

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: P145432

Luminaire Tested: **LDRL-SL4-E02-E-7060**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P145432  
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-7060  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL  
Light Source: (42) 5700K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5914.5 lumens  
Efficiency: N/A  
Efficacy: 113.5 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

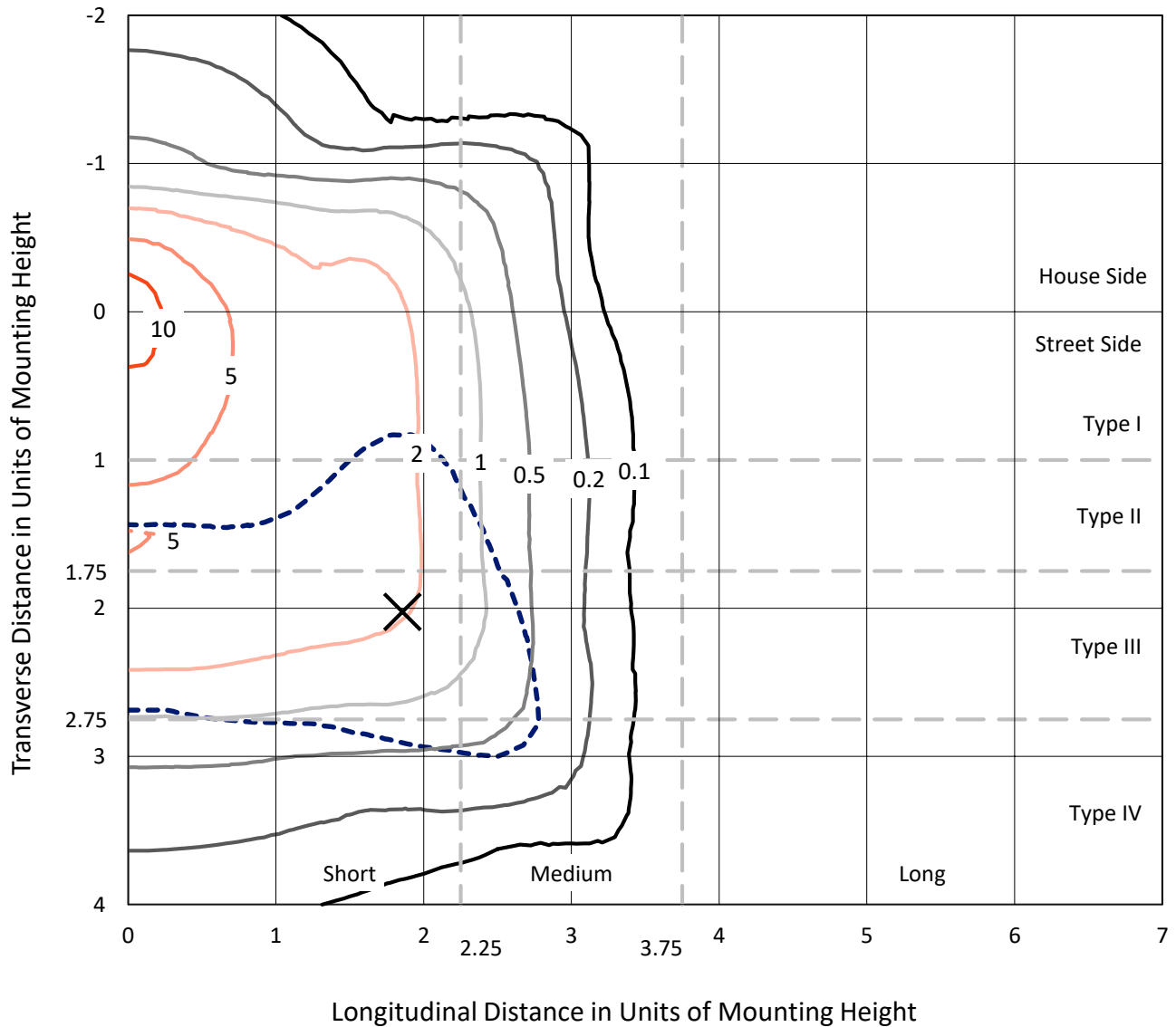
Input Watts (W): 52.1  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

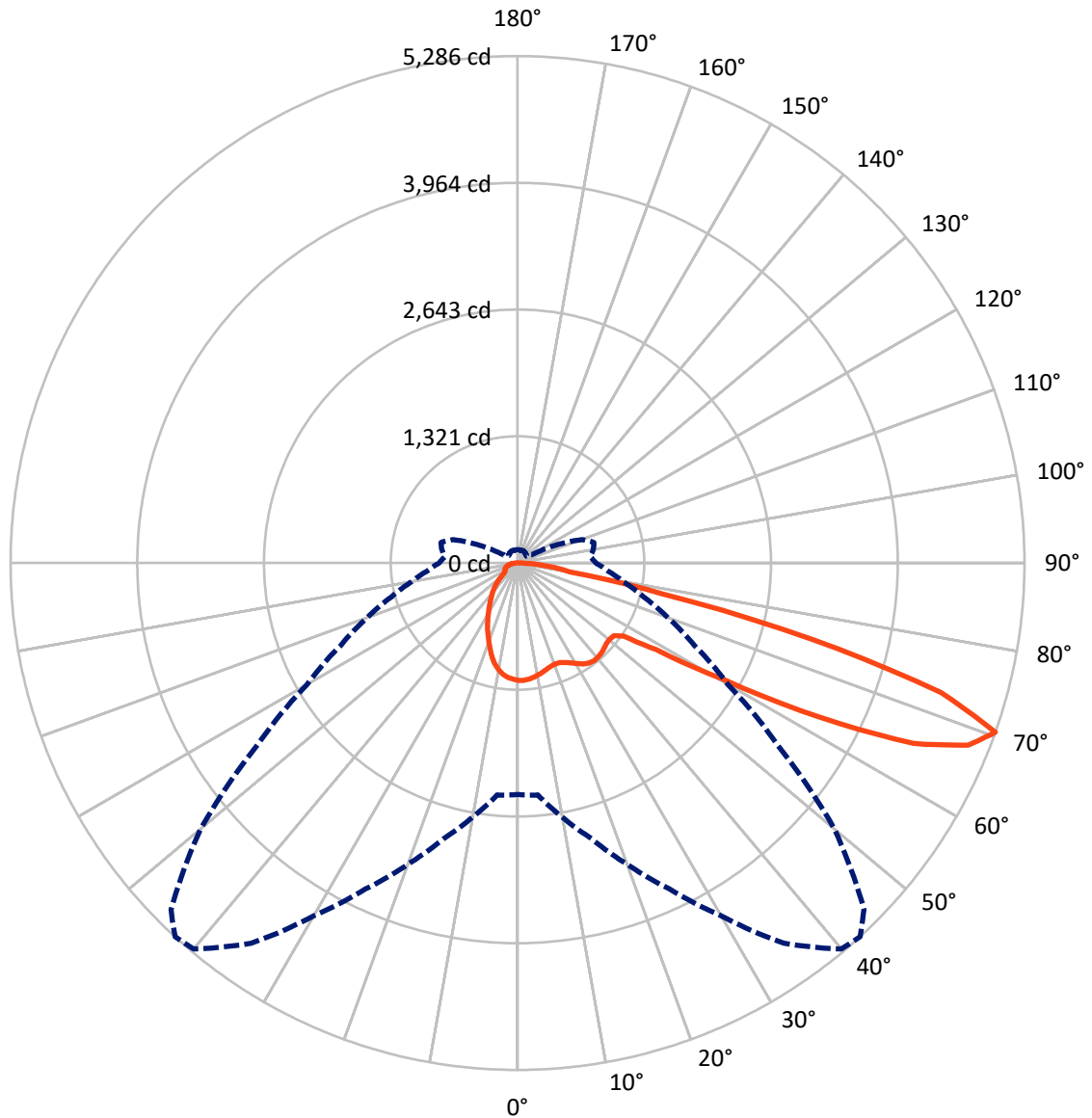
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 12.2 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	1277.6	0.0	1277.6
	% Fixture	21.6	0.0	21.6
<b>Street Side</b>	Lumens	4636.9	0.0	4636.9
	% Fixture	78.4	0.0	78.4
<b>Total</b>	Lumens	5914.5	0.0	5914.5
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	113.8	1.9
10°-20°	306.6	5.2
20°-30°	447.2	7.6
30°-40°	570.3	9.6
40°-50°	665.7	11.3
50°-60°	1018.0	17.2
60°-70°	1845.4	31.2
70°-80°	820.5	13.9
80°-90°	127.0	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°	5914.5	100.0
0°-180°	5914.5	100.0

**Coefficient of Utilization**



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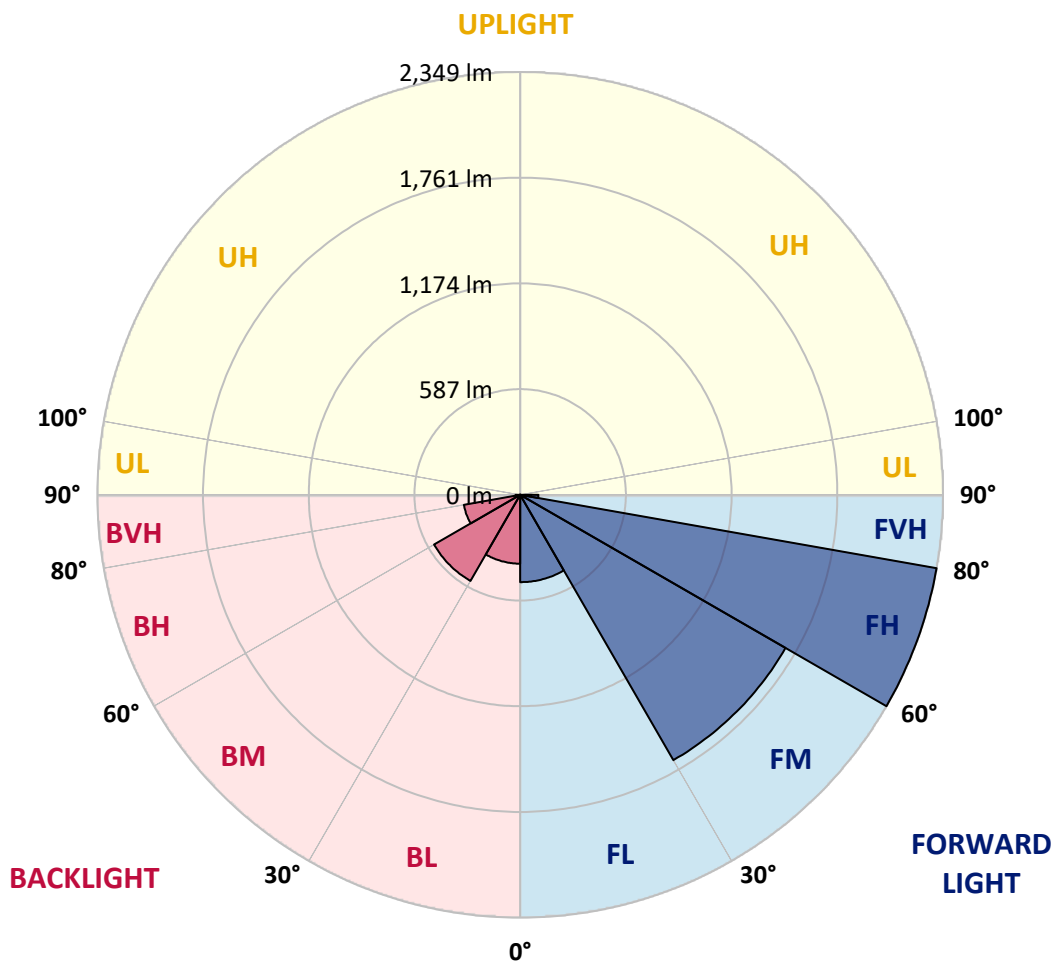
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	485.1	8.2			
FM	(30°-60°)	1701.8	28.8			
FH	(60°-80°)	2348.5	39.7			G2/5000
FVH	(80°-90°)	101.4	1.7			G2/225
BL	(0°-30°)	382.4	6.5	B1/500		
BM	(30°-60°)	552.3	9.3	B1/1000		
BH	(60°-80°)	317.4	5.4	B1/500		G1/500
BVH	(80°-90°)	25.5	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°	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1
2.5°	1228.9	1227.6	1228.5	1229.3	1229.3	1229.7	1226.0	1226.4	1224.8	1225.2	1225.6
5°	1224.3	1223.1	1223.9	1223.9	1223.9	1223.5	1218.6	1218.2	1216.1	1216.1	1215.3
7.5°	1215.7	1211.2	1213.7	1214.1	1213.3	1211.2	1208.3	1205.5	1204.2	1204.2	1201.4
10°	1202.6	1197.7	1198.9	1199.7	1199.3	1195.2	1194.0	1191.1	1187.8	1186.6	1183.3
12.5°	1185.8	1182.5	1184.1	1183.7	1183.7	1180.0	1178.0	1173.9	1169.8	1167.7	1163.6
15°	1175.1	1171.0	1172.6	1172.6	1171.0	1167.3	1164.4	1157.0	1150.1	1147.6	1142.3
17.5°	1181.7	1177.6	1179.2	1178.0	1175.1	1167.3	1159.9	1148.0	1136.9	1130.4	1123.4
20°	1207.9	1203.8	1205.1	1204.2	1200.1	1187.4	1173.9	1153.3	1132.8	1123.0	1112.3
22.5°	1249.8	1246.5	1248.6	1247.3	1240.8	1224.3	1204.2	1174.7	1143.9	1129.1	1113.9
25°	1311.8	1311.0	1314.2	1310.5	1301.1	1276.5	1247.3	1207.5	1167.3	1148.8	1127.5
27.5°	1386.5	1379.5	1384.4	1381.1	1374.6	1343.4	1304.0	1253.5	1202.2	1178.0	1152.5
30°	1453.8	1447.6	1456.7	1455.0	1445.2	1413.2	1363.5	1304.4	1246.5	1215.7	1186.6
32.5°	1531.8	1524.0	1530.9	1530.9	1516.2	1473.1	1416.4	1348.7	1288.0	1255.1	1220.2
35°	1613.4	1605.2	1611.8	1609.8	1583.5	1526.4	1455.4	1382.0	1315.1	1281.4	1245.7
37.5°	1689.4	1688.1	1689.8	1676.2	1639.7	1566.7	1481.7	1399.6	1328.6	1293.3	1256.0
40°	1765.3	1762.4	1755.5	1731.7	1678.3	1590.5	1495.2	1405.8	1329.4	1292.5	1254.7
42.5°	1812.9	1807.6	1795.7	1763.3	1696.4	1596.2	1491.1	1396.3	1319.6	1281.8	1244.9
45°	1829.3	1824.0	1809.6	1773.1	1696.8	1587.2	1475.1	1377.4	1301.1	1266.6	1229.3
47.5°	1815.8	1812.5	1799.4	1762.8	1683.6	1570.4	1455.0	1358.6	1283.5	1249.8	1214.9
50°	1792.8	1790.8	1779.3	1745.6	1671.3	1560.1	1445.6	1349.5	1278.5	1247.3	1214.5
52.5°	1850.3	1844.1	1823.6	1783.8	1697.2	1578.6	1460.4	1363.1	1290.0	1258.4	1224.8
55°	2556.6	2511.1	2409.3	2218.4	1951.2	1744.0	1569.5	1452.1	1373.3	1342.6	1310.5
57.5°	3362.3	3314.7	3272.5	3126.7	2809.5	2417.9	2065.8	1859.7	1718.5	1705.0	1692.3
60°	3672.6	3687.8	3684.1	3630.0	3467.4	3281.5	2986.8	2743.4	2473.7	2462.7	2478.7
62.5°	3886.5	3899.2	3900.8	3884.4	3831.5	3769.5	3707.9	3630.0	3578.6	3556.5	3413.2
65°	3974.7	3993.2	4033.8	4064.2	4072.8	4094.2	4150.0	4362.2	4539.1	4537.8	4370.0
67.5°	3637.7	3659.9	3813.8	3964.9	4091.7	4238.6	4464.8	4810.0	5076.3	5068.1	4930.6
70°	2414.2	2428.2	2689.6	2974.1	3343.1	3751.0	4245.2	4840.3	5253.2	5285.7	5108.4
72.5°	1480.9	1512.9	1598.3	1713.6	1910.6	2288.6	3023.3	4040.4	4646.2	4615.8	4474.6
75°	999.8	1001.5	999.0	1011.3	1022.4	1098.8	1394.7	2221.7	3147.3	3163.7	3102.9
77.5°	683.4	692.4	697.3	694.1	705.1	701.9	719.1	761.4	1206.3	1539.6	1414.8
80°	597.2	600.9	606.2	598.4	577.9	566.4	582.4	567.2	534.4	552.0	528.6
82.5°	378.0	389.1	390.3	417.4	457.6	459.3	479.8	464.6	422.8	395.3	361.6
85°	271.7	275.8	283.2	284.8	270.9	259.0	266.4	253.7	228.6	213.8	189.2
87.5°	158.4	162.5	169.9	165.4	151.5	134.2	121.1	104.3	82.5	77.2	68.1
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):**

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1
2.5°	1226.0	1223.9	1222.3	1221.5	1223.1	1221.5	1219.8	1219.0	1217.4	1217.8	1215.7
5°	1214.5	1211.6	1209.2	1207.1	1208.8	1205.9	1203.4	1201.8	1199.7	1199.3	1197.3
7.5°	1198.5	1194.0	1190.7	1187.0	1182.9	1180.4	1177.6	1174.7	1170.2	1169.8	1168.9
10°	1177.6	1173.9	1167.3	1161.6	1155.8	1149.6	1143.5	1139.0	1133.6	1131.6	1128.7
12.5°	1156.6	1149.2	1141.4	1132.4	1125.4	1115.6	1107.4	1098.8	1091.0	1086.0	1080.7
15°	1132.0	1124.2	1113.1	1104.5	1094.6	1083.6	1072.9	1060.2	1047.4	1039.7	1032.3
17.5°	1110.7	1100.8	1091.8	1079.5	1069.6	1056.9	1040.9	1027.3	1012.2	999.4	985.9
20°	1094.2	1083.2	1072.5	1061.4	1049.5	1035.1	1017.5	998.2	978.9	960.8	940.7
22.5°	1087.7	1070.0	1058.1	1047.9	1035.5	1019.1	999.4	975.6	951.8	928.8	905.4
25°	1093.4	1067.1	1048.7	1037.2	1026.1	1009.3	987.1	960.0	932.1	903.0	875.1
27.5°	1109.0	1075.8	1049.5	1031.4	1018.7	1002.3	977.7	949.4	917.7	884.9	855.0
30°	1131.6	1090.1	1057.3	1031.4	1012.6	993.7	967.0	935.0	901.7	867.3	833.6
32.5°	1156.2	1106.1	1066.7	1032.7	1003.5	979.7	951.8	920.6	885.3	848.8	812.7
35°	1174.7	1117.6	1070.8	1028.2	990.8	960.8	930.9	900.5	866.0	829.1	793.0
37.5°	1182.5	1122.1	1070.0	1018.7	973.2	940.3	909.1	878.8	845.5	810.6	777.4
40°	1182.9	1122.1	1065.1	1006.0	954.7	919.0	886.1	857.8	826.6	796.7	767.1
42.5°	1175.1	1116.4	1056.1	994.1	941.1	900.9	867.3	838.1	813.1	786.4	761.4
45°	1161.1	1104.9	1047.9	987.5	936.2	896.4	860.3	832.8	810.2	786.4	764.7
47.5°	1150.5	1098.3	1048.3	997.0	948.1	907.1	868.1	838.9	819.7	800.8	785.2
50°	1152.5	1100.8	1053.2	1004.4	956.3	914.9	877.1	852.1	840.6	834.4	830.7
52.5°	1163.2	1110.7	1074.5	1042.1	1026.5	1001.1	980.1	961.3	964.1	949.4	930.5
55°	1273.2	1255.5	1297.0	1327.0	1341.7	1367.6	1404.9	1369.2	1364.3	1318.8	1183.3
57.5°	1709.5	1751.4	1815.0	1860.1	1864.6	1856.8	1826.1	1796.5	1748.5	1679.9	1490.3
60°	2441.3	2431.5	2372.4	2293.1	2231.6	2150.7	2069.4	2000.9	1923.7	1818.7	1616.7
62.5°	3210.9	2973.7	2763.1	2583.7	2431.5	2296.4	2173.7	2070.7	1964.8	1813.7	1598.7
65°	3832.3	3375.9	3004.8	2716.3	2489.7	2298.9	2140.5	1998.4	1856.8	1682.0	1473.5
67.5°	4276.4	3552.4	2992.5	2586.6	2268.9	2006.2	1775.6	1613.9	1468.6	1331.1	1237.1
70°	4311.7	3308.2	2531.6	2035.0	1668.4	1359.8	1120.5	944.0	817.6	760.5	801.2
72.5°	3684.5	2447.5	1683.2	1245.7	988.8	768.3	617.7	493.8	392.0	341.9	348.9
75°	2170.0	1175.1	758.1	564.8	461.3	368.6	318.9	269.3	237.6	190.4	152.3
77.5°	826.2	511.0	382.5	317.7	226.6	162.9	128.5	110.8	101.8	100.6	95.2
80°	476.1	374.7	262.3	171.6	125.6	106.3	91.1	78.0	72.6	71.4	73.5
82.5°	300.9	233.5	144.1	110.4	91.5	78.8	65.7	57.1	52.5	50.9	53.8
85°	155.6	117.0	87.8	75.5	70.2	64.0	52.5	43.9	43.5	45.6	52.5
87.5°	57.5	50.1	39.4	34.1	36.5	34.1	24.6	21.3	19.3	25.4	36.9
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°	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1	1223.1
2.5°	1215.7	1214.9	1215.3	1214.5	1214.5	1215.7	1214.1	1212.9	1214.9	1214.9	1216.1
5°	1196.8	1197.7	1197.7	1197.3	1198.1	1200.1	1199.7	1199.7	1203.0	1204.2	1205.9
7.5°	1166.9	1168.1	1168.5	1169.8	1170.2	1173.0	1175.1	1177.6	1182.5	1183.7	1187.4
10°	1126.3	1125.4	1128.3	1127.9	1131.6	1134.1	1135.7	1141.0	1148.4	1152.5	1156.2
12.5°	1078.2	1078.2	1079.9	1080.3	1083.6	1086.9	1088.9	1095.5	1101.6	1107.0	1115.2
15°	1027.3	1025.7	1022.0	1021.6	1022.8	1026.1	1030.6	1035.5	1045.0	1052.8	1059.8
17.5°	974.0	969.1	964.5	958.8	958.4	958.0	960.4	964.1	978.9	986.7	996.6
20°	926.8	916.1	905.4	893.5	886.6	883.3	884.5	889.4	903.4	913.6	923.9
22.5°	884.5	868.5	851.7	832.8	821.3	814.3	815.1	817.2	827.5	833.6	838.9
25°	848.4	826.2	802.8	778.6	762.6	751.9	751.5	751.5	747.0	747.8	745.0
27.5°	823.8	793.0	763.0	734.7	713.8	703.1	688.7	678.5	669.4	657.1	651.8
30°	800.0	768.3	734.3	703.1	678.1	657.1	630.4	608.3	590.6	573.8	559.4
32.5°	778.6	745.8	713.3	679.3	644.8	608.7	573.8	548.4	523.3	497.5	480.2
35°	759.7	728.9	696.5	657.9	609.5	562.3	522.9	488.4	458.9	427.7	402.6
37.5°	749.1	721.1	687.5	635.0	574.2	520.4	476.5	437.9	398.5	361.2	330.4
40°	743.7	719.1	678.1	611.6	542.6	485.1	436.3	389.9	343.5	299.6	267.6
42.5°	742.9	719.1	664.1	587.8	515.5	453.9	399.4	343.5	287.3	244.6	216.3
45°	750.3	718.3	649.3	566.4	491.3	426.0	360.4	294.7	236.8	199.5	183.9
47.5°	771.6	721.1	637.8	548.4	468.3	395.3	316.0	240.5	191.3	174.4	174.0
50°	806.1	734.3	635.4	535.2	445.7	356.7	263.9	192.5	168.7	167.9	172.4
52.5°	860.7	758.9	641.5	526.2	418.7	306.6	208.9	166.2	161.7	166.2	172.0
55°	981.0	802.8	649.7	510.2	374.7	243.0	172.0	157.6	159.7	165.0	170.3
57.5°	1199.7	893.9	658.3	474.1	303.7	186.8	154.7	154.3	158.0	162.5	167.5
60°	1338.5	1006.4	679.3	420.7	229.4	154.3	148.2	152.3	156.8	160.1	164.2
62.5°	1343.0	1036.0	690.4	363.7	170.7	141.2	142.4	150.2	155.6	156.8	158.8
65°	1256.4	980.1	640.3	295.9	141.6	133.8	138.3	145.3	150.6	151.5	153.1
67.5°	1097.5	864.4	542.6	223.3	128.9	128.1	133.0	138.3	142.0	145.3	147.8
70°	826.6	713.3	436.3	173.2	121.1	120.3	125.2	129.7	133.0	137.1	141.2
72.5°	419.1	493.8	330.8	141.6	110.4	111.2	116.6	120.7	123.1	126.8	130.9
75°	142.8	215.5	209.3	114.5	98.5	101.8	104.3	108.8	112.5	114.9	117.0
77.5°	89.5	93.6	107.9	92.3	87.0	87.8	91.9	96.0	100.1	101.8	102.6
80°	74.7	75.1	75.5	73.9	74.3	76.8	79.2	83.7	87.8	88.7	89.1
82.5°	59.1	63.2	62.8	62.4	64.4	66.9	68.5	70.2	71.8	72.6	73.9
85°	52.1	51.3	51.7	52.9	51.3	49.7	49.3	49.3	51.7	54.6	55.8
87.5°	47.6	40.6	30.4	28.7	28.7	27.9	26.3	26.3	28.7	31.2	32.4
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):**

	160°	165°	170°	175°	180°
0°	1223.1	1223.1	1223.1	1223.1	1223.1
2.5°	1215.7	1216.1	1215.7	1215.7	1217.8
5°	1206.7	1208.3	1207.5	1208.8	1210.0
7.5°	1188.2	1192.3	1193.2	1196.4	1195.2
10°	1161.6	1164.4	1168.5	1171.8	1170.6
12.5°	1119.3	1126.3	1132.4	1136.1	1135.3
15°	1065.5	1075.4	1083.6	1086.4	1083.2
17.5°	1008.0	1014.2	1024.1	1026.1	1029.4
20°	935.4	935.0	943.6	943.6	942.0
22.5°	840.6	846.7	846.7	841.0	838.1
25°	743.7	745.8	739.6	740.8	733.0
27.5°	646.4	641.1	636.2	638.2	632.5
30°	553.7	542.2	537.3	538.1	531.9
32.5°	464.6	451.1	446.2	439.6	434.2
35°	383.8	362.4	349.7	346.4	350.1
37.5°	304.5	289.4	274.2	263.1	264.3
40°	240.9	225.3	215.5	211.0	210.1
42.5°	199.1	190.0	188.0	188.4	188.4
45°	180.6	181.0	182.6	184.3	184.7
47.5°	176.9	179.4	182.2	184.3	184.7
50°	176.5	179.0	181.0	183.5	184.3
52.5°	176.1	177.7	179.0	180.2	181.4
55°	174.4	175.3	174.8	175.7	176.9
57.5°	170.3	170.7	169.9	170.3	172.8
60°	166.6	167.0	165.4	167.5	167.9
62.5°	162.1	161.7	160.9	162.1	162.1
65°	155.6	153.1	153.9	155.1	155.6
67.5°	147.8	145.3	145.3	146.1	147.3
70°	137.9	136.7	136.7	138.3	140.0
72.5°	126.8	127.6	130.1	132.6	135.0
75°	117.8	119.8	122.3	128.5	132.2
77.5°	106.3	106.7	108.8	114.9	121.5
80°	90.3	89.9	90.3	91.1	92.3
82.5°	71.4	70.6	68.1	69.0	67.3
85°	52.5	51.3	48.4	46.4	46.0
87.5°	30.4	30.4	29.1	27.5	25.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)