

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: P196229

Luminaire Tested: **NAV-AF-05-D-UNV-SLR-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196229
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-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 615mA 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: 17899.6 lumens
Efficiency: N/A
Efficacy: 110.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G3

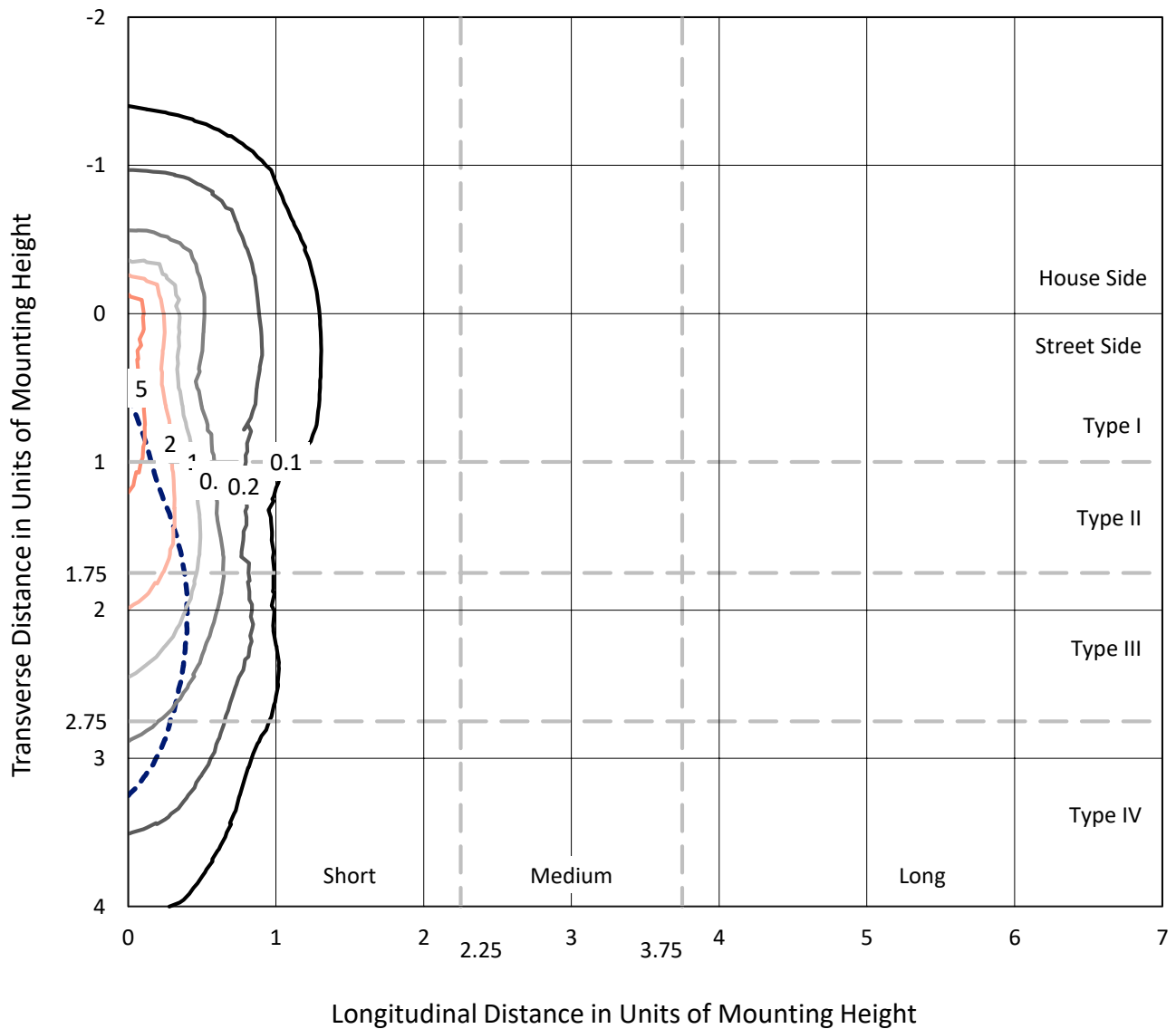
Input Watts (W): 162
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

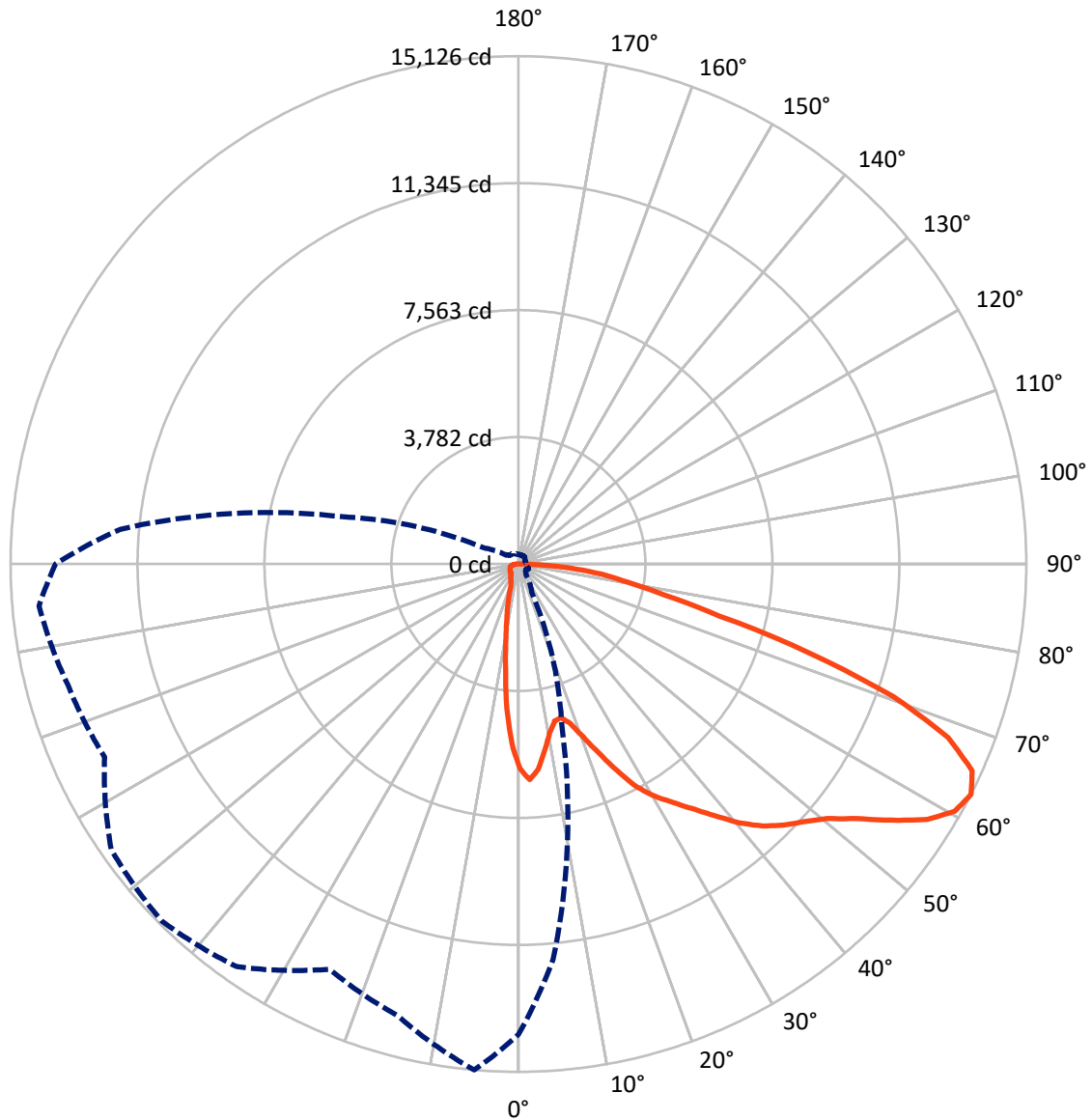
× Max cd
 - - - 1/2 Max cd



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	3170.9	0.0	3170.9
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	14728.7	0.0	14728.7
	% Fixture	82.3	0.0	82.3
Total	Lumens	17899.6	0.0	17899.6
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	443.8	2.5
10°-20°	810.6	4.5
20°-30°	1165.8	6.5
30°-40°	1785.6	10.0
40°-50°	2610.6	14.6
50°-60°	3798.4	21.2
60°-70°	4401.0	24.6
70°-80°	2294.2	12.8
80°-90°	589.7	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°	17899.6	100.0
0°-180°	17899.6	100.0

Coefficient of Utilization



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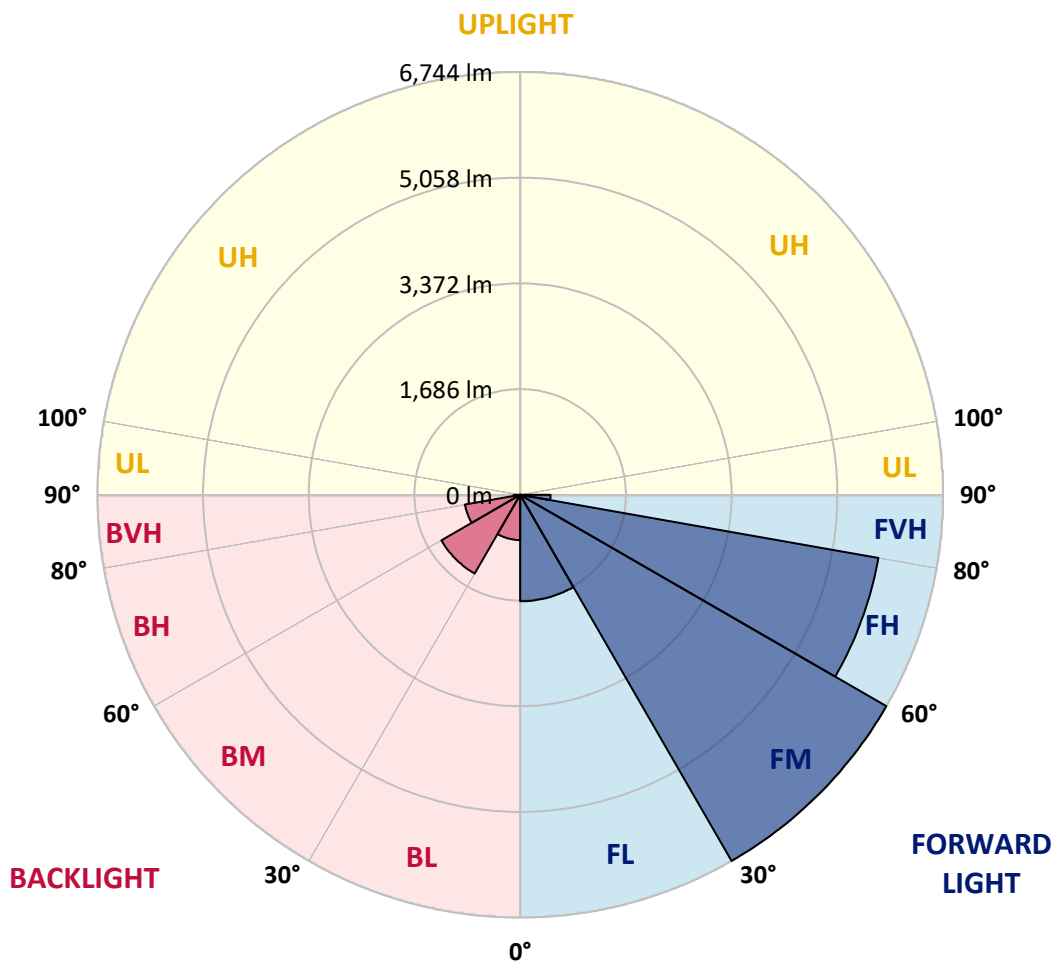
CATALOG NUMBER: NAV-AF-05-D-UNV-SLR-600

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1698.8	9.5			
FM	(30°-60°)	6743.7	37.7			
FH	(60°-80°)	5801.0	32.4			G3/7500
FVH	(80°-90°)	485.2	2.7			G3/500
BL	(0°-30°)	721.4	4.0	B2/1000		
BM	(30°-60°)	1450.8	8.1	B2/2500		
BH	(60°-80°)	894.1	5.0	B2/1000		G2/1000
BVH	(80°-90°)	104.6	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°	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3
2.5°	6299.6	6211.4	6007.6	5828.5	5605.3	5437.8	5234.1	5126.4	5047.2	4993.9	4951.2
5°	5884.3	5671.4	5282.1	4940.8	4572.2	4306.1	3994.7	3824.7	3719.6	3662.5	3636.5
7.5°	5267.8	4986.2	4482.7	4024.5	3563.8	3231.6	2995.4	2743.6	2610.0	2522.9	2494.4
10°	4729.2	4411.3	3810.4	3295.1	2939.6	2703.4	2500.9	2269.9	2098.6	1949.3	1893.5
12.5°	4416.5	4046.6	3361.3	2895.5	2597.0	2343.9	2129.7	1880.5	1700.1	1544.5	1484.7
15°	4350.3	3937.5	3173.2	2641.1	2275.0	1970.1	1713.1	1441.8	1265.4	1136.9	1095.4
17.5°	4550.2	4041.4	3094.0	2408.7	1967.4	1595.0	1278.4	987.7	841.0	770.9	754.0
20°	4961.5	4269.8	3056.4	2199.8	1668.9	1227.7	883.8	671.0	598.3	577.6	576.2
22.5°	5502.8	4641.0	3097.9	2028.5	1388.7	905.9	647.6	551.6	521.7	510.0	510.0
25°	6114.0	5143.2	3208.2	1897.4	1142.1	704.7	558.0	506.2	481.5	469.8	471.1
27.5°	6861.5	5754.5	3358.8	1776.7	965.6	617.8	521.7	477.6	453.0	441.3	442.5
30°	7424.8	6280.1	3488.6	1666.4	874.7	582.7	502.3	460.7	433.4	416.6	415.3
32.5°	7951.7	6743.5	3593.6	1587.2	822.9	520.4	454.2	423.1	399.8	380.2	376.3
35°	8534.5	7179.5	3642.9	1584.7	789.1	469.8	415.3	377.7	354.4	332.3	328.4
37.5°	9195.0	7712.9	3684.5	1600.2	770.9	437.4	397.1	360.8	341.4	319.3	314.0
40°	9882.8	8234.7	3717.0	1613.2	768.3	415.3	382.9	350.4	330.9	307.6	302.4
42.5°	10473.4	8696.6	3761.1	1608.0	750.1	411.4	373.8	341.4	323.2	299.8	293.3
45°	10945.8	9064.0	3829.8	1606.6	722.9	420.5	371.1	338.7	316.7	292.1	286.8
47.5°	11385.7	9477.9	3975.2	1601.5	693.0	417.9	385.4	336.1	314.0	289.4	285.5
50°	11889.2	10034.7	4223.0	1562.6	651.5	399.8	411.4	333.6	307.6	285.5	281.6
52.5°	12590.1	10849.7	4590.4	1492.5	594.4	380.2	415.3	332.3	297.2	277.7	272.5
55°	13414.3	11723.1	4986.2	1391.2	519.1	346.5	394.6	327.0	286.8	266.1	258.3
57.5°	14051.5	12368.2	5262.7	1245.9	445.2	327.0	351.7	315.4	273.8	253.1	246.6
60°	14230.6	12396.7	5312.0	1072.0	407.5	314.0	302.4	343.9	263.4	241.4	234.9
62.5°	14016.4	11829.6	4990.1	950.0	394.6	301.1	275.2	328.4	253.1	231.0	224.5
65°	13381.7	10871.8	4269.8	931.8	407.5	289.4	260.9	262.2	242.6	220.7	214.1
67.5°	11899.7	9462.4	3364.0	943.5	423.1	277.7	250.5	238.8	231.0	211.5	203.8
70°	9677.8	7618.2	2650.2	964.2	437.4	262.2	237.5	223.2	216.8	196.0	192.1
72.5°	7454.7	6097.1	2090.8	950.0	451.6	246.6	219.3	207.7	199.9	180.3	176.5
75°	5293.8	4844.7	1536.6	815.0	414.0	224.5	198.6	188.2	181.7	160.9	159.6
77.5°	3815.6	3628.7	1069.4	612.5	327.0	197.2	175.2	166.1	162.2	138.9	138.9
80°	3043.4	2761.8	639.9	399.8	238.8	163.6	146.7	142.8	138.9	115.5	116.8
82.5°	2186.9	1915.6	408.8	249.2	175.2	124.6	114.2	112.9	106.4	85.6	85.6
85°	1121.4	978.6	262.2	167.5	123.3	80.5	75.3	72.6	68.7	53.2	53.2
87.5°	218.0	299.8	145.4	81.7	59.7	28.5	28.5	24.7	28.5	19.4	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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3
2.5°	5032.9	5006.9	4988.8	4979.7	5110.8	5165.3	5227.6	5317.2	5378.2	5352.2	5435.2
5°	3758.4	3776.6	3818.2	3883.0	4066.0	4153.0	4208.8	4282.8	4336.0	4282.8	4371.1
7.5°	2569.7	2597.0	2685.1	2818.8	3039.5	3136.8	3156.3	3157.5	3145.9	3058.9	3118.7
10°	1892.3	1837.7	1857.2	1953.2	2150.4	2237.4	2246.5	2223.2	2219.3	2184.2	2251.7
12.5°	1466.5	1391.2	1347.1	1362.7	1510.7	1582.0	1593.8	1606.6	1659.9	1676.8	1759.9
15°	1094.0	1055.2	1022.6	1008.4	1105.7	1161.6	1168.0	1199.2	1255.0	1270.6	1341.9
17.5°	769.6	780.0	796.9	803.3	873.4	909.8	899.4	899.4	908.5	904.6	944.8
20°	587.9	608.7	641.1	672.3	735.9	756.7	730.7	698.3	677.5	667.1	676.2
22.5°	519.1	533.4	554.1	594.4	647.6	658.0	624.2	598.3	578.8	568.5	569.8
25°	481.5	495.7	512.6	545.1	590.5	595.7	564.6	547.7	532.1	521.7	519.1
27.5°	449.1	458.2	468.5	489.3	536.0	538.6	517.8	507.5	497.1	489.3	486.7
30°	419.2	423.1	427.0	447.7	482.8	486.7	476.3	471.1	467.2	462.1	462.1
32.5°	380.2	385.4	391.9	410.1	443.9	449.1	442.5	438.6	432.2	429.5	425.6
35°	333.6	346.5	360.8	382.9	419.2	421.8	414.0	402.3	386.8	382.9	380.2
37.5°	314.0	316.7	334.8	360.8	398.4	401.0	390.7	371.1	359.5	360.8	363.4
40°	301.1	304.9	315.4	341.4	379.0	382.9	373.8	359.5	347.8	349.1	353.0
42.5°	290.7	295.9	302.4	319.3	356.9	364.7	362.1	349.1	337.5	340.0	345.2
45°	285.5	289.4	289.4	301.1	337.5	349.1	350.4	340.0	330.9	333.6	340.0
47.5°	282.9	282.9	279.1	288.2	324.5	336.1	338.7	333.6	328.4	330.9	337.5
50°	279.1	273.8	270.0	277.7	314.0	324.5	327.0	323.2	325.7	330.9	334.8
52.5°	267.4	262.2	262.2	267.4	303.7	314.0	315.4	312.8	317.9	324.5	330.9
55°	253.1	253.1	254.4	259.5	298.5	306.3	304.9	302.4	307.6	315.4	321.8
57.5°	240.1	238.8	245.3	251.7	292.1	297.2	294.6	294.6	298.5	304.9	311.5
60°	232.3	225.9	231.0	241.4	285.5	290.7	286.8	285.5	292.1	297.2	302.4
62.5°	224.5	218.0	221.9	232.3	276.4	280.3	277.7	277.7	284.2	288.2	293.3
65°	212.9	210.2	212.9	223.2	268.6	270.0	270.0	271.3	276.4	279.1	284.2
67.5°	202.4	202.4	203.8	214.1	262.2	259.5	259.5	266.1	267.4	270.0	275.2
70°	189.5	192.1	192.1	205.1	257.0	247.9	249.2	254.4	257.0	259.5	260.9
72.5°	175.2	176.5	179.1	196.0	249.2	236.2	237.5	241.4	242.6	246.6	247.9
75°	159.6	160.9	164.8	186.9	244.0	224.5	221.9	224.5	227.1	229.8	228.4
77.5°	141.5	144.0	147.9	181.7	227.1	221.9	202.4	205.1	207.7	207.7	206.3
80°	119.4	123.3	129.8	173.9	192.1	214.1	180.3	181.7	183.0	183.0	180.3
82.5°	89.5	97.4	106.4	144.0	150.6	183.0	155.7	158.4	154.5	151.8	150.6
85°	58.4	64.9	77.8	99.9	110.3	144.0	128.5	129.8	122.0	120.7	120.7
87.5°	23.3	24.7	35.1	50.6	66.2	89.5	92.2	94.7	88.3	88.3	90.8
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°	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3
2.5°	5561.2	5690.9	5840.1	5992.0	6116.6	6277.5	6433.2	6599.4	6683.8	6733.1	6872.0
5°	4508.7	4686.4	4898.0	5135.4	5332.7	5670.1	6033.6	6438.5	6633.1	6825.2	7188.6
7.5°	3225.1	3399.0	3645.6	3953.2	4233.5	4678.7	5157.5	5705.2	5975.2	6286.6	6882.3
10°	2394.4	2578.8	2802.0	3062.8	3339.3	3802.6	4339.9	4955.1	5252.2	5603.9	6281.4
12.5°	1941.6	2157.0	2388.0	2621.6	2859.0	3170.5	3733.8	4417.7	4737.0	5091.3	5770.1
15°	1514.6	1745.6	1994.8	2249.2	2485.4	2833.2	3408.1	4216.6	4581.3	4923.9	5479.3
17.5°	1072.0	1290.0	1570.3	1879.3	2221.8	2633.3	3338.0	4304.9	4747.4	5105.6	5478.1
20°	730.7	881.2	1161.6	1527.6	1950.7	2472.4	3364.0	4615.0	5167.9	5561.2	5702.6
22.5°	584.0	655.4	844.9	1217.3	1717.0	2355.5	3470.4	5040.7	5771.4	6250.2	6111.4
25°	530.8	571.0	669.6	961.7	1509.4	2277.7	3678.0	5602.7	6447.6	6932.9	6603.2
27.5°	498.4	533.4	597.0	790.3	1330.2	2227.1	3941.4	6264.6	7209.3	7607.8	7116.0
30°	477.6	512.6	571.0	709.9	1195.3	2151.8	4172.5	6869.3	7818.0	8076.3	7392.4
32.5°	437.4	464.6	512.6	636.0	1094.0	2063.5	4372.3	7410.6	8393.0	8478.6	7724.6
35°	395.9	424.4	472.4	576.2	1034.4	1994.8	4477.5	7890.7	8962.7	8881.0	8054.2
37.5°	380.2	403.7	447.7	533.4	1001.9	1949.3	4517.7	8363.1	9574.0	9326.1	8284.0
40°	369.9	390.7	429.5	504.8	992.9	1906.5	4508.7	8812.2	10167.1	9786.8	8464.3
42.5°	362.1	380.2	416.6	485.4	968.1	1866.3	4478.8	9200.2	10642.1	10184.0	8637.0
45°	355.6	375.1	411.4	495.7	922.7	1822.2	4460.6	9554.6	11006.7	10518.8	8868.0
47.5°	353.0	375.1	412.7	493.2	873.4	1772.8	4525.4	9947.8	11324.8	10800.4	9175.6
50°	349.1	373.8	441.3	469.8	806.0	1711.8	4744.9	10416.3	11658.3	11117.1	9574.0
52.5°	342.6	372.5	471.1	451.6	719.0	1627.4	5100.4	11078.1	12234.5	11733.6	10163.2
55°	334.8	375.1	450.3	423.1	626.9	1518.5	5456.0	11985.3	13169.0	12727.7	11009.4
57.5°	325.7	371.1	425.6	397.1	550.2	1380.9	5726.0	12729.0	13939.9	13753.0	12048.9
60°	319.3	380.2	382.9	381.6	500.9	1249.8	5752.0	12680.9	14161.7	14418.7	13066.4
62.5°	311.5	388.0	349.1	369.9	476.3	1127.8	5431.4	11895.8	13786.7	14333.1	13895.7
65°	301.1	338.7	330.9	359.5	476.3	1062.9	4685.1	10588.9	12749.8	13523.2	14346.1
67.5°	290.7	307.6	317.9	345.2	486.7	1001.9	3765.0	8931.6	11114.5	12216.4	13839.9
70°	276.4	290.7	303.7	332.3	481.5	959.1	2962.9	7158.7	9147.0	10408.5	12439.6
72.5°	263.4	273.8	286.8	312.8	481.5	939.6	2380.2	5615.7	6983.6	8046.4	10304.7
75°	244.0	253.1	264.7	293.3	472.4	859.2	1787.1	4499.6	5109.5	5775.3	8130.8
77.5°	224.5	231.0	240.1	268.6	425.6	717.7	1264.1	3484.7	3785.7	4154.3	6338.5
80°	199.9	205.1	211.5	240.1	353.0	556.8	822.9	2725.4	2830.5	3008.3	4169.9
82.5°	171.3	179.1	180.3	206.3	284.2	403.7	489.3	1867.6	1866.3	2127.1	2942.1
85°	140.1	144.0	146.7	162.2	210.2	268.6	321.8	1020.1	909.8	1274.5	2555.4
87.5°	105.2	101.3	105.2	109.0	138.9	158.4	172.6	188.2	112.9	231.0	1486.0
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°	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3	6102.3
2.5°	6945.9	7022.5	6977.0	6922.5	6786.3	6586.4	6433.2	6299.6
5°	7440.3	7581.8	7519.5	7317.1	6964.0	6563.0	6141.3	5884.3
7.5°	7378.0	7658.4	7633.8	7296.3	6790.1	6199.7	5606.6	5267.8
10°	6879.8	7273.0	7340.5	6995.2	6459.2	5798.6	5112.1	4729.2
12.5°	6337.3	6668.2	6805.8	6674.7	6169.8	5498.9	4799.3	4416.5
15°	5883.0	6050.4	6186.7	6271.0	5958.3	5392.4	4744.9	4350.3
17.5°	5546.8	5514.4	5628.6	5831.1	5844.0	5533.9	4991.4	4550.2
20°	5384.6	5130.3	5196.5	5480.7	5812.9	5893.4	5483.2	4961.5
22.5°	5375.5	4978.4	4991.4	5297.7	5902.4	6383.9	6097.1	5502.8
25°	5515.8	4961.5	4973.2	5278.2	6060.8	6878.4	6807.0	6114.0
27.5°	5754.5	5034.2	5026.5	5363.8	6272.3	7291.1	7523.4	6861.5
30°	6012.8	5139.3	5119.9	5501.4	6480.0	7545.5	8032.2	7424.8
32.5°	6334.6	5326.2	5258.8	5702.6	6685.1	7789.5	8467.0	7951.7
35°	6640.9	5600.0	5502.8	5990.7	6904.4	8060.8	8953.6	8534.5
37.5°	6953.7	6008.9	5954.4	6406.0	7214.6	8355.4	9510.4	9195.0
40°	7354.7	6590.3	6564.4	7009.5	7628.6	8677.2	10134.7	9882.8
42.5°	7786.9	7208.0	7186.0	7702.5	8142.5	9000.3	10669.4	10473.4
45°	8226.9	7956.9	7962.1	8442.3	8683.7	9305.4	11089.8	10945.8
47.5°	8746.0	8775.8	8961.5	9209.3	9210.5	9645.4	11462.3	11385.7
50°	9405.3	9764.8	10107.4	10146.3	9742.7	10094.4	11917.9	11889.2
52.5°	10151.6	10905.6	11304.0	11180.6	10261.8	10651.2	12591.4	12590.1
55°	11037.9	12098.2	12473.4	12263.0	10883.5	11376.6	13471.3	13414.3
57.5°	11956.8	13245.5	13547.9	13274.0	11660.8	12221.5	14353.8	14051.5
60°	12949.6	14233.1	14540.7	14129.3	12533.0	13063.8	14937.8	14230.6
62.5°	13599.8	14810.7	15031.3	14636.8	13314.3	13921.6	15126.1	14016.4
65°	13633.6	14426.5	14484.9	14344.7	13646.6	14666.7	14853.5	13381.7
67.5°	12706.9	12753.6	12830.2	12980.7	12936.6	14334.4	13802.3	11899.7
70°	10725.1	10102.2	10354.0	10499.4	10826.4	12749.8	11859.5	9677.8
72.5°	8200.9	7291.1	7576.7	7527.3	8207.3	10457.8	9073.1	7454.7
75°	5902.4	4972.0	4993.9	4996.6	5897.3	8347.6	6186.7	5293.8
77.5°	4011.5	3518.3	3591.1	3545.6	3946.6	6539.7	4454.1	3815.6
80°	2743.6	2730.6	2746.2	2639.7	2632.0	4226.9	3297.8	3043.4
82.5°	2035.0	1880.5	1858.5	1745.6	2016.8	3231.6	2503.5	2186.9
85°	1605.4	1040.9	904.6	1091.5	1746.9	2973.3	1526.2	1121.4
87.5°	680.1	408.8	247.9	490.6	970.8	2179.0	423.1	218.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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