

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: P196245

Luminaire Tested: **NAV-AF-03-D-UNV-SLR-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196245
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-SLR-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 1200mA 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: 17952.8 lumens
Efficiency: N/A
Efficacy: 94.0 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

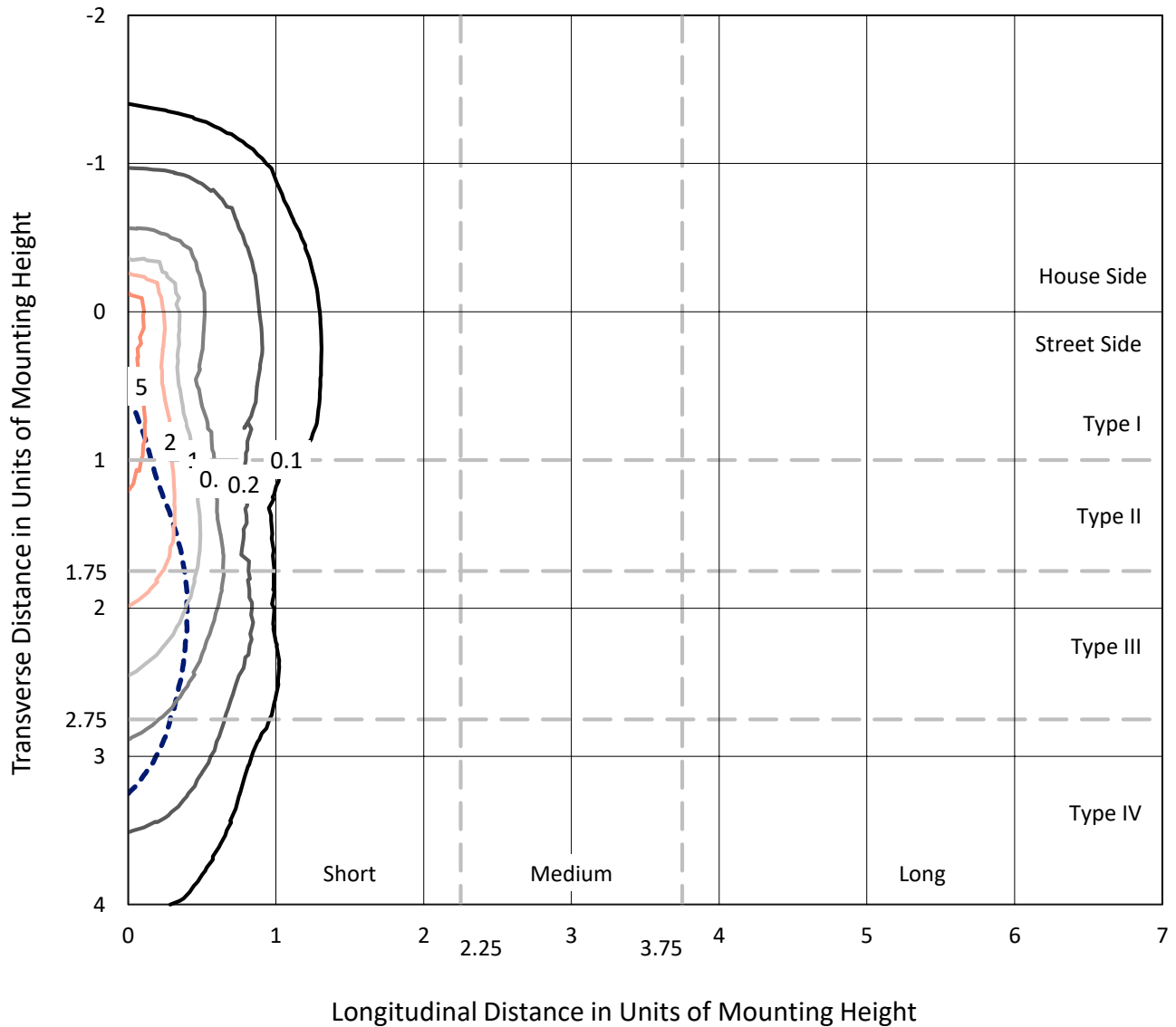
Input Watts (W): 191
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

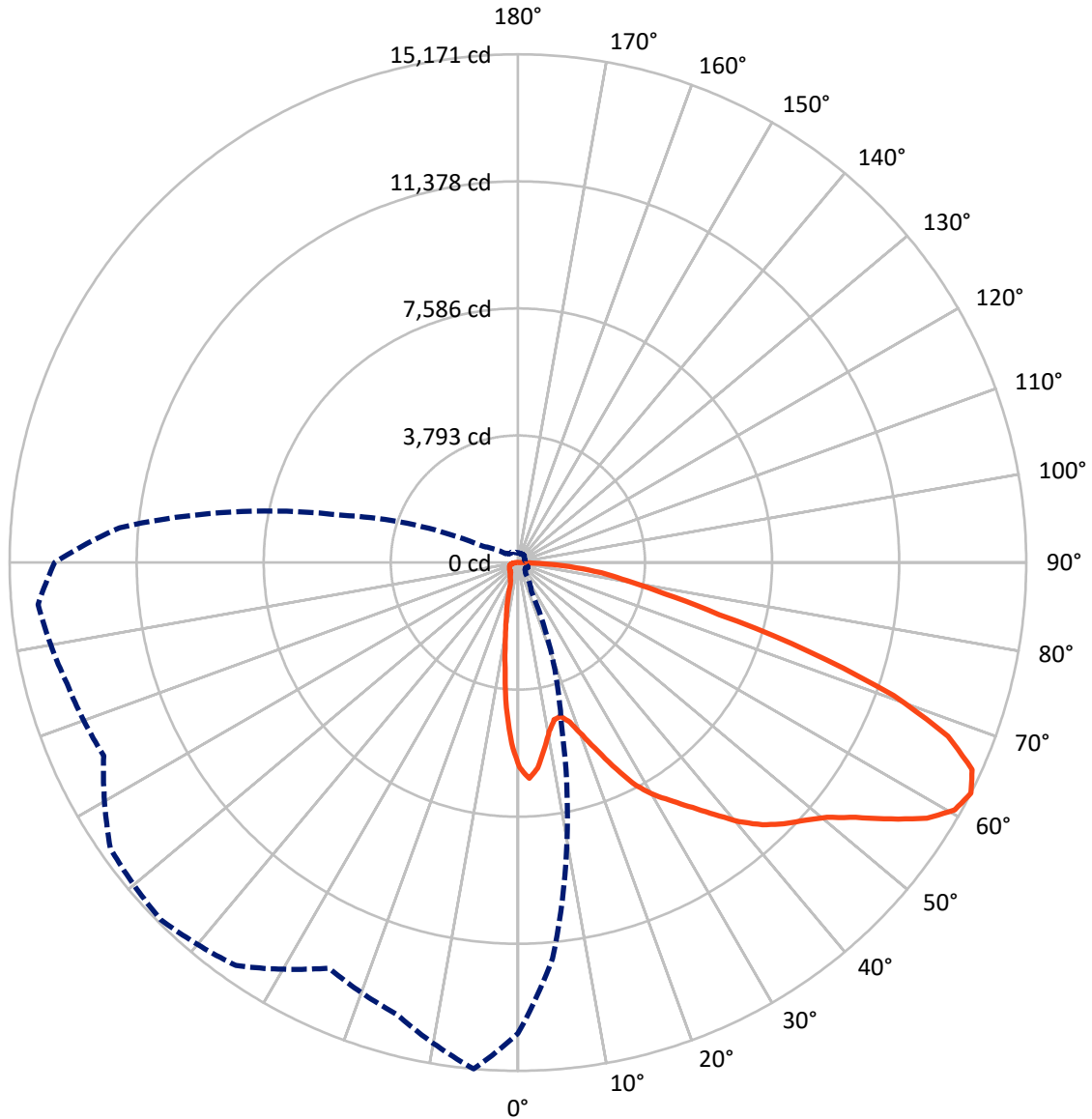
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.8 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	3180.4	0.0	3180.4
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	14772.4	0.0	14772.4
	% Fixture	82.3	0.0	82.3
Total	Lumens	17952.8	0.0	17952.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	445.1	2.5
10°-20°	813.0	4.5
20°-30°	1169.3	6.5
30°-40°	1790.9	10.0
40°-50°	2618.3	14.6
50°-60°	3809.7	21.2
60°-70°	4414.0	24.6
70°-80°	2301.0	12.8
80°-90°	591.5	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°	17952.8	100.0
0°-180°	17952.8	100.0



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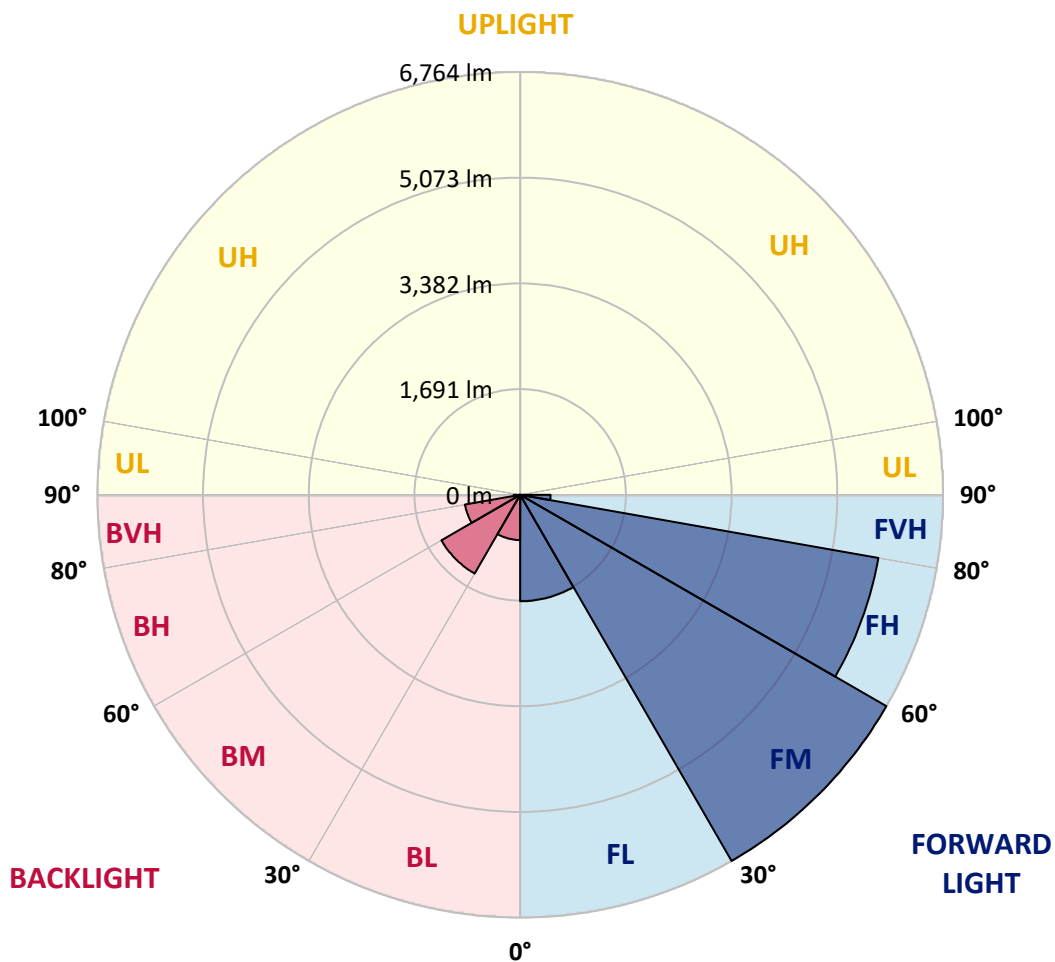
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1703.8	9.5			
FM (30°-60°)	6763.8	37.7			
FH (60°-80°)	5818.2	32.4			G3/7500
FVH (80°-90°)	486.6	2.7			G3/500
BL (0°-30°)	723.6	4.0	B2/1000		
BM (30°-60°)	1455.1	8.1	B2/2500		
BH (60°-80°)	896.8	5.0	B2/1000		G2/1000
BVH (80°-90°)	104.9	0.6			G2/225
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°	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4
2.5°	6318.4	6229.8	6025.5	5845.9	5621.9	5454.0	5249.7	5141.6	5062.2	5008.9	4965.9
5°	5901.8	5688.3	5297.8	4955.5	4585.8	4318.9	4006.6	3836.1	3730.6	3673.3	3647.3
7.5°	5283.4	5001.0	4496.0	4036.5	3574.4	3241.1	3004.3	2751.7	2617.6	2530.5	2501.8
10°	4743.3	4424.4	3821.7	3304.9	2948.2	2711.4	2508.3	2276.6	2104.8	1955.1	1899.1
12.5°	4429.6	4058.7	3371.3	2904.1	2604.6	2350.8	2136.0	1886.1	1705.2	1549.0	1489.1
15°	4363.2	3949.3	3182.6	2648.9	2281.8	1975.9	1718.3	1446.1	1269.2	1140.3	1098.6
17.5°	4563.7	4053.4	3103.2	2415.9	1973.4	1599.8	1282.2	990.5	843.5	773.1	756.3
20°	4976.2	4282.5	3065.5	2206.3	1674.0	1231.4	886.5	673.0	600.1	579.2	578.0
22.5°	5519.1	4654.7	3107.1	2034.5	1392.7	908.6	649.6	553.2	523.2	511.6	511.6
25°	6132.2	5158.5	3217.7	1903.0	1145.5	706.9	559.8	507.7	482.9	471.2	472.5
27.5°	6881.9	5771.6	3368.7	1782.0	968.4	619.6	523.2	479.0	454.3	442.5	443.9
30°	7446.9	6298.8	3498.9	1671.3	877.3	584.4	503.7	462.1	434.8	417.9	416.5
32.5°	7975.3	6763.4	3604.4	1591.9	825.2	522.0	455.6	424.3	400.9	381.4	377.5
35°	8559.7	7200.9	3653.8	1589.4	791.5	471.2	416.5	378.8	355.4	333.3	329.3
37.5°	9222.3	7735.9	3695.4	1605.0	773.1	438.6	398.3	361.8	342.4	320.2	315.0
40°	9912.2	8259.1	3727.9	1618.0	770.6	416.5	384.0	351.5	331.9	308.5	303.3
42.5°	10504.5	8722.5	3772.2	1612.8	752.4	412.7	374.9	342.4	324.1	300.6	294.2
45°	10978.3	9090.9	3841.3	1611.5	725.1	421.8	372.3	339.7	317.6	292.9	287.7
47.5°	11419.6	9506.1	3987.1	1606.2	695.1	419.1	386.6	337.2	315.0	290.3	286.3
50°	11924.6	10064.5	4235.6	1567.3	653.5	400.9	412.7	334.5	308.5	286.3	282.4
52.5°	12627.5	10881.9	4604.0	1496.9	596.2	381.4	416.5	333.3	298.1	278.5	273.3
55°	13454.1	11758.0	5001.0	1395.4	520.7	347.5	395.7	328.1	287.7	266.9	259.0
57.5°	14093.2	12404.9	5278.3	1249.6	446.5	328.1	352.7	316.3	274.7	253.8	247.3
60°	14272.8	12433.6	5327.7	1075.2	408.8	315.0	303.3	344.9	264.2	242.1	235.6
62.5°	14058.1	11864.7	5004.9	952.8	395.7	302.0	276.0	329.3	253.8	231.7	225.2
65°	13421.5	10904.1	4282.5	934.6	408.8	290.3	261.7	262.9	243.5	221.3	214.8
67.5°	11935.1	9490.5	3373.9	946.3	424.3	278.5	251.2	239.5	231.7	212.2	204.4
70°	9706.6	7640.8	2658.0	967.1	438.6	262.9	238.2	223.9	217.4	196.5	192.6
72.5°	7476.8	6115.3	2096.9	952.8	453.0	247.3	219.9	208.3	200.5	181.0	177.1
75°	5309.5	4859.1	1541.2	817.4	415.2	225.2	199.2	188.7	182.2	161.4	160.1
77.5°	3827.0	3639.5	1072.6	614.4	328.1	197.8	175.7	166.6	162.8	139.3	139.3
80°	3052.4	2769.9	641.7	400.9	239.5	164.0	147.1	143.2	139.3	115.8	117.1
82.5°	2193.3	1921.3	410.0	249.9	175.7	125.0	114.6	113.2	106.7	85.9	85.9
85°	1124.6	981.4	262.9	167.9	123.7	80.7	75.5	72.9	68.9	53.4	53.4
87.5°	218.7	300.6	145.8	82.0	59.8	28.6	28.6	24.8	28.6	19.5	20.9
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°	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4
2.5°	5047.9	5021.9	5003.7	4994.6	5126.0	5180.6	5243.1	5332.9	5394.1	5368.1	5451.4
5°	3769.7	3787.9	3829.5	3894.6	4078.1	4165.4	4221.3	4295.5	4348.9	4295.5	4384.1
7.5°	2577.3	2604.6	2693.1	2827.2	3048.5	3146.2	3165.6	3167.0	3155.3	3068.0	3127.9
10°	1897.9	1843.2	1862.7	1959.1	2156.9	2244.0	2253.2	2229.7	2225.8	2190.8	2258.4
12.5°	1470.9	1395.4	1351.1	1366.8	1515.2	1586.7	1598.5	1611.5	1664.9	1681.7	1765.1
15°	1097.3	1058.2	1025.7	1011.4	1109.0	1165.0	1171.5	1202.8	1258.7	1274.3	1345.9
17.5°	771.9	782.4	799.2	805.8	876.1	912.5	902.0	902.0	911.1	907.3	947.7
20°	589.6	610.5	643.0	674.2	738.1	758.8	732.8	700.3	679.4	669.0	678.2
22.5°	520.7	535.0	555.8	596.2	649.6	659.9	626.1	600.1	580.5	570.1	571.4
25°	482.9	497.3	514.1	546.7	592.3	597.5	566.2	549.3	533.7	523.2	520.7
27.5°	450.4	459.5	469.9	490.7	537.6	540.2	519.4	508.9	498.6	490.7	488.2
30°	420.4	424.3	428.2	449.1	484.3	488.2	477.7	472.5	468.6	463.4	463.4
32.5°	381.4	386.6	393.1	411.3	445.2	450.4	443.9	440.0	433.4	430.9	427.0
35°	334.5	347.5	361.8	384.0	420.4	423.1	415.2	403.6	387.9	384.0	381.4
37.5°	315.0	317.6	335.8	361.8	399.6	402.2	391.8	372.3	360.6	361.8	364.5
40°	302.0	305.9	316.3	342.4	380.1	384.0	374.9	360.6	348.8	350.2	354.0
42.5°	291.5	296.8	303.3	320.2	357.9	365.8	363.1	350.2	338.4	341.1	346.3
45°	286.3	290.3	290.3	302.0	338.4	350.2	351.5	341.1	331.9	334.5	341.1
47.5°	283.8	283.8	279.9	289.0	325.4	337.2	339.7	334.5	329.3	331.9	338.4
50°	279.9	274.7	270.8	278.5	315.0	325.4	328.1	324.1	326.7	331.9	335.8
52.5°	268.1	262.9	262.9	268.1	304.6	315.0	316.3	313.7	319.0	325.4	331.9
55°	253.8	253.8	255.1	260.3	299.4	307.2	305.9	303.3	308.5	316.3	322.8
57.5°	240.8	239.5	246.0	252.6	292.9	298.1	295.5	295.5	299.4	305.9	312.4
60°	233.0	226.5	231.7	242.1	286.3	291.5	287.7	286.3	292.9	298.1	303.3
62.5°	225.2	218.7	222.6	233.0	277.2	281.2	278.5	278.5	285.1	289.0	294.2
65°	213.5	210.8	213.5	223.9	269.4	270.8	270.8	272.0	277.2	279.9	285.1
67.5°	203.1	203.1	204.4	214.8	262.9	260.3	260.3	266.9	268.1	270.8	276.0
70°	190.1	192.6	192.6	205.6	257.7	248.6	249.9	255.1	257.7	260.3	261.7
72.5°	175.7	177.1	179.6	196.5	249.9	236.9	238.2	242.1	243.5	247.3	248.6
75°	160.1	161.4	165.3	187.4	244.7	225.2	222.6	225.2	227.8	230.4	229.1
77.5°	141.9	144.4	148.4	182.2	227.8	222.6	203.1	205.6	208.3	208.3	206.9
80°	119.8	123.7	130.1	174.4	192.6	214.8	181.0	182.2	183.5	183.5	181.0
82.5°	89.8	97.6	106.7	144.4	151.0	183.5	156.2	158.8	154.9	152.3	151.0
85°	58.6	65.1	78.1	100.2	110.7	144.4	128.9	130.1	122.3	121.0	121.0
87.5°	23.4	24.8	35.2	50.7	66.4	89.8	92.4	95.0	88.5	88.5	91.1
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4
2.5°	5577.6	5707.9	5857.5	6009.8	6134.7	6296.2	6452.4	6619.0	6703.6	6753.1	6892.3
5°	4522.1	4700.4	4912.5	5150.8	5348.6	5687.0	6051.5	6457.6	6652.9	6845.5	7210.0
7.5°	3234.7	3409.1	3656.4	3964.9	4246.1	4692.5	5172.9	5722.2	5992.9	6305.3	6902.8
10°	2401.6	2586.4	2810.4	3071.9	3349.2	3813.9	4352.8	4969.8	5267.9	5620.6	6300.0
12.5°	1947.3	2163.3	2395.0	2629.4	2867.5	3179.9	3744.9	4430.9	4751.1	5106.5	5787.2
15°	1519.1	1750.8	2000.7	2255.8	2492.7	2841.6	3418.2	4229.1	4594.9	4938.5	5495.7
17.5°	1075.2	1293.8	1575.0	1884.8	2228.5	2641.1	3347.9	4317.7	4761.5	5120.8	5494.4
20°	732.8	883.8	1165.0	1532.1	1956.4	2479.7	3373.9	4628.8	5183.3	5577.6	5719.5
22.5°	585.7	657.3	847.4	1221.0	1722.1	2362.5	3480.7	5055.7	5788.6	6268.8	6129.6
25°	532.3	572.8	671.7	964.5	1513.9	2284.5	3689.0	5619.3	6466.7	6953.5	6622.9
27.5°	499.8	535.0	598.7	792.7	1334.2	2233.7	3953.2	6283.2	7230.8	7630.4	7137.0
30°	479.0	514.1	572.8	712.0	1198.8	2158.2	4184.9	6889.8	7841.2	8100.3	7414.3
32.5°	438.6	466.0	514.1	637.8	1097.3	2069.6	4385.3	7432.6	8418.0	8503.8	7747.5
35°	397.0	425.6	473.8	578.0	1037.5	2000.7	4490.8	7914.2	8989.4	8907.3	8078.1
37.5°	381.4	404.8	449.1	535.0	1004.8	1955.1	4531.2	8388.0	9602.4	9353.9	8308.6
40°	371.0	391.8	430.9	506.4	995.7	1912.2	4522.1	8838.4	10197.3	9815.9	8489.5
42.5°	363.1	381.4	417.9	486.8	971.1	1871.8	4492.1	9227.5	10673.7	10214.3	8662.7
45°	356.7	376.1	412.7	497.3	925.5	1827.5	4473.9	9582.9	11039.5	10550.1	8894.4
47.5°	354.0	376.1	413.9	494.6	876.1	1778.1	4538.9	9977.4	11358.4	10832.5	9202.8
50°	350.2	374.9	442.5	471.2	808.3	1716.9	4758.9	10447.2	11692.9	11150.2	9602.4
52.5°	343.6	373.6	472.5	453.0	721.1	1632.3	5115.6	11111.1	12270.9	11768.4	10193.4
55°	335.8	376.1	451.6	424.3	628.7	1523.0	5472.3	12020.9	13208.0	12765.5	11042.0
57.5°	326.7	372.3	427.0	398.3	551.9	1385.0	5742.9	12766.8	13981.3	13793.8	12084.7
60°	320.2	381.4	384.0	382.7	502.5	1253.5	5769.0	12718.7	14203.9	14461.6	13105.2
62.5°	312.4	389.2	350.2	371.0	477.7	1131.2	5447.5	11931.1	13827.6	14375.6	13937.0
65°	302.0	339.7	331.9	360.6	477.7	1066.1	4699.0	10620.4	12787.6	13563.4	14388.7
67.5°	291.5	308.5	319.0	346.3	488.2	1004.8	3776.1	8958.1	11147.5	12252.6	13881.0
70°	277.2	291.5	304.6	333.3	482.9	962.0	2971.7	7180.0	9174.2	10439.4	12476.5
72.5°	264.2	274.7	287.7	313.7	482.9	942.4	2387.3	5632.4	7004.3	8070.4	10335.3
75°	244.7	253.8	265.6	294.2	473.8	861.7	1792.4	4512.8	5124.7	5792.5	8155.0
77.5°	225.2	231.7	240.8	269.4	427.0	719.9	1267.8	3495.0	3797.0	4166.7	6357.3
80°	200.5	205.6	212.2	240.8	354.0	558.4	825.2	2733.5	2839.0	3017.3	4182.2
82.5°	171.9	179.6	181.0	206.9	285.1	404.8	490.7	1873.1	1871.8	2133.5	2950.9
85°	140.6	144.4	147.1	162.8	210.8	269.4	322.8	1023.2	912.5	1278.3	2563.0
87.5°	105.5	101.6	105.5	109.4	139.3	158.8	173.1	188.7	113.2	231.7	1490.4
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):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4	6120.4
2.5°	6966.5	7043.3	6997.8	6943.1	6806.4	6606.0	6452.4	6318.4
5°	7462.5	7604.4	7541.9	7338.9	6984.8	6582.6	6159.5	5901.8
7.5°	7400.0	7681.1	7656.5	7318.0	6810.4	6218.1	5623.3	5283.4
10°	6900.2	7294.6	7362.3	7016.0	6478.4	5815.9	5127.3	4743.3
12.5°	6356.1	6688.0	6825.9	6694.5	6188.1	5515.1	4813.6	4429.6
15°	5900.5	6068.3	6205.1	6289.7	5976.0	5408.4	4758.9	4363.2
17.5°	5563.3	5530.8	5645.4	5848.4	5861.4	5550.3	5006.2	4563.7
20°	5400.7	5145.5	5211.9	5496.9	5830.2	5910.9	5499.6	4976.2
22.5°	5391.6	4993.2	5006.2	5313.4	5920.0	6403.0	6115.3	5519.1
25°	5532.1	4976.2	4988.0	5293.9	6078.8	6898.9	6827.3	6132.2
27.5°	5771.6	5049.2	5041.4	5379.8	6290.9	7312.8	7545.8	6881.9
30°	6030.6	5154.6	5135.1	5517.8	6499.2	7567.9	8056.0	7446.9
32.5°	6353.4	5342.1	5274.3	5719.5	6704.9	7812.7	8492.1	7975.3
35°	6660.6	5616.7	5519.1	6008.5	6924.9	8084.7	8980.3	8559.7
37.5°	6974.4	6026.7	5972.1	6425.1	7235.9	8380.1	9538.6	9222.3
40°	7376.6	6609.9	6583.8	7030.3	7651.3	8703.0	10164.8	9912.2
42.5°	7810.0	7229.5	7207.4	7725.4	8166.7	9027.1	10701.1	10504.5
45°	8251.3	7980.6	7985.8	8467.4	8709.5	9333.0	11122.7	10978.3
47.5°	8772.0	8801.9	8988.1	9236.6	9238.0	9674.0	11496.3	11419.6
50°	9433.2	9793.7	10137.4	10176.5	9771.6	10124.5	11953.3	11924.6
52.5°	10181.6	10937.9	11337.6	11213.9	10292.3	10682.8	12628.8	12627.5
55°	11070.7	12134.1	12510.4	12299.6	10915.8	11410.5	13511.3	13454.1
57.5°	11992.3	13284.9	13588.2	13313.5	11695.5	12257.8	14396.5	14093.2
60°	12988.1	14275.5	14583.9	14171.3	12570.2	13102.7	14982.2	14272.8
62.5°	13640.2	14854.7	15075.9	14680.3	13353.8	13963.1	15171.0	14058.1
65°	13674.1	14469.4	14527.9	14387.4	13687.1	14710.2	14897.6	13421.5
67.5°	12744.6	12791.5	12868.3	13019.3	12975.1	14377.0	13843.3	11935.1
70°	10757.0	10132.2	10384.7	10530.6	10858.5	12787.6	11894.7	9706.6
72.5°	8225.2	7312.8	7599.2	7549.7	8231.8	10488.8	9100.0	7476.8
75°	5920.0	4986.7	5008.9	5011.4	5914.8	8372.3	6205.1	5309.5
77.5°	4023.5	3528.9	3601.7	3556.2	3958.4	6559.2	4467.3	3827.0
80°	2751.7	2738.7	2754.3	2647.6	2639.8	4239.5	3307.5	3052.4
82.5°	2041.0	1886.1	1864.0	1750.8	2022.8	3241.1	2510.9	2193.3
85°	1610.1	1043.9	907.3	1094.7	1752.0	2982.1	1530.7	1124.6
87.5°	682.1	410.0	248.6	492.0	973.6	2185.5	424.3	218.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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