

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: P196235

Luminaire Tested: **NAV-AF-05-D-UNV-SLR-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196235
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-05-D-UNV-SLR-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 800mA 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: 21949.5 lumens
Efficiency: N/A
Efficacy: 104.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B3 - U0 - G4

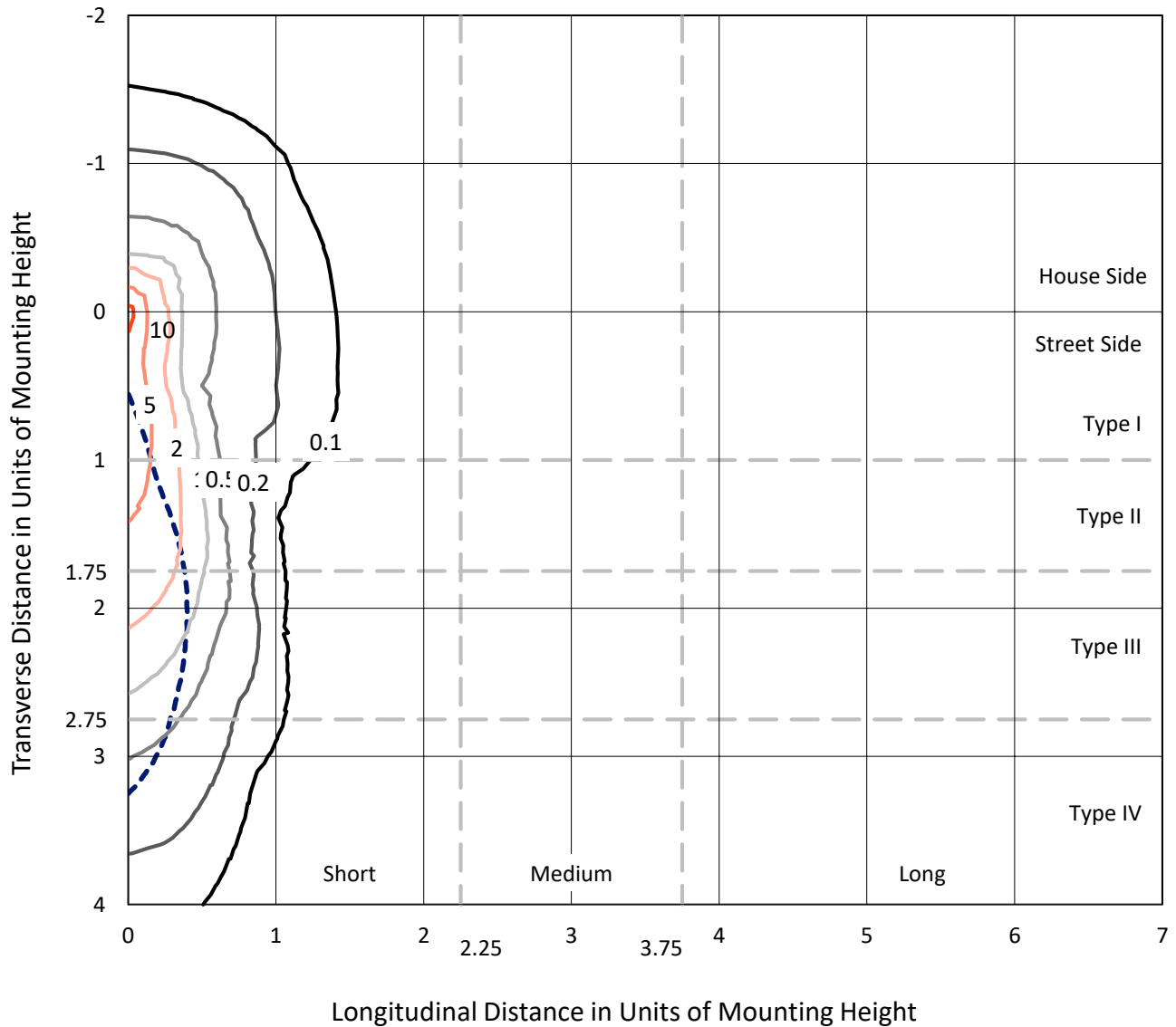
Input Watts (W): 210
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

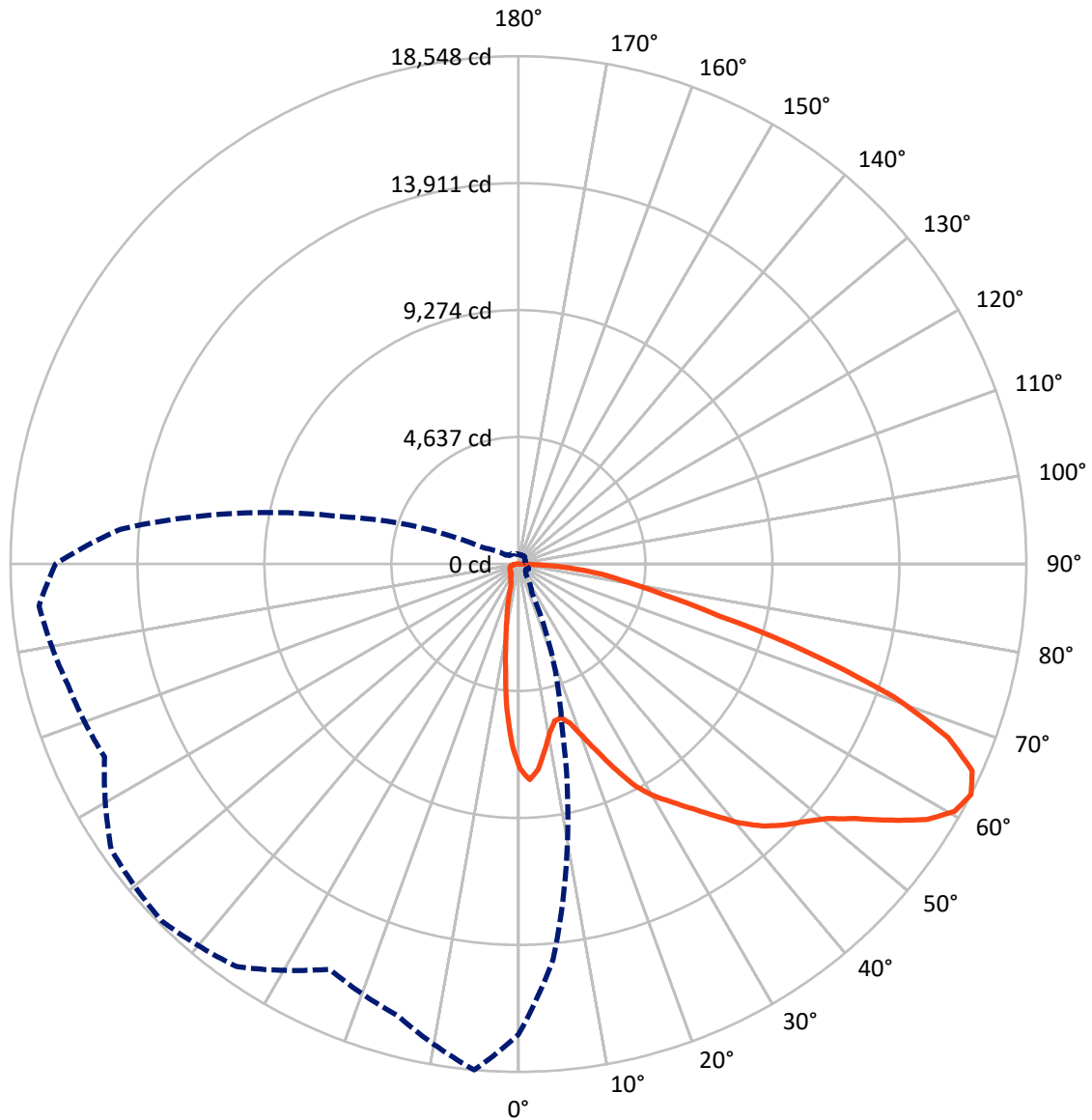
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 12 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	3888.4	0.0	3888.4
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	18061.1	0.0	18061.1
	% Fixture	82.3	0.0	82.3
Total	Lumens	21949.5	0.0	21949.5
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	544.2	2.5
10°-20°	994.0	4.5
20°-30°	1429.6	6.5
30°-40°	2189.6	10.0
40°-50°	3201.2	14.6
50°-60°	4657.8	21.2
60°-70°	5396.7	24.6
70°-80°	2813.2	12.8
80°-90°	723.1	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°	21949.5	100.0
0°-180°	21949.5	100.0



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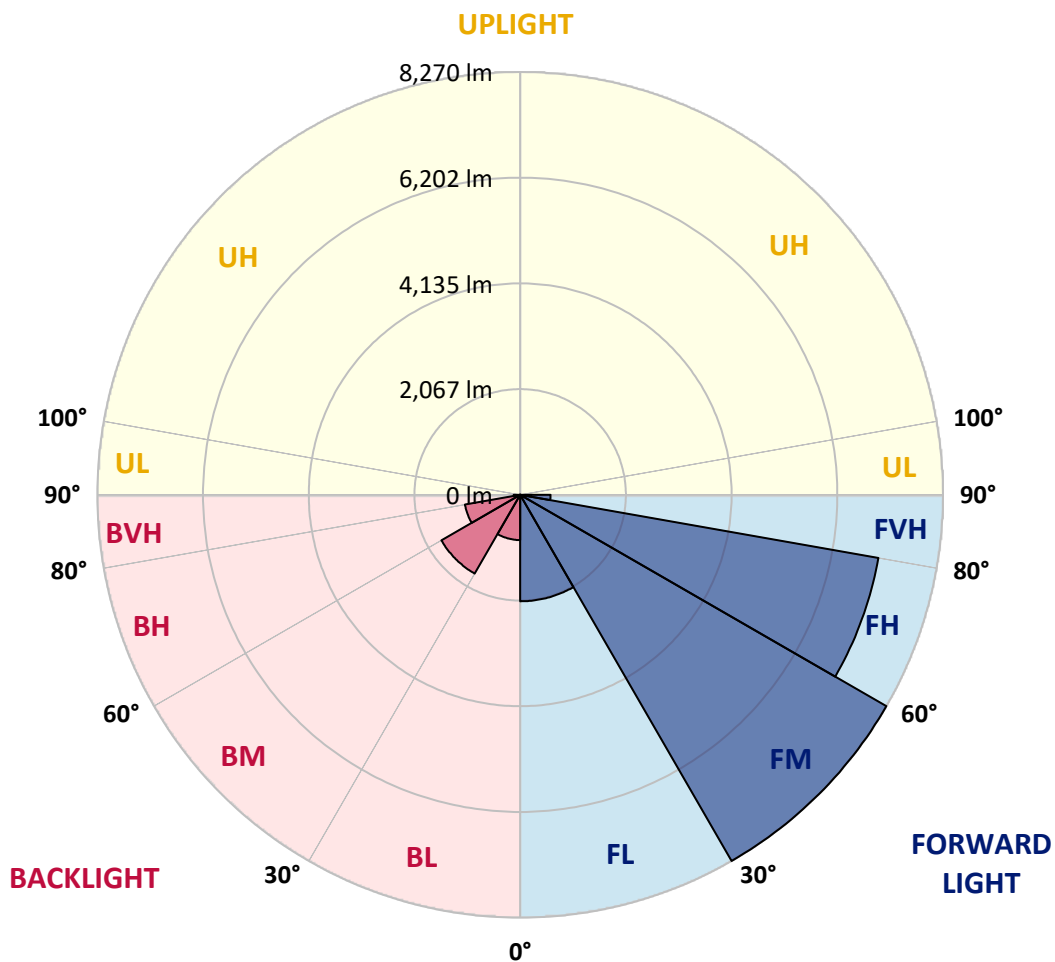
CATALOG NUMBER: NAV-AF-05-D-UNV-SLR-800

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2083.1	9.5			
FM	(30°-60°)	8269.5	37.7			
FH	(60°-80°)	7113.5	32.4			G3/7500
FVH	(80°-90°)	594.9	2.7			G4/750
BL	(0°-30°)	884.7	4.0	B2/1000		
BM	(30°-60°)	1779.1	8.1	B2/2500		
BH	(60°-80°)	1096.4	5.0	B3/2500		G3/2500
BVH	(80°-90°)	128.2	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°	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0
2.5°	7724.9	7616.7	7366.8	7147.3	6873.5	6668.2	6418.3	6286.2	6189.2	6123.9	6071.4
5°	7215.7	6954.6	6477.2	6058.6	5606.7	5280.5	4898.5	4690.0	4561.1	4491.1	4459.2
7.5°	6459.7	6114.4	5496.8	4935.1	4370.1	3962.7	3673.1	3364.3	3200.4	3093.8	3058.7
10°	5799.2	5409.4	4672.5	4040.7	3604.7	3315.0	3066.7	2783.4	2573.3	2390.3	2321.9
12.5°	5415.7	4962.1	4121.9	3550.6	3184.4	2874.2	2611.6	2306.0	2084.8	1893.8	1820.6
15°	5334.6	4828.4	3891.1	3238.6	2789.8	2415.8	2100.7	1768.1	1551.7	1394.1	1343.1
17.5°	5579.6	4955.8	3794.0	2953.8	2412.6	1955.9	1567.6	1211.1	1031.2	945.3	924.6
20°	6084.1	5235.9	3747.9	2697.5	2046.6	1505.5	1083.8	822.8	733.7	708.2	706.7
22.5°	6747.8	5691.0	3798.8	2487.4	1702.8	1110.8	794.1	676.4	639.8	625.4	625.4
25°	7497.3	6306.9	3934.1	2326.7	1400.5	864.2	684.4	620.6	590.4	576.1	577.7
27.5°	8414.0	7056.5	4118.7	2178.7	1184.1	757.5	639.8	585.6	555.5	541.1	542.7
30°	9104.7	7701.1	4277.8	2043.4	1072.7	714.5	615.9	565.0	531.5	510.9	509.2
32.5°	9750.9	8269.2	4406.8	1946.4	1008.9	638.2	557.0	518.8	490.2	466.3	461.6
35°	10465.4	8803.9	4467.2	1943.2	967.6	576.1	509.2	463.1	434.4	407.4	402.6
37.5°	11275.5	9458.0	4518.2	1962.2	945.3	536.3	487.0	442.4	418.6	391.5	385.1
40°	12118.9	10097.8	4558.0	1978.2	942.1	509.2	469.4	429.7	405.8	377.2	370.8
42.5°	12843.0	10664.4	4612.1	1971.8	919.8	504.5	458.4	418.6	396.3	367.6	359.7
45°	13422.3	11114.7	4696.4	1970.2	886.5	515.7	455.1	415.3	388.3	358.0	351.7
47.5°	13961.8	11622.4	4874.7	1963.9	849.9	512.5	472.7	412.1	385.1	354.9	350.2
50°	14579.3	12305.1	5178.6	1916.1	798.9	490.2	504.5	409.0	377.2	350.2	345.3
52.5°	15438.7	13304.5	5629.0	1830.2	728.9	466.3	509.2	407.4	364.5	340.5	334.2
55°	16449.3	14375.6	6114.4	1706.1	636.6	424.9	483.8	401.0	351.7	326.2	316.7
57.5°	17230.7	15166.6	6453.4	1527.8	545.8	401.0	431.3	386.7	335.8	310.4	302.4
60°	17450.3	15201.6	6513.8	1314.5	499.7	385.1	370.8	421.8	323.0	296.0	288.1
62.5°	17187.7	14506.1	6119.1	1164.9	483.8	369.2	337.4	402.6	310.4	283.3	275.3
65°	16409.5	13331.6	5235.9	1142.6	499.7	354.9	319.9	321.5	297.6	270.6	262.6
67.5°	14592.0	11603.2	4125.0	1157.0	518.8	340.5	307.2	292.9	283.3	259.4	249.9
70°	11867.5	9341.8	3249.7	1182.4	536.3	321.5	291.2	273.7	265.8	240.3	235.6
72.5°	9141.3	7476.6	2563.8	1164.9	553.8	302.4	268.9	254.6	245.1	221.2	216.5
75°	6491.5	5940.9	1884.3	999.4	507.7	275.3	243.5	230.8	222.8	197.3	195.8
77.5°	4678.9	4449.7	1311.3	751.2	401.0	241.9	214.8	203.7	199.0	170.3	170.3
80°	3731.9	3386.6	784.6	490.2	292.9	200.5	179.8	175.0	170.3	141.7	143.2
82.5°	2681.6	2349.0	501.3	305.6	214.8	152.8	140.0	138.4	130.5	105.1	105.1
85°	1375.1	1199.9	321.5	205.3	151.2	98.7	92.3	89.1	84.4	65.3	65.3
87.5°	267.4	367.6	178.2	100.2	73.2	35.0	35.0	30.3	35.0	23.8	25.5
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°	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0
2.5°	6171.7	6139.9	6117.6	6106.4	6267.1	6334.0	6410.3	6520.2	6595.0	6563.2	6665.0
5°	4608.8	4631.1	4682.0	4761.6	4986.1	5092.7	5161.1	5251.8	5317.0	5251.8	5360.1
7.5°	3151.1	3184.4	3292.7	3456.7	3727.2	3846.5	3870.4	3872.0	3857.6	3751.1	3824.3
10°	2320.4	2253.5	2277.4	2395.1	2637.1	2743.7	2754.8	2726.2	2721.4	2678.4	2761.1
12.5°	1798.3	1706.1	1652.0	1671.0	1852.5	1940.0	1954.3	1970.2	2035.5	2056.1	2158.0
15°	1341.6	1293.8	1254.0	1236.5	1355.9	1424.4	1432.3	1470.5	1538.9	1558.1	1645.5
17.5°	943.8	956.5	977.1	985.1	1071.0	1115.6	1102.8	1102.8	1114.0	1109.3	1158.6
20°	721.0	746.3	786.1	824.4	902.3	927.8	896.0	856.2	830.7	818.1	829.1
22.5°	636.6	654.1	679.5	728.9	794.1	806.9	765.5	733.7	709.8	697.0	698.7
25°	590.4	607.9	628.6	668.4	724.1	730.5	692.2	671.6	652.5	639.8	636.6
27.5°	550.7	561.8	574.5	600.0	657.2	660.4	634.9	622.3	609.6	600.0	596.8
30°	514.0	518.8	523.5	549.0	592.0	596.8	584.1	577.7	573.0	566.5	566.5
32.5°	466.3	472.7	480.6	502.9	544.3	550.7	542.7	537.9	530.0	526.8	522.0
35°	409.0	424.9	442.4	469.4	514.0	517.2	507.7	493.4	474.2	469.4	466.3
37.5°	385.1	388.3	410.6	442.4	488.6	491.7	479.0	455.1	440.8	442.4	445.6
40°	369.2	374.0	386.7	418.6	464.7	469.4	458.4	440.8	426.5	428.1	432.9
42.5°	356.5	362.8	370.8	391.5	437.6	447.2	444.1	428.1	413.8	417.0	423.3
45°	350.2	354.9	354.9	369.2	413.8	428.1	429.7	417.0	405.8	409.0	417.0
47.5°	347.0	347.0	342.2	353.3	397.8	412.1	415.3	409.0	402.6	405.8	413.8
50°	342.2	335.8	331.0	340.5	385.1	397.8	401.0	396.3	399.5	405.8	410.6
52.5°	327.9	321.5	321.5	327.9	372.4	385.1	386.7	383.5	389.9	397.8	405.8
55°	310.4	310.4	311.9	318.2	366.0	375.6	374.0	370.8	377.2	386.7	394.7
57.5°	294.4	292.9	300.7	308.7	358.0	364.5	361.3	361.3	366.0	374.0	382.0
60°	284.9	276.9	283.3	296.0	350.2	356.5	351.7	350.2	358.0	364.5	370.8
62.5°	275.3	267.4	272.1	284.9	339.0	343.7	340.5	340.5	348.5	353.3	359.7
65°	261.0	257.8	261.0	273.7	329.4	331.0	331.0	332.7	339.0	342.2	348.5
67.5°	248.3	248.3	249.9	262.6	321.5	318.2	318.2	326.2	327.9	331.0	337.4
70°	232.3	235.6	235.6	251.4	315.1	303.9	305.6	311.9	315.1	318.2	319.9
72.5°	214.8	216.5	219.6	240.3	305.6	289.6	291.2	296.0	297.6	302.4	303.9
75°	195.8	197.3	202.1	229.1	299.2	275.3	272.1	275.3	278.5	281.7	280.1
77.5°	173.5	176.7	181.5	222.8	278.5	272.1	248.3	251.4	254.6	254.6	253.1
80°	146.4	151.2	159.2	213.3	235.6	262.6	221.2	222.8	224.4	224.4	221.2
82.5°	109.8	119.4	130.5	176.7	184.6	224.4	191.0	194.2	189.3	186.2	184.6
85°	71.6	79.6	95.4	122.5	135.2	176.7	157.5	159.2	149.6	148.0	148.0
87.5°	28.6	30.3	43.0	62.1	81.1	109.8	113.0	116.2	108.2	108.2	111.4
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°	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0
2.5°	6819.4	6978.5	7161.6	7347.8	7500.5	7697.8	7888.8	8092.6	8196.0	8256.4	8426.8
5°	5528.7	5746.7	6006.2	6297.4	6539.3	6953.1	7398.7	7895.2	8133.9	8369.5	8815.1
7.5°	3954.7	4168.0	4470.4	4847.6	5191.3	5737.2	6324.4	6996.1	7327.1	7709.0	8439.4
10°	2936.3	3162.2	3436.0	3755.9	4094.8	4662.9	5321.8	6076.1	6440.6	6871.9	7702.6
12.5°	2380.8	2645.0	2928.3	3214.7	3506.0	3887.9	4578.6	5417.3	5808.8	6243.3	7075.5
15°	1857.3	2140.5	2446.1	2758.0	3047.7	3474.1	4179.2	5170.6	5617.8	6038.0	6719.2
17.5°	1314.5	1581.9	1925.7	2304.4	2724.5	3229.0	4093.2	5278.8	5821.5	6260.8	6717.5
20°	896.0	1080.6	1424.4	1873.1	2392.0	3031.7	4125.0	5659.2	6337.2	6819.4	6992.8
22.5°	716.2	803.7	1036.0	1492.8	2105.5	2888.5	4255.6	6181.2	7077.2	7664.5	7494.1
25°	650.9	700.2	821.2	1179.3	1850.8	2793.0	4510.2	6870.3	7906.3	8501.5	8097.3
27.5°	611.1	654.1	732.0	969.1	1631.2	2731.0	4833.2	7682.0	8840.5	9329.1	8726.0
30°	585.6	628.6	700.2	870.5	1465.7	2638.6	5116.5	8423.6	9586.9	9903.6	9064.9
32.5°	536.3	569.8	628.6	779.8	1341.6	2530.4	5361.6	9087.2	10291.9	10397.0	9472.3
35°	485.4	520.4	579.3	706.7	1268.4	2446.1	5490.5	9676.0	10990.6	10890.3	9876.6
37.5°	466.3	494.9	549.0	654.1	1228.6	2390.3	5539.9	10255.3	11740.1	11436.2	10158.2
40°	453.6	479.0	526.8	619.1	1217.4	2337.9	5528.7	10805.9	12467.4	12001.2	10379.5
42.5°	444.1	466.3	510.9	595.2	1187.2	2288.5	5492.1	11281.8	13049.9	12488.1	10591.1
45°	436.1	459.9	504.5	607.9	1131.5	2234.4	5469.8	11716.3	13497.1	12898.7	10874.4
47.5°	432.9	459.9	506.1	604.8	1071.0	2173.9	5549.4	12198.5	13887.0	13244.0	11251.5
50°	428.1	458.4	541.1	576.1	988.3	2099.1	5818.3	12773.0	14296.0	13632.4	11740.1
52.5°	420.1	456.7	577.7	553.8	881.7	1995.7	6254.4	13584.6	15002.6	14388.3	12462.6
55°	410.6	459.9	552.2	518.8	768.6	1862.0	6690.5	14697.0	16148.5	15607.4	13500.3
57.5°	399.5	455.1	522.0	487.0	674.7	1693.3	7021.5	15609.0	17093.8	16864.6	14775.0
60°	391.5	466.3	469.4	467.9	614.3	1532.6	7053.3	15550.1	17365.9	17681.0	16022.8
62.5°	382.0	475.9	428.1	453.6	584.1	1382.9	6660.2	14587.3	16906.0	17576.0	17039.7
65°	369.2	415.3	405.8	440.8	584.1	1303.4	5745.1	12984.6	15634.5	16583.0	17591.9
67.5°	356.5	377.2	389.9	423.3	596.8	1228.6	4616.8	10952.3	13629.2	14980.3	16971.3
70°	339.0	356.5	372.4	407.4	590.4	1176.1	3633.3	8778.5	11216.6	12763.5	15254.0
72.5°	323.0	335.8	351.7	383.5	590.4	1152.3	2918.7	6886.2	8563.6	9867.0	12636.1
75°	299.2	310.4	324.7	359.7	579.3	1053.5	2191.5	5517.6	6265.6	7082.0	9970.5
77.5°	275.3	283.3	294.4	329.4	522.0	880.0	1550.1	4273.1	4642.3	5094.2	7772.7
80°	245.1	251.4	259.4	294.4	432.9	682.7	1008.9	3342.1	3471.0	3689.0	5113.3
82.5°	210.1	219.6	221.2	253.1	348.5	494.9	600.0	2290.1	2288.5	2608.4	3607.8
85°	171.9	176.7	179.8	199.0	257.8	329.4	394.7	1250.9	1115.6	1562.8	3133.6
87.5°	128.9	124.1	128.9	133.7	170.3	194.2	211.6	230.8	138.4	283.3	1822.2
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):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0	7483.0
2.5°	8517.5	8611.3	8555.7	8488.9	8321.7	8076.6	7888.8	7724.9
5°	9123.8	9297.3	9220.9	8972.6	8539.7	8048.0	7530.8	7215.7
7.5°	9047.4	9391.2	9360.9	8947.1	8326.5	7602.4	6875.0	6459.7
10°	8436.3	8918.5	9001.3	8578.0	7920.6	7110.6	6268.7	5799.2
12.5°	7771.1	8176.9	8345.5	8184.8	7565.7	6743.0	5885.1	5415.7
15°	7214.1	7419.4	7586.4	7689.9	7306.3	6612.5	5818.3	5334.6
17.5°	6801.9	6762.1	6902.2	7150.4	7166.3	6785.9	6120.7	5579.6
20°	6602.9	6291.0	6372.2	6720.7	7128.1	7226.7	6723.9	6084.1
22.5°	6591.8	6104.8	6120.7	6496.4	7237.9	7828.3	7476.6	6747.8
25°	6763.6	6084.1	6098.4	6472.4	7432.0	8434.7	8347.2	7497.3
27.5°	7056.5	6173.2	6163.7	6577.5	7691.5	8940.8	9225.7	8414.0
30°	7373.2	6302.2	6278.3	6746.2	7946.1	9252.7	9849.5	9104.7
32.5°	7767.9	6531.3	6448.6	6992.8	8197.5	9551.9	10382.6	9750.9
35°	8143.5	6867.1	6747.8	7346.1	8466.6	9884.5	10979.4	10465.4
37.5°	8527.0	7368.4	7301.6	7855.4	8846.9	10245.8	11662.2	11275.5
40°	9018.7	8081.4	8049.6	8595.4	9354.6	10640.4	12427.6	12118.9
42.5°	9548.7	8838.9	8811.9	9445.3	9984.8	11036.7	13083.3	12843.0
45°	10088.2	9757.2	9763.6	10352.4	10648.4	11410.7	13599.0	13422.3
47.5°	10724.8	10761.4	10988.9	11293.0	11294.5	11827.7	14055.8	13961.8
50°	11533.3	11974.0	12394.3	12441.9	11947.0	12378.3	14614.3	14579.3
52.5°	12448.3	13372.9	13861.5	13710.4	12583.6	13061.0	15440.2	15438.7
55°	13535.3	14835.5	15295.5	15037.6	13345.9	13950.7	16519.2	16449.3
57.5°	14662.1	16242.3	16613.1	16277.4	14299.2	14986.7	17601.5	17230.7
60°	15879.5	17453.5	17830.6	17326.1	15368.6	16019.5	18317.6	17450.3
62.5°	16676.9	18161.7	18432.2	17948.4	16326.7	17071.5	18548.3	17187.7
65°	16718.2	17690.6	17762.2	17590.4	16734.1	17985.0	18214.2	16409.5
67.5°	15581.9	15639.2	15733.1	15917.7	15863.6	17577.6	16925.1	14592.0
70°	13151.8	12387.8	12696.6	12874.9	13275.9	15634.5	14542.7	11867.5
72.5°	10056.4	8940.8	9290.8	9230.4	10064.3	12823.9	11125.8	9141.3
75°	7237.9	6096.9	6123.9	6127.1	7231.5	10236.3	7586.4	6491.5
77.5°	4919.2	4314.4	4403.5	4347.8	4839.6	8019.3	5461.8	4678.9
80°	3364.3	3348.4	3367.6	3237.0	3227.5	5183.4	4043.9	3731.9
82.5°	2495.4	2306.0	2278.9	2140.5	2473.1	3962.7	3069.9	2681.6
85°	1968.7	1276.3	1109.3	1338.4	2142.1	3646.0	1871.6	1375.1
87.5°	833.9	501.3	303.9	601.6	1190.4	2672.0	518.8	267.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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