

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: P195805

Luminaire Tested: **NAV-AF-01-D-UNV-T2R-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195805
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24459)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-01-D-UNV-T2R-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(1) 70 CRI, 5000K, 1050mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6402 lumens
Efficiency: N/A
Efficacy: 108.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G1

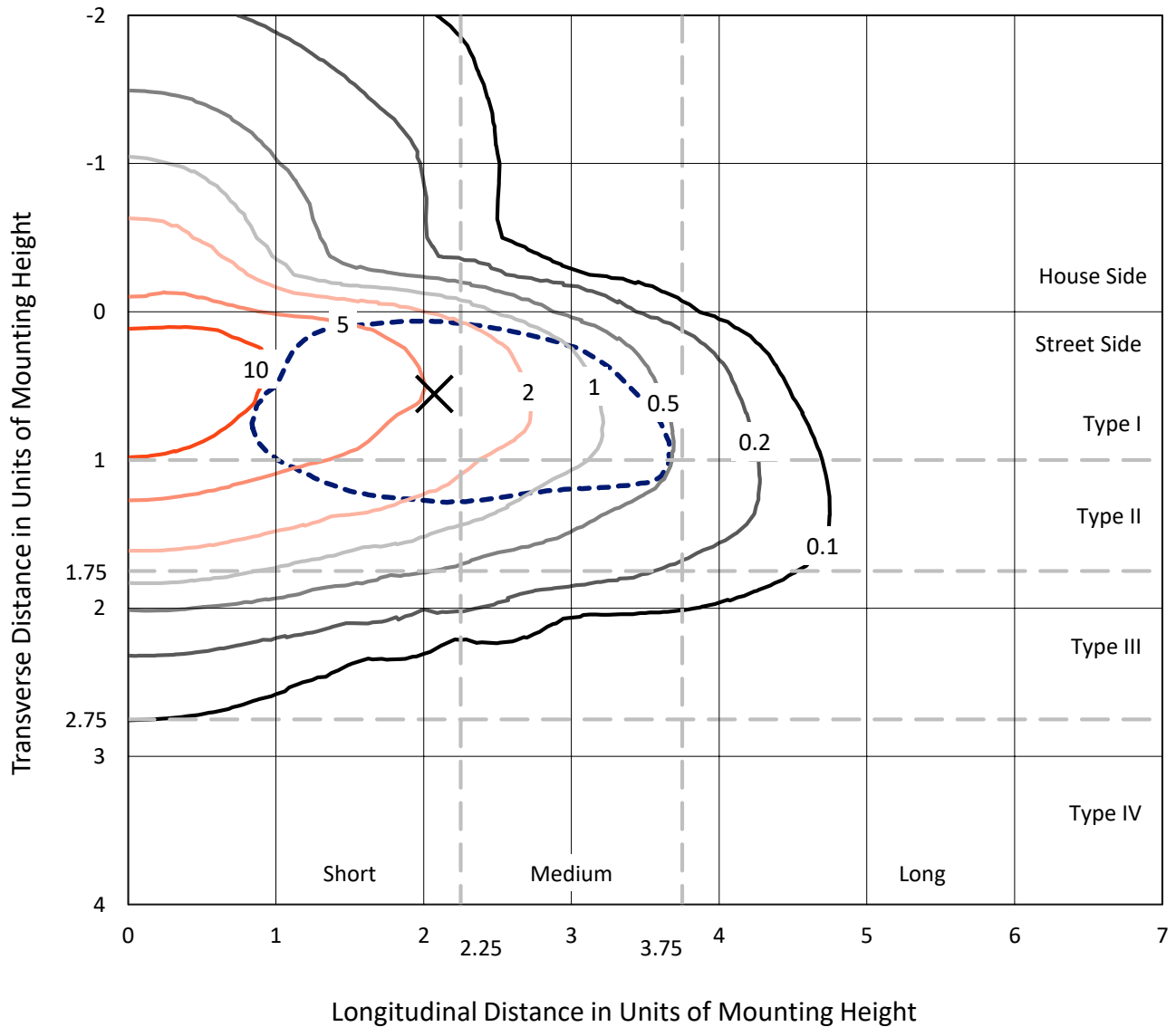
Input Watts (W): 59
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

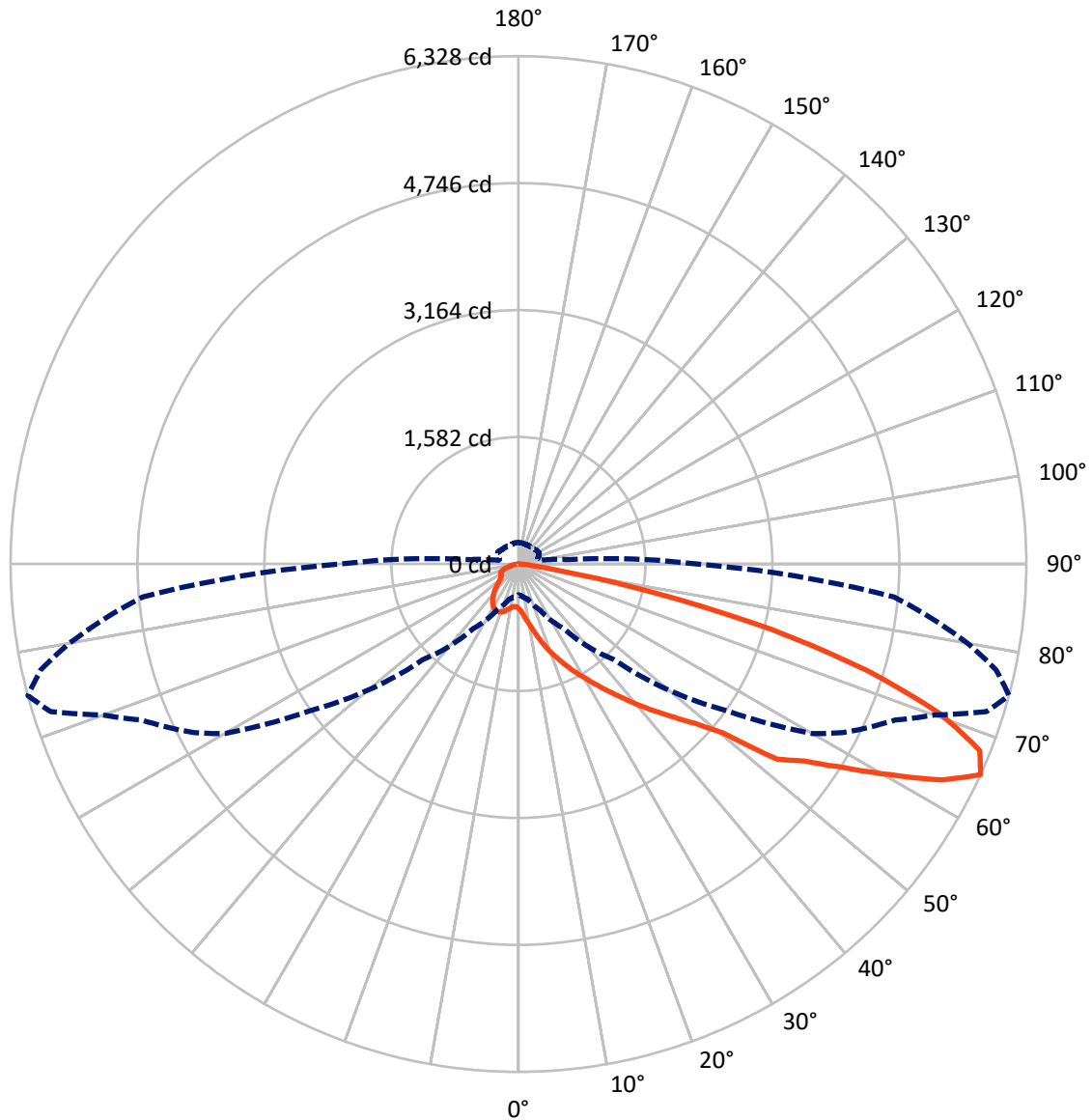
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 15.9 fc
 Type II - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	962.0	0.0	962.0
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	5440.0	0.0	5440.0
	% Fixture	85.0	0.0	85.0
Total	Lumens	6402.0	0.0	6402.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	65.5	1.0
10°-20°	250.1	3.9
20°-30°	504.8	7.9
30°-40°	857.2	13.4
40°-50°	1195.6	18.7
50°-60°	1465.4	22.9
60°-70°	1378.7	21.5
70°-80°	604.6	9.4
80°-90°	80.0	1.2
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°	6402.0	100.0
0°-180°	6402.0	100.0



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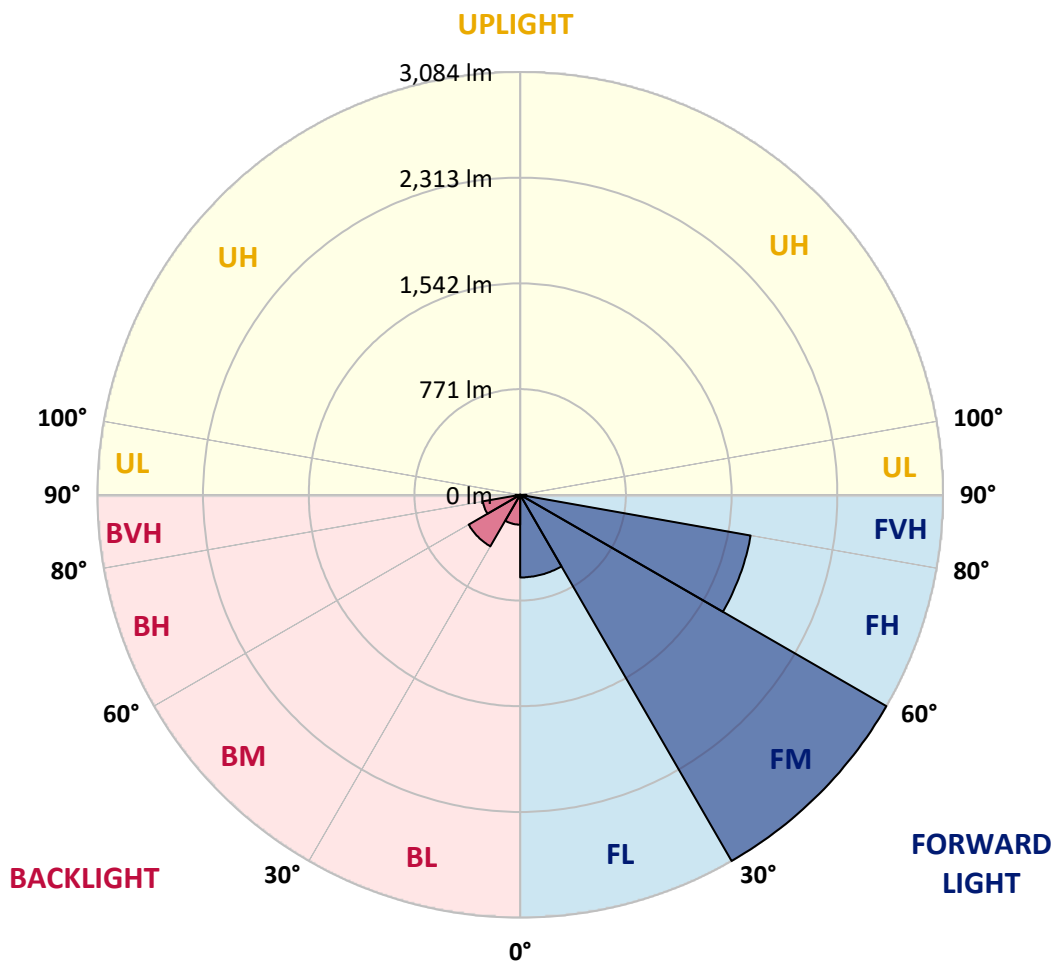
CATALOG NUMBER: NAV-AF-01-D-UNV-T2R-7050

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	602.6	9.4			
FM	(30°-60°)	3084.2	48.2			
FH	(60°-80°)	1706.8	26.7			G1/1800
FVH	(80°-90°)	46.4	0.7			G1/100
BL	(0°-30°)	217.8	3.4	B1/500		
BM	(30°-60°)	434.1	6.8	B1/1000		
BH	(60°-80°)	276.5	4.3	B1/500		G1/500
BVH	(80°-90°)	33.6	0.5			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	554.7	554.7	554.7	554.7	554.7	554.7	554.7	554.7	554.7	554.7	554.7
2.5°	698.5	690.3	691.1	679.7	663.0	644.7	629.6	621.5	614.6	612.5	601.1
5°	913.5	903.3	899.6	873.6	834.5	788.1	742.0	724.1	709.5	700.5	678.5
7.5°	1089.4	1084.1	1079.3	1055.2	1016.5	957.1	882.9	856.5	832.0	805.2	778.7
10°	1209.2	1207.1	1205.1	1188.4	1156.2	1104.5	1024.7	995.8	965.2	931.0	896.4
12.5°	1299.6	1299.6	1301.2	1287.4	1267.8	1227.9	1155.4	1128.5	1097.6	1061.7	1022.2
15°	1360.3	1361.9	1370.4	1374.5	1364.3	1338.7	1275.1	1251.5	1222.2	1186.8	1147.7
17.5°	1400.6	1403.8	1416.5	1429.9	1442.9	1434.0	1386.7	1364.7	1338.3	1305.7	1269.0
20°	1494.3	1490.2	1490.6	1486.5	1505.7	1512.6	1486.5	1468.2	1447.0	1417.3	1383.9
22.5°	1691.0	1683.2	1663.3	1612.4	1589.1	1586.7	1571.2	1561.5	1545.2	1526.4	1493.0
25°	1947.5	1938.6	1899.1	1815.2	1745.9	1682.0	1653.5	1647.4	1636.8	1624.2	1600.1
27.5°	2212.7	2202.9	2152.0	2046.1	1955.7	1826.6	1737.8	1729.7	1719.9	1714.6	1703.2
30°	2446.0	2435.4	2385.3	2277.8	2168.7	2014.7	1851.4	1822.9	1806.2	1807.8	1801.3
32.5°	2650.9	2641.5	2585.3	2475.8	2365.0	2215.5	1998.9	1954.5	1917.0	1903.1	1908.0
35°	2822.7	2814.2	2752.7	2642.3	2530.7	2406.5	2188.6	2121.8	2060.8	2022.5	2018.0
37.5°	2923.8	2918.9	2875.7	2782.0	2671.2	2580.0	2401.2	2327.1	2237.1	2181.3	2156.9
40°	2918.0	2923.3	2916.0	2873.7	2787.7	2721.3	2622.8	2549.5	2461.5	2378.4	2328.7
42.5°	2835.0	2842.3	2875.3	2897.3	2874.1	2833.7	2816.2	2761.7	2682.7	2594.7	2525.9
45°	2720.9	2727.4	2770.2	2849.6	2916.0	2927.4	2985.7	2958.4	2891.6	2816.6	2740.9
47.5°	2546.2	2558.8	2608.5	2734.8	2892.8	3002.8	3127.8	3140.4	3101.7	3039.8	2969.0
50°	2293.3	2310.0	2379.6	2559.2	2804.8	3080.1	3339.2	3387.2	3371.7	3309.0	3237.3
52.5°	2034.3	2051.0	2143.8	2334.8	2663.1	3111.9	3547.3	3670.3	3759.1	3823.8	3836.4
55°	1764.7	1783.4	1885.2	2105.1	2474.1	3071.6	3695.9	3835.6	3925.6	3993.2	4020.5
57.5°	1460.5	1481.6	1580.2	1802.6	2207.0	2909.5	3861.3	4059.2	4193.2	4297.5	4356.1
60°	1111.4	1137.9	1240.1	1464.1	1855.9	2599.2	3935.0	4227.8	4440.8	4597.2	4690.1
62.5°	704.6	731.4	837.7	1070.3	1456.4	2175.2	3726.5	4153.7	4517.0	4748.3	4918.5
65°	384.5	396.3	455.3	630.4	981.9	1687.7	3197.8	3701.6	4225.0	4552.8	4814.3
67.5°	288.3	290.0	296.1	338.8	522.9	1139.5	2500.2	2961.6	3542.8	3964.7	4277.1
70°	252.5	252.5	253.3	253.7	283.9	617.4	1693.8	2118.6	2651.3	3078.1	3466.2
72.5°	226.4	224.0	223.2	218.3	222.4	316.4	922.0	1303.7	1752.9	2231.8	2593.9
75°	195.5	195.1	195.1	190.2	192.6	222.8	399.9	625.6	973.8	1419.7	1776.1
77.5°	169.0	166.2	166.6	163.7	171.5	170.6	189.8	257.8	424.0	745.7	1041.4
80°	139.3	137.2	138.5	136.8	149.1	126.3	127.9	157.6	210.6	327.0	461.0
82.5°	103.0	103.9	111.6	110.8	125.4	85.1	93.7	117.7	141.7	162.9	177.2
85°	60.3	61.5	80.2	84.3	92.0	44.8	57.4	70.0	79.0	87.6	91.2
87.5°	6.5	8.6	44.8	46.0	41.1	13.4	23.2	29.3	31.4	33.4	29.3
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	554.7	554.7	554.7	554.7	554.7	554.7	554.7	554.7	554.7	554.7	554.7
2.5°	597.5	592.2	586.5	583.2	577.5	572.6	563.7	556.3	548.2	542.5	540.0
5°	667.5	654.9	641.4	631.7	619.4	608.9	588.5	564.1	556.3	540.0	536.0
7.5°	758.7	735.9	713.1	694.4	673.2	655.7	621.5	577.5	571.8	545.7	540.0
10°	865.8	832.4	798.6	769.7	738.8	711.9	661.4	599.5	593.4	560.0	554.3
12.5°	985.6	944.9	901.3	858.1	821.5	783.6	714.7	633.7	623.9	584.4	576.7
15°	1109.0	1065.0	1014.5	962.4	917.2	867.1	780.3	678.5	660.6	614.2	603.6
17.5°	1230.8	1183.1	1130.2	1071.9	1019.0	959.1	851.2	728.6	697.6	643.5	630.0
20°	1348.5	1300.0	1244.2	1187.2	1121.2	1052.8	923.7	777.9	730.6	667.9	650.4
22.5°	1455.6	1414.0	1358.2	1292.7	1225.9	1148.9	997.4	827.2	759.5	686.6	664.2
25°	1568.4	1530.5	1475.1	1412.0	1334.2	1248.7	1073.5	874.0	782.8	696.8	669.1
27.5°	1682.4	1649.8	1597.7	1531.3	1447.8	1352.9	1150.9	917.2	801.5	700.1	666.7
30°	1804.2	1778.9	1730.9	1656.8	1572.4	1467.4	1235.2	959.5	813.3	695.6	655.7
32.5°	1919.4	1918.6	1875.9	1798.9	1708.1	1592.4	1324.0	1002.3	819.4	683.0	636.6
35°	2039.2	2055.9	2023.7	1950.4	1854.7	1726.4	1422.2	1047.9	819.8	660.6	611.7
37.5°	2175.2	2204.9	2190.7	2121.0	2020.4	1879.1	1537.4	1099.2	817.4	629.6	575.5
40°	2330.0	2370.7	2370.3	2311.6	2204.1	2050.2	1671.4	1156.6	811.7	590.9	532.7
42.5°	2507.1	2555.6	2569.0	2511.2	2402.5	2237.1	1825.0	1219.8	802.7	552.7	487.5
45°	2709.9	2752.7	2778.0	2724.2	2615.0	2440.7	2001.3	1291.4	791.7	503.4	435.8
47.5°	2927.0	2976.7	3014.6	2968.6	2852.1	2672.9	2210.2	1383.9	787.6	447.2	380.0
50°	3196.2	3247.5	3329.4	3308.6	3244.7	3100.5	2652.1	1602.2	789.3	393.8	333.1
52.5°	3864.1	3981.8	4085.3	4039.2	3887.3	3640.1	3011.3	1723.5	755.1	350.2	300.6
55°	4065.7	4199.3	4352.0	4332.9	4187.1	3937.8	3295.2	1825.0	722.1	318.5	279.4
57.5°	4418.4	4576.0	4789.4	4785.4	4606.6	4326.0	3660.5	1946.3	707.8	300.2	268.8
60°	4791.9	4992.7	5287.5	5333.5	5139.3	4847.3	4092.2	2095.4	709.9	290.0	262.7
62.5°	5064.7	5359.2	5788.0	5925.7	5696.8	5375.1	4540.2	2244.4	697.6	278.2	255.4
65°	5081.4	5505.4	6113.9	6328.1	6096.3	5683.0	4698.2	2215.1	624.3	262.3	243.5
67.5°	4674.2	5226.4	5965.6	6200.6	5963.6	5493.2	4421.3	1936.5	507.5	234.6	223.2
70°	3893.0	4534.1	5301.4	5563.2	5367.3	4891.2	3847.8	1546.8	379.2	197.9	192.6
72.5°	3008.5	3606.3	4303.2	4545.5	4395.6	3976.9	3034.9	1127.3	270.8	160.5	156.4
75°	2150.8	2659.8	3165.7	3258.1	3110.3	2725.8	1969.1	704.2	189.8	131.5	125.8
77.5°	1331.8	1662.9	1844.5	1725.6	1537.0	1277.6	801.5	347.8	126.3	107.1	101.4
80°	590.9	693.6	647.6	577.1	455.7	374.7	244.8	154.4	81.5	82.7	79.4
82.5°	198.7	210.1	204.4	203.2	183.3	160.5	103.9	66.8	45.6	52.9	51.7
85°	96.9	101.4	101.8	105.5	91.6	71.3	28.1	26.5	19.5	28.5	29.7
87.5°	29.3	29.7	26.9	29.3	23.6	16.3	5.3	7.3	3.7	6.9	6.9
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	554.7	554.7	554.7	554.7	554.7	554.7	554.7	554.7	554.7	554.7	554.7
2.5°	535.6	533.9	531.1	527.8	527.0	522.9	521.7	519.7	518.4	516.4	514.8
5°	530.7	527.8	524.6	520.9	520.9	515.2	512.7	510.3	510.3	506.6	505.0
7.5°	535.6	531.9	528.2	525.0	526.2	519.7	517.2	514.8	514.4	510.7	509.1
10°	549.4	545.7	541.3	538.0	536.8	531.5	528.6	525.0	522.5	520.1	517.6
12.5°	570.6	565.7	560.0	553.1	550.2	545.7	541.3	536.4	530.7	528.2	524.6
15°	595.8	587.7	579.9	571.4	563.7	559.2	553.1	545.3	537.6	534.3	529.4
17.5°	616.6	608.0	597.0	586.9	573.0	569.4	560.8	551.4	538.8	537.6	530.3
20°	634.1	621.1	607.6	595.4	574.2	572.2	561.6	550.6	532.7	532.7	523.7
22.5°	643.9	626.0	610.1	593.8	567.3	565.7	553.5	540.4	518.4	519.3	508.3
25°	645.5	623.9	604.0	584.4	553.9	551.0	535.6	521.3	497.3	495.6	484.2
27.5°	639.0	613.7	590.5	566.9	533.9	527.8	510.7	493.6	470.0	465.9	453.7
30°	623.9	594.2	568.1	540.8	506.2	496.5	478.5	461.0	437.0	431.7	420.3
32.5°	599.9	566.1	537.2	509.9	471.6	459.4	441.5	424.0	400.7	396.7	386.1
35°	568.1	530.3	499.7	470.8	432.5	419.9	402.8	387.3	366.1	364.5	357.2
37.5°	528.2	488.7	456.1	428.4	392.2	385.7	368.2	356.8	339.3	340.9	337.2
40°	483.0	442.7	411.7	387.3	355.9	350.2	339.7	331.1	316.0	320.5	320.9
42.5°	437.4	397.1	369.0	347.0	320.1	316.4	309.1	304.2	292.8	301.8	305.4
45°	385.7	348.2	324.2	307.5	287.5	287.5	283.9	283.5	275.7	288.3	292.0
47.5°	335.6	306.3	289.6	279.4	265.5	272.1	270.8	274.1	268.4	281.4	284.7
50°	297.7	277.3	267.2	262.3	252.5	262.7	265.1	269.6	264.7	276.1	278.6
52.5°	273.7	260.2	254.5	253.3	246.4	259.0	263.1	267.2	261.5	272.1	271.6
55°	260.2	251.3	249.2	251.7	246.4	258.6	262.7	265.5	260.6	268.0	267.6
57.5°	255.4	250.5	251.7	255.4	251.7	261.9	263.9	267.2	262.3	265.5	267.2
60°	254.9	254.9	259.8	264.7	262.3	269.6	270.8	270.4	265.9	266.4	267.2
62.5°	252.5	258.6	266.8	274.5	273.7	282.6	283.5	278.2	274.5	270.4	269.2
65°	244.8	254.9	266.8	277.3	279.0	292.8	294.5	289.2	286.7	279.8	274.5
67.5°	227.7	240.7	254.5	267.6	270.4	289.2	292.8	294.9	296.1	291.6	284.7
70°	198.7	212.2	226.4	241.5	245.6	266.4	274.1	283.5	290.8	297.3	294.9
72.5°	161.7	173.9	186.1	200.0	206.1	227.7	237.8	254.1	265.5	282.2	289.2
75°	128.3	135.6	142.9	151.5	156.4	177.6	190.2	209.7	225.2	248.4	263.9
77.5°	101.0	104.7	108.3	112.0	114.0	125.8	136.0	155.6	173.5	202.8	225.6
80°	77.8	79.8	80.2	81.5	80.6	86.3	90.0	101.8	117.3	146.2	173.1
82.5°	50.1	51.7	52.5	54.6	50.5	57.8	60.3	61.5	69.6	90.8	110.0
85°	28.1	28.5	28.9	29.7	24.0	31.4	31.8	29.7	28.9	37.5	42.4
87.5°	6.9	6.5	6.9	6.9	2.9	6.5	6.5	4.5	3.3	6.1	4.9
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):

	135°	145°	155°	165°	175°	180°
0°	554.7	554.7	554.7	554.7	554.7	554.7
2.5°	511.1	510.3	510.7	508.7	507.9	508.3
5°	503.0	501.3	501.3	500.1	498.5	498.5
7.5°	506.6	503.4	502.2	499.7	497.3	497.7
10°	512.3	506.6	502.6	498.9	496.0	496.0
12.5°	516.0	505.8	499.7	494.8	491.6	491.6
15°	516.8	501.3	492.4	487.1	483.8	483.8
17.5°	511.9	492.4	481.0	474.1	470.4	471.2
20°	499.7	475.7	462.2	454.9	451.2	451.7
22.5°	480.6	452.9	437.4	428.8	425.2	425.2
25°	454.5	424.4	407.7	400.7	397.5	397.5
27.5°	424.8	393.8	379.2	373.9	371.8	371.8
30°	391.4	365.7	355.1	351.5	348.2	348.2
32.5°	363.3	345.0	341.3	336.4	327.8	327.4
35°	340.9	338.8	336.0	321.3	309.1	307.5
37.5°	328.7	340.9	323.0	297.7	287.9	287.5
40°	322.1	333.5	302.6	290.4	289.2	289.2
42.5°	306.7	314.8	301.4	294.5	294.5	294.9
45°	290.4	297.3	304.2	298.1	300.2	300.6
47.5°	279.0	292.8	304.2	298.9	303.0	305.4
50°	268.4	288.8	298.1	298.1	302.6	303.0
52.5°	265.9	283.0	292.4	296.9	297.3	295.3
55°	266.4	278.6	287.9	293.6	291.2	291.2
57.5°	265.9	276.1	284.3	286.3	287.5	287.5
60°	266.4	272.9	279.4	278.6	282.6	282.6
62.5°	267.6	268.4	271.6	270.8	276.9	276.9
65°	270.4	262.7	260.6	261.5	268.8	268.4
67.5°	275.7	254.9	248.4	248.8	259.4	257.8
70°	283.5	244.4	234.6	232.1	250.1	247.2
72.5°	285.9	232.1	216.7	214.2	224.8	216.7
75°	274.5	222.4	197.5	189.4	184.9	182.5
77.5°	244.8	216.3	177.6	160.5	153.5	151.9
80°	202.8	203.6	151.5	131.1	152.3	151.9
82.5°	153.1	175.9	121.4	113.6	110.4	92.0
85°	74.1	132.4	93.3	78.2	46.8	44.4
87.5°	6.5	55.4	53.8	35.0	15.9	15.1
90°	0.0	0.0	0.0	0.0	0.0	0.0

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