

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: P197174

Luminaire Tested: **NAV-AF-02-D-UNV-SLL-8030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197174
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-02-D-UNV-SLL-8030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 80 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT
ELIMINATOR LEFT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8779 lumens
Efficiency: N/A
Efficacy: 77.7 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G3

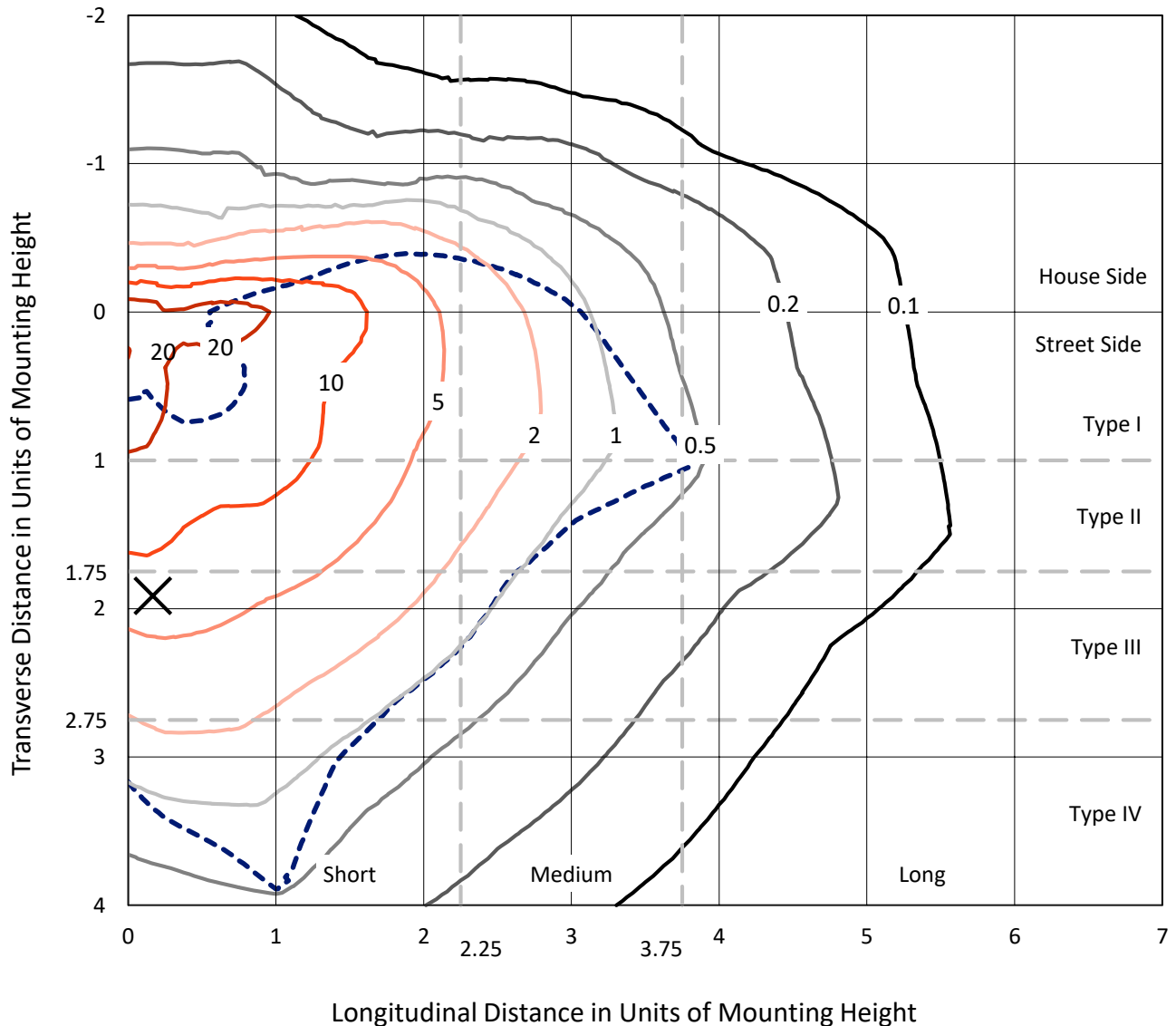
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

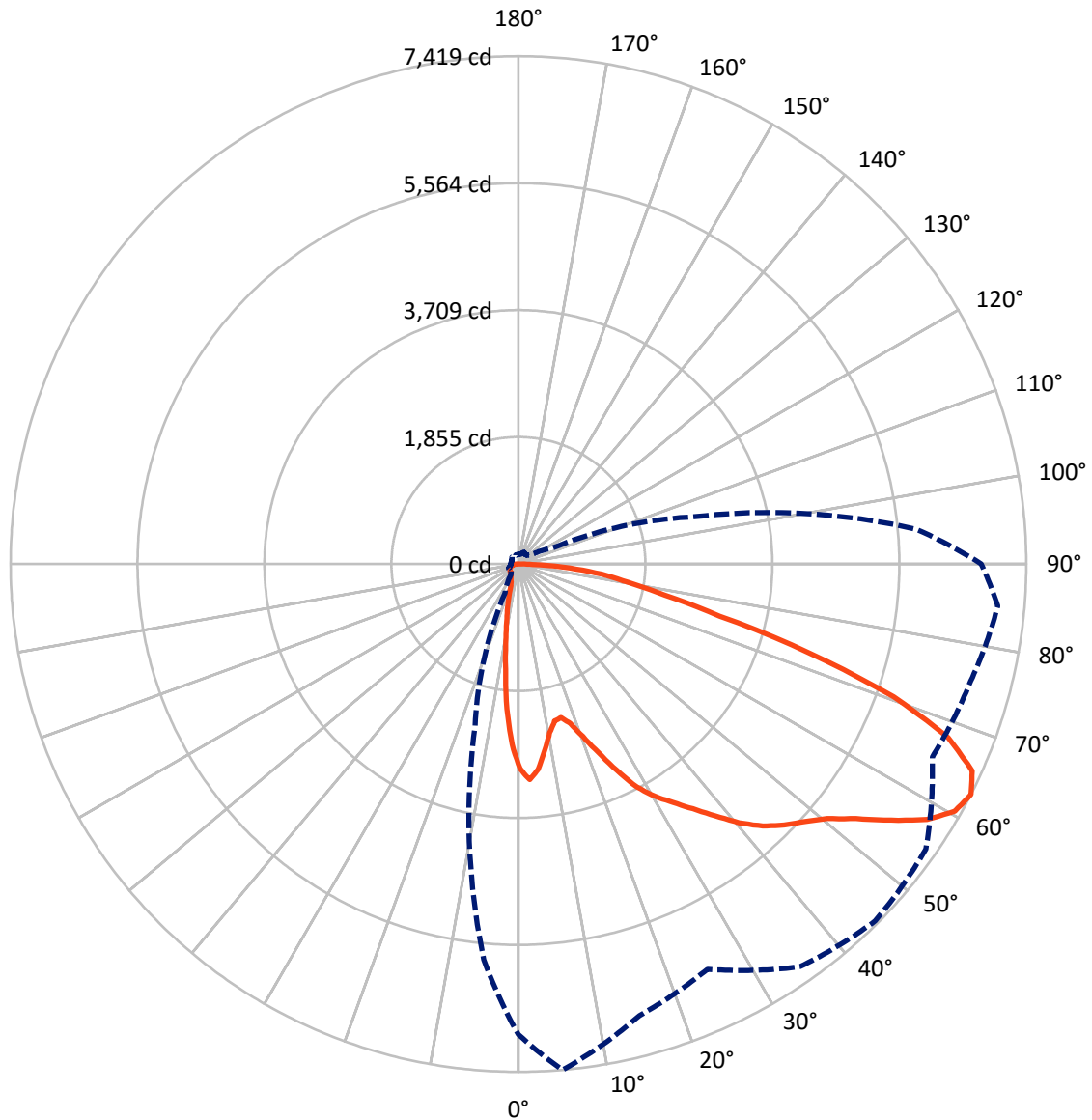
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 34.4 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 5-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1555.2	0.0	1555.2
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	7223.8	0.0	7223.8
	% Fixture	82.3	0.0	82.3
Total	Lumens	8779.0	0.0	8779.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	217.7	2.5
10°-20°	397.6	4.5
20°-30°	571.8	6.5
30°-40°	875.8	10.0
40°-50°	1280.4	14.6
50°-60°	1863.0	21.2
60°-70°	2158.5	24.6
70°-80°	1125.2	12.8
80°-90°	289.2	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°	8779.0	100.0
0°-180°	8779.0	100.0



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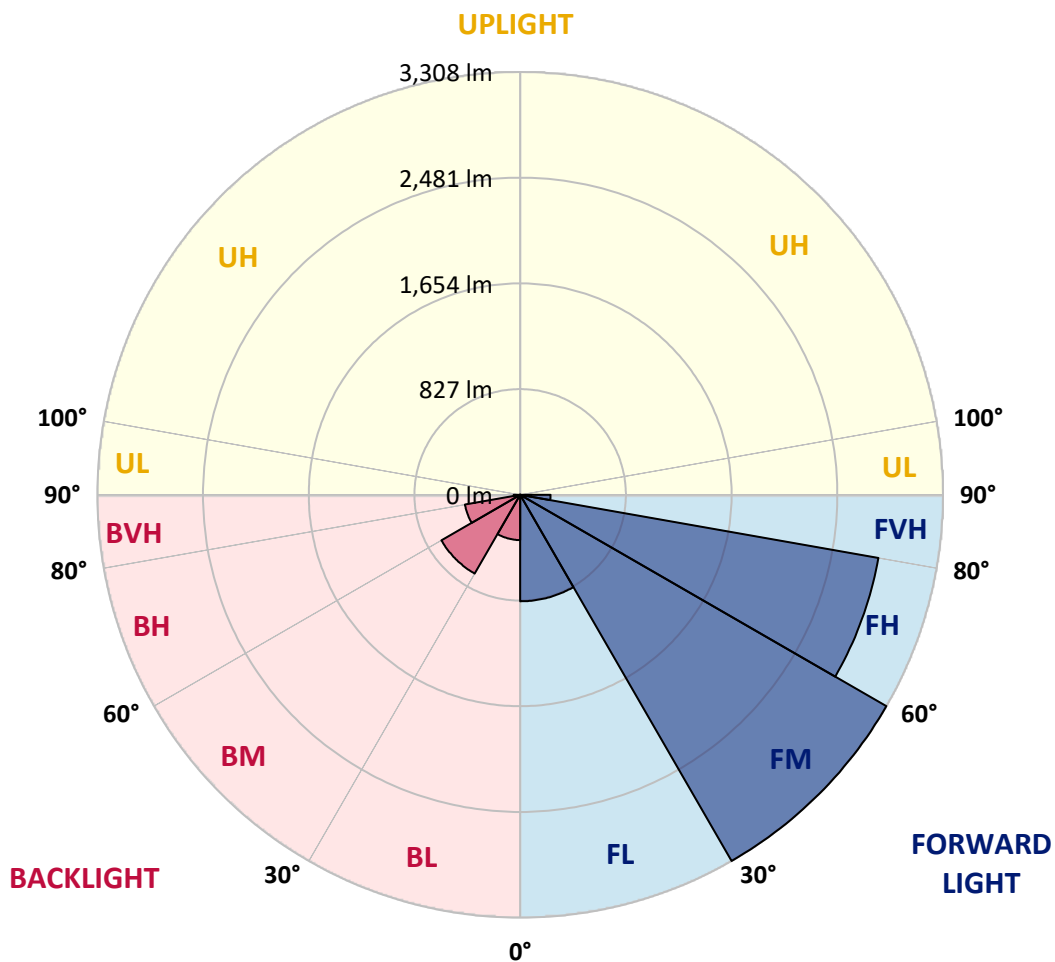
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	833.2	9.5			
FM	(30°-60°)	3307.5	37.7			
FH	(60°-80°)	2845.1	32.4			G2/5000
FVH	(80°-90°)	237.9	2.7			G3/500
BL	(0°-30°)	353.8	4.0	B1/500		
BM	(30°-60°)	711.6	8.1	B1/1000		
BH	(60°-80°)	438.5	5.0	B1/500		G1/500
BVH	(80°-90°)	51.3	0.6			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9
2.5°	3089.7	3155.2	3230.4	3328.4	3395.2	3422.0	3444.2	3406.7	3370.4	3302.3	3278.1
5°	2886.0	3012.0	3218.9	3415.6	3588.7	3688.0	3718.6	3649.2	3525.7	3347.5	3253.3
7.5°	2583.7	2749.8	3040.7	3330.3	3578.5	3744.0	3756.1	3618.6	3375.5	3083.3	2930.6
10°	2319.5	2507.3	2844.0	3168.0	3430.9	3600.2	3567.1	3374.2	3080.8	2748.5	2576.0
12.5°	2166.1	2353.9	2697.0	3026.0	3273.6	3337.9	3270.5	3108.1	2830.0	2497.1	2323.3
15°	2133.6	2327.1	2644.8	2922.3	3075.7	3034.3	2967.5	2885.4	2687.4	2415.0	2246.9
17.5°	2231.7	2448.1	2714.1	2866.3	2859.9	2760.6	2704.6	2720.5	2686.8	2504.1	2328.4
20°	2433.4	2689.3	2890.5	2851.0	2688.0	2548.6	2516.2	2640.9	2796.9	2727.5	2534.6
22.5°	2698.9	2990.4	3131.1	2894.9	2598.3	2448.1	2441.7	2636.5	2997.4	3065.5	2830.6
25°	2998.7	3338.6	3373.6	2972.6	2588.7	2439.2	2433.4	2705.2	3238.6	3400.3	3162.3
27.5°	3365.3	3689.9	3576.0	3076.3	2630.8	2465.3	2469.1	2822.3	3490.1	3731.3	3535.9
30°	3641.6	3939.4	3700.8	3178.2	2698.2	2511.1	2520.6	2949.0	3625.6	3961.1	3834.4
32.5°	3900.0	4152.7	3820.4	3278.7	2796.9	2579.2	2612.3	3106.9	3788.6	4158.4	4116.4
35°	4185.8	4391.4	3953.5	3386.3	2938.2	2698.9	2746.6	3257.1	3950.3	4355.7	4395.8
37.5°	4509.8	4664.4	4097.9	3538.4	3141.9	2920.4	2947.1	3410.5	4062.9	4574.1	4695.6
40°	4847.1	4970.6	4255.8	3741.5	3437.9	3219.5	3232.3	3607.2	4151.4	4800.0	4986.5
42.5°	5136.7	5232.9	4414.3	3993.6	3777.8	3524.4	3535.3	3819.1	4236.1	4994.8	5219.5
45°	5368.4	5439.1	4563.9	4259.0	4140.6	3905.1	3902.5	4034.9	4349.4	5159.0	5398.4
47.5°	5584.2	5621.8	4730.6	4517.4	4516.8	4395.2	4304.2	4289.5	4500.2	5297.2	5554.3
50°	5831.2	5845.2	4950.9	4778.4	4976.3	4957.2	4789.2	4612.9	4695.6	5452.5	5717.9
52.5°	6174.9	6175.6	5224.0	5033.0	5483.7	5544.1	5348.7	4978.9	4984.6	5754.8	6000.5
55°	6579.1	6607.1	5579.8	5337.9	6014.5	6117.6	5933.7	5413.6	5399.6	6242.4	6458.8
57.5°	6891.6	7040.0	5994.1	5719.2	6510.4	6644.7	6496.4	5864.3	5909.5	6745.2	6836.9
60°	6979.5	7326.4	6407.3	6146.9	6929.8	7131.6	6980.8	6351.2	6408.5	7071.8	6945.8
62.5°	6874.5	7418.7	6828.0	6530.1	7178.7	7372.2	7264.0	6670.1	6815.3	7029.8	6761.8
65°	6563.2	7285.0	7193.4	6693.1	7035.5	7104.2	7075.6	6686.7	7036.1	6632.6	6253.2
67.5°	5836.3	6769.4	7030.4	6344.9	6366.5	6292.7	6255.1	6232.2	6787.9	5991.6	5451.2
70°	4746.6	5816.6	6253.2	5309.9	5149.5	5078.2	4954.7	5260.2	6101.1	5104.9	4486.2
72.5°	3656.2	4449.9	5129.1	4025.4	3691.8	3716.0	3576.0	4022.2	5054.0	3946.4	3425.1
75°	2596.4	3034.3	4094.1	2892.4	2450.6	2449.3	2438.5	2894.9	3987.8	2832.5	2506.0
77.5°	1871.4	2184.6	3207.4	1935.7	1739.0	1761.3	1725.6	1967.5	3108.8	2037.5	1856.7
80°	1492.6	1617.4	2073.2	1290.9	1294.7	1346.9	1339.2	1345.6	2045.2	1475.5	1388.3
82.5°	1072.5	1227.9	1584.9	989.2	856.1	911.5	922.3	998.1	1443.0	1043.3	915.3
85°	550.0	748.6	1458.3	856.8	535.3	443.7	510.5	787.4	1253.3	625.1	446.2
87.5°	106.9	207.5	1068.7	476.1	240.6	121.6	200.5	333.5	728.8	113.3	55.4
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9
2.5°	3236.7	3155.2	3078.9	2999.9	2938.8	2864.4	2791.2	2727.5	2665.8	2625.0	2637.8
5°	3157.8	2959.2	2781.0	2615.5	2518.7	2402.2	2298.5	2211.3	2143.8	2100.5	2126.6
7.5°	2798.2	2529.5	2294.7	2076.3	1938.9	1788.0	1667.1	1581.8	1529.6	1500.3	1542.9
10°	2430.2	2128.5	1865.0	1637.8	1502.2	1374.3	1264.8	1174.4	1104.4	1071.3	1088.5
12.5°	2166.7	1831.3	1555.0	1402.3	1285.8	1171.2	1057.9	952.2	863.1	822.4	814.1
15°	2068.1	1671.5	1389.5	1218.9	1103.1	978.3	856.1	742.8	658.2	623.2	615.5
17.5°	2111.4	1637.1	1291.5	1089.7	921.7	770.2	632.7	525.8	463.4	443.7	445.6
20°	2263.5	1649.9	1212.6	956.7	749.2	569.7	432.2	358.4	331.6	327.2	332.3
22.5°	2472.3	1702.1	1155.3	842.1	597.1	414.4	321.4	286.4	279.4	278.8	283.9
25°	2747.9	1803.9	1117.1	740.3	471.7	328.4	280.1	260.3	254.6	255.9	261.0
27.5°	3072.5	1933.1	1092.3	652.4	387.6	292.8	261.6	244.4	238.7	240.0	243.8
30°	3369.1	2046.4	1055.4	586.2	348.2	280.1	251.4	234.2	226.6	226.6	229.1
32.5°	3634.6	2144.4	1012.1	536.6	311.9	251.4	227.9	214.5	208.8	210.7	212.0
35°	3870.1	2196.0	978.3	507.3	282.6	231.7	208.1	194.1	186.5	187.8	189.7
37.5°	4101.8	2215.7	956.1	491.4	261.6	219.6	198.0	186.5	178.2	177.0	176.3
40°	4322.0	2211.3	935.1	486.9	247.6	210.7	191.6	181.4	173.1	171.2	170.6
42.5°	4512.3	2196.6	915.3	474.8	238.1	204.3	186.5	177.6	169.3	166.8	165.5
45°	4686.1	2187.7	893.7	452.6	243.2	201.8	184.0	174.4	166.8	163.6	162.3
47.5°	4879.0	2219.6	869.5	428.4	241.9	202.4	184.0	173.1	165.5	162.3	161.0
50°	5108.7	2327.1	839.6	395.3	230.4	216.4	183.3	171.2	164.2	162.3	159.8
52.5°	5433.4	2501.5	798.2	352.6	221.5	231.1	182.7	168.0	162.3	159.1	155.9
55°	5878.3	2675.9	744.7	307.4	207.5	220.9	184.0	164.2	157.9	154.7	150.9
57.5°	6243.0	2808.3	677.3	269.9	194.8	208.8	182.0	159.8	152.8	149.6	146.4
60°	6219.5	2821.1	613.0	245.7	187.1	187.8	186.5	156.6	148.3	145.8	143.2
62.5°	5834.4	2663.9	553.1	233.6	181.4	171.2	190.3	152.8	143.9	141.3	139.4
65°	5193.4	2297.9	521.3	233.6	176.3	162.3	166.1	147.7	139.4	136.9	135.6
67.5°	4380.6	1846.6	491.4	238.7	169.3	155.9	150.9	142.6	134.9	132.4	131.1
70°	3511.1	1453.2	470.4	236.2	163.0	148.9	142.6	135.6	127.9	127.3	126.0
72.5°	2754.2	1167.4	460.8	236.2	153.4	140.7	134.3	129.2	121.6	120.9	119.0
75°	2206.8	876.5	421.4	231.7	143.9	129.9	124.1	119.7	112.0	112.7	111.4
77.5°	1709.1	620.0	352.0	208.8	131.8	117.8	113.3	110.1	101.2	101.8	101.8
80°	1336.7	403.6	273.1	173.1	117.8	103.8	100.6	98.0	88.5	89.7	89.7
82.5°	916.0	240.0	198.0	139.4	101.2	88.5	87.8	84.0	73.8	74.5	75.7
85°	500.3	157.9	131.8	103.1	79.6	71.9	70.7	68.7	59.2	59.2	59.8
87.5°	92.3	84.7	77.7	68.1	53.5	51.6	49.6	51.6	44.6	43.3	43.3
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°	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9
2.5°	2607.8	2563.9	2533.4	2506.6	2442.3	2446.8	2455.7	2468.4	2428.3	2449.3	2475.4
5°	2100.5	2064.2	2036.9	1994.2	1904.5	1872.7	1852.3	1843.4	1783.5	1796.3	1824.3
7.5°	1548.7	1548.0	1538.5	1490.7	1382.5	1317.0	1273.7	1260.3	1223.4	1237.4	1280.0
10°	1090.4	1101.8	1097.4	1054.7	958.0	910.9	901.3	928.1	928.7	956.1	1029.3
12.5°	788.0	781.7	775.9	740.9	668.4	660.7	682.4	719.3	728.2	757.5	833.8
15°	588.1	572.9	569.7	542.3	494.6	501.6	517.5	536.6	537.2	557.6	620.6
17.5°	441.1	441.1	446.2	428.4	394.0	390.8	382.6	377.5	369.8	378.1	412.5
20°	342.4	358.4	371.1	360.9	329.7	314.4	298.5	288.3	282.6	283.3	293.4
22.5°	293.4	306.2	322.7	317.6	291.5	271.8	261.6	254.6	250.2	250.2	255.9
25°	268.6	276.9	292.2	289.6	267.3	251.4	243.2	236.2	231.1	230.4	236.2
27.5°	248.9	254.0	264.2	262.9	240.0	229.8	224.7	220.2	217.1	216.4	222.1
30°	231.1	233.6	238.7	236.8	219.6	209.4	207.5	205.6	203.7	204.3	212.6
32.5°	215.1	217.1	220.2	217.7	201.1	192.2	189.0	186.5	184.6	186.5	196.0
35°	197.3	203.1	206.9	205.6	187.8	177.0	170.0	163.6	161.0	163.0	173.8
37.5°	182.0	191.6	196.7	195.4	177.0	164.2	155.3	154.0	154.0	156.6	167.4
40°	176.3	183.3	187.8	185.9	167.4	154.7	149.6	147.7	148.3	150.9	162.3
42.5°	171.2	177.6	178.9	175.0	156.6	148.3	145.1	142.6	143.9	147.0	158.5
45°	166.8	171.9	171.2	165.5	147.7	141.9	141.9	140.0	140.7	143.2	155.3
47.5°	163.6	166.1	164.9	159.1	141.3	136.9	138.8	138.8	140.0	141.9	154.0
50°	158.5	160.4	159.1	154.0	136.2	132.4	134.3	136.9	138.1	140.0	150.9
52.5°	153.4	154.7	154.0	148.9	131.1	128.6	128.6	131.1	133.7	136.2	145.8
55°	148.3	149.6	150.2	146.4	127.3	124.8	124.1	124.1	126.7	130.5	140.7
57.5°	144.5	144.5	145.8	143.2	123.5	120.3	117.1	117.8	120.9	124.1	134.3
60°	140.0	140.7	142.6	140.0	118.4	113.3	110.8	113.9	115.2	118.4	129.2
62.5°	136.2	136.2	137.5	135.6	113.9	108.8	106.9	110.1	110.1	113.3	124.1
65°	133.0	132.4	132.4	131.8	109.5	104.4	103.1	104.4	105.0	108.2	119.0
67.5°	130.5	127.3	127.3	128.6	105.0	99.9	99.3	99.3	99.9	103.8	113.3
70°	124.8	122.2	121.6	126.0	100.6	94.2	94.2	92.9	94.2	96.1	106.3
72.5°	118.4	116.5	115.8	122.2	96.1	87.8	86.6	85.9	86.6	88.5	98.0
75°	110.1	108.8	110.1	119.7	91.7	80.8	78.9	78.3	78.3	78.9	89.1
77.5°	100.6	99.3	108.8	111.4	89.1	72.6	70.7	69.4	68.1	68.1	79.6
80°	89.1	88.5	105.0	94.2	85.3	63.7	60.5	58.6	57.3	56.7	68.1
82.5°	77.7	76.4	89.7	73.8	70.7	52.2	47.7	43.9	42.0	42.0	52.2
85°	63.7	63.0	70.7	54.1	49.0	38.2	31.8	28.6	26.1	26.1	33.7
87.5°	46.5	45.2	43.9	32.5	24.8	17.2	12.1	11.5	10.2	9.5	14.0
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°	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9	2992.9
2.5°	2514.3	2567.1	2667.0	2749.1	2858.6	2946.5	3046.4	3089.7
5°	1875.8	1959.2	2112.0	2242.5	2423.2	2590.7	2781.6	2886.0
7.5°	1345.6	1469.1	1584.9	1747.9	1973.9	2198.6	2445.5	2583.7
10°	1113.3	1226.6	1325.9	1441.7	1616.1	1868.8	2163.5	2319.5
12.5°	922.3	1044.5	1149.6	1273.7	1420.1	1648.6	1984.7	2166.1
15°	707.2	840.2	966.2	1115.8	1295.3	1556.3	1931.2	2133.6
17.5°	484.4	627.0	782.3	965.0	1181.4	1517.5	1982.1	2231.7
20°	329.1	433.5	602.2	818.6	1078.9	1499.0	2094.2	2433.4
22.5°	270.5	317.6	444.3	681.1	994.9	1519.4	2276.2	2698.9
25°	248.2	273.7	345.6	560.1	930.6	1573.5	2522.5	2998.7
27.5°	234.2	255.9	303.0	473.6	871.4	1647.3	2822.3	3365.3
30°	226.0	246.3	285.8	429.0	817.3	1711.0	3080.1	3641.6
32.5°	207.5	222.8	255.2	403.6	778.5	1762.5	3307.4	3900.0
35°	185.2	203.7	230.4	387.0	777.2	1786.7	3521.3	4185.8
37.5°	177.0	194.8	214.5	378.1	784.8	1807.1	3782.9	4509.8
40°	171.9	187.8	203.7	376.8	791.2	1823.0	4038.7	4847.1
42.5°	167.4	183.3	201.8	367.9	788.7	1844.6	4265.3	5136.7
45°	166.1	182.0	206.2	354.5	788.0	1878.4	4445.5	5368.4
47.5°	164.9	189.0	205.0	339.9	785.5	1949.7	4648.5	5584.2
50°	163.6	201.8	196.0	319.5	766.4	2071.2	4921.6	5831.2
52.5°	163.0	203.7	186.5	291.5	732.0	2251.4	5321.3	6174.9
55°	160.4	193.5	170.0	254.6	682.4	2445.5	5749.7	6579.1
57.5°	154.7	172.5	160.4	218.3	611.1	2581.1	6066.1	6891.6
60°	168.7	148.3	154.0	199.9	525.8	2605.3	6080.1	6979.5
62.5°	161.0	134.9	147.7	193.5	465.9	2447.4	5801.9	6874.5
65°	128.6	127.9	141.9	199.9	457.0	2094.2	5332.2	6563.2
67.5°	117.1	122.8	136.2	207.5	462.8	1649.9	4640.9	5836.3
70°	109.5	116.5	128.6	214.5	472.9	1299.8	3736.4	4746.6
72.5°	101.8	107.6	120.9	221.5	465.9	1025.4	2990.4	3656.2
75°	92.3	97.4	110.1	203.1	399.7	753.6	2376.1	2596.4
77.5°	81.5	85.9	96.8	160.4	300.4	524.5	1779.7	1871.4
80°	70.0	71.9	80.2	117.1	196.0	313.8	1354.5	1492.6
82.5°	55.4	56.0	61.1	85.9	122.2	200.5	939.5	1072.5
85°	35.6	36.9	39.5	60.5	82.1	128.6	479.9	550.0
87.5°	12.1	14.0	14.0	29.3	40.1	71.3	147.0	106.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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