

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: P146850

Luminaire Tested: **LDRL-T4-E02-E**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P146850  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33696)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: LDRL-T4-E02-E  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 SHORT  
Light Source: (42) 4000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5877.2 lumens  
Efficiency: N/A  
Efficacy: 112.8 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

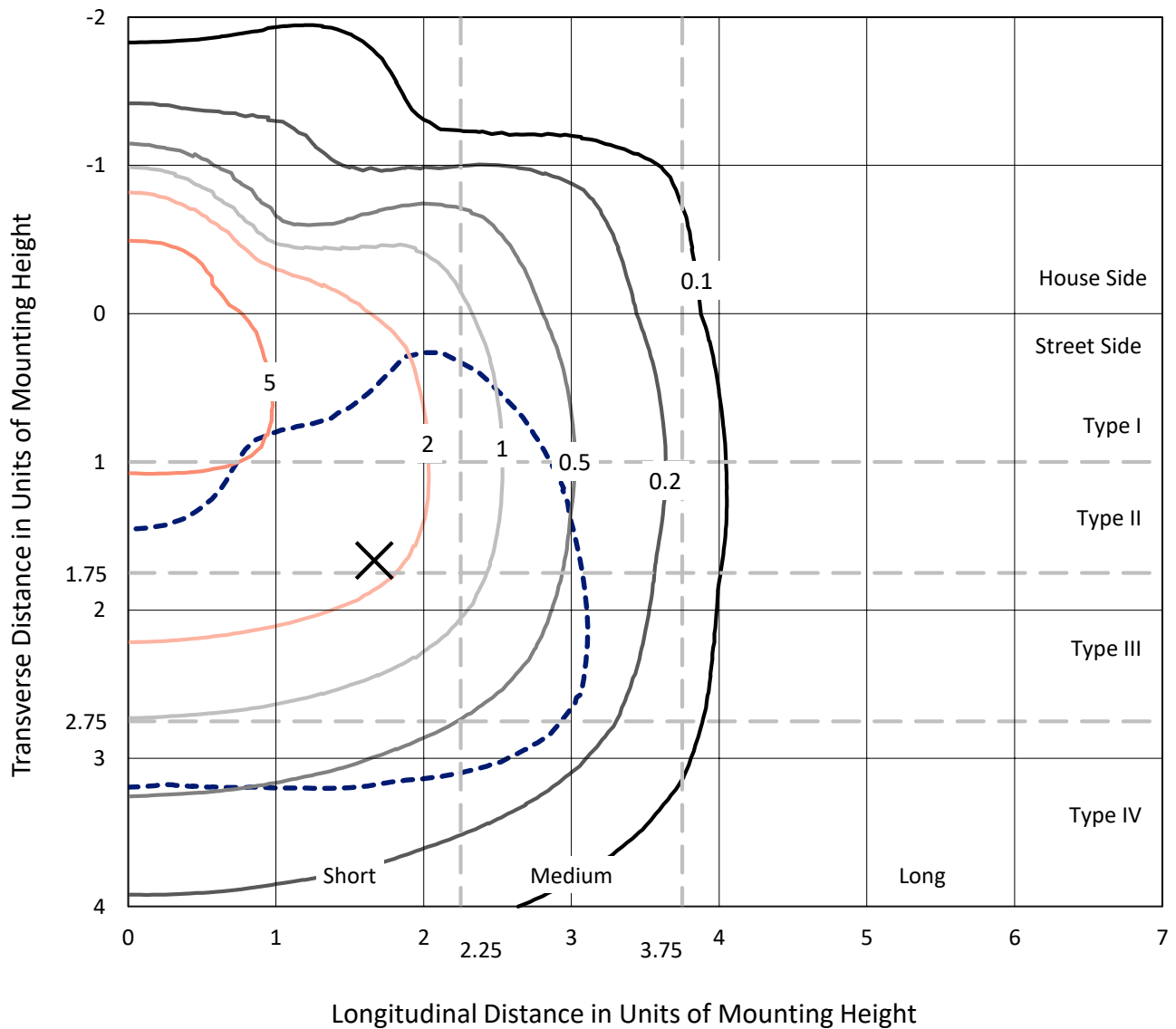
Input Watts (W): 52.1  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

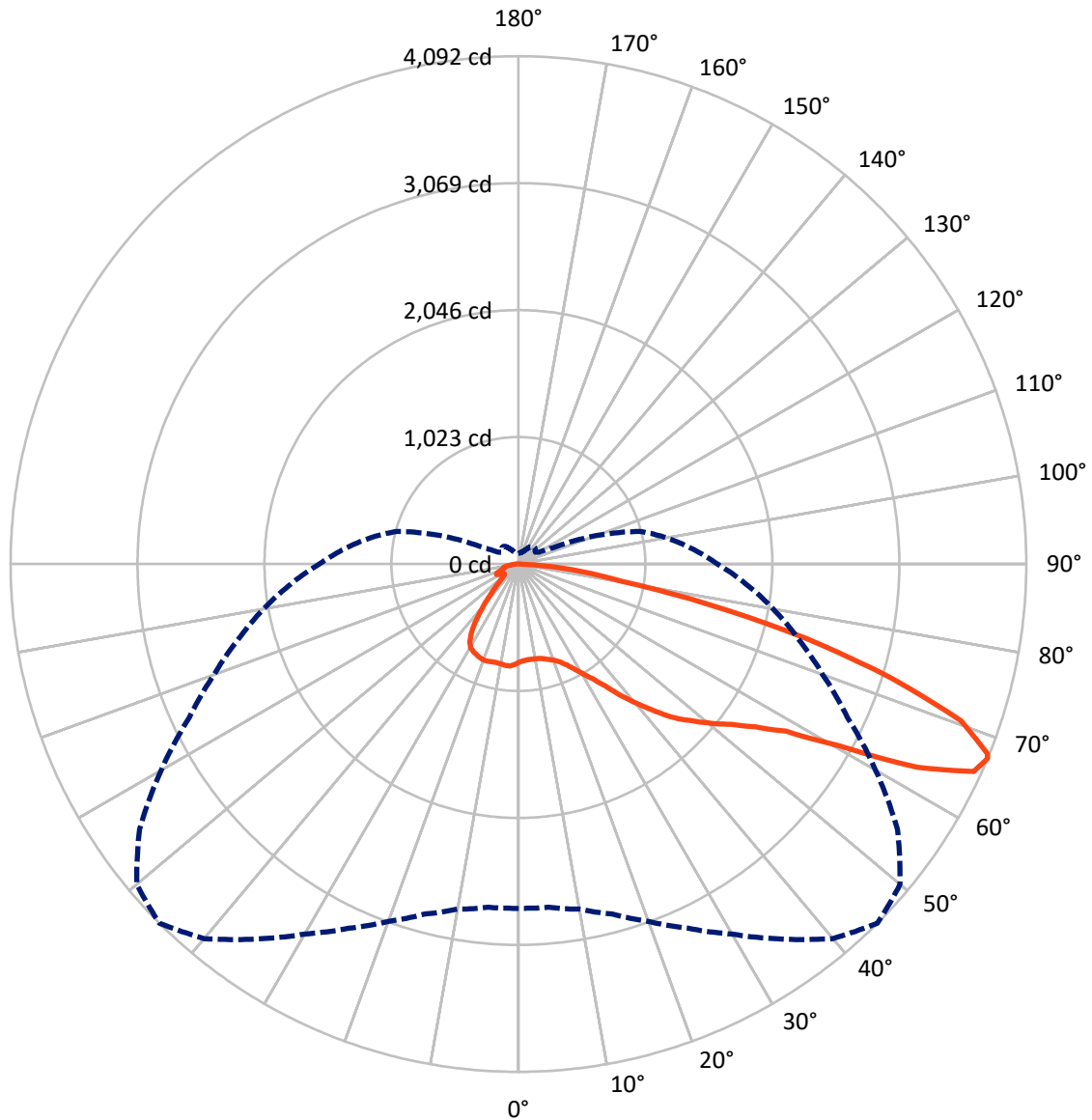
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 8.1 fc  
 Type IV - Short - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral      - - - Horizontal Cone Through 67-Deg Vertical

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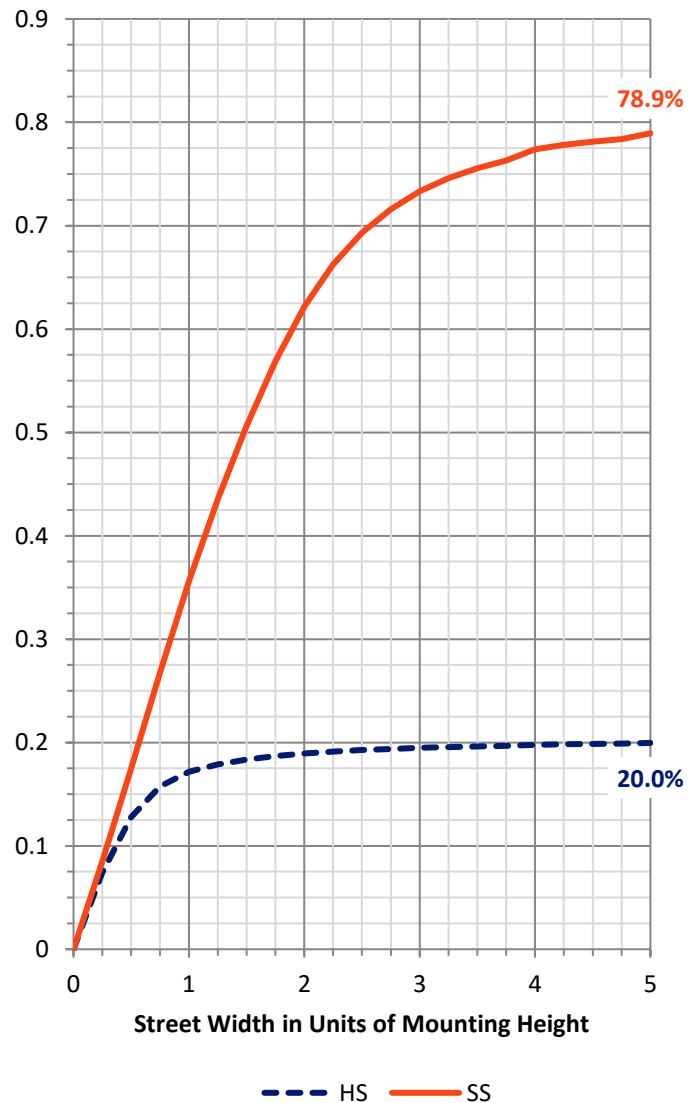
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1190.9	0.0	1190.9
	% Fixture	20.3	0.0	20.3
<b>Street Side</b>	Lumens	4686.4	0.0	4686.4
	% Fixture	79.7	0.0	79.7
<b>Total</b>	Lumens	5877.2	0.0	5877.2
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	76.3	1.3
10°-20°	229.0	3.9
20°-30°	389.2	6.6
30°-40°	584.9	10.0
40°-50°	760.5	12.9
50°-60°	1044.2	17.8
60°-70°	1647.2	28.0
70°-80°	995.3	16.9
80°-90°	150.8	2.6
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°	5877.2	100.0
0°-180°	5877.2	100.0

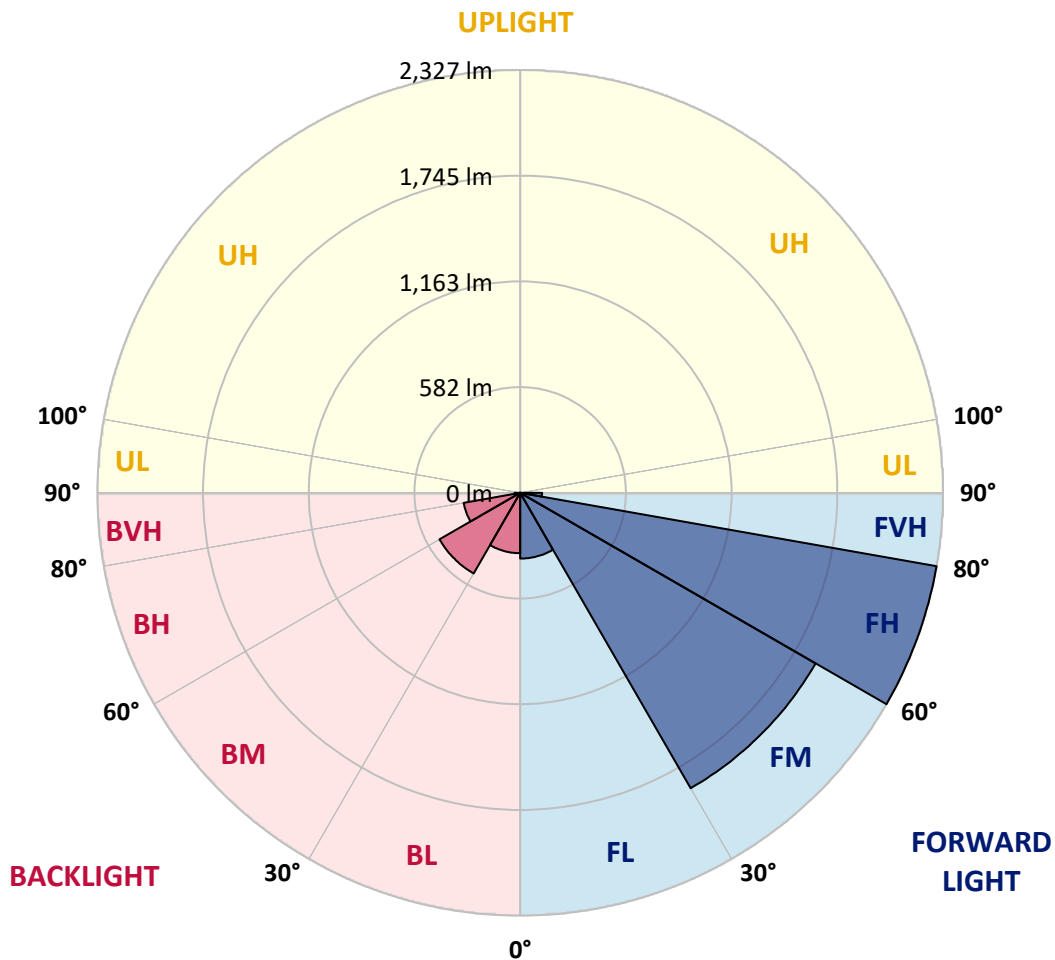


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	361.9	6.2			
FM	(30°-60°)	1877.1	31.9			
FH	(60°-80°)	2326.9	39.6			G2/5000
FVH	(80°-90°)	120.4	2.0			G2/225
BL	(0°-30°)	332.5	5.7	B1/500		
BM	(30°-60°)	512.5	8.7	B1/1000		
BH	(60°-80°)	315.5	5.4	B1/500		G1/500
BVH	(80°-90°)	30.4	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 IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	791.2	791.2	791.2	791.2	791.2	791.2	791.2	791.2	791.2	791.2	791.2
2.5°	773.6	775.2	774.0	774.0	774.4	774.8	775.6	777.2	777.6	780.0	780.4
5°	758.0	758.4	758.4	758.8	761.2	763.2	765.2	768.0	770.4	774.8	777.6
7.5°	752.4	754.0	753.6	754.4	756.8	758.8	761.2	765.2	771.2	774.8	778.8
10°	761.6	762.8	761.6	762.0	762.4	764.4	765.2	768.0	772.8	776.0	779.6
12.5°	782.8	782.8	781.6	780.8	779.6	780.0	778.4	778.0	780.4	780.8	781.2
15°	810.8	814.0	810.0	806.8	805.2	803.6	798.4	796.4	796.0	792.4	788.8
17.5°	839.2	840.0	837.6	834.0	831.6	828.0	823.6	819.6	814.8	809.2	802.0
20°	870.8	871.2	868.0	862.8	860.0	855.6	850.0	843.2	837.2	828.4	820.4
22.5°	914.8	914.4	908.0	903.6	899.6	894.4	886.4	877.2	867.6	857.2	846.0
25°	965.2	965.2	960.8	953.6	951.6	944.0	935.2	924.4	914.4	899.6	886.0
27.5°	1022.8	1023.2	1015.2	1011.2	1006.8	998.8	992.8	984.4	970.8	956.0	942.0
30°	1091.2	1089.2	1082.8	1074.4	1072.8	1066.4	1058.0	1052.0	1035.2	1024.8	1009.2
32.5°	1156.0	1159.2	1157.6	1148.0	1149.6	1143.2	1136.0	1131.6	1114.0	1104.0	1089.6
35°	1252.8	1255.6	1258.0	1254.4	1256.4	1252.8	1246.8	1235.2	1220.8	1207.6	1187.6
37.5°	1328.0	1330.8	1332.4	1341.2	1354.0	1366.4	1372.0	1366.0	1366.8	1346.8	1320.0
40°	1389.6	1396.4	1406.0	1422.8	1448.4	1472.0	1484.8	1494.8	1500.0	1481.2	1446.4
42.5°	1451.2	1458.4	1471.6	1498.4	1533.6	1567.6	1594.4	1625.2	1630.8	1626.0	1596.4
45°	1515.6	1524.0	1540.4	1570.8	1612.0	1656.4	1699.6	1743.2	1765.2	1768.8	1732.8
47.5°	1593.2	1605.2	1620.4	1654.8	1694.8	1744.8	1798.8	1854.8	1889.2	1889.2	1847.6
50°	1690.0	1703.6	1716.4	1750.8	1790.8	1842.4	1904.8	1967.2	2014.0	2016.8	1966.4
52.5°	1825.6	1827.6	1835.2	1866.8	1901.6	1959.2	2018.4	2090.8	2144.8	2147.2	2089.2
55°	1990.4	1990.4	1999.2	2025.6	2058.0	2105.6	2166.8	2247.2	2304.0	2316.4	2242.0
57.5°	2207.2	2215.2	2219.6	2250.4	2272.4	2322.8	2374.0	2461.6	2534.0	2542.0	2466.4
60°	2560.0	2544.8	2569.2	2596.4	2648.0	2684.8	2772.0	2860.0	2952.4	2974.4	2893.2
62.5°	2907.6	2924.0	2954.0	3003.2	3091.6	3174.0	3298.8	3432.4	3576.0	3605.6	3543.6
65°	2929.2	2939.2	2980.8	3065.6	3186.4	3333.2	3505.2	3706.4	3920.4	4031.2	3927.2
67°	2774.0	2776.8	2824.0	2920.4	3065.2	3239.2	3442.8	3688.4	3939.6	4092.0	4014.4
67.5°	2724.8	2730.0	2776.4	2874.8	3021.2	3199.2	3406.8	3659.2	3916.4	4075.6	4005.6
70°	2436.0	2436.0	2486.0	2585.2	2722.4	2896.0	3113.2	3368.0	3647.6	3781.6	3722.0
72.5°	2073.6	2060.4	2116.8	2192.0	2304.0	2455.6	2630.4	2831.6	3042.0	3139.6	3116.0
75°	1507.2	1532.0	1561.2	1616.8	1714.0	1833.6	1936.0	2115.6	2280.8	2388.8	2360.4
77.5°	822.4	832.0	912.8	946.0	1031.2	1120.0	1232.4	1358.4	1488.4	1556.4	1528.8
80°	488.8	507.6	555.6	595.2	641.2	708.8	790.4	818.0	843.6	842.0	792.0
82.5°	308.8	331.6	383.6	417.6	441.6	480.8	525.2	560.0	567.6	530.0	472.0
85°	50.0	82.8	216.4	254.4	269.6	290.8	323.6	338.4	316.0	276.0	286.0
87.5°	19.6	23.6	66.0	83.6	88.4	46.4	80.4	94.4	48.0	24.4	55.2
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	791.2	791.2	791.2	791.2	791.2	791.2	791.2	791.2	791.2	791.2	791.2
2.5°	782.8	784.8	786.8	789.2	790.0	792.0	795.6	795.2	798.0	799.2	801.2
5°	781.2	785.6	788.8	793.2	794.8	799.2	804.0	805.6	809.2	812.0	814.4
7.5°	784.4	789.2	793.2	798.4	802.0	805.6	809.2	813.6	816.8	818.8	820.4
10°	785.6	790.8	795.6	800.0	804.0	806.8	810.8	814.4	817.6	818.8	819.2
12.5°	786.0	789.6	794.4	799.2	802.8	806.4	809.2	813.2	815.6	816.0	815.2
15°	789.2	789.6	792.8	798.4	802.0	805.6	807.6	809.6	811.2	810.0	808.8
17.5°	798.8	796.0	796.0	798.8	800.8	802.4	802.8	802.4	800.8	798.4	796.4
20°	814.4	808.8	804.4	802.8	799.6	795.6	790.4	785.6	779.6	776.8	776.4
22.5°	838.8	830.4	822.4	814.4	804.0	792.4	780.4	770.0	761.6	757.2	757.6
25°	880.4	868.0	858.8	844.8	828.0	811.6	796.0	782.0	772.0	764.0	765.6
27.5°	936.4	922.4	914.4	898.4	879.2	858.4	840.0	820.8	806.4	796.4	798.4
30°	1002.0	998.0	984.8	968.8	950.8	927.2	899.6	870.8	844.8	828.4	825.2
32.5°	1081.2	1076.8	1062.4	1048.8	1025.6	999.6	963.6	918.0	877.2	846.0	832.4
35°	1178.8	1168.0	1150.4	1137.2	1111.2	1077.6	1031.2	969.6	907.6	860.8	826.8
37.5°	1300.4	1273.6	1244.4	1210.0	1171.6	1130.8	1077.2	1005.2	928.4	862.0	801.6
40°	1416.4	1373.2	1324.8	1270.4	1223.6	1174.4	1118.8	1036.4	942.4	853.6	763.6
42.5°	1545.6	1478.4	1412.8	1338.0	1276.4	1218.0	1154.4	1058.4	945.2	830.8	714.4
45°	1670.0	1583.6	1495.6	1403.2	1324.8	1260.0	1187.6	1077.2	944.4	806.8	665.6
47.5°	1780.8	1677.6	1568.8	1464.8	1373.6	1302.4	1223.2	1102.8	955.2	800.0	633.2
50°	1884.4	1765.2	1637.6	1522.0	1422.8	1350.0	1268.4	1143.2	988.4	815.6	628.4
52.5°	1991.2	1861.6	1715.6	1591.2	1487.6	1403.2	1320.8	1194.8	1034.8	847.6	639.2
55°	2130.4	1981.6	1826.0	1688.0	1569.2	1478.4	1383.2	1257.2	1084.8	884.8	659.6
57.5°	2337.6	2163.6	1986.8	1838.4	1701.2	1588.0	1483.6	1339.2	1167.6	940.8	704.4
60°	2709.6	2516.8	2312.0	2118.0	1960.0	1827.6	1694.8	1515.6	1320.4	1068.0	807.2
62.5°	3317.2	3050.4	2767.2	2512.0	2294.8	2115.6	1928.4	1713.2	1485.6	1222.4	962.8
65°	3682.4	3314.4	2954.0	2658.0	2401.2	2171.6	1945.2	1714.0	1493.6	1263.6	1032.8
67°	3727.6	3324.0	2925.2	2610.0	2334.8	2084.8	1839.2	1602.8	1405.6	1212.8	1013.6
67.5°	3714.0	3304.8	2898.0	2579.6	2301.6	2059.6	1818.0	1576.0	1384.0	1191.2	999.2
70°	3446.0	3045.6	2643.2	2333.6	2067.2	1819.6	1591.2	1348.8	1200.4	1062.4	896.4
72.5°	2860.0	2547.6	2210.4	1952.4	1722.4	1508.0	1307.2	1104.4	985.2	887.6	770.8
75°	2120.8	1834.4	1549.2	1394.0	1215.6	1044.0	888.8	738.8	692.8	669.6	600.8
77.5°	1309.6	1052.4	837.6	697.2	554.4	434.4	345.6	281.2	293.2	341.2	363.2
80°	652.0	481.6	372.8	296.4	239.6	193.6	142.0	104.0	124.4	147.6	167.2
82.5°	392.4	310.0	245.2	207.6	168.8	130.4	92.4	70.4	78.0	104.8	115.2
85°	243.6	195.2	156.0	130.4	108.0	80.0	52.4	52.0	55.2	69.6	79.6
87.5°	71.6	48.4	38.4	40.0	44.4	36.8	27.6	23.6	29.2	40.0	44.8
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	791.2	791.2	791.2	791.2	791.2	791.2	791.2	791.2	791.2	791.2	791.2
2.5°	801.6	804.4	805.6	806.0	806.4	808.8	808.8	811.2	812.0	812.0	812.8
5°	816.8	819.6	820.8	821.2	822.0	823.2	822.8	824.4	825.2	824.8	824.8
7.5°	822.4	823.2	823.2	824.4	825.6	824.4	823.6	824.4	824.0	824.4	824.4
10°	820.4	819.6	819.6	818.8	820.0	817.6	817.6	818.4	818.0	818.8	820.0
12.5°	815.6	815.2	814.0	813.6	815.2	813.6	814.0	815.2	816.0	817.6	819.6
15°	808.8	807.6	807.6	809.2	813.2	814.4	816.0	818.0	818.4	819.2	820.0
17.5°	797.2	799.2	804.0	809.6	817.2	820.0	820.8	819.6	815.6	812.4	809.2
20°	781.2	790.0	802.4	814.4	823.6	823.2	818.0	810.4	800.8	794.0	789.6
22.5°	767.6	784.8	804.0	818.4	824.4	816.8	804.8	793.2	782.0	772.0	763.2
25°	777.2	793.6	810.0	818.8	818.4	805.2	789.2	776.4	761.2	747.2	732.4
27.5°	808.4	818.4	823.2	820.4	812.0	794.4	776.8	758.8	739.2	722.4	705.2
30°	829.6	829.6	824.8	813.6	798.8	779.2	757.6	734.4	711.2	691.6	672.0
32.5°	822.8	807.2	793.2	778.0	761.2	740.0	715.2	690.0	663.6	640.8	624.0
35°	793.2	759.6	730.4	708.8	691.2	666.0	637.2	608.4	586.8	571.2	561.6
37.5°	740.4	686.8	644.4	618.0	590.8	564.8	531.6	518.4	499.2	489.6	486.0
40°	676.4	598.0	544.8	510.8	482.0	449.6	427.2	418.8	411.6	409.6	408.0
42.5°	602.8	504.8	441.6	406.4	371.6	348.0	338.0	332.8	331.6	331.6	333.6
45°	526.4	410.0	337.2	308.8	280.0	267.6	265.2	262.8	263.2	262.0	262.8
47.5°	467.2	329.2	254.4	228.4	213.6	209.6	206.8	206.0	206.0	204.0	201.6
50°	436.4	275.2	199.6	179.2	170.8	168.0	168.0	166.4	163.2	161.2	156.0
52.5°	428.4	247.2	172.8	155.2	148.0	145.6	143.2	140.8	136.0	131.6	125.6
55°	434.8	238.4	164.4	148.0	140.0	137.2	135.2	131.2	124.4	118.0	111.2
57.5°	461.6	244.0	167.6	150.0	142.8	140.8	138.8	132.8	124.4	115.2	107.6
60°	534.8	270.4	181.2	160.8	154.8	155.2	152.4	144.8	132.8	119.6	108.4
62.5°	629.2	307.2	198.8	176.0	175.2	179.2	179.2	166.0	146.4	126.4	111.2
65°	683.2	318.8	201.2	178.0	184.8	196.4	195.6	178.0	151.2	126.4	110.0
67°	669.6	306.4	191.2	166.4	174.4	187.6	186.0	169.2	144.0	121.2	106.8
67.5°	658.8	302.4	188.8	163.6	171.6	182.4	182.4	165.6	140.8	119.6	105.6
70°	580.0	267.2	176.8	152.8	152.8	155.6	153.6	141.6	124.8	110.0	100.8
72.5°	483.6	233.6	167.2	145.2	137.6	136.0	133.2	124.8	114.0	103.6	95.6
75°	374.8	206.8	159.6	137.2	127.2	123.6	120.8	114.4	106.0	97.2	90.4
77.5°	262.4	177.2	149.6	130.4	119.6	116.8	112.4	105.2	98.4	90.8	84.4
80°	162.8	146.4	130.4	117.6	106.4	102.4	96.8	90.4	84.8	80.4	75.6
82.5°	116.0	107.6	97.2	90.4	78.8	66.8	71.6	72.0	68.4	65.6	64.4
85°	77.6	70.0	64.8	58.8	52.0	46.8	48.0	51.6	52.0	50.8	50.8
87.5°	42.4	36.0	34.8	36.0	31.2	29.6	30.0	33.2	33.6	33.6	34.0
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):**

	165°	170°	175°	180°
0°	791.2	791.2	791.2	791.2
2.5°	813.2	814.4	814.0	814.8
5°	825.6	826.4	826.0	826.4
7.5°	823.6	825.2	826.0	824.8
10°	820.4	822.8	824.4	824.4
12.5°	821.2	825.2	827.6	827.6
15°	820.4	823.6	824.4	824.4
17.5°	808.0	808.0	808.4	806.8
20°	786.4	784.0	783.2	780.4
22.5°	755.6	750.0	746.4	744.4
25°	720.4	711.6	706.0	702.8
27.5°	691.2	683.6	678.0	674.8
30°	658.8	650.0	646.8	644.4
32.5°	612.0	603.6	601.2	599.2
35°	551.2	548.4	542.0	537.6
37.5°	480.8	477.2	474.8	473.2
40°	407.2	407.6	405.6	402.0
42.5°	333.6	337.6	333.6	332.8
45°	262.0	266.4	266.4	267.6
47.5°	202.0	201.2	202.8	203.2
50°	152.8	150.4	149.6	148.4
52.5°	121.2	118.4	116.8	114.8
55°	106.8	103.6	102.0	101.6
57.5°	102.0	98.0	95.6	95.2
60°	100.8	95.2	92.0	91.2
62.5°	100.8	94.0	90.4	89.2
65°	99.6	92.8	89.6	88.4
67°	98.0	92.0	88.8	88.0
67.5°	97.2	91.6	88.8	87.6
70°	95.2	90.4	87.2	86.0
72.5°	90.8	86.8	83.6	82.8
75°	86.0	82.4	80.4	79.6
77.5°	80.4	77.2	74.8	72.8
80°	72.0	68.4	64.8	64.0
82.5°	61.2	57.2	54.4	54.0
85°	49.2	46.0	42.8	42.8
87.5°	34.4	32.4	30.4	28.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)