

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: P163803

Luminaire Tested: **LDRL-SL4-F02-E-7050-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P163803  
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-F02-E-7050-HSS  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL AND HOUSE SIDE SHIELD  
Light Source: (14) 5000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3343.8 lumens  
Efficiency: N/A  
Efficacy: 60.8 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 1' x H: 0.1')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B0 - U0 - G1

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

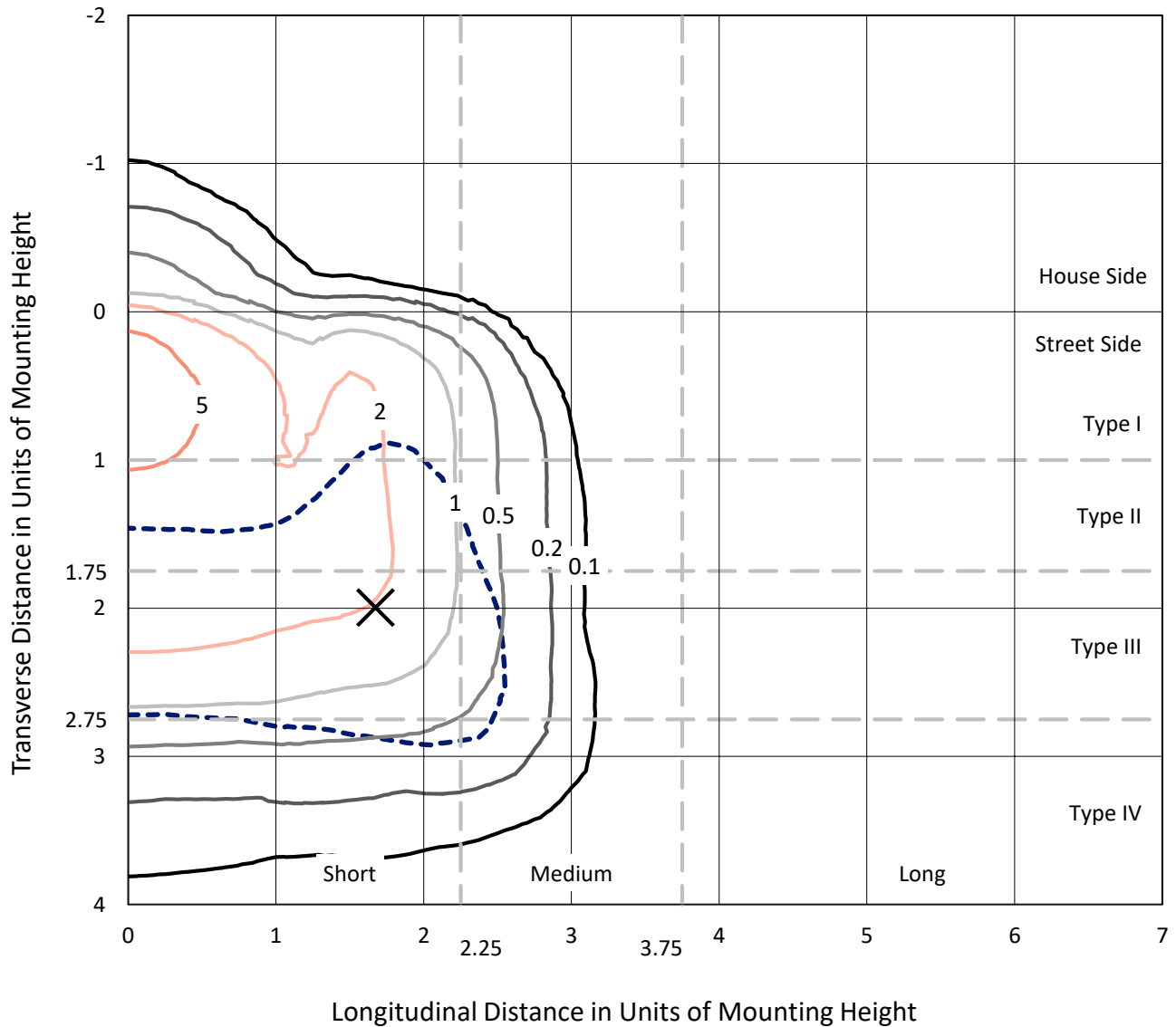


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### Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd  
 - - - 1/2 Max cd

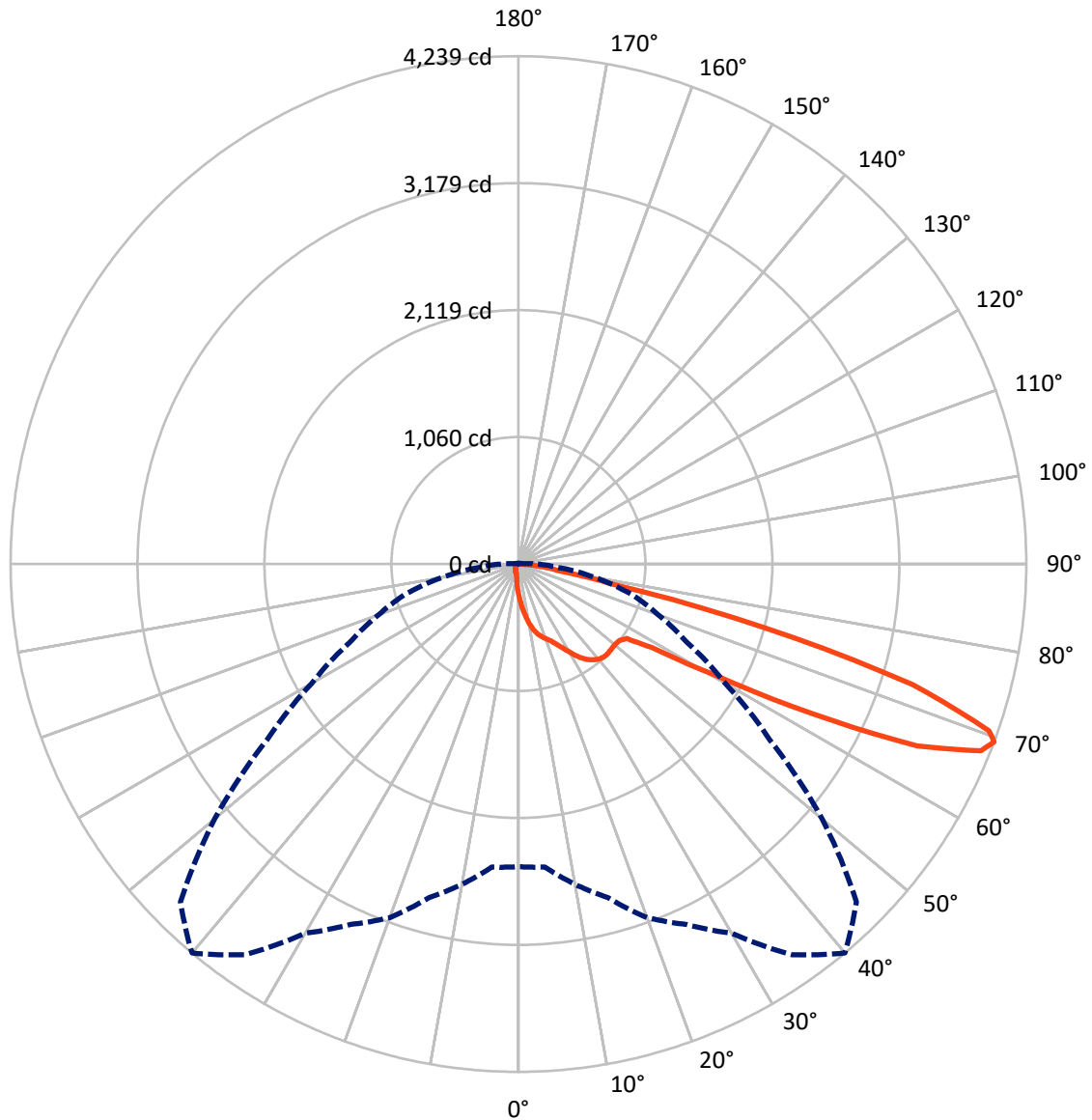


Based on 10 foot mounting height. Maximum calculated value = 7.5 fc  
 Type IV - Short - Semi-Cutoff

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### Luminous Intensity Polar Plot



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

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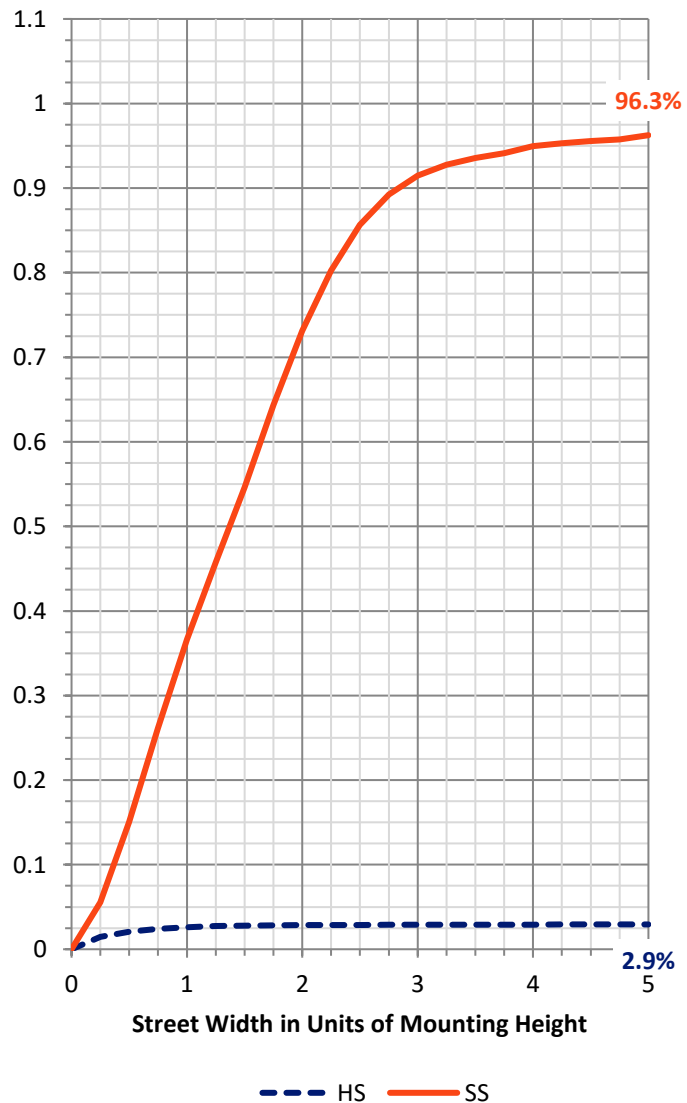
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	99.6	0.0	99.6
	% Fixture	3.0	0.0	3.0
<b>Street Side</b>	Lumens	3244.2	0.0	3244.2
	% Fixture	97.0	0.0	97.0
<b>Total</b>	Lumens	3343.8	0.0	3343.8
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	26.0	0.8
10°-20°	89.5	2.7
20°-30°	171.3	5.1
30°-40°	284.8	8.5
40°-50°	385.4	11.5
50°-60°	602.8	18.0
60°-70°	1239.3	37.1
70°-80°	498.7	14.9
80°-90°	46.1	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°	3343.8	100.0
0°-180°	3343.8	100.0



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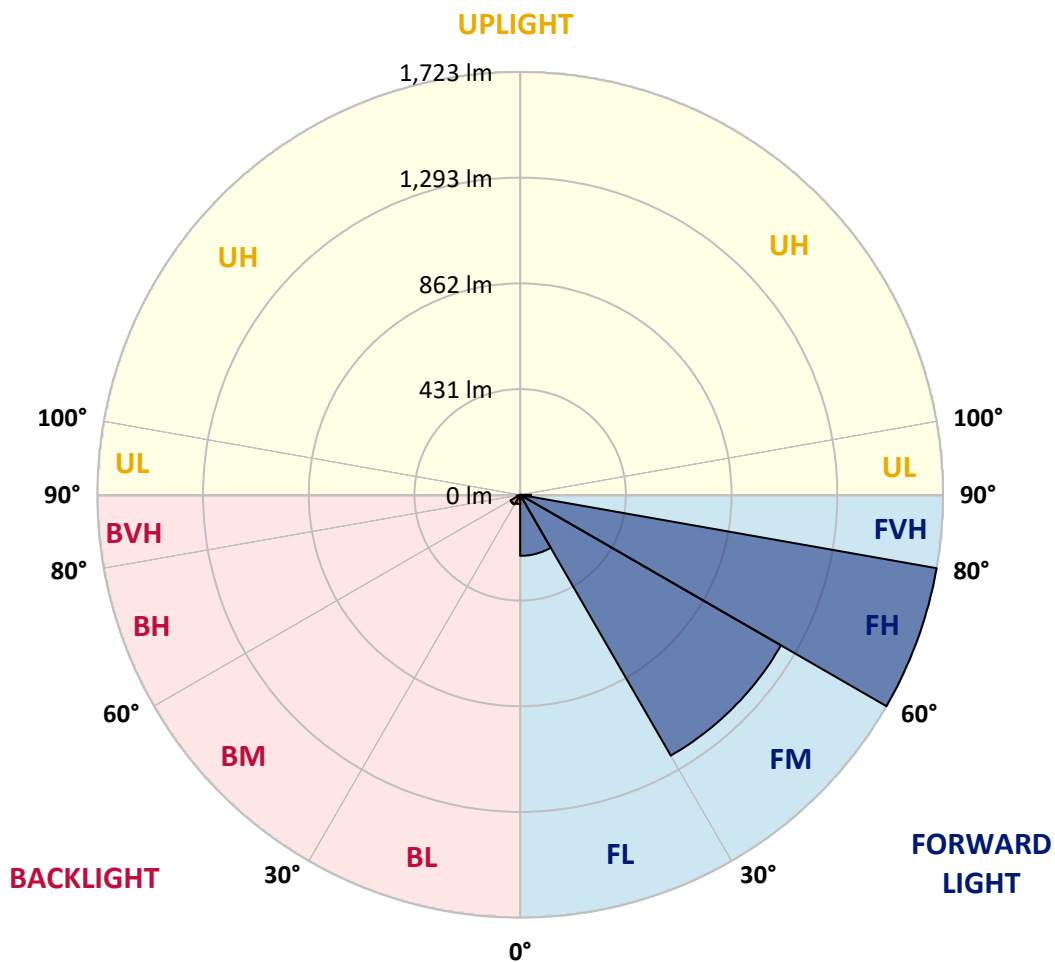
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	248.8	7.4			
FM (30°-60°)	1227.6	36.7			
FH (60°-80°)	1723.4	51.5			G1/1800
FVH (80°-90°)	44.4	1.3			G1/100
BL (0°-30°)	37.9	1.1	B0/110		
BM (30°-60°)	45.5	1.4	B0/220		
BH (60°-80°)	14.5	0.4	B0/110		G0/110
BVH (80°-90°)	1.7	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-G1**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	252.5	252.5	252.5	252.5	252.5	252.5	252.5	252.5	252.5	252.5	252.5
2.5°	336.9	333.0	328.7	328.7	323.2	323.2	319.9	311.1	310.0	305.1	300.2
5°	430.0	426.7	421.2	416.3	411.9	404.3	398.8	388.4	376.9	365.9	356.0
7.5°	520.9	519.3	509.4	507.8	500.7	488.1	477.1	461.8	442.0	426.7	408.6
10°	605.3	601.5	599.3	589.9	579.5	565.8	548.9	530.2	507.2	483.1	457.4
12.5°	672.1	669.9	660.1	656.2	645.3	631.6	610.2	586.1	563.1	531.9	501.8
15°	721.9	718.1	711.5	705.5	692.4	680.3	660.6	634.3	606.4	572.4	536.3
17.5°	763.6	756.5	754.8	745.5	731.8	717.6	695.7	671.6	638.7	604.7	565.3
20°	819.5	809.6	806.3	792.6	776.7	757.0	731.8	701.7	667.2	629.9	589.4
22.5°	885.2	878.1	871.0	858.9	838.6	810.7	774.0	741.1	697.3	656.2	612.4
25°	978.3	972.3	960.8	944.4	919.1	885.7	841.4	793.2	741.7	689.1	637.6
27.5°	1068.7	1063.2	1055.0	1042.4	1013.9	977.2	922.4	861.1	795.9	732.4	675.4
30°	1153.6	1148.7	1140.5	1127.9	1102.7	1066.5	1004.6	938.9	857.8	783.8	715.4
32.5°	1245.1	1243.4	1234.1	1216.1	1194.1	1145.4	1078.0	1007.3	925.2	839.7	759.8
35°	1348.6	1336.0	1327.2	1309.2	1271.9	1219.9	1141.0	1063.8	977.2	889.6	800.3
37.5°	1436.3	1424.2	1413.3	1390.3	1344.8	1278.5	1189.2	1104.3	1015.0	925.7	834.8
40°	1500.3	1494.3	1481.2	1451.0	1400.1	1321.2	1224.8	1132.2	1042.4	952.6	862.7
42.5°	1548.0	1538.7	1523.9	1492.7	1432.4	1342.6	1239.1	1143.8	1055.0	969.0	880.8
45°	1565.5	1557.9	1544.2	1510.2	1445.0	1348.6	1238.5	1140.5	1055.6	973.9	892.9
47.5°	1555.1	1547.4	1535.4	1503.6	1439.6	1341.5	1228.6	1131.2	1050.1	975.6	903.8
50°	1520.6	1516.2	1506.9	1480.1	1422.5	1327.8	1219.9	1126.2	1049.0	983.8	919.1
52.5°	1517.3	1514.6	1503.1	1476.2	1417.6	1323.4	1218.8	1128.9	1058.3	994.2	930.1
55°	1854.2	1815.3	1728.2	1654.3	1532.7	1388.1	1274.1	1173.3	1097.7	1035.3	990.4
57.5°	2635.3	2577.2	2462.8	2322.0	2042.6	1768.2	1548.6	1389.7	1311.4	1282.9	1299.9
60°	3001.2	2990.8	2972.8	2905.9	2763.0	2526.9	2263.9	1979.6	1865.7	1855.8	1890.4
62.5°	3174.9	3168.3	3173.8	3165.6	3121.2	3052.2	2976.6	2853.9	2741.0	2668.2	2513.7
65°	3254.8	3259.2	3290.4	3315.1	3320.6	3338.7	3394.0	3546.8	3658.6	3470.7	3041.8
67.5°	3051.6	3077.4	3149.1	3239.0	3344.1	3446.0	3610.3	3932.4	4162.0	3941.2	3332.1
69°	2526.3	2538.9	2714.2	2883.4	3140.4	3320.0	3558.3	3980.6	4238.6	3989.4	3309.1
70°	1989.0	2000.5	2188.3	2418.4	2852.8	3083.9	3395.6	3899.0	4166.9	3925.3	3190.8
72.5°	897.3	880.8	947.1	1070.3	1542.5	1909.5	2454.6	3159.0	3437.8	3144.8	2387.2
75°	626.6	619.5	626.6	627.2	700.6	903.8	1140.5	1712.3	2117.7	1827.3	1140.5
77.5°	485.3	480.4	475.5	470.0	478.8	536.3	559.3	607.5	788.8	746.1	434.9
80°	384.0	379.6	391.7	387.8	387.8	394.4	390.0	371.9	338.0	313.3	280.4
82.5°	178.6	179.7	179.7	195.0	235.0	274.4	287.0	269.0	238.8	203.2	163.8
85°	17.0	19.2	32.3	49.8	99.1	111.7	112.3	93.1	93.1	73.4	59.2
87.5°	0.0	0.5	0.5	0.5	4.9	13.7	11.5	3.3	1.6	1.6	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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	252.5	252.5	252.5	252.5	252.5	252.5	252.5	252.5	252.5	252.5	252.5
2.5°	291.4	289.8	283.2	276.6	270.6	264.0	258.0	252.0	245.4	240.5	234.4
5°	340.7	328.7	315.0	301.8	288.7	275.0	260.7	248.1	235.0	223.0	211.4
7.5°	390.6	367.0	348.4	324.8	303.5	282.1	262.4	242.1	223.5	206.0	189.5
10°	432.8	404.3	375.2	345.1	314.4	285.9	258.6	234.4	209.8	188.4	168.2
12.5°	467.2	431.1	395.5	357.7	323.2	287.0	253.1	224.0	195.0	170.9	150.1
15°	498.5	456.8	414.1	370.3	326.5	285.4	247.6	211.4	181.9	154.5	130.9
17.5°	523.7	476.0	427.8	378.5	331.4	283.2	240.5	202.7	168.2	139.7	116.7
20°	545.6	495.7	443.7	388.4	334.7	282.7	234.4	191.7	156.1	126.0	103.5
22.5°	565.8	516.0	460.1	401.0	339.6	282.1	229.0	183.5	145.7	115.6	93.1
25°	588.9	536.3	477.6	414.1	348.4	284.3	225.7	176.9	136.4	105.7	84.9
27.5°	614.6	559.3	498.5	430.6	359.9	288.7	224.6	169.8	128.2	96.4	78.3
30°	650.8	586.7	519.3	447.0	370.3	293.6	223.5	165.4	119.9	89.3	71.8
32.5°	682.5	613.5	542.3	464.0	381.8	298.5	223.0	159.4	112.3	82.2	66.8
35°	715.9	638.2	562.0	480.4	391.7	304.0	222.4	155.0	105.2	75.1	61.9
37.5°	745.0	659.0	577.3	494.6	402.6	308.9	223.0	151.2	98.6	69.0	57.5
40°	769.6	680.3	594.3	507.8	414.1	316.6	223.5	147.4	92.0	63.5	53.7
42.5°	791.5	700.6	612.4	522.6	427.3	325.4	226.8	144.1	86.5	58.6	49.8
45°	808.5	719.2	632.1	543.4	448.6	339.6	232.8	141.9	81.1	54.2	46.6
47.5°	826.0	746.6	665.5	576.2	479.9	362.1	243.2	141.3	76.7	50.9	43.8
50°	850.1	774.0	695.1	609.7	508.3	385.1	255.8	141.9	71.2	47.6	41.1
52.5°	867.7	801.9	733.5	667.7	576.2	455.2	304.6	151.7	68.5	44.9	37.8
55°	971.2	959.7	961.3	972.3	901.6	774.5	509.4	219.1	80.5	50.9	37.2
57.5°	1369.4	1410.0	1433.5	1433.0	1316.3	1091.7	684.2	281.6	89.8	59.2	44.4
60°	1893.1	1862.4	1819.1	1712.3	1557.3	1246.2	765.2	302.9	77.8	47.1	40.5
62.5°	2356.0	2176.3	2016.9	1843.8	1640.6	1299.9	781.7	301.3	67.9	35.6	28.5
65°	2644.6	2321.5	2064.0	1847.1	1607.7	1254.9	739.5	276.6	57.5	29.0	23.5
67.5°	2713.7	2243.1	1878.8	1602.2	1343.1	976.7	542.8	208.1	44.9	24.1	20.8
69°	2563.0	1993.9	1556.8	1242.9	977.2	648.0	335.8	131.5	34.5	21.9	19.2
70°	2357.6	1734.2	1268.1	997.5	723.6	455.2	235.0	92.6	27.9	20.3	17.5
72.5°	1516.8	910.9	623.3	433.8	298.5	181.3	92.0	41.6	21.3	17.0	14.2
75°	588.3	336.9	244.3	185.7	145.2	100.8	55.9	26.8	18.1	14.2	10.9
77.5°	289.8	221.8	181.3	124.4	72.3	44.9	30.1	20.8	14.8	10.4	7.1
80°	229.0	152.3	90.9	56.4	42.7	32.3	23.0	17.0	10.9	6.6	4.9
82.5°	117.2	64.1	47.1	38.4	31.8	25.2	18.6	12.1	7.1	4.4	3.8
85°	36.7	26.8	24.1	23.5	21.9	18.1	13.1	7.7	4.4	2.7	2.7
87.5°	2.7	3.8	4.9	3.8	4.4	3.8	4.9	3.3	2.2	2.2	1.6
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	252.5	252.5	252.5	252.5	252.5	252.5	252.5	252.5	252.5	252.5	252.5
2.5°	230.1	223.5	217.5	213.6	206.5	203.8	201.0	199.9	195.0	196.1	191.7
5°	201.0	189.5	180.8	172.0	163.8	157.8	152.8	146.8	141.9	139.7	135.3
7.5°	174.7	160.0	148.4	139.1	129.3	121.6	115.0	110.7	106.3	101.9	99.7
10°	151.7	135.8	122.7	113.4	104.1	97.5	92.6	89.3	86.5	84.9	84.4
12.5°	130.4	115.0	103.0	94.8	87.7	84.4	82.2	80.5	80.0	79.4	79.4
15°	113.9	98.6	89.3	83.3	80.0	78.3	77.8	76.7	75.6	75.1	75.1
17.5°	98.6	87.1	80.5	77.2	75.6	74.5	73.4	72.3	71.2	70.6	70.6
20°	88.2	78.9	75.6	73.4	71.8	70.6	69.0	67.9	67.4	66.8	66.3
22.5°	80.0	73.9	71.8	70.1	67.9	66.3	65.2	64.1	63.0	62.4	61.9
25°	73.9	70.1	68.5	66.3	64.1	62.4	60.8	59.2	58.1	57.5	56.4
27.5°	69.6	66.8	64.6	61.9	59.7	58.1	56.4	54.8	53.7	52.6	52.0
30°	65.7	63.0	60.2	58.1	55.3	53.7	51.5	49.8	49.3	48.2	47.1
32.5°	61.9	59.2	56.4	53.7	50.9	48.8	47.6	45.5	44.4	43.8	42.7
35°	57.5	54.8	51.5	49.3	46.6	44.4	42.7	41.1	40.0	38.9	38.4
37.5°	53.7	50.4	47.1	44.4	42.2	40.0	38.4	36.7	35.6	34.5	34.0
40°	49.3	46.0	42.7	40.0	37.8	36.2	34.5	32.9	31.8	31.2	31.2
42.5°	45.5	41.6	38.4	36.2	34.5	32.3	30.7	29.0	28.5	27.9	28.5
45°	41.6	37.8	35.1	32.9	31.2	29.0	27.4	26.3	25.8	26.3	26.8
47.5°	38.4	34.5	31.8	30.1	28.5	26.8	25.2	24.1	24.1	25.2	26.3
50°	35.1	31.2	29.0	27.9	26.3	24.6	22.5	21.9	22.5	23.5	24.6
52.5°	31.8	27.4	25.8	25.2	23.5	21.9	20.3	19.7	20.3	21.3	20.8
55°	28.5	24.1	23.5	23.0	21.3	19.2	17.5	17.5	17.5	17.0	15.9
57.5°	27.4	21.3	20.8	20.3	18.6	16.4	15.3	14.2	13.7	12.1	11.5
60°	28.5	19.2	19.2	18.1	16.4	14.2	12.6	10.9	9.9	8.8	8.8
62.5°	23.0	17.5	17.0	15.9	13.7	11.5	9.9	8.2	7.7	7.1	7.1
65°	18.6	15.9	14.8	13.1	11.5	9.3	7.7	6.6	6.0	6.0	6.6
67.5°	17.0	14.2	12.6	10.9	9.3	7.1	6.0	5.5	5.5	6.0	6.0
69°	15.9	13.1	11.5	9.9	8.2	6.6	5.5	5.5	5.5	5.5	6.0
70°	14.8	12.6	10.9	9.3	7.1	5.5	4.9	4.9	5.5	5.5	6.0
72.5°	11.5	9.9	9.3	7.7	5.5	4.9	4.4	4.9	4.9	5.5	5.5
75°	8.8	7.1	7.1	6.0	4.4	3.8	3.8	4.4	4.4	4.9	4.9
77.5°	6.0	4.9	4.9	4.4	3.8	3.3	3.3	3.8	4.4	4.4	4.9
80°	4.4	3.8	3.3	3.8	3.3	2.7	3.3	3.8	3.8	4.4	4.4
82.5°	3.3	3.3	3.3	3.3	2.7	2.7	3.3	3.3	3.8	4.4	4.4
85°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	3.3	3.3	3.8	3.8
87.5°	1.6	1.6	1.6	2.2	2.2	2.7	2.7	2.7	2.7	3.3	3.3
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°	252.5	252.5	252.5	252.5
2.5°	190.6	190.1	187.9	188.4
5°	133.7	130.4	132.6	132.0
7.5°	98.1	97.5	96.9	98.1
10°	83.8	83.8	83.3	83.8
12.5°	78.9	78.9	78.9	78.9
15°	75.1	75.1	74.5	74.5
17.5°	70.6	70.6	70.6	70.1
20°	66.3	65.7	65.7	65.7
22.5°	61.4	60.8	60.8	60.8
25°	56.4	55.9	55.9	55.9
27.5°	51.5	50.9	50.4	50.4
30°	46.6	46.0	45.5	45.5
32.5°	41.6	41.1	40.5	40.5
35°	37.2	37.2	36.7	36.2
37.5°	33.4	33.4	33.4	33.4
40°	30.7	31.2	31.2	31.2
42.5°	29.0	29.6	30.1	30.7
45°	27.9	29.0	29.6	29.6
47.5°	27.4	27.9	28.5	28.5
50°	25.2	24.6	24.6	24.6
52.5°	20.3	19.2	18.6	18.1
55°	14.8	14.2	13.1	13.1
57.5°	10.4	10.4	9.9	9.9
60°	8.2	8.2	7.7	8.2
62.5°	7.1	7.1	7.1	7.1
65°	6.6	6.6	6.6	6.6
67.5°	6.6	6.6	6.6	6.6
69°	6.0	6.0	6.0	6.0
70°	6.0	6.0	6.0	6.0
72.5°	5.5	5.5	5.5	5.5
75°	4.9	5.5	5.5	5.5
77.5°	4.9	4.9	4.9	4.9
80°	4.4	4.4	4.9	4.9
82.5°	4.4	4.4	4.4	4.4
85°	3.8	3.8	4.4	4.4
87.5°	3.3	3.3	3.8	3.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)