

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: P197175

Luminaire Tested: **NAV-AF-03-D-UNV-SLL-8030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197175
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-03-D-UNV-SLL-8030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 80 CRI, 3000K, 1050mA 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: 13055 lumens
Efficiency: N/A
Efficacy: 78.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G3

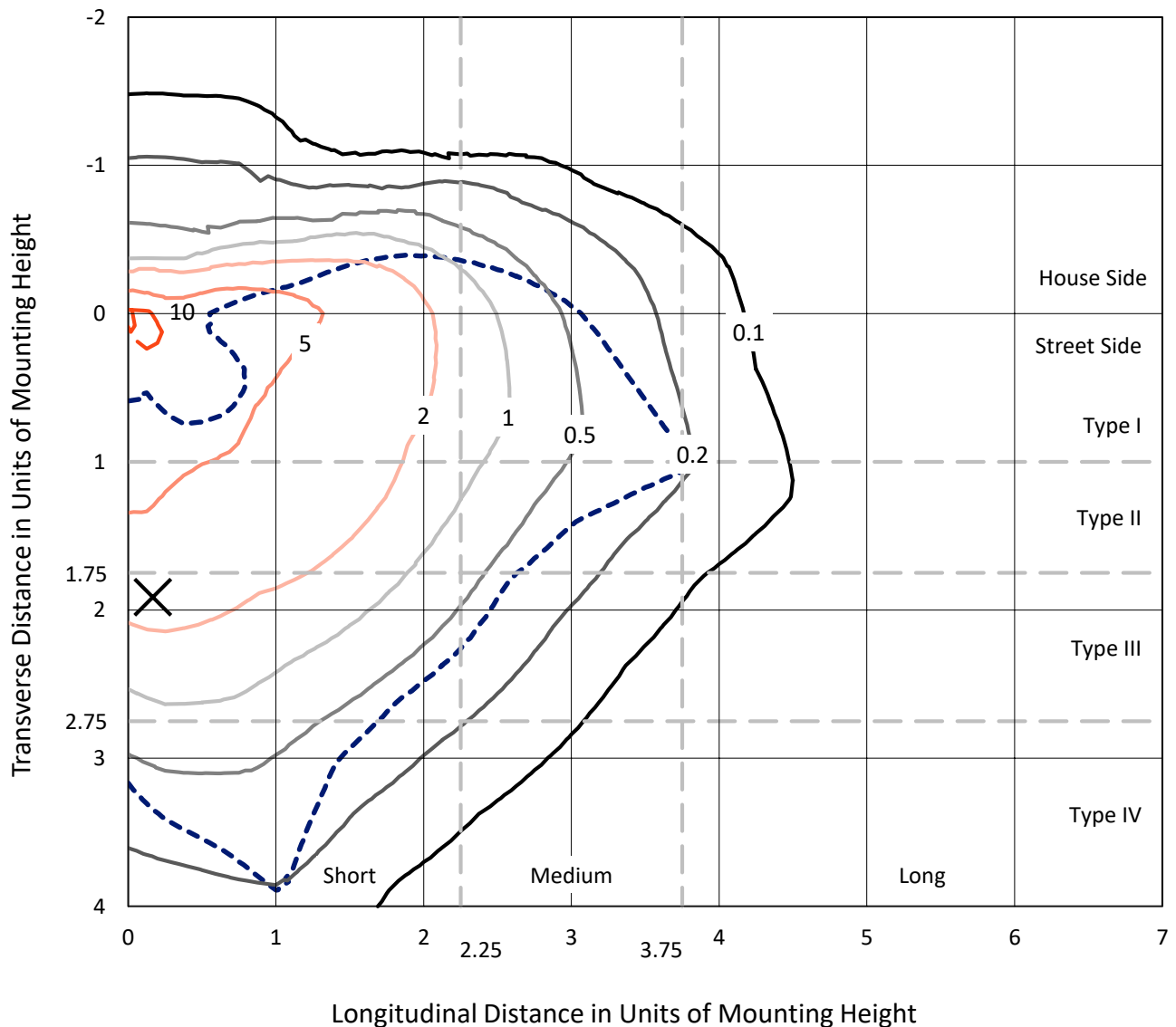
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

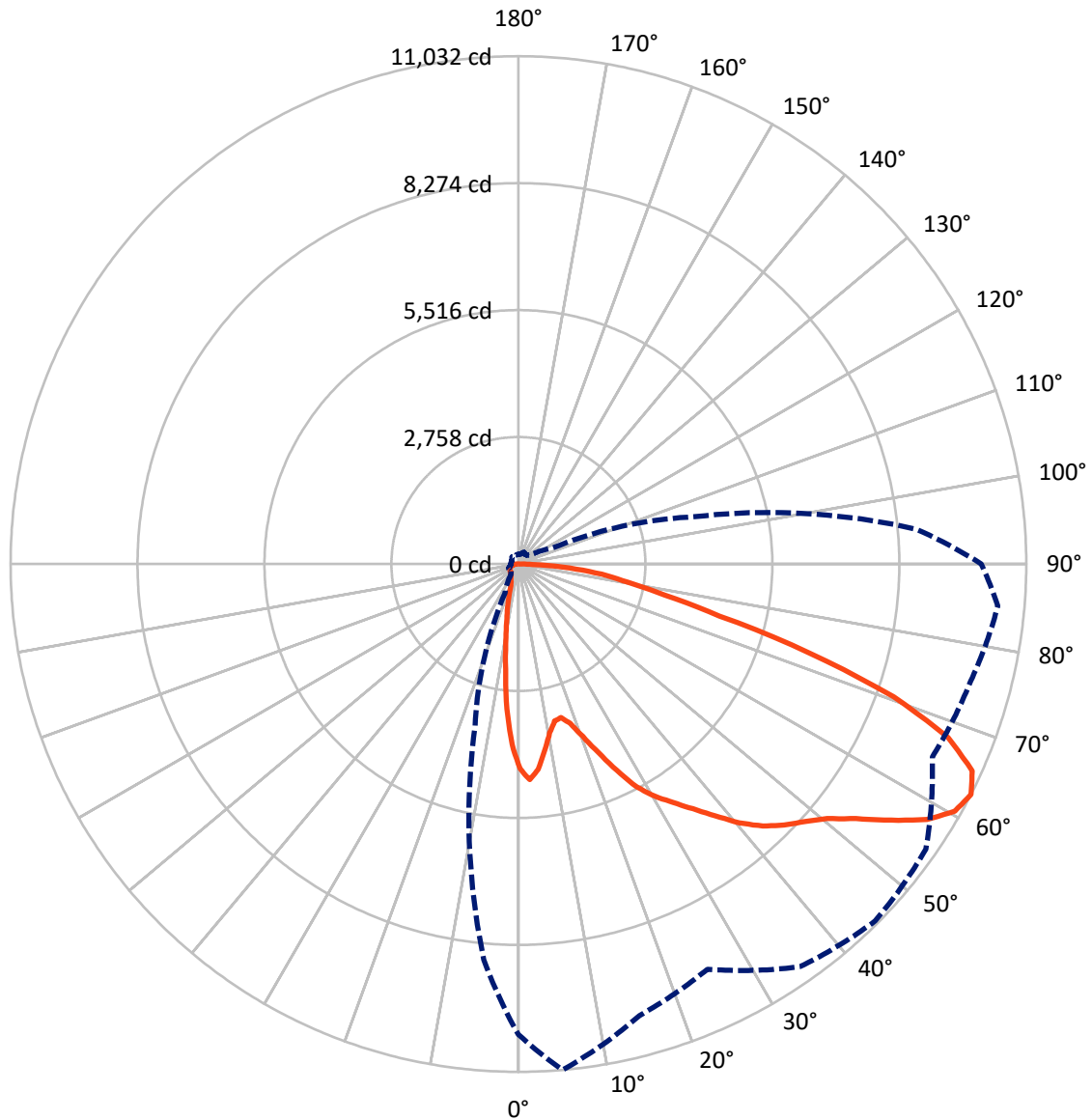
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 12.8 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	2312.7	0.0	2312.7
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	10742.3	0.0	10742.3
	% Fixture	82.3	0.0	82.3
Total	Lumens	13055.0	0.0	13055.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	323.7	2.5
10°-20°	591.2	4.5
20°-30°	850.3	6.5
30°-40°	1302.3	10.0
40°-50°	1904.0	14.6
50°-60°	2770.4	21.2
60°-70°	3209.8	24.6
70°-80°	1673.2	12.8
80°-90°	430.1	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°	13055.0	100.0
0°-180°	13055.0	100.0



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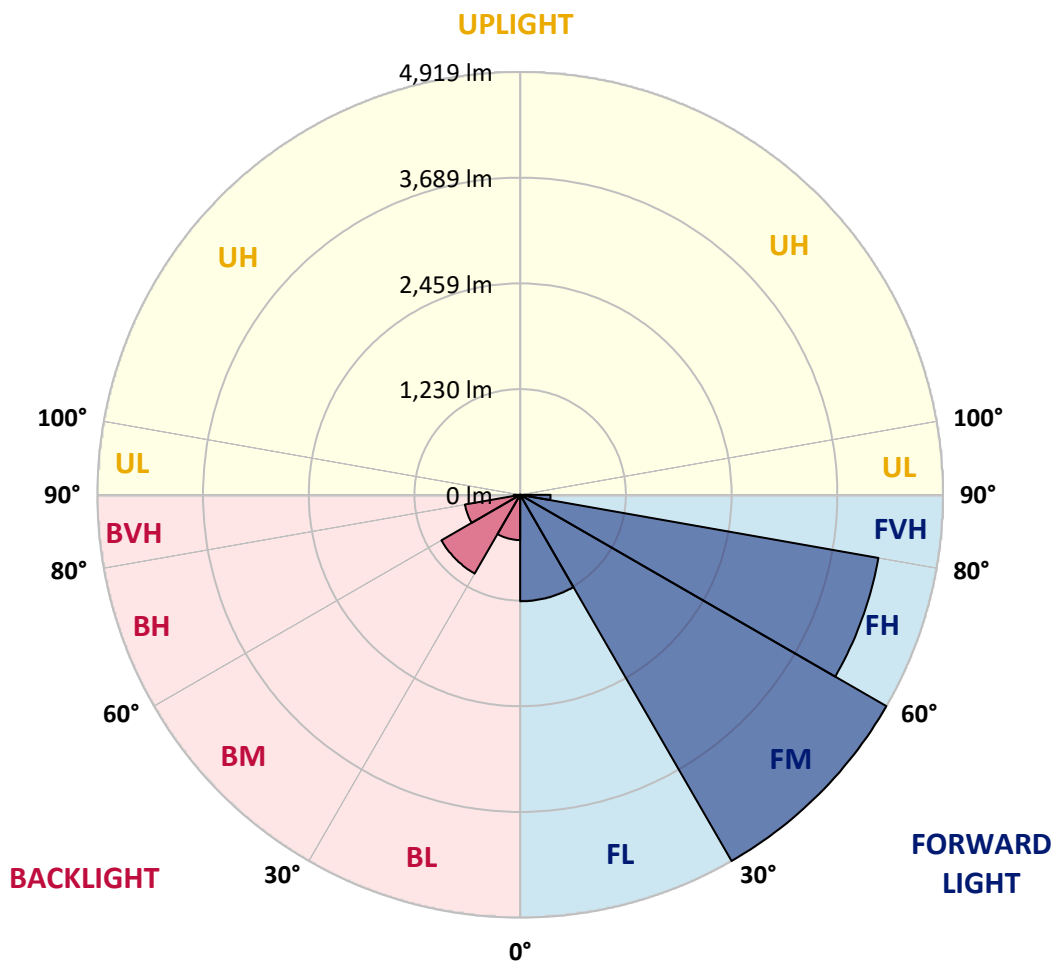
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1239.0	9.5			
FM	(30°-60°)	4918.5	37.7			
FH	(60°-80°)	4230.9	32.4			G2/5000
FVH	(80°-90°)	353.8	2.7			G3/500
BL	(0°-30°)	526.2	4.0	B2/1000		
BM	(30°-60°)	1058.1	8.1	B2/2500		
BH	(60°-80°)	652.1	5.0	B2/1000		G2/1000
BVH	(80°-90°)	76.3	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°	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7
2.5°	4594.6	4692.1	4803.8	4949.5	5048.9	5088.7	5121.8	5066.0	5012.0	4910.7	4874.8
5°	4291.7	4479.1	4786.7	5079.2	5336.7	5484.3	5529.8	5426.6	5243.0	4977.9	4837.9
7.5°	3842.1	4089.1	4521.7	4952.4	5321.5	5567.6	5585.6	5381.2	5019.6	4585.1	4357.9
10°	3449.3	3728.5	4229.2	4711.0	5101.9	5353.7	5304.5	5017.7	4581.3	4087.2	3830.7
12.5°	3221.1	3500.4	4010.6	4499.9	4868.1	4963.7	4863.4	4622.0	4208.4	3713.3	3454.9
15°	3172.9	3460.6	3932.9	4345.6	4573.8	4512.2	4412.8	4290.7	3996.4	3591.2	3341.3
17.5°	3318.6	3640.5	4036.1	4262.3	4252.9	4105.2	4021.9	4045.6	3995.4	3723.8	3462.5
20°	3618.7	3999.2	4298.3	4239.6	3997.3	3790.0	3741.7	3927.3	4159.2	4056.0	3769.2
22.5°	4013.4	4446.9	4656.1	4304.9	3863.8	3640.5	3631.0	3920.6	4457.3	4558.6	4209.3
25°	4459.2	4964.7	5016.8	4420.4	3849.6	3627.2	3618.7	4022.9	4816.1	5056.5	4702.5
27.5°	5004.4	5487.2	5317.8	4574.7	3912.1	3666.0	3671.7	4197.0	5190.0	5548.7	5258.1
30°	5415.3	5858.2	5503.3	4726.2	4012.5	3734.2	3748.4	4385.4	5391.6	5890.4	5702.1
32.5°	5799.6	6175.3	5681.2	4875.7	4159.2	3835.4	3884.7	4620.1	5633.9	6183.9	6121.4
35°	6224.6	6530.3	5879.1	5035.7	4369.3	4013.4	4084.4	4843.5	5874.3	6477.3	6536.9
37.5°	6706.4	6936.4	6093.9	5261.9	4672.2	4342.8	4382.6	5071.7	6041.9	6802.0	6982.7
40°	7208.0	7391.7	6328.7	5563.9	5112.4	4787.7	4806.6	5364.1	6173.4	7138.0	7415.3
42.5°	7638.7	7781.6	6564.4	5938.7	5617.8	5241.1	5257.2	5679.3	6299.3	7427.6	7761.8
45°	7983.3	8088.3	6786.8	6333.4	6157.4	5807.1	5803.3	6000.2	6467.8	7671.8	8027.7
47.5°	8304.1	8360.0	7034.8	6717.7	6716.8	6536.0	6400.6	6378.8	6692.2	7877.2	8259.7
50°	8671.4	8692.2	7362.3	7105.8	7400.2	7371.8	7121.9	6859.7	6982.7	8108.2	8502.9
52.5°	9182.5	9183.5	7768.4	7484.4	8154.6	8244.5	7953.9	7404.0	7412.5	8557.8	8923.2
55°	9783.6	9825.3	8297.5	7937.8	8944.0	9097.4	8823.8	8050.5	8029.6	9282.9	9604.7
57.5°	10248.4	10468.9	8913.7	8504.8	9681.4	9881.1	9660.6	8720.6	8787.8	10030.7	10167.0
60°	10379.0	10894.9	9528.0	9140.9	10305.2	10605.2	10380.9	9444.7	9529.9	10516.2	10328.8
62.5°	10222.8	11032.1	10153.7	9710.7	10675.3	10963.0	10802.1	9919.0	10134.8	10453.8	10055.3
65°	9759.9	10833.3	10697.0	9953.0	10462.3	10564.5	10521.9	9943.6	10463.2	9863.1	9299.0
67.5°	8679.0	10066.6	10454.7	9435.3	9467.5	9357.7	9301.8	9267.7	10094.1	8909.9	8106.3
70°	7058.5	8649.6	9299.0	7896.2	7657.6	7551.6	7368.0	7822.3	9072.7	7591.4	6671.3
72.5°	5437.0	6617.4	7627.4	5986.0	5490.0	5526.0	5317.8	5981.3	7515.7	5868.7	5093.4
75°	3861.0	4512.2	6088.3	4301.2	3644.2	3642.4	3626.3	4304.9	5930.2	4212.2	3726.6
77.5°	2782.9	3248.6	4769.7	2878.5	2586.0	2619.1	2566.1	2925.8	4623.0	3029.9	2761.1
80°	2219.7	2405.2	3082.9	1919.6	1925.3	2002.9	1991.6	2001.0	3041.3	2194.1	2064.4
82.5°	1594.9	1825.9	2356.9	1470.9	1273.1	1355.5	1371.6	1484.2	2145.8	1551.4	1361.1
85°	817.8	1113.2	2168.6	1274.1	796.1	659.8	759.1	1170.9	1863.8	929.5	663.5
87.5°	159.0	308.6	1589.3	708.0	357.8	180.8	298.2	496.0	1083.8	168.5	82.4
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°	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7
2.5°	4813.2	4692.1	4578.5	4461.1	4370.3	4259.5	4150.7	4056.0	3964.2	3903.6	3922.5
5°	4695.9	4400.5	4135.5	3889.4	3745.5	3572.3	3418.0	3288.3	3188.0	3123.6	3162.4
7.5°	4161.1	3761.6	3412.3	3087.7	2883.2	2658.9	2479.0	2352.2	2274.6	2231.0	2294.5
10°	3614.0	3165.3	2773.4	2435.5	2233.9	2043.6	1880.8	1746.4	1642.3	1593.1	1618.6
12.5°	3222.1	2723.2	2312.4	2085.3	1912.0	1741.7	1573.2	1416.0	1283.5	1223.0	1210.6
15°	3075.4	2485.7	2066.3	1812.7	1640.4	1454.9	1273.1	1104.6	978.7	926.7	915.3
17.5°	3139.7	2434.5	1920.6	1620.5	1370.6	1145.3	940.9	781.9	689.1	659.8	662.6
20°	3366.0	2453.5	1803.2	1422.7	1114.1	847.2	642.7	532.9	493.2	486.5	494.1
22.5°	3676.4	2531.1	1718.0	1252.3	887.9	616.2	478.0	426.0	415.5	414.6	422.2
25°	4086.3	2682.5	1661.2	1100.8	701.4	488.4	416.5	387.1	378.6	380.5	388.1
27.5°	4569.0	2874.7	1624.3	970.2	576.5	435.4	389.0	363.5	355.0	356.9	362.5
30°	5010.1	3043.2	1569.4	871.8	517.8	416.5	373.9	348.3	337.0	337.0	340.8
32.5°	5404.8	3188.9	1505.0	797.9	463.8	373.9	338.9	319.0	310.5	313.3	315.2
35°	5755.1	3265.6	1454.9	754.4	420.3	344.5	309.5	288.7	277.3	279.2	282.1
37.5°	6099.6	3295.0	1421.7	730.7	389.0	326.6	294.4	277.3	265.0	263.1	262.2
40°	6427.1	3288.3	1390.5	724.1	368.2	313.3	284.9	269.8	257.5	254.6	253.7
42.5°	6710.1	3266.6	1361.1	706.1	354.0	303.8	277.3	264.1	251.8	248.0	246.1
45°	6968.6	3253.3	1329.0	673.0	361.6	300.1	273.6	259.4	248.0	243.3	241.4
47.5°	7255.4	3300.6	1293.0	637.0	359.7	301.0	273.6	257.5	246.1	241.4	239.5
50°	7597.1	3460.6	1248.5	587.8	342.7	321.8	272.6	254.6	244.2	241.4	237.6
52.5°	8079.8	3720.0	1187.0	524.4	329.4	343.6	271.7	249.9	241.4	236.6	231.9
55°	8741.5	3979.3	1107.5	457.2	308.6	328.5	273.6	244.2	234.7	230.0	224.3
57.5°	9283.8	4176.2	1007.1	401.3	289.6	310.5	270.7	237.6	227.2	222.4	217.7
60°	9248.8	4195.1	911.5	365.4	278.3	279.2	277.3	232.9	220.5	216.8	213.0
62.5°	8676.1	3961.3	822.6	347.4	269.8	254.6	283.0	227.2	213.9	210.1	207.3
65°	7723.0	3417.1	775.2	347.4	262.2	241.4	247.1	219.6	207.3	203.5	201.6
67.5°	6514.2	2746.0	730.7	355.0	251.8	231.9	224.3	212.0	200.7	196.9	195.0
70°	5221.2	2161.0	699.5	351.2	242.3	221.5	212.0	201.6	190.3	189.3	187.4
72.5°	4095.8	1736.0	685.3	351.2	228.1	209.2	199.7	192.2	180.8	179.8	177.0
75°	3281.7	1303.4	626.6	344.5	213.9	193.1	184.6	178.0	166.6	167.5	165.6
77.5°	2541.5	921.9	523.4	310.5	195.9	175.1	168.5	163.8	150.5	151.4	151.4
80°	1987.8	600.1	406.1	257.5	175.1	154.3	149.6	145.8	131.6	133.5	133.5
82.5°	1362.1	356.9	294.4	207.3	150.5	131.6	130.6	124.9	109.8	110.7	112.6
85°	744.0	234.7	195.9	153.3	118.3	107.0	105.1	102.2	88.0	88.0	89.0
87.5°	137.3	125.9	115.5	101.3	79.5	76.7	73.8	76.7	66.3	64.4	64.4
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7
2.5°	3878.0	3812.7	3767.3	3727.5	3631.9	3638.6	3651.8	3670.7	3611.1	3642.4	3681.2
5°	3123.6	3069.7	3029.0	2965.6	2832.1	2784.8	2754.5	2741.2	2652.3	2671.2	2712.8
7.5°	2303.0	2302.0	2287.8	2216.8	2055.9	1958.4	1894.1	1874.2	1819.3	1840.1	1903.5
10°	1621.5	1638.5	1631.9	1568.4	1424.6	1354.5	1340.3	1380.1	1381.0	1421.7	1530.6
12.5°	1171.8	1162.4	1153.9	1101.8	993.9	982.5	1014.7	1069.6	1082.9	1126.4	1240.0
15°	874.6	851.9	847.2	806.5	735.5	745.9	769.6	797.9	798.9	829.2	922.9
17.5°	656.0	656.0	663.5	637.0	585.9	581.2	568.9	561.3	549.9	562.3	613.4
20°	509.2	532.9	551.8	536.7	490.3	467.6	443.9	428.8	420.3	421.2	436.4
22.5°	436.4	455.3	479.9	472.3	433.5	404.2	389.0	378.6	372.0	372.0	380.5
25°	399.4	411.8	434.5	430.7	397.6	373.9	361.6	351.2	343.6	342.7	351.2
27.5°	370.1	377.7	392.8	390.9	356.9	341.7	334.1	327.5	322.8	321.8	330.3
30°	343.6	347.4	355.0	352.1	326.6	311.4	308.6	305.7	302.9	303.8	316.1
32.5°	319.9	322.8	327.5	323.7	299.1	285.9	281.1	277.3	274.5	277.3	291.5
35°	293.4	302.0	307.6	305.7	279.2	263.1	252.7	243.3	239.5	242.3	258.4
37.5°	270.7	284.9	292.5	290.6	263.1	244.2	231.0	229.1	229.1	232.9	248.9
40°	262.2	272.6	279.2	276.4	248.9	230.0	222.4	219.6	220.5	224.3	241.4
42.5°	254.6	264.1	266.0	260.3	232.9	220.5	215.8	212.0	213.9	218.7	235.7
45°	248.0	255.6	254.6	246.1	219.6	211.1	211.1	208.2	209.2	213.0	231.0
47.5°	243.3	247.1	245.2	236.6	210.1	203.5	206.3	206.3	208.2	211.1	229.1
50°	235.7	238.5	236.6	229.1	202.6	196.9	199.7	203.5	205.4	208.2	224.3
52.5°	228.1	230.0	229.1	221.5	195.0	191.2	191.2	195.0	198.8	202.6	216.8
55°	220.5	222.4	223.4	217.7	189.3	185.5	184.6	184.6	188.4	194.0	209.2
57.5°	214.9	214.9	216.8	213.0	183.6	178.9	174.2	175.1	179.8	184.6	199.7
60°	208.2	209.2	212.0	208.2	176.1	168.5	164.7	169.4	171.3	176.1	192.2
62.5°	202.6	202.6	204.5	201.6	169.4	161.9	159.0	163.8	163.8	168.5	184.6
65°	197.8	196.9	196.9	195.9	162.8	155.2	153.3	155.2	156.2	160.9	177.0
67.5°	194.0	189.3	189.3	191.2	156.2	148.6	147.7	147.7	148.6	154.3	168.5
70°	185.5	181.7	180.8	187.4	149.6	140.1	140.1	138.2	140.1	142.9	158.1
72.5°	176.1	173.2	172.3	181.7	142.9	130.6	128.7	127.8	128.7	131.6	145.8
75°	163.8	161.9	163.8	178.0	136.3	120.2	117.4	116.4	116.4	117.4	132.5
77.5°	149.6	147.7	161.9	165.6	132.5	107.9	105.1	103.2	101.3	101.3	118.3
80°	132.5	131.6	156.2	140.1	126.8	94.7	89.9	87.1	85.2	84.2	101.3
82.5°	115.5	113.6	133.5	109.8	105.1	77.6	71.0	65.3	62.5	62.5	77.6
85°	94.7	93.7	105.1	80.5	72.9	56.8	47.3	42.6	38.8	38.8	50.2
87.5°	69.1	67.2	65.3	48.3	36.9	25.6	18.0	17.0	15.1	14.2	20.8
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°	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7	4450.7
2.5°	3738.9	3817.5	3966.1	4088.2	4251.0	4381.6	4530.2	4594.6
5°	2789.5	2913.5	3140.7	3334.7	3603.5	3852.5	4136.5	4291.7
7.5°	2001.0	2184.7	2356.9	2599.2	2935.3	3269.4	3636.7	3842.1
10°	1655.5	1824.0	1971.7	2144.0	2403.3	2779.1	3217.3	3449.3
12.5°	1371.6	1553.3	1709.5	1894.1	2111.8	2451.6	2951.4	3221.1
15°	1051.6	1249.5	1436.9	1659.3	1926.2	2314.3	2871.9	3172.9
17.5°	720.3	932.4	1163.3	1435.0	1756.8	2256.6	2947.6	3318.6
20°	489.4	644.6	895.4	1217.3	1604.4	2229.1	3114.2	3618.7
22.5°	402.3	472.3	660.7	1012.8	1479.5	2259.4	3384.9	4013.4
25°	369.2	407.0	514.0	833.0	1383.9	2339.9	3751.2	4459.2
27.5°	348.3	380.5	450.6	704.2	1295.8	2449.7	4197.0	5004.4
30°	336.0	366.3	425.0	638.0	1215.4	2544.3	4580.4	5415.3
32.5°	308.6	331.3	379.6	600.1	1157.6	2621.0	4918.3	5799.6
35°	275.4	302.9	342.7	575.5	1155.7	2657.0	5236.4	6224.6
37.5°	263.1	289.6	319.0	562.3	1167.1	2687.3	5625.4	6706.4
40°	255.6	279.2	302.9	560.4	1176.6	2710.9	6005.9	7208.0
42.5°	248.9	272.6	300.1	547.1	1172.8	2743.1	6342.9	7638.7
45°	247.1	270.7	306.7	527.2	1171.8	2793.3	6610.8	7983.3
47.5°	245.2	281.1	304.8	505.5	1168.1	2899.3	6912.7	8304.1
50°	243.3	300.1	291.5	475.2	1139.7	3080.1	7318.8	8671.4
52.5°	242.3	302.9	277.3	433.5	1088.5	3348.0	7913.2	9182.5
55°	238.5	287.8	252.7	378.6	1014.7	3636.7	8550.2	9783.6
57.5°	230.0	256.5	238.5	324.7	908.7	3838.3	9020.7	10248.4
60°	250.8	220.5	229.1	297.2	781.9	3874.3	9041.5	10379.0
62.5°	239.5	200.7	219.6	287.8	692.9	3639.5	8627.9	10222.8
65°	191.2	190.3	211.1	297.2	679.6	3114.2	7929.3	9759.9
67.5°	174.2	182.7	202.6	308.6	688.1	2453.5	6901.3	8679.0
70°	162.8	173.2	191.2	319.0	703.3	1932.9	5556.3	7058.5
72.5°	151.4	160.0	179.8	329.4	692.9	1524.9	4446.9	5437.0
75°	137.3	144.8	163.8	302.0	594.4	1120.7	3533.5	3861.0
77.5°	121.2	127.8	143.9	238.5	446.8	780.0	2646.6	2782.9
80°	104.1	107.0	119.3	174.2	291.5	466.7	2014.3	2219.7
82.5°	82.4	83.3	90.9	127.8	181.7	298.2	1397.1	1594.9
85°	53.0	54.9	58.7	89.9	122.1	191.2	713.7	817.8
87.5°	18.0	20.8	20.8	43.5	59.6	106.0	218.7	159.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)