

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: P163807

Luminaire Tested: **LDRL-SL4-E03-E-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P163807
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-E03-E-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: (63) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5921.2 lumens
Efficiency: N/A
Efficacy: 78.7 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

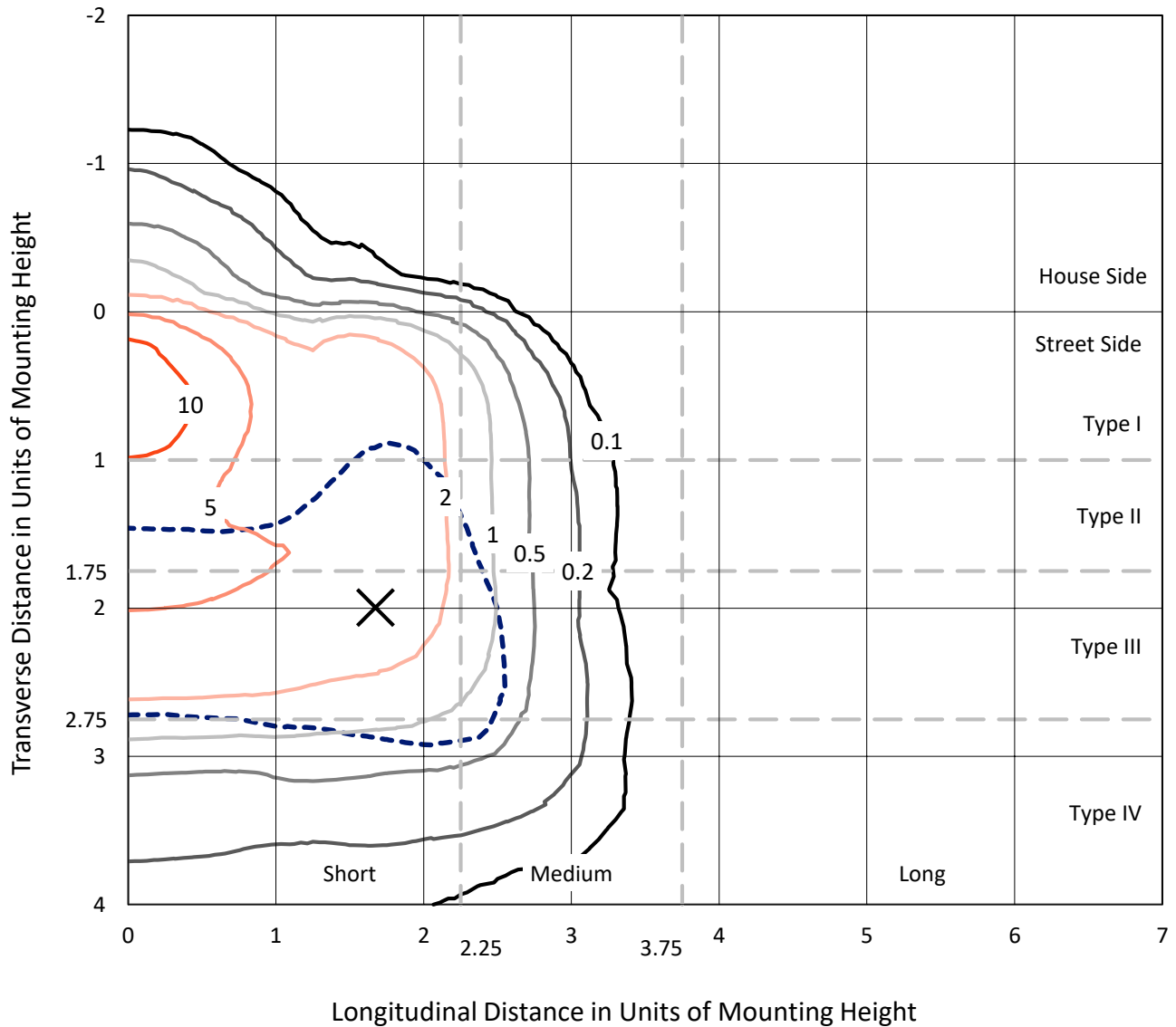
Input Watts (W): 75.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

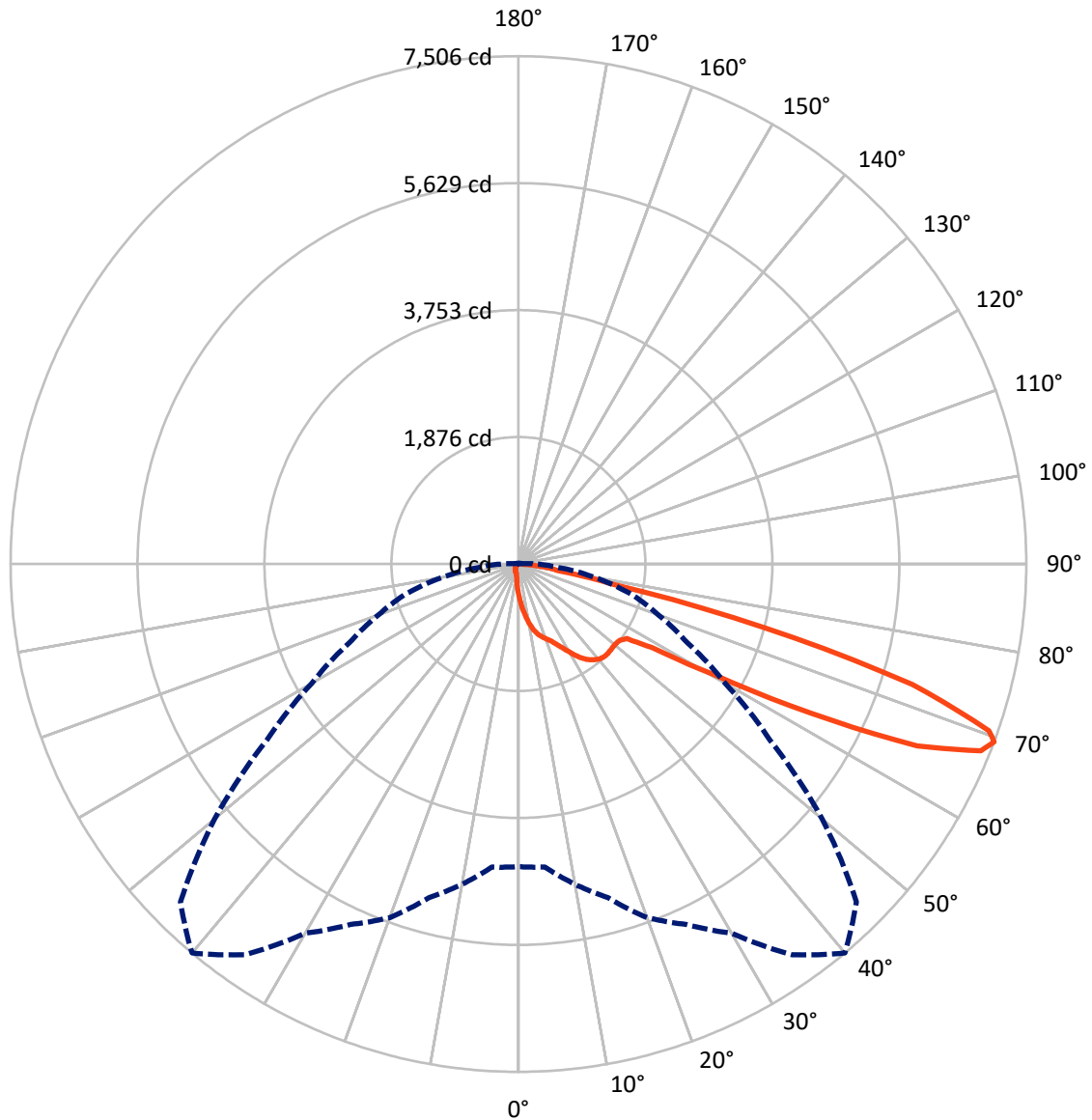
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 13.2 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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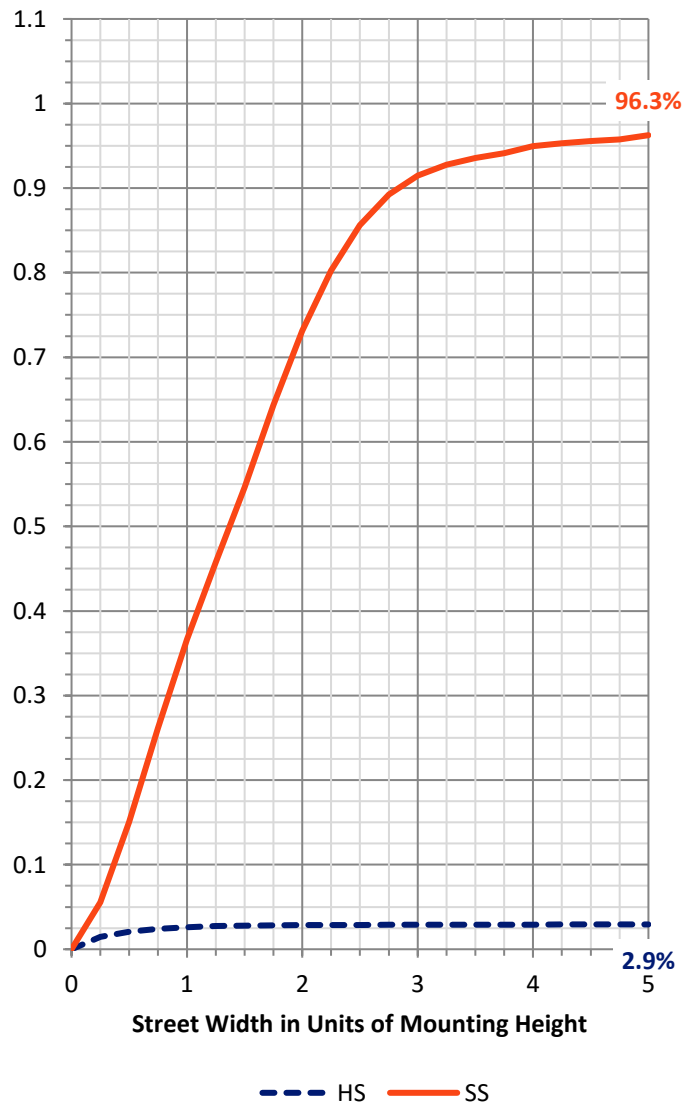
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	176.3	0.0	176.3
	% Fixture	3.0	0.0	3.0
Street Side	Lumens	5744.9	0.0	5744.9
	% Fixture	97.0	0.0	97.0
Total	Lumens	5921.2	0.0	5921.2
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.0	0.8
10°-20°	158.5	2.7
20°-30°	303.3	5.1
30°-40°	504.4	8.5
40°-50°	682.5	11.5
50°-60°	1067.4	18.0
60°-70°	2194.5	37.1
70°-80°	883.0	14.9
80°-90°	81.7	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°	5921.2	100.0
0°-180°	5921.2	100.0



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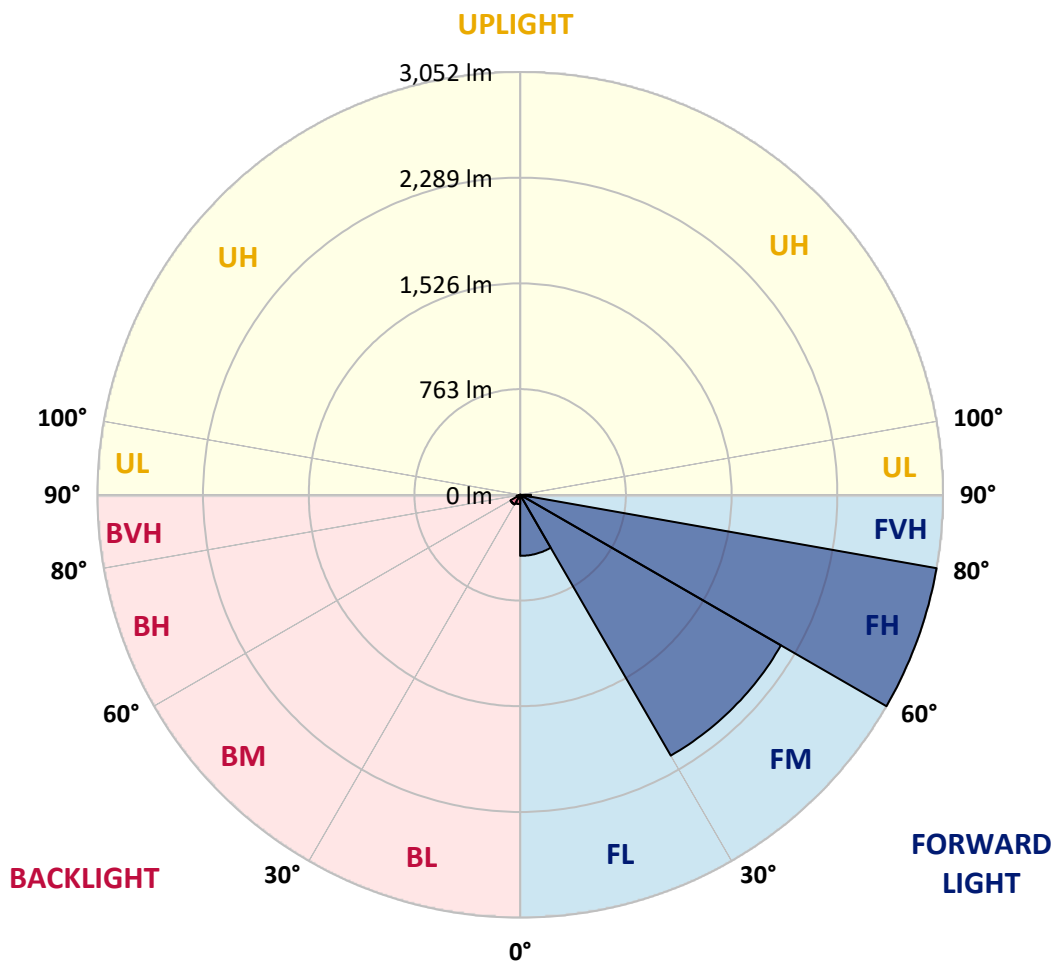
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	440.7	7.4			
FM	(30°-60°)	2173.8	36.7			
FH	(60°-80°)	3051.8	51.5			G2/5000
FVH	(80°-90°)	78.6	1.3			G1/100
BL	(0°-30°)	67.1	1.1	B0/110		
BM	(30°-60°)	80.5	1.4	B0/220		
BH	(60°-80°)	25.7	0.4	B0/110		G0/110
BVH	(80°-90°)	3.0	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°	447.2	447.2	447.2	447.2	447.2	447.2	447.2	447.2	447.2	447.2	447.2
2.5°	596.5	589.7	582.0	582.0	572.3	572.3	566.5	551.0	549.0	540.3	531.5
5°	761.5	755.6	745.9	737.2	729.4	715.9	706.1	687.7	667.4	647.9	630.5
7.5°	922.4	919.6	902.1	899.2	886.6	864.2	844.9	817.7	782.8	755.6	723.6
10°	1071.8	1065.1	1061.2	1044.7	1026.2	1002.0	971.9	938.9	898.2	855.5	809.9
12.5°	1190.2	1186.3	1168.9	1162.0	1142.6	1118.4	1080.5	1037.9	997.1	941.9	888.5
15°	1278.4	1271.6	1260.0	1249.3	1226.0	1204.7	1169.8	1123.3	1073.8	1013.6	949.6
17.5°	1352.2	1339.6	1336.6	1320.2	1295.9	1270.7	1231.9	1189.2	1131.0	1070.9	1001.0
20°	1451.1	1433.6	1427.8	1403.6	1375.4	1340.5	1295.9	1242.5	1181.5	1115.5	1043.7
22.5°	1567.5	1554.9	1542.3	1520.9	1485.1	1435.6	1370.6	1312.4	1234.8	1162.0	1084.4
25°	1732.4	1721.8	1701.4	1672.3	1627.6	1568.5	1489.9	1404.5	1313.3	1220.2	1129.1
27.5°	1892.5	1882.7	1868.2	1845.9	1795.4	1730.5	1633.4	1524.8	1409.4	1296.9	1196.0
30°	2042.8	2034.1	2019.5	1997.2	1952.6	1888.6	1778.9	1662.5	1519.0	1388.0	1266.8
32.5°	2204.8	2201.9	2185.4	2153.4	2114.6	2028.2	1909.0	1783.8	1638.3	1487.0	1345.4
35°	2388.1	2365.8	2350.3	2318.3	2252.3	2160.2	2020.5	1883.7	1730.5	1575.2	1417.1
37.5°	2543.3	2522.0	2502.6	2461.9	2381.3	2264.0	2105.8	1955.5	1797.4	1639.3	1478.3
40°	2656.8	2646.1	2622.8	2569.5	2479.3	2339.6	2168.9	2005.0	1845.9	1686.8	1527.7
42.5°	2741.2	2724.7	2698.5	2643.2	2536.5	2377.4	2194.1	2025.4	1868.2	1715.9	1559.8
45°	2772.2	2758.7	2734.4	2674.3	2558.8	2388.1	2193.1	2019.5	1869.2	1724.6	1581.1
47.5°	2753.8	2740.2	2718.9	2662.6	2549.2	2375.5	2175.7	2003.0	1859.5	1727.6	1600.5
50°	2692.7	2684.9	2668.4	2620.9	2519.0	2351.3	2160.2	1994.3	1857.5	1742.1	1627.6
52.5°	2686.9	2682.0	2661.7	2614.1	2510.3	2343.5	2158.2	1999.1	1874.0	1760.5	1647.1
55°	3283.4	3214.6	3060.3	2929.4	2714.0	2458.0	2256.2	2077.7	1943.9	1833.3	1753.7
57.5°	4666.6	4563.8	4361.1	4111.8	3617.1	3131.1	2742.2	2460.8	2322.2	2271.7	2301.8
60°	5314.6	5296.1	5264.2	5145.8	4892.6	4474.6	4009.0	3505.6	3303.8	3286.3	3347.5
62.5°	5622.1	5610.4	5620.1	5605.6	5527.0	5404.8	5270.9	5053.6	4853.8	4724.8	4451.3
65°	5763.7	5771.5	5826.7	5870.4	5880.1	5912.1	6010.1	6280.7	6478.6	6145.9	5386.4
67.5°	5403.8	5449.4	5576.5	5735.6	5921.8	6102.2	6393.2	6963.5	7370.0	6979.1	5900.5
69°	4473.6	4495.9	4806.3	5106.0	5561.0	5879.1	6301.1	7048.9	7505.8	7064.5	5859.7
70°	3522.1	3542.4	3875.1	4282.5	5051.7	5461.0	6013.0	6904.4	7378.7	6950.9	5650.2
72.5°	1588.9	1559.8	1677.1	1895.3	2731.5	3381.4	4346.5	5593.9	6087.7	5568.7	4227.2
75°	1109.6	1097.0	1109.6	1110.7	1240.6	1600.5	2019.5	3032.2	3750.0	3235.9	2019.5
77.5°	859.4	850.7	842.0	832.3	847.8	949.6	990.4	1075.7	1396.8	1321.1	770.2
80°	680.0	672.2	693.5	686.8	686.8	698.4	690.7	658.6	598.5	554.8	496.6
82.5°	316.2	318.2	318.2	345.3	416.1	485.9	508.3	476.3	422.9	359.9	290.0
85°	30.1	34.0	57.2	88.3	175.6	197.9	198.8	164.9	164.9	130.0	104.8
87.5°	0.0	1.0	1.0	1.0	8.7	24.2	20.3	5.8	2.9	2.9	4.9
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°	447.2	447.2	447.2	447.2	447.2	447.2	447.2	447.2	447.2	447.2	447.2
2.5°	516.1	513.1	501.5	489.8	479.2	467.5	456.8	446.2	434.6	425.8	415.1
5°	603.4	582.0	557.8	534.5	511.2	487.0	461.7	439.4	416.1	394.8	374.4
7.5°	691.6	649.9	616.9	575.2	537.4	499.6	464.6	428.8	395.8	364.7	335.6
10°	766.3	715.9	664.4	611.1	556.8	506.3	457.9	415.1	371.5	333.7	297.8
12.5°	827.4	763.4	700.3	633.4	572.3	508.3	448.1	396.7	345.3	302.6	265.8
15°	882.7	809.0	733.3	655.7	578.1	505.4	438.4	374.4	322.0	273.5	231.8
17.5°	927.3	842.9	757.6	670.3	586.9	501.5	425.8	358.9	297.8	247.3	206.6
20°	966.1	877.9	785.7	687.7	592.7	500.5	415.1	339.5	276.4	223.1	183.3
22.5°	1002.0	913.7	814.8	710.0	601.4	499.6	405.5	325.0	258.0	204.7	164.9
25°	1042.7	949.6	845.8	733.3	616.9	503.4	399.7	313.3	241.5	187.2	150.4
27.5°	1088.3	990.4	882.7	762.4	637.3	511.2	397.7	300.7	227.0	170.7	138.7
30°	1152.4	1038.8	919.6	791.5	655.7	519.9	395.8	292.9	212.4	158.1	127.1
32.5°	1208.6	1086.4	960.3	821.6	676.1	528.7	394.8	282.2	198.8	145.5	118.3
35°	1267.8	1130.0	995.2	850.7	693.5	538.3	393.8	274.5	186.2	132.9	109.6
37.5°	1319.2	1166.9	1022.3	875.9	712.9	547.1	394.8	267.7	174.6	122.2	101.8
40°	1362.8	1204.7	1052.5	899.2	733.3	560.6	395.8	260.9	163.0	112.5	95.0
42.5°	1401.7	1240.6	1084.4	925.4	756.6	576.2	401.6	255.1	153.2	103.8	88.3
45°	1431.7	1273.6	1119.4	962.2	794.4	601.4	412.3	251.2	143.6	96.0	82.4
47.5°	1462.7	1322.1	1178.5	1020.4	849.7	641.2	430.7	250.3	135.8	90.2	77.6
50°	1505.4	1370.6	1230.9	1079.6	900.2	681.9	453.0	251.2	126.1	84.4	72.7
52.5°	1536.5	1420.1	1298.8	1182.4	1020.4	806.0	539.3	268.7	121.3	79.6	66.9
55°	1719.8	1699.4	1702.3	1721.8	1596.6	1371.5	902.1	388.0	142.6	90.2	65.9
57.5°	2425.0	2496.8	2538.5	2537.5	2330.9	1933.2	1211.5	498.6	159.1	104.8	78.5
60°	3352.3	3298.0	3221.3	3032.2	2757.7	2206.7	1355.1	536.4	137.8	83.4	71.8
62.5°	4171.9	3853.8	3571.5	3265.0	2905.1	2301.8	1384.2	533.5	120.3	63.1	50.5
65°	4683.1	4110.8	3654.9	3270.8	2846.9	2222.2	1309.5	489.8	101.8	51.4	41.7
67.5°	4805.3	3972.1	3327.1	2837.2	2378.4	1729.5	961.3	368.6	79.6	42.7	36.8
69°	4538.6	3530.8	2756.7	2200.9	1730.5	1147.5	594.6	232.8	61.1	38.8	34.0
70°	4174.9	3071.0	2245.5	1766.3	1281.4	806.0	416.1	163.9	49.4	35.9	31.0
72.5°	2685.9	1613.1	1103.8	768.2	528.7	321.1	163.0	73.7	37.8	30.1	25.2
75°	1041.8	596.5	432.6	328.8	257.0	178.5	98.9	47.5	32.0	25.2	19.4
77.5°	513.1	392.8	321.1	220.2	128.0	79.6	53.3	36.8	26.2	18.4	12.6
80°	405.5	269.6	161.0	99.9	75.7	57.2	40.7	30.1	19.4	11.6	8.7
82.5°	207.6	113.5	83.4	67.9	56.3	44.6	33.0	21.4	12.6	7.7	6.8
85°	65.0	47.5	42.7	41.7	38.8	32.0	23.3	13.6	7.7	4.9	4.9
87.5°	4.9	6.8	8.7	6.8	7.7	6.8	8.7	5.8	3.9	3.9	2.9
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°	447.2	447.2	447.2	447.2	447.2	447.2	447.2	447.2	447.2	447.2	447.2
2.5°	407.4	395.8	385.1	378.3	365.7	360.8	356.0	354.1	345.3	347.3	339.5
5°	356.0	335.6	320.1	304.6	290.0	279.4	270.6	260.0	251.2	247.3	239.6
7.5°	309.4	283.3	262.9	246.4	228.9	215.3	203.7	196.0	188.2	180.4	176.5
10°	268.7	240.5	217.3	200.8	184.3	172.7	163.9	158.1	153.2	150.4	149.4
12.5°	230.9	203.7	182.3	167.8	155.2	149.4	145.5	142.6	141.6	140.6	140.6
15°	201.8	174.6	158.1	147.4	141.6	138.7	137.8	135.8	133.9	132.9	132.9
17.5°	174.6	154.2	142.6	136.7	133.9	131.9	130.0	128.0	126.1	125.1	125.1
20°	156.2	139.7	133.9	130.0	127.1	125.1	122.2	120.3	119.3	118.3	117.4
22.5°	141.6	130.9	127.1	124.1	120.3	117.4	115.4	113.5	111.5	110.6	109.6
25°	130.9	124.1	121.3	117.4	113.5	110.6	107.6	104.8	102.8	101.8	99.9
27.5°	123.2	118.3	114.5	109.6	105.7	102.8	99.9	97.0	95.0	93.1	92.2
30°	116.4	111.5	106.7	102.8	98.0	95.0	91.2	88.3	87.3	85.4	83.4
32.5°	109.6	104.8	99.9	95.0	90.2	86.3	84.4	80.5	78.5	77.6	75.7
35°	101.8	97.0	91.2	87.3	82.4	78.5	75.7	72.7	70.8	68.9	67.9
37.5°	95.0	89.2	83.4	78.5	74.7	70.8	67.9	65.0	63.1	61.1	60.1
40°	87.3	81.5	75.7	70.8	66.9	64.0	61.1	58.2	56.3	55.3	55.3
42.5°	80.5	73.7	67.9	64.0	61.1	57.2	54.3	51.4	50.5	49.4	50.5
45°	73.7	66.9	62.1	58.2	55.3	51.4	48.5	46.6	45.6	46.6	47.5
47.5°	67.9	61.1	56.3	53.3	50.5	47.5	44.6	42.7	42.7	44.6	46.6
50°	62.1	55.3	51.4	49.4	46.6	43.6	39.8	38.8	39.8	41.7	43.6
52.5°	56.3	48.5	45.6	44.6	41.7	38.8	35.9	34.9	35.9	37.8	36.8
55°	50.5	42.7	41.7	40.7	37.8	34.0	31.0	31.0	31.0	30.1	28.1
57.5°	48.5	37.8	36.8	35.9	33.0	29.1	27.2	25.2	24.2	21.4	20.3
60°	50.5	34.0	34.0	32.0	29.1	25.2	22.3	19.4	17.5	15.5	15.5
62.5°	40.7	31.0	30.1	28.1	24.2	20.3	17.5	14.5	13.6	12.6	12.6
65°	33.0	28.1	26.2	23.3	20.3	16.5	13.6	11.6	10.7	10.7	11.6
67.5°	30.1	25.2	22.3	19.4	16.5	12.6	10.7	9.7	9.7	10.7	10.7
69°	28.1	23.3	20.3	17.5	14.5	11.6	9.7	9.7	9.7	9.7	10.7
70°	26.2	22.3	19.4	16.5	12.6	9.7	8.7	8.7	9.7	9.7	10.7
72.5°	20.3	17.5	16.5	13.6	9.7	8.7	7.7	8.7	8.7	9.7	9.7
75°	15.5	12.6	12.6	10.7	7.7	6.8	6.8	7.7	7.7	8.7	8.7
77.5°	10.7	8.7	8.7	7.7	6.8	5.8	5.8	6.8	7.7	7.7	8.7
80°	7.7	6.8	5.8	6.8	5.8	4.9	5.8	6.8	6.8	7.7	7.7
82.5°	5.8	5.8	5.8	5.8	4.9	4.9	5.8	5.8	6.8	7.7	7.7
85°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	5.8	5.8	6.8	6.8
87.5°	2.9	2.9	2.9	3.9	3.9	4.9	4.9	4.9	4.9	5.8	5.8
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):

	165°	170°	175°	180°
0°	447.2	447.2	447.2	447.2
2.5°	337.6	336.6	332.7	333.7
5°	236.7	230.9	234.7	233.8
7.5°	173.6	172.7	171.7	173.6
10°	148.4	148.4	147.4	148.4
12.5°	139.7	139.7	139.7	139.7
15°	132.9	132.9	131.9	131.9
17.5°	125.1	125.1	125.1	124.1
20°	117.4	116.4	116.4	116.4
22.5°	108.7	107.6	107.6	107.6
25°	99.9	98.9	98.9	98.9
27.5°	91.2	90.2	89.2	89.2
30°	82.4	81.5	80.5	80.5
32.5°	73.7	72.7	71.8	71.8
35°	65.9	65.9	65.0	64.0
37.5°	59.2	59.2	59.2	59.2
40°	54.3	55.3	55.3	55.3
42.5°	51.4	52.4	53.3	54.3
45°	49.4	51.4	52.4	52.4
47.5°	48.5	49.4	50.5	50.5
50°	44.6	43.6	43.6	43.6
52.5°	35.9	34.0	33.0	32.0
55°	26.2	25.2	23.3	23.3
57.5°	18.4	18.4	17.5	17.5
60°	14.5	14.5	13.6	14.5
62.5°	12.6	12.6	12.6	12.6
65°	11.6	11.6	11.6	11.6
67.5°	11.6	11.6	11.6	11.6
69°	10.7	10.7	10.7	10.7
70°	10.7	10.7	10.7	10.7
72.5°	9.7	9.7	9.7	9.7
75°	8.7	9.7	9.7	9.7
77.5°	8.7	8.7	8.7	8.7
80°	7.7	7.7	8.7	8.7
82.5°	7.7	7.7	7.7	7.7
85°	6.8	6.8	7.7	7.7
87.5°	5.8	5.8	6.8	6.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)