

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: P163812

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P163812  
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-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) 4000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4888.1 lumens  
Efficiency: N/A  
Efficacy: 62.4 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

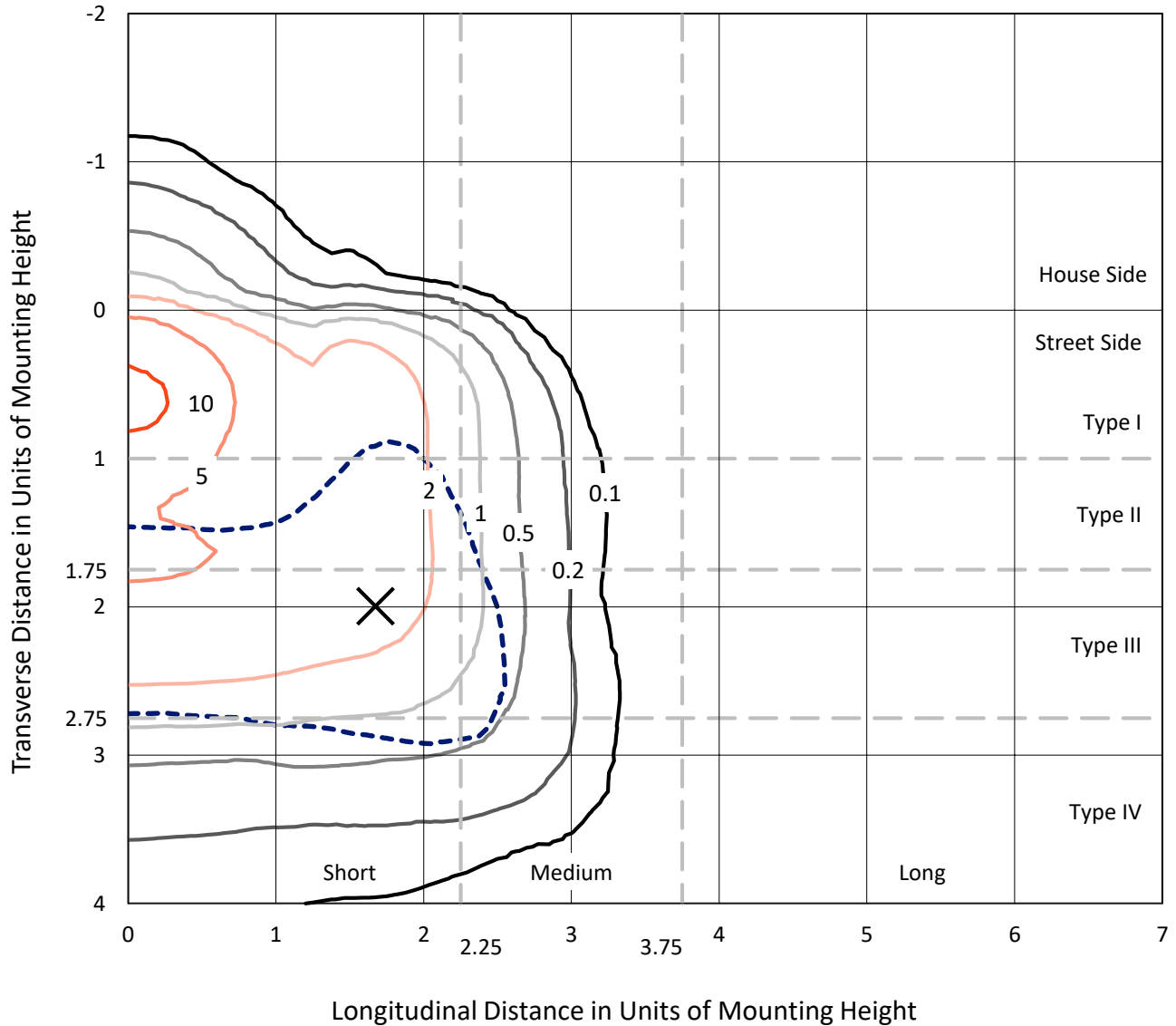
Input Watts (W): 78.3  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

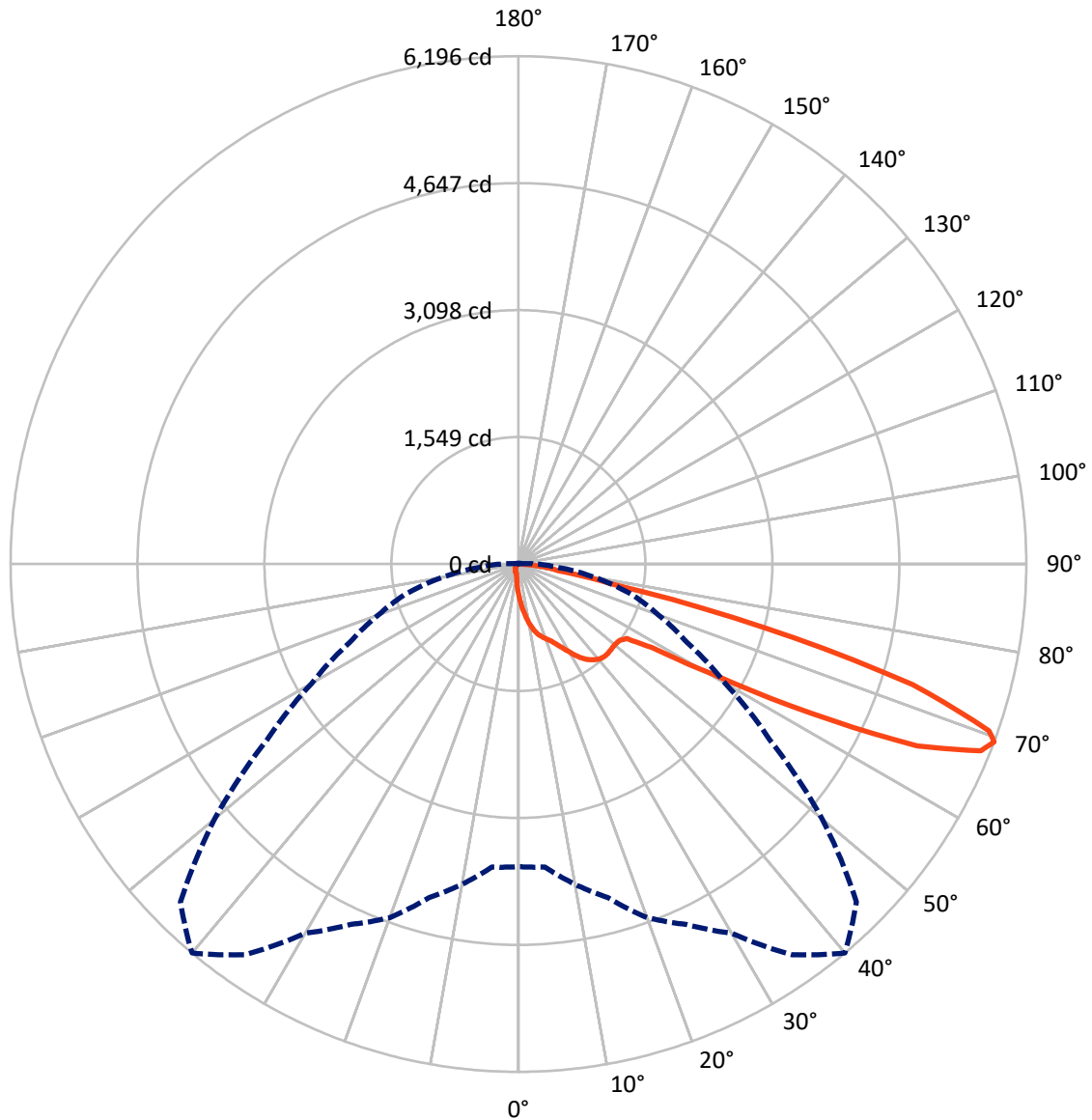
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 10.9 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	145.5	0.0	145.5
	% Fixture	3.0	0.0	3.0
<b>Street Side</b>	Lumens	4742.6	0.0	4742.6
	% Fixture	97.0	0.0	97.0
<b>Total</b>	Lumens	4888.1	0.0	4888.1
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.9	0.8
10°-20°	130.8	2.7
20°-30°	250.4	5.1
30°-40°	416.4	8.5
40°-50°	563.4	11.5
50°-60°	881.1	18.0
60°-70°	1811.6	37.1
70°-80°	729.0	14.9
80°-90°	67.4	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°	4888.1	100.0
0°-180°	4888.1	100.0



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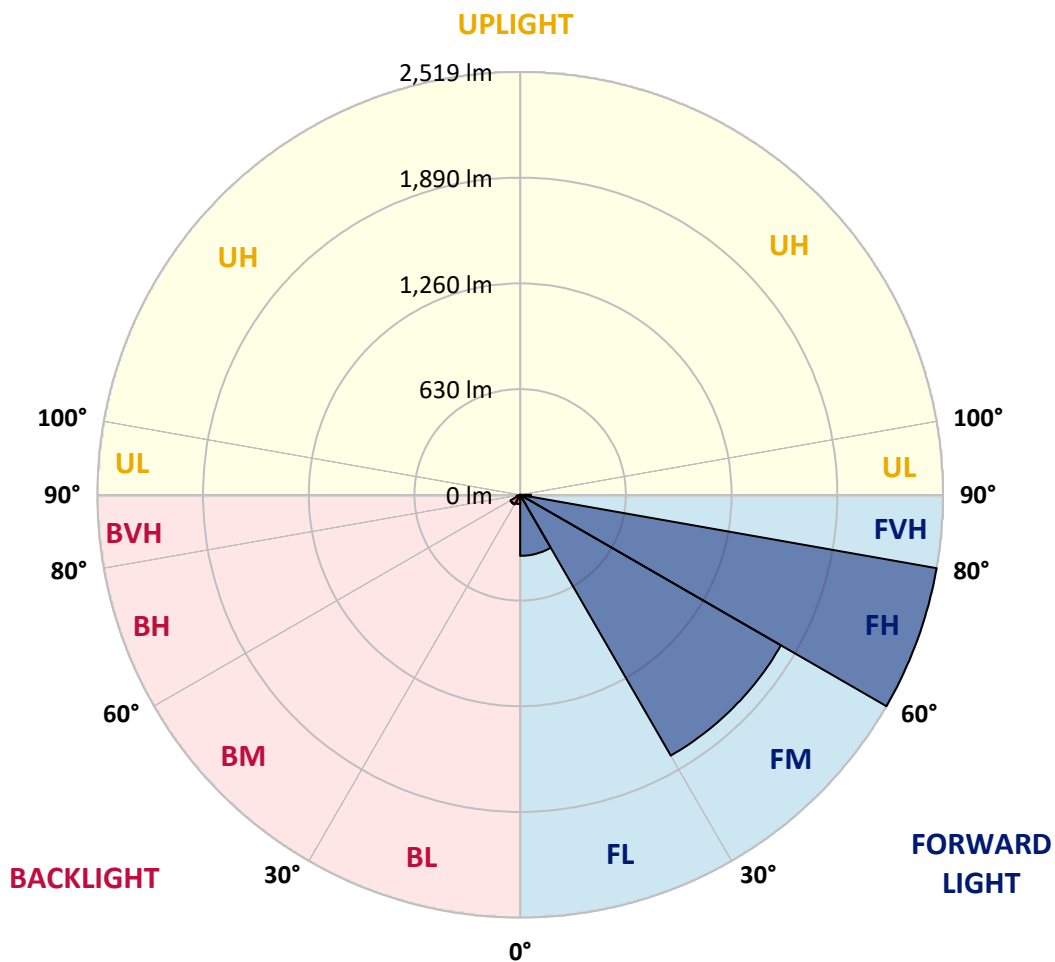
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	363.8	7.4			
FM	(30°-60°)	1794.5	36.7			
FH	(60°-80°)	2519.4	51.5			G2/5000
FVH	(80°-90°)	64.9	1.3			G1/100
BL	(0°-30°)	55.4	1.1	B0/110		
BM	(30°-60°)	66.4	1.4	B0/220		
BH	(60°-80°)	21.2	0.4	B0/110		G0/110
BVH	(80°-90°)	2.5	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°	369.2	369.2	369.2	369.2	369.2	369.2	369.2	369.2	369.2	369.2	369.2
2.5°	492.4	486.8	480.5	480.5	472.4	472.4	467.6	454.8	453.2	446.0	438.8
5°	628.6	623.8	615.8	608.6	602.2	591.0	582.9	567.7	550.9	534.9	520.5
7.5°	761.5	759.1	744.7	742.3	731.9	713.5	697.5	675.0	646.2	623.8	597.3
10°	884.8	879.2	876.0	862.4	847.2	827.2	802.4	775.1	741.5	706.3	668.6
12.5°	982.5	979.3	964.9	959.3	943.3	923.3	892.0	856.8	823.2	777.5	733.5
15°	1055.4	1049.8	1040.2	1031.3	1012.1	994.5	965.7	927.3	886.4	836.8	783.9
17.5°	1116.2	1105.8	1103.4	1089.8	1069.8	1049.0	1016.9	981.7	933.7	884.0	826.4
20°	1197.9	1183.5	1178.7	1158.7	1135.5	1106.6	1069.8	1025.7	975.3	920.8	861.6
22.5°	1294.0	1283.6	1273.2	1255.6	1226.0	1185.1	1131.4	1083.4	1019.4	959.3	895.2
25°	1430.1	1421.4	1404.5	1380.5	1343.6	1294.8	1230.0	1159.5	1084.2	1007.3	932.1
27.5°	1562.3	1554.2	1542.3	1523.8	1482.2	1428.5	1348.4	1258.8	1163.5	1070.6	987.3
30°	1686.4	1679.2	1667.2	1648.8	1611.9	1559.1	1468.6	1372.5	1254.0	1145.9	1045.8
32.5°	1820.1	1817.7	1804.1	1777.7	1745.6	1674.4	1575.9	1472.6	1352.5	1227.5	1110.6
35°	1971.5	1953.0	1940.2	1913.8	1859.4	1783.3	1668.0	1555.0	1428.5	1300.4	1169.9
37.5°	2099.6	2082.0	2066.0	2032.3	1965.9	1869.0	1738.4	1614.3	1483.8	1353.2	1220.4
40°	2193.3	2184.4	2165.2	2121.2	2046.7	1931.4	1790.5	1655.1	1523.8	1392.5	1261.2
42.5°	2262.9	2249.3	2227.7	2182.1	2093.9	1962.6	1811.3	1672.0	1542.3	1416.6	1287.6
45°	2288.6	2277.4	2257.3	2207.7	2112.4	1971.5	1810.5	1667.2	1543.1	1423.7	1305.2
47.5°	2273.3	2262.1	2244.5	2198.1	2104.4	1961.1	1796.1	1653.6	1535.0	1426.2	1321.3
50°	2222.9	2216.5	2202.9	2163.6	2079.5	1941.0	1783.3	1646.3	1533.4	1438.1	1343.6
52.5°	2218.1	2214.1	2197.3	2158.0	2072.3	1934.6	1781.6	1650.3	1547.1	1453.4	1359.7
55°	2710.6	2653.7	2526.4	2418.3	2240.5	2029.1	1862.5	1715.2	1604.7	1513.4	1447.8
57.5°	3852.4	3767.5	3600.2	3394.4	2986.0	2584.8	2263.7	2031.5	1917.0	1875.4	1900.2
60°	4387.3	4372.1	4345.7	4248.0	4039.0	3693.9	3309.5	2893.9	2727.4	2712.9	2763.4
62.5°	4641.2	4631.5	4639.6	4627.5	4562.7	4461.8	4351.3	4171.9	4006.9	3900.5	3674.6
65°	4758.0	4764.5	4810.1	4846.2	4854.1	4880.6	4961.5	5184.9	5348.2	5073.6	4446.6
67.5°	4461.0	4498.6	4603.5	4734.9	4888.6	5037.5	5277.7	5748.6	6084.1	5761.4	4871.0
69°	3693.1	3711.5	3967.7	4215.1	4590.7	4853.3	5201.7	5819.1	6196.2	5831.9	4837.3
70°	2907.5	2924.3	3199.0	3535.3	4170.3	4508.2	4963.8	5699.7	6091.3	5738.2	4664.4
72.5°	1311.6	1287.6	1384.5	1564.7	2254.9	2791.4	3588.2	4617.9	5025.5	4597.1	3489.7
75°	916.0	905.6	916.0	916.9	1024.2	1321.3	1667.2	2503.1	3095.7	2671.3	1667.2
77.5°	709.5	702.3	695.1	687.1	699.9	783.9	817.6	888.1	1153.1	1090.6	635.8
80°	561.3	554.9	572.5	566.9	566.9	576.5	570.2	543.7	494.1	458.0	410.0
82.5°	261.0	262.7	262.7	285.1	343.5	401.2	419.6	393.2	349.1	297.1	239.4
85°	24.8	28.0	47.3	72.9	144.9	163.4	164.1	136.1	136.1	107.3	86.5
87.5°	0.0	0.8	0.8	0.8	7.2	20.0	16.8	4.8	2.4	2.4	4.0
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	369.2	369.2	369.2	369.2	369.2	369.2	369.2	369.2	369.2	369.2	369.2
2.5°	426.0	423.6	414.0	404.4	395.6	385.9	377.1	368.4	358.8	351.5	342.7
5°	498.1	480.5	460.4	441.2	422.0	402.0	381.1	362.7	343.5	325.9	309.1
7.5°	570.9	536.5	509.3	474.9	443.6	412.4	383.6	354.0	326.7	301.1	277.1
10°	632.6	591.0	548.5	504.5	459.7	418.0	378.0	342.7	306.7	275.4	245.8
12.5°	683.0	630.2	578.1	522.9	472.4	419.6	370.0	327.5	285.1	249.8	219.4
15°	728.7	667.8	605.4	541.3	477.2	417.2	361.9	309.1	265.8	225.8	191.4
17.5°	765.5	695.9	625.4	553.3	484.5	414.0	351.5	296.3	245.8	204.2	170.5
20°	797.6	724.7	648.6	567.7	489.3	413.2	342.7	280.2	228.2	184.2	151.3
22.5°	827.2	754.3	672.6	586.2	496.5	412.4	334.7	268.3	213.0	169.0	136.1
25°	860.8	783.9	698.2	605.4	509.3	415.6	329.9	258.7	199.4	154.5	124.1
27.5°	898.5	817.6	728.7	629.4	526.1	422.0	328.3	248.3	187.4	140.9	114.5
30°	951.3	857.6	759.1	653.4	541.3	429.2	326.7	241.8	175.3	130.5	104.9
32.5°	997.7	896.8	792.8	678.2	558.1	436.4	325.9	233.0	164.1	120.1	97.7
35°	1046.6	932.9	821.6	702.3	572.5	444.4	325.1	226.6	153.7	109.7	90.5
37.5°	1089.0	963.3	844.0	723.1	588.5	451.6	325.9	221.0	144.1	100.9	84.1
40°	1125.1	994.5	868.8	742.3	605.4	462.8	326.7	215.4	134.5	92.9	78.5
42.5°	1157.1	1024.2	895.2	763.9	624.6	475.7	331.5	210.6	126.5	85.7	72.9
45°	1181.9	1051.4	924.1	794.3	655.8	496.5	340.3	207.4	118.5	79.3	68.1
47.5°	1207.5	1091.4	972.9	842.4	701.5	529.3	355.5	206.6	112.1	74.4	64.0
50°	1242.7	1131.4	1016.1	891.2	743.1	562.9	374.0	207.4	104.1	69.6	60.0
52.5°	1268.4	1172.3	1072.2	976.1	842.4	665.4	445.2	221.8	100.1	65.7	55.2
55°	1419.7	1402.9	1405.3	1421.4	1318.0	1132.2	744.7	320.3	117.7	74.4	54.4
57.5°	2001.9	2061.2	2095.6	2094.8	1924.2	1595.9	1000.1	411.6	131.3	86.5	64.8
60°	2767.4	2722.5	2659.3	2503.1	2276.5	1821.7	1118.7	442.8	113.7	68.8	59.2
62.5°	3444.0	3181.4	2948.4	2695.3	2398.3	1900.2	1142.7	440.4	99.3	52.1	41.7
65°	3866.0	3393.6	3017.2	2700.1	2350.2	1834.5	1081.0	404.4	84.1	42.4	34.4
67.5°	3966.9	3279.1	2746.6	2342.2	1963.4	1427.7	793.5	304.3	65.7	35.2	30.4
69°	3746.7	2914.7	2275.7	1816.9	1428.5	947.3	490.9	192.2	50.4	32.0	28.0
70°	3446.5	2535.2	1853.7	1458.2	1057.8	665.4	343.5	135.3	40.8	29.6	25.6
72.5°	2217.3	1331.7	911.2	634.2	436.4	265.0	134.5	60.9	31.2	24.8	20.8
75°	860.0	492.4	357.1	271.4	212.2	147.4	81.7	39.2	26.4	20.8	16.0
77.5°	423.6	324.3	265.0	181.8	105.7	65.7	44.0	30.4	21.6	15.2	10.4
80°	334.7	222.6	132.9	82.5	62.5	47.3	33.6	24.8	16.0	9.6	7.2
82.5°	171.4	93.7	68.8	56.1	46.5	36.9	27.2	17.6	10.4	6.4	5.6
85°	53.6	39.2	35.2	34.4	32.0	26.4	19.2	11.2	6.4	4.0	4.0
87.5°	4.0	5.6	7.2	5.6	6.4	5.6	7.2	4.8	3.2	3.2	2.4
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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	369.2	369.2	369.2	369.2	369.2	369.2	369.2	369.2	369.2	369.2	369.2
2.5°	336.3	326.7	317.9	312.3	301.9	297.9	293.9	292.3	285.1	286.7	280.2
5°	293.9	277.1	264.3	251.4	239.4	230.6	223.4	214.6	207.4	204.2	197.8
7.5°	255.4	233.8	217.0	203.4	189.0	177.8	168.2	161.8	155.3	148.9	145.7
10°	221.8	198.6	179.4	165.7	152.2	142.6	135.3	130.5	126.5	124.1	123.3
12.5°	190.6	168.2	150.5	138.5	128.1	123.3	120.1	117.7	116.9	116.1	116.1
15°	166.6	144.1	130.5	121.7	116.9	114.5	113.7	112.1	110.5	109.7	109.7
17.5°	144.1	127.3	117.7	112.9	110.5	108.9	107.3	105.7	104.1	103.3	103.3
20°	128.9	115.3	110.5	107.3	104.9	103.3	100.9	99.3	98.5	97.7	96.9
22.5°	116.9	108.1	104.9	102.5	99.3	96.9	95.3	93.7	92.1	91.3	90.5
25°	108.1	102.5	100.1	96.9	93.7	91.3	88.9	86.5	84.9	84.1	82.5
27.5°	101.7	97.7	94.5	90.5	87.3	84.9	82.5	80.1	78.5	76.9	76.1
30°	96.1	92.1	88.1	84.9	80.9	78.5	75.3	72.9	72.1	70.5	68.8
32.5°	90.5	86.5	82.5	78.5	74.4	71.3	69.6	66.5	64.8	64.0	62.5
35°	84.1	80.1	75.3	72.1	68.1	64.8	62.5	60.0	58.4	56.9	56.1
37.5°	78.5	73.7	68.8	64.8	61.7	58.4	56.1	53.6	52.1	50.4	49.6
40°	72.1	67.3	62.5	58.4	55.2	52.9	50.4	48.0	46.5	45.6	45.6
42.5°	66.5	60.9	56.1	52.9	50.4	47.3	44.8	42.4	41.7	40.8	41.7
45°	60.9	55.2	51.3	48.0	45.6	42.4	40.0	38.4	37.6	38.4	39.2
47.5°	56.1	50.4	46.5	44.0	41.7	39.2	36.9	35.2	35.2	36.9	38.4
50°	51.3	45.6	42.4	40.8	38.4	36.0	32.8	32.0	32.8	34.4	36.0
52.5°	46.5	40.0	37.6	36.9	34.4	32.0	29.6	28.8	29.6	31.2	30.4
55°	41.7	35.2	34.4	33.6	31.2	28.0	25.6	25.6	25.6	24.8	23.2
57.5°	40.0	31.2	30.4	29.6	27.2	24.0	22.4	20.8	20.0	17.6	16.8
60°	41.7	28.0	28.0	26.4	24.0	20.8	18.4	16.0	14.4	12.8	12.8
62.5°	33.6	25.6	24.8	23.2	20.0	16.8	14.4	12.0	11.2	10.4	10.4
65°	27.2	23.2	21.6	19.2	16.8	13.6	11.2	9.6	8.8	8.8	9.6
67.5°	24.8	20.8	18.4	16.0	13.6	10.4	8.8	8.0	8.0	8.8	8.8
69°	23.2	19.2	16.8	14.4	12.0	9.6	8.0	8.0	8.0	8.0	8.8
70°	21.6	18.4	16.0	13.6	10.4	8.0	7.2	7.2	8.0	8.0	8.8
72.5°	16.8	14.4	13.6	11.2	8.0	7.2	6.4	7.2	7.2	8.0	8.0
75°	12.8	10.4	10.4	8.8	6.4	5.6	5.6	6.4	6.4	7.2	7.2
77.5°	8.8	7.2	7.2	6.4	5.6	4.8	4.8	5.6	6.4	6.4	7.2
80°	6.4	5.6	4.8	5.6	4.8	4.0	4.8	5.6	5.6	6.4	6.4
82.5°	4.8	4.8	4.8	4.8	4.0	4.0	4.8	4.8	5.6	6.4	6.4
85°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.8	4.8	5.6	5.6
87.5°	2.4	2.4	2.4	3.2	3.2	4.0	4.0	4.0	4.0	4.8	4.8
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°	369.2	369.2	369.2	369.2
2.5°	278.7	277.9	274.7	275.4
5°	195.4	190.6	193.8	193.0
7.5°	143.3	142.6	141.7	143.3
10°	122.5	122.5	121.7	122.5
12.5°	115.3	115.3	115.3	115.3
15°	109.7	109.7	108.9	108.9
17.5°	103.3	103.3	103.3	102.5
20°	96.9	96.1	96.1	96.1
22.5°	89.7	88.9	88.9	88.9
25°	82.5	81.7	81.7	81.7
27.5°	75.3	74.4	73.7	73.7
30°	68.1	67.3	66.5	66.5
32.5°	60.9	60.0	59.2	59.2
35°	54.4	54.4	53.6	52.9
37.5°	48.8	48.8	48.8	48.8
40°	44.8	45.6	45.6	45.6
42.5°	42.4	43.2	44.0	44.8
45°	40.8	42.4	43.2	43.2
47.5°	40.0	40.8	41.7	41.7
50°	36.9	36.0	36.0	36.0
52.5°	29.6	28.0	27.2	26.4
55°	21.6	20.8	19.2	19.2
57.5°	15.2	15.2	14.4	14.4
60°	12.0	12.0	11.2	12.0
62.5°	10.4	10.4	10.4	10.4
65°	9.6	9.6	9.6	9.6
67.5°	9.6	9.6	9.6	9.6
69°	8.8	8.8	8.8	8.8
70°	8.8	8.8	8.8	8.8
72.5°	8.0	8.0	8.0	8.0
75°	7.2	8.0	8.0	8.0
77.5°	7.2	7.2	7.2	7.2
80°	6.4	6.4	7.2	7.2
82.5°	6.4	6.4	6.4	6.4
85°	5.6	5.6	6.4	6.4
87.5°	4.8	4.8	5.6	5.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)