

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: P195740

Luminaire Tested: **NAV-AF-02-D-UNV-SLL-7050-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195740
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24264)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-02-D-UNV-SLL-7050-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT
ELIMINATOR LEFT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11801 lumens
Efficiency: N/A
Efficacy: 91.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G3

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

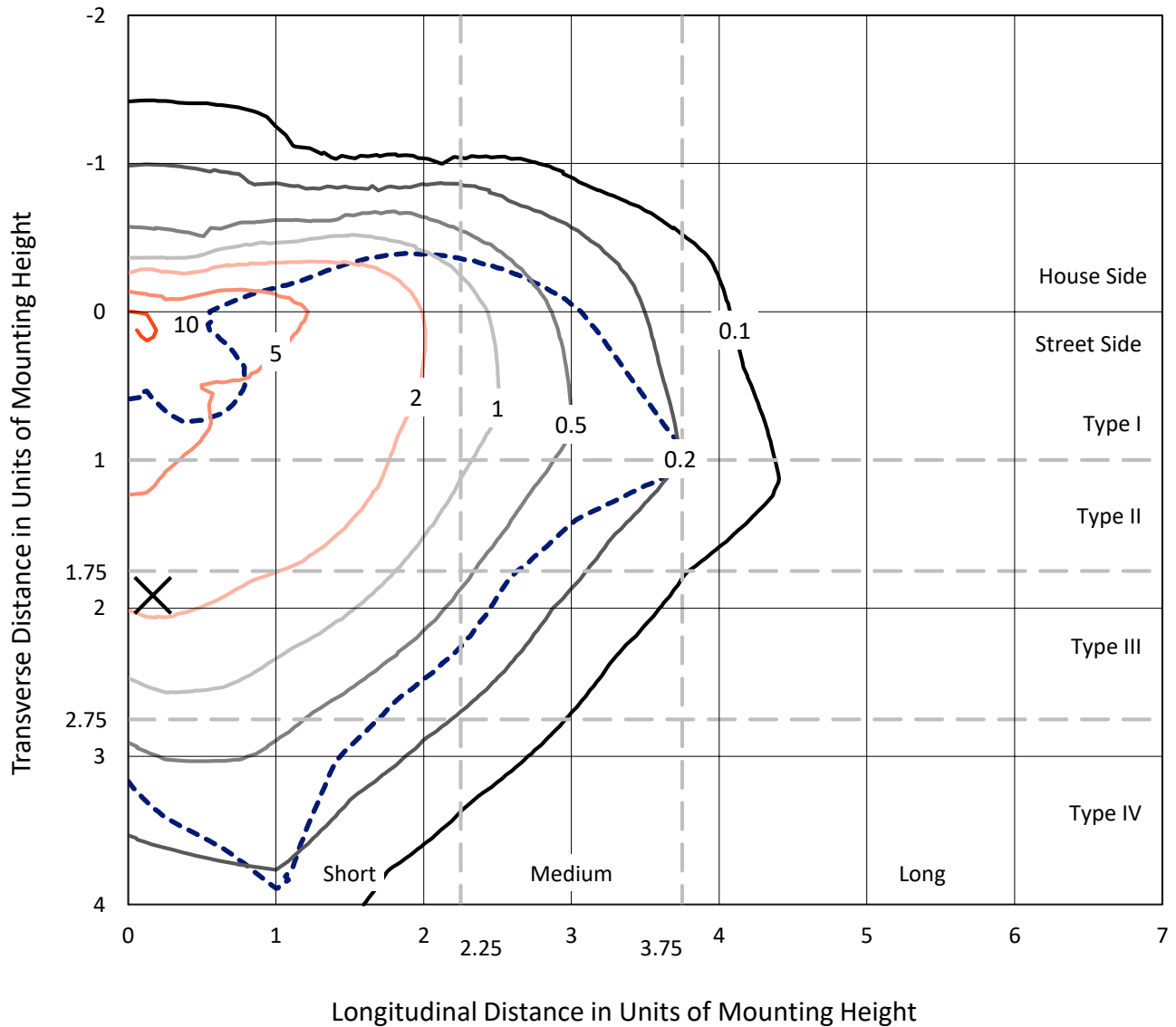


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Iso-Footcandle Lines of Horizontal Illumination

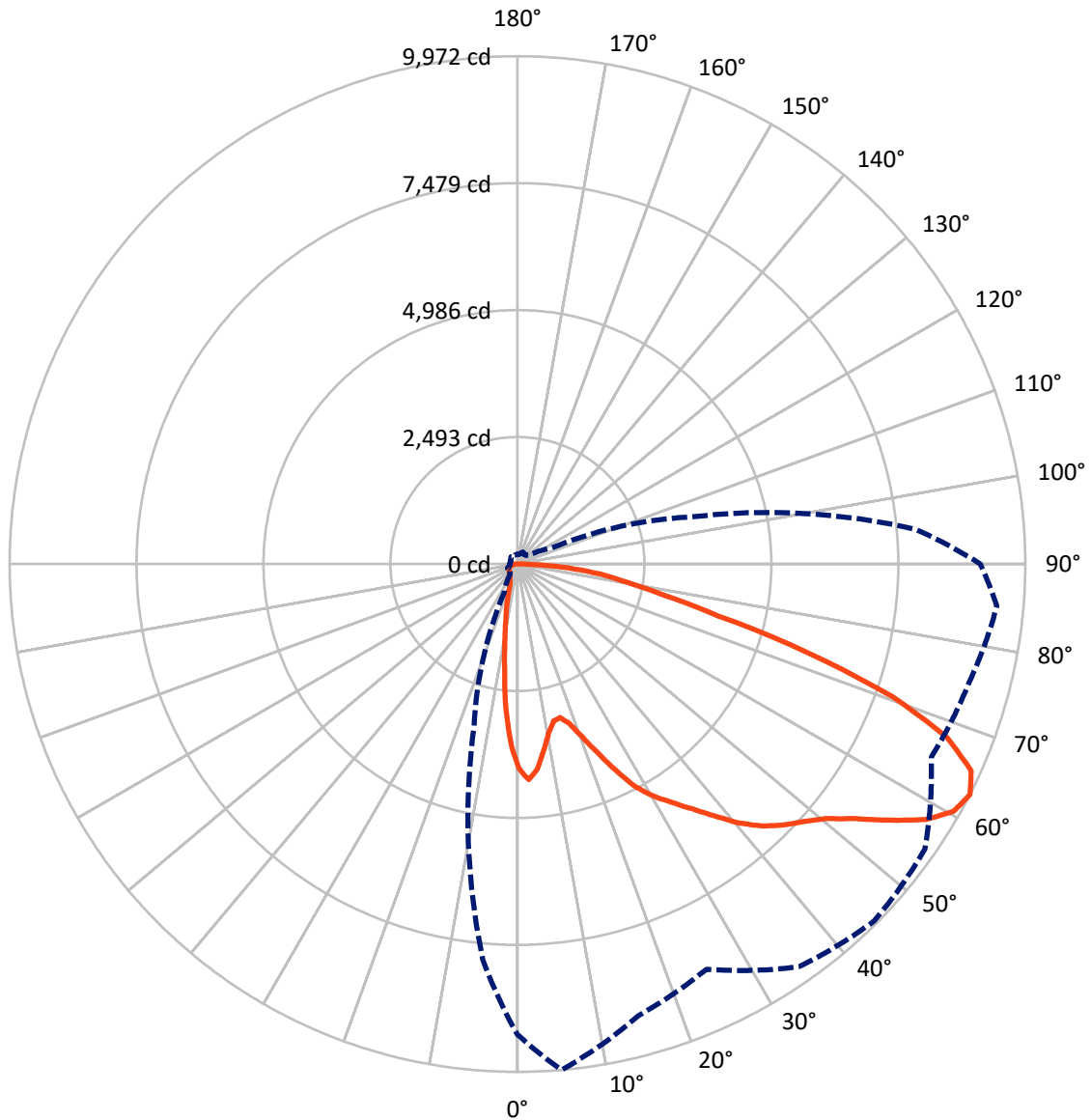
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 11.5 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 5-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2090.6	0.0	2090.6
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	9710.4	0.0	9710.4
	% Fixture	82.3	0.0	82.3
Total	Lumens	11801.0	0.0	11801.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	292.6	2.5
10°-20°	534.4	4.5
20°-30°	768.6	6.5
30°-40°	1177.2	10.0
40°-50°	1721.1	14.6
50°-60°	2504.3	21.2
60°-70°	2901.5	24.6
70°-80°	1512.5	12.8
80°-90°	388.8	3.3
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°	11801.0	100.0
0°-180°	11801.0	100.0



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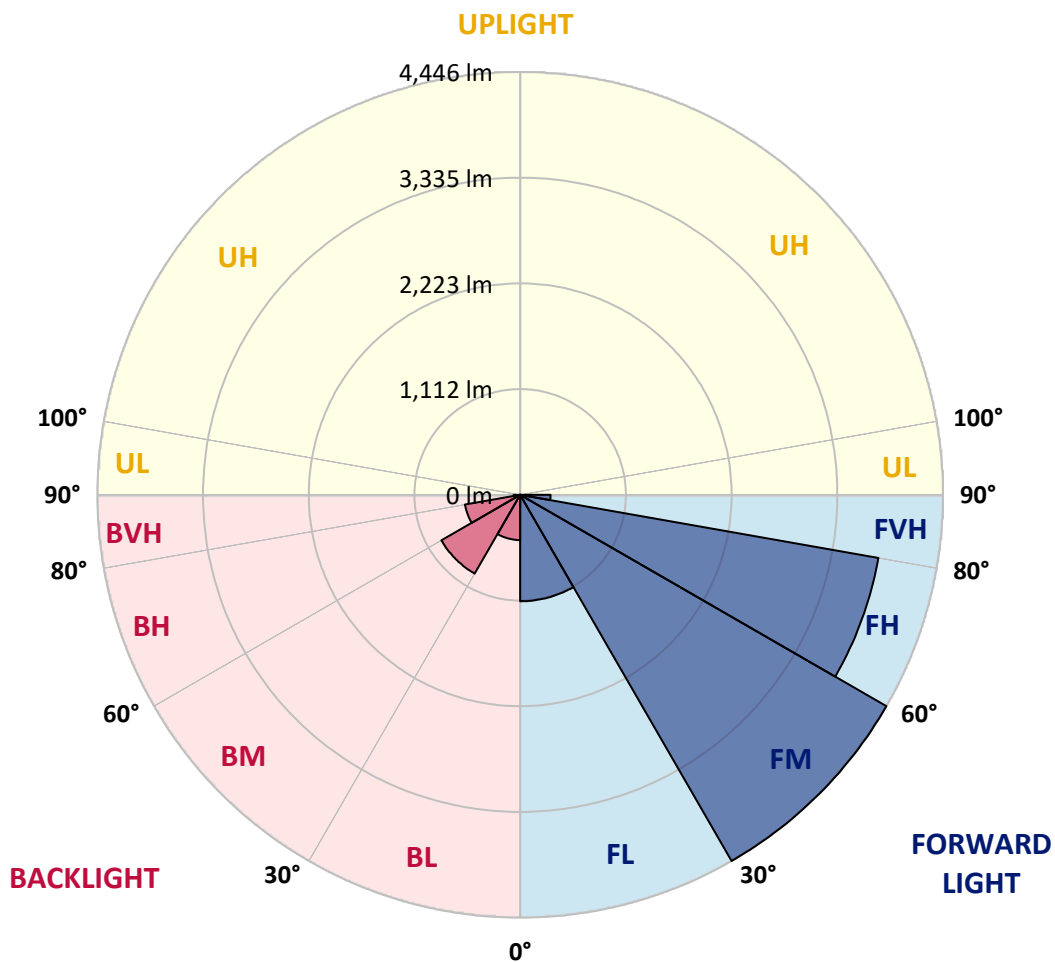
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1120.0	9.5			
FM (30°-60°)	4446.1	37.7			
FH (60°-80°)	3824.5	32.4			G2/5000
FVH (80°-90°)	319.9	2.7			G3/500
BL (0°-30°)	475.6	4.0	B1/500		
BM (30°-60°)	956.5	8.1	B1/1000		
BH (60°-80°)	589.5	5.0	B2/1000		G2/1000
BVH (80°-90°)	68.9	0.6			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2
2.5°	4153.3	4241.4	4342.3	4474.1	4564.0	4599.9	4629.8	4579.4	4530.6	4439.0	4406.5
5°	3879.4	4048.9	4326.9	4591.3	4824.1	4957.5	4998.6	4905.4	4739.4	4499.8	4373.2
7.5°	3473.0	3696.3	4087.4	4476.7	4810.4	5032.8	5049.1	4864.3	4537.4	4144.7	3939.3
10°	3117.9	3370.3	3823.0	4258.5	4611.9	4839.5	4795.0	4535.7	4141.3	3694.6	3462.8
12.5°	2911.7	3164.1	3625.3	4067.7	4400.5	4487.0	4396.3	4178.1	3804.2	3356.7	3123.1
15°	2868.1	3128.2	3555.2	3928.2	4134.4	4078.8	3989.0	3878.6	3612.5	3246.3	3020.4
17.5°	2999.9	3290.8	3648.4	3852.9	3844.4	3710.9	3635.6	3657.0	3611.6	3366.1	3129.9
20°	3271.1	3615.1	3885.4	3832.4	3613.3	3426.0	3382.3	3550.0	3759.7	3666.4	3407.1
22.5°	3627.9	4019.8	4208.9	3891.4	3492.7	3290.8	3282.2	3544.0	4029.2	4120.7	3805.0
25°	4030.9	4487.8	4534.9	3995.8	3479.9	3278.8	3271.1	3636.4	4353.5	4570.8	4250.8
27.5°	4523.7	4960.1	4807.0	4135.3	3536.3	3313.9	3319.0	3793.9	4691.4	5015.7	4753.1
30°	4895.1	5295.5	4974.7	4272.2	3627.0	3375.5	3388.3	3964.2	4873.7	5324.6	5154.3
32.5°	5242.5	5582.2	5135.5	4407.4	3759.7	3467.0	3511.5	4176.4	5092.7	5589.9	5533.4
35°	5626.7	5903.0	5314.3	4552.0	3949.6	3627.9	3692.1	4378.3	5310.1	5855.1	5909.0
37.5°	6062.2	6270.1	5508.6	4756.5	4223.4	3925.7	3961.6	4584.5	5461.5	6148.6	6312.0
40°	6515.7	6681.7	5720.8	5029.4	4621.3	4327.8	4344.9	4848.9	5580.5	6452.3	6703.0
42.5°	6905.0	7034.2	5933.8	5368.3	5078.2	4737.7	4752.2	5133.8	5694.3	6714.2	7016.2
45°	7216.4	7311.4	6134.9	5725.1	5565.9	5249.3	5245.9	5423.9	5846.6	6934.9	7256.6
47.5°	7506.5	7557.0	6359.1	6072.4	6071.6	5908.2	5785.8	5766.1	6049.3	7120.6	7466.3
50°	7838.5	7857.3	6655.1	6423.3	6689.4	6663.7	6437.8	6200.8	6312.0	7329.4	7686.2
52.5°	8300.5	8301.4	7022.2	6765.5	7371.3	7452.6	7189.9	6692.8	6700.5	7735.8	8066.1
55°	8843.8	8881.5	7500.5	7175.4	8084.9	8223.5	7976.2	7277.2	7258.4	8391.2	8682.1
57.5°	9264.0	9463.3	8057.5	7687.9	8751.4	8932.0	8732.6	7883.0	7943.7	9067.2	9190.4
60°	9382.0	9848.4	8612.8	8262.9	9315.3	9586.5	9383.7	8537.5	8614.5	9506.1	9336.7
62.5°	9240.9	9972.4	9178.4	8778.0	9649.9	9910.0	9764.5	8966.2	9161.3	9449.6	9089.4
65°	8822.5	9792.7	9669.5	8997.0	9457.3	9549.7	9511.2	8988.4	9458.2	8915.7	8405.8
67.5°	7845.3	9099.7	9450.5	8529.0	8558.1	8458.8	8408.3	8377.5	9124.5	8054.1	7327.7
70°	6380.5	7818.8	8405.8	7137.7	6922.1	6826.3	6660.3	7071.0	8201.3	6862.2	6030.5
72.5°	4914.8	5981.7	6894.7	5411.0	4962.7	4995.2	4807.0	5406.8	6793.7	5304.9	4604.2
75°	3490.1	4078.8	5503.4	3888.0	3294.2	3292.5	3277.9	3891.4	5360.6	3807.6	3368.6
77.5°	2515.6	2936.5	4311.5	2602.0	2337.6	2367.5	2319.6	2644.8	4178.9	2738.9	2495.9
80°	2006.5	2174.2	2786.8	1735.2	1740.4	1810.5	1800.3	1808.8	2749.2	1983.4	1866.1
82.5°	1441.7	1650.5	2130.5	1329.7	1150.8	1225.3	1239.8	1341.6	1939.7	1402.4	1230.4
85°	739.3	1006.2	1960.3	1151.7	719.6	596.4	686.2	1058.4	1684.7	840.2	599.8
87.5°	143.7	278.9	1436.6	640.0	323.4	163.4	269.5	448.4	979.7	152.3	74.4
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2
2.5°	4350.9	4241.4	4138.7	4032.6	3950.5	3850.4	3752.0	3666.4	3583.4	3528.6	3545.8
5°	4244.8	3977.8	3738.3	3515.8	3385.7	3229.2	3089.7	2972.5	2881.8	2823.6	2858.7
7.5°	3761.4	3400.3	3084.6	2791.1	2606.3	2403.5	2240.9	2126.3	2056.1	2016.7	2074.1
10°	3266.8	2861.2	2507.0	2201.5	2019.3	1847.3	1700.1	1578.6	1484.5	1440.0	1463.1
12.5°	2912.6	2461.7	2090.3	1885.0	1728.4	1574.4	1422.1	1280.0	1160.2	1105.5	1094.4
15°	2780.0	2246.9	1867.9	1638.5	1482.8	1315.1	1150.8	998.5	884.7	837.7	827.4
17.5°	2838.1	2200.7	1736.1	1464.8	1239.0	1035.3	850.5	706.8	622.9	596.4	598.9
20°	3042.6	2217.8	1630.0	1286.0	1007.1	765.8	581.0	481.7	445.8	439.8	446.6
22.5°	3323.3	2288.0	1553.0	1132.0	802.6	557.0	432.1	385.0	375.6	374.8	381.6
25°	3693.8	2424.9	1501.6	995.1	634.0	441.5	376.5	350.0	342.3	344.0	350.8
27.5°	4130.2	2598.6	1468.3	877.0	521.1	393.6	351.7	328.6	320.9	322.6	327.7
30°	4528.9	2750.9	1418.6	788.0	468.0	376.5	338.0	314.9	304.6	304.6	308.0
32.5°	4885.7	2882.6	1360.5	721.3	419.3	338.0	306.3	288.3	280.6	283.2	284.9
35°	5202.3	2951.9	1315.1	681.9	379.9	311.5	279.8	261.0	250.7	252.4	255.0
37.5°	5513.7	2978.5	1285.2	660.6	351.7	295.2	266.1	250.7	239.6	237.9	237.0
40°	5809.8	2972.5	1256.9	654.6	332.8	283.2	257.5	243.9	232.7	230.2	229.3
42.5°	6065.6	2952.8	1230.4	638.3	320.0	274.7	250.7	238.7	227.6	224.2	222.5
45°	6299.2	2940.8	1201.3	608.4	326.9	271.2	247.3	234.4	224.2	219.9	218.2
47.5°	6558.4	2983.6	1168.8	575.8	325.1	272.1	247.3	232.7	222.5	218.2	216.5
50°	6867.3	3128.2	1128.6	531.3	309.7	290.9	246.4	230.2	220.8	218.2	214.8
52.5°	7303.7	3362.6	1073.0	474.0	297.8	310.6	245.6	225.9	218.2	213.9	209.6
55°	7901.8	3597.1	1001.1	413.3	278.9	296.9	247.3	220.8	212.2	207.9	202.8
57.5°	8392.1	3775.1	910.4	362.8	261.8	280.6	244.7	214.8	205.4	201.1	196.8
60°	8360.4	3792.2	824.0	330.3	251.6	252.4	250.7	210.5	199.4	195.9	192.5
62.5°	7842.8	3580.8	743.5	314.0	243.9	230.2	255.8	205.4	193.4	190.0	187.4
65°	6981.1	3088.8	700.8	314.0	237.0	218.2	223.3	198.5	187.4	184.0	182.3
67.5°	5888.5	2482.2	660.6	320.9	227.6	209.6	202.8	191.7	181.4	178.0	176.3
70°	4719.7	1953.4	632.3	317.4	219.0	200.2	191.7	182.3	172.0	171.1	169.4
72.5°	3702.3	1569.2	619.5	317.4	206.2	189.1	180.5	173.7	163.4	162.6	160.0
75°	2966.5	1178.2	566.4	311.5	193.4	174.5	166.8	160.9	150.6	151.4	149.7
77.5°	2297.4	833.4	473.2	280.6	177.1	158.3	152.3	148.0	136.0	136.9	136.9
80°	1796.8	542.5	367.1	232.7	158.3	139.5	135.2	131.8	118.9	120.6	120.6
82.5°	1231.3	322.6	266.1	187.4	136.0	118.9	118.1	112.9	99.3	100.1	101.8
85°	672.5	212.2	177.1	138.6	107.0	96.7	95.0	92.4	79.6	79.6	80.4
87.5°	124.1	113.8	104.4	91.6	71.9	69.3	66.7	69.3	59.9	58.2	58.2
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2
2.5°	3505.5	3446.5	3405.4	3369.5	3283.1	3289.1	3301.0	3318.2	3264.2	3292.5	3327.6
5°	2823.6	2774.8	2738.0	2680.7	2560.1	2517.3	2489.9	2477.9	2397.5	2414.6	2452.3
7.5°	2081.8	2080.9	2068.1	2003.9	1858.4	1770.3	1712.1	1694.2	1644.5	1663.4	1720.7
10°	1465.7	1481.1	1475.1	1417.8	1287.7	1224.4	1211.6	1247.5	1248.4	1285.2	1383.6
12.5°	1059.3	1050.7	1043.0	996.0	898.4	888.1	917.2	966.9	978.8	1018.2	1120.9
15°	790.6	770.1	765.8	729.0	664.8	674.2	695.6	721.3	722.2	749.5	834.2
17.5°	593.0	593.0	599.8	575.8	529.6	525.4	514.2	507.4	497.1	508.2	554.5
20°	460.3	481.7	498.8	485.1	443.2	422.7	401.3	387.6	379.9	380.8	394.4
22.5°	394.4	411.6	433.8	427.0	391.9	365.4	351.7	342.3	336.3	336.3	344.0
25°	361.1	372.2	392.7	389.3	359.4	338.0	326.9	317.4	310.6	309.7	317.4
27.5°	334.6	341.4	355.1	353.4	322.6	308.9	302.0	296.0	291.8	290.9	298.6
30°	310.6	314.0	320.9	318.3	295.2	281.5	278.9	276.4	273.8	274.7	285.8
32.5°	289.2	291.8	296.0	292.6	270.4	258.4	254.1	250.7	248.1	250.7	263.5
35°	265.2	272.9	278.1	276.4	252.4	237.9	228.5	219.9	216.5	219.0	233.6
37.5°	244.7	257.5	264.4	262.7	237.9	220.8	208.8	207.1	207.1	210.5	225.0
40°	237.0	246.4	252.4	249.8	225.0	207.9	201.1	198.5	199.4	202.8	218.2
42.5°	230.2	238.7	240.4	235.3	210.5	199.4	195.1	191.7	193.4	197.7	213.1
45°	224.2	231.0	230.2	222.5	198.5	190.8	190.8	188.2	189.1	192.5	208.8
47.5°	219.9	223.3	221.6	213.9	190.0	184.0	186.5	186.5	188.2	190.8	207.1
50°	213.1	215.6	213.9	207.1	183.1	178.0	180.5	184.0	185.7	188.2	202.8
52.5°	206.2	207.9	207.1	200.2	176.3	172.8	172.8	176.3	179.7	183.1	195.9
55°	199.4	201.1	201.9	196.8	171.1	167.7	166.8	166.8	170.3	175.4	189.1
57.5°	194.2	194.2	195.9	192.5	166.0	161.7	157.4	158.3	162.6	166.8	180.5
60°	188.2	189.1	191.7	188.2	159.1	152.3	148.9	153.2	154.9	159.1	173.7
62.5°	183.1	183.1	184.8	182.3	153.2	146.3	143.7	148.0	148.0	152.3	166.8
65°	178.8	178.0	178.0	177.1	147.2	140.3	138.6	140.3	141.2	145.5	160.0
67.5°	175.4	171.1	171.1	172.8	141.2	134.3	133.5	133.5	134.3	139.5	152.3
70°	167.7	164.3	163.4	169.4	135.2	126.6	126.6	124.9	126.6	129.2	142.9
72.5°	159.1	156.6	155.7	164.3	129.2	118.1	116.4	115.5	116.4	118.9	131.8
75°	148.0	146.3	148.0	160.9	123.2	108.7	106.1	105.2	105.2	106.1	119.8
77.5°	135.2	133.5	146.3	149.7	119.8	97.5	95.0	93.3	91.6	91.6	107.0
80°	119.8	118.9	141.2	126.6	114.7	85.6	81.3	78.7	77.0	76.2	91.6
82.5°	104.4	102.7	120.6	99.3	95.0	70.2	64.2	59.0	56.5	56.5	70.2
85°	85.6	84.7	95.0	72.7	65.9	51.3	42.8	38.5	35.1	35.1	45.3
87.5°	62.5	60.8	59.0	43.6	33.4	23.1	16.3	15.4	13.7	12.8	18.8
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):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2	4023.2
2.5°	3379.8	3450.8	3585.1	3695.5	3842.7	3960.7	4095.1	4153.3
5°	2521.6	2633.6	2839.0	3014.4	3257.4	3482.4	3739.1	3879.4
7.5°	1808.8	1974.8	2130.5	2349.6	2653.3	2955.4	3287.3	3473.0
10°	1496.5	1648.8	1782.3	1938.0	2172.5	2512.1	2908.3	3117.9
12.5°	1239.8	1404.1	1545.3	1712.1	1908.9	2216.1	2667.9	2911.7
15°	950.6	1129.4	1298.9	1499.9	1741.2	2092.0	2596.0	2868.1
17.5°	651.1	842.8	1051.6	1297.1	1588.1	2039.8	2664.4	2999.9
20°	442.4	582.7	809.4	1100.3	1450.3	2015.0	2815.0	3271.1
22.5°	363.6	427.0	597.2	915.5	1337.4	2042.4	3059.8	3627.9
25°	333.7	367.9	464.6	753.0	1250.9	2115.1	3390.9	4030.9
27.5°	314.9	344.0	407.3	636.6	1171.4	2214.4	3793.9	4523.7
30°	303.8	331.1	384.2	576.7	1098.6	2299.9	4140.4	4895.1
32.5°	278.9	299.5	343.1	542.5	1046.4	2369.3	4445.9	5242.5
35°	249.0	273.8	309.7	520.2	1044.7	2401.8	4733.4	5626.7
37.5°	237.9	261.8	288.3	508.2	1055.0	2429.1	5085.0	6062.2
40°	231.0	252.4	273.8	506.5	1063.6	2450.5	5429.0	6515.7
42.5°	225.0	246.4	271.2	494.6	1060.1	2479.6	5733.6	6905.0
45°	223.3	244.7	277.2	476.6	1059.3	2525.0	5975.8	7216.4
47.5°	221.6	254.1	275.5	456.9	1055.9	2620.8	6248.7	7506.5
50°	219.9	271.2	263.5	429.5	1030.2	2784.2	6615.8	7838.5
52.5°	219.0	273.8	250.7	391.9	984.0	3026.4	7153.1	8300.5
55°	215.6	260.1	228.5	342.3	917.2	3287.3	7729.0	8843.8
57.5°	207.9	231.9	215.6	293.5	821.4	3469.6	8154.2	9264.0
60°	226.7	199.4	207.1	268.7	706.8	3502.1	8173.0	9382.0
62.5°	216.5	181.4	198.5	260.1	626.3	3289.9	7799.1	9240.9
65°	172.8	172.0	190.8	268.7	614.3	2815.0	7167.7	8822.5
67.5°	157.4	165.1	183.1	278.9	622.0	2217.8	6238.4	7845.3
70°	147.2	156.6	172.8	288.3	635.7	1747.2	5022.6	6380.5
72.5°	136.9	144.6	162.6	297.8	626.3	1378.4	4019.8	4914.8
75°	124.1	130.9	148.0	272.9	537.3	1013.1	3194.1	3490.1
77.5°	109.5	115.5	130.1	215.6	403.9	705.0	2392.4	2515.6
80°	94.1	96.7	107.8	157.4	263.5	421.8	1820.8	2006.5
82.5°	74.4	75.3	82.1	115.5	164.3	269.5	1262.9	1441.7
85°	47.9	49.6	53.0	81.3	110.4	172.8	645.1	739.3
87.5°	16.3	18.8	18.8	39.4	53.9	95.8	197.7	143.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)