

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: P196279

Luminaire Tested: **NAV-AF-01-D-UNV-T2R-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196279
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-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(1) 70 CRI, 4000K, 800mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5290.7 lumens
Efficiency: N/A
Efficacy: 120.2 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

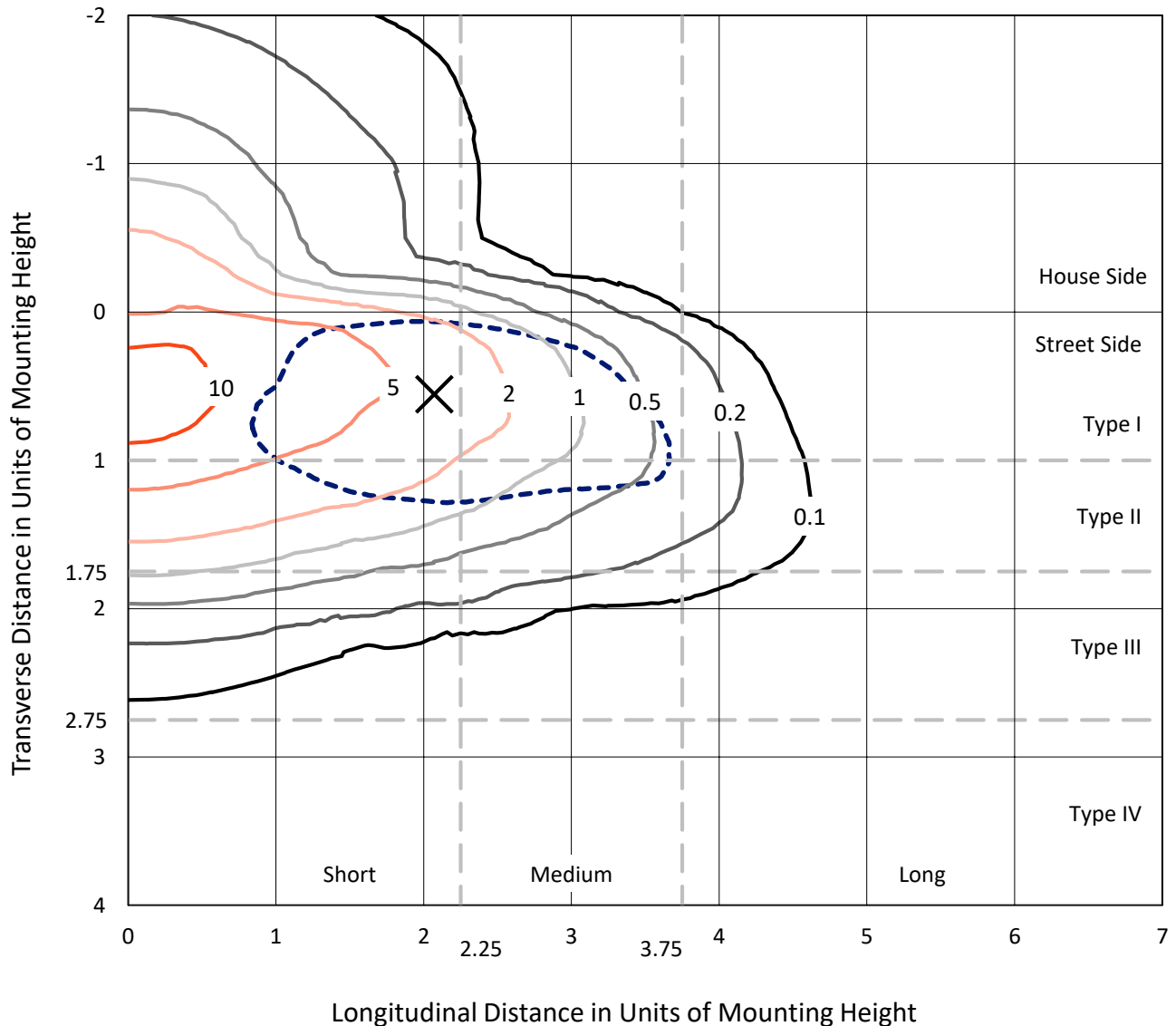
Input Watts (W): 44
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

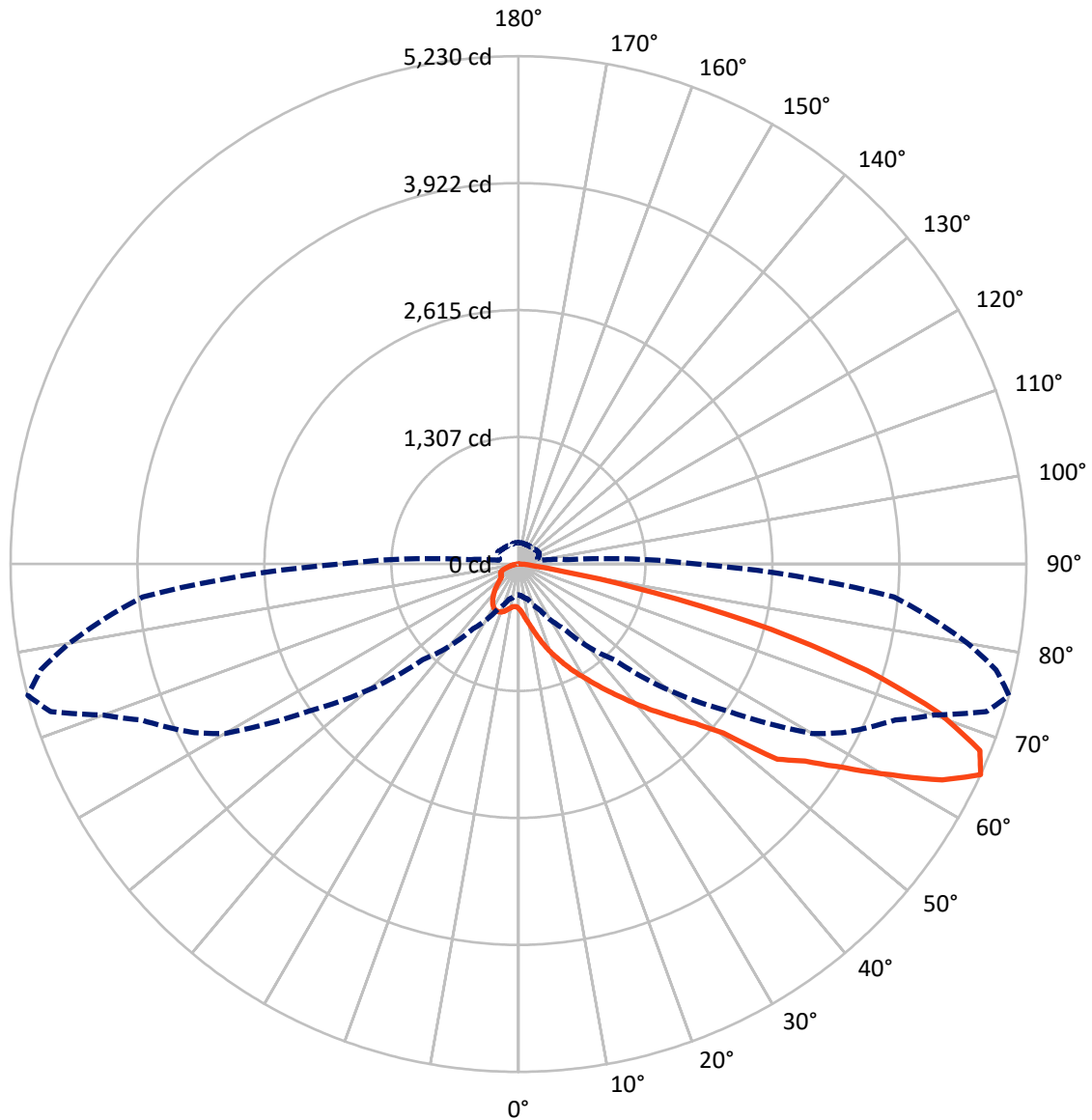
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 13.2 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	795.0	0.0	795.0
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	4495.7	0.0	4495.7
	% Fixture	85.0	0.0	85.0
Total	Lumens	5290.7	0.0	5290.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	54.1	1.0
10°-20°	206.7	3.9
20°-30°	417.2	7.9
30°-40°	708.4	13.4
40°-50°	988.1	18.7
50°-60°	1211.0	22.9
60°-70°	1139.4	21.5
70°-80°	499.6	9.4
80°-90°	66.1	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°	5290.7	100.0
0°-180°	5290.7	100.0



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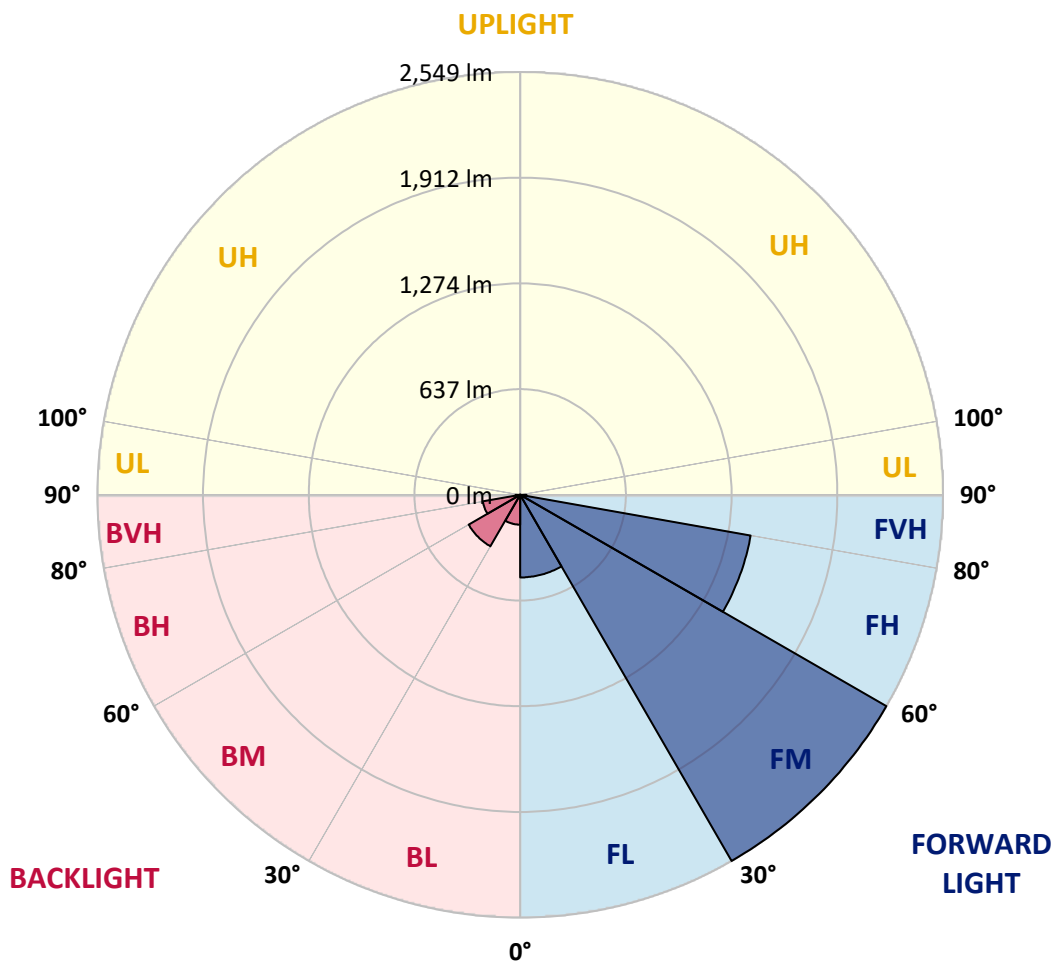
CATALOG NUMBER: NAV-AF-01-D-UNV-T2R-800

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	498.0	9.4			
FM	(30°-60°)	2548.8	48.2			
FH	(60°-80°)	1410.5	26.7			G1/1800
FVH	(80°-90°)	38.3	0.7			G1/100
BL	(0°-30°)	180.0	3.4	B1/500		
BM	(30°-60°)	358.7	6.8	B1/1000		
BH	(60°-80°)	228.5	4.3	B1/500		G1/500
BVH	(80°-90°)	27.8	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°	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4
2.5°	577.3	570.5	571.1	561.7	547.9	532.8	520.4	513.6	507.9	506.2	496.7
5°	754.9	746.5	743.5	721.9	689.7	651.2	613.3	598.4	586.3	578.9	560.7
7.5°	900.3	895.9	891.9	872.1	840.0	790.9	729.7	707.8	687.6	665.4	643.5
10°	999.3	997.6	995.9	982.1	955.5	912.8	846.8	822.9	797.7	769.4	740.8
12.5°	1074.0	1074.0	1075.3	1063.9	1047.7	1014.8	954.8	932.6	907.1	877.4	844.8
15°	1124.1	1125.5	1132.5	1135.9	1127.5	1106.3	1053.8	1034.3	1010.1	980.8	948.5
17.5°	1157.5	1160.1	1170.6	1181.7	1192.5	1185.1	1146.0	1127.8	1106.0	1079.0	1048.7
20°	1234.9	1231.5	1231.8	1228.5	1244.3	1250.0	1228.5	1213.3	1195.8	1171.3	1143.7
22.5°	1397.5	1391.0	1374.5	1332.5	1313.3	1311.3	1298.5	1290.5	1276.9	1261.5	1233.9
25°	1609.5	1602.0	1569.4	1500.1	1442.9	1390.0	1366.5	1361.4	1352.6	1342.2	1322.4
27.5°	1828.6	1820.5	1778.4	1690.9	1616.2	1509.5	1436.1	1429.4	1421.3	1417.0	1407.6
30°	2021.5	2012.7	1971.3	1882.4	1792.2	1665.1	1530.0	1506.5	1492.7	1494.0	1488.6
32.5°	2190.8	2183.0	2136.5	2046.0	1954.4	1831.0	1651.9	1615.2	1584.2	1572.8	1576.8
35°	2332.7	2325.7	2274.8	2183.7	2091.4	1988.8	1808.7	1753.5	1703.0	1671.4	1667.7
37.5°	2416.2	2412.2	2376.5	2299.1	2207.5	2132.1	1984.4	1923.1	1848.8	1802.6	1782.5
40°	2411.5	2415.9	2409.9	2374.8	2303.8	2249.0	2167.5	2107.0	2034.2	1965.6	1924.5
42.5°	2342.9	2348.9	2376.2	2394.3	2375.2	2341.8	2327.4	2282.3	2216.9	2144.3	2087.4
45°	2248.7	2254.0	2289.4	2354.9	2409.9	2419.3	2467.4	2444.9	2389.6	2327.7	2265.1
47.5°	2104.2	2114.6	2155.8	2260.1	2390.6	2481.5	2584.9	2595.3	2563.3	2512.2	2453.5
50°	1895.2	1909.0	1966.6	2115.0	2317.9	2545.5	2759.5	2799.2	2786.4	2734.7	2675.4
52.5°	1681.1	1694.9	1771.6	1929.6	2200.8	2571.7	2931.5	3033.2	3106.5	3160.0	3170.4
55°	1458.3	1473.9	1558.0	1739.7	2044.7	2538.5	3054.3	3169.8	3244.2	3300.0	3322.6
57.5°	1207.0	1224.5	1305.9	1489.6	1823.8	2404.4	3191.0	3354.6	3465.3	3551.5	3600.0
60°	918.5	940.4	1024.9	1209.9	1533.7	2148.0	3252.0	3493.9	3669.9	3799.2	3876.0
62.5°	582.3	604.5	692.3	884.5	1203.6	1797.6	3079.6	3432.7	3732.8	3924.0	4064.7
65°	317.7	327.4	376.2	521.0	811.5	1394.7	2642.7	3059.0	3491.5	3762.5	3978.6
67.5°	238.2	239.7	244.7	280.0	432.2	941.7	2066.2	2447.5	2927.8	3276.5	3534.6
70°	208.7	208.7	209.3	209.7	234.6	510.2	1399.8	1750.9	2191.1	2543.8	2864.6
72.5°	187.1	185.2	184.4	180.4	183.7	261.5	762.0	1077.4	1448.6	1844.4	2143.6
75°	161.5	161.2	161.2	157.2	159.2	184.1	330.5	517.0	804.8	1173.3	1467.7
77.5°	139.6	137.3	137.7	135.3	141.7	141.1	156.8	213.1	350.4	616.2	860.6
80°	115.1	113.4	114.5	113.0	123.2	104.3	105.7	130.2	174.0	270.3	380.9
82.5°	85.1	85.8	92.3	91.6	103.6	70.4	77.4	97.3	117.1	134.6	146.4
85°	49.8	50.8	66.3	69.7	76.1	37.0	47.5	57.9	65.3	72.3	75.4
87.5°	5.4	7.1	37.0	38.1	34.0	11.2	19.2	24.2	25.9	27.6	24.2
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4
2.5°	493.8	489.4	484.7	482.0	477.2	473.2	465.9	459.7	453.1	448.4	446.3
5°	551.7	541.2	530.1	522.0	511.9	503.2	486.3	466.2	459.7	446.3	442.9
7.5°	627.1	608.1	589.3	573.9	556.4	541.9	513.6	477.2	472.5	451.0	446.3
10°	715.6	687.9	660.0	636.1	610.5	588.3	546.6	495.4	490.4	462.8	458.1
12.5°	814.5	780.8	744.8	709.1	678.8	647.5	590.7	523.8	515.7	482.9	476.6
15°	916.5	880.1	838.4	795.3	757.9	716.6	644.9	560.7	545.9	507.6	498.8
17.5°	1017.1	977.7	934.0	885.9	842.1	792.6	703.4	602.1	576.5	531.7	520.7
20°	1114.4	1074.3	1028.2	981.1	926.6	870.0	763.3	642.8	603.8	552.0	537.5
22.5°	1202.9	1168.5	1122.5	1068.3	1013.0	949.5	824.3	683.5	627.7	567.4	548.9
25°	1296.1	1264.8	1219.1	1166.9	1102.6	1032.0	887.2	722.3	646.9	575.8	553.0
27.5°	1390.4	1363.5	1320.3	1265.5	1196.5	1118.1	951.1	757.9	662.4	578.6	551.0
30°	1491.0	1470.1	1430.4	1369.1	1299.5	1212.7	1020.8	793.0	672.1	574.9	541.9
32.5°	1586.3	1585.6	1550.3	1486.7	1411.6	1316.0	1094.1	828.3	677.2	564.5	526.1
35°	1685.2	1699.0	1672.4	1611.9	1532.7	1426.7	1175.3	866.0	677.5	545.9	505.5
37.5°	1797.6	1822.2	1810.4	1752.8	1669.8	1552.9	1270.5	908.4	675.5	520.4	475.6
40°	1925.5	1959.2	1958.8	1910.4	1821.5	1694.3	1381.3	955.8	670.7	488.4	440.3
42.5°	2071.9	2112.0	2123.0	2075.3	1985.4	1848.8	1508.1	1008.0	663.4	456.7	402.8
45°	2239.5	2274.8	2295.7	2251.3	2161.1	2017.1	1653.9	1067.2	654.3	416.0	360.1
47.5°	2419.0	2460.0	2491.3	2453.2	2357.0	2208.9	1826.6	1143.7	650.9	369.6	314.0
50°	2641.4	2683.8	2751.4	2734.2	2681.5	2562.3	2191.8	1324.1	652.2	325.5	275.3
52.5°	3193.3	3290.6	3376.1	3338.1	3212.6	3008.3	2488.6	1424.4	624.0	289.5	248.4
55°	3360.0	3470.4	3596.6	3580.7	3460.2	3254.3	2723.2	1508.1	596.7	263.2	230.9
57.5°	3651.4	3781.6	3958.0	3954.7	3806.9	3575.0	3025.1	1608.5	584.9	248.1	222.2
60°	3960.0	4126.0	4369.6	4407.7	4247.2	4005.9	3381.9	1731.7	586.7	239.7	217.1
62.5°	4185.6	4428.9	4783.3	4897.1	4707.9	4442.1	3752.1	1854.8	576.5	229.9	211.0
65°	4199.4	4549.8	5052.6	5229.6	5038.1	4696.5	3882.6	1830.6	516.0	216.8	201.3
67.5°	3862.8	4319.2	4930.1	5124.3	4928.4	4539.7	3653.8	1600.4	419.4	193.8	184.4
70°	3217.3	3747.1	4381.1	4597.6	4435.6	4042.2	3179.9	1278.3	313.3	163.6	159.2
72.5°	2486.3	2980.4	3556.2	3756.5	3632.6	3286.6	2508.1	931.6	223.8	132.6	129.2
75°	1777.4	2198.1	2616.2	2692.5	2570.4	2252.6	1627.3	582.0	156.8	108.7	104.0
77.5°	1100.6	1374.2	1524.3	1426.0	1270.2	1055.8	662.4	287.4	104.3	88.5	83.8
80°	488.4	573.2	535.1	476.9	376.7	309.6	202.2	127.6	67.3	68.3	65.7
82.5°	164.3	173.7	169.0	168.0	151.5	132.6	85.8	55.2	37.6	43.8	42.8
85°	80.1	83.8	84.2	87.2	75.7	58.9	23.2	21.9	16.2	23.5	24.6
87.5°	24.2	24.6	22.2	24.2	19.5	13.5	4.4	6.0	3.1	5.7	5.7
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4	458.4
2.5°	442.6	441.2	438.8	436.2	435.5	432.2	431.2	429.4	428.4	426.8	425.4
5°	438.5	436.2	433.5	430.5	430.5	425.8	423.7	421.8	421.8	418.7	417.4
7.5°	442.6	439.6	436.5	433.8	434.9	429.4	427.5	425.4	425.0	422.1	420.7
10°	454.0	451.0	447.3	444.6	443.6	439.3	436.9	433.8	431.8	429.8	427.8
12.5°	471.6	467.5	462.8	457.1	454.7	451.0	447.3	443.2	438.5	436.5	433.5
15°	492.4	485.7	479.3	472.2	465.9	462.1	457.1	450.7	444.3	441.6	437.5
17.5°	509.5	502.5	493.4	485.0	473.5	470.6	463.5	455.7	445.3	444.3	438.2
20°	524.1	513.3	502.2	492.0	474.5	472.9	464.1	455.0	440.3	440.3	432.8
22.5°	532.1	517.3	504.2	490.7	468.8	467.5	457.4	446.6	428.4	429.1	420.0
25°	533.5	515.7	499.1	482.9	457.8	455.4	442.6	430.8	410.9	409.6	400.2
27.5°	528.0	507.2	488.0	468.5	441.2	436.2	422.1	408.0	388.4	385.0	374.9
30°	515.7	491.0	469.5	446.9	418.4	410.3	395.5	380.9	361.1	356.8	347.3
32.5°	495.7	467.8	444.0	421.4	389.7	379.6	364.9	350.4	331.2	327.9	319.1
35°	469.5	438.2	413.0	389.0	357.4	347.0	332.9	320.1	302.6	301.3	295.1
37.5°	436.5	403.9	377.0	354.0	324.1	318.8	304.2	294.8	280.4	281.7	278.7
40°	399.2	365.8	340.2	320.1	294.2	289.5	280.7	273.6	261.2	264.8	265.3
42.5°	361.5	328.2	304.9	286.7	264.5	261.5	255.4	251.4	242.0	249.4	252.5
45°	318.8	287.8	267.9	254.1	237.6	237.6	234.6	234.3	227.8	238.2	241.3
47.5°	277.3	253.1	239.3	230.9	219.4	224.8	223.8	226.5	221.8	232.6	235.3
50°	246.0	229.2	220.8	216.8	208.7	217.1	219.1	222.8	218.8	228.2	230.2
52.5°	226.2	215.0	210.3	209.3	203.7	214.1	217.4	220.8	216.0	224.8	224.5
55°	215.0	207.7	206.0	208.0	203.7	213.7	217.1	219.4	215.4	221.5	221.2
57.5°	211.0	206.9	208.0	211.0	208.0	216.5	218.1	220.8	216.8	219.4	220.8
60°	210.7	210.7	214.7	218.8	216.8	222.8	223.8	223.5	219.7	220.1	220.8
62.5°	208.7	213.7	220.4	226.9	226.2	233.5	234.3	229.9	226.9	223.5	222.5
65°	202.2	210.7	220.4	229.2	230.6	242.0	243.4	239.0	236.9	231.2	226.9
67.5°	188.1	198.9	210.3	221.2	223.5	239.0	242.0	243.7	244.7	241.0	235.3
70°	164.3	175.3	187.1	199.6	203.0	220.1	226.5	234.3	240.3	245.7	243.7
72.5°	133.6	143.7	153.9	165.2	170.3	188.1	196.5	210.0	219.4	233.2	239.0
75°	106.0	112.1	118.2	125.2	129.2	146.8	157.2	173.3	186.1	205.3	218.1
77.5°	83.5	86.5	89.5	92.6	94.2	104.0	112.4	128.6	143.4	167.7	186.5
80°	64.2	66.0	66.3	67.3	66.6	71.4	74.4	84.2	97.0	120.8	143.0
82.5°	41.4	42.8	43.4	45.1	41.7	47.8	49.8	50.8	57.6	75.1	90.8
85°	23.2	23.5	23.9	24.6	19.8	25.9	26.3	24.6	23.9	31.0	35.0
87.5°	5.7	5.4	5.7	5.7	2.4	5.4	5.4	3.7	2.7	5.0	4.0
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):

	135°	145°	155°	165°	175°	180°
0°	458.4	458.4	458.4	458.4	458.4	458.4
2.5°	422.4	421.8	422.1	420.3	419.7	420.0
5°	415.6	414.3	414.3	413.3	411.9	411.9
7.5°	418.7	416.0	415.0	413.0	410.9	411.3
10°	423.4	418.7	415.3	412.2	409.9	409.9
12.5°	426.5	418.0	413.0	409.0	406.2	406.2
15°	427.1	414.3	406.9	402.5	399.9	399.9
17.5°	423.1	406.9	397.5	391.8	388.7	389.4
20°	413.0	393.1	382.0	375.9	373.0	373.3
22.5°	397.1	374.3	361.5	354.5	351.4	351.4
25°	375.6	350.7	336.9	331.2	328.5	328.5
27.5°	351.1	325.5	313.3	308.9	307.3	307.3
30°	323.5	302.3	293.5	290.4	287.8	287.8
32.5°	300.2	285.1	282.0	278.0	271.0	270.6
35°	281.7	280.0	277.6	265.6	255.4	254.1
37.5°	271.6	281.7	266.9	246.0	237.9	237.6
40°	266.3	275.7	250.1	240.0	239.0	239.0
42.5°	253.5	260.1	249.1	243.4	243.4	243.7
45°	240.0	245.7	251.4	246.3	248.1	248.4
47.5°	230.6	242.0	251.4	247.0	250.4	252.5
50°	221.8	238.7	246.3	246.3	250.1	250.4
52.5°	219.7	233.9	241.6	245.4	245.7	244.0
55°	220.1	230.2	237.9	242.6	240.6	240.6
57.5°	219.7	228.2	235.0	236.6	237.6	237.6
60°	220.1	225.5	230.9	230.2	233.5	233.5
62.5°	221.2	221.8	224.5	223.8	228.8	228.8
65°	223.5	217.1	215.4	216.0	222.2	221.8
67.5°	227.8	210.7	205.3	205.6	214.4	213.1
70°	234.3	201.9	193.8	191.8	206.6	204.3
72.5°	236.3	191.8	179.0	177.1	185.8	179.0
75°	226.9	183.7	163.3	156.5	152.8	150.8
77.5°	202.2	178.7	146.8	132.6	126.8	125.5
80°	167.7	168.3	125.2	108.3	125.9	125.5
82.5°	126.5	145.4	100.2	93.9	91.2	76.1
85°	61.3	109.4	77.0	64.7	38.7	36.7
87.5°	5.4	45.7	44.4	28.9	13.1	12.5
90°	0.0	0.0	0.0	0.0	0.0	0.0

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