

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: P145435

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P145435
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
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (14) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4758.4 lumens
Efficiency: N/A
Efficacy: 86.5 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

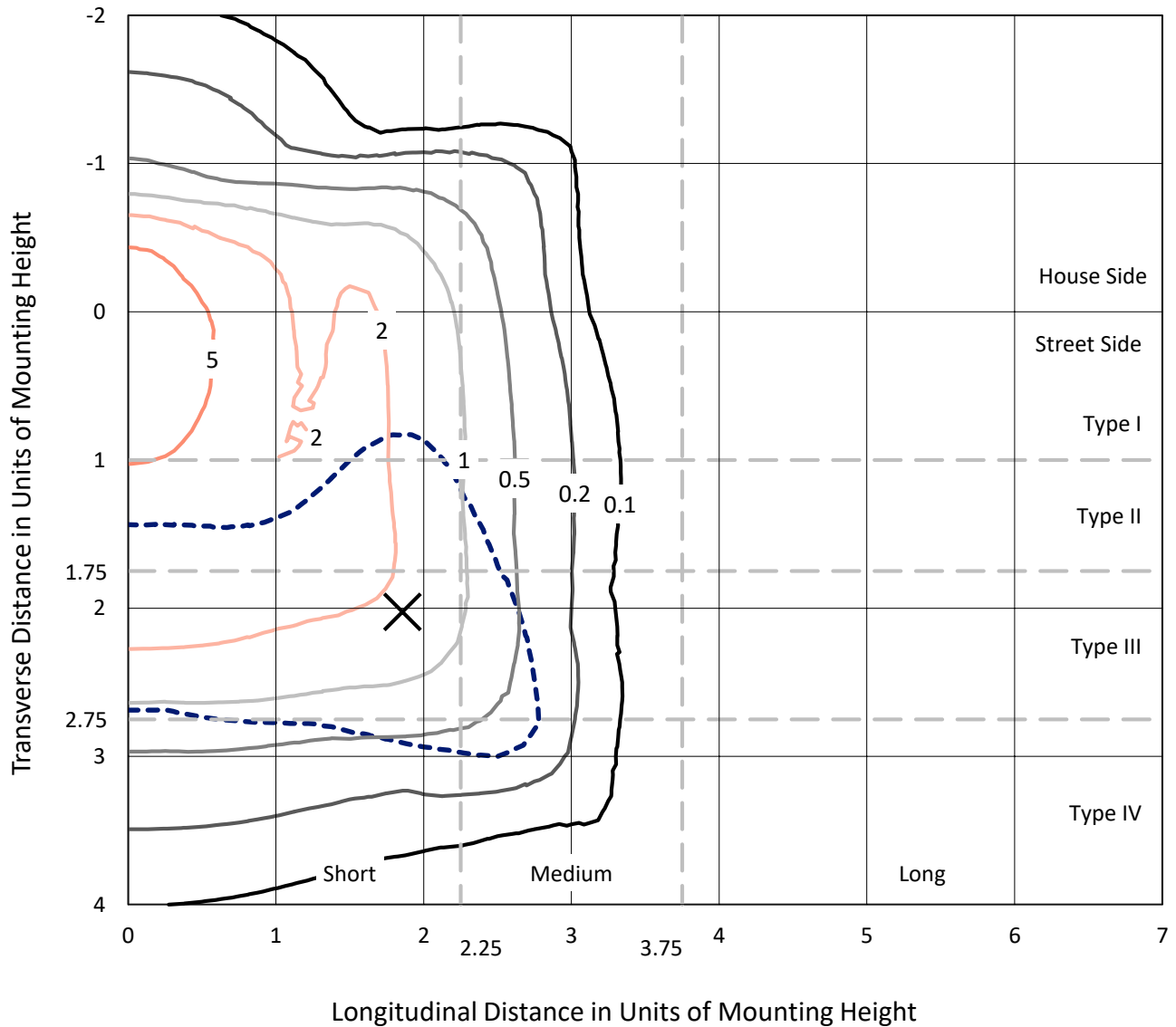
Input Watts (W): 55
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

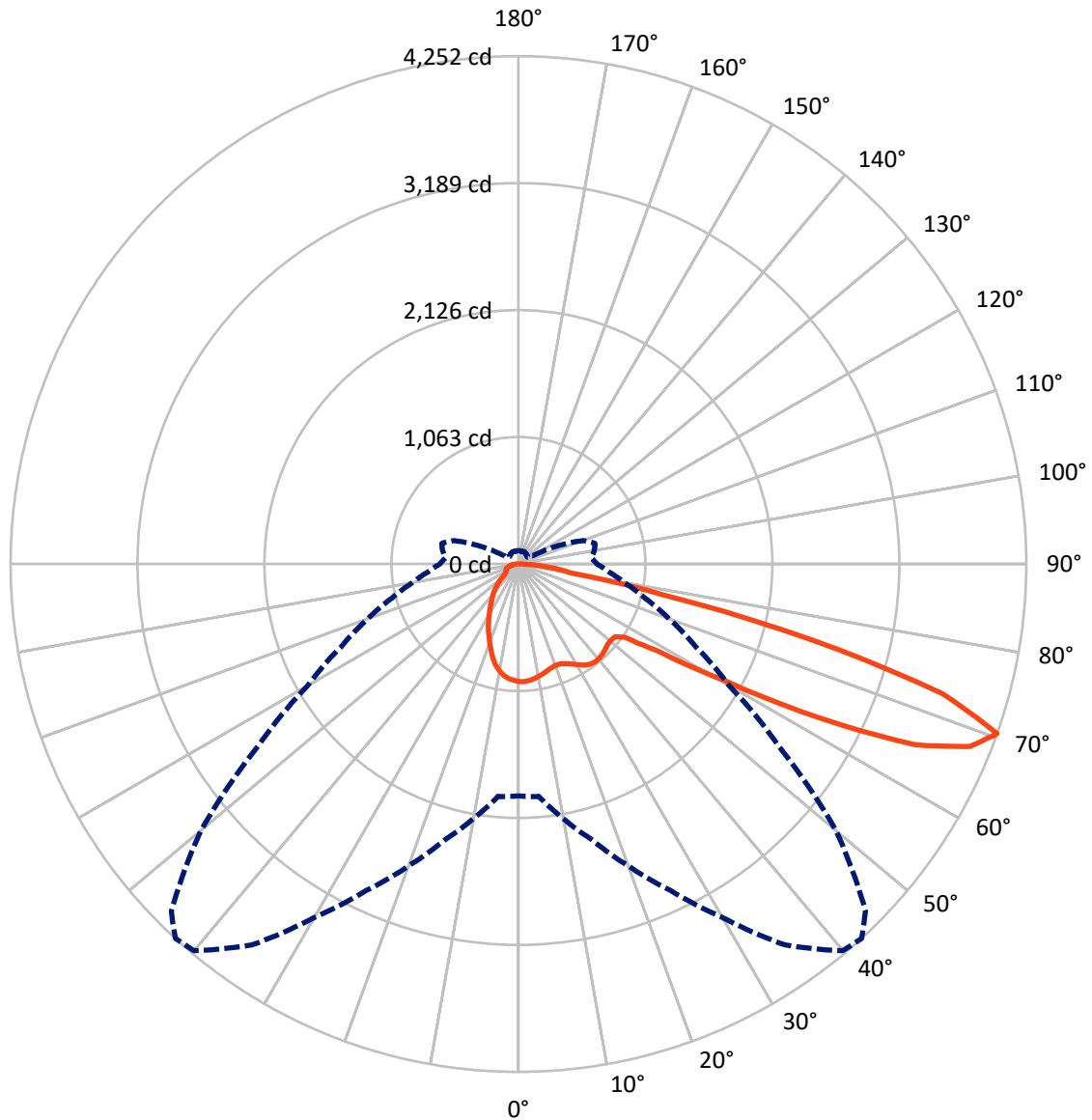
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 9.8 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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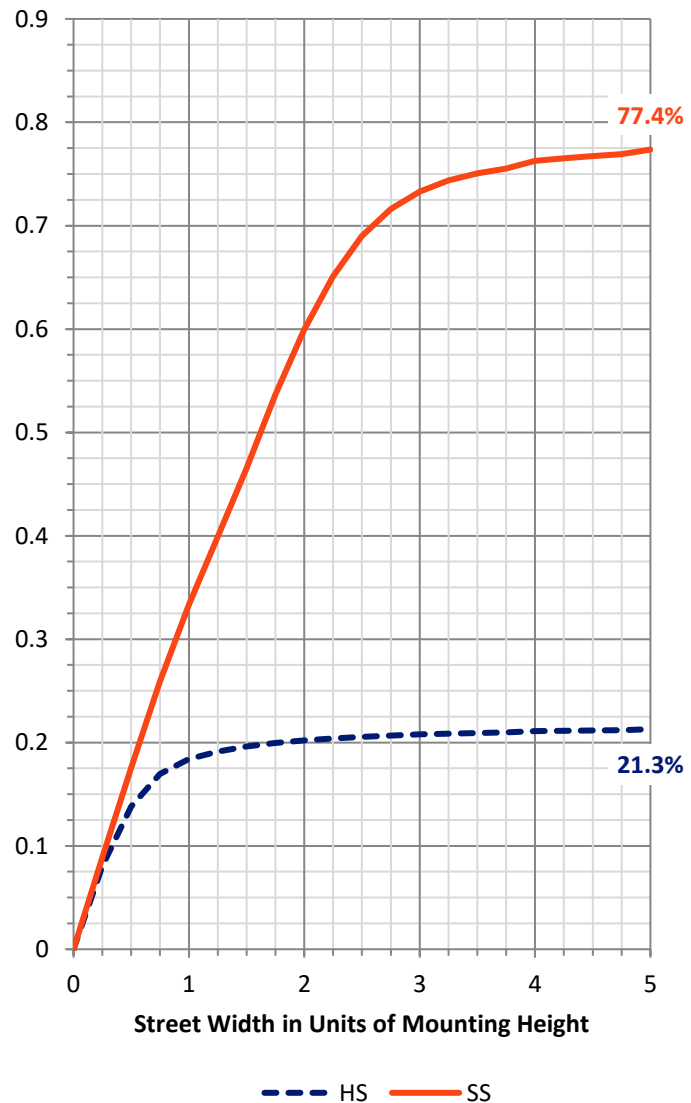
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1027.9	0.0	1027.9
	% Fixture	21.6	0.0	21.6
Street Side	Lumens	3730.5	0.0	3730.5
	% Fixture	78.4	0.0	78.4
Total	Lumens	4758.4	0.0	4758.4
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	91.6	1.9
10°-20°	246.6	5.2
20°-30°	359.8	7.6
30°-40°	458.9	9.6
40°-50°	535.6	11.3
50°-60°	819.0	17.2
60°-70°	1484.7	31.2
70°-80°	660.1	13.9
80°-90°	102.1	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°	4758.4	100.0
0°-180°	4758.4	100.0



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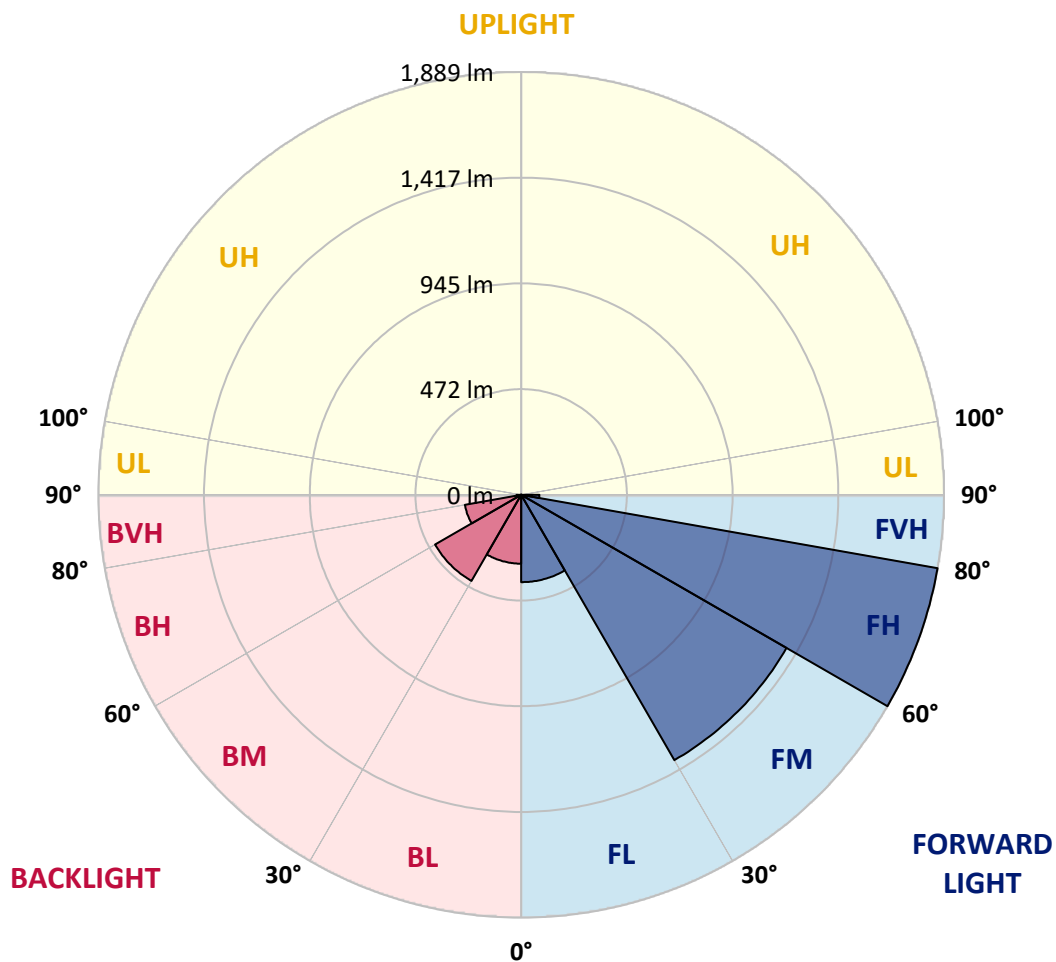
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	390.3	8.2			
FM	(30°-60°)	1369.1	28.8			
FH	(60°-80°)	1889.5	39.7			G2/5000
FVH	(80°-90°)	81.6	1.7			G1/100
BL	(0°-30°)	307.7	6.5	B1/500		
BM	(30°-60°)	444.3	9.3	B1/1000		
BH	(60°-80°)	255.4	5.4	B1/500		G1/500
BVH	(80°-90°)	20.5	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°	984.0	984.0	984.0	984.0	984.0	984.0	984.0	984.0	984.0	984.0	984.0
2.5°	988.6	987.7	988.3	989.0	989.0	989.3	986.3	986.7	985.3	985.7	986.0
5°	985.0	984.0	984.7	984.7	984.7	984.4	980.4	980.1	978.4	978.4	977.8
7.5°	978.1	974.4	976.4	976.8	976.1	974.4	972.1	969.8	968.8	968.8	966.5
10°	967.5	963.6	964.5	965.2	964.9	961.6	960.6	958.3	955.6	954.6	952.0
12.5°	954.0	951.3	952.7	952.3	952.3	949.4	947.7	944.4	941.1	939.4	936.1
15°	945.4	942.1	943.4	943.4	942.1	939.1	936.8	930.9	925.2	923.3	919.0
17.5°	950.7	947.4	948.7	947.7	945.4	939.1	933.2	923.6	914.7	909.4	903.8
20°	971.8	968.5	969.5	968.8	965.5	955.3	944.4	927.9	911.4	903.5	894.9
22.5°	1005.5	1002.8	1004.5	1003.5	998.2	985.0	968.8	945.1	920.3	908.4	896.2
25°	1055.4	1054.7	1057.3	1054.4	1046.8	1027.0	1003.5	971.5	939.1	924.3	907.1
27.5°	1115.4	1109.8	1113.8	1111.2	1105.9	1080.8	1049.1	1008.5	967.2	947.7	927.2
30°	1169.6	1164.7	1171.9	1170.6	1162.7	1136.9	1097.0	1049.4	1002.8	978.1	954.6
32.5°	1232.3	1226.1	1231.7	1231.7	1219.8	1185.1	1139.6	1085.1	1036.2	1009.8	981.7
35°	1298.1	1291.5	1296.7	1295.1	1274.0	1228.1	1170.9	1111.8	1058.0	1030.9	1002.2
37.5°	1359.1	1358.2	1359.5	1348.6	1319.2	1260.4	1192.1	1126.0	1068.9	1040.5	1010.4
40°	1420.2	1417.9	1412.3	1393.2	1350.2	1279.6	1203.0	1131.0	1069.6	1039.8	1009.5
42.5°	1458.5	1454.2	1444.7	1418.6	1364.8	1284.2	1199.7	1123.4	1061.6	1031.2	1001.5
45°	1471.7	1467.5	1455.9	1426.5	1365.1	1276.9	1186.8	1108.2	1046.8	1019.0	989.0
47.5°	1460.8	1458.2	1447.6	1418.3	1354.5	1263.4	1170.6	1093.0	1032.6	1005.5	977.4
50°	1442.4	1440.7	1431.5	1404.4	1344.6	1255.1	1163.0	1085.7	1028.6	1003.5	977.1
52.5°	1488.6	1483.6	1467.1	1435.1	1365.4	1270.0	1174.9	1096.6	1037.8	1012.4	985.3
55°	2056.9	2020.2	1938.3	1784.8	1569.8	1403.1	1262.7	1168.3	1104.9	1080.1	1054.4
57.5°	2705.1	2666.8	2632.8	2515.5	2260.3	1945.3	1661.9	1496.2	1382.6	1371.7	1361.5
60°	2954.7	2966.9	2964.0	2920.4	2789.6	2640.0	2402.9	2207.1	1990.2	1981.3	1994.1
62.5°	3126.8	3137.0	3138.3	3125.1	3082.5	3032.6	2983.1	2920.4	2879.1	2861.3	2746.0
65°	3197.8	3212.6	3245.3	3269.7	3276.7	3293.8	3338.8	3509.5	3651.8	3650.8	3515.7
67.5°	2926.7	2944.5	3068.3	3189.8	3291.9	3410.1	3592.0	3869.7	4084.0	4077.4	3966.8
70°	1942.3	1953.5	2163.9	2392.7	2689.6	3017.8	3415.4	3894.2	4226.4	4252.4	4109.8
72.5°	1191.4	1217.2	1285.8	1378.6	1537.1	1841.3	2432.3	3250.6	3738.0	3713.5	3599.9
75°	804.4	805.7	803.7	813.6	822.6	884.0	1122.1	1787.4	2532.1	2545.3	2496.4
77.5°	549.8	557.1	561.0	558.4	567.3	564.7	578.5	612.5	970.5	1238.6	1138.2
80°	480.5	483.4	487.7	481.4	464.9	455.7	468.6	456.4	429.9	444.1	425.3
82.5°	304.1	313.0	314.0	335.8	368.2	369.5	386.0	373.8	340.1	318.0	290.9
85°	218.6	221.9	227.8	229.2	217.9	208.4	214.3	204.1	183.9	172.0	152.2
87.5°	127.5	130.8	136.7	133.1	121.8	108.0	97.4	83.9	66.4	62.1	54.8
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):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	984.0	984.0	984.0	984.0	984.0	984.0	984.0	984.0	984.0	984.0	984.0
2.5°	986.3	984.7	983.4	982.7	984.0	982.7	981.4	980.7	979.4	979.7	978.1
5°	977.1	974.8	972.8	971.1	972.5	970.2	968.2	966.9	965.2	964.9	963.2
7.5°	964.2	960.6	957.9	955.0	951.7	949.7	947.4	945.1	941.4	941.1	940.4
10°	947.4	944.4	939.1	934.5	929.9	924.9	920.0	916.3	912.0	910.4	908.1
12.5°	930.5	924.6	918.3	911.0	905.4	897.5	890.9	884.0	877.7	873.7	869.4
15°	910.7	904.4	895.5	888.6	880.7	871.8	863.2	852.9	842.7	836.4	830.5
17.5°	893.5	885.6	878.4	868.5	860.5	850.3	837.4	826.5	814.3	804.1	793.2
20°	880.3	871.4	862.8	853.9	844.3	832.8	818.6	803.1	787.6	773.0	756.8
22.5°	875.1	860.9	851.3	843.0	833.1	819.9	804.1	784.9	765.8	747.3	728.4
25°	879.7	858.5	843.7	834.4	825.5	812.0	794.2	772.4	749.9	726.5	704.0
27.5°	892.2	865.5	844.3	829.8	819.6	806.4	786.6	763.8	738.3	711.9	687.8
30°	910.4	877.0	850.6	829.8	814.6	799.4	778.0	752.2	725.5	697.7	670.7
32.5°	930.2	889.9	858.2	830.8	807.4	788.2	765.8	740.7	712.3	682.9	653.8
35°	945.1	899.2	861.5	827.2	797.1	773.0	748.9	724.5	696.7	667.0	638.0
37.5°	951.3	902.8	860.9	819.6	782.9	756.5	731.4	707.0	680.2	652.2	625.4
40°	951.7	902.8	856.9	809.3	768.1	739.3	712.9	690.1	665.0	640.9	617.2
42.5°	945.4	898.2	849.6	799.8	757.2	724.8	697.7	674.3	654.1	632.7	612.5
45°	934.2	888.9	843.0	794.5	753.2	721.2	692.1	670.0	651.8	632.7	615.2
47.5°	925.6	883.6	843.4	802.1	762.8	729.8	698.4	674.9	659.4	644.2	631.7
50°	927.2	885.6	847.3	808.0	769.4	736.0	705.7	685.5	676.3	671.3	668.3
52.5°	935.8	893.5	864.5	838.4	825.9	805.4	788.5	773.4	775.7	763.8	748.6
55°	1024.3	1010.1	1043.5	1067.6	1079.5	1100.3	1130.3	1101.6	1097.6	1061.0	952.0
57.5°	1375.3	1409.0	1460.2	1496.5	1500.1	1493.9	1469.1	1445.3	1406.7	1351.5	1199.0
60°	1964.1	1956.2	1908.6	1844.9	1795.4	1730.3	1664.9	1609.8	1547.7	1463.2	1300.7
62.5°	2583.2	2392.4	2223.0	2078.7	1956.2	1847.5	1748.8	1665.9	1580.7	1459.2	1286.2
65°	3083.2	2716.0	2417.5	2185.3	2003.1	1849.5	1722.0	1607.8	1493.9	1353.2	1185.5
67.5°	3440.5	2858.0	2407.6	2081.0	1825.4	1614.1	1428.5	1298.4	1181.5	1070.9	995.3
70°	3468.9	2661.5	2036.7	1637.2	1342.3	1094.0	901.5	759.5	657.8	611.9	644.6
72.5°	2964.3	1969.0	1354.2	1002.2	795.5	618.2	497.0	397.2	315.4	275.1	280.7
75°	1745.8	945.4	609.9	454.4	371.2	296.5	256.6	216.6	191.2	153.2	122.5
77.5°	664.7	411.1	307.8	255.6	182.3	131.1	103.4	89.2	81.9	80.9	76.6
80°	383.0	301.5	211.0	138.0	101.0	85.5	73.3	62.7	58.4	57.5	59.1
82.5°	242.0	187.9	115.9	88.8	73.6	63.4	52.8	45.9	42.3	40.9	43.3
85°	125.1	94.1	70.7	60.8	56.5	51.5	42.3	35.3	35.0	36.7	42.3
87.5°	46.2	40.3	31.7	27.4	29.4	27.4	19.8	17.2	15.5	20.5	29.7
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°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	984.0	984.0	984.0	984.0	984.0	984.0	984.0	984.0	984.0	984.0	984.0
2.5°	978.1	977.4	977.8	977.1	977.1	978.1	976.8	975.8	977.4	977.4	978.4
5°	962.9	963.6	963.6	963.2	963.9	965.5	965.2	965.2	967.8	968.8	970.2
7.5°	938.8	939.8	940.1	941.1	941.4	943.7	945.4	947.4	951.3	952.3	955.3
10°	906.1	905.4	907.7	907.4	910.4	912.4	913.7	918.0	923.9	927.2	930.2
12.5°	867.5	867.5	868.8	869.1	871.8	874.4	876.0	881.3	886.3	890.6	897.2
15°	826.5	825.2	822.2	821.9	822.9	825.5	829.2	833.1	840.7	847.0	852.6
17.5°	783.6	779.6	776.0	771.4	771.0	770.7	772.7	775.7	787.6	793.8	801.7
20°	745.6	737.0	728.4	718.9	713.3	710.6	711.6	715.6	726.8	735.0	743.3
22.5°	711.6	698.7	685.2	670.0	660.8	655.1	655.8	657.4	665.7	670.7	674.9
25°	682.5	664.7	645.9	626.4	613.5	604.9	604.6	604.6	601.0	601.6	599.3
27.5°	662.7	638.0	613.9	591.1	574.2	565.6	554.1	545.8	538.6	528.7	524.4
30°	643.6	618.2	590.7	565.6	545.5	528.7	507.2	489.4	475.2	461.6	450.1
32.5°	626.4	600.0	573.9	546.5	518.8	489.7	461.6	441.2	421.0	400.2	386.3
35°	611.2	586.5	560.4	529.3	490.4	452.4	420.7	392.9	369.2	344.1	323.9
37.5°	602.6	580.2	553.1	510.8	462.0	418.7	383.4	352.3	320.6	290.6	265.8
40°	598.3	578.5	545.5	492.0	436.5	390.3	351.0	313.7	276.4	241.1	215.3
42.5°	597.7	578.5	534.3	472.9	414.7	365.2	321.3	276.4	231.1	196.8	174.0
45°	603.6	577.9	522.4	455.7	395.3	342.8	289.9	237.1	190.5	160.5	147.9
47.5°	620.8	580.2	513.1	441.2	376.8	318.0	254.3	193.5	153.9	140.3	140.0
50°	648.5	590.7	511.2	430.6	358.6	287.0	212.3	154.9	135.7	135.1	138.7
52.5°	692.5	610.6	516.1	423.3	336.8	246.7	168.1	133.7	130.1	133.7	138.4
55°	789.2	645.9	522.7	410.5	301.5	195.5	138.4	126.8	128.5	132.7	137.0
57.5°	965.2	719.2	529.7	381.4	244.4	150.2	124.5	124.2	127.1	130.8	134.7
60°	1076.8	809.7	546.5	338.5	184.6	124.2	119.2	122.5	126.1	128.8	132.1
62.5°	1080.4	833.4	555.4	292.6	137.4	113.6	114.6	120.9	125.1	126.1	127.8
65°	1010.8	788.5	515.1	238.1	113.9	107.6	111.3	116.9	121.2	121.8	123.2
67.5°	883.0	695.4	436.5	179.6	103.7	103.0	107.0	111.3	114.3	116.9	118.9
70°	665.0	573.9	351.0	139.3	97.4	96.8	100.7	104.3	107.0	110.3	113.6
72.5°	337.1	397.2	266.1	113.9	88.8	89.5	93.8	97.1	99.1	102.0	105.3
75°	114.9	173.4	168.4	92.1	79.3	81.9	83.9	87.5	90.5	92.5	94.1
77.5°	72.0	75.3	86.8	74.3	70.0	70.7	74.0	77.3	80.6	81.9	82.6
80°	60.1	60.4	60.8	59.4	59.8	61.7	63.7	67.4	70.7	71.3	71.7
82.5°	47.6	50.9	50.5	50.2	51.8	53.8	55.1	56.5	57.8	58.4	59.4
85°	41.9	41.3	41.6	42.6	41.3	40.0	39.6	39.6	41.6	43.9	44.9
87.5°	38.3	32.7	24.4	23.1	23.1	22.5	21.1	21.1	23.1	25.1	26.1
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):

	160°	165°	170°	175°	180°
0°	984.0	984.0	984.0	984.0	984.0
2.5°	978.1	978.4	978.1	978.1	979.7
5°	970.8	972.1	971.5	972.5	973.5
7.5°	956.0	959.3	959.9	962.6	961.6
10°	934.5	936.8	940.1	942.7	941.8
12.5°	900.5	906.1	911.0	914.0	913.4
15°	857.2	865.2	871.8	874.1	871.4
17.5°	811.0	815.9	823.9	825.5	828.2
20°	752.5	752.2	759.2	759.2	757.8
22.5°	676.3	681.2	681.2	676.6	674.3
25°	598.3	600.0	595.0	596.0	589.8
27.5°	520.1	515.8	511.8	513.5	508.9
30°	445.5	436.2	432.2	432.9	428.0
32.5°	373.8	362.9	358.9	353.7	349.4
35°	308.7	291.6	281.3	278.7	281.7
37.5°	245.0	232.8	220.6	211.7	212.7
40°	193.8	181.3	173.4	169.7	169.1
42.5°	160.2	152.9	151.2	151.6	151.6
45°	145.3	145.6	146.9	148.3	148.6
47.5°	142.3	144.3	146.6	148.3	148.6
50°	142.0	144.0	145.6	147.6	148.3
52.5°	141.7	143.0	144.0	145.0	146.0
55°	140.3	141.0	140.7	141.3	142.3
57.5°	137.0	137.4	136.7	137.0	139.0
60°	134.1	134.4	133.1	134.7	135.1
62.5°	130.4	130.1	129.4	130.4	130.4
65°	125.1	123.2	123.8	124.8	125.1
67.5°	118.9	116.9	116.9	117.6	118.5
70°	111.0	110.0	110.0	111.3	112.6
72.5°	102.0	102.7	104.7	106.7	108.6
75°	94.8	96.4	98.4	103.4	106.3
77.5°	85.5	85.9	87.5	92.5	97.7
80°	72.6	72.3	72.6	73.3	74.3
82.5°	57.5	56.8	54.8	55.5	54.2
85°	42.3	41.3	39.0	37.3	37.0
87.5°	24.4	24.4	23.4	22.1	20.8
90°	0.0	0.0	0.0	0.0	0.0

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