

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: P196720

Luminaire Tested: **NAV-AF-04-D-UNV-SLR-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196720
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-04-D-UNV-SLR-7030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT
ELIMINATOR RIGHT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20840.1 lumens
Efficiency: N/A
Efficacy: 92.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B3 - U0 - G4

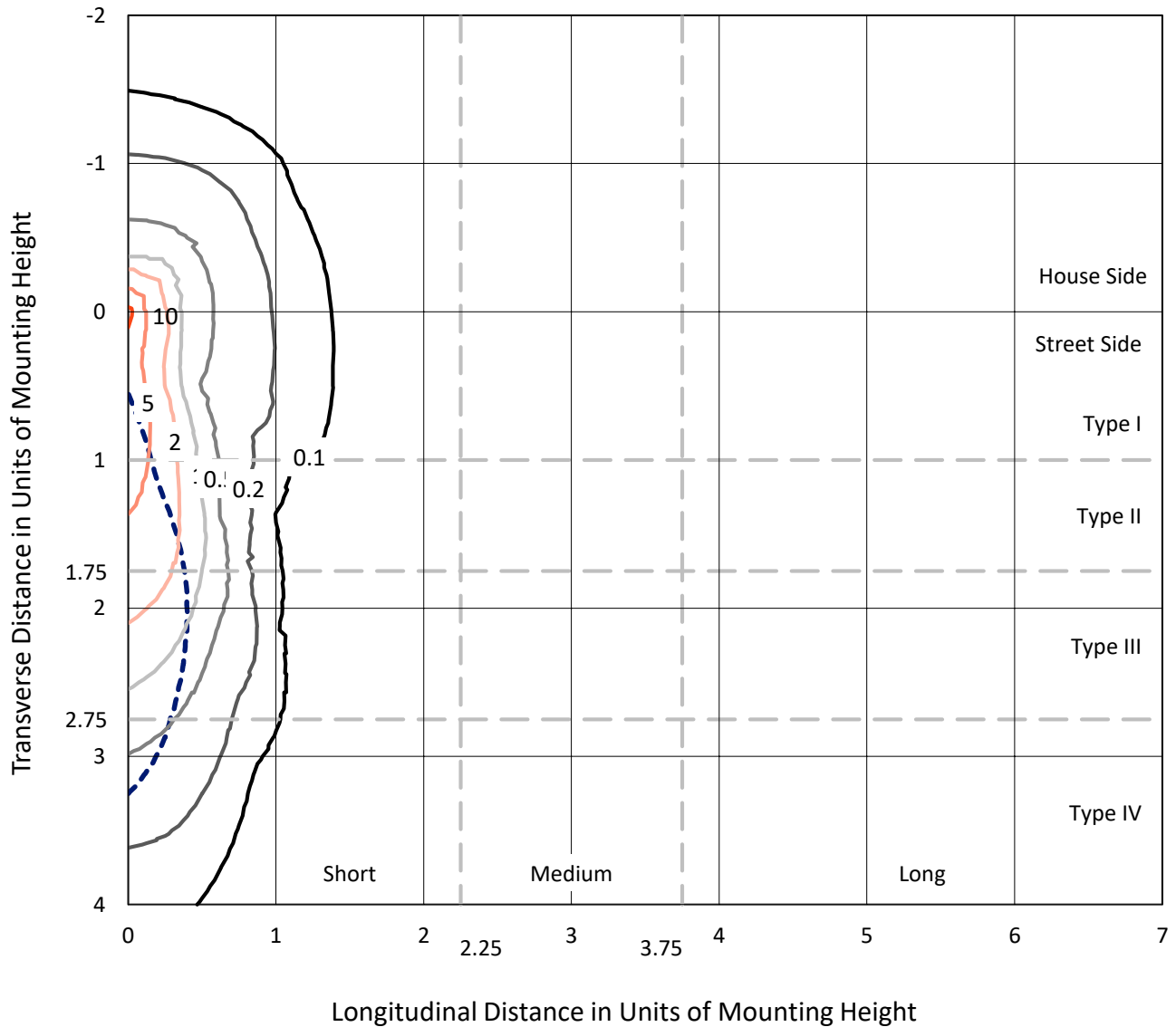
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

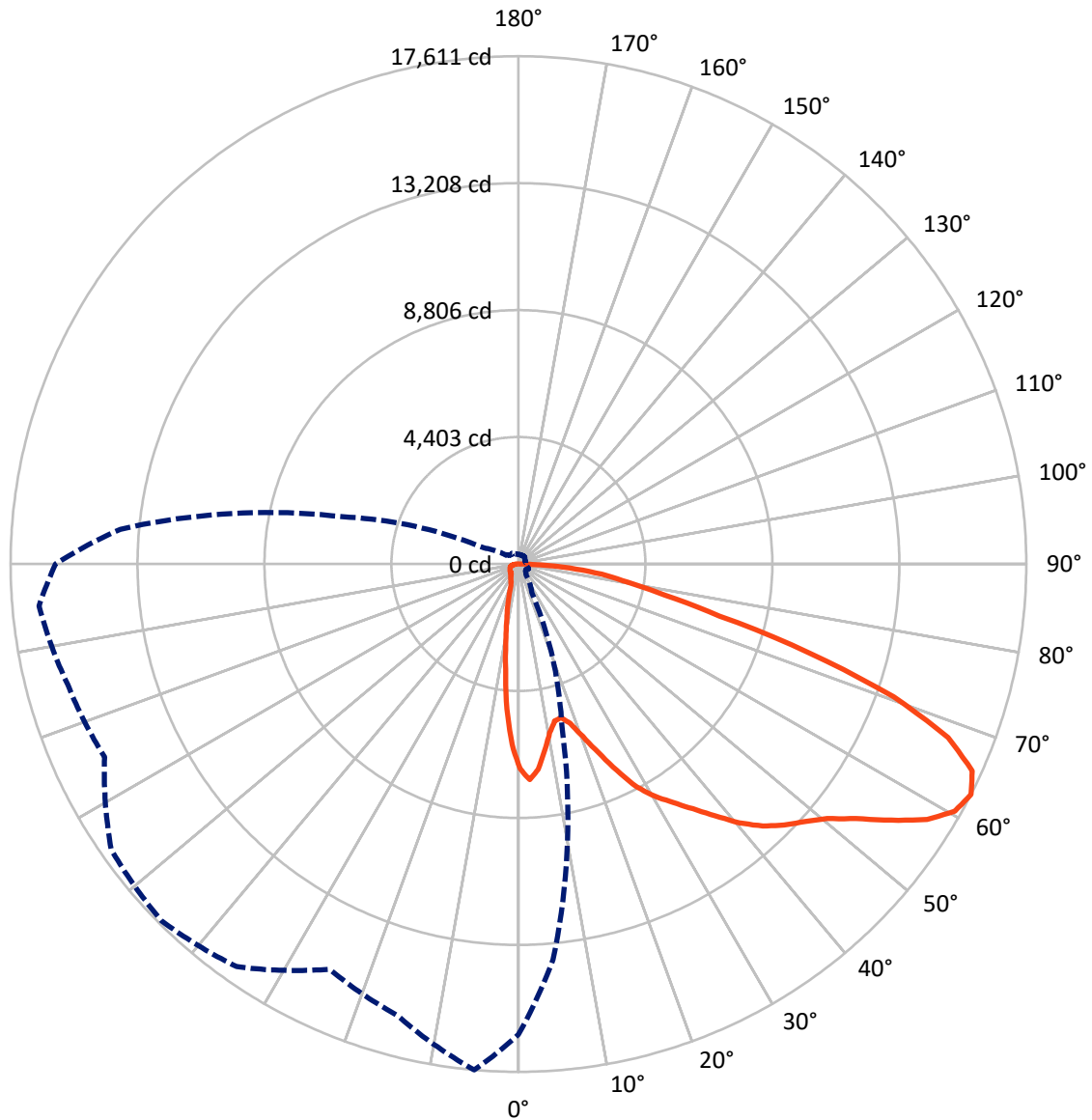
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 11.4 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 355-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3691.9	0.0	3691.9
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	17148.3	0.0	17148.3
	% Fixture	82.3	0.0	82.3
Total	Lumens	20840.1	0.0	20840.1
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	516.7	2.5
10°-20°	943.7	4.5
20°-30°	1357.3	6.5
30°-40°	2078.9	10.0
40°-50°	3039.4	14.6
50°-60°	4422.4	21.2
60°-70°	5123.9	24.6
70°-80°	2671.0	12.8
80°-90°	686.6	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°	20840.1	100.0
0°-180°	20840.1	100.0



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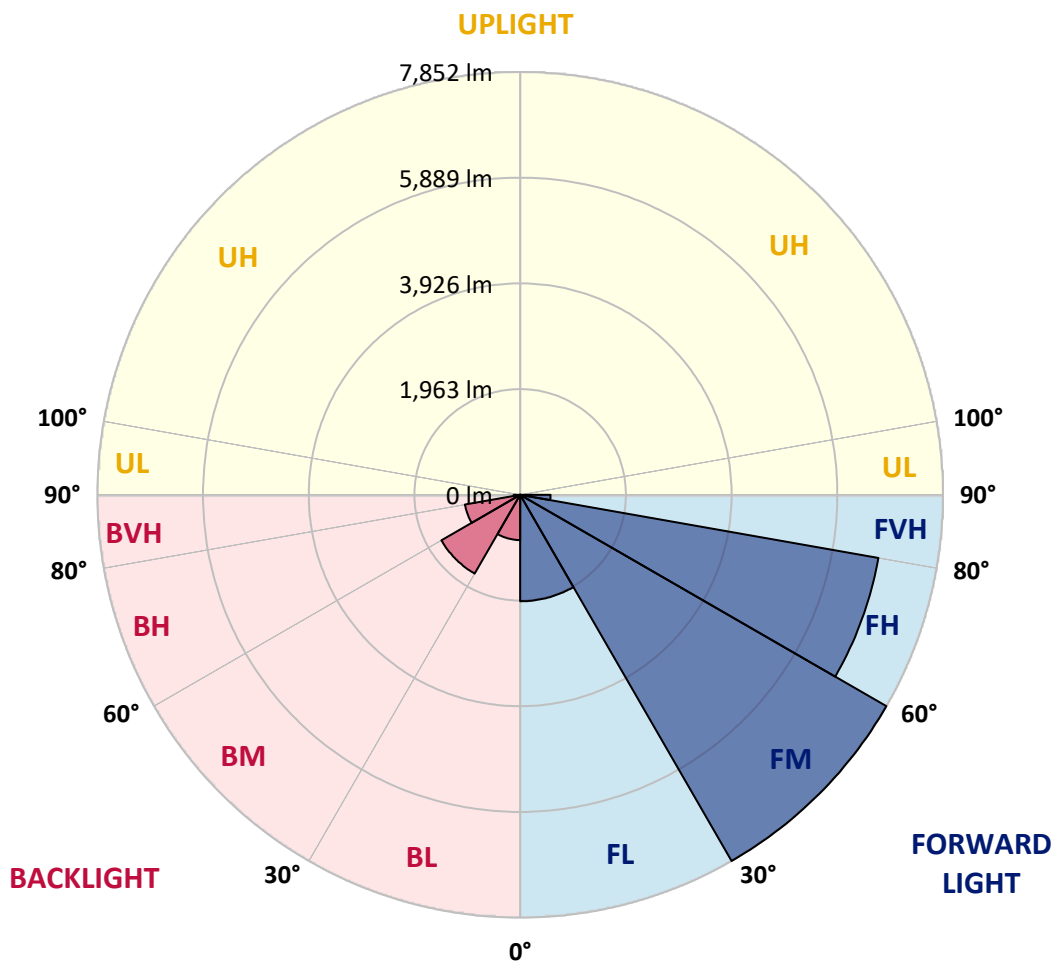
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1977.8	9.5			
FM	(30°-60°)	7851.6	37.7			
FH	(60°-80°)	6754.0	32.4			G3/7500
FVH	(80°-90°)	564.9	2.7			G4/750
BL	(0°-30°)	840.0	4.0	B2/1000		
BM	(30°-60°)	1689.2	8.1	B2/2500		
BH	(60°-80°)	1041.0	5.0	B3/2500		G3/2500
BVH	(80°-90°)	121.7	0.6			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 IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8
2.5°	7334.5	7231.8	6994.6	6786.0	6526.0	6331.1	6093.9	5968.5	5876.4	5814.4	5764.5
5°	6851.0	6603.2	6149.8	5752.5	5323.3	5013.6	4650.9	4453.0	4330.6	4264.1	4233.9
7.5°	6133.3	5805.4	5219.1	4685.7	4149.2	3762.5	3487.4	3194.3	3038.6	2937.4	2904.2
10°	5506.1	5135.9	4436.4	3836.5	3422.4	3147.4	2911.8	2642.8	2443.4	2269.6	2204.6
12.5°	5142.0	4711.4	3913.5	3371.0	3023.5	2728.9	2479.5	2189.4	1979.4	1798.1	1728.6
15°	5064.9	4584.4	3694.5	3074.9	2648.8	2293.7	1994.5	1678.8	1473.3	1323.6	1275.3
17.5°	5297.7	4705.4	3602.3	2804.4	2290.7	1857.1	1488.3	1149.9	979.2	897.6	877.9
20°	5776.6	4971.3	3558.5	2561.1	1943.1	1429.4	1029.0	781.2	696.5	672.4	670.9
22.5°	6406.8	5403.4	3606.7	2361.7	1616.8	1054.7	754.0	642.2	607.5	593.9	593.9
25°	7118.5	5988.2	3735.2	2209.1	1329.6	820.5	649.8	589.4	560.6	547.0	548.5
27.5°	7988.7	6699.9	3910.5	2068.6	1124.2	719.3	607.5	556.0	527.4	513.7	515.2
30°	8644.5	7311.8	4061.6	1940.1	1018.4	678.5	584.7	536.5	504.7	485.0	483.5
32.5°	9258.0	7851.3	4184.0	1848.0	957.9	606.0	528.9	492.5	465.5	442.7	438.2
35°	9936.5	8359.0	4241.5	1845.0	918.7	547.0	483.5	439.7	412.5	386.8	382.3
37.5°	10705.6	8980.0	4289.7	1863.1	897.6	509.2	462.3	420.1	397.3	371.7	365.7
40°	11506.4	9587.4	4327.5	1878.1	894.5	483.5	445.8	408.0	385.3	358.2	352.1
42.5°	12193.9	10125.4	4378.9	1872.1	873.4	479.0	435.2	397.3	376.3	349.1	341.6
45°	12743.9	10553.0	4459.0	1870.6	841.7	489.6	432.1	394.4	368.6	340.1	333.9
47.5°	13256.2	11034.9	4628.2	1864.6	806.9	486.5	448.7	391.3	365.7	336.9	332.4
50°	13842.5	11683.2	4916.8	1819.2	758.5	465.5	479.0	388.3	358.2	332.4	327.9
52.5°	14658.4	12632.1	5344.5	1737.7	692.0	442.7	483.5	386.8	346.1	323.4	317.3
55°	15617.8	13649.0	5805.4	1619.8	604.4	403.5	459.3	380.8	333.9	309.8	300.7
57.5°	16359.8	14400.1	6127.2	1450.5	518.3	380.8	409.5	367.2	318.8	294.7	287.2
60°	16568.3	14433.2	6184.6	1248.1	474.5	365.7	352.1	400.4	306.7	281.1	273.4
62.5°	16319.0	13772.9	5809.9	1106.0	459.3	350.5	320.3	382.3	294.7	269.0	261.4
65°	15580.2	12657.8	4971.3	1085.0	474.5	336.9	303.7	305.3	282.6	256.9	249.3
67.5°	13854.5	11016.8	3916.5	1098.5	492.5	323.4	291.6	278.1	269.0	246.3	237.2
70°	11267.7	8869.6	3085.5	1122.6	509.2	305.3	276.5	259.9	252.4	228.2	223.7
72.5°	8679.3	7098.8	2434.3	1106.0	525.9	287.2	255.3	241.8	232.7	210.0	205.5
75°	6163.5	5640.6	1789.0	948.9	482.1	261.4	231.2	219.1	211.5	187.4	185.8
77.5°	4442.4	4224.8	1245.1	713.3	380.8	229.7	204.0	193.4	188.9	161.7	161.7
80°	3543.4	3215.5	744.9	465.5	278.1	190.4	170.8	166.2	161.7	134.5	136.0
82.5°	2546.1	2230.3	476.0	290.1	204.0	145.1	133.0	131.4	123.9	99.8	99.8
85°	1305.5	1139.3	305.3	194.9	143.5	93.6	87.6	84.5	80.1	62.0	62.0
87.5°	253.8	349.1	169.3	95.2	69.5	33.3	33.3	28.7	33.3	22.6	24.1
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°	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8
2.5°	5859.7	5829.5	5808.3	5797.8	5950.4	6013.8	6086.4	6190.6	6261.6	6231.5	6328.2
5°	4376.0	4397.0	4445.4	4520.9	4733.9	4835.3	4900.3	4986.4	5048.4	4986.4	5089.1
7.5°	2991.8	3023.5	3126.4	3281.9	3538.8	3652.1	3674.8	3676.3	3662.7	3561.6	3631.0
10°	2203.1	2139.7	2162.2	2274.1	2503.7	2605.0	2615.5	2588.4	2583.9	2543.0	2621.5
12.5°	1707.5	1619.8	1568.4	1586.6	1758.8	1841.9	1855.5	1870.6	1932.6	1952.3	2048.9
15°	1273.8	1228.5	1190.7	1174.1	1287.4	1352.4	1360.0	1396.3	1461.2	1479.3	1562.4
17.5°	896.0	908.2	927.7	935.4	1016.8	1059.3	1047.1	1047.1	1057.7	1053.1	1100.0
20°	684.5	708.6	746.5	782.8	856.7	880.9	850.7	812.9	788.8	776.7	787.2
22.5°	604.4	621.0	645.1	692.0	754.0	766.1	726.8	696.5	673.9	661.8	663.3
25°	560.6	577.2	596.9	634.6	687.5	693.6	657.3	637.6	619.5	607.5	604.4
27.5°	522.8	533.4	545.5	569.7	624.1	627.0	602.9	590.8	578.7	569.7	566.6
30°	488.1	492.5	497.1	521.2	562.1	566.6	554.5	548.5	544.0	537.9	537.9
32.5°	442.7	448.7	456.3	477.5	516.8	522.8	515.2	510.7	503.1	500.2	495.6
35°	388.3	403.5	420.1	445.8	488.1	491.1	482.1	468.4	450.2	445.8	442.7
37.5°	365.7	368.6	389.8	420.1	464.0	466.9	454.8	432.1	418.6	420.1	423.1
40°	350.5	355.1	367.2	397.3	441.2	445.8	435.2	418.6	405.0	406.5	411.1
42.5°	338.4	344.5	352.1	371.7	415.5	424.6	421.5	406.5	392.9	395.8	402.0
45°	332.4	336.9	336.9	350.5	392.9	406.5	408.0	395.8	385.3	388.3	395.8
47.5°	329.4	329.4	324.8	335.4	377.7	391.3	394.4	388.3	382.3	385.3	392.9
50°	324.8	318.8	314.3	323.4	365.7	377.7	380.8	376.3	379.2	385.3	389.8
52.5°	311.3	305.3	305.3	311.3	353.6	365.7	367.2	364.2	370.2	377.7	385.3
55°	294.7	294.7	296.2	302.2	347.6	356.6	355.1	352.1	358.2	367.2	374.8
57.5°	279.4	278.1	285.6	293.2	340.1	346.1	343.0	343.0	347.6	355.1	362.6
60°	270.5	262.9	269.0	281.1	332.4	338.4	333.9	332.4	340.1	346.1	352.1
62.5°	261.4	253.8	258.4	270.5	321.9	326.3	323.4	323.4	330.9	335.4	341.6
65°	247.8	244.7	247.8	259.9	312.8	314.3	314.3	315.8	321.9	324.8	330.9
67.5°	235.7	235.7	237.2	249.3	305.3	302.2	302.2	309.8	311.3	314.3	320.3
70°	220.6	223.7	223.7	238.7	299.2	288.6	290.1	296.2	299.2	302.2	303.7
72.5°	204.0	205.5	208.4	228.2	290.1	275.0	276.5	281.1	282.6	287.2	288.6
75°	185.8	187.4	191.9	217.5	284.1	261.4	258.4	261.4	264.4	267.4	265.9
77.5°	164.7	167.7	172.3	211.5	264.4	258.4	235.7	238.7	241.8	241.8	240.3
80°	139.0	143.5	151.1	202.4	223.7	249.3	210.0	211.5	213.0	213.0	210.0
82.5°	104.3	113.3	123.9	167.7	175.3	213.0	181.4	184.3	179.8	176.8	175.3
85°	68.0	75.5	90.6	116.4	128.5	167.7	149.5	151.1	142.0	140.5	140.5
87.5°	27.2	28.7	40.8	58.9	77.0	104.3	107.3	110.4	102.7	102.7	105.8
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8
2.5°	6474.7	6625.8	6799.5	6976.4	7121.4	7308.8	7490.2	7683.5	7781.8	7839.2	8000.8
5°	5249.3	5456.3	5702.6	5979.1	6208.7	6601.7	7024.8	7496.2	7722.8	7946.4	8369.5
7.5°	3754.9	3957.4	4244.5	4602.5	4928.9	5447.2	6004.8	6642.4	6956.7	7319.4	8013.0
10°	2787.9	3002.5	3262.3	3566.0	3887.9	4427.3	5052.8	5769.1	6115.1	6524.5	7313.4
12.5°	2260.5	2511.4	2780.3	3052.2	3328.8	3691.5	4347.2	5143.5	5515.2	5927.8	6718.1
15°	1763.3	2032.3	2322.5	2618.6	2893.6	3298.5	3968.0	4909.3	5333.9	5732.9	6379.5
17.5°	1248.1	1502.0	1828.4	2187.9	2586.8	3065.9	3886.4	5012.0	5527.3	5944.4	6378.0
20°	850.7	1026.0	1352.4	1778.5	2271.1	2878.6	3916.5	5373.2	6016.9	6474.7	6639.4
22.5°	679.9	763.0	983.7	1417.3	1999.1	2742.5	4040.5	5868.8	6719.6	7277.1	7115.4
25°	618.0	664.9	779.7	1119.7	1757.3	2651.8	4282.2	6523.1	7506.7	8071.8	7688.0
27.5°	580.2	621.0	695.1	920.2	1548.7	2592.9	4589.0	7293.7	8393.8	8857.5	8284.9
30°	556.0	596.9	664.9	826.5	1391.6	2505.4	4857.8	7997.8	9102.4	9403.1	8606.8
32.5°	509.2	541.0	596.9	740.4	1273.8	2402.5	5090.6	8627.8	9771.7	9871.5	8993.5
35°	460.8	494.1	550.0	670.9	1204.2	2322.5	5213.0	9186.9	10435.2	10339.9	9377.4
37.5°	442.7	470.0	521.2	621.0	1166.5	2269.6	5259.8	9736.9	11146.7	10858.1	9644.9
40°	430.6	454.8	500.2	587.9	1156.0	2219.7	5249.3	10259.8	11837.3	11394.5	9854.8
42.5°	421.5	442.7	485.0	565.1	1127.2	2172.8	5214.5	10711.6	12390.3	11857.0	10055.7
45°	414.0	436.7	479.0	577.2	1074.3	2121.5	5193.4	11124.1	12814.9	12246.8	10324.8
47.5°	411.1	436.7	480.5	574.1	1016.8	2064.0	5268.9	11581.9	13185.2	12574.6	10683.0
50°	406.5	435.2	513.7	547.0	938.3	1993.0	5524.2	12127.4	13573.5	12943.4	11146.7
52.5°	398.9	433.6	548.5	525.9	837.2	1894.8	5938.3	12898.0	14244.3	13661.1	11832.8
55°	389.8	436.7	524.3	492.5	729.9	1768.0	6352.4	13954.3	15332.4	14818.5	12818.0
57.5°	379.2	432.1	495.6	462.3	640.7	1607.7	6666.6	14820.0	16229.8	16012.3	14028.4
60°	371.7	442.7	445.8	444.2	583.2	1455.2	6696.8	14764.2	16488.2	16787.4	15212.9
62.5°	362.6	451.8	406.5	430.6	554.5	1313.1	6323.6	13850.0	16051.5	16687.7	16178.4
65°	350.5	394.4	385.3	418.6	554.5	1237.5	5454.8	12328.4	14844.3	15744.8	16702.8
67.5°	338.4	358.2	370.2	402.0	566.6	1166.5	4383.5	10398.9	12940.3	14223.3	16113.5
70°	321.9	338.4	353.6	386.8	560.6	1116.6	3449.7	8334.8	10649.6	12118.4	14483.1
72.5°	306.7	318.8	333.9	364.2	560.6	1094.0	2771.3	6538.2	8130.7	9368.3	11997.5
75°	284.1	294.7	308.2	341.6	550.0	1000.3	2080.7	5238.7	5948.8	6724.1	9466.6
77.5°	261.4	269.0	279.4	312.8	495.6	835.7	1471.7	4057.2	4407.6	4836.8	7379.8
80°	232.7	238.7	246.3	279.4	411.1	648.2	957.9	3173.1	3295.5	3502.6	4854.9
82.5°	199.5	208.4	210.0	240.3	330.9	470.0	569.7	2174.4	2172.8	2476.6	3425.5
85°	163.3	167.7	170.8	188.9	244.7	312.8	374.8	1187.6	1059.3	1483.8	2975.2
87.5°	122.4	117.9	122.4	127.0	161.7	184.3	200.9	219.1	131.4	269.0	1730.1
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°	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8	7104.8
2.5°	8087.0	8176.1	8123.2	8059.7	7901.1	7668.5	7490.2	7334.5
5°	8662.6	8827.4	8754.8	8519.2	8108.1	7641.3	7150.2	6851.0
7.5°	8590.2	8916.5	8887.8	8494.9	7905.7	7218.1	6527.5	6133.3
10°	8009.9	8467.7	8546.4	8144.4	7520.4	6751.2	5951.9	5506.1
12.5°	7378.3	7763.6	7923.8	7771.2	7183.4	6402.1	5587.7	5142.0
15°	6849.5	7044.4	7203.0	7301.2	6937.1	6278.2	5524.2	5064.9
17.5°	6458.1	6420.3	6553.3	6789.1	6804.1	6443.0	5811.4	5297.7
20°	6269.2	5973.1	6050.1	6381.1	6767.8	6861.5	6384.0	5776.6
22.5°	6258.6	5796.3	5811.4	6168.0	6872.1	7432.7	7098.8	6406.8
25°	6421.8	5776.6	5790.2	6145.3	7056.5	8008.3	7925.3	7118.5
27.5°	6699.9	5861.2	5852.2	6245.0	7302.8	8488.9	8759.5	7988.7
30°	7000.6	5983.6	5960.9	6405.3	7544.5	8785.1	9351.7	8644.5
32.5°	7375.3	6201.2	6122.7	6639.4	7783.3	9069.2	9857.9	9258.0
35°	7731.8	6520.0	6406.8	6974.9	8038.6	9385.0	10424.5	9936.5
37.5°	8096.0	6996.0	6932.5	7458.4	8399.8	9727.9	11072.8	10705.6
40°	8562.9	7672.9	7642.6	8161.0	8881.8	10102.6	11799.6	11506.4
42.5°	9066.2	8392.2	8366.5	8967.9	9480.1	10478.9	12422.1	12193.9
45°	9578.3	9264.1	9270.1	9829.2	10110.2	10834.0	12911.6	12743.9
47.5°	10182.8	10217.5	10433.6	10722.1	10723.7	11229.8	13345.4	13256.2
50°	10950.4	11368.9	11767.8	11813.1	11343.2	11752.7	13875.7	13842.5
52.5°	11819.2	12697.1	13161.0	13017.4	11947.6	12400.9	14659.9	14658.4
55°	12851.2	14085.7	14522.4	14277.6	12671.5	13245.6	15684.3	15617.8
57.5°	13921.0	15421.5	15773.5	15454.7	13576.5	14229.3	16711.9	16359.8
60°	15076.9	16571.4	16929.5	16450.5	14591.9	15209.9	17391.8	16568.3
62.5°	15834.0	17243.8	17500.6	17041.2	15501.4	16208.7	17611.0	16319.0
65°	15873.3	16796.5	16864.5	16701.3	15888.4	17076.0	17293.5	15580.2
67.5°	14794.4	14848.8	14937.9	15113.2	15061.8	16689.3	16069.7	13854.5
70°	12487.0	11761.8	12054.9	12224.2	12604.9	14844.3	13807.6	11267.7
72.5°	9548.1	8488.9	8821.4	8763.9	9555.7	12175.8	10563.5	8679.3
75°	6872.1	5788.7	5814.4	5817.4	6866.1	9718.8	7203.0	6163.5
77.5°	4670.5	4096.3	4181.1	4128.2	4595.0	7614.1	5185.8	4442.4
80°	3194.3	3179.2	3197.4	3073.5	3064.4	4921.4	3839.5	3543.4
82.5°	2369.3	2189.4	2163.8	2032.3	2348.1	3762.5	2914.7	2546.1
85°	1869.1	1211.8	1053.1	1270.8	2033.9	3461.8	1777.0	1305.5
87.5°	791.8	476.0	288.6	571.2	1130.3	2537.0	492.5	253.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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