

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: McGRAW-EDISON

Report Number: P228358

Luminaire Tested: **ISS-AF-450-LED-E1-SL4-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P228358
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29763)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: ISS-AF-450-LED-E1-SL4-7050
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE
LIGHT SQUARE WITH ACCULED OPTICS-TYPE IV W/SPILL CONTROL
Light Source: (16) 5000K CCT, 70 CRI LEDs
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2649 lumens
Efficiency: N/A
Efficacy: 104.7 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B0 - U0 - G1

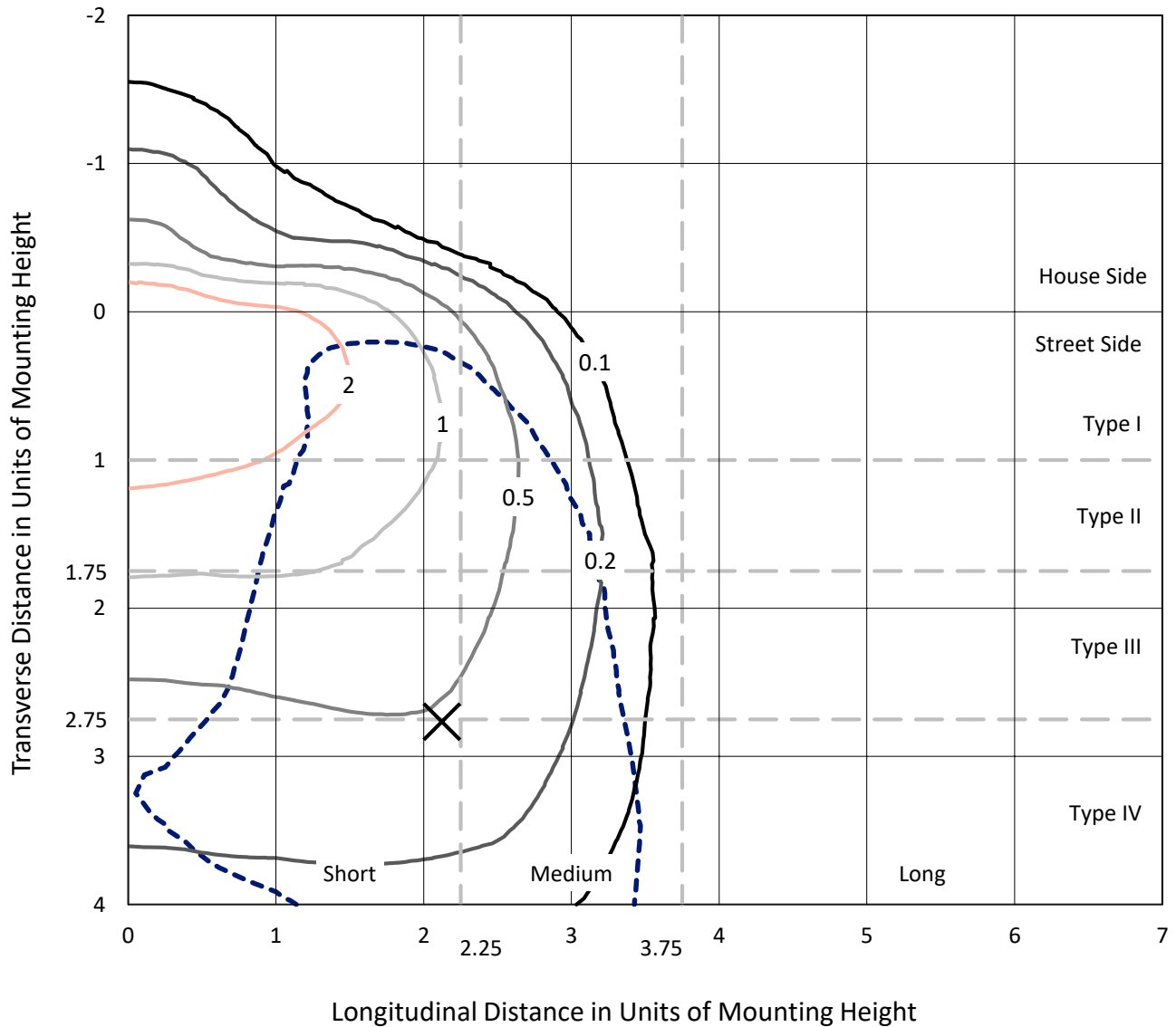
Input Watts (W): 25.31
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

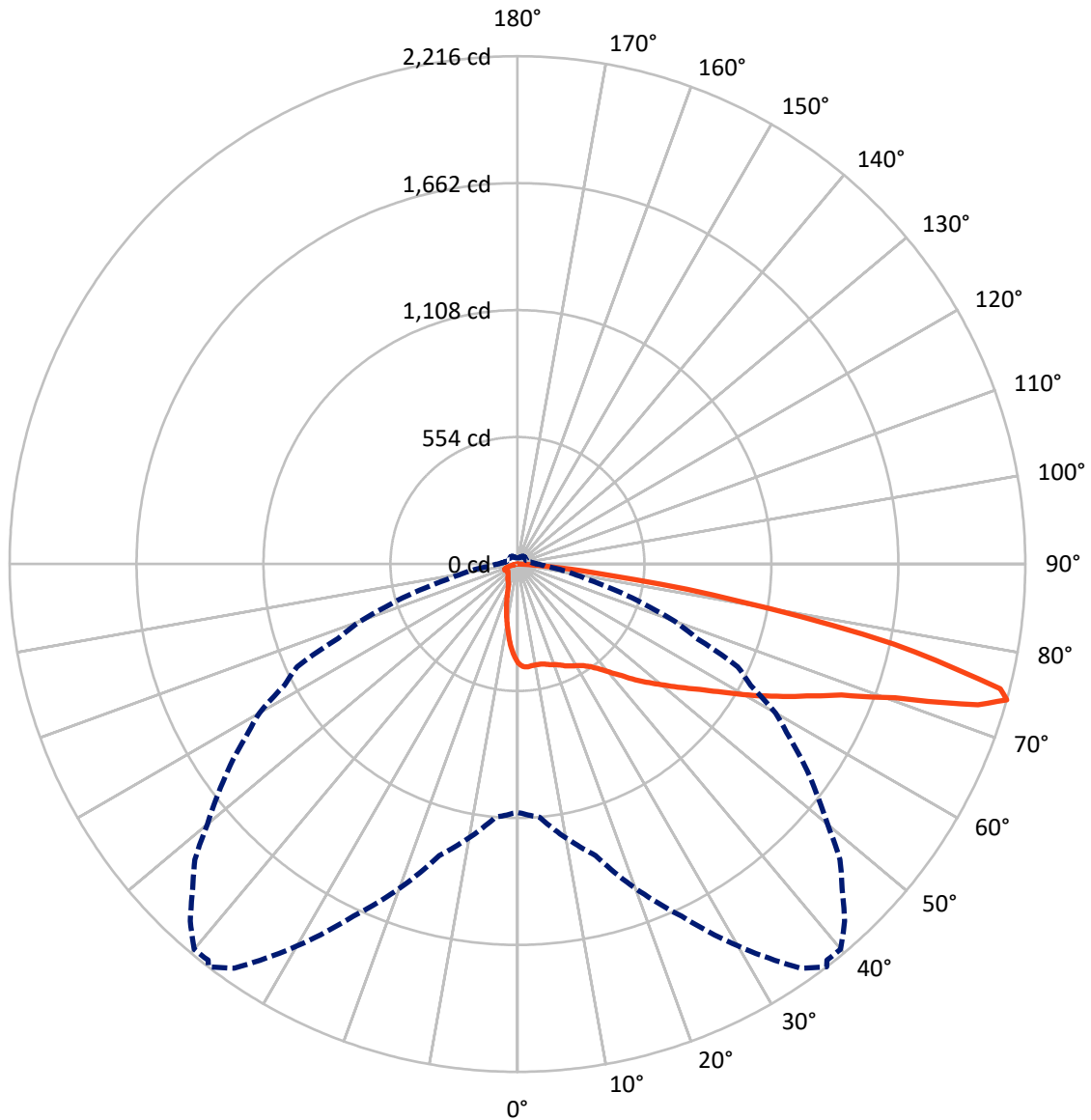
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4.6 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 37.5-Deg Lateral - - - Horizontal Cone Through 74-Deg Vertical

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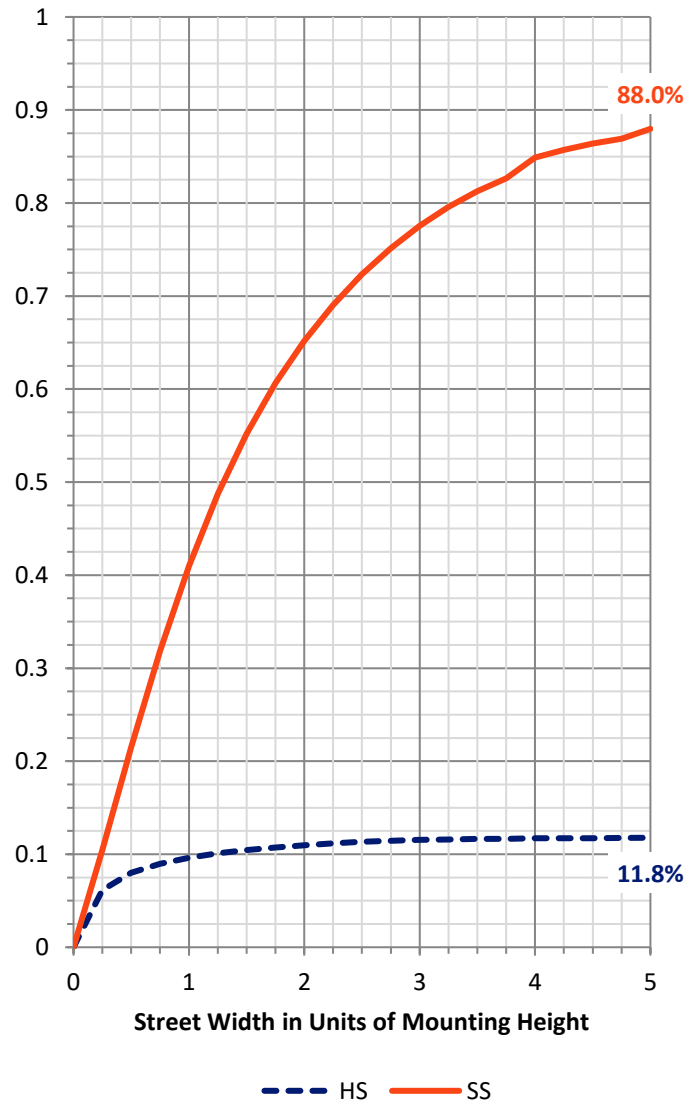
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	314.1	0.0	314.1
	% Fixture	11.9	0.0	11.9
Street Side	Lumens	2334.9	0.0	2334.9
	% Fixture	88.1	0.0	88.1
Total	Lumens	2649.0	0.0	2649.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.6	1.4
10°-20°	95.9	3.6
20°-30°	148.6	5.6
30°-40°	220.4	8.3
40°-50°	339.0	12.8
50°-60°	501.1	18.9
60°-70°	667.9	25.2
70°-80°	576.5	21.8
80°-90°	62.0	2.3
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°	2649.0	100.0
0°-180°	2649.0	100.0



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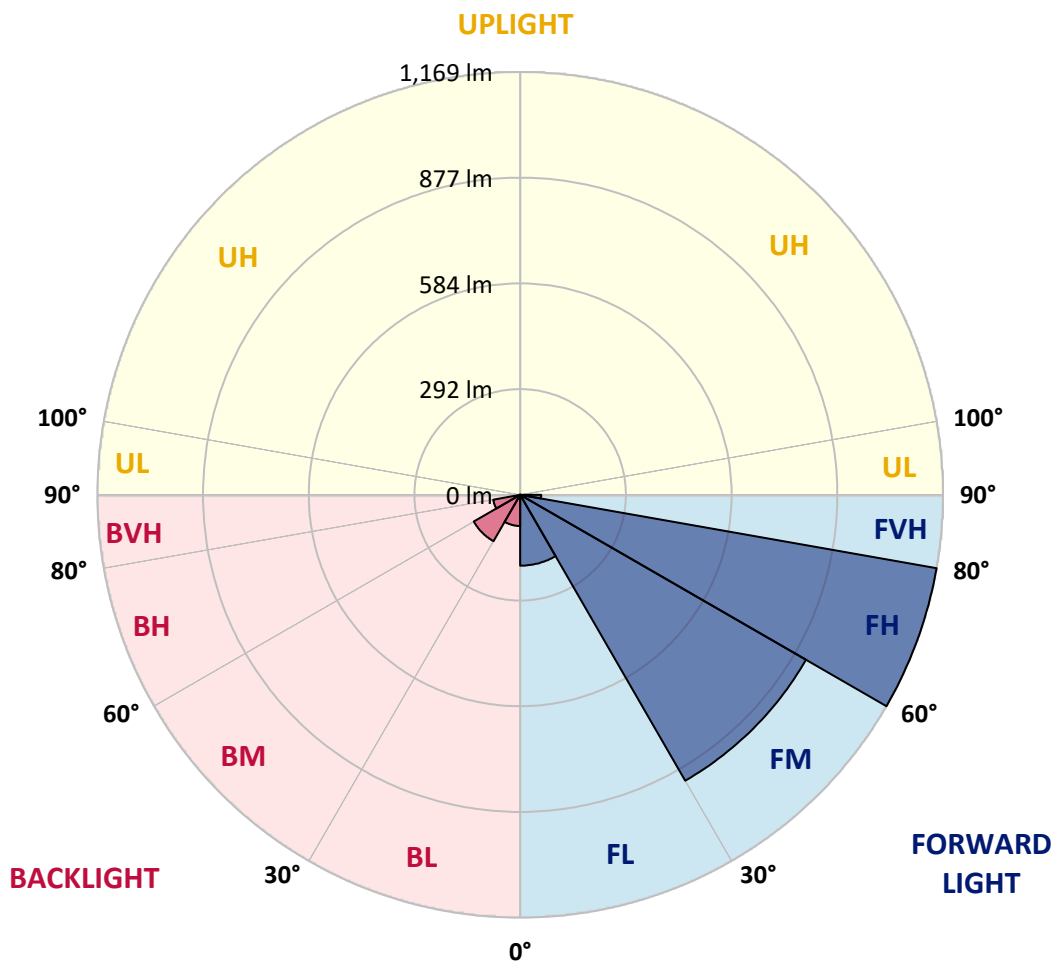
CATALOG NUMBER: ISS-AF-450-LED-E1-SL4-7050

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	195.8	7.4			
FM (30°-60°)	912.4	34.4			
FH (60°-80°)	1168.7	44.1			G1/1800
FVH (80°-90°)	57.9	2.2			G1/100
BL (0°-30°)	86.2	3.3	B0/110		
BM (30°-60°)	148.1	5.6	B0/220		
BH (60°-80°)	75.7	2.9	B0/110		G0/110
BVH (80°-90°)	4.1	0.2			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°	15°	25°	35°	37.5°	38°	40°	42.5°	45°	47.5°
0°	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3
2.5°	457.0	456.0	454.0	453.0	451.1	448.1	451.1	447.1	445.1	447.1	443.2
5°	464.9	463.9	462.0	458.0	456.0	451.1	454.0	449.1	448.1	450.1	445.1
7.5°	465.9	463.9	461.0	456.0	454.0	448.1	450.1	444.1	442.2	444.1	441.2
10°	462.9	462.0	459.0	451.1	449.1	447.1	446.1	442.2	441.2	440.2	439.2
12.5°	458.0	458.0	456.0	453.0	452.1	448.1	449.1	445.1	446.1	444.1	442.2
15°	456.0	455.0	457.0	459.0	459.0	453.0	457.0	454.0	452.1	453.0	450.1
17.5°	454.0	455.0	462.0	465.9	467.9	462.0	467.9	462.0	458.0	462.9	458.0
20°	453.0	456.0	467.9	476.8	477.8	467.9	477.8	467.9	467.9	473.8	464.9
22.5°	458.0	462.9	479.8	489.6	491.6	478.8	490.6	477.8	477.8	482.7	473.8
25°	473.8	478.8	497.6	508.4	506.5	492.6	503.5	490.6	489.6	495.6	483.7
27.5°	494.6	501.5	519.3	529.2	522.3	503.5	519.3	500.5	500.5	509.4	493.6
30°	524.3	529.2	545.0	546.0	537.1	514.4	532.2	511.4	508.4	524.3	504.5
32.5°	556.9	560.9	572.7	565.8	553.0	529.2	550.0	525.3	524.3	541.1	518.3
35°	591.5	595.5	599.4	587.6	575.7	550.0	572.7	548.0	547.0	565.8	544.1
37.5°	627.1	627.1	627.1	613.3	605.4	580.7	601.4	581.6	579.7	599.4	578.7
40°	655.8	657.8	654.8	642.0	638.0	620.2	638.0	620.2	623.2	641.0	624.2
42.5°	679.6	681.6	682.5	671.7	675.6	665.7	679.6	666.7	667.7	687.5	677.6
45°	703.3	702.3	710.2	707.3	719.1	720.1	728.0	723.1	725.1	739.9	736.9
47.5°	728.0	723.1	732.0	744.9	766.6	773.5	778.5	780.5	788.4	795.3	802.2
50°	751.8	746.8	752.8	781.5	816.1	830.9	831.9	841.8	850.7	860.6	874.4
52.5°	776.5	772.6	778.5	819.0	874.4	895.2	892.2	909.1	921.9	932.8	955.6
55°	802.2	798.3	804.2	864.5	936.8	965.4	962.5	986.2	1010.9	1014.9	1040.6
57.5°	827.0	822.0	838.8	918.0	1010.9	1054.5	1040.6	1077.2	1101.0	1099.0	1134.6
60°	853.7	849.7	876.4	983.3	1103.9	1160.3	1139.5	1188.0	1204.8	1197.9	1231.5
62.5°	879.4	878.4	922.9	1059.4	1216.7	1271.1	1252.3	1294.8	1306.7	1297.8	1314.6
65°	903.1	909.1	973.4	1135.6	1325.5	1387.8	1362.1	1404.6	1418.5	1411.6	1440.3
67.5°	942.7	949.6	1035.7	1232.5	1460.0	1524.3	1502.6	1547.1	1567.9	1565.9	1597.5
70°	1001.1	1013.9	1127.7	1370.0	1664.8	1746.9	1735.0	1789.4	1839.9	1835.9	1867.6
72.5°	1102.9	1123.7	1279.0	1583.7	2001.1	2101.0	2087.2	2117.9	2108.9	2036.7	1978.4
74°	1083.2	1108.9	1316.6	1695.5	2152.5	2215.8	2193.0	2194.0	2112.9	2003.1	1909.1
75°	1010.9	1037.7	1262.2	1681.6	2141.6	2176.2	2143.6	2103.0	2005.1	1893.3	1777.6
77.5°	693.4	728.0	927.9	1358.2	1724.2	1676.7	1668.8	1591.6	1462.0	1336.4	1188.0
80°	355.1	379.8	479.8	710.2	1022.8	975.3	991.2	928.8	821.0	730.0	578.7
82.5°	85.1	91.0	141.5	275.0	443.2	405.6	411.5	364.0	301.7	246.3	190.9
85°	44.5	50.4	69.2	76.2	116.7	120.7	117.7	113.8	93.0	78.1	68.3
87.5°	0.0	0.0	0.0	2.0	1.0	0.0	1.0	0.0	0.0	1.0	2.0
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):

	50°	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°
0°	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3
2.5°	446.1	444.1	446.1	440.2	443.2	438.2	440.2	435.2	437.2	433.3	434.3
5°	448.1	443.2	446.1	441.2	442.2	438.2	437.2	435.2	434.3	431.3	429.3
7.5°	443.2	439.2	438.2	436.2	433.3	434.3	430.3	429.3	426.3	426.3	420.4
10°	438.2	439.2	433.3	435.2	430.3	431.3	424.4	426.3	421.4	425.4	416.4
12.5°	442.2	443.2	438.2	441.2	432.3	434.3	428.3	431.3	424.4	429.3	418.4
15°	451.1	450.1	448.1	448.1	439.2	443.2	436.2	438.2	431.3	437.2	425.4
17.5°	459.0	458.0	455.0	454.0	448.1	449.1	442.2	446.1	438.2	443.2	431.3
20°	467.9	462.9	462.0	461.0	454.0	454.0	449.1	451.1	443.2	449.1	435.2
22.5°	474.8	470.9	469.9	465.9	461.0	462.9	456.0	457.0	449.1	455.0	443.2
25°	485.7	480.7	480.7	474.8	471.8	470.9	466.9	469.9	462.0	465.9	455.0
27.5°	500.5	489.6	493.6	487.7	485.7	484.7	482.7	484.7	478.8	481.7	470.9
30°	514.4	500.5	506.5	498.6	502.5	498.6	501.5	498.6	498.6	498.6	493.6
32.5°	533.2	516.4	528.2	516.4	524.3	518.3	528.2	522.3	526.2	525.3	523.3
35°	559.9	540.1	556.9	541.1	554.9	547.0	560.9	557.9	565.8	561.9	565.8
37.5°	595.5	574.7	594.5	579.7	596.5	584.6	604.4	602.4	619.2	613.3	619.2
40°	640.0	625.2	640.0	629.1	646.9	642.0	662.8	663.7	682.5	679.6	686.5
42.5°	689.5	678.6	693.4	687.5	705.3	709.2	733.0	738.9	756.7	761.7	762.7
45°	742.9	740.9	752.8	758.7	776.5	788.4	809.2	824.0	843.8	854.7	852.7
47.5°	805.2	813.1	821.0	835.9	851.7	876.4	897.2	916.0	938.7	945.7	948.6
50°	875.4	889.3	896.2	917.0	932.8	963.5	992.2	1015.9	1040.6	1037.7	1039.6
52.5°	949.6	967.4	977.3	1002.0	1022.8	1058.4	1083.2	1105.9	1136.6	1128.7	1125.7
55°	1031.7	1058.4	1066.3	1094.0	1111.8	1148.4	1170.2	1209.8	1222.6	1214.7	1197.9
57.5°	1118.8	1150.4	1159.3	1196.9	1205.8	1245.4	1264.2	1290.9	1301.8	1288.9	1267.1
60°	1217.7	1246.4	1253.3	1286.9	1298.8	1335.4	1349.3	1373.0	1380.9	1349.3	1318.6
62.5°	1316.6	1346.3	1350.2	1379.9	1391.8	1423.4	1439.3	1453.1	1449.2	1402.7	1364.1
65°	1429.4	1458.1	1468.0	1497.6	1504.6	1528.3	1541.2	1525.3	1516.4	1446.2	1402.7
67.5°	1608.4	1639.1	1643.0	1650.0	1649.0	1637.1	1631.2	1576.8	1537.2	1407.6	1345.3
70°	1843.8	1821.1	1776.6	1725.1	1687.6	1620.3	1580.7	1468.9	1385.9	1240.4	1135.6
72.5°	1886.4	1812.2	1702.4	1614.4	1523.3	1417.5	1332.4	1163.3	1046.6	894.2	783.4
74°	1765.7	1645.0	1529.3	1405.6	1300.8	1146.5	1060.4	846.7	731.0	576.7	442.2
75°	1620.3	1478.8	1348.3	1191.0	1093.1	908.1	827.0	596.5	480.7	342.3	230.5
77.5°	1033.7	864.5	739.9	557.9	481.7	332.4	243.3	151.3	111.8	97.9	85.1
80°	463.9	330.4	262.1	181.0	151.3	115.7	97.9	79.1	72.2	63.3	60.3
82.5°	148.4	118.7	112.8	100.9	100.9	81.1	69.2	54.4	49.5	42.5	38.6
85°	64.3	60.3	62.3	57.4	58.4	44.5	35.6	26.7	26.7	18.8	16.8
87.5°	2.0	0.0	1.0	0.0	2.0	0.0	1.0	0.0	1.0	0.0	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):

	77.5°	80°	85°	90°	95°	100°	102.5°	105°	107.5°	110°	112.5°
0°	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3
2.5°	430.3	432.3	431.3	427.3	426.3	423.4	416.4	417.4	413.5	416.4	411.5
5°	426.3	425.4	421.4	416.4	411.5	405.6	400.6	398.6	394.7	392.7	389.7
7.5°	420.4	416.4	409.5	401.6	394.7	386.8	382.8	375.9	373.9	367.0	366.0
10°	418.4	411.5	403.6	393.7	381.8	370.0	369.0	357.1	356.1	345.2	342.3
12.5°	422.4	413.5	403.6	391.7	377.9	361.1	361.1	343.2	342.3	327.4	322.5
15°	430.3	419.4	406.6	392.7	374.9	354.1	353.1	332.4	330.4	312.6	306.6
17.5°	437.2	422.4	410.5	391.7	370.9	347.2	342.3	321.5	317.5	296.8	288.8
20°	442.2	425.4	411.5	389.7	364.0	336.3	329.4	307.6	298.7	278.0	267.1
22.5°	448.1	432.3	413.5	388.8	360.1	327.4	312.6	292.8	279.9	258.2	243.3
25°	457.0	443.2	420.4	391.7	357.1	318.5	298.7	278.0	260.2	238.4	216.6
27.5°	470.9	457.0	430.3	395.7	356.1	309.6	287.9	262.1	240.4	216.6	191.9
30°	490.6	475.8	447.1	406.6	357.1	302.7	276.0	248.3	222.6	194.9	169.2
32.5°	516.4	504.5	468.9	418.4	361.1	296.8	265.1	233.4	201.8	175.1	152.3
35°	552.0	544.1	499.5	441.2	370.9	293.8	254.2	219.6	184.0	157.3	132.6
37.5°	604.4	593.5	544.1	473.8	386.8	291.8	246.3	202.8	169.2	140.5	119.7
40°	670.7	655.8	596.5	513.4	411.5	292.8	239.4	189.9	156.3	125.6	108.8
42.5°	749.8	728.0	660.8	561.9	436.2	294.8	235.4	178.1	146.4	113.8	100.9
45°	838.8	814.1	736.9	622.2	471.8	299.7	232.5	168.2	137.5	104.9	96.0
47.5°	925.9	901.1	815.1	682.5	508.4	308.6	234.4	162.2	131.6	99.9	90.0
50°	1010.9	985.2	884.3	736.9	540.1	320.5	242.4	163.2	130.6	97.9	87.0
52.5°	1086.1	1054.5	943.7	779.5	562.8	328.4	249.3	166.2	131.6	96.9	86.1
55°	1161.3	1120.7	991.2	813.1	576.7	329.4	249.3	167.2	132.6	96.9	85.1
57.5°	1217.7	1171.2	1027.8	832.9	581.6	324.5	243.3	162.2	126.6	96.0	83.1
60°	1253.3	1203.8	1053.5	845.8	574.7	303.7	211.7	143.4	111.8	89.0	77.2
62.5°	1283.0	1232.5	1061.4	824.0	516.4	241.4	165.2	116.7	93.0	79.1	71.2
65°	1289.9	1229.6	1006.0	728.0	403.6	167.2	119.7	92.0	76.2	70.2	64.3
67.5°	1185.0	1112.8	845.8	569.8	275.0	114.7	89.0	75.2	65.3	62.3	60.3
70°	963.5	884.3	619.2	372.9	153.3	80.1	68.3	62.3	56.4	56.4	53.4
72.5°	621.2	539.1	317.5	159.3	78.1	61.3	55.4	53.4	48.5	49.5	46.5
74°	317.5	247.3	129.6	84.1	64.3	54.4	49.5	48.5	43.5	44.5	41.5
75°	161.2	127.6	91.0	70.2	59.4	51.4	45.5	45.5	39.6	40.6	37.6
77.5°	75.2	72.2	62.3	55.4	50.4	43.5	37.6	36.6	30.7	32.6	28.7
80°	52.4	52.4	48.5	46.5	41.5	35.6	28.7	28.7	22.8	23.7	20.8
82.5°	29.7	27.7	27.7	31.7	32.6	26.7	20.8	19.8	16.8	16.8	13.8
85°	12.9	14.8	17.8	21.8	23.7	20.8	14.8	13.8	8.9	8.9	4.9
87.5°	0.0	1.0	1.0	2.0	4.0	4.0	0.0	2.0	0.0	1.0	0.0
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):

	115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	155°	165°
0°	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3
2.5°	413.5	408.5	411.5	406.6	408.5	403.6	405.6	402.6	399.6	395.7	394.7
5°	386.8	382.8	381.8	376.9	377.9	373.9	370.0	365.0	359.1	351.2	348.2
7.5°	357.1	356.1	349.2	346.2	342.3	338.3	331.4	323.5	311.6	300.7	293.8
10°	331.4	328.4	318.5	313.6	307.6	302.7	292.8	281.9	265.1	248.3	239.4
12.5°	309.6	305.7	292.8	286.9	278.0	272.0	260.2	246.3	222.6	198.8	187.9
15°	291.8	285.9	271.0	262.1	250.3	244.3	231.5	211.7	183.0	158.3	143.4
17.5°	271.0	263.1	247.3	236.4	224.5	213.7	200.8	180.0	147.4	124.6	109.8
20°	248.3	238.4	221.6	206.7	193.9	184.0	171.1	150.4	117.7	99.9	92.0
22.5°	224.5	208.7	193.9	181.0	166.2	156.3	143.4	124.6	99.9	90.0	87.0
25°	199.8	182.0	167.2	154.3	140.5	131.6	120.7	105.8	91.0	88.0	88.0
27.5°	175.1	157.3	143.4	130.6	118.7	112.8	102.9	93.0	86.1	87.0	88.0
30°	152.3	134.5	121.7	111.8	100.9	96.9	89.0	83.1	82.1	85.1	86.1
32.5°	132.6	116.7	104.9	96.9	88.0	86.1	79.1	76.2	79.1	83.1	82.1
35°	115.7	102.9	91.0	86.1	78.1	77.2	72.2	70.2	74.2	79.1	79.1
37.5°	102.9	91.0	82.1	78.1	72.2	71.2	67.3	65.3	68.3	75.2	77.2
40°	92.0	85.1	76.2	72.2	68.3	66.3	64.3	62.3	63.3	72.2	73.2
42.5°	85.1	80.1	72.2	70.2	65.3	64.3	61.3	59.4	60.3	67.3	70.2
45°	80.1	76.2	69.2	68.3	63.3	62.3	59.4	57.4	58.4	64.3	67.3
47.5°	76.2	72.2	66.3	64.3	61.3	60.3	58.4	56.4	56.4	62.3	65.3
50°	74.2	70.2	64.3	62.3	59.4	58.4	56.4	54.4	55.4	60.3	62.3
52.5°	73.2	68.3	63.3	60.3	58.4	56.4	54.4	52.4	53.4	58.4	60.3
55°	73.2	67.3	63.3	60.3	57.4	54.4	53.4	50.4	52.4	56.4	59.4
57.5°	73.2	67.3	63.3	60.3	58.4	55.4	53.4	51.4	52.4	56.4	59.4
60°	71.2	66.3	64.3	61.3	60.3	57.4	56.4	54.4	54.4	59.4	64.3
62.5°	68.3	65.3	64.3	62.3	62.3	60.3	60.3	58.4	58.4	64.3	69.2
65°	64.3	62.3	63.3	62.3	62.3	62.3	61.3	61.3	61.3	66.3	72.2
67.5°	60.3	59.4	60.3	60.3	61.3	60.3	61.3	60.3	60.3	65.3	71.2
70°	54.4	54.4	55.4	54.4	55.4	55.4	56.4	56.4	56.4	59.4	65.3
72.5°	47.5	46.5	47.5	46.5	48.5	46.5	48.5	49.5	48.5	49.5	52.4
74°	42.5	41.5	42.5	41.5	43.5	41.5	42.5	42.5	41.5	33.6	28.7
75°	38.6	37.6	38.6	37.6	39.6	37.6	39.6	38.6	36.6	24.7	23.7
77.5°	30.7	27.7	30.7	27.7	29.7	26.7	28.7	24.7	18.8	17.8	17.8
80°	22.8	19.8	21.8	18.8	17.8	13.8	14.8	13.8	12.9	13.8	13.8
82.5°	13.8	9.9	11.9	8.9	10.9	7.9	9.9	8.9	7.9	7.9	7.9
85°	6.9	4.9	6.9	4.0	5.9	4.0	4.9	4.9	3.0	3.0	3.0
87.5°	1.0	0.0	2.0	0.0	2.0	0.0	1.0	1.0	0.0	0.0	0.0
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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	175°	180°
0°	432.3	432.3
2.5°	391.7	392.7
5°	343.2	346.2
7.5°	289.8	291.8
10°	233.4	235.4
12.5°	180.0	182.0
15°	135.5	133.5
17.5°	103.9	101.9
20°	88.0	88.0
22.5°	86.1	85.1
25°	87.0	86.1
27.5°	87.0	86.1
30°	85.1	84.1
32.5°	82.1	81.1
35°	79.1	79.1
37.5°	77.2	78.1
40°	74.2	75.2
42.5°	71.2	72.2
45°	68.3	69.2
47.5°	65.3	65.3
50°	61.3	61.3
52.5°	60.3	60.3
55°	60.3	60.3
57.5°	62.3	62.3
60°	68.3	69.2
62.5°	80.1	81.1
65°	92.0	94.0
67.5°	93.0	96.0
70°	90.0	93.0
72.5°	62.3	62.3
74°	27.7	26.7
75°	23.7	22.8
77.5°	17.8	17.8
80°	12.9	11.9
82.5°	6.9	6.9
85°	2.0	2.0
87.5°	0.0	0.0
90°	0.0	0.0

(END OF REPORT)