

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: P163810

Luminaire Tested: **LDRL-SL4-F03-E-8030-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P163810  
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-F03-E-8030-HSS  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(3) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL AND HOUSE SIDE SHIELD  
Light Source: (21) 3000K CCT, 80 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4125.5 lumens  
Efficiency: N/A  
Efficacy: 52.7 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 1' x H: 0.1')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B0 - U0 - G2

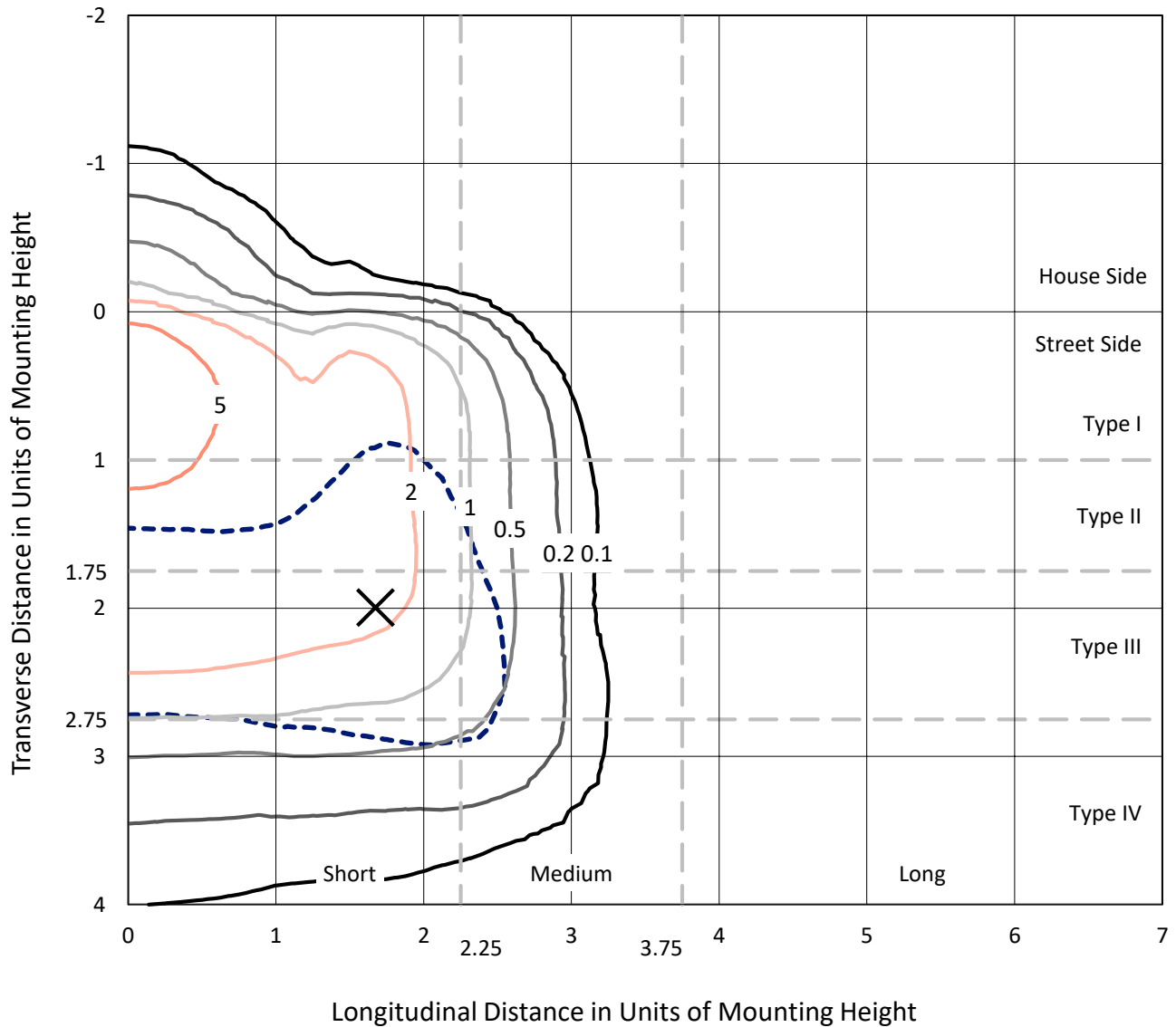
Input Watts (W): 78.3  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

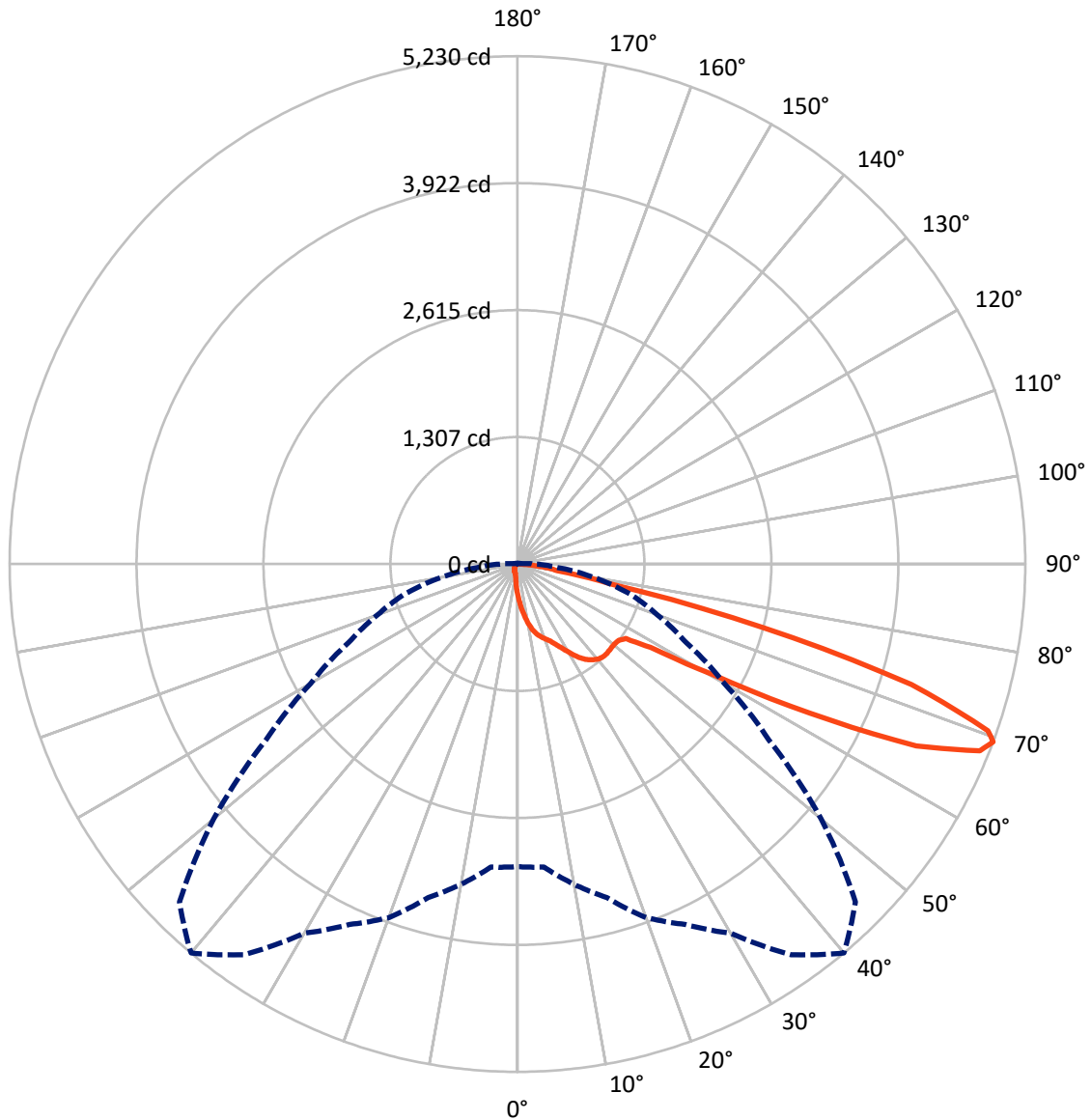
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 9.2 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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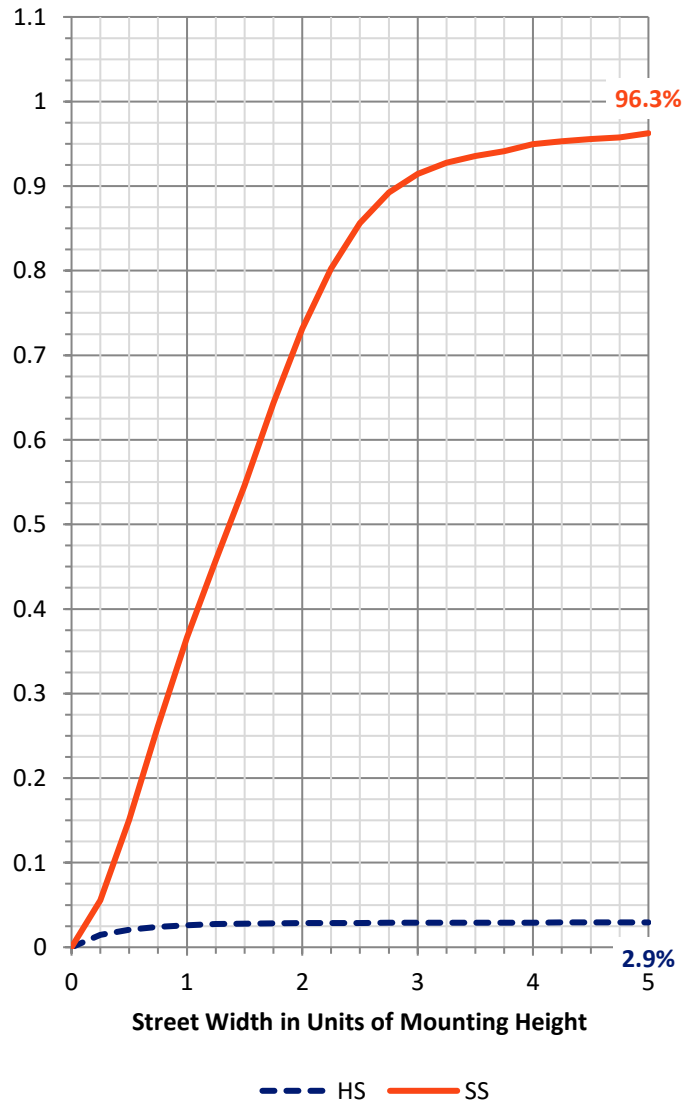
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	122.9	0.0	122.9
	% Fixture	3.0	0.0	3.0
<b>Street Side</b>	Lumens	4002.7	0.0	4002.7
	% Fixture	97.0	0.0	97.0
<b>Total</b>	Lumens	4125.5	0.0	4125.5
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	32.0	0.8
10°-20°	110.4	2.7
20°-30°	211.3	5.1
30°-40°	351.4	8.5
40°-50°	475.5	11.5
50°-60°	743.7	18.0
60°-70°	1529.0	37.1
70°-80°	615.2	14.9
80°-90°	56.9	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°	4125.5	100.0
0°-180°	4125.5	100.0



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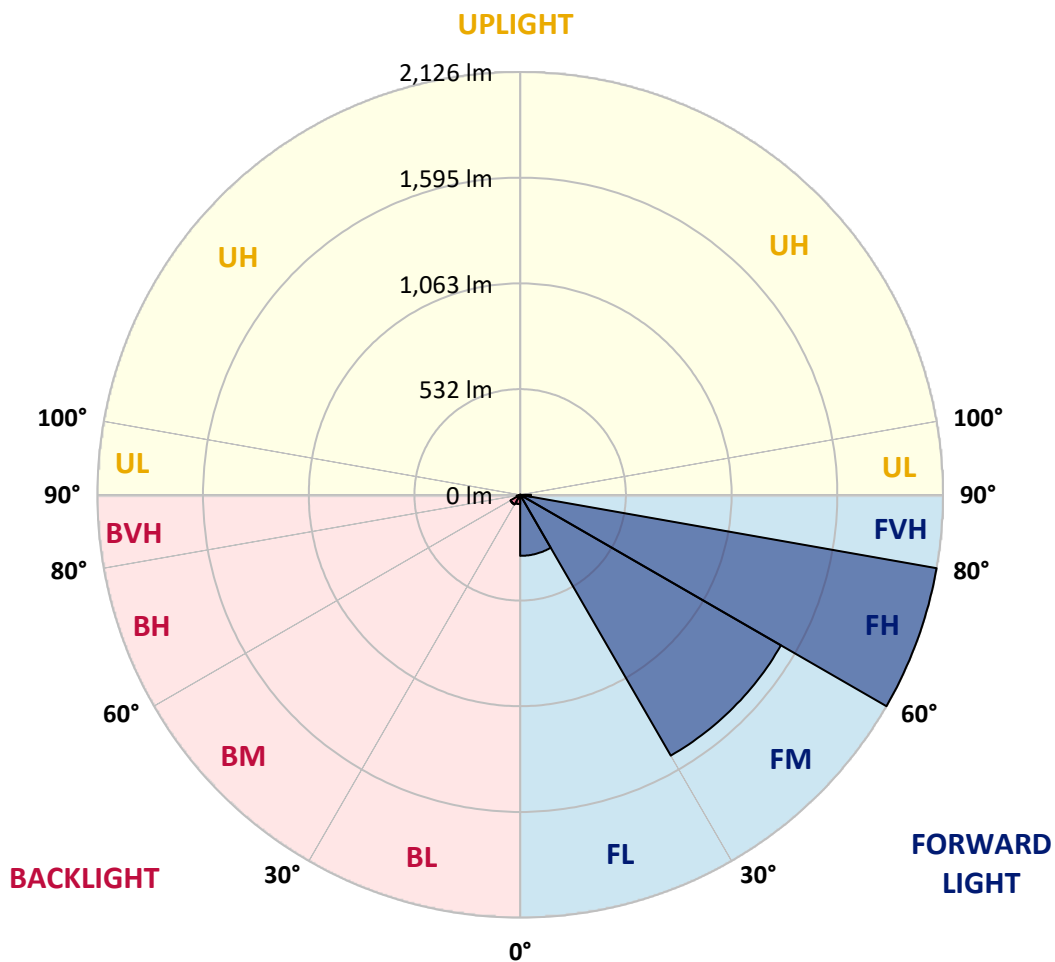
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	307.0	7.4			
FM (30°-60°)	1514.5	36.7			
FH (60°-80°)	2126.3	51.5			G2/5000
FVH (80°-90°)	54.8	1.3			G1/100
BL (0°-30°)	46.7	1.1	B0/110		
BM (30°-60°)	56.1	1.4	B0/220		
BH (60°-80°)	17.9	0.4	B0/110		G0/110
BVH (80°-90°)	2.1	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°	311.6	311.6	311.6	311.6	311.6	311.6	311.6	311.6	311.6	311.6	311.6
2.5°	415.6	410.9	405.5	405.5	398.7	398.7	394.7	383.9	382.5	376.4	370.3
5°	530.5	526.5	519.7	513.6	508.2	498.8	492.0	479.2	465.0	451.4	439.3
7.5°	642.7	640.7	628.5	626.5	617.7	602.1	588.6	569.7	545.4	526.5	504.2
10°	746.8	742.1	739.3	727.9	715.0	698.1	677.2	654.2	625.8	596.1	564.3
12.5°	829.2	826.6	814.4	809.6	796.1	779.2	752.9	723.1	694.7	656.2	619.1
15°	890.7	886.0	877.9	870.4	854.2	839.4	815.1	782.6	748.1	706.2	661.6
17.5°	942.1	933.3	931.3	919.8	902.9	885.3	858.3	828.6	788.0	746.1	697.5
20°	1011.0	998.9	994.8	977.9	958.3	934.0	902.9	865.7	823.2	777.2	727.2
22.5°	1092.1	1083.4	1074.6	1059.7	1034.7	1000.2	954.9	914.4	860.3	809.6	755.6
25°	1207.0	1199.6	1185.4	1165.1	1134.0	1092.8	1038.1	978.6	915.1	850.2	786.7
27.5°	1318.5	1311.8	1301.7	1286.1	1250.9	1205.7	1138.1	1062.4	982.0	903.6	833.3
30°	1423.3	1417.2	1407.1	1391.5	1360.4	1315.8	1239.5	1158.4	1058.4	967.1	882.6
32.5°	1536.1	1534.1	1522.6	1500.4	1473.3	1413.1	1330.0	1242.8	1141.5	1036.0	937.4
35°	1663.9	1648.3	1637.5	1615.2	1569.3	1505.1	1407.8	1312.4	1205.7	1097.5	987.4
37.5°	1772.0	1757.2	1743.7	1715.3	1659.2	1577.4	1467.2	1362.5	1252.3	1142.1	1030.0
40°	1851.1	1843.6	1827.4	1790.3	1727.4	1630.1	1511.1	1396.9	1286.1	1175.3	1064.4
42.5°	1909.9	1898.4	1880.1	1841.6	1767.3	1656.4	1528.7	1411.1	1301.7	1195.6	1086.7
45°	1931.5	1922.1	1905.1	1863.3	1782.8	1663.9	1528.0	1407.1	1302.3	1201.6	1101.6
47.5°	1918.7	1909.2	1894.4	1855.1	1776.1	1655.1	1515.9	1395.6	1295.6	1203.7	1115.1
50°	1876.1	1870.7	1859.2	1826.1	1755.1	1638.2	1505.1	1389.5	1294.2	1213.8	1134.0
52.5°	1872.0	1868.6	1854.5	1821.4	1749.0	1632.8	1503.7	1392.9	1305.7	1226.6	1147.6
55°	2287.7	2239.7	2132.2	2041.0	1891.0	1712.5	1572.0	1447.6	1354.4	1277.3	1221.9
57.5°	3251.4	3179.7	3038.5	2864.8	2520.2	2181.5	1910.6	1714.6	1617.9	1582.8	1603.7
60°	3702.8	3690.0	3667.7	3585.2	3408.9	3117.6	2793.2	2442.4	2301.9	2289.7	2332.3
62.5°	3917.1	3909.0	3915.8	3905.6	3850.9	3765.7	3672.5	3521.0	3381.8	3292.0	3101.4
65°	4015.7	4021.2	4059.7	4090.1	4096.8	4119.2	4187.4	4376.0	4513.8	4282.0	3752.9
67.5°	3765.0	3796.8	3885.3	3996.2	4125.9	4251.6	4454.4	4851.7	5134.9	4862.6	4111.1
69°	3116.9	3132.5	3348.7	3557.5	3874.5	4096.2	4390.2	4911.2	5229.5	4922.1	4082.7
70°	2453.9	2468.1	2699.9	2983.8	3519.7	3804.9	4189.4	4810.5	5141.0	4843.0	3936.7
72.5°	1107.0	1086.7	1168.5	1320.6	1903.1	2355.9	3028.4	3897.5	4241.5	3879.9	2945.3
75°	773.1	764.3	773.1	773.8	864.4	1115.1	1407.1	2112.6	2612.8	2254.5	1407.1
77.5°	598.8	592.7	586.6	579.9	590.7	661.6	690.0	749.5	973.2	920.5	536.6
80°	473.8	468.3	483.2	478.5	478.5	486.6	481.2	458.9	417.0	386.6	346.0
82.5°	220.3	221.7	221.7	240.6	289.9	338.6	354.1	331.8	294.7	250.7	202.1
85°	20.9	23.7	39.9	61.5	122.3	137.9	138.5	114.9	114.9	90.5	73.0
87.5°	0.0	0.7	0.7	0.7	6.1	16.9	14.2	4.1	2.0	2.0	3.4
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	311.6	311.6	311.6	311.6	311.6	311.6	311.6	311.6	311.6	311.6	311.6
2.5°	359.6	357.5	349.4	341.3	333.8	325.7	318.3	310.9	302.8	296.7	289.2
5°	420.4	405.5	388.6	372.4	356.2	339.3	321.7	306.1	289.9	275.1	260.9
7.5°	481.9	452.8	429.8	400.8	374.4	348.1	323.7	298.7	275.7	254.1	233.9
10°	533.9	498.8	462.9	425.8	387.9	352.8	319.0	289.2	258.9	232.5	207.5
12.5°	576.5	531.9	487.9	441.3	398.7	354.1	312.2	276.4	240.6	210.9	185.2
15°	615.0	563.6	510.9	456.9	402.8	352.1	305.5	260.9	224.4	190.6	161.5
17.5°	646.1	587.3	527.8	467.0	408.9	349.4	296.7	250.1	207.5	172.3	143.9
20°	673.1	611.6	547.4	479.2	412.9	348.7	289.2	236.5	192.6	155.4	127.7
22.5°	698.1	636.6	567.7	494.7	419.0	348.1	282.5	226.4	179.8	142.6	114.9
25°	726.5	661.6	589.3	510.9	429.8	350.7	278.5	218.3	168.3	130.4	104.8
27.5°	758.3	690.0	615.0	531.2	444.0	356.2	277.1	209.5	158.1	118.9	96.7
30°	802.9	723.8	640.7	551.5	456.9	362.2	275.7	204.1	148.0	110.2	88.5
32.5°	842.1	756.9	669.1	572.4	471.0	368.3	275.1	196.6	138.5	101.4	82.4
35°	883.3	787.3	693.4	592.7	483.2	375.1	274.4	191.3	129.8	92.6	76.4
37.5°	919.1	813.0	712.3	610.3	496.7	381.2	275.1	186.5	121.7	85.2	70.9
40°	949.5	839.4	733.3	626.5	510.9	390.6	275.7	181.8	113.5	78.4	66.2
42.5°	976.6	864.4	755.6	644.7	527.2	401.4	279.8	177.8	106.8	72.3	61.5
45°	997.5	887.4	779.9	670.4	553.5	419.0	287.2	175.0	100.0	66.9	57.4
47.5°	1019.1	921.2	821.1	711.0	592.0	446.7	300.1	174.4	94.6	62.8	54.1
50°	1048.9	954.9	857.6	752.2	627.2	475.1	315.6	175.0	87.9	58.8	50.7
52.5°	1070.5	989.4	904.9	823.8	711.0	561.6	375.8	187.2	84.5	55.4	46.6
55°	1198.2	1184.1	1186.1	1199.6	1112.4	955.6	628.5	270.3	99.3	62.8	45.9
57.5°	1689.6	1739.6	1768.6	1768.0	1624.0	1346.9	844.1	347.4	110.8	73.0	54.7
60°	2335.6	2297.8	2244.4	2112.6	1921.4	1537.5	944.1	373.7	96.0	58.1	50.0
62.5°	2906.7	2685.1	2488.4	2274.8	2024.1	1603.7	964.4	371.7	83.8	43.9	35.2
65°	3262.9	2864.2	2546.5	2278.9	1983.6	1548.3	912.4	341.3	70.9	35.8	29.1
67.5°	3348.1	2767.5	2318.1	1976.8	1657.1	1205.0	669.7	256.8	55.4	29.7	25.7
69°	3162.2	2460.0	1920.7	1533.5	1205.7	799.5	414.3	162.2	42.6	27.0	23.7
70°	2908.8	2139.7	1564.5	1230.7	892.8	561.6	289.9	114.2	34.4	25.0	21.6
72.5°	1871.4	1123.9	769.1	535.3	368.3	223.7	113.5	51.4	26.3	20.9	17.6
75°	725.8	415.6	301.4	229.1	179.1	124.4	68.9	33.1	22.3	17.6	13.5
77.5°	357.5	273.7	223.7	153.4	89.2	55.4	37.2	25.7	18.2	12.8	8.8
80°	282.5	187.9	112.2	69.6	52.7	39.9	28.4	20.9	13.5	8.1	6.1
82.5°	144.6	79.1	58.1	47.3	39.2	31.1	23.0	14.9	8.8	5.4	4.7
85°	45.3	33.1	29.7	29.1	27.0	22.3	16.2	9.4	5.4	3.4	3.4
87.5°	3.4	4.7	6.1	4.7	5.4	4.7	6.1	4.1	2.7	2.7	2.0
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	311.6	311.6	311.6	311.6	311.6	311.6	311.6	311.6	311.6	311.6	311.6
2.5°	283.9	275.7	268.3	263.6	254.8	251.4	248.0	246.7	240.6	242.0	236.5
5°	248.0	233.9	223.0	212.2	202.1	194.6	188.5	181.1	175.0	172.3	166.9
7.5°	215.6	197.4	183.1	171.6	159.5	150.0	141.9	136.5	131.1	125.7	123.0
10°	187.2	167.6	151.4	139.9	128.4	120.3	114.2	110.2	106.8	104.8	104.1
12.5°	160.9	141.9	127.0	116.9	108.1	104.1	101.4	99.3	98.7	98.0	98.0
15°	140.6	121.7	110.2	102.7	98.7	96.7	96.0	94.6	93.3	92.6	92.6
17.5°	121.7	107.4	99.3	95.3	93.3	91.9	90.5	89.2	87.9	87.2	87.2
20°	108.8	97.3	93.3	90.5	88.5	87.2	85.2	83.8	83.1	82.4	81.8
22.5°	98.7	91.2	88.5	86.5	83.8	81.8	80.4	79.1	77.7	77.0	76.4
25°	91.2	86.5	84.5	81.8	79.1	77.0	75.0	73.0	71.7	70.9	69.6
27.5°	85.8	82.4	79.8	76.4	73.7	71.7	69.6	67.6	66.2	64.9	64.2
30°	81.1	77.7	74.3	71.7	68.3	66.2	63.5	61.5	60.8	59.5	58.1
32.5°	76.4	73.0	69.6	66.2	62.8	60.2	58.8	56.1	54.7	54.1	52.7
35°	70.9	67.6	63.5	60.8	57.4	54.7	52.7	50.7	49.3	48.0	47.3
37.5°	66.2	62.2	58.1	54.7	52.0	49.3	47.3	45.3	43.9	42.6	41.9
40°	60.8	56.8	52.7	49.3	46.6	44.6	42.6	40.6	39.2	38.5	38.5
42.5°	56.1	51.4	47.3	44.6	42.6	39.9	37.8	35.8	35.2	34.4	35.2
45°	51.4	46.6	43.3	40.6	38.5	35.8	33.8	32.4	31.8	32.4	33.1
47.5°	47.3	42.6	39.2	37.2	35.2	33.1	31.1	29.7	29.7	31.1	32.4
50°	43.3	38.5	35.8	34.4	32.4	30.4	27.7	27.0	27.7	29.1	30.4
52.5°	39.2	33.8	31.8	31.1	29.1	27.0	25.0	24.3	25.0	26.3	25.7
55°	35.2	29.7	29.1	28.4	26.3	23.7	21.6	21.6	21.6	20.9	19.6
57.5°	33.8	26.3	25.7	25.0	23.0	20.3	18.9	17.6	16.9	14.9	14.2
60°	35.2	23.7	23.7	22.3	20.3	17.6	15.6	13.5	12.2	10.8	10.8
62.5°	28.4	21.6	20.9	19.6	16.9	14.2	12.2	10.1	9.4	8.8	8.8
65°	23.0	19.6	18.2	16.2	14.2	11.5	9.4	8.1	7.4	7.4	8.1
67.5°	20.9	17.6	15.6	13.5	11.5	8.8	7.4	6.8	6.8	7.4	7.4
69°	19.6	16.2	14.2	12.2	10.1	8.1	6.8	6.8	6.8	6.8	7.4
70°	18.2	15.6	13.5	11.5	8.8	6.8	6.1	6.1	6.8	6.8	7.4
72.5°	14.2	12.2	11.5	9.4	6.8	6.1	5.4	6.1	6.1	6.8	6.8
75°	10.8	8.8	8.8	7.4	5.4	4.7	4.7	5.4	5.4	6.1	6.1
77.5°	7.4	6.1	6.1	5.4	4.7	4.1	4.1	4.7	5.4	5.4	6.1
80°	5.4	4.7	4.1	4.7	4.1	3.4	4.1	4.7	4.7	5.4	5.4
82.5°	4.1	4.1	4.1	4.1	3.4	3.4	4.1	4.1	4.7	5.4	5.4
85°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	4.1	4.1	4.7	4.7
87.5°	2.0	2.0	2.0	2.7	2.7	3.4	3.4	3.4	3.4	4.1	4.1
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):**

	165°	170°	175°	180°
0°	311.6	311.6	311.6	311.6
2.5°	235.2	234.5	231.8	232.5
5°	164.9	160.9	163.5	162.9
7.5°	121.0	120.3	119.6	121.0
10°	103.4	103.4	102.7	103.4
12.5°	97.3	97.3	97.3	97.3
15°	92.6	92.6	91.9	91.9
17.5°	87.2	87.2	87.2	86.5
20°	81.8	81.1	81.1	81.1
22.5°	75.7	75.0	75.0	75.0
25°	69.6	68.9	68.9	68.9
27.5°	63.5	62.8	62.2	62.2
30°	57.4	56.8	56.1	56.1
32.5°	51.4	50.7	50.0	50.0
35°	45.9	45.9	45.3	44.6
37.5°	41.2	41.2	41.2	41.2
40°	37.8	38.5	38.5	38.5
42.5°	35.8	36.5	37.2	37.8
45°	34.4	35.8	36.5	36.5
47.5°	33.8	34.4	35.2	35.2
50°	31.1	30.4	30.4	30.4
52.5°	25.0	23.7	23.0	22.3
55°	18.2	17.6	16.2	16.2
57.5°	12.8	12.8	12.2	12.2
60°	10.1	10.1	9.4	10.1
62.5°	8.8	8.8	8.8	8.8
65°	8.1	8.1	8.1	8.1
67.5°	8.1	8.1	8.1	8.1
69°	7.4	7.4	7.4	7.4
70°	7.4	7.4	7.4	7.4
72.5°	6.8	6.8	6.8	6.8
75°	6.1	6.8	6.8	6.8
77.5°	6.1	6.1	6.1	6.1
80°	5.4	5.4	6.1	6.1
82.5°	5.4	5.4	5.4	5.4
85°	4.7	4.7	5.4	5.4
87.5°	4.1	4.1	4.7	4.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)