

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: P145124

Luminaire Tested: **LDRL-SL3-F01-E-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P145124
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33702)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-SL3-F01-E-7030
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(1) LIGHTBARS WITH AccuLED OPTICS - TYPE 3 W/ SPILL LIGHT CONTROL
Light Source: (7) 3000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2238.4 lumens
Efficiency: N/A
Efficacy: 86.4 lumens/watt
Luminous Opening: Rectangular (W 0.17' x L: 1' x H: 0')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G1

Input Watts (W): 25.9
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

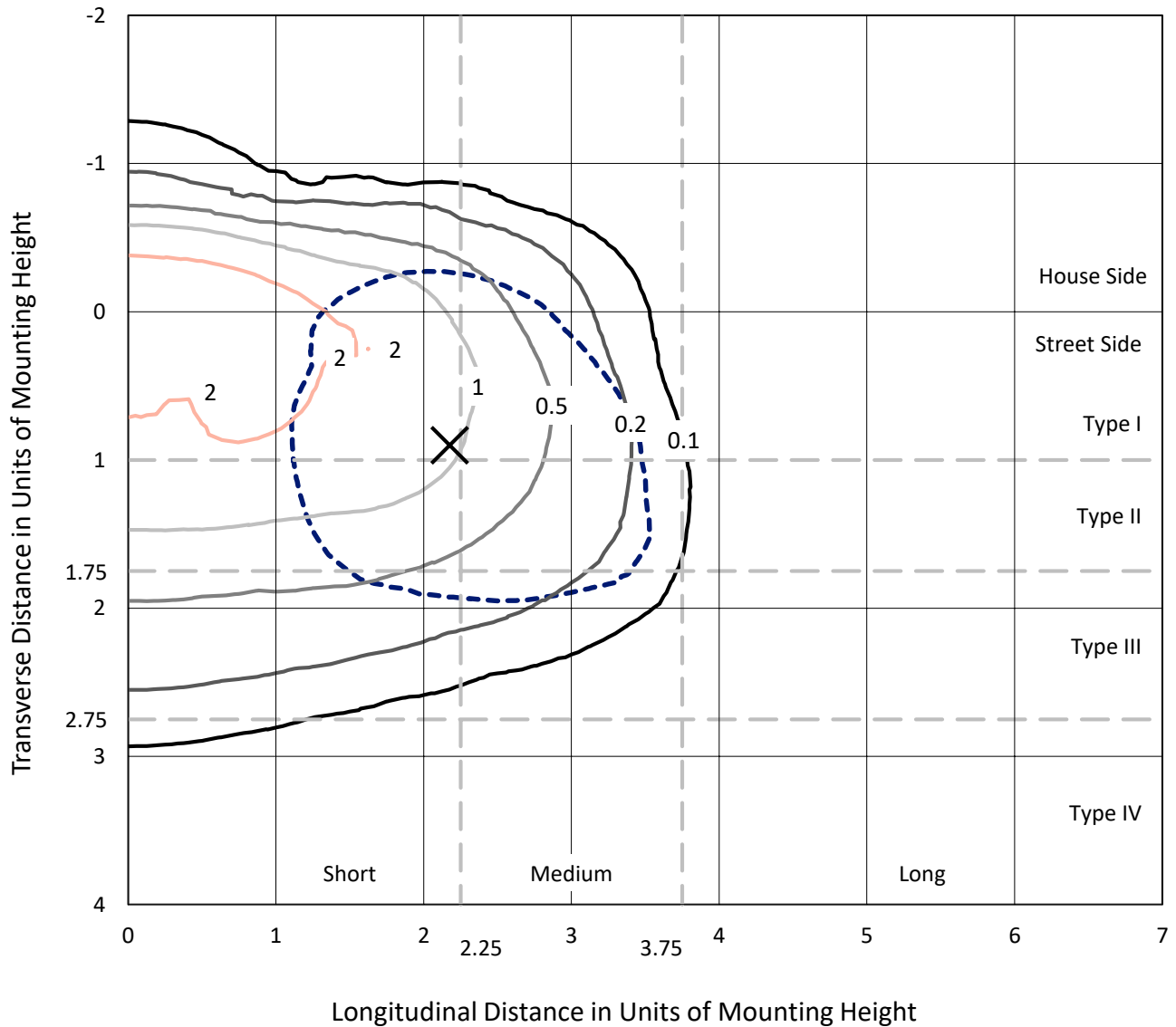


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Iso-Footcandle Lines of Horizontal Illumination

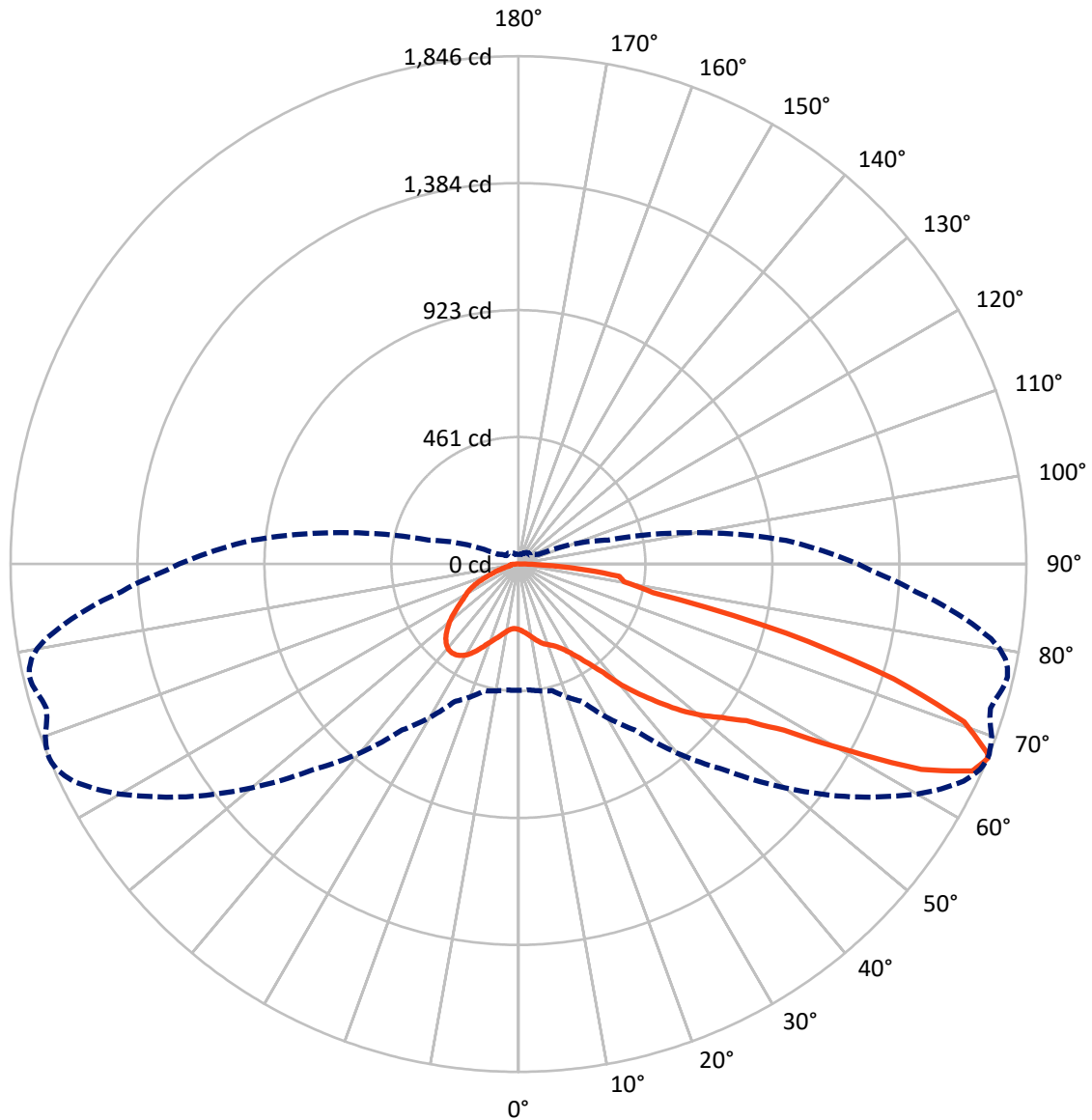
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3 fc
 Type III - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 67.5-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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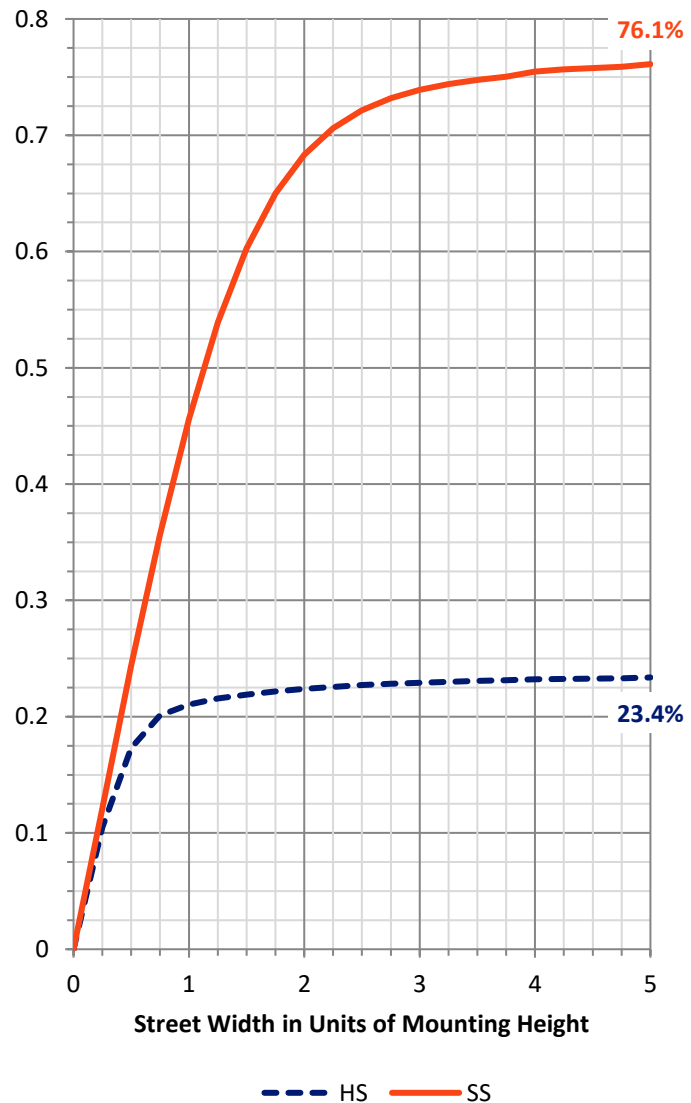
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	530.0	0.0	530.0
	% Fixture	23.7	0.0	23.7
Street Side	Lumens	1708.4	0.0	1708.4
	% Fixture	76.3	0.0	76.3
Total	Lumens	2238.4	0.0	2238.4
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	23.8	1.1
10°-20°	81.4	3.6
20°-30°	144.9	6.5
30°-40°	211.0	9.4
40°-50°	325.2	14.5
50°-60°	476.2	21.3
60°-70°	632.3	28.2
70°-80°	298.1	13.3
80°-90°	45.6	2.0
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°	2238.4	100.0
0°-180°	2238.4	100.0



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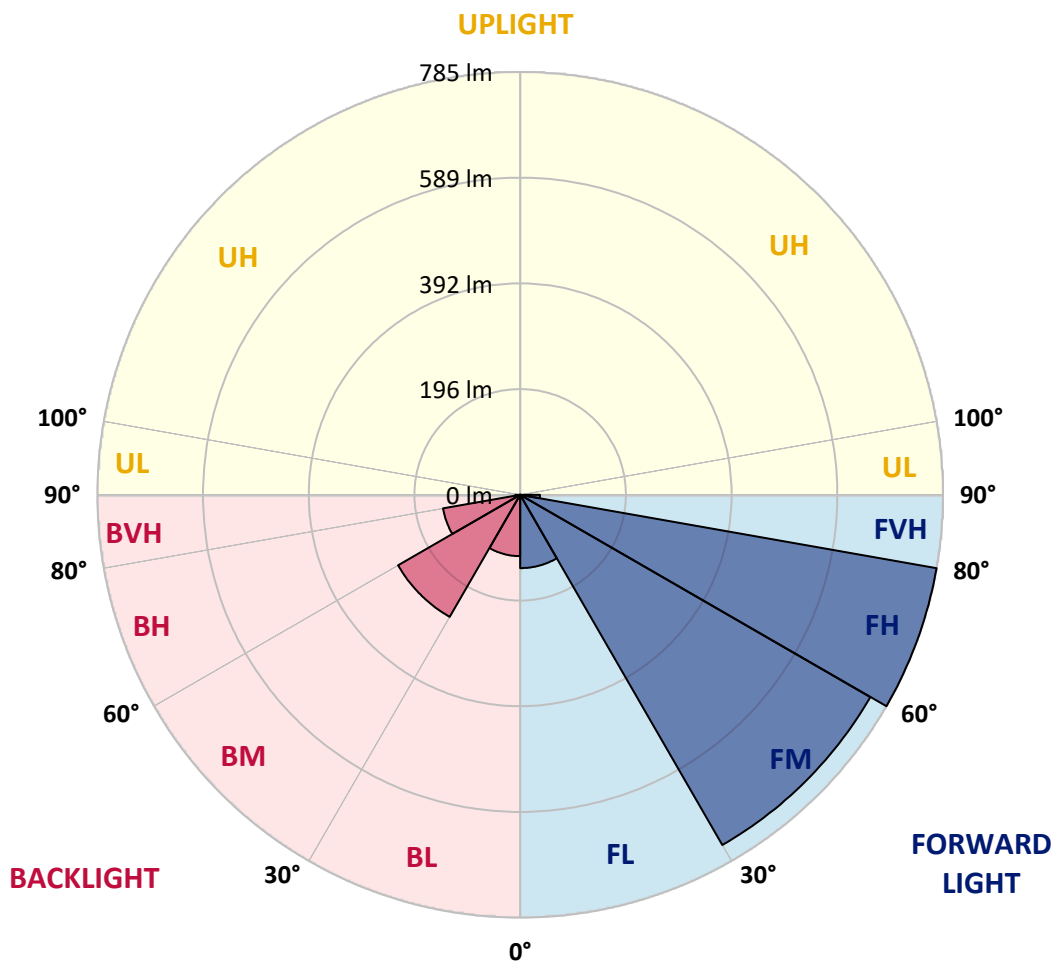
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	136.1	6.1			
FM	(30°-60°)	750.6	33.5			
FH	(60°-80°)	784.9	35.1			G1/1800
FVH	(80°-90°)	36.7	1.6			G1/100
BL	(0°-30°)	113.9	5.1	B1/500		
BM	(30°-60°)	261.7	11.7	B1/1000		
BH	(60°-80°)	145.5	6.5	B1/500		G1/500
BVH	(80°-90°)	8.9	0.4			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	61°	62°	64°
0°	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1
2.5°	250.0	249.0	249.1	249.6	248.1	247.3	245.7	244.6	244.4	244.3	243.7
5°	264.7	263.6	264.0	262.8	260.0	258.0	254.5	252.7	252.4	252.1	251.4
7.5°	279.9	278.5	277.0	275.7	272.5	269.3	264.8	262.1	261.8	261.3	260.9
10°	298.0	296.0	294.8	290.6	285.2	280.8	276.3	273.4	273.2	272.8	271.9
12.5°	318.3	316.2	314.0	308.4	299.9	293.5	288.2	286.5	285.2	285.3	284.4
15°	338.5	336.3	333.3	326.2	315.0	305.4	298.6	296.2	296.3	295.6	296.0
17.5°	355.6	353.6	349.2	340.2	327.2	314.0	305.4	304.3	304.6	304.5	304.9
20°	366.7	365.5	358.9	348.0	333.4	318.8	310.0	310.0	310.2	310.8	311.9
22.5°	373.5	371.7	363.0	347.7	333.3	321.1	314.3	315.8	316.7	317.1	318.8
25°	377.3	375.0	363.1	342.9	328.1	322.7	320.6	324.4	325.9	326.6	329.3
27.5°	377.3	374.6	361.2	336.9	322.3	327.7	332.7	339.1	340.2	342.5	345.6
30°	373.1	371.0	358.1	332.4	320.7	337.0	352.1	359.5	362.1	364.6	368.7
32.5°	368.6	366.7	356.6	334.8	329.2	356.6	381.8	391.9	393.4	395.5	399.8
35°	368.3	367.6	363.3	350.2	354.7	392.5	426.6	433.5	437.8	438.8	440.6
37.5°	371.4	372.6	376.4	375.0	391.3	445.9	485.3	499.1	502.5	500.7	502.3
40°	378.8	381.8	395.8	413.2	447.3	510.5	565.2	581.2	584.8	583.7	583.3
42.5°	402.2	406.3	426.9	464.0	505.5	577.3	639.4	656.6	657.8	658.4	654.5
45°	438.8	441.1	468.5	515.9	568.5	649.2	713.4	732.6	731.8	728.8	725.9
47.5°	480.4	485.1	518.0	575.3	633.7	715.7	788.4	807.1	808.7	806.0	800.7
50°	518.3	521.9	559.0	627.0	691.1	771.0	851.6	870.4	870.1	871.6	873.1
52.5°	548.2	551.5	586.8	661.6	733.3	817.5	899.2	922.4	926.1	928.5	931.5
55°	563.5	567.0	599.6	675.9	759.0	862.9	954.3	987.6	993.8	999.2	1004.2
57.5°	563.8	568.4	598.2	674.8	772.2	903.4	1027.1	1087.0	1095.7	1109.6	1126.6
60°	554.6	561.0	587.8	665.0	787.5	954.9	1147.1	1261.7	1278.9	1303.2	1325.1
62.5°	530.7	537.0	561.0	640.1	805.3	1020.8	1320.5	1488.5	1525.2	1552.0	1595.3
65°	492.8	498.8	519.0	599.0	791.1	1072.8	1449.8	1651.2	1688.6	1722.3	1773.1
67°	459.0	459.6	476.7	551.8	735.9	1056.6	1475.7	1673.0	1707.5	1741.6	1800.5
67.5°	447.1	450.4	463.7	536.1	714.9	1044.7	1465.5	1661.2	1694.7	1731.0	1791.2
70°	361.5	362.4	375.2	427.7	567.3	866.2	1316.3	1511.2	1534.1	1587.3	1646.4
72.5°	220.5	219.0	223.0	261.9	373.4	599.9	1053.9	1244.1	1275.5	1320.8	1360.8
75°	121.4	128.6	133.6	160.6	209.8	352.7	717.7	900.1	946.1	973.1	981.1
77.5°	74.2	73.6	75.9	103.6	172.1	241.3	396.4	528.1	553.7	561.4	531.7
80°	35.3	36.6	36.2	42.7	83.4	203.6	277.2	339.1	352.1	359.5	369.2
82.5°	19.3	20.1	22.8	25.5	32.9	87.6	239.2	312.8	321.5	334.2	348.3
85°	12.1	12.7	17.5	18.4	20.2	27.0	99.7	182.8	190.2	215.3	223.3
87.5°	5.0	5.4	9.5	8.6	10.3	9.5	30.2	46.4	49.3	52.5	58.2
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):

	65°	66°	67°	67.5°	68°	69°	70°	71°	72°	73°	74°
0°	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1
2.5°	243.8	243.7	243.1	242.9	243.2	243.2	242.9	242.5	242.3	242.2	241.9
5°	251.1	250.8	250.3	250.0	249.9	249.9	249.4	249.0	248.5	247.9	247.8
7.5°	259.7	259.7	259.5	259.1	258.6	258.0	257.6	257.1	256.7	256.4	255.9
10°	271.0	271.6	270.5	270.2	270.1	269.2	269.0	268.6	268.3	267.5	267.5
12.5°	284.4	283.8	283.7	283.0	283.0	282.6	282.4	282.3	282.0	281.4	281.2
15°	295.6	295.6	295.4	295.1	295.4	295.1	294.7	295.0	294.5	294.7	294.2
17.5°	304.6	305.2	305.1	305.2	305.1	305.1	305.4	305.4	305.7	305.1	305.2
20°	312.2	313.1	313.5	313.2	313.5	313.7	314.4	314.7	315.2	315.5	315.5
22.5°	320.0	321.2	322.1	322.1	322.7	323.3	324.7	325.0	326.0	325.9	326.6
25°	331.0	333.0	333.6	334.5	335.2	336.3	337.9	338.7	339.1	340.2	341.4
27.5°	347.9	350.3	350.8	351.8	353.8	354.4	356.2	356.9	358.6	360.9	361.3
30°	371.0	374.0	374.1	375.3	377.6	378.4	379.9	381.8	383.2	385.4	385.6
32.5°	402.3	405.3	404.9	407.2	407.0	409.3	408.8	411.8	413.0	414.2	417.6
35°	444.1	443.8	446.1	446.8	446.4	448.2	447.9	449.2	450.4	450.4	454.1
37.5°	504.3	503.8	503.5	500.4	499.6	499.7	499.1	500.4	498.4	498.4	502.3
40°	584.9	582.2	580.1	578.0	575.9	573.0	570.6	570.0	566.7	566.6	565.0
42.5°	655.1	652.5	651.0	646.9	644.8	644.4	638.5	636.8	635.9	636.5	635.0
45°	728.7	725.9	720.2	718.4	717.8	714.6	713.7	709.7	708.5	710.6	709.8
47.5°	804.5	800.6	797.4	795.3	794.6	791.8	787.9	791.2	789.6	788.4	786.1
50°	872.7	868.3	868.3	864.5	865.1	863.3	859.3	860.2	855.5	857.3	856.1
52.5°	929.8	930.1	931.6	927.4	928.2	928.2	926.8	922.4	923.6	923.0	925.9
55°	1002.5	1007.5	1004.8	1005.5	1006.4	1010.7	1013.7	1011.1	1006.9	1010.2	1019.4
57.5°	1129.6	1134.2	1136.9	1139.0	1142.5	1144.4	1160.7	1163.0	1158.1	1168.1	1188.6
60°	1350.7	1356.1	1364.3	1375.0	1377.2	1391.0	1399.4	1409.4	1413.0	1421.6	1443.6
62.5°	1616.6	1628.8	1630.3	1643.9	1654.4	1641.6	1644.9	1657.1	1643.3	1662.3	1663.2
65°	1790.6	1808.4	1809.0	1814.0	1817.9	1805.8	1800.4	1795.0	1781.8	1781.1	1794.2
67°	1820.4	1836.7	1843.5	1845.9	1845.3	1839.1	1830.2	1814.6	1801.9	1794.7	1800.1
67.5°	1812.0	1828.0	1837.5	1839.7	1839.9	1833.9	1825.7	1808.7	1796.8	1788.6	1794.4
70°	1673.3	1710.7	1726.9	1718.5	1723.3	1723.3	1723.0	1707.3	1701.5	1693.6	1690.6
72.5°	1391.3	1417.2	1437.9	1426.9	1428.2	1438.5	1436.1	1437.7	1420.8	1419.0	1391.1
75°	996.6	1004.9	998.0	1005.8	963.6	948.5	922.9	885.5	875.7	860.2	813.7
77.5°	529.5	520.1	501.6	500.0	482.7	469.3	452.7	441.8	414.4	399.2	364.3
80°	374.0	378.5	385.6	389.8	393.7	396.8	390.6	373.2	350.3	324.7	300.4
82.5°	357.2	363.4	367.6	369.8	368.3	363.4	349.2	332.7	302.0	279.9	253.6
85°	225.3	230.3	221.7	219.9	223.6	193.2	176.4	162.9	131.9	122.8	108.4
87.5°	60.5	63.8	63.9	62.0	60.8	53.5	47.4	41.9	34.7	32.6	26.4
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):

	75°	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°
0°	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1
2.5°	241.9	241.7	241.7	241.3	241.0	240.8	240.7	240.2	239.9	239.9	239.8
5°	247.6	247.3	246.9	246.7	246.1	245.8	245.2	244.9	244.4	244.1	244.0
7.5°	255.8	255.0	254.1	254.2	253.3	252.9	252.6	252.0	251.5	251.1	250.9
10°	266.6	266.5	265.6	265.9	264.2	265.0	263.4	263.6	262.7	261.8	261.6
12.5°	280.5	280.3	279.4	278.4	278.1	278.2	277.3	277.5	276.4	276.1	275.8
15°	293.8	293.5	293.0	292.2	291.8	291.6	291.3	291.0	290.1	290.1	289.1
17.5°	305.2	305.4	304.8	304.2	303.9	303.4	303.3	303.3	302.5	301.7	301.9
20°	315.3	315.6	315.6	315.2	315.3	315.0	314.9	315.2	314.4	314.1	313.7
22.5°	326.6	326.6	326.8	327.1	327.5	327.7	327.7	327.4	326.9	326.8	325.9
25°	342.3	341.7	342.5	342.8	342.8	343.5	343.2	343.4	343.5	343.1	342.6
27.5°	362.1	361.5	363.0	364.0	363.9	364.3	365.2	364.2	364.8	365.2	364.2
30°	386.3	387.9	388.9	389.7	389.4	390.7	391.2	391.0	390.6	391.3	391.3
32.5°	417.3	416.5	419.2	420.9	421.0	420.7	421.5	422.4	421.6	422.8	422.2
35°	454.1	454.5	455.1	456.9	457.7	456.5	457.7	458.7	458.4	458.6	459.2
37.5°	501.6	502.3	501.7	501.9	501.6	507.3	508.2	509.1	508.0	507.1	509.9
40°	567.5	567.5	567.3	569.3	565.9	569.6	568.5	571.1	573.8	572.3	576.4
42.5°	632.3	635.9	636.2	633.4	635.8	639.7	639.7	641.3	643.8	641.3	645.3
45°	706.6	711.2	710.4	715.2	711.6	716.1	716.9	714.8	720.1	720.7	719.2
47.5°	787.8	788.7	788.8	790.5	791.2	794.9	794.7	798.6	797.4	791.4	793.5
50°	857.3	859.6	860.8	861.8	865.6	868.1	871.6	872.2	871.3	869.5	867.8
52.5°	926.8	932.2	935.7	945.1	950.9	955.6	961.3	963.5	962.4	961.9	955.3
55°	1019.9	1032.8	1052.9	1065.8	1080.0	1088.3	1094.9	1098.3	1095.9	1097.1	1083.3
57.5°	1195.1	1225.5	1243.0	1265.2	1290.2	1300.6	1303.5	1315.3	1302.3	1289.3	1278.9
60°	1455.5	1483.6	1515.4	1538.1	1546.6	1575.4	1561.8	1546.6	1532.7	1505.9	1475.6
62.5°	1690.6	1726.8	1743.1	1764.3	1758.6	1756.2	1747.2	1722.9	1693.2	1653.2	1612.8
65°	1806.6	1826.9	1837.0	1844.0	1837.5	1820.7	1790.9	1755.0	1712.5	1660.7	1607.7
67°	1811.2	1820.6	1823.9	1817.3	1802.8	1776.7	1739.0	1688.2	1635.9	1576.6	1516.9
67.5°	1803.6	1809.7	1811.4	1801.0	1783.8	1755.6	1715.3	1661.0	1605.4	1543.9	1483.9
70°	1698.6	1694.1	1679.4	1665.1	1611.4	1573.6	1503.5	1445.6	1368.3	1311.8	1247.7
72.5°	1380.0	1359.3	1345.1	1281.8	1216.9	1179.4	1104.0	1034.8	964.4	910.5	871.2
75°	774.7	759.6	720.2	686.7	633.2	584.2	549.1	505.0	462.8	437.8	419.4
77.5°	350.0	306.9	277.2	239.6	193.6	155.6	115.5	106.8	91.1	87.2	78.6
80°	273.1	242.2	203.3	160.3	113.1	76.0	55.8	47.4	44.5	42.7	41.8
82.5°	227.9	187.7	158.0	112.2	71.8	48.3	36.3	32.9	30.8	29.3	27.9
85°	97.4	77.1	63.5	45.4	32.3	25.5	22.3	20.4	18.4	16.7	15.7
87.5°	22.8	17.5	16.0	13.6	12.8	12.7	12.5	11.9	11.2	10.3	9.2
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):

	86°	87°	88°	89°	90°	95°	105°	115°	125°	135°	145°
0°	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1	238.1
2.5°	239.6	239.5	239.2	238.7	238.7	238.1	236.2	234.8	233.3	232.4	231.5
5°	243.7	243.5	242.8	242.3	242.0	240.8	237.5	234.9	232.2	230.3	228.8
7.5°	250.5	250.0	249.4	249.1	248.2	246.7	241.9	238.3	234.3	231.2	228.6
10°	261.5	260.7	259.8	258.9	259.2	256.8	251.2	246.0	240.2	235.2	231.8
12.5°	274.9	274.9	274.5	273.9	272.8	270.1	262.5	256.4	249.4	243.2	240.7
15°	289.1	288.3	287.6	286.7	286.5	282.9	276.1	269.0	261.8	256.5	253.5
17.5°	300.7	301.0	299.9	299.6	299.3	295.7	288.5	282.1	276.9	271.3	266.5
20°	313.1	312.5	312.2	311.7	311.6	308.5	302.8	298.9	294.2	285.8	273.1
22.5°	326.3	325.6	325.9	325.0	324.8	322.7	318.5	317.3	310.3	292.5	270.5
25°	343.5	342.2	342.6	342.6	342.8	340.8	340.4	338.2	320.7	290.9	260.3
27.5°	364.0	364.6	364.6	364.5	363.4	364.0	366.1	358.9	324.4	282.1	244.9
30°	390.7	391.0	391.3	392.4	390.1	394.0	396.6	373.5	321.7	270.1	225.6
32.5°	423.1	421.9	422.5	423.1	423.9	428.0	426.5	380.9	313.7	253.6	201.6
35°	458.9	461.1	461.7	463.1	464.6	470.8	453.5	382.4	301.4	231.6	171.0
37.5°	512.1	515.7	515.7	520.6	517.7	525.2	477.6	378.8	282.9	201.0	136.5
40°	579.2	580.9	582.5	583.1	581.6	580.7	493.4	369.9	256.8	162.6	99.8
42.5°	647.7	647.1	647.2	648.3	644.2	627.2	503.2	354.4	224.4	121.4	71.6
45°	721.4	718.9	718.1	716.0	712.4	676.5	508.8	332.5	181.7	85.4	56.2
47.5°	793.2	790.0	785.2	779.3	772.4	716.1	508.2	304.2	139.3	61.1	49.6
50°	866.8	861.2	850.8	845.1	833.3	755.5	504.7	272.6	100.3	50.5	46.4
52.5°	950.9	941.0	931.3	919.9	900.4	803.9	499.4	237.2	73.1	46.3	44.3
55°	1076.4	1060.1	1044.3	1020.5	1001.6	868.8	490.5	199.1	57.8	44.6	43.1
57.5°	1249.4	1221.6	1201.6	1169.4	1139.3	958.5	481.0	164.4	51.6	44.2	42.5
60°	1444.0	1402.3	1364.9	1325.4	1291.0	1070.5	476.1	137.2	50.2	44.6	42.7
62.5°	1566.2	1516.9	1470.1	1421.9	1372.4	1124.1	454.5	118.5	50.8	46.6	43.9
65°	1550.8	1496.4	1445.6	1386.7	1340.1	1073.5	399.6	100.3	51.9	50.1	47.2
67°	1447.1	1394.3	1336.4	1278.8	1233.5	977.5	337.3	84.4	53.1	54.0	50.8
67.5°	1419.3	1359.9	1301.5	1248.6	1199.6	947.8	321.1	80.5	53.4	55.0	52.0
70°	1183.6	1136.6	1068.3	1029.1	993.6	768.3	239.5	62.6	54.3	59.7	57.8
72.5°	828.2	782.6	746.9	725.5	704.8	558.3	168.4	49.9	52.9	62.3	60.3
75°	418.3	407.9	395.4	388.5	388.8	324.5	101.5	42.5	49.8	59.7	54.7
77.5°	82.6	80.5	81.4	89.1	87.8	100.0	50.4	36.0	42.4	46.0	39.4
80°	40.0	38.6	37.4	37.1	36.3	34.8	31.7	30.0	34.4	30.3	26.1
82.5°	25.9	24.4	23.8	22.6	22.8	24.7	27.6	28.8	27.9	21.0	17.6
85°	14.6	14.5	14.2	14.5	15.1	19.8	29.6	27.0	22.5	14.8	13.3
87.5°	8.7	8.3	8.4	8.6	8.9	14.6	23.4	19.5	14.3	7.7	7.8
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):

	155°	165°	175°	180°
0°	238.1	238.1	238.1	238.1
2.5°	231.3	230.7	230.7	230.6
5°	227.6	226.7	226.5	226.5
7.5°	227.0	225.7	225.6	225.1
10°	229.7	229.2	229.4	228.9
12.5°	238.3	238.9	239.5	239.5
15°	251.4	250.9	251.7	250.9
17.5°	261.0	257.1	256.2	255.8
20°	261.3	253.2	250.5	250.0
22.5°	252.0	239.9	235.4	234.6
25°	236.2	220.9	215.2	214.6
27.5°	216.2	199.2	190.8	190.5
30°	192.3	172.1	161.4	159.7
32.5°	163.0	139.0	127.7	124.1
35°	129.2	104.7	94.1	93.8
37.5°	96.5	77.4	70.6	70.3
40°	70.7	60.8	58.2	57.8
42.5°	57.8	53.7	52.6	52.2
45°	51.7	50.1	49.5	49.0
47.5°	48.1	47.0	46.6	46.6
50°	45.2	44.9	44.6	44.6
52.5°	43.3	43.1	42.8	42.7
55°	41.6	41.0	41.2	41.0
57.5°	40.6	39.7	39.7	39.7
60°	40.0	38.3	38.3	38.5
62.5°	40.1	37.5	37.4	37.4
65°	41.3	37.1	36.2	36.3
67°	42.8	36.6	34.8	34.7
67.5°	43.3	36.3	34.4	34.2
70°	45.1	35.4	32.1	31.8
72.5°	45.4	34.1	29.9	29.6
75°	42.2	32.3	28.0	27.3
77.5°	32.9	27.7	25.3	25.3
80°	23.1	21.3	18.1	17.9
82.5°	16.9	16.0	13.3	13.0
85°	12.4	11.6	9.8	9.8
87.5°	7.7	7.4	6.3	6.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)