.9	14708.6	14119.3	13178.1	10805.5	6972.8	4274.7	2717.9	2352.8
47.5°	15803.7	16071.9	16276.4	16027.9	15399.1	14431.5	11933.6	7471.9	4252.7	2414.4	2051.6
50°	17257.1	17534.2	17976.2	17864.0	17518.8	16740.4	14319.4	8650.6	4261.5	2126.4	1798.7
52.5°	20863.4	21498.9	22057.4	21808.9	20988.7	19654.0	16258.8	9305.8	4076.8	1891.1	1622.8
55°	21951.8	22673.1	23497.7	23394.3	22607.1	21261.4	17791.5	9853.4	3898.7	1719.6	1508.5
57.5°	23856.1	24707.1	25859.3	25837.3	24872.0	23357.0	19763.9	10508.7	3821.7	1620.6	1451.3
60°	25872.5	26956.6	28548.6	28797.1	27748.2	26171.6	22094.8	11313.5	3832.7	1565.6	1418.3
62.5°	27345.8	28935.6	31251.1	31994.3	30758.5	29021.4	24513.6	12118.3	3766.8	1501.9	1378.7
65°	27436.0	29725.0	33010.2	34166.9	32915.7	30683.8	25366.8	11959.9	3370.9	1416.1	1315.0
67.5°	25237.0	28218.8	32209.8	33478.6	32198.8	29659.1	23871.5	10455.9	2739.9	1266.6	1205.0
70°	21019.5	24480.6	28623.4	30037.3	28979.6	26409.1	20775.4	8351.5	2047.2	1068.7	1040.1
72.5°	16243.4	19471.5	23233.8	24542.2	23733.0	21472.5	16386.4	6086.6	1462.3	866.4	844.4
75°	11612.5	14361.2	17092.2	17591.4	16793.2	14717.4	10631.8	3801.9	1024.7	710.3	679.5
77.5°	7190.5	8978.2	9958.9	9316.8	8298.7	6898.0	4327.5	1877.9	681.7	578.3	547.5
80°	3190.6	3744.8	3496.3	3115.9	2460.6	2023.0	1321.6	833.4	439.8	446.4	428.8
82.5°	1073.1	1134.6	1103.9	1097.3	989.5	866.4	560.7	360.6	246.3	285.9	279.3
85°	523.3	547.5	549.7	569.5	494.8	384.8	151.7	142.9	105.5	153.9	160.5
87.5°	158.3	160.5	145.1	158.3	127.5	88.0	28.6	39.6	19.8	37.4	37.4
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°	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9
2.5°	2891.6	2882.8	2867.4	2849.8	2845.4	2823.4	2816.8	2805.8	2799.2	2788.2	2779.4
5°	2865.2	2849.8	2832.2	2812.4	2812.4	2781.6	2768.4	2755.2	2755.2	2735.5	2726.7
7.5°	2891.6	2871.8	2852.0	2834.4	2841.0	2805.8	2792.6	2779.4	2777.2	2757.4	2748.7
10°	2966.3	2946.6	2922.4	2904.8	2898.2	2869.6	2854.2	2834.4	2821.2	2808.0	2794.8
12.5°	3080.7	3054.3	3023.5	2986.1	2970.7	2946.6	2922.4	2896.0	2865.2	2852.0	2832.2
15°	3217.0	3173.0	3131.3	3085.1	3043.3	3019.1	2986.1	2944.4	2902.6	2885.0	2858.6
17.5°	3329.2	3283.0	3223.6	3168.6	3093.9	3074.1	3027.9	2977.3	2909.2	2902.6	2863.0
20°	3423.7	3353.4	3280.8	3214.8	3100.5	3089.5	3032.3	2972.9	2876.2	2876.2	2827.8
22.5°	3476.5	3379.7	3294.0	3206.0	3063.1	3054.3	2988.3	2918.0	2799.2	2803.6	2744.3
25°	3485.3	3368.7	3261.0	3155.5	2990.5	2975.1	2891.6	2814.6	2684.9	2676.1	2614.5
27.5°	3450.1	3313.8	3188.4	3060.9	2882.8	2849.8	2757.4	2665.1	2537.6	2515.6	2449.6
30°	3368.7	3208.2	3067.5	2920.2	2733.3	2680.5	2583.7	2489.2	2359.4	2330.9	2269.3
32.5°	3239.0	3056.5	2900.4	2753.1	2546.4	2480.4	2383.6	2289.1	2163.7	2141.8	2084.6
35°	3067.5	2863.0	2698.1	2542.0	2335.3	2267.1	2174.7	2091.2	1976.8	1968.0	1928.5
37.5°	2852.0	2638.7	2462.8	2313.3	2117.6	2082.4	1987.8	1926.3	1831.7	1840.5	1820.7
40°	2607.9	2390.2	2223.1	2091.2	1921.9	1891.1	1833.9	1787.7	1706.4	1730.6	1732.8
42.5°	2361.6	2143.9	1992.2	1873.5	1728.4	1708.6	1669.0	1642.6	1581.0	1629.4	1649.2
45°	2082.4	1880.1	1750.3	1660.2	1552.4	1552.4	1532.6	1530.5	1488.7	1556.8	1576.6
47.5°	1811.9	1653.6	1563.4	1508.5	1433.7	1468.9	1462.3	1479.9	1449.1	1519.5	1537.0
50°	1607.4	1497.5	1442.5	1416.1	1363.3	1418.3	1431.5	1455.7	1429.3	1490.9	1504.1
52.5°	1477.7	1405.1	1374.3	1367.7	1330.3	1398.5	1420.5	1442.5	1411.7	1468.9	1466.7
55°	1405.1	1356.7	1345.7	1358.9	1330.3	1396.3	1418.3	1433.7	1407.3	1446.9	1444.7
57.5°	1378.7	1352.3	1358.9	1378.7	1358.9	1413.9	1424.9	1442.5	1416.1	1433.7	1442.5
60°	1376.5	1376.5	1402.9	1429.3	1416.1	1455.7	1462.3	1460.1	1435.9	1438.1	1442.5
62.5°	1363.3	1396.3	1440.3	1482.1	1477.7	1526.1	1530.5	1501.9	1482.1	1460.1	1453.5
65°	1321.6	1376.5	1440.3	1497.5	1506.3	1581.0	1589.8	1561.2	1548.0	1510.7	1482.1
67.5°	1229.2	1299.6	1374.3	1444.7	1460.1	1561.2	1581.0	1592.0	1598.6	1574.4	1537.0
70°	1073.1	1145.6	1222.6	1304.0	1326.0	1438.1	1479.9	1530.5	1570.0	1605.2	1592.0
72.5°	873.0	938.9	1004.9	1079.7	1112.7	1229.2	1284.2	1372.1	1433.7	1523.9	1561.2
75°	692.7	732.2	771.8	818.0	844.4	958.7	1026.9	1132.4	1216.0	1341.3	1424.9
77.5°	545.3	565.1	584.9	604.7	615.7	679.5	734.4	840.0	936.7	1095.1	1218.2
80°	420.0	431.0	433.2	439.8	435.4	466.2	486.0	549.7	633.3	789.4	934.5
82.5°	270.5	279.3	283.7	294.7	272.7	312.2	325.4	332.0	376.0	490.4	593.7
85°	151.7	153.9	156.1	160.5	129.7	169.3	171.5	160.5	156.1	202.3	228.7
87.5°	37.4	35.2	37.4	37.4	15.4	35.2	35.2	24.2	17.6	33.0	26.4
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°	2994.9	2994.9	2994.9	2994.9	2994.9	2994.9
2.5°	2759.6	2755.2	2757.4	2746.5	2742.1	2744.3
5°	2715.7	2706.9	2706.9	2700.3	2691.5	2691.5
7.5°	2735.5	2717.9	2711.3	2698.1	2684.9	2687.1
10°	2766.2	2735.5	2713.5	2693.7	2678.3	2678.3
12.5°	2786.0	2731.1	2698.1	2671.7	2654.1	2654.1
15°	2790.4	2706.9	2658.5	2629.9	2612.3	2612.3
17.5°	2764.0	2658.5	2596.9	2559.5	2539.8	2544.2
20°	2698.1	2568.3	2495.8	2456.2	2436.4	2438.6
22.5°	2594.7	2445.2	2361.6	2315.5	2295.7	2295.7
25°	2454.0	2291.3	2201.1	2163.7	2146.1	2146.1
27.5°	2293.5	2126.4	2047.2	2018.6	2007.6	2007.6
30°	2113.2	1974.6	1917.5	1897.7	1880.1	1880.1
32.5°	1961.4	1862.5	1842.7	1816.3	1770.1	1767.9
35°	1840.5	1829.5	1814.1	1734.9	1669.0	1660.2
37.5°	1774.5	1840.5	1743.7	1607.4	1554.6	1552.4
40°	1739.3	1800.9	1633.8	1567.8	1561.2	1561.2
42.5°	1655.8	1699.8	1627.2	1589.8	1589.8	1592.0
45°	1567.8	1605.2	1642.6	1609.6	1620.6	1622.8
47.5°	1506.3	1581.0	1642.6	1614.0	1636.0	1649.2
50°	1449.1	1559.0	1609.6	1609.6	1633.8	1636.0
52.5°	1435.9	1528.3	1578.8	1603.0	1605.2	1594.2
55°	1438.1	1504.1	1554.6	1585.4	1572.2	1572.2
57.5°	1435.9	1490.9	1534.8	1545.8	1552.4	1552.4
60°	1438.1	1473.3	1508.5	1504.1	1526.1	1526.1
62.5°	1444.7	1449.1	1466.7	1462.3	1495.3	1495.3
65°	1460.1	1418.3	1407.3	1411.7	1451.3	1449.1
67.5°	1488.7	1376.5	1341.3	1343.5	1400.7	1391.9
70°	1530.5	1319.4	1266.6	1253.4	1350.1	1334.7
72.5°	1543.6	1253.4	1169.8	1156.6	1213.8	1169.8
75°	1482.1	1200.6	1066.5	1022.5	998.3	985.1
77.5°	1321.6	1167.6	958.7	866.4	829.0	820.2
80°	1095.1	1099.5	818.0	708.1	822.4	820.2
82.5°	826.8	949.9	655.3	613.5	595.9	497.0
85°	400.2	714.6	503.6	422.2	252.9	239.7
87.5°	35.2	299.1	290.3	189.1	85.8	81.4
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)