

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: P195759

Luminaire Tested: **NAV-AF-03-D-UNV-SLR-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195759
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-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 5000K, 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: 15999 lumens
Efficiency: N/A
Efficacy: 96.4 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

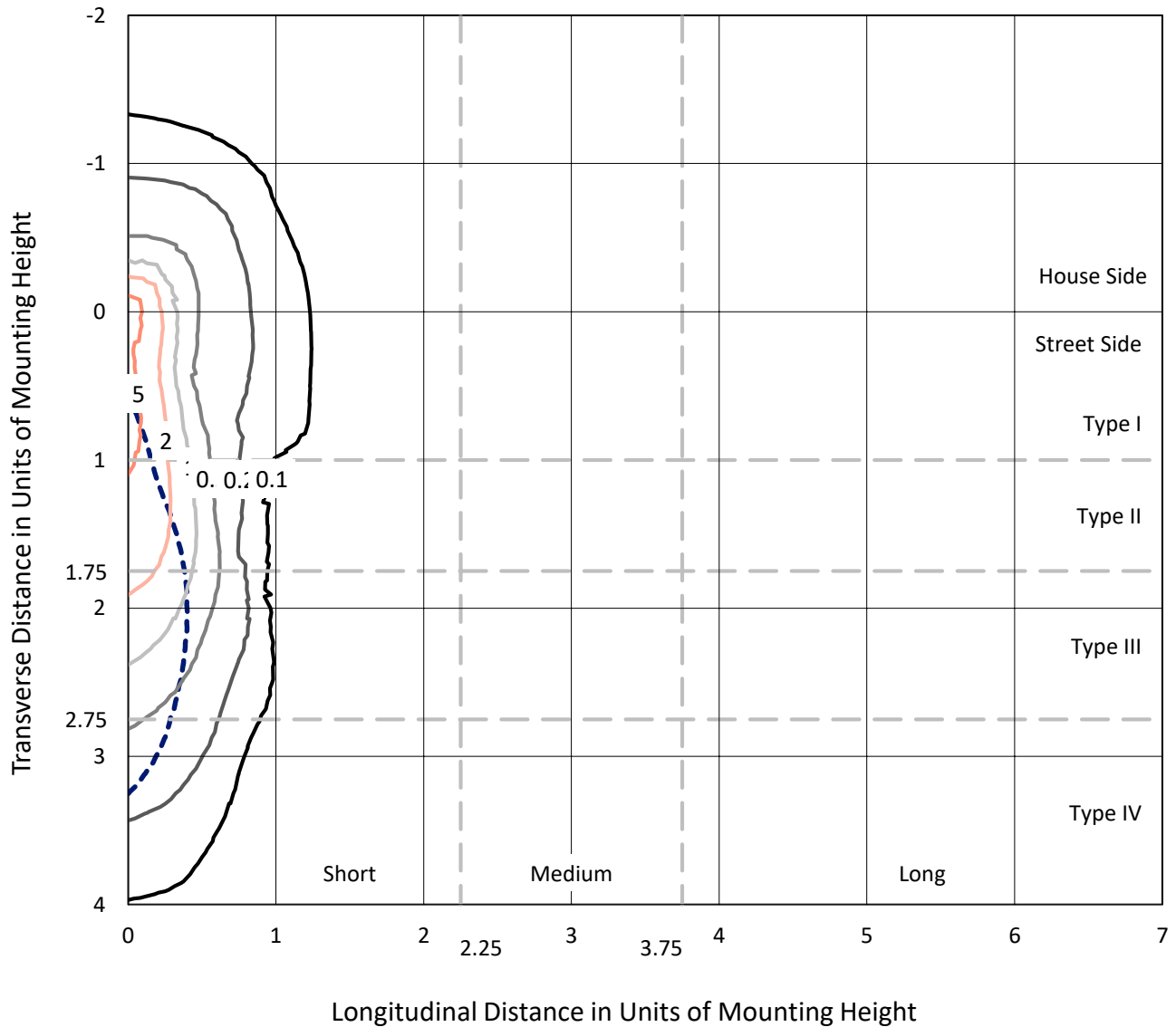
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

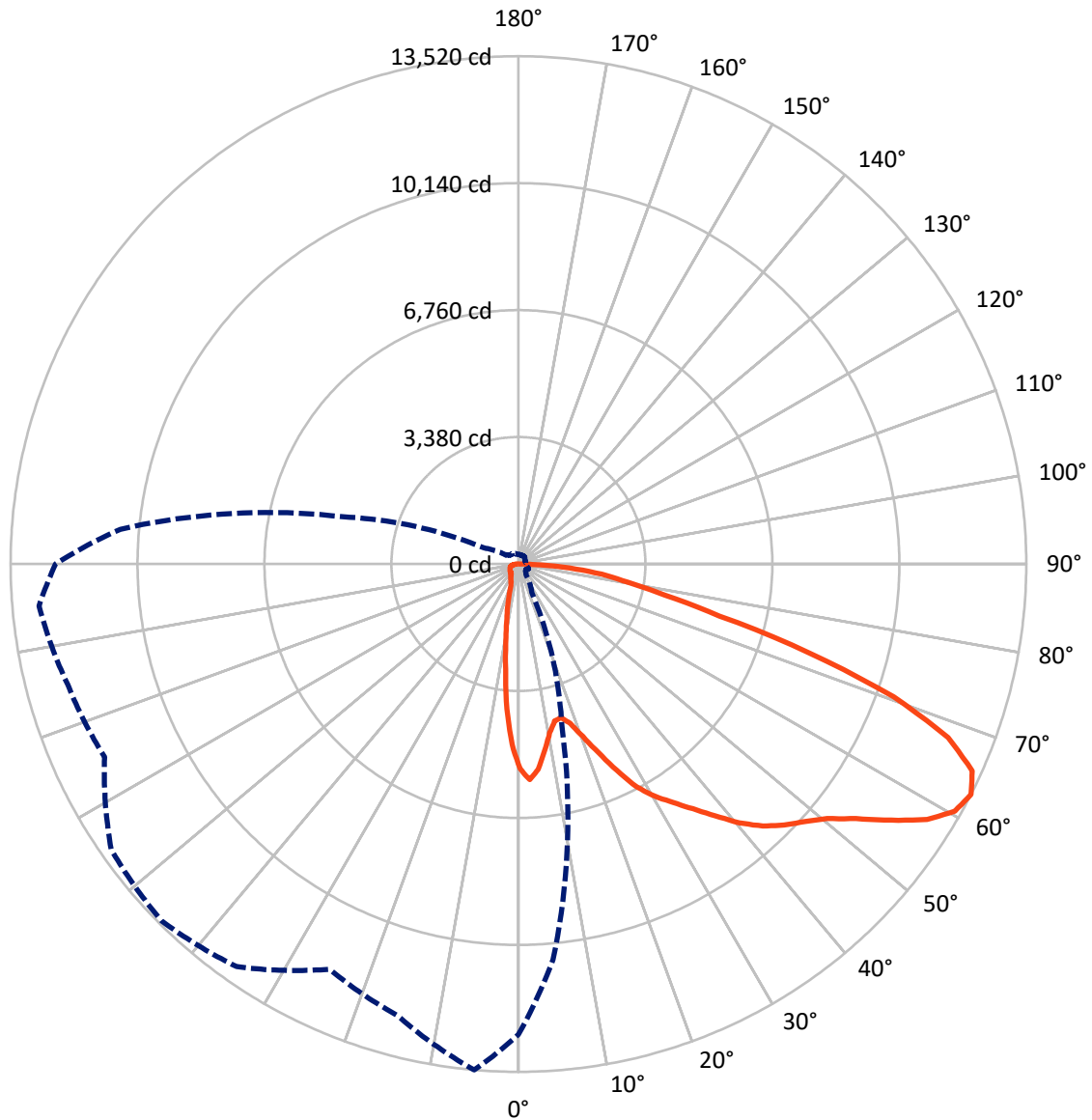
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.7 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	2834.2	0.0	2834.2
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	13164.8	0.0	13164.8
	% Fixture	82.3	0.0	82.3
Total	Lumens	15999.0	0.0	15999.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	396.7	2.5
10°-20°	724.5	4.5
20°-30°	1042.0	6.5
30°-40°	1596.0	10.0
40°-50°	2333.4	14.6
50°-60°	3395.1	21.2
60°-70°	3933.7	24.6
70°-80°	2050.6	12.8
80°-90°	527.1	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°	15999.0	100.0
0°-180°	15999.0	100.0



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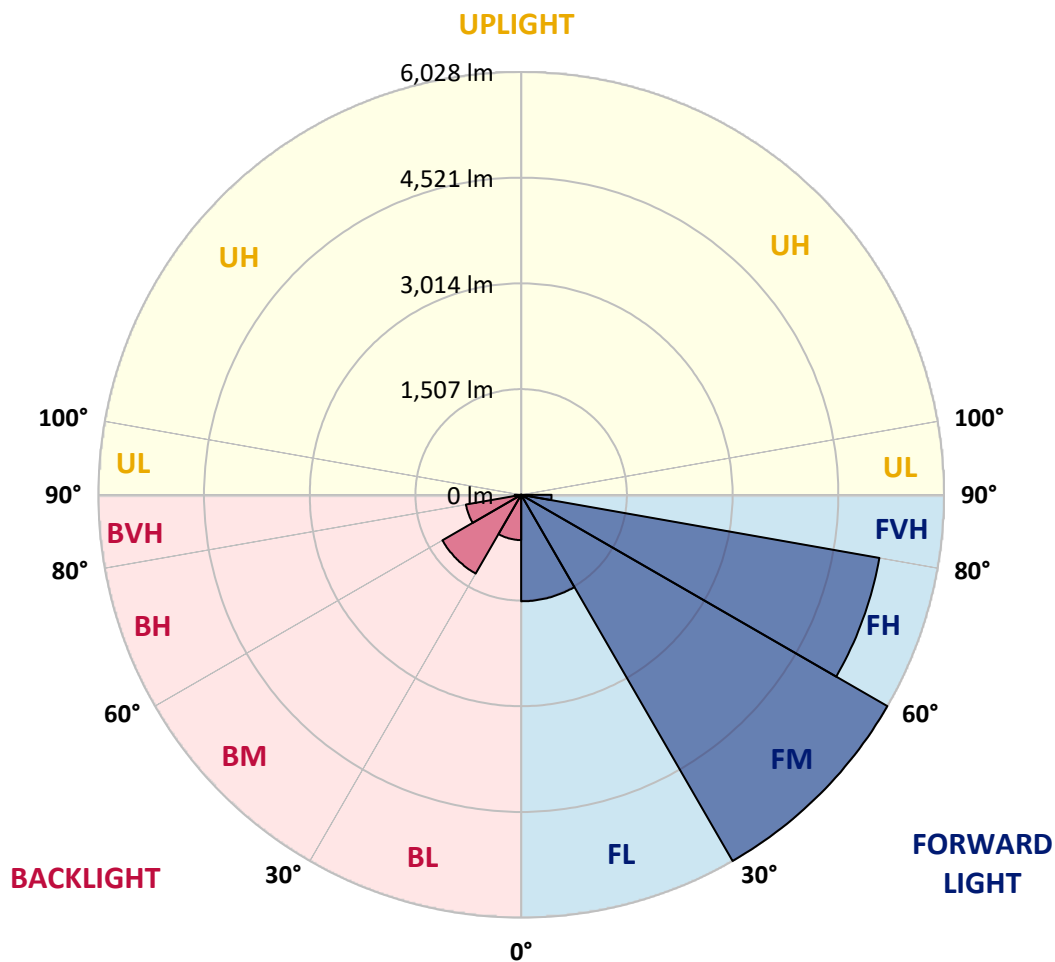
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1518.4	9.5			
FM	(30°-60°)	6027.7	37.7			
FH	(60°-80°)	5185.0	32.4			G3/7500
FVH	(80°-90°)	433.6	2.7			G3/500
BL	(0°-30°)	644.8	4.0	B2/1000		
BM	(30°-60°)	1296.8	8.1	B2/2500		
BH	(60°-80°)	799.2	5.0	B2/1000		G2/1000
BVH	(80°-90°)	93.5	0.6			G1/100
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°	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4
2.5°	5630.7	5551.8	5369.7	5209.6	5010.1	4860.5	4678.3	4582.0	4511.3	4463.7	4425.4
5°	5259.5	5069.3	4721.3	4416.2	4086.7	3848.9	3570.5	3418.6	3324.6	3273.6	3250.4
7.5°	4708.5	4456.8	4006.7	3597.2	3185.4	2888.4	2677.3	2452.3	2332.8	2255.1	2229.5
10°	4227.1	3942.9	3405.8	2945.3	2627.4	2416.3	2235.3	2028.9	1875.7	1742.3	1692.5
12.5°	3947.5	3616.9	3004.4	2588.0	2321.2	2095.0	1903.6	1680.9	1519.6	1380.4	1327.1
15°	3888.4	3519.5	2836.2	2360.6	2033.5	1760.9	1531.2	1288.8	1131.0	1016.2	979.1
17.5°	4067.0	3612.3	2765.5	2153.0	1758.6	1425.7	1142.6	882.8	751.7	689.0	674.0
20°	4434.7	3816.4	2731.8	1966.2	1491.8	1097.4	790.0	599.7	534.8	516.2	515.0
22.5°	4918.5	4148.2	2768.9	1813.1	1241.2	809.7	578.8	493.0	466.3	455.9	455.9
25°	5464.8	4597.1	2867.6	1695.9	1020.8	629.9	498.8	452.4	430.4	419.9	421.1
27.5°	6133.0	5143.5	3002.1	1588.1	863.0	552.2	466.3	426.9	404.8	394.4	395.6
30°	6636.4	5613.3	3118.1	1489.5	781.8	520.8	448.9	411.8	387.4	372.4	371.2
32.5°	7107.4	6027.4	3212.1	1418.7	735.4	465.2	406.0	378.2	357.3	339.9	336.4
35°	7628.2	6417.2	3256.2	1416.4	705.3	419.9	371.2	337.6	316.7	297.0	293.5
37.5°	8218.7	6894.0	3293.3	1430.3	689.0	390.9	355.0	322.5	305.1	285.4	280.7
40°	8833.5	7360.3	3322.3	1441.9	686.7	371.2	342.2	313.2	295.8	274.9	270.3
42.5°	9361.3	7773.2	3361.7	1437.3	670.5	367.7	334.1	305.1	288.8	268.0	262.2
45°	9783.5	8101.5	3423.2	1436.1	646.1	375.8	331.8	302.8	283.0	261.0	256.4
47.5°	10176.8	8471.6	3553.1	1431.5	619.4	373.5	344.5	300.4	280.7	258.7	255.2
50°	10626.9	8969.2	3774.7	1396.7	582.3	357.3	367.7	298.1	274.9	255.2	251.7
52.5°	11253.3	9697.7	4103.0	1334.0	531.3	339.9	371.2	297.0	265.6	248.2	243.6
55°	11989.9	10478.4	4456.8	1243.5	464.0	309.7	352.6	292.3	256.4	237.8	230.8
57.5°	12559.5	11054.9	4703.8	1113.6	397.9	292.3	314.4	281.9	244.8	226.2	220.4
60°	12719.5	11080.4	4747.9	958.2	364.2	280.7	270.3	307.4	235.5	215.8	210.0
62.5°	12528.1	10573.5	4460.2	849.1	352.6	269.1	245.9	293.5	226.2	206.5	200.7
65°	11960.9	9717.4	3816.4	832.9	364.2	258.7	233.2	234.3	216.9	197.2	191.4
67.5°	10636.2	8457.6	3006.8	843.3	378.2	248.2	223.9	213.4	206.5	189.1	182.1
70°	8650.2	6809.3	2368.7	861.9	390.9	234.3	212.3	199.5	193.7	175.2	171.7
72.5°	6663.1	5449.7	1868.8	849.1	403.7	220.4	196.0	185.6	178.6	161.2	157.8
75°	4731.7	4330.3	1373.5	728.5	370.0	200.7	177.5	168.2	162.4	143.8	142.7
77.5°	3410.4	3243.4	955.9	547.5	292.3	176.3	156.6	148.5	145.0	124.1	124.1
80°	2720.2	2468.5	571.9	357.3	213.4	146.2	131.1	127.6	124.1	103.2	104.4
82.5°	1954.6	1712.2	365.4	222.7	156.6	111.4	102.1	100.9	95.1	76.6	76.6
85°	1002.3	874.6	234.3	149.6	110.2	71.9	67.3	65.0	61.5	47.6	47.6
87.5°	194.9	268.0	129.9	73.1	53.4	25.5	25.5	22.0	25.5	17.4	18.6
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4
2.5°	4498.5	4475.3	4459.1	4451.0	4568.1	4616.8	4672.5	4752.6	4807.1	4783.9	4858.1
5°	3359.4	3375.6	3412.8	3470.8	3634.3	3712.0	3761.9	3828.0	3875.6	3828.0	3906.9
7.5°	2296.8	2321.2	2400.1	2519.5	2716.7	2803.7	2821.1	2822.3	2811.9	2734.1	2787.5
10°	1691.3	1642.6	1660.0	1745.8	1922.1	1999.9	2008.0	1987.1	1983.6	1952.3	2012.6
12.5°	1310.8	1243.5	1204.1	1218.0	1350.3	1414.1	1424.5	1436.1	1483.7	1498.7	1573.0
15°	977.9	943.1	914.1	901.3	988.3	1038.2	1044.0	1071.9	1121.7	1135.7	1199.5
17.5°	687.9	697.2	712.2	718.0	780.7	813.2	803.9	803.9	812.0	808.5	844.5
20°	525.5	544.0	573.0	600.9	657.7	676.3	653.1	624.1	605.5	596.2	604.4
22.5°	464.0	476.8	495.3	531.3	578.8	588.1	558.0	534.8	517.4	508.1	509.2
25°	430.4	443.1	458.2	487.2	527.8	532.4	504.6	489.5	475.6	466.3	464.0
27.5°	401.4	409.5	418.8	437.3	479.1	481.4	462.8	453.6	444.3	437.3	435.0
30°	374.7	378.2	381.6	400.2	431.5	435.0	425.7	421.1	417.6	413.0	413.0
32.5°	339.9	344.5	350.3	366.6	396.7	401.4	395.6	392.1	386.3	384.0	380.5
35°	298.1	309.7	322.5	342.2	374.7	377.0	370.0	359.6	345.7	342.2	339.9
37.5°	280.7	283.0	299.3	322.5	356.1	358.4	349.2	331.8	321.3	322.5	324.8
40°	269.1	272.6	281.9	305.1	338.7	342.2	334.1	321.3	310.9	312.0	315.5
42.5°	259.8	264.5	270.3	285.4	319.0	326.0	323.6	312.0	301.6	303.9	308.6
45°	255.2	258.7	258.7	269.1	301.6	312.0	313.2	303.9	295.8	298.1	303.9
47.5°	252.9	252.9	249.4	257.5	290.0	300.4	302.8	298.1	293.5	295.8	301.6
50°	249.4	244.8	241.3	248.2	280.7	290.0	292.3	288.8	291.2	295.8	299.3
52.5°	239.0	234.3	234.3	239.0	271.4	280.7	281.9	279.6	284.2	290.0	295.8
55°	226.2	226.2	227.4	232.0	266.8	273.8	272.6	270.3	274.9	281.9	287.7
57.5°	214.6	213.4	219.2	225.0	261.0	265.6	263.3	263.3	266.8	272.6	278.4
60°	207.6	201.8	206.5	215.8	255.2	259.8	256.4	255.2	261.0	265.6	270.3
62.5°	200.7	194.9	198.4	207.6	247.1	250.6	248.2	248.2	254.0	257.5	262.2
65°	190.2	187.9	190.2	199.5	240.1	241.3	241.3	242.4	247.1	249.4	254.0
67.5°	181.0	181.0	182.1	191.4	234.3	232.0	232.0	237.8	239.0	241.3	245.9
70°	169.4	171.7	171.7	183.3	229.7	221.6	222.7	227.4	229.7	232.0	233.2
72.5°	156.6	157.8	160.1	175.2	222.7	211.1	212.3	215.8	216.9	220.4	221.6
75°	142.7	143.8	147.3	167.0	218.1	200.7	198.4	200.7	203.0	205.3	204.2
77.5°	126.4	128.8	132.2	162.4	203.0	198.4	181.0	183.3	185.6	185.6	184.4
80°	106.7	110.2	116.0	155.4	171.7	191.4	161.2	162.4	163.6	163.6	161.2
82.5°	80.0	87.0	95.1	128.8	134.6	163.6	139.2	141.5	138.0	135.7	134.6
85°	52.2	58.0	69.6	89.3	98.6	128.8	114.8	116.0	109.0	107.9	107.9
87.5°	20.9	22.0	31.3	45.2	59.2	80.0	82.4	84.7	78.9	78.9	81.2
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4
2.5°	4970.7	5086.7	5220.1	5355.8	5467.1	5611.0	5750.2	5898.7	5974.1	6018.1	6142.3
5°	4029.9	4188.8	4377.9	4590.2	4766.5	5068.1	5392.9	5754.8	5928.8	6100.5	6425.3
7.5°	2882.6	3038.1	3258.5	3533.4	3784.0	4181.8	4609.9	5099.4	5340.7	5619.1	6151.5
10°	2140.2	2304.9	2504.5	2737.6	2984.7	3398.8	3879.1	4428.9	4694.6	5008.9	5614.5
12.5°	1735.4	1927.9	2134.4	2343.2	2555.5	2833.9	3337.4	3948.7	4234.0	4550.7	5157.4
15°	1353.7	1560.2	1782.9	2010.3	2221.4	2532.3	3046.2	3768.9	4094.8	4401.1	4897.6
17.5°	958.2	1153.1	1403.6	1679.7	1985.9	2353.7	2983.6	3847.8	4243.3	4563.5	4896.4
20°	653.1	787.6	1038.2	1365.3	1743.5	2209.8	3006.8	4125.0	4619.2	4970.7	5097.1
22.5°	522.0	585.8	755.2	1088.1	1534.7	2105.4	3101.9	4505.5	5158.6	5586.6	5462.5
25°	474.4	510.4	598.6	859.6	1349.1	2035.8	3287.5	5007.8	5762.9	6196.8	5902.1
27.5°	445.4	476.8	533.6	706.4	1189.0	1990.6	3523.0	5599.4	6443.9	6800.0	6360.3
30°	426.9	458.2	510.4	634.5	1068.4	1923.3	3729.4	6139.9	6987.9	7218.8	6607.4
32.5°	390.9	415.3	458.2	568.4	977.9	1844.4	3908.1	6623.7	7501.8	7578.4	6904.4
35°	353.8	379.3	422.2	515.0	924.5	1782.9	4002.0	7052.9	8011.0	7938.0	7199.0
37.5°	339.9	360.8	400.2	476.8	895.5	1742.3	4038.0	7475.1	8557.4	8335.8	7404.4
40°	330.6	349.2	384.0	451.2	887.4	1704.1	4029.9	7876.5	9087.5	8747.7	7565.6
42.5°	323.6	339.9	372.4	433.8	865.4	1668.1	4003.2	8223.3	9512.1	9102.6	7719.9
45°	317.8	335.2	367.7	443.1	824.8	1628.7	3987.0	8540.0	9838.1	9401.9	7926.4
47.5°	315.5	335.2	368.9	440.8	780.7	1584.6	4045.0	8891.5	10122.3	9653.6	8201.3
50°	312.0	334.1	394.4	419.9	720.4	1530.1	4241.0	9310.3	10420.4	9936.7	8557.4
52.5°	306.2	332.9	421.1	403.7	642.6	1454.7	4558.8	9901.9	10935.4	10487.7	9084.1
55°	299.3	335.2	402.5	378.2	560.3	1357.2	4876.7	10712.7	11770.6	11376.2	9840.4
57.5°	291.2	331.8	380.5	355.0	491.8	1234.3	5118.0	11377.4	12459.7	12292.7	10769.6
60°	285.4	339.9	342.2	341.0	447.8	1117.1	5141.2	11334.5	12658.1	12887.7	11679.0
62.5°	278.4	346.8	312.0	330.6	425.7	1008.1	4854.7	10632.7	12322.8	12811.2	12420.3
65°	269.1	302.8	295.8	321.3	425.7	950.1	4187.6	9464.5	11396.0	12087.3	12822.8
67.5°	259.8	274.9	284.2	308.6	435.0	895.5	3365.2	7983.2	9934.3	10919.2	12370.4
70°	247.1	259.8	271.4	297.0	430.4	857.2	2648.3	6398.6	8175.8	9303.3	11118.7
72.5°	235.5	244.8	256.4	279.6	430.4	839.8	2127.5	5019.4	6242.0	7192.1	9210.5
75°	218.1	226.2	236.6	262.2	422.2	767.9	1597.3	4021.8	4567.0	5162.1	7267.5
77.5°	200.7	206.5	214.6	240.1	380.5	641.5	1129.9	3114.6	3383.8	3713.2	5665.5
80°	178.6	183.3	189.1	214.6	315.5	497.6	735.4	2436.0	2530.0	2688.9	3727.1
82.5°	153.1	160.1	161.2	184.4	254.0	360.8	437.3	1669.3	1668.1	1901.3	2629.7
85°	125.3	128.8	131.1	145.0	187.9	240.1	287.7	911.8	813.2	1139.1	2284.1
87.5°	94.0	90.5	94.0	97.4	124.1	141.5	154.3	168.2	100.9	206.5	1328.2
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°	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4
2.5°	6208.4	6276.8	6236.2	6187.5	6065.7	5887.1	5750.2	5630.7
5°	6650.4	6776.8	6721.1	6540.1	6224.6	5866.2	5489.2	5259.5
7.5°	6594.7	6845.2	6823.2	6521.6	6069.2	5541.4	5011.3	4708.5
10°	6149.2	6500.7	6561.0	6252.5	5773.4	5182.9	4569.3	4227.1
12.5°	5664.3	5960.1	6083.1	5965.9	5514.7	4915.0	4289.7	3947.5
15°	5258.3	5408.0	5529.8	5605.2	5325.6	4819.9	4241.0	3888.4
17.5°	4957.9	4928.9	5031.0	5211.9	5223.5	4946.3	4461.4	4067.0
20°	4812.9	4585.5	4644.7	4898.7	5195.7	5267.6	4901.1	4434.7
22.5°	4804.8	4449.8	4461.4	4735.2	5275.7	5706.1	5449.7	4918.5
25°	4930.1	4434.7	4445.2	4717.8	5417.3	6148.1	6084.3	5464.8
27.5°	5143.5	4499.7	4492.7	4794.3	5606.3	6516.9	6724.6	6133.0
30°	5374.3	4593.6	4576.2	4917.3	5791.9	6744.3	7179.3	6636.4
32.5°	5662.0	4760.7	4700.4	5097.1	5975.2	6962.4	7567.9	7107.4
35°	5935.8	5005.5	4918.5	5354.6	6171.3	7204.8	8002.9	7628.2
37.5°	6215.3	5370.9	5322.1	5725.8	6448.5	7468.2	8500.6	8218.7
40°	6573.8	5890.5	5867.3	6265.2	6818.6	7755.8	9058.5	8833.5
42.5°	6960.1	6442.7	6423.0	6884.7	7277.9	8044.7	9536.5	9361.3
45°	7353.3	7112.0	7116.7	7545.9	7761.6	8317.3	9912.3	9783.5
47.5°	7817.3	7844.0	8009.9	8231.4	8232.6	8621.2	10245.2	10176.8
50°	8406.6	8727.9	9034.2	9069.0	8708.2	9022.6	10652.4	10626.9
52.5°	9073.6	9747.6	10103.7	9993.5	9172.2	9520.2	11254.4	11253.3
55°	9865.9	10813.6	11148.9	10961.0	9727.9	10168.7	12040.9	11989.9
57.5°	10687.2	11839.1	12109.4	11864.6	10422.7	10923.8	12829.7	12559.5
60°	11574.6	12721.9	12996.8	12629.1	11202.2	11676.7	13351.7	12719.5
62.5°	12155.8	13238.1	13435.3	13082.6	11900.6	12443.5	13519.9	12528.1
65°	12185.9	12894.7	12946.9	12821.6	12197.5	13109.3	13276.3	11960.9
67.5°	11357.7	11399.4	11467.9	11602.4	11563.0	12812.3	12336.7	10636.2
70°	9586.3	9029.5	9254.6	9384.5	9676.8	11396.0	10600.2	8650.2
72.5°	7330.1	6516.9	6772.2	6728.1	7335.9	9347.4	8109.6	6663.1
75°	5275.7	4444.0	4463.7	4466.0	5271.1	7461.2	5529.8	4731.7
77.5°	3585.6	3144.8	3209.8	3169.2	3527.6	5845.3	3981.2	3410.4
80°	2452.3	2440.7	2454.6	2359.5	2352.5	3778.2	2947.6	2720.2
82.5°	1818.9	1680.9	1661.1	1560.2	1802.7	2888.4	2237.7	1954.6
85°	1434.9	930.3	808.5	975.6	1561.4	2657.6	1364.2	1002.3
87.5°	607.8	365.4	221.6	438.5	867.7	1947.7	378.2	194.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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