

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: P163827

Luminaire Tested: **LDRL-SL4-E05-E-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P163827  
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-E05-E-HSS  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(5) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL AND HOUSE SIDE SHIELD  
Light Source: (105) 4000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9868.7 lumens  
Efficiency: N/A  
Efficacy: 77.5 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.83' x L: 1' x H: 0.1')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B1 - U0 - G3

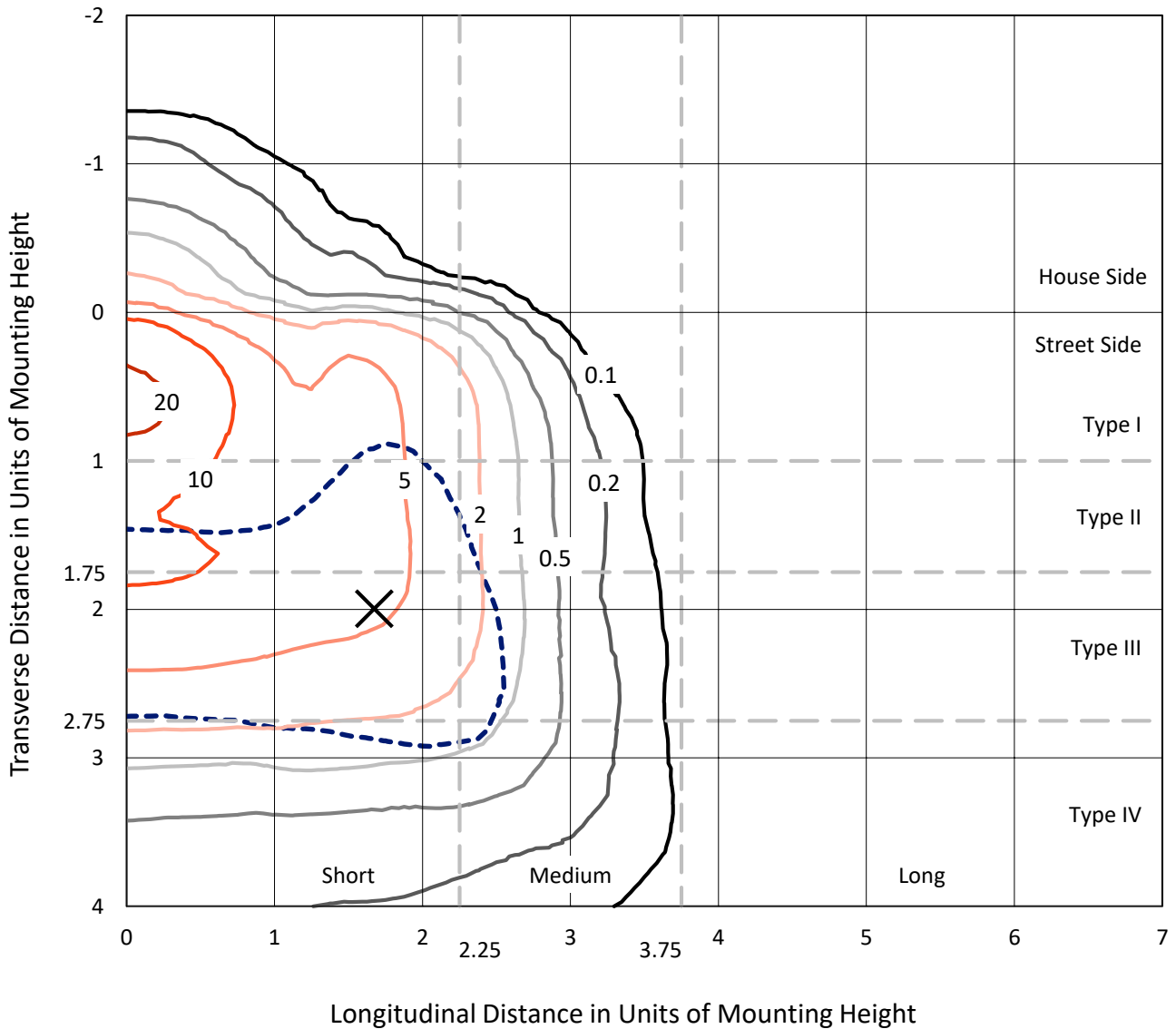
Input Watts (W): 127.3  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

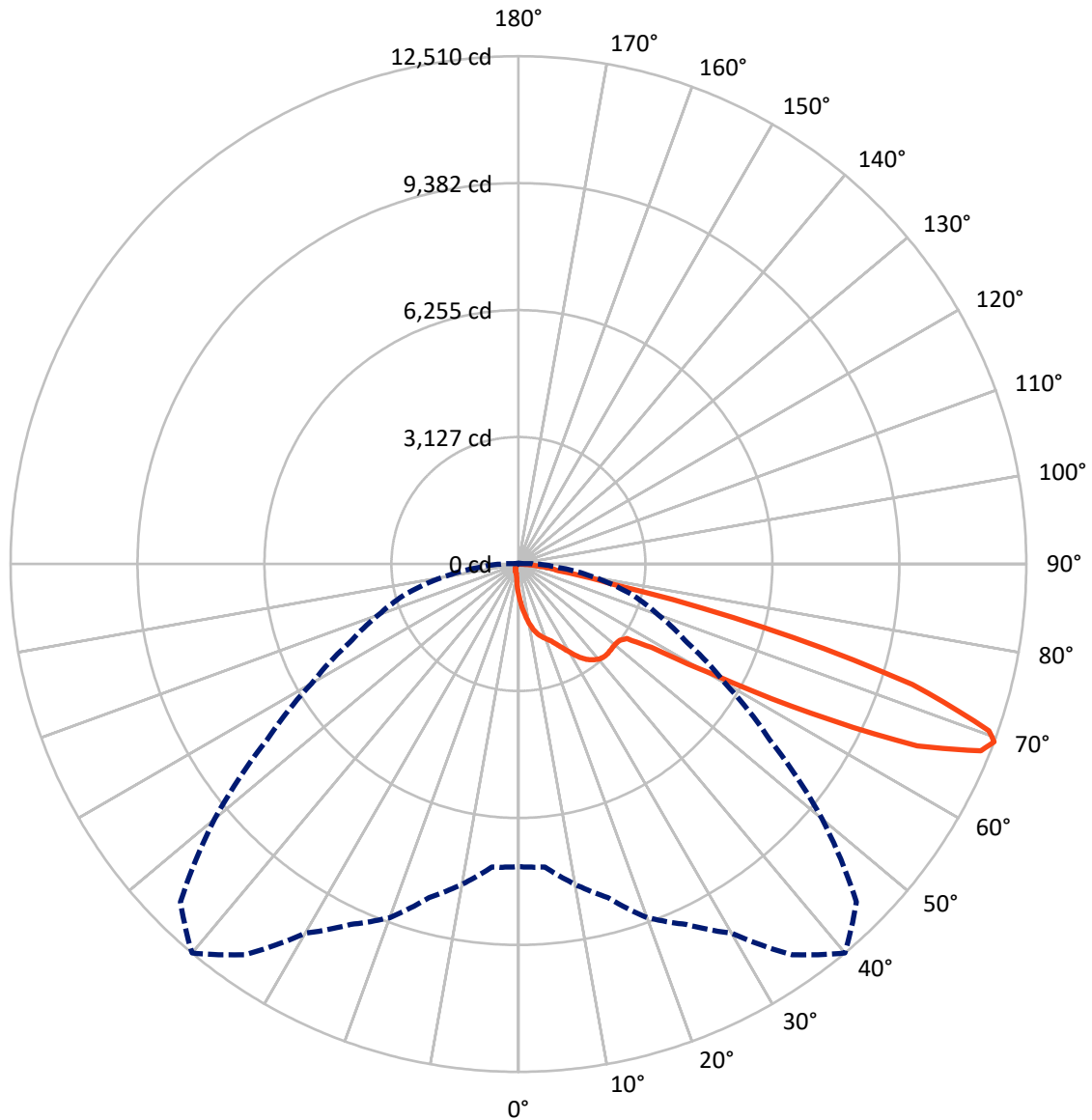
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 22.1 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	293.9	0.0	293.9
	% Fixture	3.0	0.0	3.0
<b>Street Side</b>	Lumens	9574.8	0.0	9574.8
	% Fixture	97.0	0.0	97.0
<b>Total</b>	Lumens	9868.7	0.0	9868.7
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	76.6	0.8
10°-20°	264.1	2.7
20°-30°	505.5	5.1
30°-40°	840.6	8.5
40°-50°	1137.5	11.5
50°-60°	1779.0	18.0
60°-70°	3657.5	37.1
70°-80°	1471.7	14.9
80°-90°	136.1	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°	9868.7	100.0
0°-180°	9868.7	100.0



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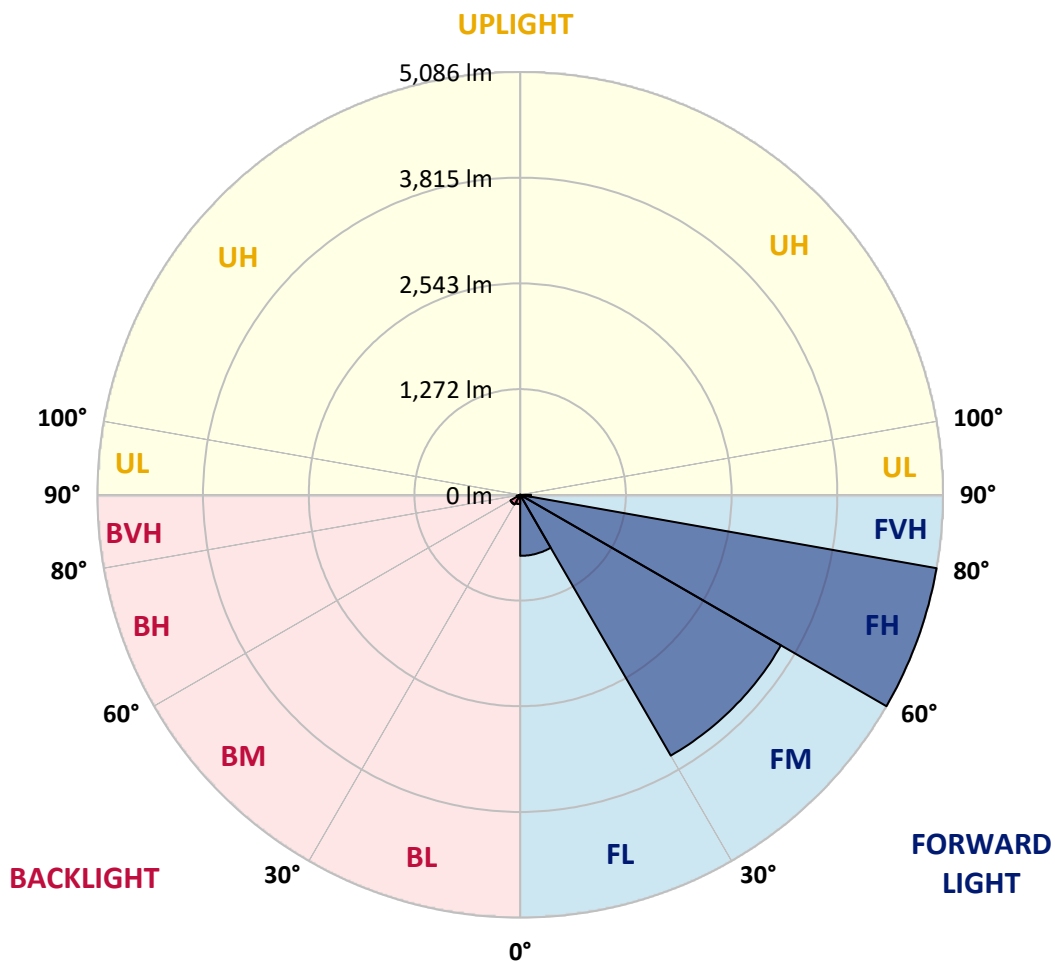
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	734.4	7.4			
FM (30°-60°)	3623.0	36.7			
FH (60°-80°)	5086.4	51.5			G3/7500
FVH (80°-90°)	131.1	1.3			G2/225
BL (0°-30°)	111.8	1.1	B1/500		
BM (30°-60°)	134.2	1.4	B0/220		
BH (60°-80°)	42.9	0.4	B0/110		G0/110
BVH (80°-90°)	5.1	0.1			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	745.3	745.3	745.3	745.3	745.3	745.3	745.3	745.3	745.3	745.3	745.3
2.5°	994.2	982.9	970.0	970.0	953.8	953.8	944.1	918.3	915.0	900.5	885.9
5°	1269.1	1259.4	1243.2	1228.7	1215.7	1193.1	1176.9	1146.2	1112.3	1079.9	1050.8
7.5°	1537.4	1532.6	1503.5	1498.6	1477.6	1440.4	1408.1	1362.8	1304.6	1259.4	1206.0
10°	1786.4	1775.1	1768.6	1741.1	1710.4	1670.0	1619.9	1564.9	1497.0	1425.9	1349.9
12.5°	1983.6	1977.2	1948.1	1936.7	1904.4	1864.0	1800.9	1729.8	1661.9	1569.8	1480.9
15°	2130.7	2119.4	2100.0	2082.2	2043.4	2007.9	1949.7	1872.1	1789.6	1689.4	1582.7
17.5°	2253.6	2232.6	2227.7	2200.3	2159.8	2117.8	2053.1	1982.0	1885.0	1784.8	1668.4
20°	2418.5	2389.4	2379.7	2339.3	2292.4	2234.2	2159.8	2070.9	1969.1	1859.1	1739.5
22.5°	2612.5	2591.5	2570.5	2534.9	2475.1	2392.6	2284.3	2187.3	2058.0	1936.7	1807.4
25°	2887.3	2869.6	2835.6	2787.1	2712.7	2614.1	2483.2	2340.9	2188.9	2033.7	1881.8
27.5°	3154.1	3137.9	3113.7	3076.5	2992.4	2884.1	2722.4	2541.4	2349.0	2161.5	1993.3
30°	3404.7	3390.1	3365.9	3328.7	3254.3	3147.6	2964.9	2770.9	2531.7	2313.4	2111.3
32.5°	3674.6	3669.8	3642.3	3589.0	3524.3	3380.4	3181.6	2973.0	2730.5	2478.3	2242.3
35°	3980.2	3943.0	3917.1	3863.8	3753.9	3600.3	3367.5	3139.5	2884.1	2625.4	2361.9
37.5°	4238.9	4203.3	4171.0	4103.1	3968.9	3773.3	3509.7	3259.2	2995.7	2732.1	2463.8
40°	4428.0	4410.2	4371.4	4282.5	4132.2	3899.4	3614.8	3341.6	3076.5	2811.4	2546.2
42.5°	4568.7	4541.2	4497.5	4405.4	4227.5	3962.4	3656.9	3375.6	3113.7	2859.9	2599.6
45°	4620.4	4597.8	4557.3	4457.1	4264.7	3980.2	3655.2	3365.9	3115.3	2874.4	2635.1
47.5°	4589.7	4567.0	4531.5	4437.7	4248.6	3959.2	3626.1	3338.4	3099.1	2879.3	2667.5
50°	4487.8	4474.9	4447.4	4368.2	4198.4	3918.8	3600.3	3323.8	3095.9	2903.5	2712.7
52.5°	4478.1	4470.0	4436.1	4356.9	4183.9	3905.8	3597.0	3331.9	3123.4	2934.2	2745.1
55°	5472.4	5357.6	5100.5	4882.3	4523.4	4096.6	3760.3	3462.9	3239.8	3055.5	2922.9
57.5°	7777.7	7606.3	7268.5	6853.0	6028.5	5218.5	4570.3	4101.4	3870.3	3786.2	3836.3
60°	8857.6	8826.9	8773.6	8576.3	8154.4	7457.6	6681.6	5842.6	5506.3	5477.2	5579.1
62.5°	9370.1	9350.7	9366.9	9342.6	9211.7	9008.0	8784.9	8422.7	8089.7	7874.7	7418.8
65°	9606.1	9619.1	9711.2	9784.0	9800.1	9853.5	10016.8	10467.8	10797.6	10243.1	8977.3
67.5°	9006.4	9082.3	9294.1	9559.3	9869.6	10170.3	10655.3	11605.9	12283.3	11631.8	9834.1
69°	7456.0	7493.2	8010.5	8510.0	9268.3	9798.5	10501.8	11748.2	12509.6	11774.1	9766.2
70°	5870.1	5904.0	6458.5	7137.5	8419.5	9101.7	10021.6	11507.3	12297.9	11584.9	9417.0
72.5°	2648.1	2599.6	2795.2	3158.9	4552.5	5635.6	7244.2	9323.2	10146.1	9281.2	7045.4
75°	1849.4	1828.4	1849.4	1851.1	2067.7	2667.5	3365.9	5053.6	6250.0	5393.1	3365.9
77.5°	1432.4	1417.8	1403.3	1387.1	1413.0	1582.7	1650.6	1792.9	2328.0	2201.9	1283.6
80°	1133.3	1120.3	1155.9	1144.6	1144.6	1164.0	1151.1	1097.7	997.5	924.7	827.7
82.5°	527.0	530.3	530.3	575.5	693.5	809.9	847.1	793.8	704.9	599.8	483.4
85°	50.1	56.6	95.4	147.1	292.6	329.8	331.4	274.8	274.8	216.6	174.6
87.5°	0.0	1.6	1.6	1.6	14.5	40.4	33.9	9.7	4.8	4.8	8.1
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	745.3	745.3	745.3	745.3	745.3	745.3	745.3	745.3	745.3	745.3	745.3
2.5°	860.1	855.2	835.8	816.4	798.6	779.2	761.4	743.7	724.3	709.7	691.9
5°	1005.6	970.0	929.6	890.8	852.0	811.6	769.5	732.3	693.5	658.0	624.0
7.5°	1152.7	1083.2	1028.2	958.7	895.6	832.6	774.4	714.6	659.6	607.9	559.4
10°	1277.2	1193.1	1107.4	1018.5	928.0	843.9	763.1	691.9	619.2	556.1	496.3
12.5°	1379.0	1272.3	1167.2	1055.7	953.8	847.1	746.9	661.2	575.5	504.4	443.0
15°	1471.2	1348.3	1222.2	1092.9	963.5	842.3	730.7	624.0	536.7	455.9	386.4
17.5°	1545.5	1404.9	1262.6	1117.1	978.1	835.8	709.7	598.2	496.3	412.2	344.3
20°	1610.2	1463.1	1309.5	1146.2	987.8	834.2	691.9	565.8	460.7	371.8	305.5
22.5°	1670.0	1522.9	1358.0	1183.4	1002.3	832.6	675.8	541.6	430.0	341.1	274.8
25°	1737.9	1582.7	1409.7	1222.2	1028.2	839.0	666.1	522.2	402.5	312.0	250.6
27.5°	1813.9	1650.6	1471.2	1270.7	1062.1	852.0	662.8	501.2	378.3	284.5	231.2
30°	1920.6	1731.4	1532.6	1319.2	1092.9	866.5	659.6	488.2	354.0	263.5	211.8
32.5°	2014.3	1810.6	1600.5	1369.3	1126.8	881.1	658.0	470.4	331.4	242.5	197.2
35°	2113.0	1883.4	1658.7	1417.8	1155.9	897.2	656.4	457.5	310.4	221.5	182.7
37.5°	2198.6	1944.8	1703.9	1459.8	1188.2	911.8	658.0	446.2	291.0	203.7	169.7
40°	2271.4	2007.9	1754.1	1498.6	1222.2	934.4	659.6	434.9	271.6	187.5	158.4
42.5°	2336.1	2067.7	1807.4	1542.3	1261.0	960.3	669.3	425.2	255.4	173.0	147.1
45°	2386.2	2122.7	1865.6	1603.7	1324.0	1002.3	687.1	418.7	239.3	160.0	137.4
47.5°	2437.9	2203.5	1964.2	1700.7	1416.2	1068.6	717.8	417.1	226.3	150.3	129.3
50°	2509.0	2284.3	2051.5	1799.3	1500.3	1136.5	755.0	418.7	210.2	140.6	121.2
52.5°	2560.8	2366.8	2164.7	1970.7	1700.7	1343.4	898.9	447.8	202.1	132.6	111.5
55°	2866.3	2832.4	2837.2	2869.6	2661.0	2285.9	1503.5	646.7	237.6	150.3	109.9
57.5°	4041.6	4161.3	4230.8	4229.2	3884.8	3222.0	2019.2	831.0	265.1	174.6	130.9
60°	5587.1	5496.6	5368.9	5053.6	4596.1	3677.9	2258.5	894.0	229.6	139.0	119.6
62.5°	6953.2	6423.0	5952.5	5441.6	4841.9	3836.3	2307.0	889.2	200.5	105.1	84.1
65°	7805.2	6851.4	6091.5	5451.3	4744.9	3703.7	2182.5	816.4	169.7	85.7	69.5
67.5°	8008.9	6620.2	5545.1	4728.7	3964.0	2882.5	1602.1	614.3	132.6	71.1	61.4
69°	7564.3	5884.6	4594.5	3668.2	2884.1	1912.5	991.0	388.0	101.8	64.7	56.6
70°	6958.1	5118.3	3742.5	2943.9	2135.6	1343.4	693.5	273.2	82.4	59.8	51.7
72.5°	4476.5	2688.5	1839.7	1280.4	881.1	535.1	271.6	122.9	63.0	50.1	42.0
75°	1736.3	994.2	721.0	548.0	428.4	297.5	164.9	79.2	53.3	42.0	32.3
77.5°	855.2	654.7	535.1	367.0	213.4	132.6	88.9	61.4	43.6	30.7	21.0
80°	675.8	449.4	268.4	166.5	126.1	95.4	67.9	50.1	32.3	19.4	14.5
82.5°	346.0	189.1	139.0	113.2	93.8	74.4	55.0	35.6	21.0	12.9	11.3
85°	108.3	79.2	71.1	69.5	64.7	53.3	38.8	22.6	12.9	8.1	8.1
87.5°	8.1	11.3	14.5	11.3	12.9	11.3	14.5	9.7	6.5	6.5	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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	745.3	745.3	745.3	745.3	745.3	745.3	745.3	745.3	745.3	745.3	745.3
2.5°	679.0	659.6	641.8	630.5	609.5	601.4	593.3	590.1	575.5	578.8	565.8
5°	593.3	559.4	533.5	507.6	483.4	465.6	451.0	433.3	418.7	412.2	399.3
7.5°	515.7	472.1	438.1	410.6	381.5	358.9	339.5	326.6	313.6	300.7	294.2
10°	447.8	400.9	362.1	334.6	307.2	287.8	273.2	263.5	255.4	250.6	249.0
12.5°	384.8	339.5	303.9	279.7	258.7	249.0	242.5	237.6	236.0	234.4	234.4
15°	336.3	291.0	263.5	245.7	236.0	231.2	229.6	226.3	223.1	221.5	221.5
17.5°	291.0	257.0	237.6	227.9	223.1	219.9	216.6	213.4	210.2	208.5	208.5
20°	260.3	232.8	223.1	216.6	211.8	208.5	203.7	200.5	198.8	197.2	195.6
22.5°	236.0	218.2	211.8	206.9	200.5	195.6	192.4	189.1	185.9	184.3	182.7
25°	218.2	206.9	202.1	195.6	189.1	184.3	179.4	174.6	171.4	169.7	166.5
27.5°	205.3	197.2	190.8	182.7	176.2	171.4	166.5	161.7	158.4	155.2	153.6
30°	194.0	185.9	177.8	171.4	163.3	158.4	152.0	147.1	145.5	142.3	139.0
32.5°	182.7	174.6	166.5	158.4	150.3	143.9	140.6	134.2	130.9	129.3	126.1
35°	169.7	161.7	152.0	145.5	137.4	130.9	126.1	121.2	118.0	114.8	113.2
37.5°	158.4	148.7	139.0	130.9	124.5	118.0	113.2	108.3	105.1	101.8	100.2
40°	145.5	135.8	126.1	118.0	111.5	106.7	101.8	97.0	93.8	92.1	92.1
42.5°	134.2	122.9	113.2	106.7	101.8	95.4	90.5	85.7	84.1	82.4	84.1
45°	122.9	111.5	103.5	97.0	92.1	85.7	80.8	77.6	76.0	77.6	79.2
47.5°	113.2	101.8	93.8	88.9	84.1	79.2	74.4	71.1	71.1	74.4	77.6
50°	103.5	92.1	85.7	82.4	77.6	72.7	66.3	64.7	66.3	69.5	72.7
52.5°	93.8	80.8	76.0	74.4	69.5	64.7	59.8	58.2	59.8	63.0	61.4
55°	84.1	71.1	69.5	67.9	63.0	56.6	51.7	51.7	51.7	50.1	46.9
57.5°	80.8	63.0	61.4	59.8	55.0	48.5	45.3	42.0	40.4	35.6	33.9
60°	84.1	56.6	56.6	53.3	48.5	42.0	37.2	32.3	29.1	25.9	25.9
62.5°	67.9	51.7	50.1	46.9	40.4	33.9	29.1	24.2	22.6	21.0	21.0
65°	55.0	46.9	43.6	38.8	33.9	27.5	22.6	19.4	17.8	17.8	19.4
67.5°	50.1	42.0	37.2	32.3	27.5	21.0	17.8	16.2	16.2	17.8	17.8
69°	46.9	38.8	33.9	29.1	24.2	19.4	16.2	16.2	16.2	16.2	17.8
70°	43.6	37.2	32.3	27.5	21.0	16.2	14.5	14.5	16.2	16.2	17.8
72.5°	33.9	29.1	27.5	22.6	16.2	14.5	12.9	14.5	14.5	16.2	16.2
75°	25.9	21.0	21.0	17.8	12.9	11.3	11.3	12.9	12.9	14.5	14.5
77.5°	17.8	14.5	14.5	12.9	11.3	9.7	9.7	11.3	12.9	12.9	14.5
80°	12.9	11.3	9.7	11.3	9.7	8.1	9.7	11.3	11.3	12.9	12.9
82.5°	9.7	9.7	9.7	9.7	8.1	8.1	9.7	9.7	11.3	12.9	12.9
85°	8.1	8.1	8.1	8.1	8.1	8.1	8.1	9.7	9.7	11.3	11.3
87.5°	4.8	4.8	4.8	6.5	6.5	8.1	8.1	8.1	8.1	9.7	9.7
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):**

	165°	170°	175°	180°
0°	745.3	745.3	745.3	745.3
2.5°	562.6	561.0	554.5	556.1
5°	394.5	384.8	391.2	389.6
7.5°	289.4	287.8	286.1	289.4
10°	247.3	247.3	245.7	247.3
12.5°	232.8	232.8	232.8	232.8
15°	221.5	221.5	219.9	219.9
17.5°	208.5	208.5	208.5	206.9
20°	195.6	194.0	194.0	194.0
22.5°	181.1	179.4	179.4	179.4
25°	166.5	164.9	164.9	164.9
27.5°	152.0	150.3	148.7	148.7
30°	137.4	135.8	134.2	134.2
32.5°	122.9	121.2	119.6	119.6
35°	109.9	109.9	108.3	106.7
37.5°	98.6	98.6	98.6	98.6
40°	90.5	92.1	92.1	92.1
42.5°	85.7	87.3	88.9	90.5
45°	82.4	85.7	87.3	87.3
47.5°	80.8	82.4	84.1	84.1
50°	74.4	72.7	72.7	72.7
52.5°	59.8	56.6	55.0	53.3
55°	43.6	42.0	38.8	38.8
57.5°	30.7	30.7	29.1	29.1
60°	24.2	24.2	22.6	24.2
62.5°	21.0	21.0	21.0	21.0
65°	19.4	19.4	19.4	19.4
67.5°	19.4	19.4	19.4	19.4
69°	17.8	17.8	17.8	17.8
70°	17.8	17.8	17.8	17.8
72.5°	16.2	16.2	16.2	16.2
75°	14.5	16.2	16.2	16.2
77.5°	14.5	14.5	14.5	14.5
80°	12.9	12.9	14.5	14.5
82.5°	12.9	12.9	12.9	12.9
85°	11.3	11.3	12.9	12.9
87.5°	9.7	9.7	11.3	11.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)