

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: P163795

Luminaire Tested: **LDRL-SL4-E02-E-8030-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P163795  
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-E02-E-8030-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: (42) 3000K CCT, 80 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3331.6 lumens  
Efficiency: N/A  
Efficacy: 63.9 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

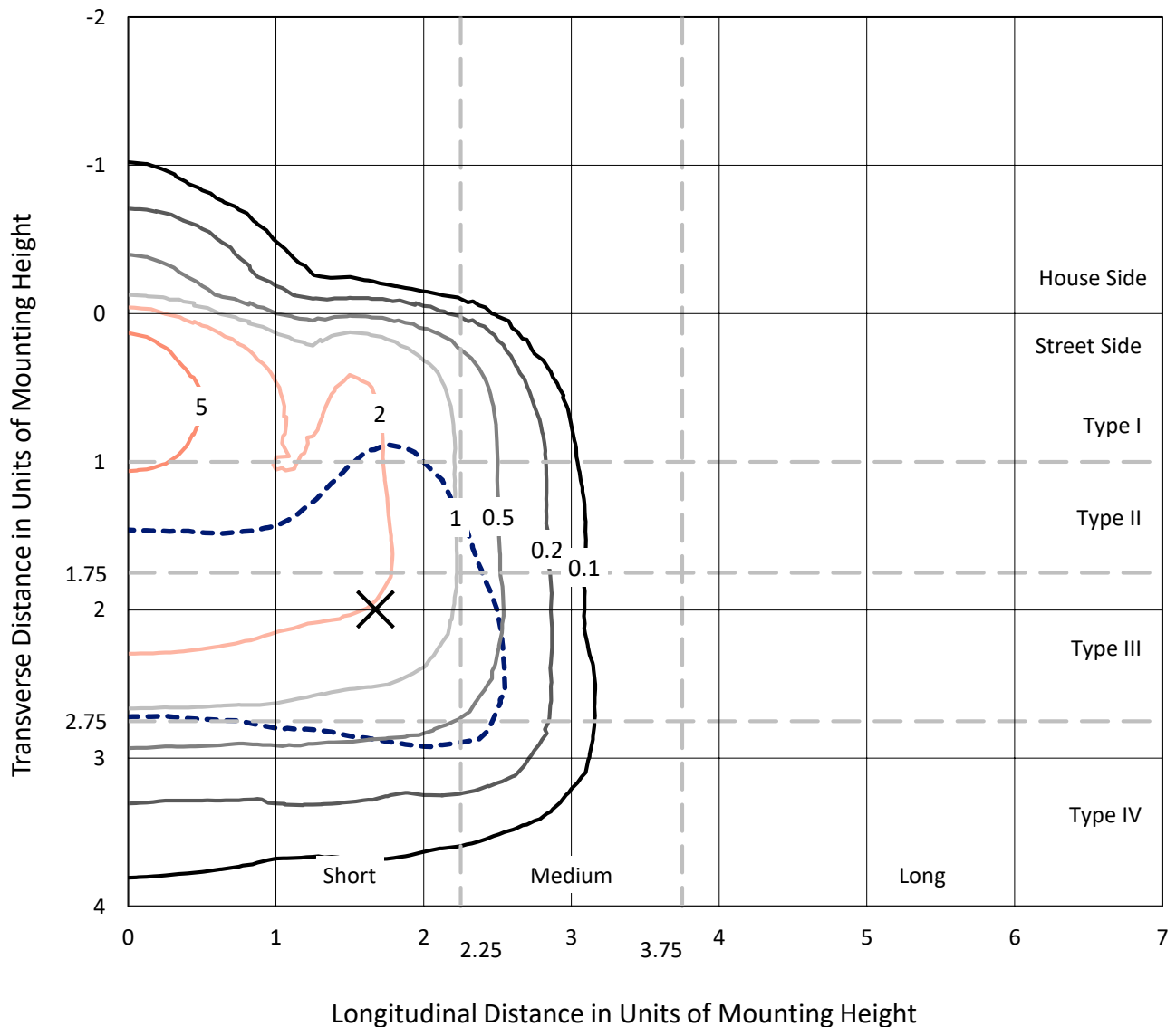
Input Watts (W): 52.1  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

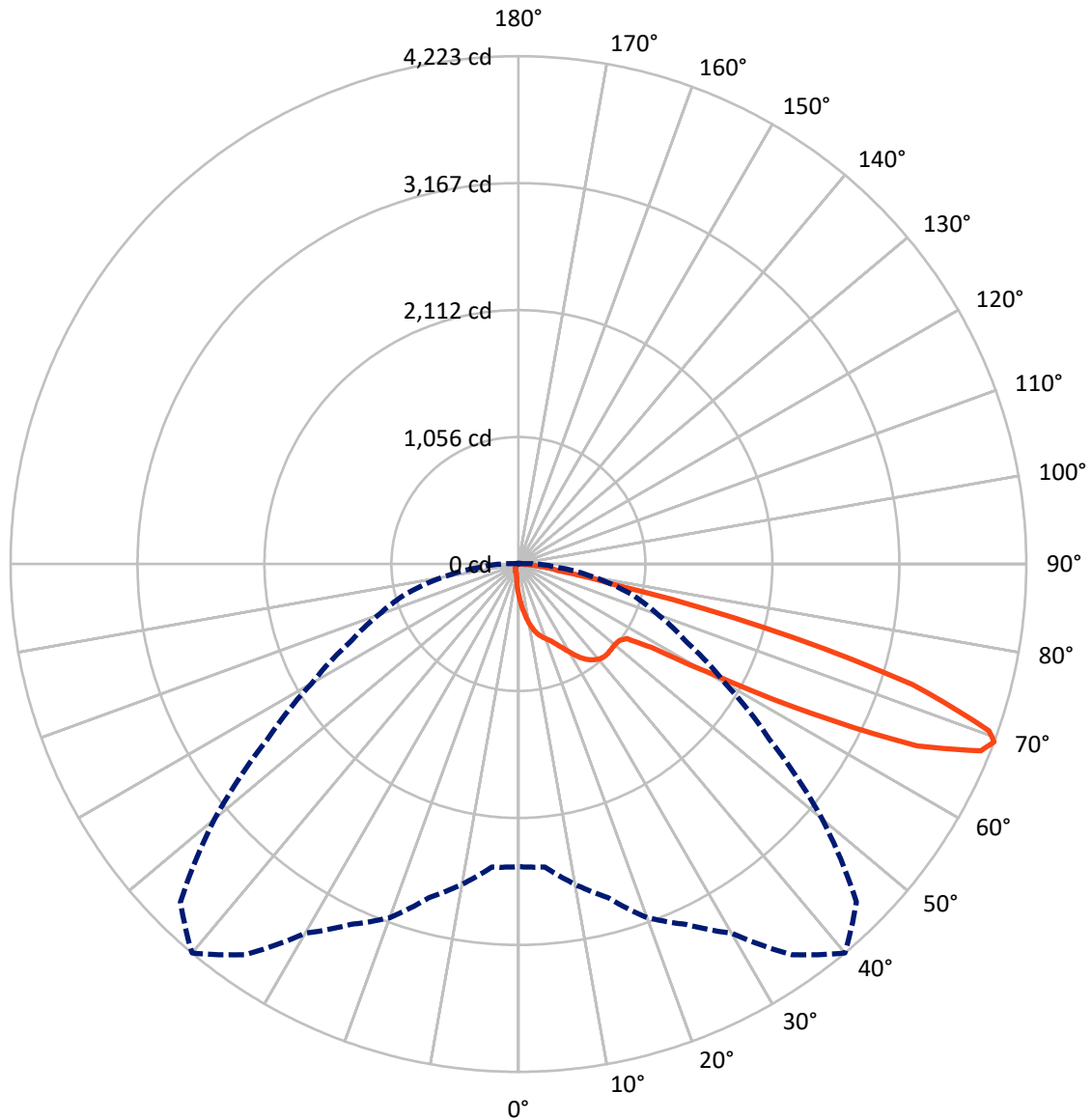
✕ Max cd  
 - - - 1/2 Max cd



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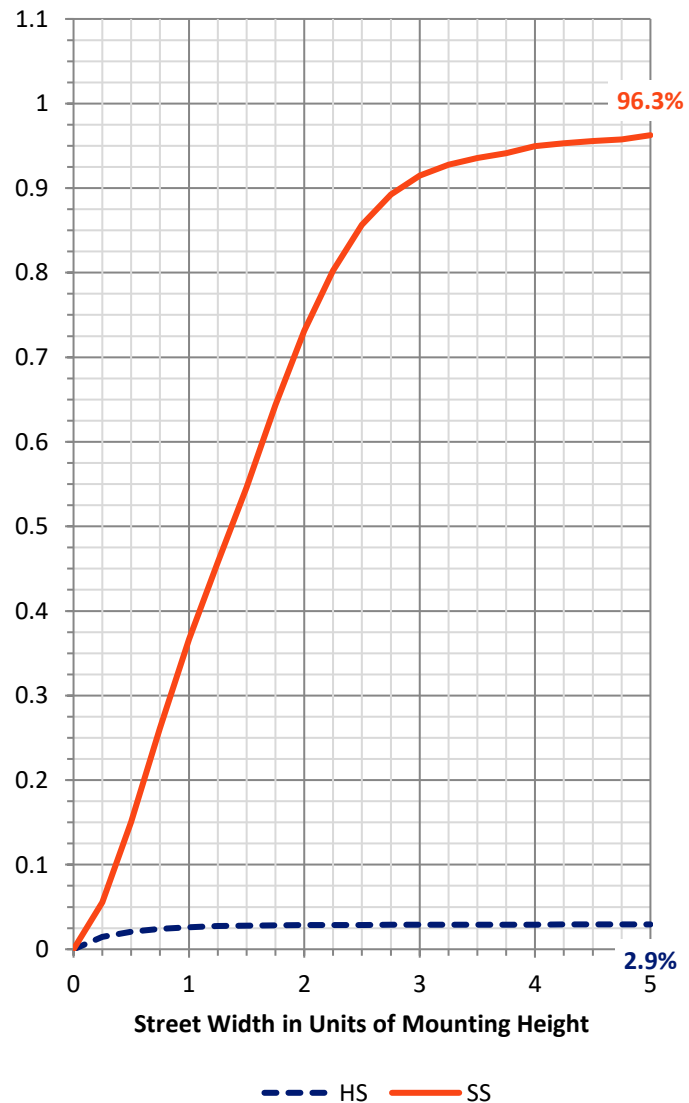
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	99.2	0.0	99.2
	% Fixture	3.0	0.0	3.0
<b>Street Side</b>	Lumens	3232.4	0.0	3232.4
	% Fixture	97.0	0.0	97.0
<b>Total</b>	Lumens	3331.6	0.0	3331.6
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	25.9	0.8
10°-20°	89.2	2.7
20°-30°	170.7	5.1
30°-40°	283.8	8.5
40°-50°	384.0	11.5
50°-60°	600.6	18.0
60°-70°	1234.8	37.1
70°-80°	496.8	14.9
80°-90°	46.0	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°	3331.6	100.0
0°-180°	3331.6	100.0



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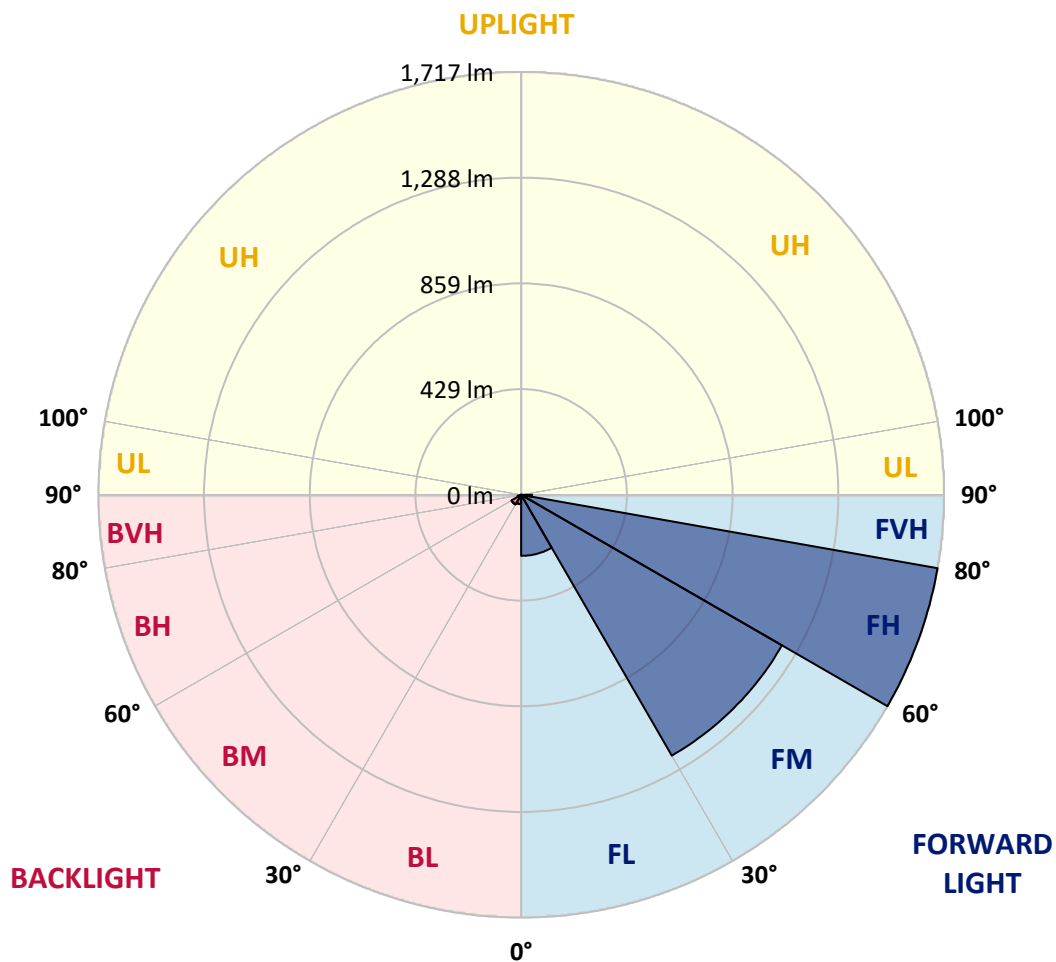
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	247.9	7.4			
FM (30°-60°)	1223.1	36.7			
FH (60°-80°)	1717.1	51.5			G1/1800
FVH (80°-90°)	44.2	1.3			G1/100
BL (0°-30°)	37.7	1.1	B0/110		
BM (30°-60°)	45.3	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°	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6
2.5°	335.6	331.8	327.5	327.5	322.0	322.0	318.7	310.0	308.9	304.0	299.1
5°	428.4	425.2	419.7	414.8	410.4	402.8	397.3	387.0	375.5	364.6	354.7
7.5°	519.0	517.4	507.6	505.9	498.8	486.3	475.4	460.1	440.4	425.2	407.1
10°	603.1	599.3	597.1	587.8	577.4	563.8	546.9	528.3	505.4	481.4	455.7
12.5°	669.7	667.5	657.7	653.8	642.9	629.3	608.0	584.0	561.1	530.0	499.9
15°	719.3	715.5	709.0	702.9	689.8	677.9	658.2	632.0	604.2	570.3	534.3
17.5°	760.8	753.7	752.1	742.8	729.1	715.0	693.1	669.1	636.4	602.5	563.2
20°	816.5	806.7	803.4	789.7	773.9	754.3	729.1	699.1	664.8	627.6	587.2
22.5°	882.0	874.9	867.8	855.8	835.6	807.7	771.2	738.4	694.8	653.8	610.2
25°	974.7	968.8	957.3	940.9	915.8	882.5	838.3	790.3	739.0	686.6	635.3
27.5°	1064.8	1059.3	1051.2	1038.6	1010.2	973.7	919.1	858.0	793.0	729.7	672.9
30°	1149.4	1144.5	1136.3	1123.8	1098.6	1062.6	1000.9	935.4	854.7	781.0	712.8
32.5°	1240.5	1238.9	1229.6	1211.6	1189.8	1141.2	1074.1	1003.7	921.8	836.7	757.0
35°	1343.7	1331.1	1322.4	1304.4	1267.3	1215.4	1136.9	1059.9	973.7	886.3	797.4
37.5°	1431.0	1419.0	1408.1	1385.2	1339.9	1273.9	1184.9	1100.3	1011.3	922.3	831.8
40°	1494.9	1488.9	1475.8	1445.8	1395.0	1316.4	1220.3	1128.1	1038.6	949.1	859.6
42.5°	1542.4	1533.1	1518.3	1487.2	1427.2	1337.7	1234.6	1139.6	1051.2	965.5	877.6
45°	1559.8	1552.2	1538.5	1504.7	1439.7	1343.7	1234.0	1136.3	1051.7	970.4	889.6
47.5°	1549.5	1541.8	1529.8	1498.2	1434.3	1336.6	1224.2	1127.0	1046.2	972.0	900.5
50°	1515.1	1510.7	1501.4	1474.7	1417.4	1323.0	1215.4	1122.1	1045.2	980.2	915.8
52.5°	1511.8	1509.1	1497.6	1470.9	1412.5	1318.6	1214.3	1124.8	1054.4	990.6	926.7
55°	1847.5	1808.7	1721.9	1648.2	1527.1	1383.0	1269.5	1169.1	1093.7	1031.5	986.8
57.5°	2625.7	2567.9	2453.8	2313.5	2035.2	1761.7	1542.9	1384.6	1306.6	1278.2	1295.1
60°	2990.3	2979.9	2961.9	2895.3	2752.9	2517.7	2255.7	1972.4	1858.9	1849.1	1883.5
62.5°	3163.3	3156.8	3162.2	3154.0	3109.8	3041.1	2965.8	2843.5	2731.1	2658.5	2504.6
65°	3243.0	3247.4	3278.5	3303.0	3308.5	3326.5	3381.6	3533.9	3645.2	3458.0	3030.7
67.5°	3040.5	3066.2	3137.7	3227.2	3331.9	3433.5	3597.2	3918.1	4146.8	3926.9	3320.0
69°	2517.1	2529.7	2704.3	2872.9	3128.9	3307.9	3545.4	3966.1	4223.2	3974.9	3297.0
70°	1981.7	1993.2	2180.4	2409.6	2842.4	3072.7	3383.3	3884.8	4151.7	3911.0	3179.1
72.5°	894.0	877.6	943.6	1066.4	1536.9	1902.6	2445.6	3147.5	3425.3	3133.3	2378.5
75°	624.4	617.3	624.4	624.9	698.0	900.5	1136.3	1706.1	2110.0	1820.7	1136.3
77.5°	483.6	478.6	473.7	468.3	477.0	534.3	557.2	605.3	785.9	743.4	433.3
80°	382.6	378.2	390.2	386.4	386.4	393.0	388.6	370.6	336.8	312.2	279.4
82.5°	177.9	179.0	179.0	194.3	234.1	273.4	286.0	268.0	238.0	202.5	163.2
85°	16.9	19.1	32.2	49.7	98.8	111.3	111.9	92.8	92.8	73.1	58.9
87.5°	0.0	0.5	0.5	0.5	4.9	13.6	11.4	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°	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6
2.5°	290.4	288.7	282.2	275.6	269.6	263.1	257.0	251.1	244.5	239.6	233.6
5°	339.5	327.5	313.8	300.7	287.6	274.0	259.8	247.2	234.1	222.1	210.7
7.5°	389.1	365.7	347.1	323.7	302.4	281.1	261.4	241.2	222.7	205.2	188.9
10°	431.2	402.8	373.9	343.8	313.3	284.9	257.6	233.6	209.0	187.7	167.5
12.5°	465.5	429.5	394.0	356.4	322.0	286.0	252.2	223.2	194.3	170.3	149.6
15°	496.7	455.2	412.6	369.0	325.3	284.4	246.7	210.7	181.2	153.9	130.4
17.5°	521.8	474.3	426.2	377.1	330.2	282.2	239.6	202.0	167.5	139.2	116.2
20°	543.6	493.9	442.1	387.0	333.5	281.6	233.6	191.0	155.5	125.5	103.1
22.5°	563.8	514.1	458.5	399.5	338.4	281.1	228.1	182.8	145.2	115.2	92.8
25°	586.7	534.3	475.9	412.6	347.1	283.2	224.9	176.3	135.9	105.3	84.6
27.5°	612.4	557.2	496.7	429.0	358.6	287.6	223.8	169.2	127.7	96.0	78.1
30°	648.4	584.5	517.4	445.4	369.0	292.5	222.7	164.8	119.5	89.0	71.5
32.5°	680.0	611.3	540.3	462.3	380.4	297.5	222.1	158.8	111.9	81.9	66.6
35°	713.3	635.8	560.0	478.6	390.2	302.9	221.6	154.5	104.8	74.8	61.7
37.5°	742.2	656.6	575.2	492.8	401.1	307.8	222.1	150.6	98.2	68.8	57.3
40°	766.8	677.9	592.2	505.9	412.6	315.5	222.7	146.8	91.7	63.3	53.5
42.5°	788.7	698.0	610.2	520.7	425.7	324.2	226.0	143.5	86.2	58.4	49.7
45°	805.6	716.6	629.8	541.4	447.0	338.4	232.0	141.4	80.8	54.0	46.4
47.5°	823.0	743.9	663.1	574.2	478.1	360.8	242.3	140.8	76.4	50.7	43.7
50°	847.0	771.2	692.6	607.4	506.5	383.7	254.9	141.4	71.0	47.5	40.9
52.5°	864.5	799.0	730.8	665.3	574.2	453.5	303.5	151.2	68.2	44.8	37.6
55°	967.7	956.2	957.8	968.8	898.3	771.7	507.6	218.3	80.2	50.7	37.1
57.5°	1364.4	1404.8	1428.3	1427.8	1311.5	1087.7	681.7	280.5	89.5	58.9	44.2
60°	1886.2	1855.6	1812.5	1706.1	1551.6	1241.6	762.5	301.8	77.5	46.9	40.4
62.5°	2347.4	2168.4	2009.5	1837.1	1634.6	1295.1	778.8	300.2	67.7	35.5	28.4
65°	2635.0	2313.0	2056.5	1840.3	1601.9	1250.4	736.8	275.6	57.3	28.9	23.5
67.5°	2703.8	2235.0	1872.0	1596.4	1338.2	973.1	540.9	207.4	44.8	24.0	20.7
69°	2553.7	1986.6	1551.1	1238.4	973.7	645.7	334.6	131.0	34.4	21.8	19.1
70°	2349.0	1727.9	1263.5	993.8	721.0	453.5	234.1	92.2	27.8	20.2	17.5
72.5°	1511.3	907.6	621.1	432.3	297.5	180.6	91.7	41.5	21.3	16.9	14.2
75°	586.2	335.6	243.4	185.0	144.6	100.4	55.7	26.7	18.0	14.2	10.9
77.5°	288.7	221.0	180.6	123.9	72.0	44.8	30.0	20.7	14.7	10.4	7.1
80°	228.1	151.7	90.6	56.2	42.6	32.2	22.9	16.9	10.9	6.5	4.9
82.5°	116.8	63.8	46.9	38.2	31.7	25.1	18.6	12.0	7.1	4.4	3.8
85°	36.6	26.7	24.0	23.5	21.8	18.0	13.1	7.6	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°	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6
2.5°	229.2	222.7	216.7	212.9	205.8	203.0	200.3	199.2	194.3	195.4	191.0
5°	200.3	188.9	180.1	171.4	163.2	157.2	152.3	146.3	141.4	139.2	134.8
7.5°	174.1	159.4	147.9	138.6	128.8	121.2	114.6	110.3	105.9	101.5	99.3
10°	151.2	135.3	122.2	113.0	103.7	97.2	92.2	89.0	86.2	84.6	84.1
12.5°	129.9	114.6	102.6	94.4	87.3	84.1	81.9	80.2	79.7	79.1	79.1
15°	113.5	98.2	89.0	82.9	79.7	78.1	77.5	76.4	75.3	74.8	74.8
17.5°	98.2	86.8	80.2	76.9	75.3	74.2	73.1	72.0	71.0	70.4	70.4
20°	87.9	78.6	75.3	73.1	71.5	70.4	68.8	67.7	67.1	66.6	66.0
22.5°	79.7	73.7	71.5	69.8	67.7	66.0	65.0	63.8	62.8	62.2	61.7
25°	73.7	69.8	68.2	66.0	63.8	62.2	60.6	58.9	57.9	57.3	56.2
27.5°	69.3	66.6	64.4	61.7	59.5	57.9	56.2	54.6	53.5	52.4	51.9
30°	65.5	62.8	60.0	57.9	55.1	53.5	51.3	49.7	49.1	48.0	46.9
32.5°	61.7	58.9	56.2	53.5	50.7	48.6	47.5	45.3	44.2	43.7	42.6
35°	57.3	54.6	51.3	49.1	46.4	44.2	42.6	40.9	39.8	38.8	38.2
37.5°	53.5	50.2	46.9	44.2	42.0	39.8	38.2	36.6	35.5	34.4	33.8
40°	49.1	45.8	42.6	39.8	37.6	36.0	34.4	32.7	31.7	31.1	31.1
42.5°	45.3	41.5	38.2	36.0	34.4	32.2	30.6	28.9	28.4	27.8	28.4
45°	41.5	37.6	34.9	32.7	31.1	28.9	27.3	26.2	25.7	26.2	26.7
47.5°	38.2	34.4	31.7	30.0	28.4	26.7	25.1	24.0	24.0	25.1	26.2
50°	34.9	31.1	28.9	27.8	26.2	24.5	22.4	21.8	22.4	23.5	24.5
52.5°	31.7	27.3	25.7	25.1	23.5	21.8	20.2	19.6	20.2	21.3	20.7
55°	28.4	24.0	23.5	22.9	21.3	19.1	17.5	17.5	17.5	16.9	15.8
57.5°	27.3	21.3	20.7	20.2	18.6	16.4	15.3	14.2	13.6	12.0	11.4
60°	28.4	19.1	19.1	18.0	16.4	14.2	12.6	10.9	9.8	8.7	8.7
62.5°	22.9	17.5	16.9	15.8	13.6	11.4	9.8	8.2	7.6	7.1	7.1
65°	18.6	15.8	14.7	13.1	11.4	9.3	7.6	6.5	6.0	6.0	6.5
67.5°	16.9	14.2	12.6	10.9	9.3	7.1	6.0	5.5	5.5	6.0	6.0
69°	15.8	13.1	11.4	9.8	8.2	6.5	5.5	5.5	5.5	5.5	6.0
70°	14.7	12.6	10.9	9.3	7.1	5.5	4.9	4.9	5.5	5.5	6.0
72.5°	11.4	9.8	9.3	7.6	5.5	4.9	4.4	4.9	4.9	5.5	5.5
75°	8.7	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°	251.6	251.6	251.6	251.6
2.5°	189.9	189.4	187.2	187.7
5°	133.2	129.9	132.1	131.5
7.5°	97.7	97.2	96.6	97.7
10°	83.5	83.5	82.9	83.5
12.5°	78.6	78.6	78.6	78.6
15°	74.8	74.8	74.2	74.2
17.5°	70.4	70.4	70.4	69.8
20°	66.0	65.5	65.5	65.5
22.5°	61.1	60.6	60.6	60.6
25°	56.2	55.7	55.7	55.7
27.5°	51.3	50.7	50.2	50.2
30°	46.4	45.8	45.3	45.3
32.5°	41.5	40.9	40.4	40.4
35°	37.1	37.1	36.6	36.0
37.5°	33.3	33.3	33.3	33.3
40°	30.6	31.1	31.1	31.1
42.5°	28.9	29.5	30.0	30.6
45°	27.8	28.9	29.5	29.5
47.5°	27.3	27.8	28.4	28.4
50°	25.1	24.5	24.5	24.5
52.5°	20.2	19.1	18.6	18.0
55°	14.7	14.2	13.1	13.1
57.5°	10.4	10.4	9.8	9.8
60°	8.2	8.2	7.6	8.2
62.5°	7.1	7.1	7.1	7.1
65°	6.5	6.5	6.5	6.5
67.5°	6.5	6.5	6.5	6.5
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)