

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: P145437

Luminaire Tested: **LDRL-SL4-F02-E-7060**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P145437
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33703)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-SL4-F02-E-7060
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (14) 5700K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4882.6 lumens
Efficiency: N/A
Efficacy: 88.8 lumens/watt
Luminous Opening: Rectangular (W 0.33' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G2

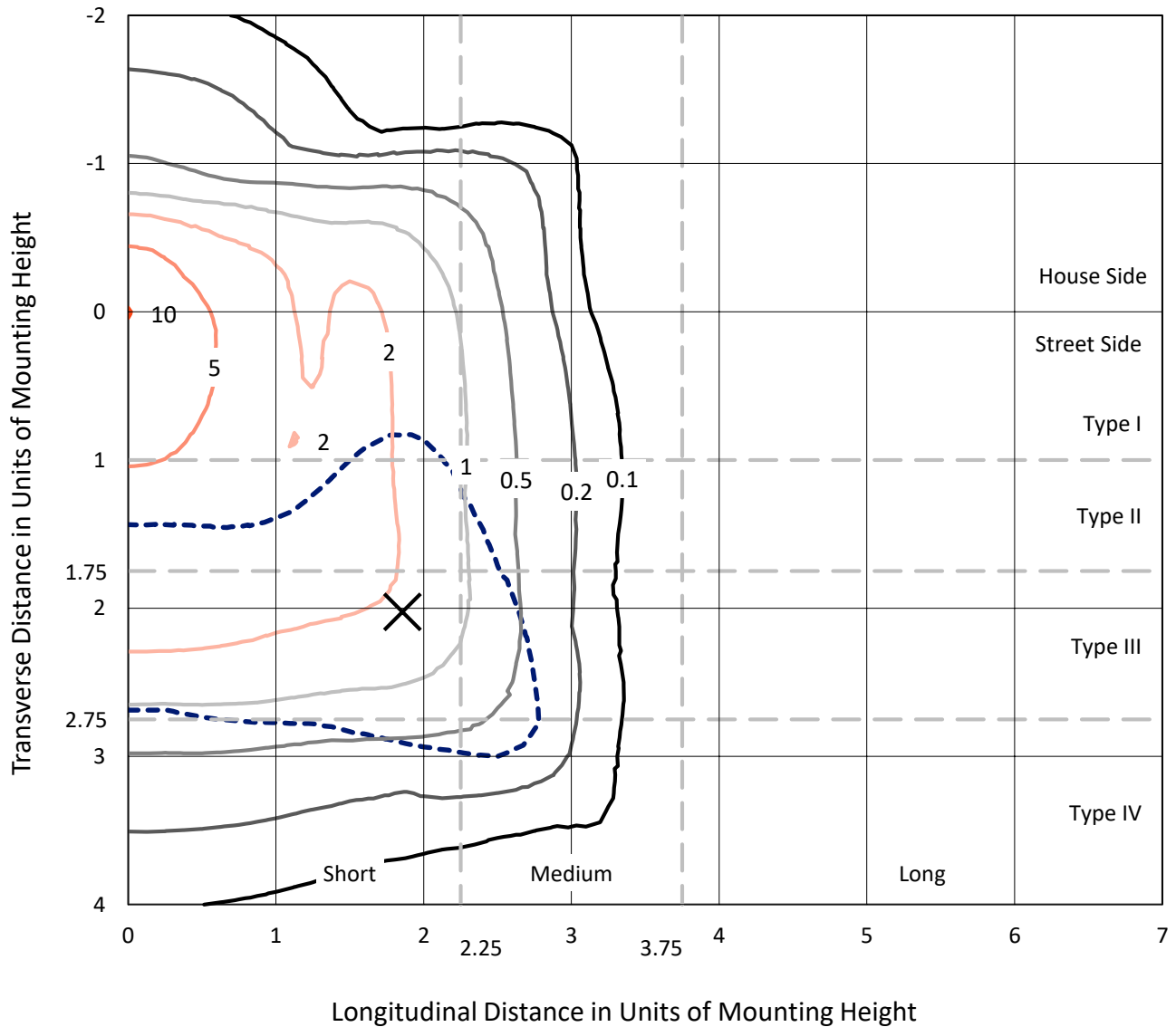
Input Watts (W): 55
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

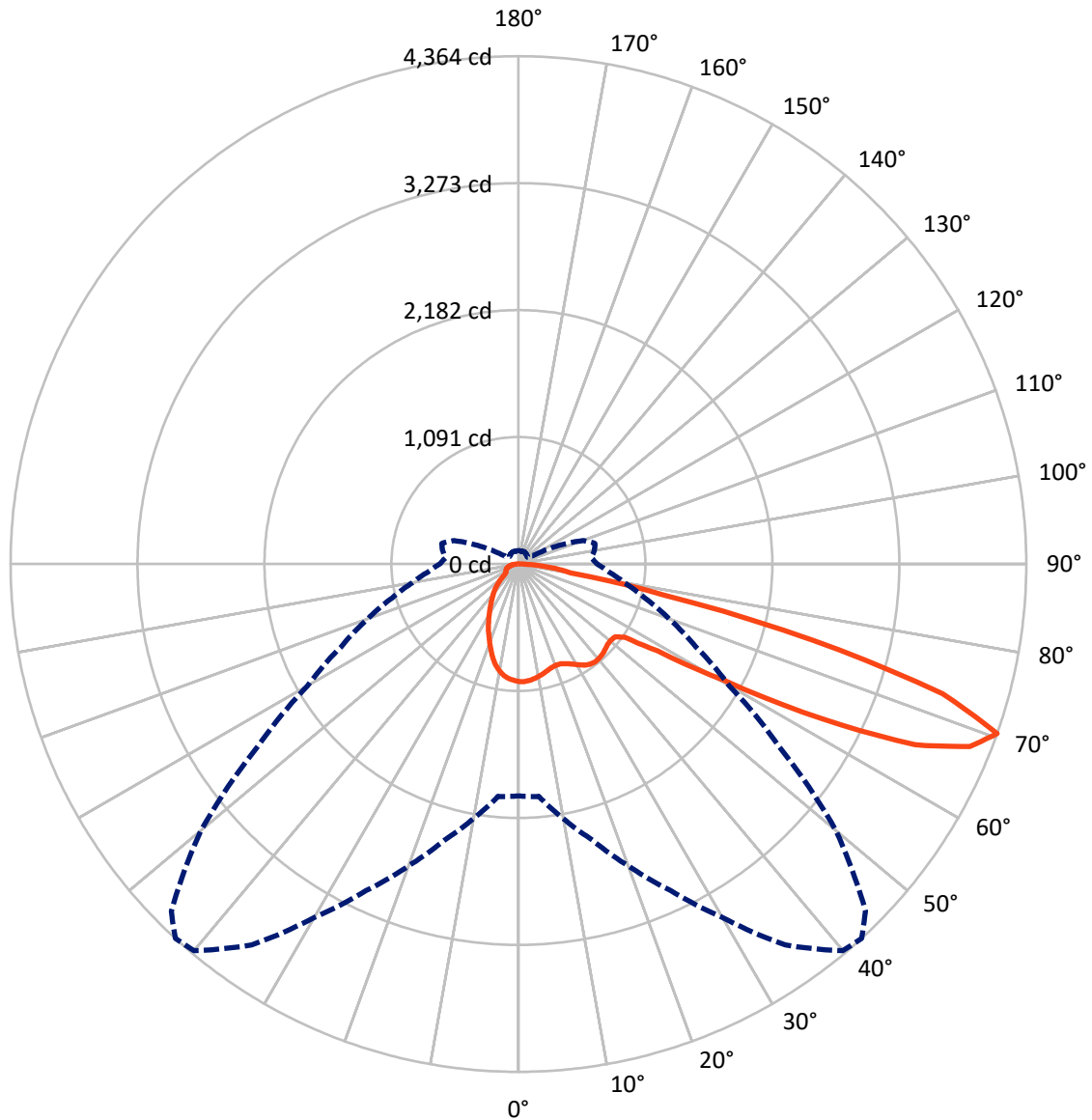
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 10.1 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 42.5-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1054.7	0.0	1054.7
	% Fixture	21.6	0.0	21.6
Street Side	Lumens	3827.9	0.0	3827.9
	% Fixture	78.4	0.0	78.4
Total	Lumens	4882.6	0.0	4882.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	93.9	1.9
10°-20°	253.1	5.2
20°-30°	369.2	7.6
30°-40°	470.8	9.6
40°-50°	549.5	11.3
50°-60°	840.4	17.2
60°-70°	1523.4	31.2
70°-80°	677.4	13.9
80°-90°	104.8	2.1
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°	4882.6	100.0
0°-180°	4882.6	100.0



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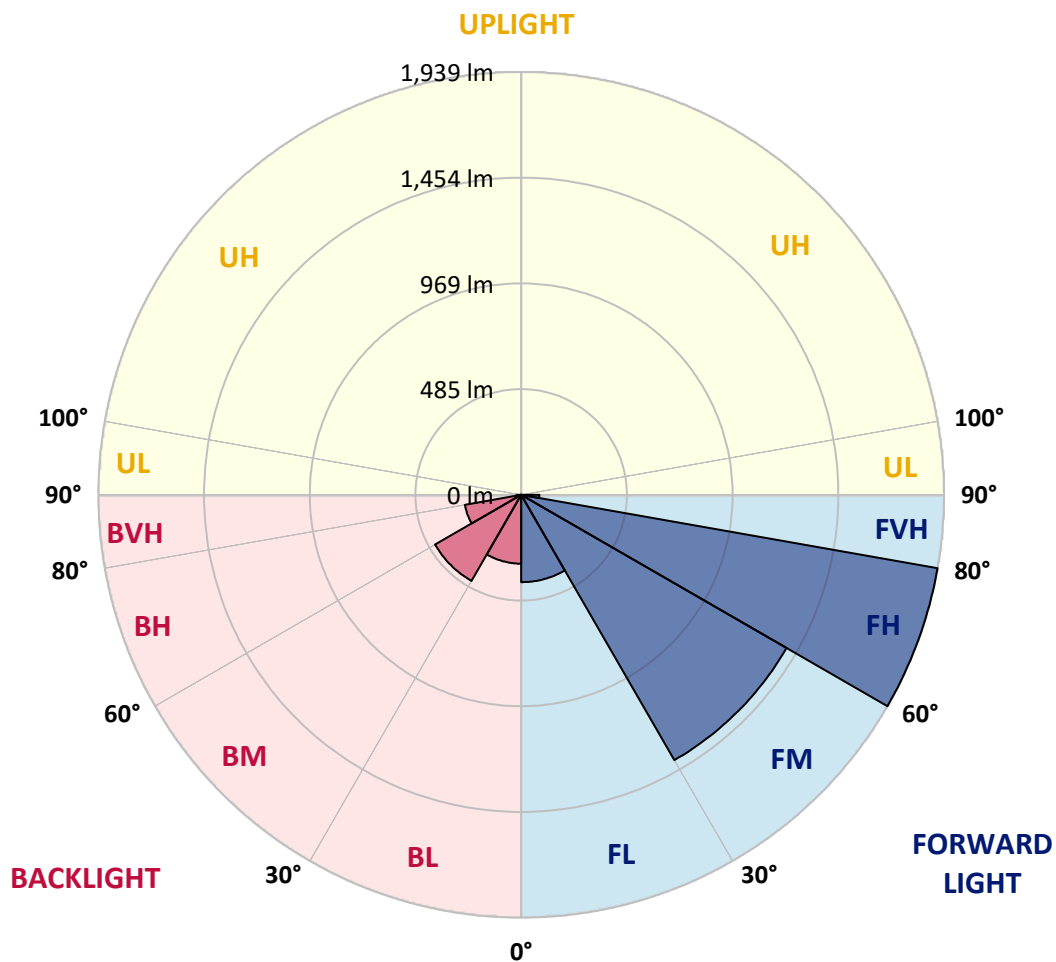
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	400.5	8.2			
FM	(30°-60°)	1404.8	28.8			
FH	(60°-80°)	1938.8	39.7			G2/5000
FVH	(80°-90°)	83.7	1.7			G1/100
BL	(0°-30°)	315.7	6.5	B1/500		
BM	(30°-60°)	455.9	9.3	B1/1000		
BH	(60°-80°)	262.0	5.4	B1/500		G1/500
BVH	(80°-90°)	21.1	0.4			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 IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	42.5°	45°
0°	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7
2.5°	1014.5	1013.4	1014.1	1014.8	1014.8	1015.1	1012.1	1012.4	1011.1	1011.4	1011.7
5°	1010.7	1009.7	1010.4	1010.4	1010.4	1010.1	1006.0	1005.6	1004.0	1004.0	1003.3
7.5°	1003.6	999.9	1001.9	1002.3	1001.6	999.9	997.5	995.1	994.1	994.1	991.8
10°	992.8	988.7	989.7	990.4	990.1	986.7	985.7	983.3	980.6	979.6	976.8
12.5°	978.9	976.2	977.5	977.2	977.2	974.1	972.4	969.1	965.7	964.0	960.6
15°	970.1	966.7	968.0	968.0	966.7	963.6	961.3	955.2	949.4	947.4	943.0
17.5°	975.5	972.1	973.5	972.4	970.1	963.6	957.5	947.7	938.6	933.1	927.4
20°	997.2	993.8	994.8	994.1	990.7	980.2	969.1	952.1	935.2	927.0	918.2
22.5°	1031.7	1029.0	1030.7	1029.7	1024.3	1010.7	994.1	969.7	944.3	932.1	919.6
25°	1082.9	1082.2	1084.9	1081.9	1074.1	1053.8	1029.7	996.8	963.6	948.4	930.8
27.5°	1144.6	1138.8	1142.9	1140.2	1134.7	1109.0	1076.5	1034.8	992.4	972.4	951.4
30°	1200.1	1195.1	1202.5	1201.2	1193.0	1166.6	1125.6	1076.8	1029.0	1003.6	979.6
32.5°	1264.5	1258.1	1263.8	1263.8	1251.6	1216.1	1169.3	1113.4	1063.2	1036.1	1007.3
35°	1331.9	1325.2	1330.6	1328.9	1307.2	1260.1	1201.5	1140.8	1085.6	1057.8	1028.3
37.5°	1394.6	1393.6	1395.0	1383.8	1353.6	1293.3	1223.2	1155.4	1096.8	1067.7	1036.8
40°	1457.3	1454.9	1449.2	1429.5	1385.5	1313.0	1234.4	1160.5	1097.5	1067.0	1035.8
42.5°	1496.6	1492.2	1482.4	1455.6	1400.4	1317.7	1231.0	1152.7	1089.3	1058.2	1027.7
45°	1510.2	1505.8	1493.9	1463.7	1400.7	1310.3	1217.8	1137.1	1074.1	1045.6	1014.8
47.5°	1499.0	1496.3	1485.4	1455.3	1389.9	1296.4	1201.2	1121.5	1059.5	1031.7	1002.9
50°	1480.0	1478.3	1468.8	1441.0	1379.7	1287.9	1193.4	1114.1	1055.5	1029.7	1002.6
52.5°	1527.4	1522.4	1505.4	1472.6	1401.1	1303.1	1205.6	1125.3	1064.9	1038.9	1011.1
55°	2110.6	2073.0	1988.9	1831.4	1610.8	1439.7	1295.7	1198.8	1133.7	1108.3	1081.9
57.5°	2775.7	2736.4	2701.5	2581.2	2319.3	1996.0	1705.3	1535.2	1418.7	1407.5	1397.0
60°	3031.9	3044.4	3041.3	2996.6	2862.4	2708.9	2465.7	2264.7	2042.1	2033.0	2046.2
62.5°	3208.4	3218.9	3220.2	3206.7	3163.0	3111.8	3061.0	2996.6	2954.3	2936.0	2817.7
65°	3281.2	3296.5	3330.0	3355.1	3362.2	3379.8	3425.9	3601.1	3747.1	3746.1	3607.5
67.5°	3003.1	3021.3	3148.4	3273.1	3377.8	3499.1	3685.8	3970.8	4190.7	4183.9	4070.4
70°	1993.0	2004.5	2220.4	2455.2	2759.8	3096.6	3504.5	3995.8	4336.7	4363.5	4217.1
72.5°	1222.5	1248.9	1319.4	1414.6	1577.3	1889.3	2495.8	3335.4	3835.6	3810.5	3693.9
75°	825.4	826.7	824.7	834.9	844.0	907.0	1151.3	1834.1	2598.2	2611.7	2561.6
77.5°	564.2	571.6	575.7	573.0	582.1	579.4	593.6	628.5	995.8	1271.0	1167.9
80°	493.0	496.0	500.5	494.0	477.1	467.6	480.8	468.3	441.2	455.7	436.4
82.5°	312.1	321.2	322.2	344.6	377.8	379.2	396.1	383.6	349.0	326.3	298.5
85°	224.3	227.7	233.8	235.1	223.6	213.8	219.9	209.4	188.7	176.5	156.2
87.5°	130.8	134.2	140.3	136.5	125.0	110.8	100.0	86.1	68.1	63.7	56.2
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):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7
2.5°	1012.1	1010.4	1009.0	1008.4	1009.7	1008.4	1007.0	1006.3	1005.0	1005.3	1003.6
5°	1002.6	1000.2	998.2	996.5	997.9	995.5	993.5	992.1	990.4	990.1	988.4
7.5°	989.4	985.7	982.9	979.9	976.5	974.5	972.1	969.7	966.0	965.7	965.0
10°	972.1	969.1	963.6	958.9	954.1	949.1	944.0	940.3	935.8	934.2	931.8
12.5°	954.8	948.7	942.3	934.8	929.1	920.9	914.2	907.0	900.6	896.5	892.1
15°	934.5	928.1	918.9	911.8	903.7	894.5	885.7	875.2	864.7	858.3	852.2
17.5°	916.9	908.7	901.3	891.1	883.0	872.5	859.3	848.1	835.6	825.1	813.9
20°	903.3	894.2	885.4	876.2	866.4	854.5	840.0	824.0	808.1	793.2	776.6
22.5°	897.9	883.3	873.5	865.0	854.9	841.3	825.1	805.4	785.7	766.8	747.5
25°	902.6	881.0	865.7	856.2	847.1	833.2	814.9	792.5	769.5	745.4	722.4
27.5°	915.5	888.1	866.4	851.5	841.0	827.4	807.1	783.7	757.6	730.5	705.8
30°	934.2	899.9	872.8	851.5	835.9	820.3	798.3	771.9	744.4	715.9	688.2
32.5°	954.5	913.1	880.6	852.5	828.4	808.8	785.7	760.0	730.9	700.7	670.9
35°	969.7	922.6	884.0	848.8	817.9	793.2	768.5	743.4	714.9	684.4	654.6
37.5°	976.2	926.4	883.3	841.0	803.4	776.3	750.5	725.4	698.0	669.2	641.7
40°	976.5	926.4	879.3	830.5	788.1	758.6	731.5	708.2	682.4	657.7	633.3
42.5°	970.1	921.6	871.8	820.6	776.9	743.7	715.9	691.9	671.2	649.2	628.5
45°	958.6	912.1	865.0	815.2	772.9	740.0	710.2	687.5	668.9	649.2	631.2
47.5°	949.7	906.7	865.4	823.0	782.7	748.8	716.6	692.6	676.6	661.1	648.2
50°	951.4	908.7	869.4	829.1	789.5	755.3	724.1	703.4	693.9	688.8	685.8
52.5°	960.2	916.9	887.1	860.3	847.4	826.4	809.1	793.5	795.9	783.7	768.1
55°	1051.1	1036.5	1070.7	1095.4	1107.6	1129.0	1159.8	1130.3	1126.3	1088.7	976.8
57.5°	1411.2	1445.8	1498.3	1535.6	1539.3	1532.9	1507.5	1483.1	1443.4	1386.8	1230.3
60°	2015.4	2007.2	1958.4	1893.0	1842.2	1775.5	1708.4	1651.8	1588.1	1501.4	1334.7
62.5°	2650.7	2454.8	2281.0	2132.9	2007.2	1895.8	1794.4	1709.4	1622.0	1497.3	1319.7
65°	3163.7	2786.9	2480.6	2242.4	2055.3	1897.8	1767.0	1649.8	1532.9	1388.5	1216.4
67.5°	3530.3	2932.6	2470.4	2135.3	1873.1	1656.2	1465.8	1332.3	1212.3	1098.8	1021.2
70°	3559.4	2731.0	2089.9	1679.9	1377.3	1122.5	925.0	779.3	674.9	627.9	661.4
72.5°	3041.7	2020.4	1389.5	1028.3	816.2	634.3	509.9	407.6	323.6	282.2	288.0
75°	1791.4	970.1	625.8	466.2	380.8	304.3	263.3	222.3	196.2	157.2	125.7
77.5°	682.1	421.8	315.8	262.3	187.0	134.5	106.1	91.5	84.0	83.0	78.6
80°	393.0	309.4	216.5	141.6	103.7	87.8	75.2	64.4	60.0	59.0	60.7
82.5°	248.4	192.8	118.9	91.1	75.6	65.1	54.2	47.1	43.4	42.0	44.4
85°	128.4	96.6	72.5	62.3	57.9	52.9	43.4	36.3	35.9	37.6	43.4
87.5°	47.4	41.3	32.5	28.1	30.2	28.1	20.3	17.6	15.9	21.0	30.5
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):

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7	1009.7
2.5°	1003.6	1002.9	1003.3	1002.6	1002.6	1003.6	1002.3	1001.2	1002.9	1002.9	1004.0
5°	988.0	988.7	988.7	988.4	989.0	990.7	990.4	990.4	993.1	994.1	995.5
7.5°	963.3	964.3	964.6	965.7	966.0	968.4	970.1	972.1	976.2	977.2	980.2
10°	929.8	929.1	931.4	931.1	934.2	936.2	937.5	941.9	948.0	951.4	954.5
12.5°	890.1	890.1	891.5	891.8	894.5	897.2	898.9	904.3	909.4	913.8	920.6
15°	848.1	846.7	843.7	843.3	844.4	847.1	850.8	854.9	862.7	869.1	874.9
17.5°	804.0	800.0	796.3	791.5	791.2	790.8	792.9	795.9	808.1	814.5	822.7
20°	765.1	756.3	747.5	737.6	731.9	729.2	730.2	734.2	745.8	754.2	762.7
22.5°	730.2	717.0	703.1	687.5	678.0	672.2	672.9	674.6	683.1	688.2	692.6
25°	700.4	682.1	662.8	642.8	629.5	620.7	620.4	620.4	616.7	617.3	615.0
27.5°	680.0	654.6	629.9	606.5	589.2	580.4	568.6	560.1	552.6	542.5	538.1
30°	660.4	634.3	606.2	580.4	559.7	542.5	520.4	502.1	487.6	473.7	461.8
32.5°	642.8	615.7	588.9	560.8	532.3	502.5	473.7	452.7	432.0	410.7	396.4
35°	627.2	601.8	575.0	543.1	503.2	464.2	431.7	403.2	378.8	353.1	332.4
37.5°	618.4	595.3	567.5	524.2	474.0	429.6	393.4	361.5	329.0	298.2	272.8
40°	614.0	593.6	559.7	504.9	447.9	400.5	360.2	321.9	283.6	247.3	220.9
42.5°	613.3	593.6	548.2	485.2	425.6	374.7	329.7	283.6	237.2	201.9	178.6
45°	619.4	593.0	536.0	467.6	405.6	351.7	297.5	243.3	195.5	164.7	151.8
47.5°	637.0	595.3	526.5	452.7	386.6	326.3	260.9	198.6	157.9	144.0	143.7
50°	665.5	606.2	524.5	441.8	368.0	294.4	217.9	158.9	139.3	138.6	142.3
52.5°	710.5	626.5	529.6	434.4	345.6	253.1	172.5	137.2	133.5	137.2	142.0
55°	809.8	662.8	536.4	421.2	309.4	200.6	142.0	130.1	131.8	136.2	140.6
57.5°	990.4	738.0	543.5	391.3	250.7	154.2	127.7	127.4	130.4	134.2	138.2
60°	1104.9	830.8	560.8	347.3	189.4	127.4	122.3	125.7	129.4	132.1	135.5
62.5°	1108.7	855.2	569.9	300.2	141.0	116.6	117.6	124.0	128.4	129.4	131.1
65°	1037.2	809.1	528.6	244.3	116.9	110.5	114.2	119.9	124.4	125.0	126.4
67.5°	906.0	713.6	447.9	184.3	106.4	105.7	109.8	114.2	117.2	119.9	122.0
70°	682.4	588.9	360.2	143.0	100.0	99.3	103.3	107.1	109.8	113.2	116.6
72.5°	345.9	407.6	273.1	116.9	91.1	91.8	96.2	99.6	101.6	104.7	108.1
75°	117.9	177.9	172.8	94.5	81.3	84.0	86.1	89.8	92.8	94.9	96.6
77.5°	73.9	77.3	89.1	76.2	71.8	72.5	75.9	79.3	82.7	84.0	84.7
80°	61.7	62.0	62.3	61.0	61.3	63.4	65.4	69.1	72.5	73.2	73.5
82.5°	48.8	52.2	51.8	51.5	53.2	55.2	56.6	57.9	59.3	60.0	61.0
85°	43.0	42.4	42.7	43.7	42.4	41.0	40.7	40.7	42.7	45.1	46.1
87.5°	39.3	33.5	25.1	23.7	23.7	23.0	21.7	21.7	23.7	25.8	26.8
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):

	160°	165°	170°	175°	180°
0°	1009.7	1009.7	1009.7	1009.7	1009.7
2.5°	1003.6	1004.0	1003.6	1003.6	1005.3
5°	996.2	997.5	996.8	997.9	998.9
7.5°	980.9	984.3	985.0	987.7	986.7
10°	958.9	961.3	964.6	967.4	966.3
12.5°	924.0	929.8	934.8	937.9	937.2
15°	879.6	887.7	894.5	896.9	894.2
17.5°	832.2	837.2	845.4	847.1	849.8
20°	772.2	771.9	779.0	779.0	777.6
22.5°	693.9	699.0	699.0	694.3	691.9
25°	614.0	615.7	610.6	611.6	605.2
27.5°	533.7	529.3	525.2	526.9	522.1
30°	457.1	447.6	443.5	444.2	439.1
32.5°	383.6	372.4	368.3	362.9	358.5
35°	316.8	299.2	288.7	286.0	289.0
37.5°	251.4	238.9	226.3	217.2	218.2
40°	198.9	186.0	177.9	174.2	173.5
42.5°	164.3	156.9	155.2	155.5	155.5
45°	149.1	149.4	150.8	152.1	152.5
47.5°	146.0	148.1	150.4	152.1	152.5
50°	145.7	147.7	149.4	151.5	152.1
52.5°	145.4	146.7	147.7	148.7	149.8
55°	144.0	144.7	144.3	145.0	146.0
57.5°	140.6	141.0	140.3	140.6	142.6
60°	137.6	137.9	136.5	138.2	138.6
62.5°	133.8	133.5	132.8	133.8	133.8
65°	128.4	126.4	127.1	128.1	128.4
67.5°	122.0	119.9	119.9	120.6	121.6
70°	113.8	112.8	112.8	114.2	115.5
72.5°	104.7	105.4	107.4	109.4	111.5
75°	97.2	98.9	101.0	106.1	109.1
77.5°	87.8	88.1	89.8	94.9	100.3
80°	74.5	74.2	74.5	75.2	76.2
82.5°	59.0	58.3	56.2	56.9	55.6
85°	43.4	42.4	40.0	38.3	37.9
87.5°	25.1	25.1	24.1	22.7	21.3
90°	0.0	0.0	0.0	0.0	0.0

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