

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: P195794

Luminaire Tested: **NAV-AF-02-D-UNV-T2R-7050-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195794
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-02-D-UNV-T2R-7050-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8410 lumens
Efficiency: N/A
Efficacy: 127.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G2

Input Watts (W): 66
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

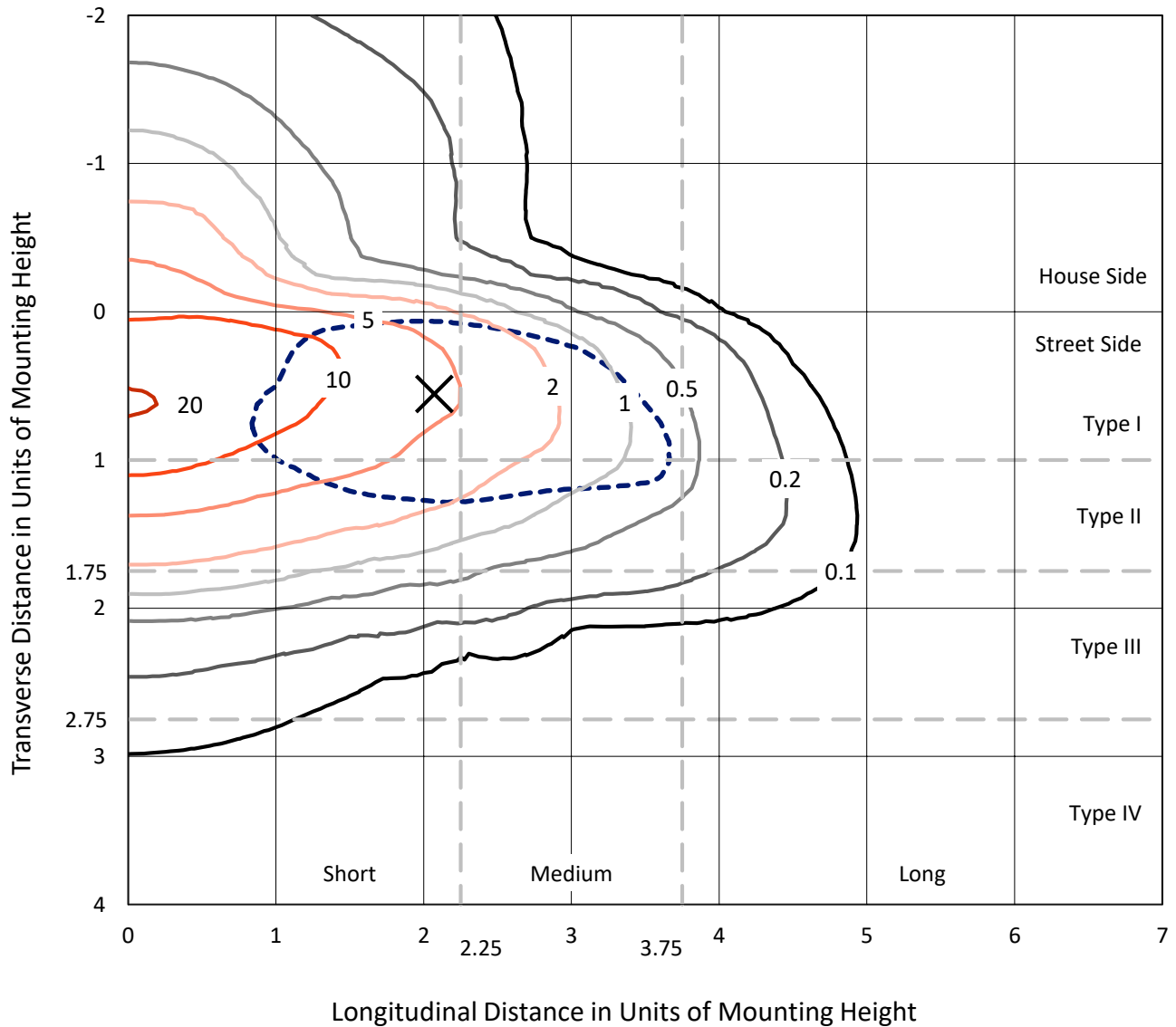


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Iso-Footcandle Lines of Horizontal Illumination

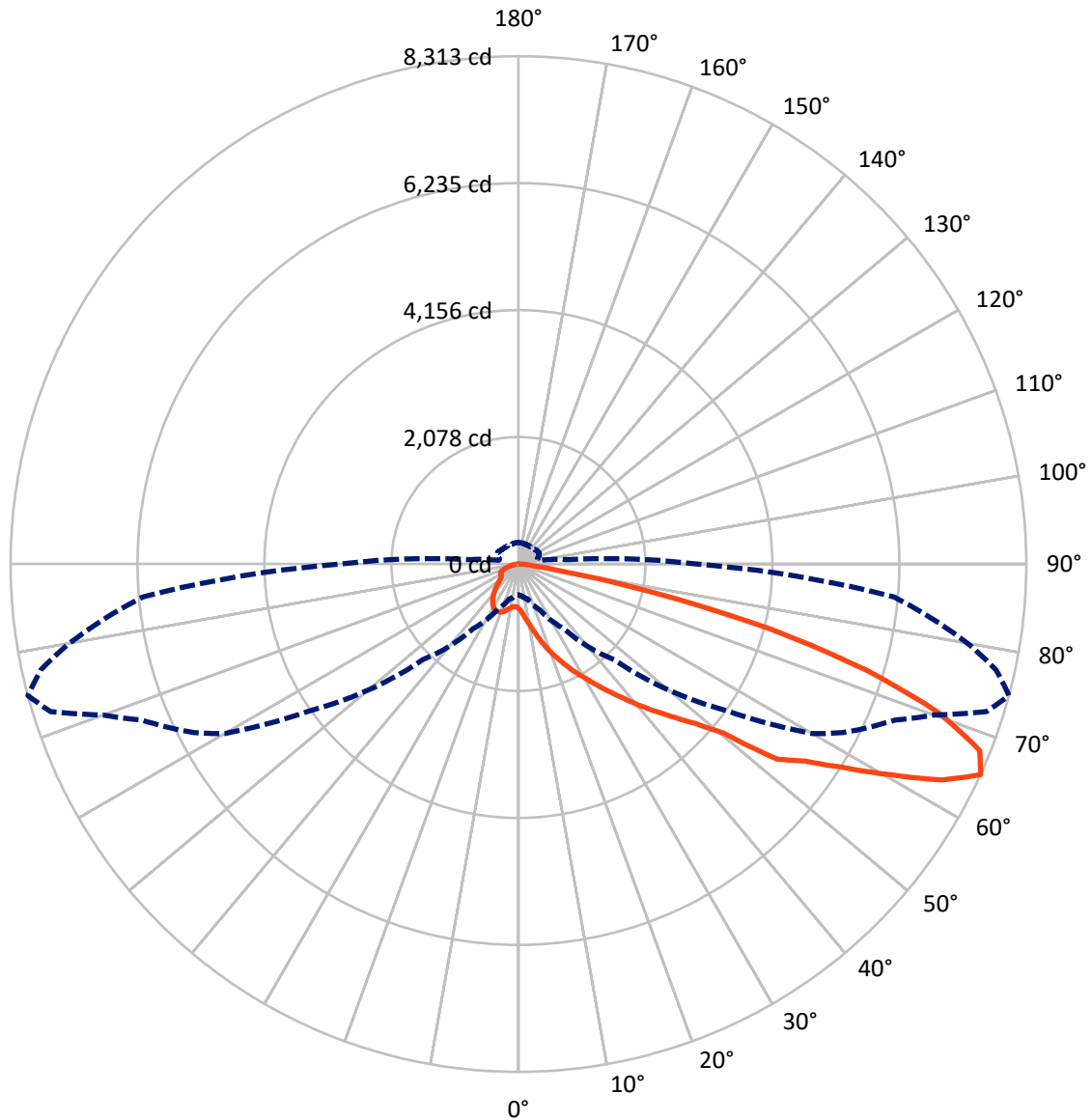
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 20.9 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	1263.7	0.0	1263.7
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	7146.3	0.0	7146.3
	% Fixture	85.0	0.0	85.0
Total	Lumens	8410.0	0.0	8410.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	86.0	1.0
10°-20°	328.6	3.9
20°-30°	663.1	7.9
30°-40°	1126.1	13.4
40°-50°	1570.7	18.7
50°-60°	1925.0	22.9
60°-70°	1811.2	21.5
70°-80°	794.2	9.4
80°-90°	105.1	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°	8410.0	100.0
0°-180°	8410.0	100.0

Coefficient of Utilization



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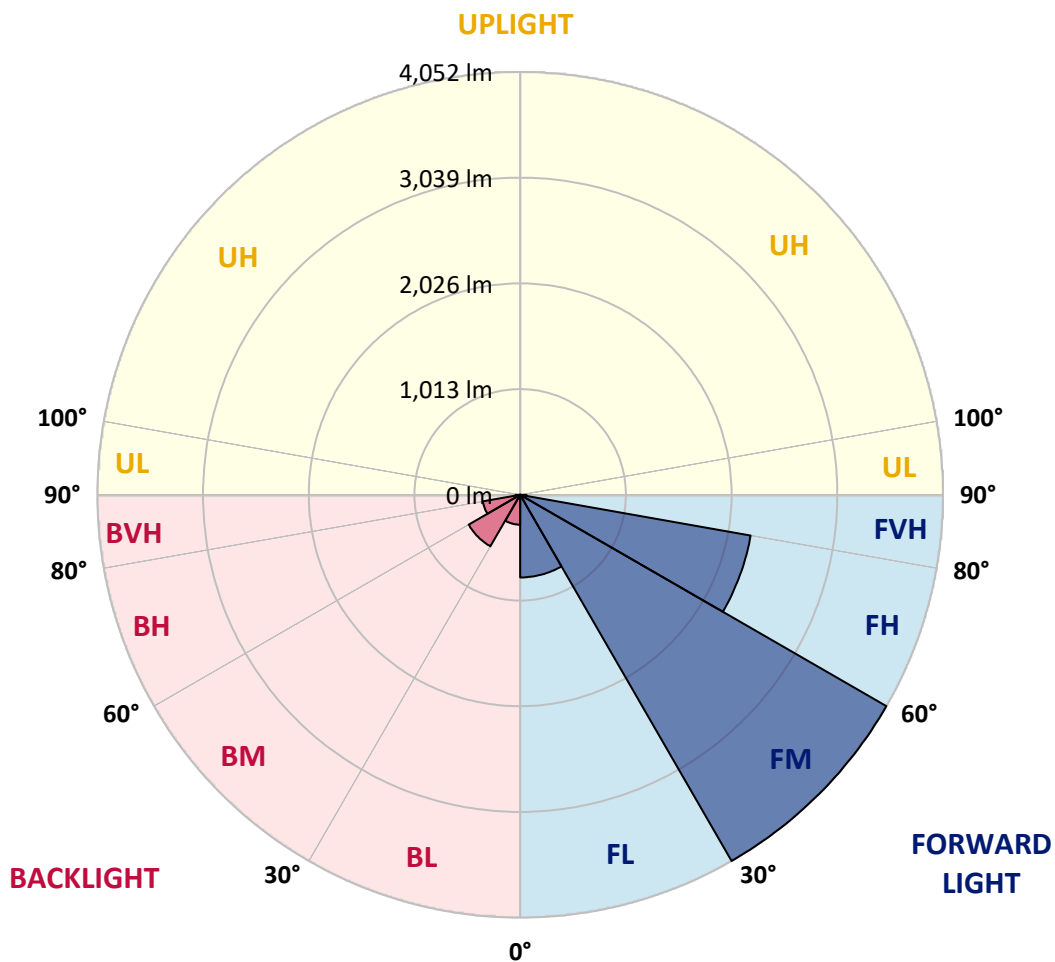
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	791.6	9.4			
FM	(30°-60°)	4051.6	48.2			
FH	(60°-80°)	2242.2	26.7			G2/5000
FVH	(80°-90°)	60.9	0.7			G1/100
BL	(0°-30°)	286.1	3.4	B1/500		
BM	(30°-60°)	570.3	6.8	B1/1000		
BH	(60°-80°)	363.2	4.3	B1/500		G1/500
BVH	(80°-90°)	44.2	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-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	728.7	728.7	728.7	728.7	728.7	728.7	728.7	728.7	728.7	728.7	728.7
2.5°	917.5	906.8	907.9	892.9	871.0	846.9	827.1	816.4	807.3	804.6	789.7
5°	1200.0	1186.6	1181.8	1147.6	1096.2	1035.2	974.8	951.2	932.0	920.2	891.3
7.5°	1431.1	1424.2	1417.8	1386.2	1335.4	1257.3	1159.9	1125.1	1093.0	1057.7	1022.9
10°	1588.4	1585.8	1583.1	1561.1	1518.9	1450.9	1346.1	1308.1	1268.0	1223.0	1177.5
12.5°	1707.2	1707.2	1709.3	1691.1	1665.5	1613.0	1517.8	1482.5	1441.8	1394.8	1342.9
15°	1786.9	1789.1	1800.3	1805.6	1792.3	1758.6	1675.1	1644.1	1605.5	1559.0	1507.6
17.5°	1839.9	1844.2	1860.7	1878.4	1895.5	1883.7	1821.7	1792.8	1758.0	1715.2	1667.1
20°	1962.9	1957.6	1958.1	1952.8	1977.9	1987.0	1952.8	1928.7	1900.9	1861.8	1817.9
22.5°	2221.3	2211.2	2185.0	2118.1	2087.6	2084.4	2064.0	2051.2	2029.8	2005.2	1961.3
25°	2558.4	2546.6	2494.7	2384.5	2293.6	2209.6	2172.1	2164.1	2150.2	2133.6	2102.0
27.5°	2906.7	2893.8	2827.0	2687.9	2569.1	2399.5	2282.9	2272.2	2259.3	2252.4	2237.4
30°	3213.2	3199.3	3133.5	2992.3	2848.9	2646.7	2432.1	2394.7	2372.7	2374.9	2366.3
32.5°	3482.3	3470.0	3396.2	3252.3	3106.8	2910.4	2625.8	2567.5	2518.3	2500.1	2506.5
35°	3708.1	3696.9	3616.1	3471.1	3324.5	3161.3	2875.1	2787.4	2707.1	2656.8	2650.9
37.5°	3840.8	3834.4	3777.7	3654.6	3509.1	3389.2	3154.4	3057.0	2938.8	2865.5	2833.4
40°	3833.3	3840.3	3830.6	3775.0	3662.1	3574.9	3445.4	3349.1	3233.6	3124.4	3059.2
42.5°	3724.2	3733.8	3777.1	3806.0	3775.5	3722.6	3699.6	3627.9	3524.1	3408.5	3318.1
45°	3574.4	3582.9	3639.1	3743.4	3830.6	3845.6	3922.1	3886.3	3798.5	3700.1	3600.6
47.5°	3344.8	3361.4	3426.7	3592.5	3800.1	3944.6	4108.8	4125.4	4074.6	3993.3	3900.2
50°	3012.6	3034.5	3126.0	3362.0	3684.6	4046.2	4386.5	4449.6	4429.3	4346.9	4252.7
52.5°	2672.3	2694.3	2816.3	3067.2	3498.4	4088.0	4659.9	4821.5	4938.1	5023.1	5039.7
55°	2318.2	2342.8	2476.5	2765.4	3250.1	4035.0	4855.2	5038.7	5156.9	5245.7	5281.6
57.5°	1918.5	1946.3	2075.8	2367.9	2899.2	3822.1	5072.4	5332.4	5508.4	5645.4	5722.4
60°	1460.0	1494.8	1629.1	1923.3	2438.0	3414.4	5169.2	5553.9	5833.7	6039.1	6161.1
62.5°	925.6	960.9	1100.5	1406.0	1913.2	2857.5	4895.3	5456.5	5933.7	6237.6	6461.2
65°	505.0	520.6	598.1	828.2	1289.9	2217.1	4200.8	4862.6	5550.1	5980.8	6324.3
67.5°	378.8	380.9	388.9	445.1	686.9	1496.9	3284.4	3890.5	4654.0	5208.3	5618.6
70°	331.7	331.7	332.8	333.3	372.9	811.1	2225.1	2783.1	3482.9	4043.6	4553.4
72.5°	297.5	294.3	293.2	286.8	292.1	415.7	1211.2	1712.5	2302.7	2931.8	3407.4
75°	256.8	256.3	256.3	249.8	253.1	292.6	525.4	821.8	1279.2	1865.0	2333.2
77.5°	222.0	218.3	218.8	215.1	225.2	224.2	249.3	338.7	556.9	979.6	1368.0
80°	183.0	180.3	181.9	179.8	195.8	165.9	168.0	207.0	276.6	429.6	605.6
82.5°	135.4	136.4	146.6	145.5	164.8	111.8	123.1	154.6	186.2	214.0	232.7
85°	79.2	80.8	105.4	110.7	120.9	58.9	75.4	92.0	103.8	115.0	119.8
87.5°	8.6	11.2	58.9	60.5	54.0	17.7	30.5	38.5	41.2	43.9	38.5
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°	728.7	728.7	728.7	728.7	728.7	728.7	728.7	728.7	728.7	728.7	728.7
2.5°	784.9	777.9	770.4	766.1	758.6	752.2	740.4	730.8	720.1	712.6	709.4
5°	876.9	860.3	842.6	829.8	813.7	799.8	773.1	741.0	730.8	709.4	704.1
7.5°	996.7	966.8	936.8	912.2	884.4	861.4	816.4	758.6	751.1	716.9	709.4
10°	1137.4	1093.5	1049.1	1011.2	970.5	935.2	868.8	787.5	779.5	735.6	728.1
12.5°	1294.7	1241.2	1184.0	1127.3	1079.1	1029.3	938.9	832.5	819.6	767.7	757.6
15°	1456.8	1399.0	1332.7	1264.2	1204.8	1139.0	1025.1	891.3	867.8	806.8	792.9
17.5°	1616.8	1554.2	1484.6	1408.1	1338.6	1259.9	1118.2	957.1	916.5	845.3	827.7
20°	1771.4	1707.7	1634.4	1559.5	1472.9	1383.0	1213.4	1021.9	959.8	877.4	854.4
22.5°	1912.1	1857.5	1784.2	1698.1	1610.4	1509.2	1310.2	1086.6	997.8	902.0	872.6
25°	2060.3	2010.5	1937.8	1854.9	1752.7	1640.3	1410.3	1148.1	1028.3	915.4	879.0
27.5°	2210.1	2167.3	2098.8	2011.6	1901.9	1777.3	1511.9	1204.8	1052.9	919.7	875.8
30°	2370.1	2336.9	2273.8	2176.4	2065.6	1927.6	1622.7	1260.5	1068.4	913.8	861.4
32.5°	2521.5	2520.4	2464.2	2363.1	2243.8	2091.9	1739.3	1316.6	1076.4	897.2	836.2
35°	2678.8	2700.7	2658.4	2562.1	2436.4	2267.9	1868.2	1376.6	1077.0	867.8	803.6
37.5°	2857.5	2896.5	2877.8	2786.3	2654.2	2468.5	2019.6	1444.0	1073.8	827.1	756.0
40°	3060.8	3114.3	3113.7	3036.7	2895.4	2693.2	2195.7	1519.4	1066.3	776.3	699.8
42.5°	3293.5	3357.1	3374.8	3298.8	3156.0	2938.8	2397.4	1602.3	1054.5	726.0	640.4
45°	3559.9	3616.1	3649.3	3578.6	3435.3	3206.3	2629.0	1696.5	1040.0	661.3	572.5
47.5°	3845.1	3910.3	3960.1	3899.6	3746.6	3511.2	2903.5	1817.9	1034.7	587.4	499.2
50°	4198.7	4266.1	4373.7	4346.4	4262.4	4073.0	3483.9	2104.7	1036.8	517.3	437.6
52.5°	5076.1	5230.7	5366.6	5306.2	5106.6	4781.9	3955.8	2264.1	991.9	460.1	394.8
55°	5340.9	5516.4	5717.0	5691.9	5500.4	5173.0	4328.7	2397.4	948.6	418.4	367.0
57.5°	5804.3	6011.3	6291.6	6286.3	6051.4	5682.8	4808.6	2556.8	929.8	394.3	353.1
60°	6294.9	6558.6	6946.0	7006.4	6751.2	6367.6	5375.7	2752.6	932.5	380.9	345.1
62.5°	6653.3	7040.1	7603.5	7784.3	7483.6	7061.0	5964.2	2948.4	916.5	365.4	335.4
65°	6675.2	7232.2	8031.5	8312.9	8008.5	7465.4	6171.8	2909.9	820.2	344.5	319.9
67.5°	6140.2	6865.7	7836.7	8145.4	7834.1	7216.1	5808.0	2543.9	666.6	308.2	293.2
70°	5114.1	5956.2	6964.1	7308.2	7050.8	6425.4	5054.7	2031.9	498.1	260.0	253.1
72.5°	3952.1	4737.5	5652.8	5971.2	5774.3	5224.3	3986.8	1480.9	355.8	210.8	205.4
75°	2825.4	3494.1	4158.6	4280.0	4085.8	3580.8	2586.7	925.0	249.3	172.8	165.3
77.5°	1749.5	2184.4	2423.0	2266.8	2019.1	1678.3	1052.9	456.9	165.9	140.7	133.2
80°	776.3	911.1	850.7	758.1	598.7	492.2	321.5	202.8	107.0	108.6	104.3
82.5°	261.1	276.1	268.6	267.0	240.8	210.8	136.4	87.7	59.9	69.6	67.9
85°	127.3	133.2	133.8	138.6	120.4	93.6	36.9	34.8	25.7	37.5	39.1
87.5°	38.5	39.1	35.3	38.5	31.0	21.4	7.0	9.6	4.8	9.1	9.1
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°	728.7	728.7	728.7	728.7	728.7	728.7	728.7	728.7	728.7	728.7	728.7
2.5°	703.5	701.4	697.6	693.4	692.3	686.9	685.3	682.7	681.1	678.4	676.2
5°	697.1	693.4	689.1	684.3	684.3	676.8	673.6	670.4	670.4	665.5	663.4
7.5°	703.5	698.7	693.9	689.6	691.2	682.7	679.5	676.2	675.7	670.9	668.8
10°	721.7	716.9	711.0	706.7	705.1	698.2	694.4	689.6	686.4	683.2	680.0
12.5°	749.5	743.1	735.6	726.5	722.8	716.9	711.0	704.6	697.1	693.9	689.1
15°	782.7	772.0	761.8	750.6	740.4	734.6	726.5	716.4	706.2	701.9	695.5
17.5°	810.0	798.8	784.3	770.9	752.8	747.9	736.7	724.4	707.8	706.2	696.6
20°	833.0	815.9	798.2	782.2	754.4	751.7	737.8	723.3	699.8	699.8	688.0
22.5°	845.8	822.3	801.4	780.0	745.3	743.1	727.1	709.9	681.1	682.1	667.7
25°	848.0	819.6	793.4	767.7	727.6	723.9	703.5	684.8	653.2	651.1	636.1
27.5°	839.4	806.3	775.8	744.7	701.4	693.4	670.9	648.4	617.4	612.0	596.0
30°	819.6	780.6	746.3	710.5	665.0	652.2	628.6	605.6	574.1	567.1	552.1
32.5°	788.1	743.7	705.7	669.8	619.5	603.5	579.9	556.9	526.4	521.1	507.2
35°	746.3	696.6	656.4	618.5	568.2	551.6	529.1	508.8	481.0	478.8	469.2
37.5°	693.9	642.0	599.2	562.8	515.2	506.6	483.6	468.7	445.7	447.8	443.0
40°	634.5	581.5	540.9	508.8	467.6	460.1	446.2	435.0	415.2	421.0	421.6
42.5°	574.6	521.6	484.7	455.8	420.5	415.7	406.1	399.6	384.7	396.4	401.3
45°	506.6	457.4	425.9	403.9	377.7	377.7	372.9	372.4	362.2	378.8	383.6
47.5°	440.8	402.3	380.4	367.0	348.8	357.4	355.8	360.1	352.6	369.7	374.0
50°	391.1	364.3	351.0	344.5	331.7	345.1	348.3	354.2	347.8	362.7	365.9
52.5°	359.5	341.9	334.4	332.8	323.7	340.3	345.6	351.0	343.5	357.4	356.8
55°	341.9	330.1	327.4	330.6	323.7	339.7	345.1	348.8	342.4	352.0	351.5
57.5°	335.4	329.0	330.6	335.4	330.6	344.0	346.7	351.0	344.5	348.8	351.0
60°	334.9	334.9	341.3	347.8	344.5	354.2	355.8	355.2	349.4	349.9	351.0
62.5°	331.7	339.7	350.4	360.6	359.5	371.3	372.4	365.4	360.6	355.2	353.6
65°	321.5	334.9	350.4	364.3	366.5	384.7	386.8	379.9	376.6	367.5	360.6
67.5°	299.1	316.2	334.4	351.5	355.2	379.9	384.7	387.3	388.9	383.1	374.0
70°	261.1	278.7	297.5	317.3	322.6	349.9	360.1	372.4	382.0	390.6	387.3
72.5°	212.4	228.4	244.5	262.7	270.7	299.1	312.4	333.8	348.8	370.8	379.9
75°	168.5	178.2	187.8	199.0	205.4	233.3	249.8	275.5	295.9	326.4	346.7
77.5°	132.7	137.5	142.3	147.1	149.8	165.3	178.7	204.4	227.9	266.4	296.4
80°	102.2	104.9	105.4	107.0	105.9	113.4	118.2	133.8	154.1	192.1	227.4
82.5°	65.8	67.9	69.0	71.7	66.3	76.0	79.2	80.8	91.5	119.3	144.5
85°	36.9	37.5	38.0	39.1	31.6	41.2	41.7	39.1	38.0	49.2	55.6
87.5°	9.1	8.6	9.1	9.1	3.7	8.6	8.6	5.9	4.3	8.0	6.4
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):

	135°	145°	155°	165°	175°	180°
0°	728.7	728.7	728.7	728.7	728.7	728.7
2.5°	671.4	670.4	670.9	668.2	667.1	667.7
5°	660.7	658.6	658.6	657.0	654.8	654.8
7.5°	665.5	661.3	659.7	656.4	653.2	653.8
10°	673.0	665.5	660.2	655.4	651.6	651.6
12.5°	677.8	664.5	656.4	650.0	645.7	645.7
15°	678.9	658.6	646.8	639.9	635.6	635.6
17.5°	672.5	646.8	631.8	622.7	617.9	619.0
20°	656.4	624.9	607.2	597.6	592.8	593.3
22.5°	631.3	594.9	574.6	563.4	558.5	558.5
25°	597.1	557.5	535.5	526.4	522.2	522.2
27.5°	558.0	517.3	498.1	491.1	488.5	488.5
30°	514.1	480.4	466.5	461.7	457.4	457.4
32.5°	477.2	453.1	448.3	441.9	430.7	430.1
35°	447.8	445.1	441.4	422.1	406.1	403.9
37.5°	431.7	447.8	424.3	391.1	378.2	377.7
40°	423.2	438.2	397.5	381.5	379.9	379.9
42.5°	402.9	413.6	395.9	386.8	386.8	387.3
45°	381.5	390.6	399.6	391.6	394.3	394.8
47.5°	366.5	384.7	399.6	392.7	398.0	401.3
50°	352.6	379.3	391.6	391.6	397.5	398.0
52.5°	349.4	371.8	384.1	390.0	390.6	387.9
55°	349.9	365.9	378.2	385.7	382.5	382.5
57.5°	349.4	362.7	373.4	376.1	377.7	377.7
60°	349.9	358.5	367.0	365.9	371.3	371.3
62.5°	351.5	352.6	356.8	355.8	363.8	363.8
65°	355.2	345.1	342.4	343.5	353.1	352.6
67.5°	362.2	334.9	326.4	326.9	340.8	338.7
70°	372.4	321.0	308.2	305.0	328.5	324.7
72.5°	375.6	305.0	284.6	281.4	295.3	284.6
75°	360.6	292.1	259.5	248.8	242.9	239.7
77.5°	321.5	284.1	233.3	210.8	201.7	199.6
80°	266.4	267.5	199.0	172.3	200.1	199.6
82.5°	201.2	231.1	159.4	149.3	145.0	120.9
85°	97.4	173.9	122.5	102.7	61.5	58.3
87.5°	8.6	72.8	70.6	46.0	20.9	19.8
90°	0.0	0.0	0.0	0.0	0.0	0.0

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