

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: P163787

Luminaire Tested: **LDRL-SL4-E01-E-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P163787
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-E01-E-HSS
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(1) 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: 1973.7 lumens
Efficiency: N/A
Efficacy: 79.9 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 1' x H: 0.1')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B0 - U0 - G1

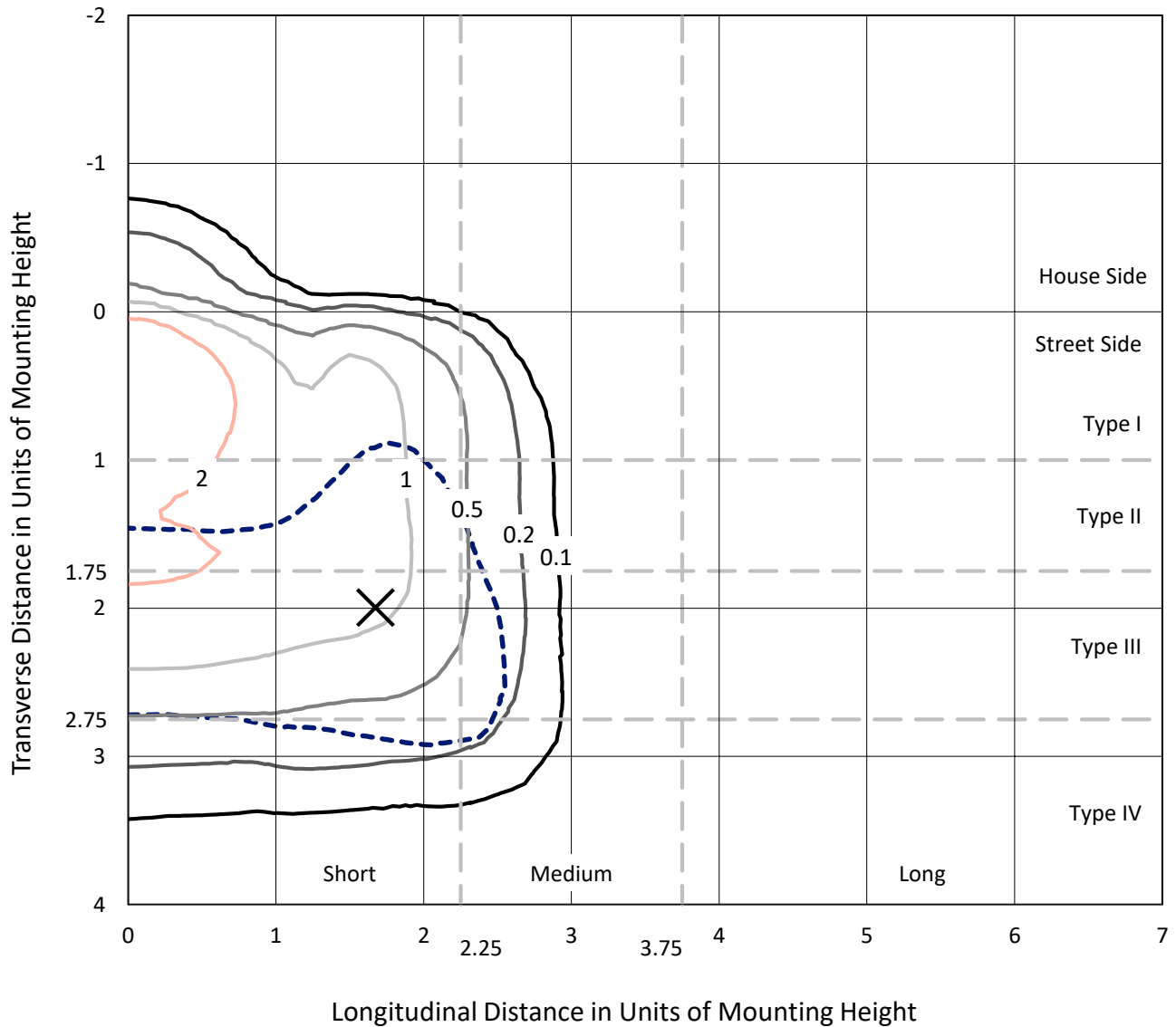
Input Watts (W): 24.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

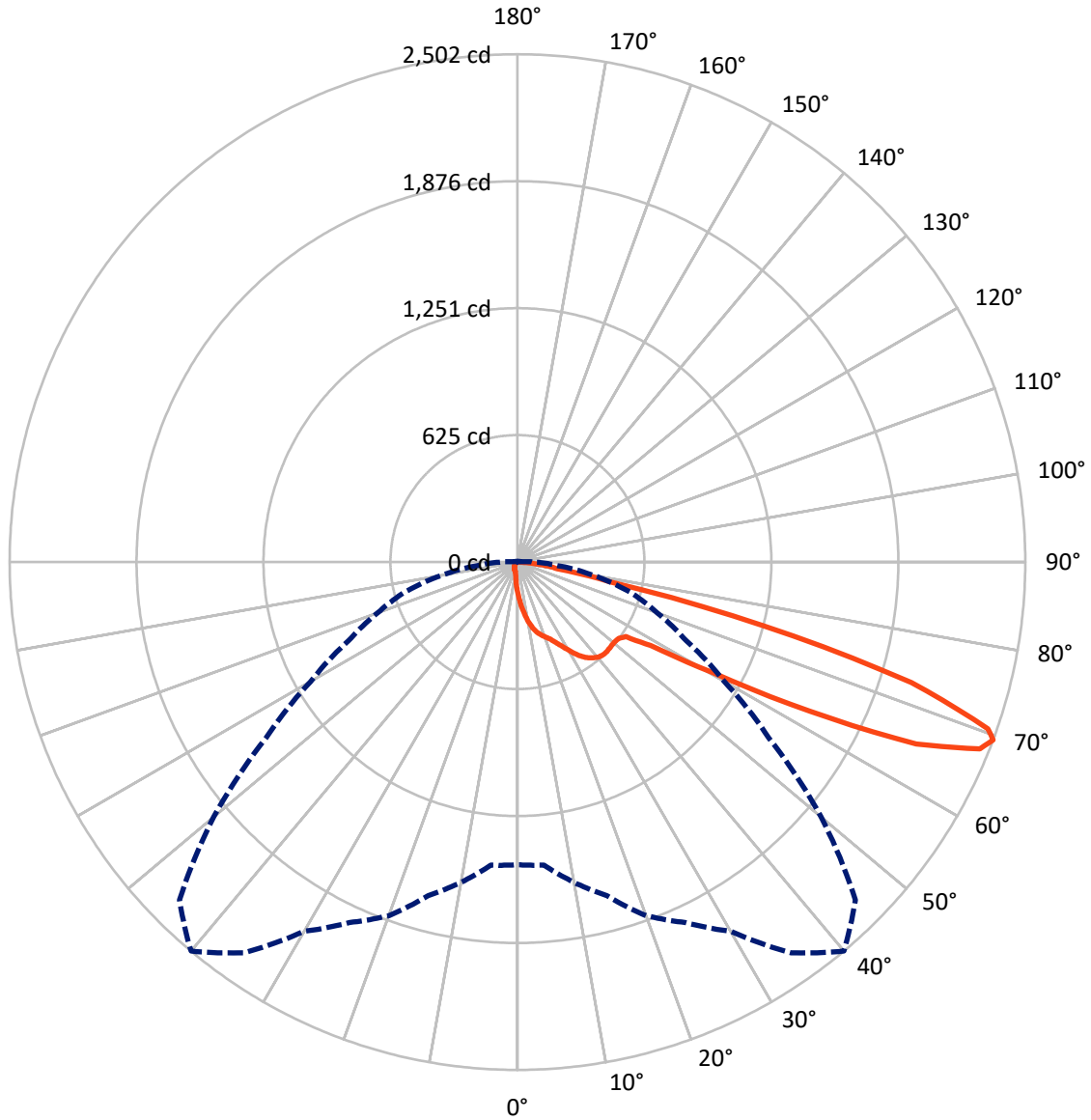
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4.4 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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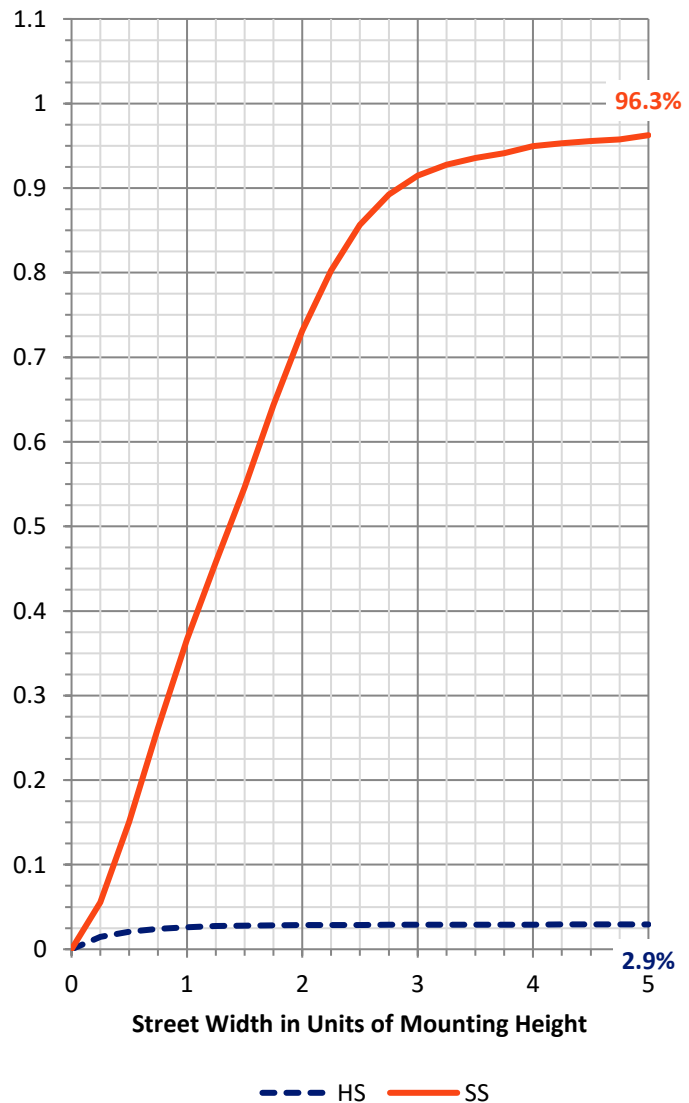
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	58.8	0.0	58.8
	% Fixture	3.0	0.0	3.0
Street Side	Lumens	1915.0	0.0	1915.0
	% Fixture	97.0	0.0	97.0
Total	Lumens	1973.7	0.0	1973.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	15.3	0.8
10°-20°	52.8	2.7
20°-30°	101.1	5.1
30°-40°	168.1	8.5
40°-50°	227.5	11.5
50°-60°	355.8	18.0
60°-70°	731.5	37.1
70°-80°	294.3	14.9
80°-90°	27.2	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°	1973.7	100.0
0°-180°	1973.7	100.0



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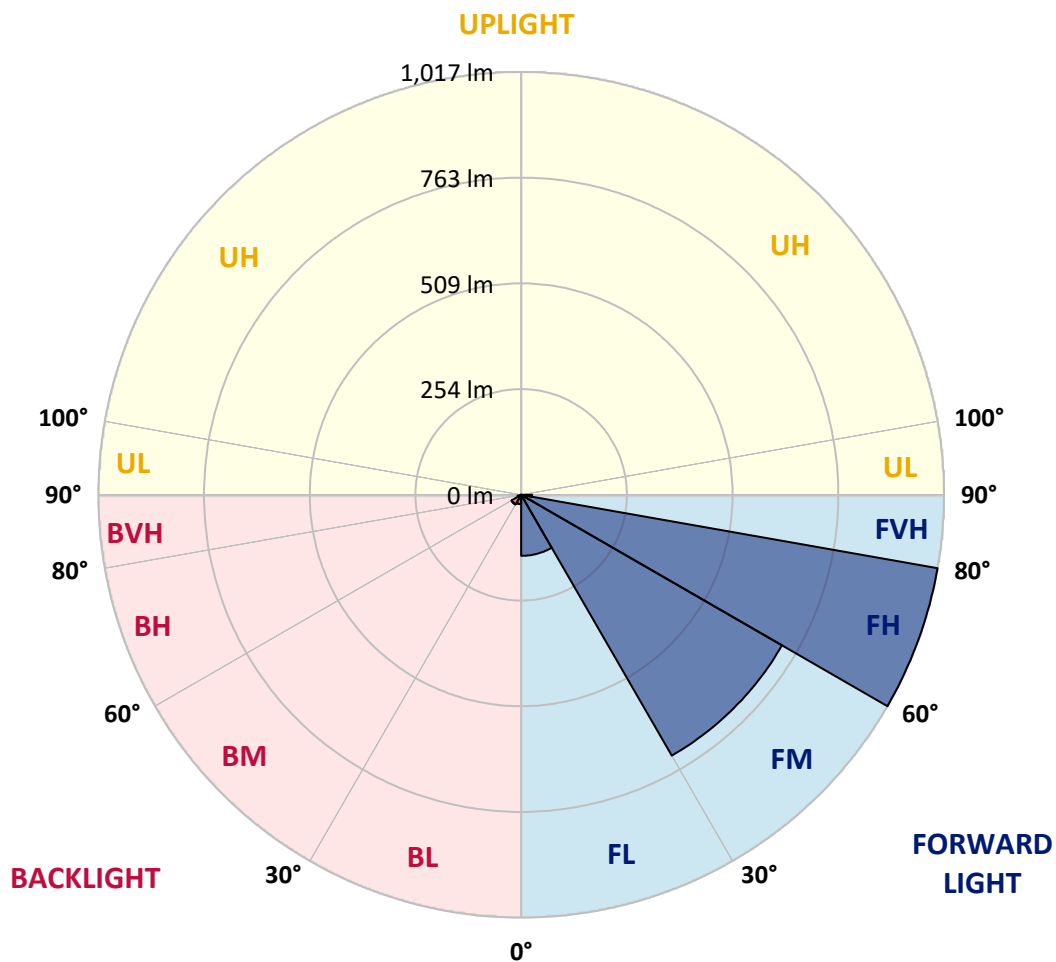
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	146.9	7.4			
FM	(30°-60°)	724.6	36.7			
FH	(60°-80°)	1017.3	51.5			G1/1800
FVH	(80°-90°)	26.2	1.3			G1/100
BL	(0°-30°)	22.4	1.1	B0/110		
BM	(30°-60°)	26.8	1.4	B0/220		
BH	(60°-80°)	8.6	0.4	B0/110		G0/110
BVH	(80°-90°)	1.0	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-G1

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	149.1	149.1	149.1	149.1	149.1	149.1	149.1	149.1	149.1	149.1	149.1
2.5°	198.8	196.6	194.0	194.0	190.8	190.8	188.8	183.7	183.0	180.1	177.2
5°	253.8	251.9	248.6	245.7	243.1	238.6	235.4	229.2	222.5	216.0	210.2
7.5°	307.5	306.5	300.7	299.7	295.5	288.1	281.6	272.6	260.9	251.9	241.2
10°	357.3	355.0	353.7	348.2	342.1	334.0	324.0	313.0	299.4	285.2	270.0
12.5°	396.7	395.4	389.6	387.3	380.9	372.8	360.2	346.0	332.4	314.0	296.2
15°	426.1	423.9	420.0	416.4	408.7	401.6	389.9	374.4	357.9	337.9	316.5
17.5°	450.7	446.5	445.5	440.1	432.0	423.6	410.6	396.4	377.0	357.0	333.7
20°	483.7	477.9	475.9	467.9	458.5	446.8	432.0	414.2	393.8	371.8	347.9
22.5°	522.5	518.3	514.1	507.0	495.0	478.5	456.9	437.5	411.6	387.3	361.5
25°	577.5	573.9	567.1	557.4	542.5	522.8	496.6	468.2	437.8	406.7	376.4
27.5°	630.8	627.6	622.7	615.3	598.5	576.8	544.5	508.3	469.8	432.3	398.7
30°	680.9	678.0	673.2	665.7	650.9	629.5	593.0	554.2	506.3	462.7	422.3
32.5°	734.9	734.0	728.5	717.8	704.9	676.1	636.3	594.6	546.1	495.7	448.5
35°	796.0	788.6	783.4	772.8	750.8	720.1	673.5	627.9	576.8	525.1	472.4
37.5°	847.8	840.7	834.2	820.6	793.8	754.7	701.9	651.8	599.1	546.4	492.8
40°	885.6	882.0	874.3	856.5	826.4	779.9	723.0	668.3	615.3	562.3	509.2
42.5°	913.7	908.2	899.5	881.1	845.5	792.5	731.4	675.1	622.7	572.0	519.9
45°	924.1	919.6	911.5	891.4	852.9	796.0	731.0	673.2	623.1	574.9	527.0
47.5°	917.9	913.4	906.3	887.5	849.7	791.8	725.2	667.7	619.8	575.9	533.5
50°	897.6	895.0	889.5	873.6	839.7	783.8	720.1	664.8	619.2	580.7	542.5
52.5°	895.6	894.0	887.2	871.4	836.8	781.2	719.4	666.4	624.7	586.8	549.0
55°	1094.5	1071.5	1020.1	976.5	904.7	819.3	752.1	692.6	648.0	611.1	584.6
57.5°	1555.5	1521.3	1453.7	1370.6	1205.7	1043.7	914.1	820.3	774.1	757.2	767.3
60°	1771.5	1765.4	1754.7	1715.3	1630.9	1491.5	1336.3	1168.5	1101.3	1095.4	1115.8
62.5°	1874.0	1870.1	1873.4	1868.5	1842.3	1801.6	1757.0	1684.5	1617.9	1574.9	1483.8
65°	1921.2	1923.8	1942.2	1956.8	1960.0	1970.7	2003.4	2093.6	2159.5	2048.6	1795.5
67.5°	1801.3	1816.5	1858.8	1911.9	1973.9	2034.1	2131.1	2321.2	2456.7	2326.4	1966.8
69°	1491.2	1498.6	1602.1	1702.0	1853.7	1959.7	2100.4	2349.6	2501.9	2354.8	1953.2
70°	1174.0	1180.8	1291.7	1427.5	1683.9	1820.3	2004.3	2301.5	2459.6	2317.0	1883.4
72.5°	529.6	519.9	559.0	631.8	910.5	1127.1	1448.8	1864.6	2029.2	1856.2	1409.1
75°	369.9	365.7	369.9	370.2	413.5	533.5	673.2	1010.7	1250.0	1078.6	673.2
77.5°	286.5	283.6	280.7	277.4	282.6	316.5	330.1	358.6	465.6	440.4	256.7
80°	226.7	224.1	231.2	228.9	228.9	232.8	230.2	219.5	199.5	184.9	165.5
82.5°	105.4	106.1	106.1	115.1	138.7	162.0	169.4	158.8	141.0	120.0	96.7
85°	10.0	11.3	19.1	29.4	58.5	66.0	66.3	55.0	55.0	43.3	34.9
87.5°	0.0	0.3	0.3	0.3	2.9	8.1	6.8	1.9	1.0	1.0	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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	149.1	149.1	149.1	149.1	149.1	149.1	149.1	149.1	149.1	149.1	149.1
2.5°	172.0	171.0	167.2	163.3	159.7	155.8	152.3	148.7	144.9	141.9	138.4
5°	201.1	194.0	185.9	178.2	170.4	162.3	153.9	146.5	138.7	131.6	124.8
7.5°	230.5	216.6	205.6	191.7	179.1	166.5	154.9	142.9	131.9	121.6	111.9
10°	255.4	238.6	221.5	203.7	185.6	168.8	152.6	138.4	123.8	111.2	99.3
12.5°	275.8	254.5	233.4	211.1	190.8	169.4	149.4	132.2	115.1	100.9	88.6
15°	294.2	269.7	244.4	218.6	192.7	168.5	146.1	124.8	107.3	91.2	77.3
17.5°	309.1	281.0	252.5	223.4	195.6	167.2	141.9	119.6	99.3	82.4	68.9
20°	322.0	292.6	261.9	229.2	197.6	166.8	138.4	113.2	92.1	74.4	61.1
22.5°	334.0	304.6	271.6	236.7	200.5	166.5	135.2	108.3	86.0	68.2	55.0
25°	347.6	316.5	281.9	244.4	205.6	167.8	133.2	104.4	80.5	62.4	50.1
27.5°	362.8	330.1	294.2	254.1	212.4	170.4	132.6	100.2	75.7	56.9	46.2
30°	384.1	346.3	306.5	263.8	218.6	173.3	131.9	97.6	70.8	52.7	42.4
32.5°	402.9	362.1	320.1	273.9	225.4	176.2	131.6	94.1	66.3	48.5	39.4
35°	422.6	376.7	331.7	283.6	231.2	179.4	131.3	91.5	62.1	44.3	36.5
37.5°	439.7	389.0	340.8	292.0	237.6	182.4	131.6	89.2	58.2	40.7	33.9
40°	454.3	401.6	350.8	299.7	244.4	186.9	131.9	87.0	54.3	37.5	31.7
42.5°	467.2	413.5	361.5	308.5	252.2	192.1	133.9	85.0	51.1	34.6	29.4
45°	477.2	424.5	373.1	320.7	264.8	200.5	137.4	83.7	47.9	32.0	27.5
47.5°	487.6	440.7	392.8	340.1	283.2	213.7	143.6	83.4	45.3	30.1	25.9
50°	501.8	456.9	410.3	359.9	300.1	227.3	151.0	83.7	42.0	28.1	24.2
52.5°	512.2	473.4	432.9	394.1	340.1	268.7	179.8	89.6	40.4	26.5	22.3
55°	573.3	566.5	567.4	573.9	532.2	457.2	300.7	129.3	47.5	30.1	22.0
57.5°	808.3	832.3	846.2	845.8	777.0	644.4	403.8	166.2	53.0	34.9	26.2
60°	1117.4	1099.3	1073.8	1010.7	919.2	735.6	451.7	178.8	45.9	27.8	23.9
62.5°	1390.6	1284.6	1190.5	1088.3	968.4	767.3	461.4	177.8	40.1	21.0	16.8
65°	1561.0	1370.3	1218.3	1090.3	949.0	740.7	436.5	163.3	33.9	17.1	13.9
67.5°	1601.8	1324.0	1109.0	945.7	792.8	576.5	320.4	122.9	26.5	14.2	12.3
69°	1512.9	1176.9	918.9	733.6	576.8	382.5	198.2	77.6	20.4	12.9	11.3
70°	1391.6	1023.7	748.5	588.8	427.1	268.7	138.7	54.6	16.5	12.0	10.3
72.5°	895.3	537.7	367.9	256.1	176.2	107.0	54.3	24.6	12.6	10.0	8.4
75°	347.3	198.8	144.2	109.6	85.7	59.5	33.0	15.8	10.7	8.4	6.5
77.5°	171.0	130.9	107.0	73.4	42.7	26.5	17.8	12.3	8.7	6.1	4.2
80°	135.2	89.9	53.7	33.3	25.2	19.1	13.6	10.0	6.5	3.9	2.9
82.5°	69.2	37.8	27.8	22.6	18.8	14.9	11.0	7.1	4.2	2.6	2.3
85°	21.7	15.8	14.2	13.9	12.9	10.7	7.8	4.5	2.6	1.6	1.6
87.5°	1.6	2.3	2.9	2.3	2.6	2.3	2.9	1.9	1.3	1.3	1.0
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°	149.1	149.1	149.1	149.1	149.1	149.1	149.1	149.1	149.1	149.1	149.1
2.5°	135.8	131.9	128.4	126.1	121.9	120.3	118.7	118.0	115.1	115.8	113.2
5°	118.7	111.9	106.7	101.5	96.7	93.1	90.2	86.7	83.7	82.4	79.9
7.5°	103.1	94.4	87.6	82.1	76.3	71.8	67.9	65.3	62.7	60.1	58.8
10°	89.6	80.2	72.4	66.9	61.4	57.6	54.6	52.7	51.1	50.1	49.8
12.5°	77.0	67.9	60.8	55.9	51.7	49.8	48.5	47.5	47.2	46.9	46.9
15°	67.3	58.2	52.7	49.1	47.2	46.2	45.9	45.3	44.6	44.3	44.3
17.5°	58.2	51.4	47.5	45.6	44.6	44.0	43.3	42.7	42.0	41.7	41.7
20°	52.1	46.6	44.6	43.3	42.4	41.7	40.7	40.1	39.8	39.4	39.1
22.5°	47.2	43.6	42.4	41.4	40.1	39.1	38.5	37.8	37.2	36.9	36.5
25°	43.6	41.4	40.4	39.1	37.8	36.9	35.9	34.9	34.3	33.9	33.3
27.5°	41.1	39.4	38.2	36.5	35.2	34.3	33.3	32.3	31.7	31.0	30.7
30°	38.8	37.2	35.6	34.3	32.7	31.7	30.4	29.4	29.1	28.5	27.8
32.5°	36.5	34.9	33.3	31.7	30.1	28.8	28.1	26.8	26.2	25.9	25.2
35°	33.9	32.3	30.4	29.1	27.5	26.2	25.2	24.2	23.6	23.0	22.6
37.5°	31.7	29.7	27.8	26.2	24.9	23.6	22.6	21.7	21.0	20.4	20.0
40°	29.1	27.2	25.2	23.6	22.3	21.3	20.4	19.4	18.8	18.4	18.4
42.5°	26.8	24.6	22.6	21.3	20.4	19.1	18.1	17.1	16.8	16.5	16.8
45°	24.6	22.3	20.7	19.4	18.4	17.1	16.2	15.5	15.2	15.5	15.8
47.5°	22.6	20.4	18.8	17.8	16.8	15.8	14.9	14.2	14.2	14.9	15.5
50°	20.7	18.4	17.1	16.5	15.5	14.5	13.3	12.9	13.3	13.9	14.5
52.5°	18.8	16.2	15.2	14.9	13.9	12.9	12.0	11.6	12.0	12.6	12.3
55°	16.8	14.2	13.9	13.6	12.6	11.3	10.3	10.3	10.3	10.0	9.4
57.5°	16.2	12.6	12.3	12.0	11.0	9.7	9.1	8.4	8.1	7.1	6.8
60°	16.8	11.3	11.3	10.7	9.7	8.4	7.4	6.5	5.8	5.2	5.2
62.5°	13.6	10.3	10.0	9.4	8.1	6.8	5.8	4.8	4.5	4.2	4.2
65°	11.0	9.4	8.7	7.8	6.8	5.5	4.5	3.9	3.6	3.6	3.9
67.5°	10.0	8.4	7.4	6.5	5.5	4.2	3.6	3.2	3.2	3.6	3.6
69°	9.4	7.8	6.8	5.8	4.8	3.9	3.2	3.2	3.2	3.2	3.6
70°	8.7	7.4	6.5	5.5	4.2	3.2	2.9	2.9	3.2	3.2	3.6
72.5°	6.8	5.8	5.5	4.5	3.2	2.9	2.6	2.9	2.9	3.2	3.2
75°	5.2	4.2	4.2	3.6	2.6	2.3	2.3	2.6	2.6	2.9	2.9
77.5°	3.6	2.9	2.9	2.6	2.3	1.9	1.9	2.3	2.6	2.6	2.9
80°	2.6	2.3	1.9	2.3	1.9	1.6	1.9	2.3	2.3	2.6	2.6
82.5°	1.9	1.9	1.9	1.9	1.6	1.6	1.9	1.9	2.3	2.6	2.6
85°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.9	1.9	2.3	2.3
87.5°	1.0	1.0	1.0	1.3	1.3	1.6	1.6	1.6	1.6	1.9	1.9
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):

	165°	170°	175°	180°
0°	149.1	149.1	149.1	149.1
2.5°	112.5	112.2	110.9	111.2
5°	78.9	77.0	78.2	77.9
7.5°	57.9	57.6	57.2	57.9
10°	49.5	49.5	49.1	49.5
12.5°	46.6	46.6	46.6	46.6
15°	44.3	44.3	44.0	44.0
17.5°	41.7	41.7	41.7	41.4
20°	39.1	38.8	38.8	38.8
22.5°	36.2	35.9	35.9	35.9
25°	33.3	33.0	33.0	33.0
27.5°	30.4	30.1	29.7	29.7
30°	27.5	27.2	26.8	26.8
32.5°	24.6	24.2	23.9	23.9
35°	22.0	22.0	21.7	21.3
37.5°	19.7	19.7	19.7	19.7
40°	18.1	18.4	18.4	18.4
42.5°	17.1	17.5	17.8	18.1
45°	16.5	17.1	17.5	17.5
47.5°	16.2	16.5	16.8	16.8
50°	14.9	14.5	14.5	14.5
52.5°	12.0	11.3	11.0	10.7
55°	8.7	8.4	7.8	7.8
57.5°	6.1	6.1	5.8	5.8
60°	4.8	4.8	4.5	4.8
62.5°	4.2	4.2	4.2	4.2
65°	3.9	3.9	3.9	3.9
67.5°	3.9	3.9	3.9	3.9
69°	3.6	3.6	3.6	3.6
70°	3.6	3.6	3.6	3.6
72.5°	3.2	3.2	3.2	3.2
75°	2.9	3.2	3.2	3.2
77.5°	2.9	2.9	2.9	2.9
80°	2.6	2.6	2.9	2.9
82.5°	2.6	2.6	2.6	2.6
85°	2.3	2.3	2.6	2.6
87.5°	1.9	1.9	2.3	2.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)