

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: P196273

Luminaire Tested: **NAV-AF-01-D-UNV-T2R-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196273
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-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(1) 70 CRI, 4000K, 615mA LIGHTSQUARE WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4314.8 lumens
Efficiency: N/A
Efficacy: 126.9 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

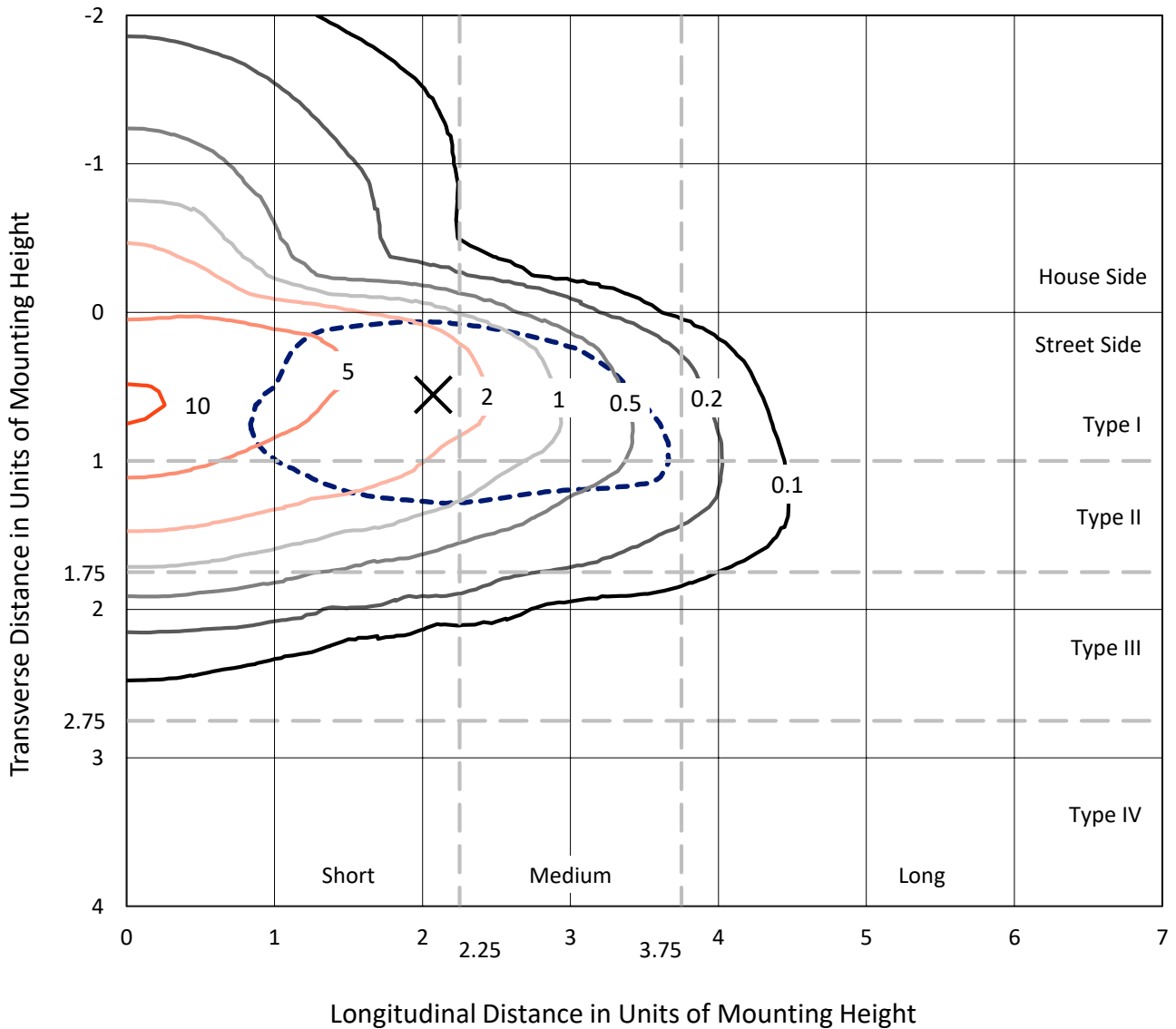
Input Watts (W): 34
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

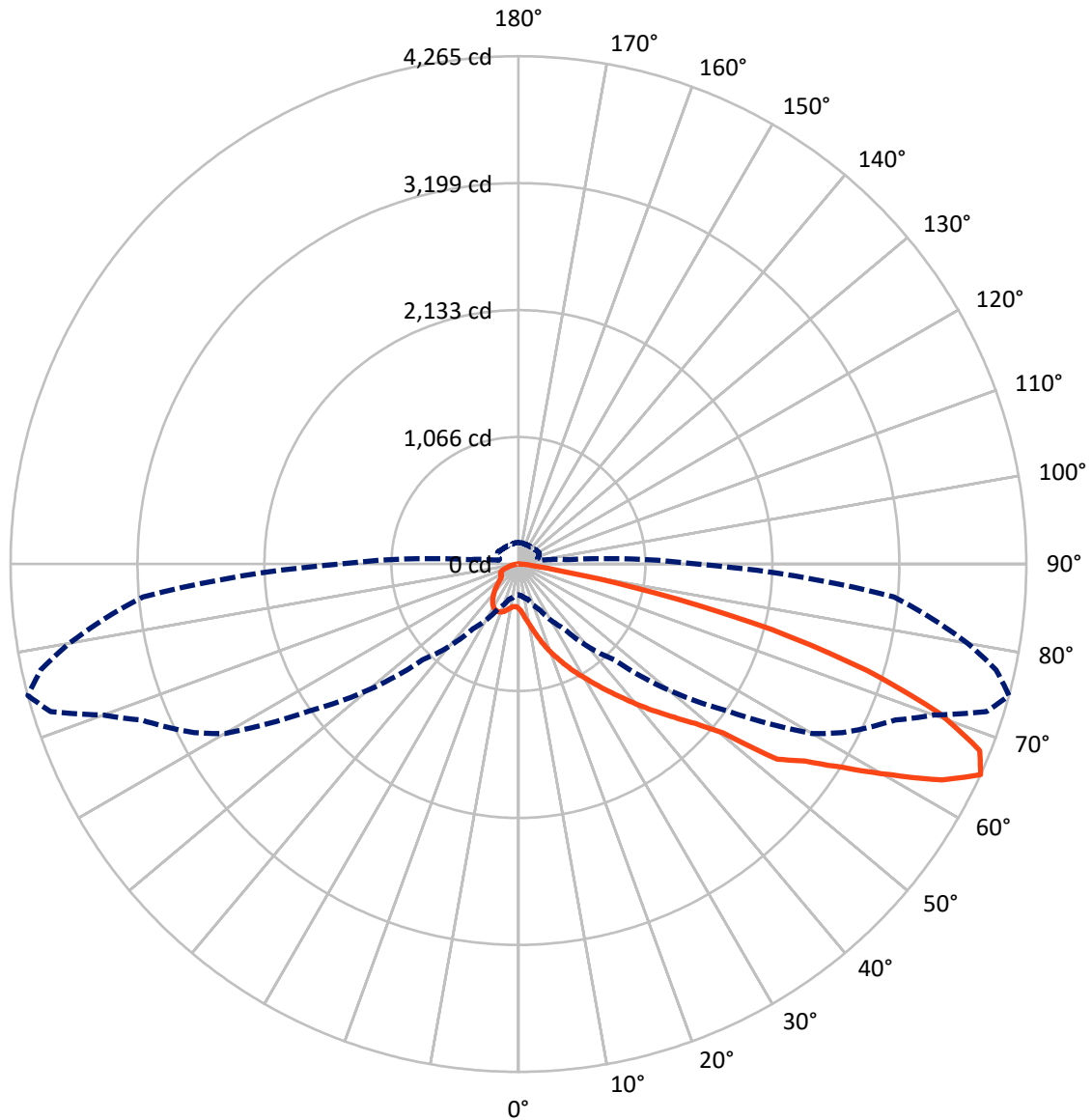
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 10.7 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	648.4	0.0	648.4
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	3666.4	0.0	3666.4
	% Fixture	85.0	0.0	85.0
Total	Lumens	4314.8	0.0	4314.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.1	1.0
10°-20°	168.6	3.9
20°-30°	340.2	7.9
30°-40°	577.8	13.4
40°-50°	805.8	18.7
50°-60°	987.7	22.9
60°-70°	929.3	21.5
70°-80°	407.5	9.4
80°-90°	53.9	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°	4314.8	100.0
0°-180°	4314.8	100.0



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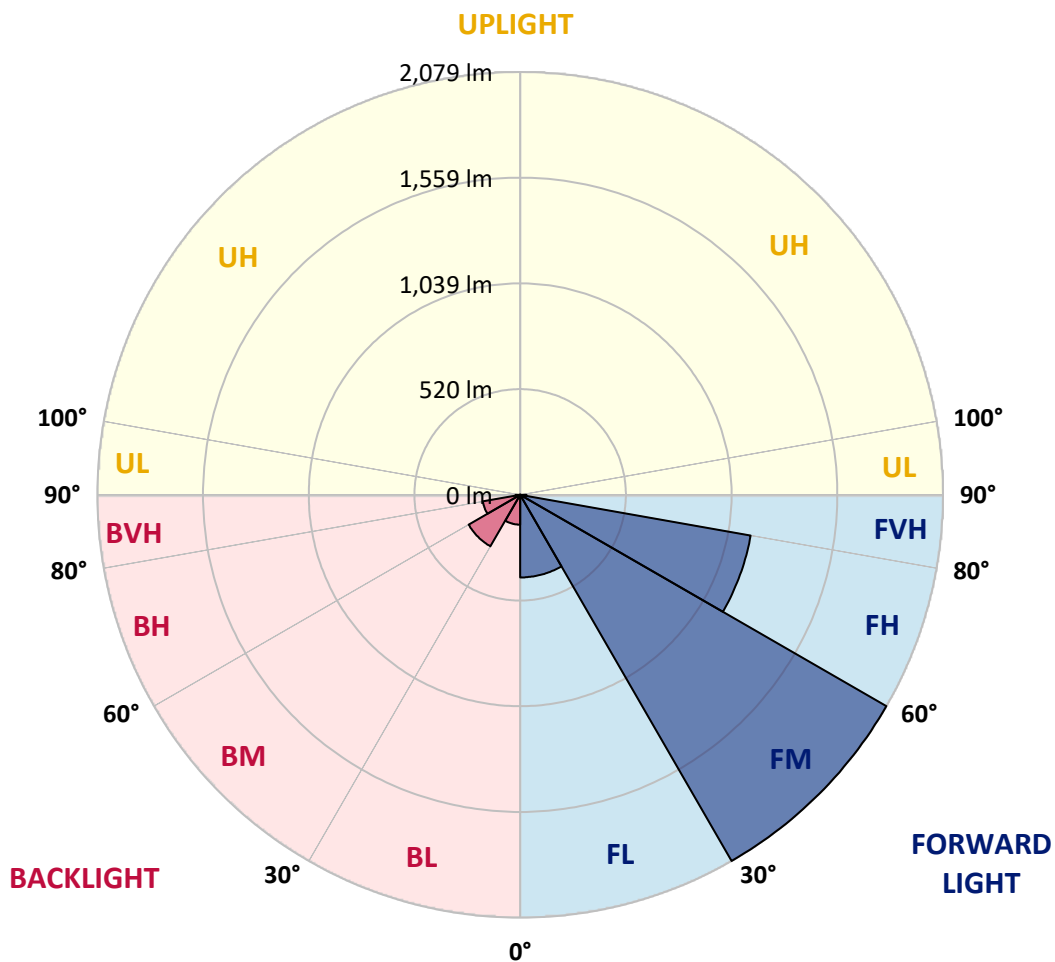
CATALOG NUMBER: NAV-AF-01-D-UNV-T2R-600

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	406.1	9.4			
FM	(30°-60°)	2078.7	48.2			
FH	(60°-80°)	1150.4	26.7			G1/1800
FVH	(80°-90°)	31.3	0.7			G1/100
BL	(0°-30°)	146.8	3.4	B1/500		
BM	(30°-60°)	292.6	6.8	B1/1000		
BH	(60°-80°)	186.4	4.3	B1/500		G1/500
BVH	(80°-90°)	22.7	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°	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9
2.5°	470.8	465.2	465.9	458.1	446.8	434.5	424.3	418.9	414.2	412.9	405.2
5°	615.7	608.9	606.3	588.8	562.4	531.1	500.1	488.0	478.1	472.1	457.3
7.5°	734.3	730.7	727.4	711.2	685.1	645.1	595.1	577.3	560.8	542.7	524.8
10°	815.0	813.6	812.2	801.0	779.3	744.4	690.6	671.2	650.5	627.5	604.2
12.5°	875.9	875.9	877.0	867.7	854.5	827.6	778.7	760.6	739.7	715.6	689.0
15°	916.8	917.9	923.6	926.4	919.5	902.2	859.4	843.5	823.8	799.8	773.6
17.5°	944.0	946.1	954.6	963.7	972.5	966.5	934.7	919.8	901.9	880.0	855.3
20°	1007.1	1004.3	1004.6	1001.9	1014.8	1019.5	1001.9	989.5	975.3	955.2	932.7
22.5°	1139.7	1134.5	1121.1	1086.7	1071.0	1069.4	1059.0	1052.4	1041.4	1028.8	1006.3
25°	1312.5	1306.5	1279.9	1223.3	1176.7	1133.6	1114.4	1110.3	1103.2	1094.7	1078.5
27.5°	1491.3	1484.7	1450.3	1379.0	1318.1	1231.1	1171.3	1165.8	1159.2	1155.6	1148.0
30°	1648.6	1641.4	1607.7	1535.2	1461.7	1357.9	1247.8	1228.6	1217.3	1218.4	1214.0
32.5°	1786.7	1780.3	1742.5	1668.6	1594.0	1493.2	1347.2	1317.3	1292.0	1282.7	1286.0
35°	1902.5	1896.8	1855.2	1780.9	1705.7	1622.0	1475.1	1430.1	1388.9	1363.1	1360.1
37.5°	1970.5	1967.2	1938.2	1875.1	1800.4	1738.9	1618.4	1568.4	1507.7	1470.2	1453.7
40°	1966.7	1970.3	1965.3	1936.8	1878.9	1834.2	1767.7	1718.3	1659.0	1603.0	1569.5
42.5°	1910.7	1915.7	1937.9	1952.7	1937.1	1909.8	1898.1	1861.3	1808.1	1748.7	1702.4
45°	1833.8	1838.2	1867.1	1920.6	1965.3	1973.0	2012.2	1993.8	1948.8	1898.4	1847.3
47.5°	1716.1	1724.6	1758.0	1843.2	1949.6	2023.8	2108.1	2116.6	2090.5	2048.8	2001.0
50°	1545.7	1556.9	1603.8	1724.9	1890.4	2076.0	2250.5	2282.9	2272.5	2230.2	2181.9
52.5°	1371.1	1382.3	1444.9	1573.6	1794.9	2097.4	2390.7	2473.7	2533.5	2577.1	2585.7
55°	1189.4	1202.0	1270.6	1418.8	1667.5	2070.1	2491.0	2585.1	2645.8	2691.4	2709.7
57.5°	984.3	998.6	1065.0	1214.9	1487.5	1960.9	2602.4	2735.8	2826.1	2896.4	2935.9
60°	749.1	766.9	835.9	986.7	1250.9	1751.8	2652.1	2849.4	2993.1	3098.4	3161.0
62.5°	474.9	493.0	564.7	721.4	981.5	1466.0	2511.5	2799.5	3044.3	3200.2	3315.0
65°	259.1	267.1	306.9	424.9	661.7	1137.5	2155.3	2494.8	2847.5	3068.4	3244.7
67.5°	194.4	195.5	199.6	228.3	352.4	768.0	1685.1	1996.1	2387.8	2672.2	2882.7
70°	170.2	170.2	170.7	171.0	191.3	416.1	1141.6	1427.8	1786.9	2074.5	2336.1
72.5°	152.6	151.0	150.4	147.1	149.9	213.3	621.4	878.6	1181.4	1504.1	1748.2
75°	131.8	131.4	131.4	128.2	129.8	150.2	269.5	421.7	656.3	956.9	1197.1
77.5°	114.0	112.0	112.2	110.4	115.6	115.0	127.9	173.8	285.7	502.6	701.8
80°	93.9	92.5	93.3	92.3	100.5	85.1	86.2	106.2	141.9	220.4	310.7
82.5°	69.5	70.0	75.2	74.7	84.5	57.4	63.1	79.3	95.5	109.8	119.4
85°	40.6	41.4	54.1	56.8	62.0	30.2	38.7	47.3	53.3	59.0	61.5
87.5°	4.4	5.7	30.2	31.0	27.7	9.1	15.7	19.7	21.2	22.5	19.7
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9
2.5°	402.6	399.2	395.3	393.0	389.2	386.0	379.9	374.9	369.5	365.6	364.0
5°	449.9	441.4	432.3	425.8	417.5	410.4	396.6	380.1	374.9	364.0	361.2
7.5°	511.4	496.0	480.6	468.0	453.7	441.9	418.9	389.2	385.3	367.9	364.0
10°	583.6	561.1	538.3	518.7	497.9	479.8	445.8	404.1	400.0	377.5	373.6
12.5°	664.3	636.8	607.4	578.4	553.6	528.1	481.7	427.1	420.5	393.9	388.7
15°	747.5	717.8	683.7	648.7	618.2	584.4	525.9	457.3	445.2	413.9	406.8
17.5°	829.5	797.4	761.7	722.4	686.8	646.4	573.7	491.0	470.1	433.7	424.6
20°	908.8	876.2	838.5	800.2	755.7	709.5	622.6	524.3	492.4	450.2	438.3
22.5°	981.0	953.0	915.4	871.2	826.2	774.4	672.2	557.5	511.9	462.8	447.6
25°	1057.0	1031.5	994.2	951.7	899.2	841.6	723.5	589.0	527.5	469.6	451.0
27.5°	1133.9	1111.9	1076.9	1032.1	975.8	911.9	775.7	618.2	540.2	471.9	449.4
30°	1216.0	1199.0	1166.6	1116.7	1059.8	989.0	832.5	646.7	548.2	468.8	441.9
32.5°	1293.6	1293.1	1264.3	1212.4	1151.2	1073.3	892.3	675.6	552.3	460.3	429.0
35°	1374.3	1385.6	1363.9	1314.5	1250.0	1163.5	958.5	706.2	552.5	445.2	412.2
37.5°	1466.0	1486.0	1476.4	1429.6	1361.8	1266.5	1036.1	740.8	550.9	424.3	387.8
40°	1570.3	1597.7	1597.5	1558.0	1485.5	1381.8	1126.5	779.6	547.1	398.2	359.1
42.5°	1689.7	1722.4	1731.4	1692.5	1619.2	1507.7	1230.0	822.0	541.0	372.5	328.6
45°	1826.5	1855.2	1872.3	1836.1	1762.4	1645.0	1348.9	870.4	533.6	339.3	293.7
47.5°	1972.8	2006.2	2031.8	2000.7	1922.2	1801.4	1489.6	932.7	530.8	301.4	256.1
50°	2154.1	2188.8	2243.9	2229.9	2186.9	2089.7	1787.5	1079.8	531.9	265.5	224.5
52.5°	2604.3	2683.7	2753.4	2722.4	2620.0	2453.3	2029.5	1161.7	508.9	236.1	202.5
55°	2740.2	2830.2	2933.2	2920.3	2822.0	2654.0	2220.8	1230.0	486.6	214.6	188.3
57.5°	2977.9	3084.1	3227.9	3225.3	3104.8	2915.6	2467.1	1311.7	477.1	202.3	181.2
60°	3229.7	3364.9	3563.7	3594.6	3463.7	3266.9	2758.1	1412.3	478.4	195.5	177.1
62.5°	3413.5	3611.9	3901.0	3993.8	3839.5	3622.7	3060.0	1512.7	470.1	187.5	172.1
65°	3424.7	3710.5	4120.7	4265.0	4108.8	3830.2	3166.4	1492.9	420.7	176.8	164.2
67.5°	3150.3	3522.5	4020.7	4179.1	4019.3	3702.3	2979.9	1305.2	342.0	158.1	150.4
70°	2623.9	3055.9	3573.0	3749.5	3617.5	3296.6	2593.4	1042.5	255.5	133.4	129.8
72.5°	2027.6	2430.6	2900.3	3063.5	2962.6	2680.3	2045.5	759.7	182.5	108.1	105.4
75°	1449.5	1792.7	2133.6	2195.9	2096.2	1837.1	1327.2	474.5	127.9	88.7	84.8
77.5°	897.5	1120.7	1243.2	1163.0	1035.9	861.0	540.2	234.5	85.1	72.2	68.3
80°	398.2	467.5	436.4	388.9	307.2	252.6	165.0	104.0	54.9	55.8	53.5
82.5°	133.9	141.7	137.8	137.0	123.5	108.1	70.0	45.0	30.8	35.7	34.9
85°	65.4	68.3	68.6	71.1	61.8	48.1	18.9	17.8	13.2	19.2	20.0
87.5°	19.7	20.0	18.1	19.7	16.0	10.9	3.6	4.9	2.5	4.7	4.7
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°	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9	373.9
2.5°	361.0	359.9	357.9	355.8	355.2	352.4	351.6	350.3	349.4	348.0	347.0
5°	357.6	355.8	353.5	351.1	351.1	347.2	345.6	343.9	343.9	341.5	340.3
7.5°	361.0	358.4	356.0	353.8	354.7	350.3	348.6	347.0	346.7	344.2	343.1
10°	370.3	367.9	364.8	362.6	361.8	358.2	356.3	353.8	352.2	350.6	348.8
12.5°	384.5	381.3	377.5	372.8	370.8	367.9	364.8	361.5	357.6	356.0	353.5
15°	401.6	396.1	390.9	385.1	379.9	376.9	372.8	367.5	362.3	360.1	356.8
17.5°	415.5	409.8	402.4	395.6	386.2	383.7	378.0	371.6	363.1	362.3	357.4
20°	427.4	418.6	409.5	401.3	387.0	385.7	378.5	371.1	359.1	359.1	353.0
22.5°	433.9	421.9	411.2	400.2	382.4	381.3	373.1	364.3	349.4	350.0	342.6
25°	435.1	420.5	407.0	393.9	373.3	371.3	361.0	351.4	335.1	334.1	326.3
27.5°	430.7	413.7	398.0	382.1	359.9	355.8	344.2	332.7	316.8	314.0	305.8
30°	420.5	400.5	382.9	364.5	341.2	334.6	322.5	310.7	294.5	290.9	283.3
32.5°	404.3	381.6	362.0	343.6	317.8	309.6	297.6	285.7	270.1	267.4	260.2
35°	382.9	357.4	336.8	317.3	291.5	282.9	271.5	261.1	246.7	245.7	240.7
37.5°	356.0	329.4	307.4	288.8	264.3	259.9	248.2	240.5	228.6	229.8	227.3
40°	325.5	298.4	277.5	261.1	239.9	236.1	228.9	223.2	213.0	216.0	216.3
42.5°	294.8	267.6	248.7	233.8	215.7	213.3	208.4	205.0	197.3	203.4	205.8
45°	259.9	234.7	218.5	207.2	193.7	193.7	191.3	191.1	185.9	194.4	196.8
47.5°	226.2	206.4	195.2	188.3	179.0	183.3	182.5	184.7	180.9	189.7	191.9
50°	200.6	186.9	180.0	176.8	170.2	177.1	178.7	181.7	178.4	186.1	187.7
52.5°	184.4	175.4	171.5	170.7	166.0	174.6	177.3	180.0	176.3	183.3	183.1
55°	175.4	169.4	168.0	169.6	166.0	174.3	177.1	179.0	175.6	180.7	180.3
57.5°	172.1	168.8	169.6	172.1	169.6	176.5	177.9	180.0	176.8	179.0	180.0
60°	171.9	171.9	175.1	178.4	176.8	181.7	182.5	182.3	179.2	179.5	180.0
62.5°	170.2	174.3	179.8	185.1	184.4	190.5	191.1	187.5	185.1	182.3	181.5
65°	165.0	171.9	179.8	186.9	188.0	197.3	198.5	194.9	193.2	188.5	185.1
67.5°	153.4	162.2	171.5	180.3	182.3	194.9	197.3	198.8	199.6	196.5	191.9
70°	133.9	143.0	152.6	162.8	165.5	179.5	184.7	191.1	196.0	200.4	198.8
72.5°	108.9	117.2	125.4	134.7	138.9	153.4	160.3	171.2	179.0	190.3	194.9
75°	86.4	91.5	96.4	102.1	105.4	119.7	128.2	141.4	151.8	167.5	177.9
77.5°	68.0	70.6	73.0	75.5	76.8	84.8	91.7	104.9	116.9	136.7	152.1
80°	52.5	53.8	54.1	54.9	54.3	58.2	60.7	68.6	79.1	98.5	116.6
82.5°	33.8	34.9	35.4	36.8	34.1	39.0	40.6	41.4	47.0	61.2	74.1
85°	18.9	19.2	19.5	20.0	16.2	21.2	21.4	20.0	19.5	25.3	28.5
87.5°	4.7	4.4	4.7	4.7	1.9	4.4	4.4	3.1	2.1	4.1	3.3
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):

	135°	145°	155°	165°	175°	180°
0°	373.9	373.9	373.9	373.9	373.9	373.9
2.5°	344.5	343.9	344.2	342.8	342.3	342.6
5°	339.0	337.9	337.9	337.1	335.9	335.9
7.5°	341.5	339.3	338.4	336.8	335.1	335.4
10°	345.3	341.5	338.7	336.2	334.3	334.3
12.5°	347.8	340.9	336.8	333.5	331.3	331.3
15°	348.3	337.9	331.8	328.3	326.1	326.1
17.5°	345.0	331.8	324.2	319.5	317.0	317.6
20°	336.8	320.6	311.6	306.6	304.1	304.4
22.5°	323.9	305.2	294.8	289.1	286.5	286.5
25°	306.4	286.0	274.8	270.1	267.9	267.9
27.5°	286.3	265.5	255.5	252.0	250.6	250.6
30°	263.8	246.5	239.4	236.9	234.7	234.7
32.5°	244.8	232.5	230.1	226.7	221.0	220.7
35°	229.8	228.3	226.5	216.6	208.4	207.2
37.5°	221.5	229.8	217.7	200.6	194.1	193.7
40°	217.1	224.8	204.0	195.7	194.9	194.9
42.5°	206.7	212.2	203.2	198.5	198.5	198.8
45°	195.7	200.4	205.0	200.9	202.3	202.5
47.5°	188.0	197.3	205.0	201.5	204.2	205.8
50°	180.9	194.6	200.9	200.9	204.0	204.2
52.5°	179.2	190.8	197.1	200.1	200.4	199.0
55°	179.5	187.7	194.1	197.9	196.3	196.3
57.5°	179.2	186.1	191.6	192.9	193.7	193.7
60°	179.5	183.9	188.3	187.7	190.5	190.5
62.5°	180.3	180.9	183.1	182.5	186.7	186.7
65°	182.3	177.1	175.6	176.3	181.2	180.9
67.5°	185.9	171.9	167.5	167.7	174.8	173.8
70°	191.1	164.7	158.1	156.4	168.6	166.6
72.5°	192.7	156.4	146.1	144.3	151.5	146.1
75°	185.1	149.9	133.1	127.7	124.6	123.0
77.5°	165.0	145.8	119.7	108.1	103.5	102.4
80°	136.7	137.3	102.1	88.4	102.7	102.4
82.5°	103.2	118.6	81.8	76.6	74.4	62.0
85°	49.9	89.2	62.8	52.7	31.6	29.9
87.5°	4.4	37.3	36.2	23.6	10.7	10.1
90°	0.0	0.0	0.0	0.0	0.0	0.0

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