

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: P145430

Luminaire Tested: **LDRL-SL4-E02-E**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P145430  
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-E02-E  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL  
Light Source: (42) 4000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5764.1 lumens  
Efficiency: N/A  
Efficacy: 110.6 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

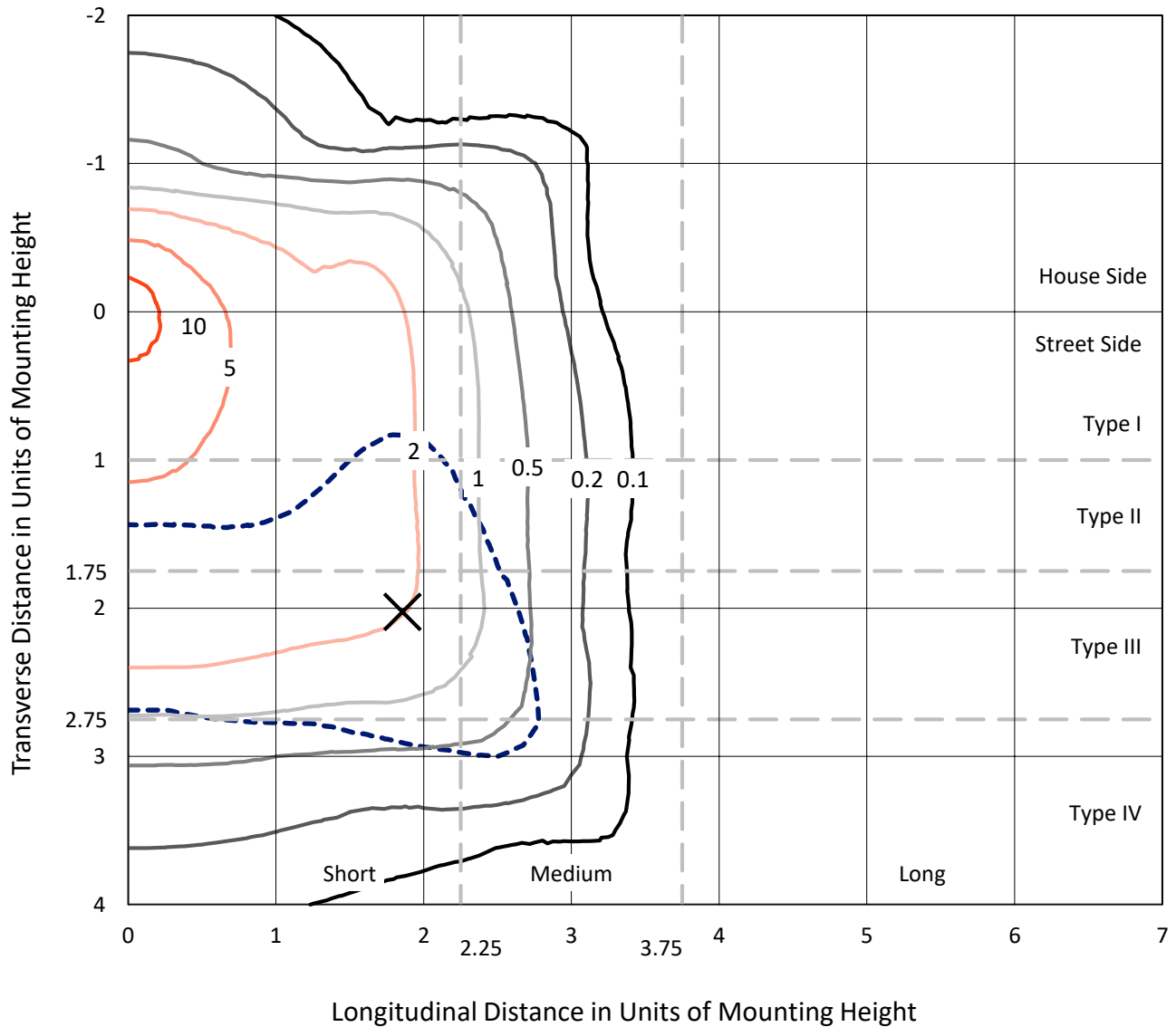
Input Watts (W): 52.1  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

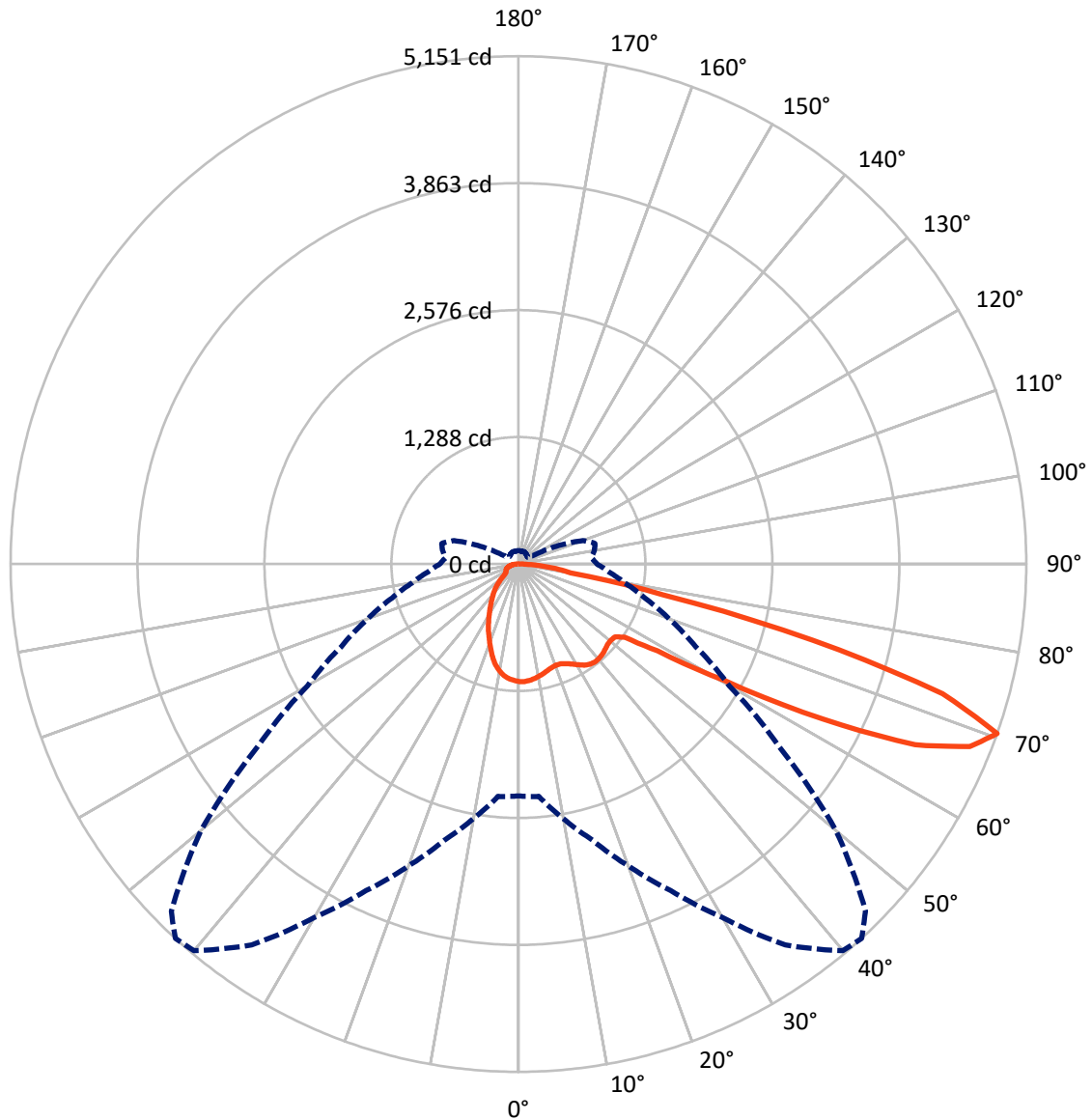
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 11.9 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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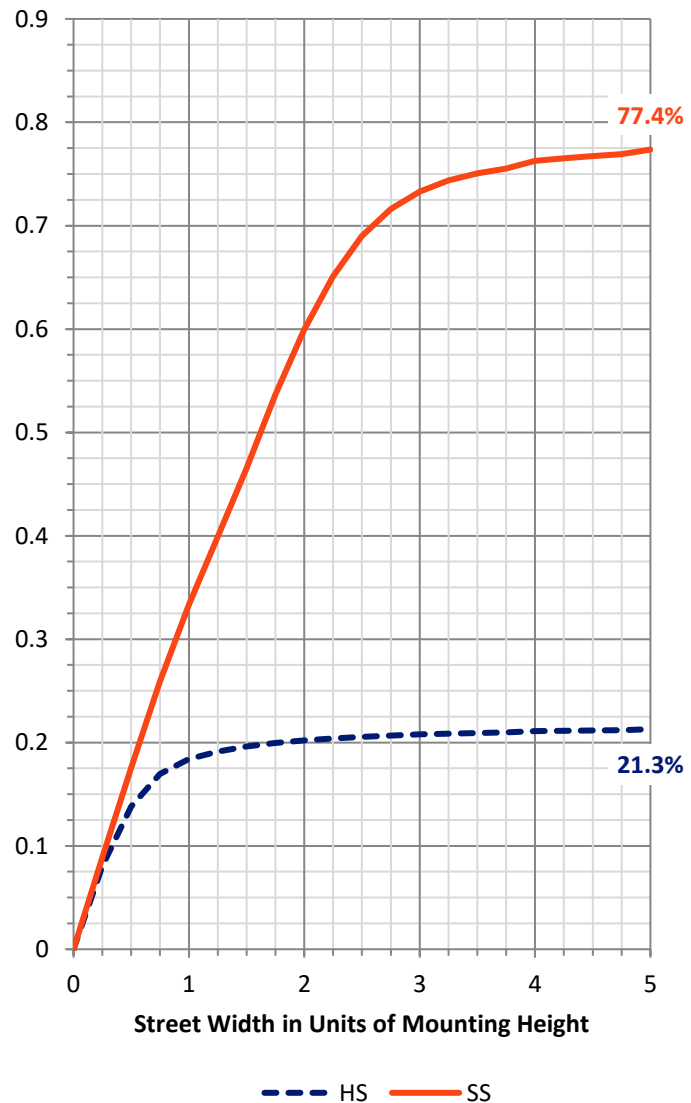
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1245.1	0.0	1245.1
	% Fixture	21.6	0.0	21.6
<b>Street Side</b>	Lumens	4518.9	0.0	4518.9
	% Fixture	78.4	0.0	78.4
<b>Total</b>	Lumens	5764.1	0.0	5764.1
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	110.9	1.9
10°-20°	298.8	5.2
20°-30°	435.8	7.6
30°-40°	555.8	9.6
40°-50°	648.8	11.3
50°-60°	992.1	17.2
60°-70°	1798.5	31.2
70°-80°	799.7	13.9
80°-90°	123.7	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°	5764.1	100.0
0°-180°	5764.1	100.0

**Coefficient of Utilization**



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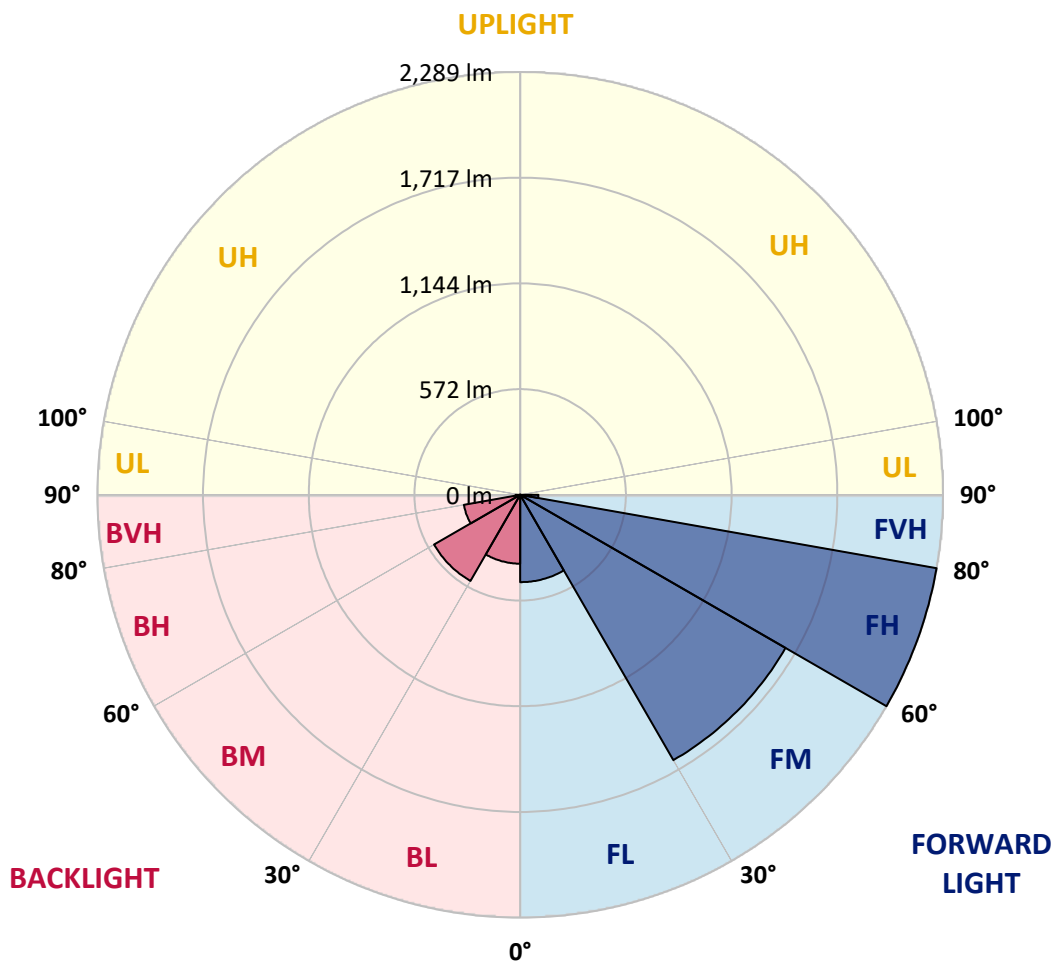
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	472.8	8.2			
FM	(30°-60°)	1658.5	28.8			
FH	(60°-80°)	2288.8	39.7			G2/5000
FVH	(80°-90°)	98.9	1.7			G1/100
BL	(0°-30°)	372.7	6.5	B1/500		
BM	(30°-60°)	538.3	9.3	B1/1000		
BH	(60°-80°)	309.3	5.4	B1/500		G1/500
BVH	(80°-90°)	24.9	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°	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0
2.5°	1197.6	1196.4	1197.2	1198.0	1198.0	1198.4	1194.8	1195.2	1193.6	1194.0	1194.4
5°	1193.2	1192.0	1192.8	1192.8	1192.8	1192.4	1187.6	1187.2	1185.2	1185.2	1184.4
7.5°	1184.8	1180.4	1182.8	1183.2	1182.4	1180.4	1177.6	1174.8	1173.6	1173.6	1170.8
10°	1172.0	1167.2	1168.4	1169.2	1168.8	1164.8	1163.6	1160.8	1157.6	1156.4	1153.2
12.5°	1155.6	1152.4	1154.0	1153.6	1153.6	1150.0	1148.0	1144.0	1140.0	1138.0	1134.0
15°	1145.2	1141.2	1142.8	1142.8	1141.2	1137.6	1134.8	1127.6	1120.8	1118.4	1113.2
17.5°	1151.6	1147.6	1149.2	1148.0	1145.2	1137.6	1130.4	1118.8	1108.0	1101.6	1094.8
20°	1177.2	1173.2	1174.4	1173.6	1169.6	1157.2	1144.0	1124.0	1104.0	1094.4	1084.0
22.5°	1218.0	1214.8	1216.8	1215.6	1209.2	1193.2	1173.6	1144.8	1114.8	1100.4	1085.6
25°	1278.4	1277.6	1280.8	1277.2	1268.0	1244.0	1215.6	1176.8	1137.6	1119.6	1098.8
27.5°	1351.2	1344.4	1349.2	1346.0	1339.6	1309.2	1270.8	1221.6	1171.6	1148.0	1123.2
30°	1416.8	1410.8	1419.6	1418.0	1408.4	1377.2	1328.8	1271.2	1214.8	1184.8	1156.4
32.5°	1492.8	1485.2	1492.0	1492.0	1477.6	1435.6	1380.4	1314.4	1255.2	1223.2	1189.2
35°	1572.4	1564.4	1570.8	1568.8	1543.2	1487.6	1418.4	1346.8	1281.6	1248.8	1214.0
37.5°	1646.4	1645.2	1646.8	1633.6	1598.0	1526.8	1444.0	1364.0	1294.8	1260.4	1224.0
40°	1720.4	1717.6	1710.8	1687.6	1635.6	1550.0	1457.2	1370.0	1295.6	1259.6	1222.8
42.5°	1766.8	1761.6	1750.0	1718.4	1653.2	1555.6	1453.2	1360.8	1286.0	1249.2	1213.2
45°	1782.8	1777.6	1763.6	1728.0	1653.6	1546.8	1437.6	1342.4	1268.0	1234.4	1198.0
47.5°	1769.6	1766.4	1753.6	1718.0	1640.8	1530.4	1418.0	1324.0	1250.8	1218.0	1184.0
50°	1747.2	1745.2	1734.0	1701.2	1628.8	1520.4	1408.8	1315.2	1246.0	1215.6	1183.6
52.5°	1803.2	1797.2	1777.2	1738.4	1654.0	1538.4	1423.2	1328.4	1257.2	1226.4	1193.6
55°	2491.6	2447.2	2348.0	2162.0	1901.6	1699.6	1529.6	1415.2	1338.4	1308.4	1277.2
57.5°	3276.8	3230.4	3189.2	3047.2	2738.0	2356.4	2013.2	1812.4	1674.8	1661.6	1649.2
60°	3579.2	3594.0	3590.4	3537.6	3379.2	3198.0	2910.8	2673.6	2410.8	2400.0	2415.6
62.5°	3787.6	3800.0	3801.6	3785.6	3734.0	3673.6	3613.6	3537.6	3487.6	3466.0	3326.4
65°	3873.6	3891.6	3931.2	3960.8	3969.2	3990.0	4044.4	4251.2	4423.6	4422.4	4258.8
67.5°	3545.2	3566.8	3716.8	3864.0	3987.6	4130.8	4351.2	4687.6	4947.2	4939.2	4805.2
70°	2352.8	2366.4	2621.2	2898.4	3258.0	3655.6	4137.2	4717.2	5119.6	5151.2	4978.4
72.5°	1443.2	1474.4	1557.6	1670.0	1862.0	2230.4	2946.4	3937.6	4528.0	4498.4	4360.8
75°	974.4	976.0	973.6	985.6	996.4	1070.8	1359.2	2165.2	3067.2	3083.2	3024.0
77.5°	666.0	674.8	679.6	676.4	687.2	684.0	700.8	742.0	1175.6	1500.4	1378.8
80°	582.0	585.6	590.8	583.2	563.2	552.0	567.6	552.8	520.8	538.0	515.2
82.5°	368.4	379.2	380.4	406.8	446.0	447.6	467.6	452.8	412.0	385.2	352.4
85°	264.8	268.8	276.0	277.6	264.0	252.4	259.6	247.2	222.8	208.4	184.4
87.5°	154.4	158.4	165.6	161.2	147.6	130.8	118.0	101.6	80.4	75.2	66.4
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):**

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0
2.5°	1194.8	1192.8	1191.2	1190.4	1192.0	1190.4	1188.8	1188.0	1186.4	1186.8	1184.8
5°	1183.6	1180.8	1178.4	1176.4	1178.0	1175.2	1172.8	1171.2	1169.2	1168.8	1166.8
7.5°	1168.0	1163.6	1160.4	1156.8	1152.8	1150.4	1147.6	1144.8	1140.4	1140.0	1139.2
10°	1147.6	1144.0	1137.6	1132.0	1126.4	1120.4	1114.4	1110.0	1104.8	1102.8	1100.0
12.5°	1127.2	1120.0	1112.4	1103.6	1096.8	1087.2	1079.2	1070.8	1063.2	1058.4	1053.2
15°	1103.2	1095.6	1084.8	1076.4	1066.8	1056.0	1045.6	1033.2	1020.8	1013.2	1006.0
17.5°	1082.4	1072.8	1064.0	1052.0	1042.4	1030.0	1014.4	1001.2	986.4	974.0	960.8
20°	1066.4	1055.6	1045.2	1034.4	1022.8	1008.8	991.6	972.8	954.0	936.4	916.8
22.5°	1060.0	1042.8	1031.2	1021.2	1009.2	993.2	974.0	950.8	927.6	905.2	882.4
25°	1065.6	1040.0	1022.0	1010.8	1000.0	983.6	962.0	935.6	908.4	880.0	852.8
27.5°	1080.8	1048.4	1022.8	1005.2	992.8	976.8	952.8	925.2	894.4	862.4	833.2
30°	1102.8	1062.4	1030.4	1005.2	986.8	968.4	942.4	911.2	878.8	845.2	812.4
32.5°	1126.8	1078.0	1039.6	1006.4	978.0	954.8	927.6	897.2	862.8	827.2	792.0
35°	1144.8	1089.2	1043.6	1002.0	965.6	936.4	907.2	877.6	844.0	808.0	772.8
37.5°	1152.4	1093.6	1042.8	992.8	948.4	916.4	886.0	856.4	824.0	790.0	757.6
40°	1152.8	1093.6	1038.0	980.4	930.4	895.6	863.6	836.0	805.6	776.4	747.6
42.5°	1145.2	1088.0	1029.2	968.8	917.2	878.0	845.2	816.8	792.4	766.4	742.0
45°	1131.6	1076.8	1021.2	962.4	912.4	873.6	838.4	811.6	789.6	766.4	745.2
47.5°	1121.2	1070.4	1021.6	971.6	924.0	884.0	846.0	817.6	798.8	780.4	765.2
50°	1123.2	1072.8	1026.4	978.8	932.0	891.6	854.8	830.4	819.2	813.2	809.6
52.5°	1133.6	1082.4	1047.2	1015.6	1000.4	975.6	955.2	936.8	939.6	925.2	906.8
55°	1240.8	1223.6	1264.0	1293.2	1307.6	1332.8	1369.2	1334.4	1329.6	1285.2	1153.2
57.5°	1666.0	1706.8	1768.8	1812.8	1817.2	1809.6	1779.6	1750.8	1704.0	1637.2	1452.4
60°	2379.2	2369.6	2312.0	2234.8	2174.8	2096.0	2016.8	1950.0	1874.8	1772.4	1575.6
62.5°	3129.2	2898.0	2692.8	2518.0	2369.6	2238.0	2118.4	2018.0	1914.8	1767.6	1558.0
65°	3734.8	3290.0	2928.4	2647.2	2426.4	2240.4	2086.0	1947.6	1809.6	1639.2	1436.0
67.5°	4167.6	3462.0	2916.4	2520.8	2211.2	1955.2	1730.4	1572.8	1431.2	1297.2	1205.6
70°	4202.0	3224.0	2467.2	1983.2	1626.0	1325.2	1092.0	920.0	796.8	741.2	780.8
72.5°	3590.8	2385.2	1640.4	1214.0	963.6	748.8	602.0	481.2	382.0	333.2	340.0
75°	2114.8	1145.2	738.8	550.4	449.6	359.2	310.8	262.4	231.6	185.6	148.4
77.5°	805.2	498.0	372.8	309.6	220.8	158.8	125.2	108.0	99.2	98.0	92.8
80°	464.0	365.2	255.6	167.2	122.4	103.6	88.8	76.0	70.8	69.6	71.6
82.5°	293.2	227.6	140.4	107.6	89.2	76.8	64.0	55.6	51.2	49.6	52.4
85°	151.6	114.0	85.6	73.6	68.4	62.4	51.2	42.8	42.4	44.4	51.2
87.5°	56.0	48.8	38.4	33.2	35.6	33.2	24.0	20.8	18.8	24.8	36.0
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):**

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0	1192.0
2.5°	1184.8	1184.0	1184.4	1183.6	1183.6	1184.8	1183.2	1182.0	1184.0	1184.0	1185.2
5°	1166.4	1167.2	1167.2	1166.8	1167.6	1169.6	1169.2	1169.2	1172.4	1173.6	1175.2
7.5°	1137.2	1138.4	1138.8	1140.0	1140.4	1143.2	1145.2	1147.6	1152.4	1153.6	1157.2
10°	1097.6	1096.8	1099.6	1099.2	1102.8	1105.2	1106.8	1112.0	1119.2	1123.2	1126.8
12.5°	1050.8	1050.8	1052.4	1052.8	1056.0	1059.2	1061.2	1067.6	1073.6	1078.8	1086.8
15°	1001.2	999.6	996.0	995.6	996.8	1000.0	1004.4	1009.2	1018.4	1026.0	1032.8
17.5°	949.2	944.4	940.0	934.4	934.0	933.6	936.0	939.6	954.0	961.6	971.2
20°	903.2	892.8	882.4	870.8	864.0	860.8	862.0	866.8	880.4	890.4	900.4
22.5°	862.0	846.4	830.0	811.6	800.4	793.6	794.4	796.4	806.4	812.4	817.6
25°	826.8	805.2	782.4	758.8	743.2	732.8	732.4	732.4	728.0	728.8	726.0
27.5°	802.8	772.8	743.6	716.0	695.6	685.2	671.2	661.2	652.4	640.4	635.2
30°	779.6	748.8	715.6	685.2	660.8	640.4	614.4	592.8	575.6	559.2	545.2
32.5°	758.8	726.8	695.2	662.0	628.4	593.2	559.2	534.4	510.0	484.8	468.0
35°	740.4	710.4	678.8	641.2	594.0	548.0	509.6	476.0	447.2	416.8	392.4
37.5°	730.0	702.8	670.0	618.8	559.6	507.2	464.4	426.8	388.4	352.0	322.0
40°	724.8	700.8	660.8	596.0	528.8	472.8	425.2	380.0	334.8	292.0	260.8
42.5°	724.0	700.8	647.2	572.8	502.4	442.4	389.2	334.8	280.0	238.4	210.8
45°	731.2	700.0	632.8	552.0	478.8	415.2	351.2	287.2	230.8	194.4	179.2
47.5°	752.0	702.8	621.6	534.4	456.4	385.2	308.0	234.4	186.4	170.0	169.6
50°	785.6	715.6	619.2	521.6	434.4	347.6	257.2	187.6	164.4	163.6	168.0
52.5°	838.8	739.6	625.2	512.8	408.0	298.8	203.6	162.0	157.6	162.0	167.6
55°	956.0	782.4	633.2	497.2	365.2	236.8	167.6	153.6	155.6	160.8	166.0
57.5°	1169.2	871.2	641.6	462.0	296.0	182.0	150.8	150.4	154.0	158.4	163.2
60°	1304.4	980.8	662.0	410.0	223.6	150.4	144.4	148.4	152.8	156.0	160.0
62.5°	1308.8	1009.6	672.8	354.4	166.4	137.6	138.8	146.4	151.6	152.8	154.8
65°	1224.4	955.2	624.0	288.4	138.0	130.4	134.8	141.6	146.8	147.6	149.2
67.5°	1069.6	842.4	528.8	217.6	125.6	124.8	129.6	134.8	138.4	141.6	144.0
70°	805.6	695.2	425.2	168.8	118.0	117.2	122.0	126.4	129.6	133.6	137.6
72.5°	408.4	481.2	322.4	138.0	107.6	108.4	113.6	117.6	120.0	123.6	127.6
75°	139.2	210.0	204.0	111.6	96.0	99.2	101.6	106.0	109.6	112.0	114.0
77.5°	87.2	91.2	105.2	90.0	84.8	85.6	89.6	93.6	97.6	99.2	100.0
80°	72.8	73.2	73.6	72.0	72.4	74.8	77.2	81.6	85.6	86.4	86.8
82.5°	57.6	61.6	61.2	60.8	62.8	65.2	66.8	68.4	70.0	70.8	72.0
85°	50.8	50.0	50.4	51.6	50.0	48.4	48.0	48.0	50.4	53.2	54.4
87.5°	46.4	39.6	29.6	28.0	28.0	27.2	25.6	25.6	28.0	30.4	31.6
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°	1192.0	1192.0	1192.0	1192.0	1192.0
2.5°	1184.8	1185.2	1184.8	1184.8	1186.8
5°	1176.0	1177.6	1176.8	1178.0	1179.2
7.5°	1158.0	1162.0	1162.8	1166.0	1164.8
10°	1132.0	1134.8	1138.8	1142.0	1140.8
12.5°	1090.8	1097.6	1103.6	1107.2	1106.4
15°	1038.4	1048.0	1056.0	1058.8	1055.6
17.5°	982.4	988.4	998.0	1000.0	1003.2
20°	911.6	911.2	919.6	919.6	918.0
22.5°	819.2	825.2	825.2	819.6	816.8
25°	724.8	726.8	720.8	722.0	714.4
27.5°	630.0	624.8	620.0	622.0	616.4
30°	539.6	528.4	523.6	524.4	518.4
32.5°	452.8	439.6	434.8	428.4	423.2
35°	374.0	353.2	340.8	337.6	341.2
37.5°	296.8	282.0	267.2	256.4	257.6
40°	234.8	219.6	210.0	205.6	204.8
42.5°	194.0	185.2	183.2	183.6	183.6
45°	176.0	176.4	178.0	179.6	180.0
47.5°	172.4	174.8	177.6	179.6	180.0
50°	172.0	174.4	176.4	178.8	179.6
52.5°	171.6	173.2	174.4	175.6	176.8
55°	170.0	170.8	170.4	171.2	172.4
57.5°	166.0	166.4	165.6	166.0	168.4
60°	162.4	162.8	161.2	163.2	163.6
62.5°	158.0	157.6	156.8	158.0	158.0
65°	151.6	149.2	150.0	151.2	151.6
67.5°	144.0	141.6	141.6	142.4	143.6
70°	134.4	133.2	133.2	134.8	136.4
72.5°	123.6	124.4	126.8	129.2	131.6
75°	114.8	116.8	119.2	125.2	128.8
77.5°	103.6	104.0	106.0	112.0	118.4
80°	88.0	87.6	88.0	88.8	90.0
82.5°	69.6	68.8	66.4	67.2	65.6
85°	51.2	50.0	47.2	45.2	44.8
87.5°	29.6	29.6	28.4	26.8	25.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)