

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: P163820

Luminaire Tested: **LDRL-SL4-F04-E-8030-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P163820  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33728)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: LDRL-SL4-F04-E-8030-HSS  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL AND HOUSE SIDE SHIELD  
Light Source: (28) 3000K CCT, 80 CRI LEDs  
Ballast/Driver: -

**Summary**

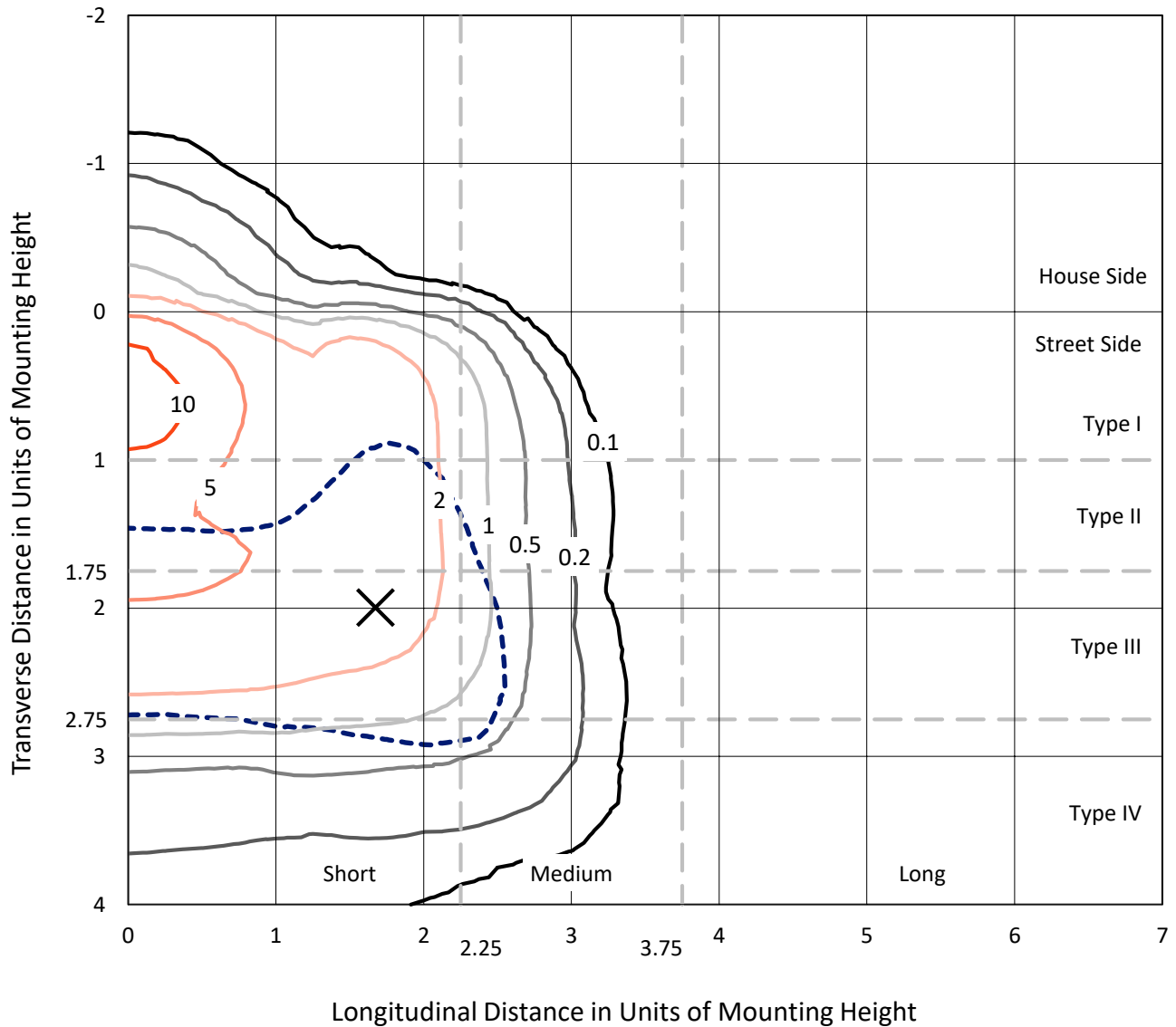
Lumens per Lamp: N/A  
Luminaire Lumens: 5500.7 lumens  
Efficiency: N/A  
Efficacy: 53.8 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.1')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B0 - U0 - G2  
  
Input Watts (W): 102.2  
Input Voltage (V): NR  
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

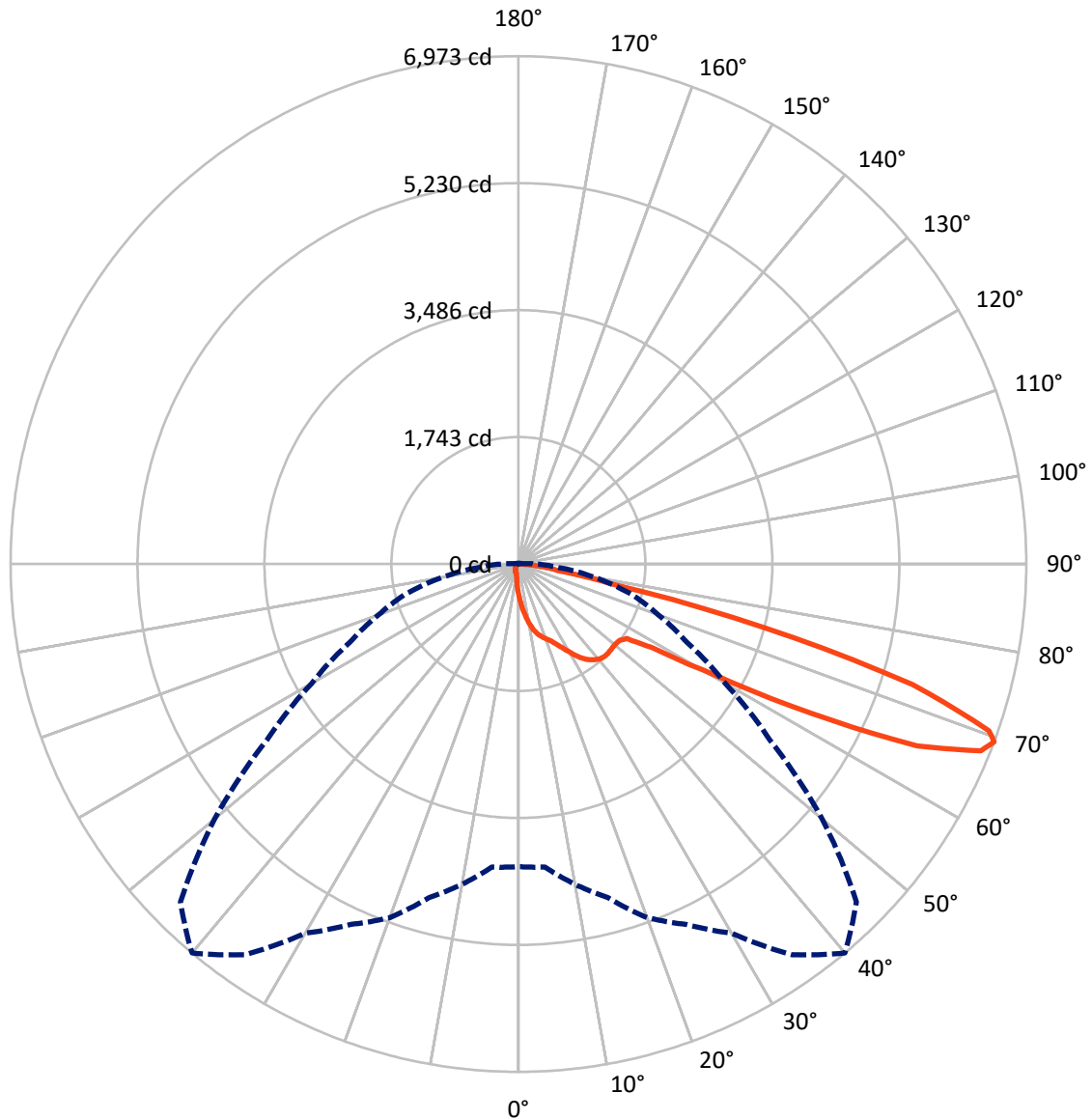


Based on 10 foot mounting height. Maximum calculated value = 12.3 fc  
 Type IV - Short - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 40-Deg Lateral    - - - Horizontal Cone Through 69-Deg Vertical

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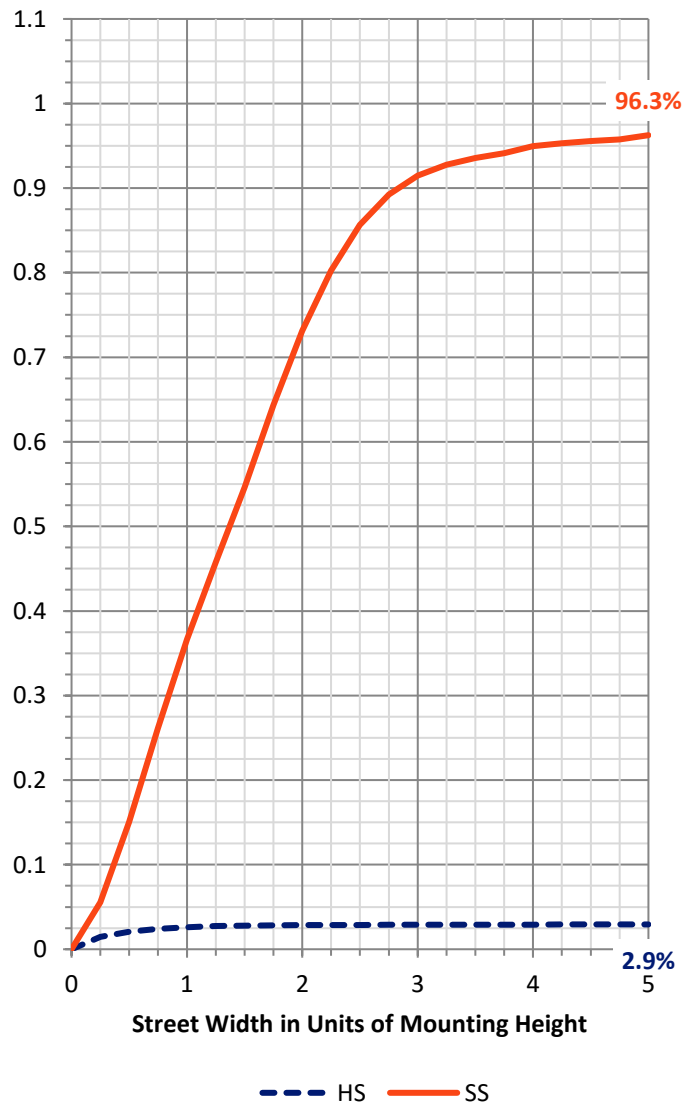
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	163.8	0.0	163.8
	% Fixture	3.0	0.0	3.0
<b>Street Side</b>	Lumens	5336.9	0.0	5336.9
	% Fixture	97.0	0.0	97.0
<b>Total</b>	Lumens	5500.7	0.0	5500.7
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	42.7	0.8
10°-20°	147.2	2.7
20°-30°	281.7	5.1
30°-40°	468.6	8.5
40°-50°	634.0	11.5
50°-60°	991.6	18.0
60°-70°	2038.7	37.1
70°-80°	820.3	14.9
80°-90°	75.9	1.4
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°	5500.7	100.0
0°-180°	5500.7	100.0



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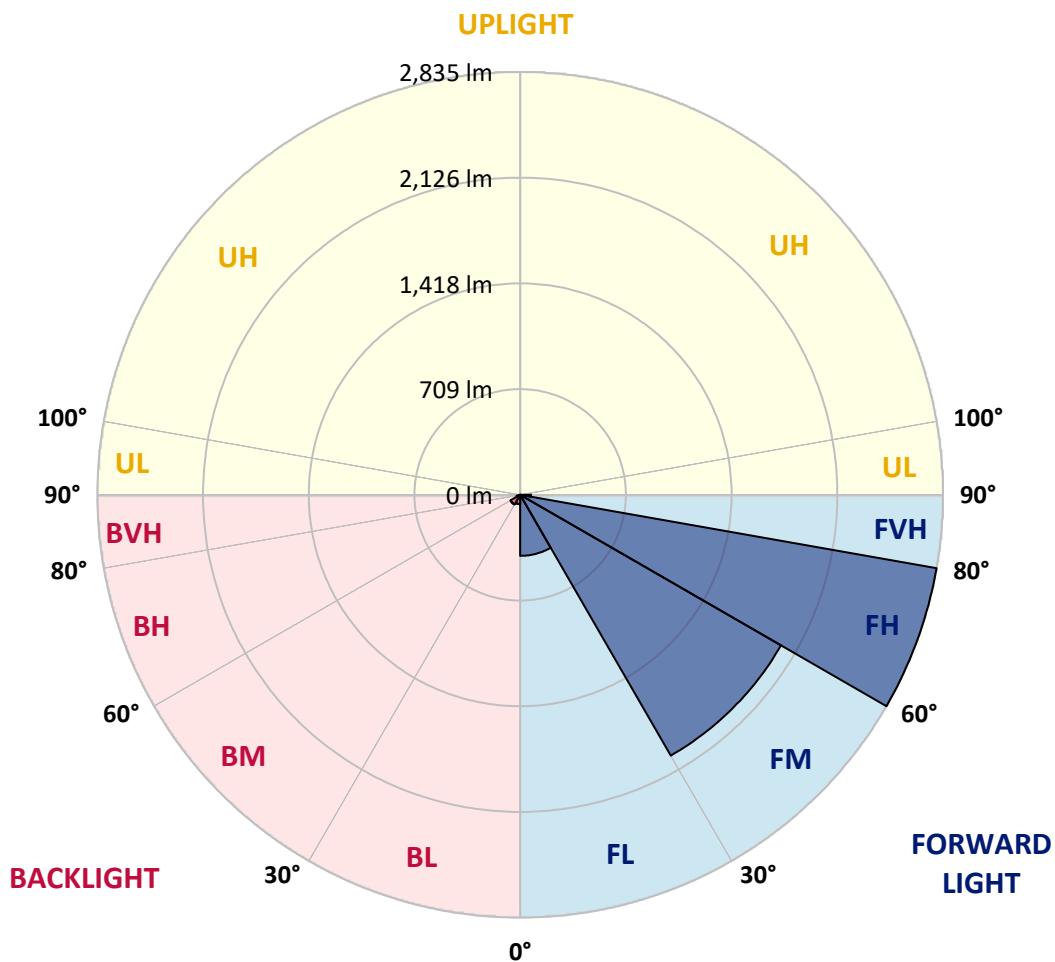
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	409.4	7.4			
FM (30°-60°)	2019.4	36.7			
FH (60°-80°)	2835.1	51.5			G2/5000
FVH (80°-90°)	73.1	1.3			G1/100
BL (0°-30°)	62.3	1.1	B0/110		
BM (30°-60°)	74.8	1.4	B0/220		
BH (60°-80°)	23.9	0.4	B0/110		G0/110
BVH (80°-90°)	2.8	0.1			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B0-U0-G2**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4
2.5°	554.2	547.9	540.7	540.7	531.6	531.6	526.2	511.8	510.0	501.9	493.8
5°	707.4	702.0	692.9	684.9	677.6	665.0	656.0	638.9	620.0	601.9	585.7
7.5°	856.9	854.3	838.0	835.3	823.6	802.9	784.9	759.6	727.2	702.0	672.2
10°	995.7	989.4	985.8	970.5	953.4	930.8	902.9	872.3	834.4	794.8	752.4
12.5°	1105.6	1102.1	1085.8	1079.5	1061.5	1039.0	1003.8	964.2	926.3	875.0	825.4
15°	1187.6	1181.3	1170.5	1160.6	1139.0	1119.2	1086.7	1043.5	997.5	941.7	882.2
17.5°	1256.1	1244.4	1241.7	1226.4	1203.8	1180.4	1144.4	1104.7	1050.7	994.8	929.9
20°	1348.0	1331.8	1326.4	1303.9	1277.8	1245.3	1203.8	1154.3	1097.6	1036.2	969.6
22.5°	1456.2	1444.5	1432.8	1412.9	1379.6	1333.6	1273.2	1219.2	1147.1	1079.5	1007.4
25°	1609.3	1599.5	1580.5	1553.5	1512.0	1457.1	1384.1	1304.8	1220.1	1133.6	1048.9
27.5°	1758.1	1749.0	1735.5	1714.8	1667.9	1607.6	1517.4	1416.5	1309.3	1204.8	1111.0
30°	1897.7	1889.6	1876.1	1855.4	1813.9	1754.4	1652.6	1544.5	1411.1	1289.5	1176.8
32.5°	2048.2	2045.5	2030.2	2000.5	1964.4	1884.2	1773.4	1657.1	1521.9	1381.4	1249.8
35°	2218.5	2197.8	2183.3	2153.6	2092.4	2006.8	1877.0	1749.9	1607.6	1463.4	1316.5
37.5°	2362.7	2342.9	2324.9	2287.0	2212.2	2103.2	1956.3	1816.6	1669.8	1522.8	1373.3
40°	2468.1	2458.2	2436.6	2387.0	2303.2	2173.5	2014.8	1862.6	1714.8	1567.0	1419.2
42.5°	2546.5	2531.2	2506.9	2455.5	2356.4	2208.6	2038.3	1881.5	1735.5	1594.1	1449.0
45°	2575.4	2562.8	2540.2	2484.3	2377.1	2218.5	2037.4	1876.1	1736.4	1602.2	1468.8
47.5°	2558.2	2545.6	2525.8	2473.5	2368.1	2206.8	2021.1	1860.8	1727.4	1604.9	1486.8
50°	2501.4	2494.3	2478.9	2434.8	2340.1	2184.3	2006.8	1852.6	1725.6	1618.4	1512.0
52.5°	2496.0	2491.5	2472.6	2428.5	2332.1	2177.0	2004.9	1857.2	1740.9	1635.5	1530.1
55°	3050.3	2986.3	2843.0	2721.3	2521.3	2283.4	2095.9	1930.2	1805.8	1703.1	1629.2
57.5°	4335.2	4239.7	4051.4	3819.8	3360.2	2908.7	2547.4	2286.1	2157.3	2110.4	2138.3
60°	4937.1	4920.0	4890.3	4780.3	4545.2	4156.8	3724.2	3256.6	3069.1	3052.9	3109.7
62.5°	5222.8	5212.0	5221.0	5207.5	5134.5	5021.0	4896.6	4694.7	4509.1	4389.3	4135.2
65°	5354.3	5361.6	5412.9	5453.5	5462.5	5492.2	5583.2	5834.6	6018.5	5709.4	5003.8
67.5°	5020.1	5062.4	5180.4	5328.2	5501.2	5668.8	5939.1	6469.0	6846.6	6483.4	5481.4
69°	4155.9	4176.6	4465.0	4743.4	5166.0	5461.6	5853.6	6548.3	6972.7	6562.7	5443.6
70°	3271.9	3290.8	3599.9	3978.4	4692.9	5073.2	5585.9	6414.0	6854.7	6457.3	5248.9
72.5°	1476.0	1449.0	1558.0	1760.7	2537.5	3141.2	4037.8	5196.6	5655.3	5173.2	3927.0
75°	1030.8	1019.1	1030.8	1031.8	1152.5	1486.8	1876.1	2816.8	3483.7	3006.1	1876.1
77.5°	798.4	790.3	782.2	773.2	787.6	882.2	920.0	999.3	1297.6	1227.3	715.5
80°	631.7	624.4	644.3	638.0	638.0	648.8	641.6	611.8	556.0	515.4	461.4
82.5°	293.7	295.6	295.6	320.8	386.5	451.4	472.2	442.5	392.9	334.3	269.4
85°	27.9	31.5	53.2	82.0	163.1	183.8	184.7	153.2	153.2	120.7	97.3
87.5°	0.0	0.9	0.9	0.9	8.1	22.5	18.9	5.4	2.7	2.7	4.5
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4
2.5°	479.4	476.7	465.9	455.1	445.1	434.3	424.4	414.5	403.7	395.6	385.7
5°	560.5	540.7	518.1	496.5	474.9	452.4	428.9	408.2	386.5	366.8	347.8
7.5°	642.5	603.8	573.1	534.4	499.2	464.1	431.6	398.3	367.7	338.8	311.8
10°	711.9	665.0	617.3	567.7	517.3	470.4	425.3	385.7	345.1	310.0	276.6
12.5°	768.6	709.2	650.6	588.4	531.6	472.2	416.3	368.5	320.8	281.1	246.9
15°	820.0	751.5	681.2	609.2	537.0	469.5	407.3	347.8	299.2	254.1	215.4
17.5°	861.4	783.1	703.8	622.7	545.2	465.9	395.6	333.4	276.6	229.8	191.9
20°	897.5	815.5	729.9	638.9	550.6	465.0	385.7	315.4	256.8	207.2	170.3
22.5°	930.8	848.8	756.9	659.6	558.7	464.1	376.7	301.9	239.7	190.1	153.2
25°	968.7	882.2	785.8	681.2	573.1	467.6	371.3	291.1	224.3	173.9	139.7
27.5°	1011.0	920.0	820.0	708.3	592.0	474.9	369.4	279.4	210.9	158.6	128.9
30°	1070.5	965.1	854.3	735.3	609.2	483.0	367.7	272.1	197.3	146.9	118.1
32.5°	1122.7	1009.2	892.1	763.2	628.1	491.1	366.8	262.2	184.7	135.2	109.9
35°	1177.8	1049.8	924.5	790.3	644.3	500.1	365.9	255.0	173.0	123.5	101.8
37.5°	1225.5	1084.0	949.7	813.7	662.3	508.2	366.8	248.7	162.2	113.5	94.6
40°	1266.1	1119.2	977.7	835.3	681.2	520.8	367.7	242.4	151.4	104.5	88.3
42.5°	1302.1	1152.5	1007.4	859.7	702.9	535.3	373.1	237.0	142.4	96.4	82.0
45°	1330.0	1183.2	1039.9	893.9	738.0	558.7	383.0	233.4	133.4	89.2	76.6
47.5°	1358.9	1228.2	1094.8	948.0	789.4	595.6	400.1	232.5	126.1	83.8	72.1
50°	1398.5	1273.2	1143.5	1002.9	836.2	633.5	420.8	233.4	117.2	78.4	67.6
52.5°	1427.4	1319.2	1206.6	1098.4	948.0	748.8	501.0	249.6	112.6	73.9	62.1
55°	1597.6	1578.7	1581.4	1599.5	1483.2	1274.1	838.0	360.5	132.4	83.8	61.3
57.5°	2252.7	2319.5	2358.2	2357.3	2165.3	1795.9	1125.5	463.2	147.8	97.3	73.0
60°	3114.2	3063.7	2992.6	2816.8	2561.8	2050.0	1258.9	498.3	128.0	77.5	66.7
62.5°	3875.6	3580.1	3317.9	3033.1	2698.8	2138.3	1285.9	495.6	111.8	58.6	46.9
65°	4350.5	3818.9	3395.3	3038.5	2644.8	2064.4	1216.5	455.1	94.6	47.8	38.7
67.5°	4464.1	3690.0	3090.8	2635.7	2209.5	1606.7	893.0	342.4	73.9	39.6	34.2
69°	4216.3	3280.0	2560.9	2044.6	1607.6	1066.0	552.4	216.3	56.7	36.1	31.5
70°	3878.4	2852.9	2086.0	1640.9	1190.4	748.8	386.5	152.3	45.9	33.3	28.8
72.5°	2495.1	1498.5	1025.4	713.7	491.1	298.3	151.4	68.5	35.1	27.9	23.4
75°	967.8	554.2	401.9	305.4	238.8	165.8	91.9	44.1	29.7	23.4	18.0
77.5°	476.7	364.9	298.3	204.6	118.9	73.9	49.6	34.2	24.3	17.1	11.7
80°	376.7	250.5	149.6	92.8	70.3	53.2	37.8	27.9	18.0	10.8	8.1
82.5°	192.9	105.4	77.5	63.1	52.3	41.5	30.7	19.8	11.7	7.2	6.3
85°	60.4	44.1	39.6	38.7	36.1	29.7	21.6	12.6	7.2	4.5	4.5
87.5°	4.5	6.3	8.1	6.3	7.2	6.3	8.1	5.4	3.6	3.6	2.7
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4	415.4
2.5°	378.5	367.7	357.7	351.4	339.7	335.2	330.7	328.9	320.8	322.6	315.4
5°	330.7	311.8	297.4	282.9	269.4	259.5	251.4	241.5	233.4	229.8	222.6
7.5°	287.4	263.1	244.2	228.9	212.6	200.0	189.2	182.0	174.8	167.6	164.0
10°	249.6	223.5	201.8	186.5	171.2	160.4	152.3	146.9	142.4	139.7	138.8
12.5°	214.5	189.2	169.4	155.9	144.2	138.8	135.2	132.4	131.5	130.7	130.7
15°	187.4	162.2	146.9	137.0	131.5	128.9	128.0	126.1	124.4	123.5	123.5
17.5°	162.2	143.2	132.4	127.0	124.4	122.6	120.7	118.9	117.2	116.2	116.2
20°	145.1	129.8	124.4	120.7	118.1	116.2	113.5	111.8	110.8	109.9	109.0
22.5°	131.5	121.6	118.1	115.3	111.8	109.0	107.2	105.4	103.6	102.7	101.8
25°	121.6	115.3	112.6	109.0	105.4	102.7	100.0	97.3	95.5	94.6	92.8
27.5°	114.4	109.9	106.3	101.8	98.2	95.5	92.8	90.1	88.3	86.5	85.6
30°	108.1	103.6	99.1	95.5	91.0	88.3	84.7	82.0	81.1	79.3	77.5
32.5°	101.8	97.3	92.8	88.3	83.8	80.2	78.4	74.8	73.0	72.1	70.3
35°	94.6	90.1	84.7	81.1	76.6	73.0	70.3	67.6	65.8	64.0	63.1
37.5°	88.3	82.9	77.5	73.0	69.4	65.8	63.1	60.4	58.6	56.7	55.9
40°	81.1	75.7	70.3	65.8	62.1	59.5	56.7	54.1	52.3	51.3	51.3
42.5°	74.8	68.5	63.1	59.5	56.7	53.2	50.4	47.8	46.9	45.9	46.9
45°	68.5	62.1	57.7	54.1	51.3	47.8	45.0	43.3	42.4	43.3	44.1
47.5°	63.1	56.7	52.3	49.6	46.9	44.1	41.5	39.6	39.6	41.5	43.3
50°	57.7	51.3	47.8	45.9	43.3	40.5	37.0	36.1	37.0	38.7	40.5
52.5°	52.3	45.0	42.4	41.5	38.7	36.1	33.3	32.4	33.3	35.1	34.2
55°	46.9	39.6	38.7	37.8	35.1	31.5	28.8	28.8	28.8	27.9	26.1
57.5°	45.0	35.1	34.2	33.3	30.7	27.0	25.2	23.4	22.5	19.8	18.9
60°	46.9	31.5	31.5	29.7	27.0	23.4	20.7	18.0	16.2	14.4	14.4
62.5°	37.8	28.8	27.9	26.1	22.5	18.9	16.2	13.5	12.6	11.7	11.7
65°	30.7	26.1	24.3	21.6	18.9	15.3	12.6	10.8	9.9	9.9	10.8
67.5°	27.9	23.4	20.7	18.0	15.3	11.7	9.9	9.0	9.0	9.9	9.9
69°	26.1	21.6	18.9	16.2	13.5	10.8	9.0	9.0	9.0	9.0	9.9
70°	24.3	20.7	18.0	15.3	11.7	9.0	8.1	8.1	9.0	9.0	9.9
72.5°	18.9	16.2	15.3	12.6	9.0	8.1	7.2	8.1	8.1	9.0	9.0
75°	14.4	11.7	11.7	9.9	7.2	6.3	6.3	7.2	7.2	8.1	8.1
77.5°	9.9	8.1	8.1	7.2	6.3	5.4	5.4	6.3	7.2	7.2	8.1
80°	7.2	6.3	5.4	6.3	5.4	4.5	5.4	6.3	6.3	7.2	7.2
82.5°	5.4	5.4	5.4	5.4	4.5	4.5	5.4	5.4	6.3	7.2	7.2
85°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	5.4	5.4	6.3	6.3
87.5°	2.7	2.7	2.7	3.6	3.6	4.5	4.5	4.5	4.5	5.4	5.4
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):**

	165°	170°	175°	180°
0°	415.4	415.4	415.4	415.4
2.5°	313.6	312.7	309.1	310.0
5°	219.9	214.5	218.1	217.2
7.5°	161.3	160.4	159.5	161.3
10°	137.8	137.8	137.0	137.8
12.5°	129.8	129.8	129.8	129.8
15°	123.5	123.5	122.6	122.6
17.5°	116.2	116.2	116.2	115.3
20°	109.0	108.1	108.1	108.1
22.5°	100.9	100.0	100.0	100.0
25°	92.8	91.9	91.9	91.9
27.5°	84.7	83.8	82.9	82.9
30°	76.6	75.7	74.8	74.8
32.5°	68.5	67.6	66.7	66.7
35°	61.3	61.3	60.4	59.5
37.5°	55.0	55.0	55.0	55.0
40°	50.4	51.3	51.3	51.3
42.5°	47.8	48.7	49.6	50.4
45°	45.9	47.8	48.7	48.7
47.5°	45.0	45.9	46.9	46.9
50°	41.5	40.5	40.5	40.5
52.5°	33.3	31.5	30.7	29.7
55°	24.3	23.4	21.6	21.6
57.5°	17.1	17.1	16.2	16.2
60°	13.5	13.5	12.6	13.5
62.5°	11.7	11.7	11.7	11.7
65°	10.8	10.8	10.8	10.8
67.5°	10.8	10.8	10.8	10.8
69°	9.9	9.9	9.9	9.9
70°	9.9	9.9	9.9	9.9
72.5°	9.0	9.0	9.0	9.0
75°	8.1	9.0	9.0	9.0
77.5°	8.1	8.1	8.1	8.1
80°	7.2	7.2	8.1	8.1
82.5°	7.2	7.2	7.2	7.2
85°	6.3	6.3	7.2	7.2
87.5°	5.4	5.4	6.3	6.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)