

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: P196234

Luminaire Tested: **NAV-AF-04-D-UNV-SLR-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196234
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-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 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: 17809.6 lumens
Efficiency: N/A
Efficacy: 104.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G3

Input Watts (W): 171
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

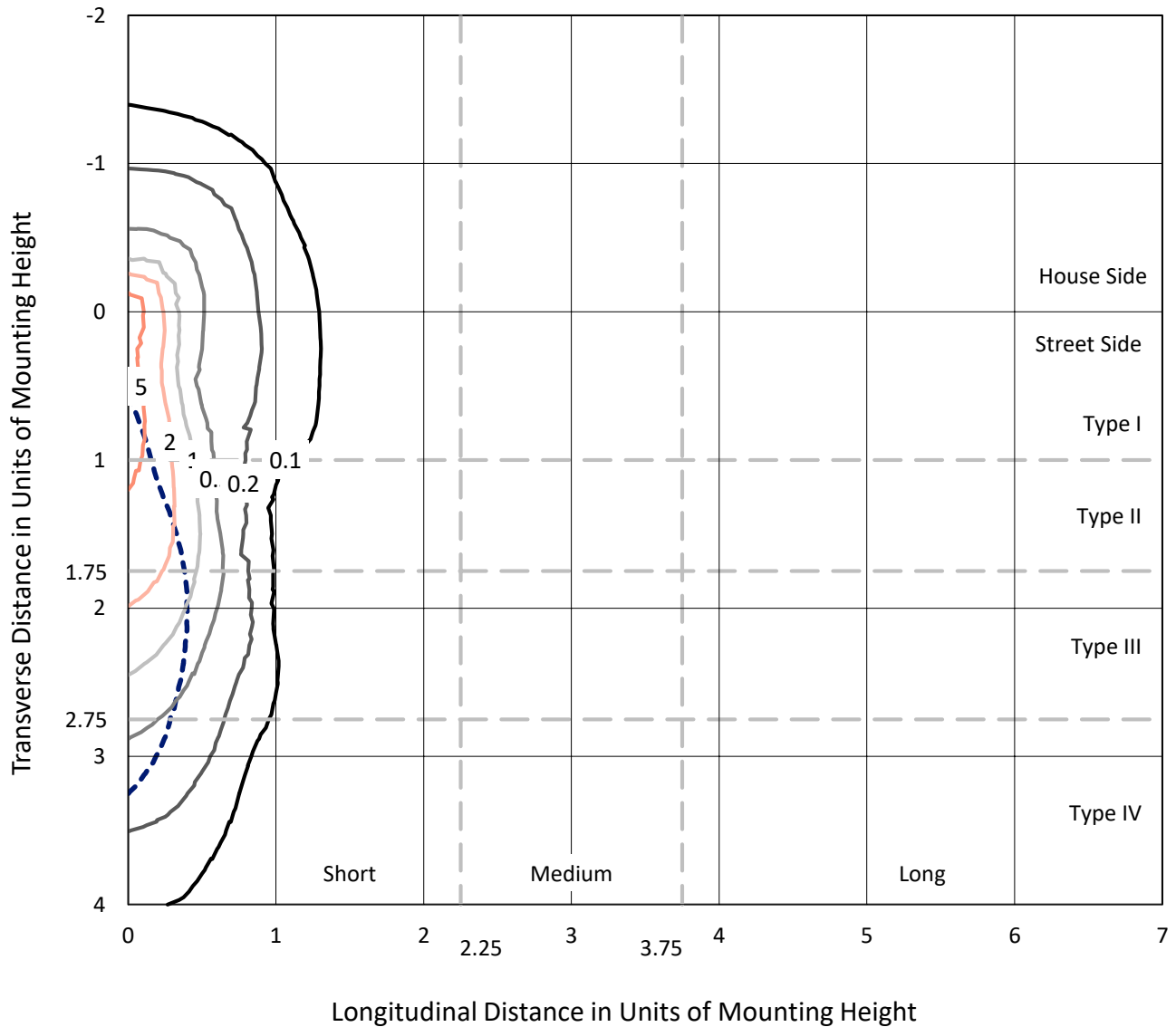


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Iso-Footcandle Lines of Horizontal Illumination

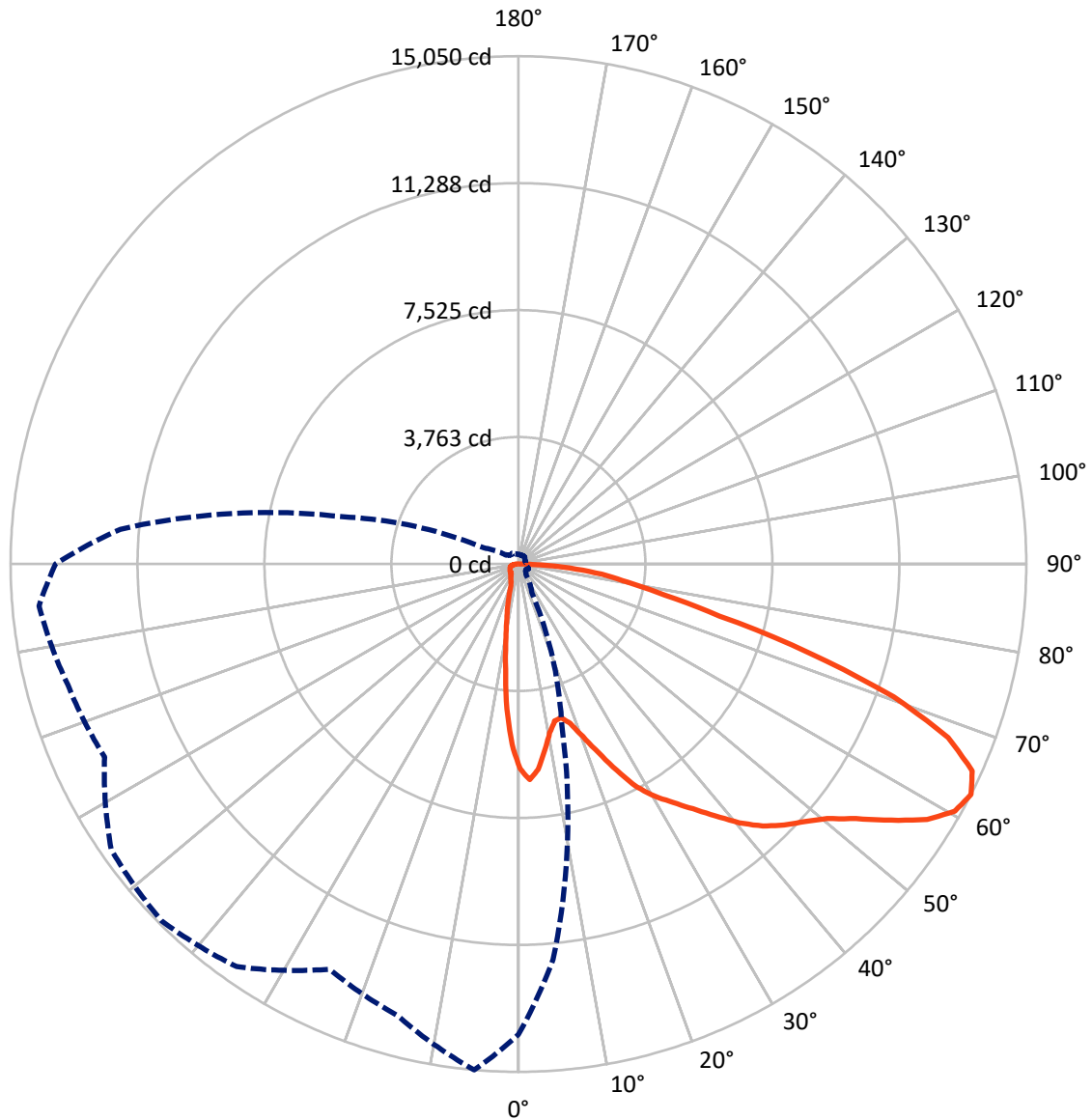
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.7 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	3155.0	0.0	3155.0
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	14654.6	0.0	14654.6
	% Fixture	82.3	0.0	82.3
Total	Lumens	17809.6	0.0	17809.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	441.6	2.5
10°-20°	806.5	4.5
20°-30°	1160.0	6.5
30°-40°	1776.6	10.0
40°-50°	2597.4	14.6
50°-60°	3779.3	21.2
60°-70°	4378.8	24.6
70°-80°	2282.6	12.8
80°-90°	586.8	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°	17809.6	100.0
0°-180°	17809.6	100.0



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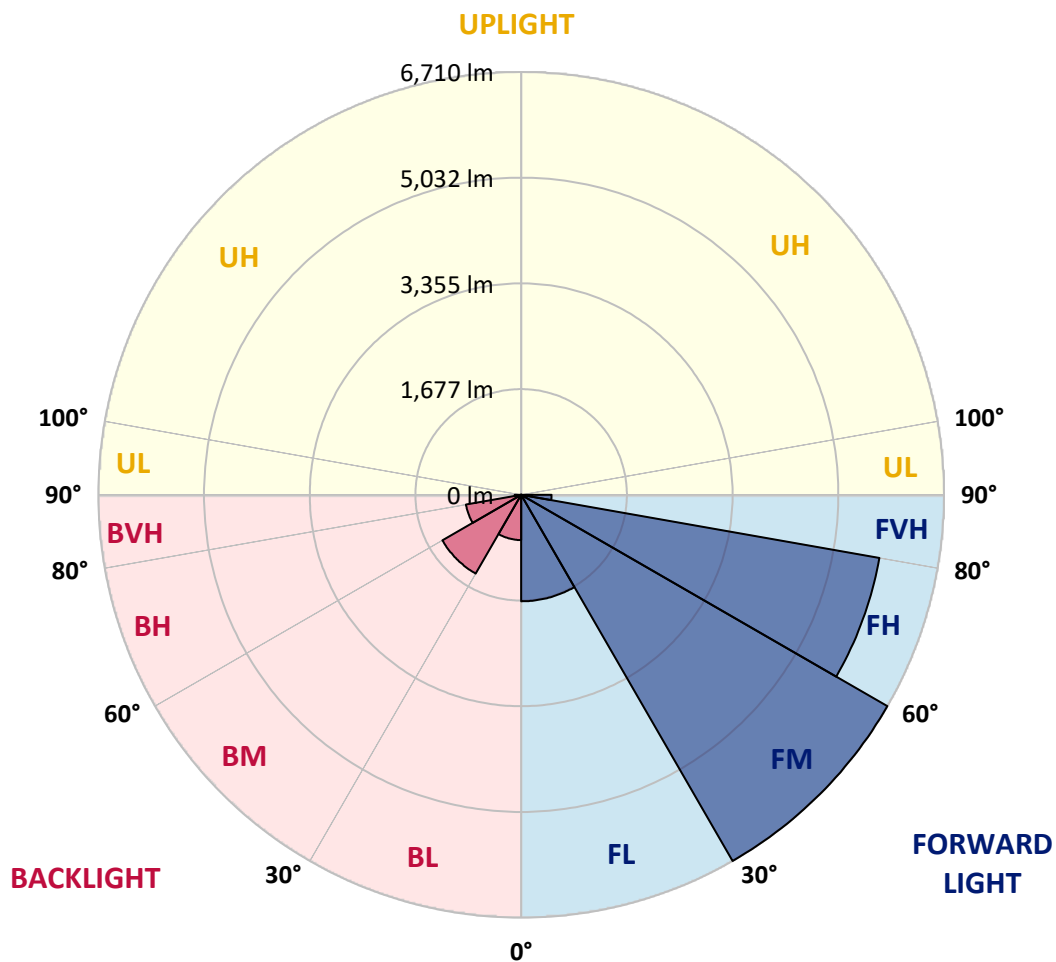
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1690.2	9.5			
FM	(30°-60°)	6709.8	37.7			
FH	(60°-80°)	5771.8	32.4			G3/7500
FVH	(80°-90°)	482.7	2.7			G3/500
BL	(0°-30°)	717.8	4.0	B2/1000		
BM	(30°-60°)	1443.5	8.1	B2/2500		
BH	(60°-80°)	889.6	5.0	B2/1000		G2/1000
BVH	(80°-90°)	104.0	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°	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6
2.5°	6267.9	6180.2	5977.4	5799.2	5577.0	5410.5	5207.7	5100.6	5021.9	4968.9	4926.2
5°	5854.7	5642.9	5255.5	4915.9	4549.2	4284.5	3974.6	3805.4	3700.8	3644.1	3618.2
7.5°	5241.3	4961.1	4460.1	4004.2	3545.9	3215.3	2980.3	2729.7	2596.8	2510.2	2481.9
10°	4705.5	4389.1	3791.3	3278.6	2924.7	2689.7	2488.3	2258.5	2088.0	1939.5	1884.0
12.5°	4394.3	4026.2	3344.4	2880.8	2583.9	2332.0	2119.0	1871.1	1691.6	1536.7	1477.2
15°	4328.4	3917.8	3157.2	2627.8	2263.6	1960.2	1704.5	1434.6	1259.0	1131.2	1089.9
17.5°	4527.3	4021.1	3078.5	2396.7	1957.6	1587.0	1271.9	982.6	836.8	767.0	750.2
20°	4936.6	4248.3	3041.0	2188.7	1660.6	1221.6	879.3	667.6	595.3	574.6	573.4
22.5°	5475.0	4617.6	3082.4	2018.3	1381.7	901.3	644.4	548.8	519.1	507.5	507.5
25°	6083.3	5117.4	3192.0	1887.9	1136.3	701.1	555.3	503.6	479.0	467.5	468.7
27.5°	6827.1	5725.6	3341.9	1767.8	960.8	614.7	519.1	475.2	450.6	439.1	440.4
30°	7387.4	6248.6	3471.0	1658.0	870.3	579.8	499.7	458.4	431.3	414.5	413.2
32.5°	7911.7	6709.5	3575.6	1579.2	818.7	517.8	451.9	420.9	397.7	378.4	374.5
35°	8491.5	7143.4	3624.6	1576.7	785.1	467.5	413.2	375.7	352.5	330.6	326.7
37.5°	9148.8	7674.2	3665.9	1592.1	767.0	435.2	395.2	359.0	339.6	317.6	312.5
40°	9833.1	8193.2	3698.3	1605.1	764.5	413.2	380.9	348.6	329.3	306.1	300.8
42.5°	10420.7	8652.9	3742.2	1599.9	746.3	409.4	371.8	339.6	321.5	298.3	291.8
45°	10890.7	9018.3	3810.6	1598.6	719.2	418.4	369.3	337.1	315.1	290.5	285.4
47.5°	11328.5	9430.3	3955.2	1593.5	689.6	415.8	383.5	334.4	312.5	288.0	284.1
50°	11829.5	9984.2	4201.9	1554.7	648.2	397.7	409.4	331.8	306.1	284.1	280.2
52.5°	12526.7	10795.2	4567.3	1485.0	591.4	378.4	413.2	330.6	295.7	276.3	271.2
55°	13346.7	11664.2	4961.1	1384.3	516.5	344.7	392.5	325.4	285.4	264.7	257.0
57.5°	13980.8	12306.0	5236.2	1239.6	442.9	325.4	350.0	313.7	272.4	251.9	245.3
60°	14159.0	12334.4	5285.3	1066.6	405.5	312.5	300.8	342.2	262.2	240.2	233.7
62.5°	13945.9	11770.1	4965.0	945.2	392.5	299.6	273.7	326.7	251.9	229.9	223.4
65°	13314.5	10817.1	4248.3	927.1	405.5	288.0	259.5	260.9	241.5	219.5	213.1
67.5°	11839.8	9414.8	3347.0	938.8	420.9	276.3	249.2	237.6	229.9	210.5	202.7
70°	9629.1	7579.9	2636.9	959.4	435.2	260.9	236.3	222.1	215.6	195.0	191.1
72.5°	7417.2	6066.5	2080.3	945.2	449.4	245.3	218.2	206.6	198.9	179.5	175.6
75°	5267.2	4820.3	1528.9	810.9	411.9	223.4	197.5	187.2	180.8	160.1	158.9
77.5°	3796.4	3610.4	1064.0	609.5	325.4	196.3	174.3	165.3	161.4	138.2	138.2
80°	3028.0	2747.9	636.6	397.7	237.6	162.8	145.9	142.1	138.2	114.9	116.2
82.5°	2175.8	1906.0	406.7	248.0	174.3	124.0	113.6	112.3	105.9	85.2	85.2
85°	1115.6	973.6	260.9	166.5	122.7	80.1	74.9	72.3	68.4	53.0	53.0
87.5°	217.0	298.3	144.6	81.3	59.4	28.4	28.4	24.6	28.4	19.3	20.7
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°	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6
2.5°	5007.7	4981.8	4963.7	4954.7	5085.1	5139.3	5201.3	5290.4	5351.1	5325.3	5407.9
5°	3739.6	3757.6	3798.9	3863.6	4045.6	4132.1	4187.7	4261.2	4314.2	4261.2	4349.1
7.5°	2556.8	2583.9	2671.6	2804.7	3024.1	3121.0	3140.5	3141.7	3130.1	3043.6	3102.9
10°	1882.7	1828.4	1847.9	1943.4	2139.7	2226.1	2235.2	2211.9	2208.1	2173.3	2240.4
12.5°	1459.1	1384.3	1340.4	1355.8	1503.0	1574.1	1585.7	1598.6	1651.6	1668.3	1751.0
15°	1088.5	1049.9	1017.5	1003.3	1100.2	1155.7	1162.2	1193.2	1248.7	1264.2	1335.2
17.5°	765.8	776.1	792.9	799.3	869.0	905.2	894.9	894.9	903.9	900.0	940.1
20°	584.9	605.6	637.9	668.9	732.1	752.8	727.0	694.7	674.0	663.7	672.8
22.5°	516.5	530.7	551.4	591.4	644.4	654.7	621.1	595.3	575.9	565.6	566.9
25°	479.0	493.3	510.0	542.4	587.6	592.7	561.7	544.9	529.5	519.1	516.5
27.5°	446.8	455.8	466.2	486.8	533.3	535.9	515.3	504.9	494.6	486.8	484.3
30°	417.1	420.9	424.8	445.5	480.4	484.3	473.9	468.7	464.8	459.7	459.7
32.5°	378.4	383.5	389.9	408.1	441.6	446.8	440.4	436.5	430.0	427.4	423.5
35°	331.8	344.7	359.0	380.9	417.1	419.7	411.9	400.3	384.8	380.9	378.4
37.5°	312.5	315.1	333.2	359.0	396.4	399.1	388.7	369.3	357.7	359.0	361.5
40°	299.6	303.4	313.7	339.6	377.1	380.9	371.8	357.7	346.1	347.4	351.3
42.5°	289.3	294.4	300.8	317.6	355.1	362.8	360.3	347.4	335.7	338.3	343.5
45°	284.1	288.0	288.0	299.6	335.7	347.4	348.6	338.3	329.3	331.8	338.3
47.5°	281.5	281.5	277.6	286.6	322.8	334.4	337.1	331.8	326.7	329.3	335.7
50°	277.6	272.4	268.6	276.3	312.5	322.8	325.4	321.5	324.1	329.3	333.2
52.5°	266.0	260.9	260.9	266.0	302.2	312.5	313.7	311.2	316.4	322.8	329.3
55°	251.9	251.9	253.1	258.3	297.0	304.7	303.4	300.8	306.1	313.7	320.3
57.5°	238.9	237.6	244.1	250.5	290.5	295.7	293.1	293.1	297.0	303.4	310.0
60°	231.2	224.6	229.9	240.2	284.1	289.3	285.4	284.1	290.5	295.7	300.8
62.5°	223.4	217.0	220.9	231.2	275.1	279.0	276.3	276.3	282.7	286.6	291.8
65°	211.8	209.2	211.8	222.1	267.3	268.6	268.6	269.9	275.1	277.6	282.7
67.5°	201.4	201.4	202.7	213.1	260.9	258.3	258.3	264.7	266.0	268.6	273.7
70°	188.5	191.1	191.1	204.0	255.6	246.6	248.0	253.1	255.6	258.3	259.5
72.5°	174.3	175.6	178.2	195.0	248.0	235.0	236.3	240.2	241.5	245.3	246.6
75°	158.9	160.1	164.0	186.0	242.7	223.4	220.9	223.4	226.0	228.5	227.3
77.5°	140.8	143.3	147.2	180.8	226.0	220.9	201.4	204.0	206.6	206.6	205.3
80°	118.8	122.7	129.1	173.1	191.1	213.1	179.5	180.8	182.1	182.1	179.5
82.5°	89.1	96.9	105.9	143.3	149.8	182.1	155.0	157.5	153.6	151.1	149.8
85°	58.1	64.5	77.4	99.4	109.8	143.3	127.9	129.1	121.4	120.1	120.1
87.5°	23.2	24.6	34.9	50.3	65.9	89.1	91.7	94.2	87.8	87.8	90.4
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°	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6
2.5°	5533.1	5662.3	5810.8	5961.9	6085.8	6245.9	6400.9	6566.2	6650.1	6699.2	6837.4
5°	4485.9	4662.8	4873.3	5109.6	5305.9	5641.7	6003.2	6406.1	6599.8	6790.9	7152.5
7.5°	3208.9	3381.9	3627.2	3933.2	4212.2	4655.1	5131.5	5676.5	5945.1	6255.0	6847.7
10°	2382.5	2565.8	2787.8	3047.5	3322.4	3783.5	4318.1	4930.1	5225.8	5575.8	6249.8
12.5°	1931.7	2146.2	2376.0	2608.4	2844.7	3154.6	3715.1	4395.5	4713.2	5065.8	5741.1
15°	1506.9	1736.8	1984.7	2237.8	2472.8	2818.8	3390.9	4195.4	4558.3	4899.1	5451.8
17.5°	1066.6	1283.5	1562.5	1869.7	2210.7	2620.0	3321.2	4283.2	4723.6	5080.0	5450.5
20°	727.0	876.8	1155.7	1519.8	1940.8	2459.9	3347.0	4591.8	5141.9	5533.1	5673.9
22.5°	581.0	652.1	840.7	1211.3	1708.3	2343.7	3452.9	5015.3	5742.3	6218.8	6080.7
25°	528.1	568.1	666.4	956.9	1501.8	2266.2	3659.5	5574.5	6415.1	6898.1	6570.1
27.5°	495.8	530.7	594.0	786.4	1323.6	2215.8	3921.7	6233.0	7173.1	7569.5	7080.1
30°	475.2	510.0	568.1	706.3	1189.3	2140.9	4151.5	6834.7	7778.7	8035.7	7355.2
32.5°	435.2	462.3	510.0	632.7	1088.5	2053.2	4350.3	7373.2	8350.8	8436.0	7685.7
35°	393.8	422.3	470.0	573.4	1029.2	1984.7	4455.0	7851.0	8917.7	8836.2	8013.7
37.5°	378.4	401.6	445.5	530.7	996.9	1939.5	4494.9	8321.1	9525.8	9279.2	8242.3
40°	368.1	388.7	427.4	502.3	987.9	1896.9	4485.9	8767.8	10116.0	9737.6	8421.7
42.5°	360.3	378.4	414.5	482.9	963.3	1856.9	4456.3	9154.0	10588.6	10132.7	8593.5
45°	353.8	373.2	409.4	493.3	918.1	1813.0	4438.2	9506.5	10951.4	10465.9	8823.4
47.5°	351.3	373.2	410.6	490.7	869.0	1763.9	4502.7	9897.8	11267.8	10746.1	9129.4
50°	347.4	371.8	439.1	467.5	801.9	1703.2	4720.9	10363.9	11599.6	11061.2	9525.8
52.5°	340.9	370.6	468.7	449.4	715.3	1619.2	5074.8	11022.4	12173.0	11674.5	10112.1
55°	333.2	373.2	448.1	420.9	623.7	1510.8	5428.6	11925.0	13102.7	12663.6	10954.0
57.5°	324.1	369.3	423.5	395.2	547.5	1373.9	5697.1	12664.9	13869.7	13683.8	11988.4
60°	317.6	378.4	380.9	379.6	498.5	1243.5	5723.0	12617.2	14090.5	14346.2	13000.7
62.5°	310.0	386.1	347.4	368.1	473.9	1122.2	5404.0	11836.0	13717.4	14261.0	13825.8
65°	299.6	337.1	329.3	357.7	473.9	1057.5	4661.6	10535.6	12685.6	13455.2	14273.9
67.5°	289.3	306.1	316.4	343.5	484.3	996.9	3746.0	8886.7	11058.6	12154.9	13770.4
70°	275.1	289.3	302.2	330.6	479.0	954.3	2948.0	7122.7	9101.0	10356.1	12377.0
72.5°	262.2	272.4	285.4	311.2	479.0	934.9	2368.2	5587.4	6948.4	8006.0	10252.8
75°	242.7	251.9	263.4	291.8	470.0	854.9	1778.1	4476.9	5083.8	5746.2	8089.9
77.5°	223.4	229.9	238.9	267.3	423.5	714.1	1257.7	3467.1	3766.7	4133.4	6306.7
80°	198.9	204.0	210.5	238.9	351.3	553.9	818.7	2711.7	2816.3	2993.3	4148.9
82.5°	170.4	178.2	179.5	205.3	282.7	401.6	486.8	1858.2	1856.9	2116.4	2927.4
85°	139.4	143.3	145.9	161.4	209.2	267.3	320.3	1015.0	905.2	1268.0	2542.5
87.5°	104.5	100.8	104.5	108.4	138.2	157.5	171.8	187.2	112.3	229.9	1478.6
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°	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6	6071.6
2.5°	6911.0	6987.2	6941.9	6887.7	6752.2	6553.3	6400.9	6267.9
5°	7403.0	7543.8	7481.8	7280.2	6929.1	6530.0	6110.4	5854.7
7.5°	7341.0	7619.9	7595.4	7259.6	6756.0	6168.5	5578.4	5241.3
10°	6845.1	7236.4	7303.6	6960.1	6426.8	5769.4	5086.4	4705.5
12.5°	6305.4	6634.7	6771.5	6641.1	6138.8	5471.2	4775.1	4394.3
15°	5853.4	6020.0	6155.6	6239.5	5928.3	5365.3	4720.9	4328.4
17.5°	5518.9	5486.7	5600.3	5801.8	5814.7	5506.0	4966.3	4527.3
20°	5357.6	5104.4	5170.3	5453.1	5783.7	5863.8	5455.7	4936.6
22.5°	5348.5	4953.3	4966.3	5271.1	5872.8	6351.8	6066.5	5475.0
25°	5487.9	4936.6	4948.2	5251.6	6030.3	6843.8	6772.9	6083.3
27.5°	5725.6	5008.9	5001.2	5336.9	6240.8	7254.5	7485.6	6827.1
30°	5982.5	5113.5	5094.1	5473.8	6447.5	7507.5	7991.8	7387.4
32.5°	6302.8	5299.5	5232.3	5673.9	6651.4	7750.3	8424.4	7911.7
35°	6607.5	5571.9	5475.0	5960.6	6869.6	8020.2	8908.6	8491.5
37.5°	6918.7	5978.6	5924.4	6373.8	7178.3	8313.3	9462.6	9148.8
40°	7317.8	6557.1	6531.3	6974.3	7590.2	8633.6	10083.6	9833.1
42.5°	7747.7	7171.8	7149.9	7663.8	8101.6	8955.1	10615.7	10420.7
45°	8185.4	7916.9	7922.0	8399.9	8640.0	9258.5	11034.1	10890.7
47.5°	8702.0	8731.7	8916.3	9163.0	9164.3	9596.8	11404.7	11328.5
50°	9358.0	9715.7	10056.5	10095.3	9693.7	10043.6	11857.9	11829.5
52.5°	10100.4	10850.7	11247.1	11124.5	10210.2	10597.6	12528.1	12526.7
55°	10982.4	12037.4	12410.5	12201.3	10828.8	11319.5	13403.6	13346.7
57.5°	11896.6	13178.9	13479.7	13207.3	11602.2	12160.0	14281.6	13980.8
60°	12884.5	14161.5	14467.6	14058.2	12470.0	12998.1	14862.8	14159.0
62.5°	13531.4	14736.2	14955.7	14563.1	13247.3	13851.7	15050.0	13945.9
65°	13564.9	14353.9	14412.0	14272.6	13577.9	14592.8	14778.8	13314.5
67.5°	12643.0	12689.5	12765.7	12915.5	12871.6	14262.3	13732.8	11839.8
70°	10671.2	10051.4	10301.9	10446.5	10772.0	12685.6	11799.8	9629.1
72.5°	8159.7	7254.5	7538.5	7489.4	8166.1	10405.3	9027.4	7417.2
75°	5872.8	4946.9	4968.9	4971.4	5867.6	8305.5	6155.6	5267.2
77.5°	3991.3	3500.6	3573.0	3527.9	3926.8	6506.8	4431.7	3796.4
80°	2729.7	2716.9	2732.4	2626.5	2618.8	4205.8	3281.1	3028.0
82.5°	2024.7	1871.1	1849.1	1736.8	2006.6	3215.3	2490.9	2175.8
85°	1597.3	1035.6	900.0	1086.0	1738.1	2958.4	1518.6	1115.6
87.5°	676.7	406.7	246.6	488.2	965.9	2168.0	420.9	217.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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