

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: P227570

Luminaire Tested: **ISS-AF-450-LED-E1-T2**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P227570
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29758)
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-T2
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE
LIGHT SQUARE WITH ACCULED OPTICS-TYPE II
Light Source: (16) 4000K CCT, 70 CRI LEDs
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3001.3 lumens
Efficiency: N/A
Efficacy: 118.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type II - Medium - Non-Cutoff
BUG Rating: B1 - 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

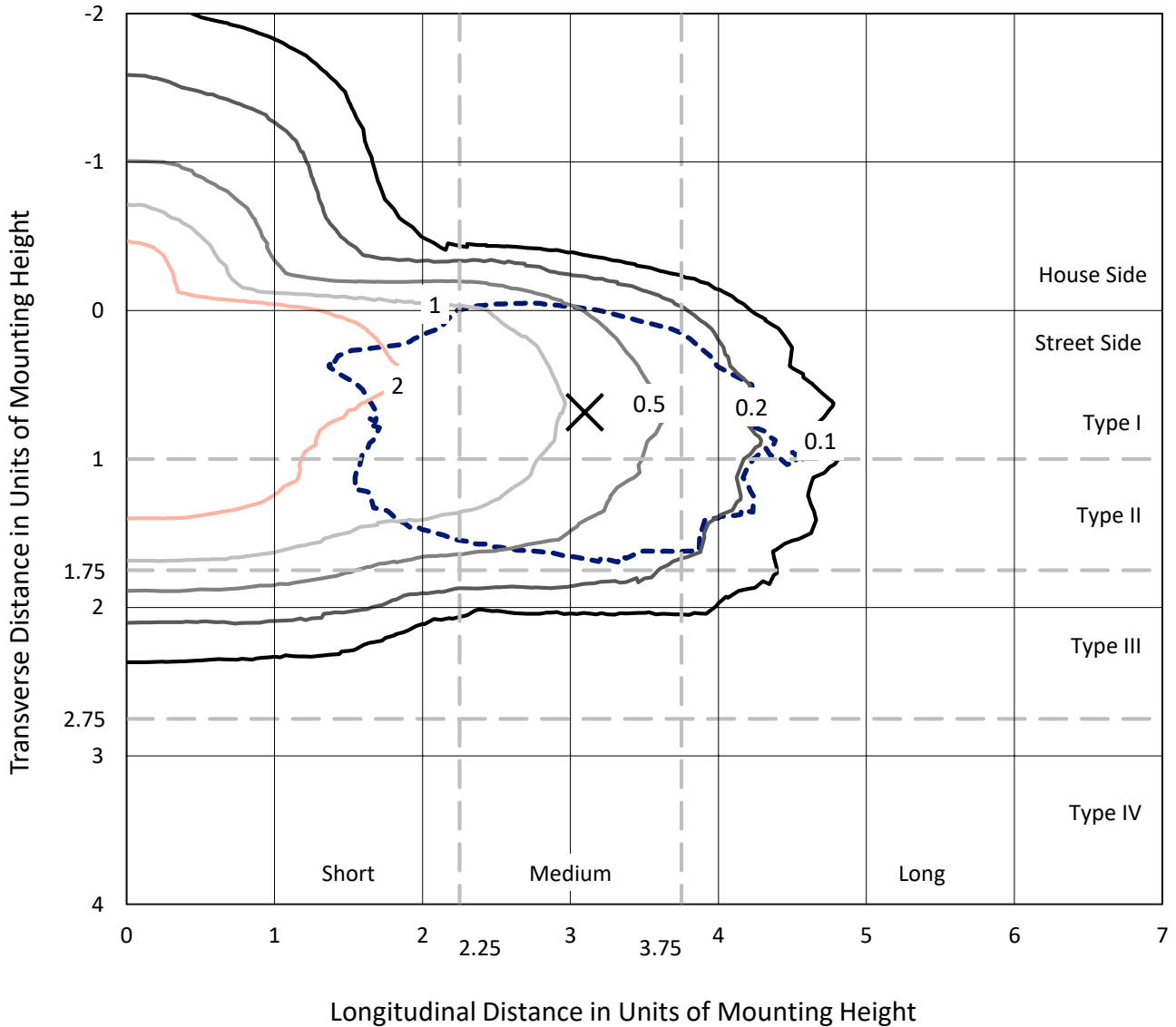


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

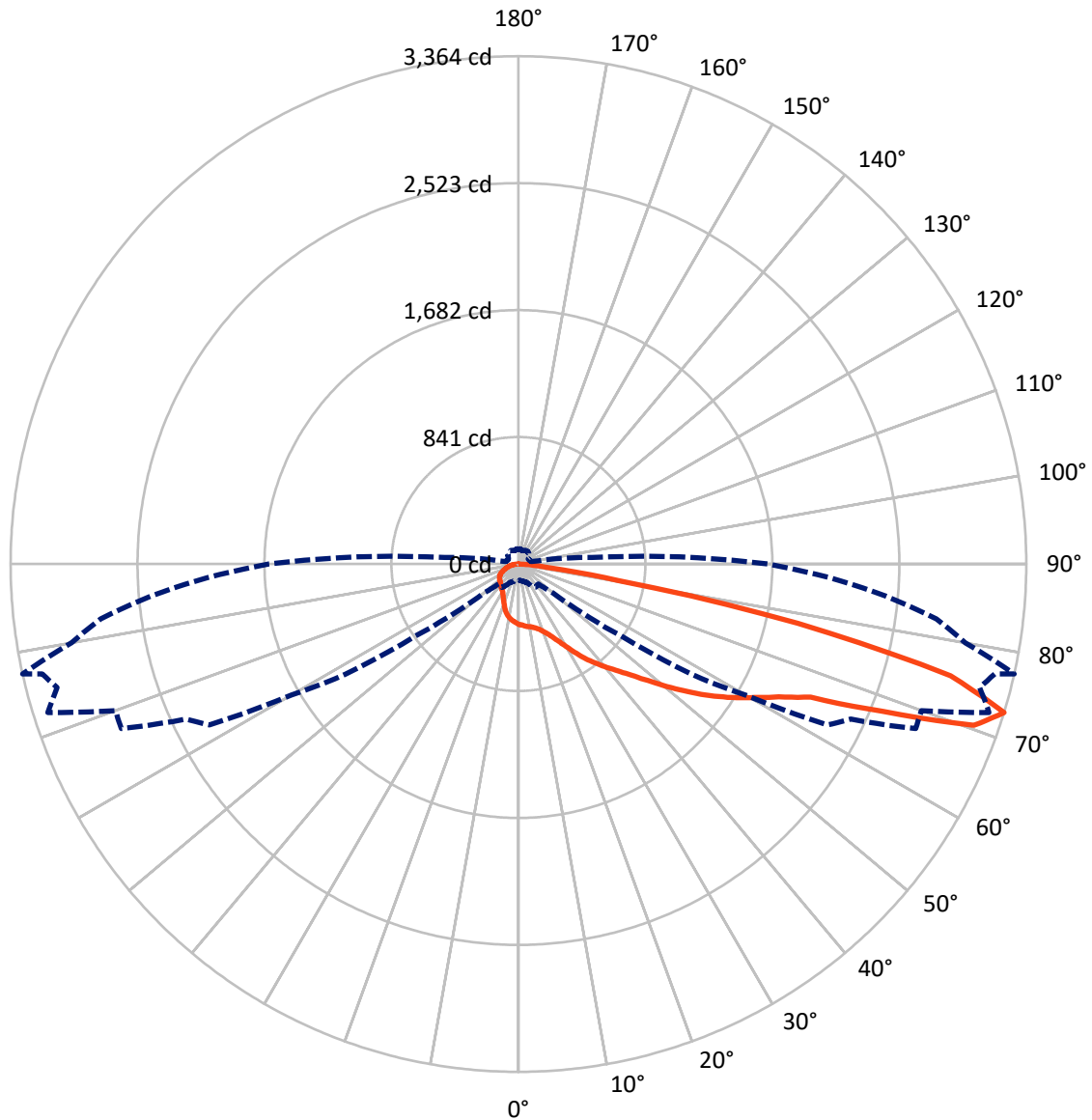


Based on 10 foot mounting height. Maximum calculated value = 4.9 fc
 Type II - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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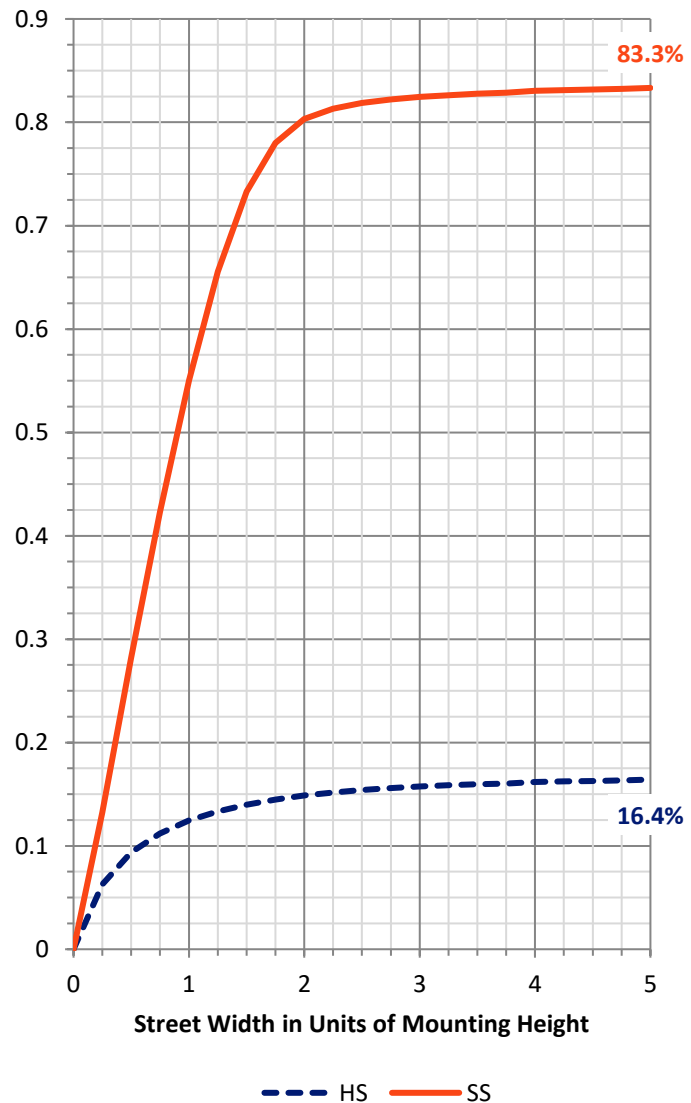
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	497.3	0.0	497.3
	% Fixture	16.6	0.0	16.6
Street Side	Lumens	2504.0	0.0	2504.0
	% Fixture	83.4	0.0	83.4
Total	Lumens	3001.3	0.0	3001.3
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.2	1.2
10°-20°	114.1	3.8
20°-30°	202.6	6.8
30°-40°	321.0	10.7
40°-50°	481.6	16.0
50°-60°	624.0	20.8
60°-70°	709.1	23.6
70°-80°	470.5	15.7
80°-90°	41.2	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°	3001.3	100.0
0°-180°	3001.3	100.0



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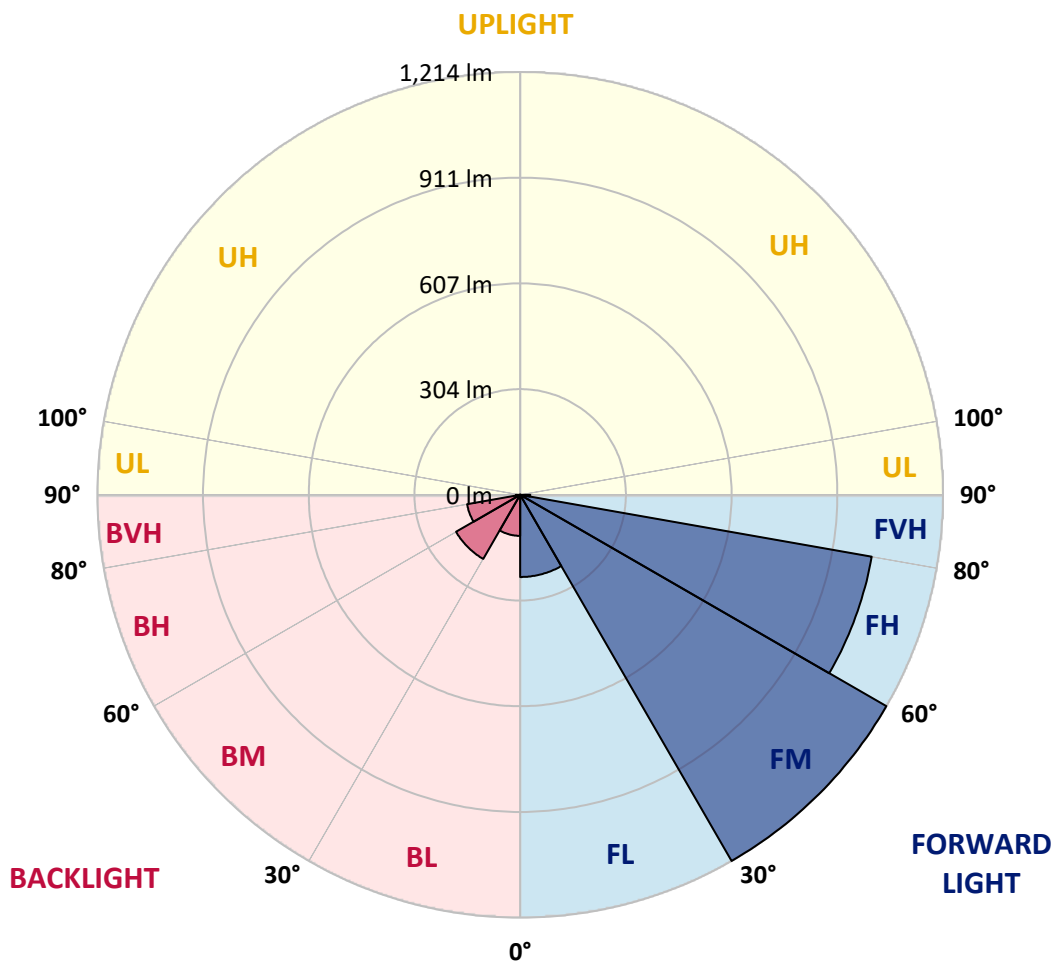
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	236.1	7.9			
FM	(30°-60°)	1214.2	40.5			
FH	(60°-80°)	1025.0	34.1			G1/1800
FVH	(80°-90°)	28.8	1.0			G1/100
BL	(0°-30°)	117.8	3.9	B1/500		
BM	(30°-60°)	212.4	7.1	B0/220		
BH	(60°-80°)	154.7	5.2	B1/500		G1/500
BVH	(80°-90°)	12.4	0.4			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1

Type II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
0°	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7
2.5°	434.1	432.1	431.1	429.0	427.1	426.1	423.0	420.9	424.0	423.0	423.0
5°	466.5	464.5	461.5	458.4	454.4	451.3	448.3	445.3	447.2	445.3	443.2
7.5°	492.9	490.8	486.7	483.8	479.7	475.6	471.6	470.6	468.5	465.5	464.5
10°	508.0	506.0	503.9	502.0	495.8	492.9	487.7	484.7	485.7	481.7	481.7
12.5°	522.1	520.2	519.1	519.1	514.0	511.1	509.0	506.0	508.0	502.0	499.9
15°	535.3	533.3	530.3	533.3	532.2	531.3	530.3	529.3	532.2	526.2	527.2
17.5°	556.6	555.6	549.5	545.4	546.5	549.5	551.5	550.4	550.4	547.5	548.5
20°	589.9	589.9	581.9	574.8	563.6	563.6	564.7	563.6	565.7	567.7	570.7
22.5°	615.3	613.3	610.2	604.2	592.0	581.9	581.9	577.9	580.8	581.9	588.0
25°	647.6	645.6	638.5	638.5	626.4	613.3	611.2	605.2	612.2	599.0	609.2
27.5°	687.1	685.1	676.0	672.0	665.8	649.7	645.6	646.6	653.8	634.5	644.6
30°	736.7	734.7	723.5	712.4	702.3	685.1	683.0	682.1	698.3	676.0	689.2
32.5°	799.4	799.4	787.3	772.1	751.9	728.6	720.5	721.5	743.8	719.5	741.7
35°	894.6	882.4	860.2	836.9	815.6	788.3	777.1	775.2	795.3	771.1	796.4
37.5°	955.2	947.2	926.9	909.7	886.5	860.2	852.0	855.1	872.3	836.9	873.3
40°	1010.0	1008.9	995.7	984.6	961.4	935.1	945.2	985.6	1031.1	962.4	963.4
42.5°	1046.4	1048.4	1047.4	1048.4	1035.2	1007.9	1025.1	1081.8	1159.7	1119.2	1081.8
45°	1052.4	1059.5	1062.5	1082.8	1096.0	1079.7	1088.8	1148.6	1304.4	1367.2	1198.2
47.5°	1067.7	1074.7	1068.6	1092.9	1153.6	1152.6	1189.1	1211.3	1232.6	1242.7	1370.1
50°	1087.8	1101.0	1095.0	1115.1	1164.7	1193.1	1224.5	1252.8	1235.6	1171.8	1206.3
52.5°	1088.8	1104.1	1137.4	1157.7	1206.3	1200.1	1221.4	1206.3	1232.6	1166.8	1200.1
55°	999.8	1002.8	1100.0	1202.2	1287.2	1270.0	1256.8	1222.4	1255.9	1173.8	1216.4
57.5°	859.2	869.3	970.5	1142.5	1324.6	1339.9	1335.8	1332.7	1359.1	1249.7	1296.3
60°	704.3	716.5	812.6	1015.0	1246.7	1286.2	1340.8	1374.2	1442.1	1398.5	1475.4
62.5°	439.2	448.3	554.5	807.5	1100.0	1177.9	1257.8	1297.3	1395.5	1415.8	1546.3
65°	209.5	212.5	254.0	439.2	799.4	946.1	1064.6	1148.6	1269.0	1360.0	1536.2
67.5°	163.0	164.0	179.1	233.7	409.8	508.0	642.6	753.9	882.4	1131.4	1350.0
70°	130.5	130.5	142.7	172.1	254.0	267.2	301.6	339.0	393.6	594.0	771.1
72.5°	109.3	109.3	117.4	135.6	188.2	191.3	189.2	186.2	186.2	234.8	299.5
75°	92.1	91.0	96.2	108.2	139.6	143.7	141.7	134.6	126.5	126.5	142.7
77.5°	74.9	74.9	79.0	85.0	101.2	103.2	103.2	97.2	90.0	91.0	98.2
80°	58.7	58.7	61.7	65.8	70.8	69.9	69.9	63.7	58.7	57.7	61.7
82.5°	42.5	43.5	50.6	47.6	45.5	42.5	42.5	41.5	37.4	34.4	36.4
85°	13.2	14.1	24.2	28.3	23.3	19.2	18.2	15.1	16.2	13.2	15.1
87.5°	0.0	0.0	0.0	0.0	1.0	0.0	0.0	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):

	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77°
0°	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7
2.5°	418.0	419.9	415.9	415.9	410.8	413.9	408.9	409.8	404.8	406.8	406.8
5°	438.1	439.2	434.1	432.1	427.1	427.1	422.0	422.0	414.9	417.0	414.9
7.5°	457.4	457.4	452.3	448.3	443.2	441.2	435.2	432.1	426.1	425.0	422.0
10°	473.6	473.6	466.5	462.5	456.3	453.4	445.3	442.2	435.2	430.0	427.1
12.5°	493.9	491.8	483.8	479.7	469.5	468.5	456.3	454.4	444.3	441.2	436.2
15°	518.1	520.2	507.0	506.0	491.8	490.8	474.6	473.6	458.4	457.4	450.3
17.5°	544.4	548.5	537.4	536.3	519.1	519.1	499.9	498.9	478.6	477.6	468.5
20°	567.7	572.8	565.7	567.7	552.5	553.5	532.2	532.2	503.9	502.0	493.9
22.5°	588.9	599.0	593.0	604.2	588.9	596.1	567.7	572.8	539.4	535.3	523.1
25°	610.2	623.4	621.3	639.5	628.4	640.6	611.2	621.3	577.9	580.8	564.7
27.5°	631.5	648.7	646.6	672.9	668.9	693.2	667.9	679.0	631.5	634.5	616.2
30°	666.9	686.1	679.0	706.3	706.3	745.8	726.6	743.8	691.2	697.2	676.0
32.5°	714.4	736.7	715.5	750.8	748.8	800.5	785.3	814.6	763.0	771.1	744.8
35°	766.1	801.5	767.0	806.5	800.5	854.1	843.9	891.5	836.9	846.0	819.7
37.5°	833.8	876.4	830.8	865.2	837.9	899.6	893.5	958.3	902.7	926.0	894.6
40°	913.8	947.2	890.5	919.8	874.3	938.0	927.9	1017.0	965.4	1002.8	974.5
42.5°	987.7	1011.0	936.1	972.5	917.8	982.6	964.3	1071.6	1027.1	1084.8	1053.4
45°	1054.5	1080.7	981.6	1022.0	961.4	1032.2	1000.9	1124.3	1093.9	1180.9	1149.6
47.5°	1149.6	1111.1	1023.1	1075.7	1007.9	1085.9	1044.3	1186.0	1174.9	1298.3	1261.9
50°	1118.2	1143.5	1057.5	1112.2	1050.4	1145.5	1100.0	1259.9	1262.9	1425.8	1404.6
52.5°	1121.3	1163.7	1083.8	1159.7	1100.0	1228.5	1180.9	1349.0	1363.1	1549.3	1519.9
55°	1139.5	1202.2	1123.3	1225.5	1169.8	1320.6	1287.2	1445.0	1469.4	1665.7	1648.5
57.5°	1185.0	1272.0	1191.0	1324.6	1266.9	1425.8	1395.5	1544.2	1577.6	1782.1	1777.0
60°	1360.0	1463.2	1321.7	1469.4	1392.4	1545.3	1504.8	1648.5	1681.8	1893.4	1906.5
62.5°	1555.4	1734.5	1650.5	1804.3	1600.9	1755.7	1636.3	1777.0	1779.0	2012.8	2054.3
65°	1605.9	1881.2	1953.0	2239.4	2133.2	2292.0	1973.3	2067.4	1946.0	2230.3	2290.1
67.5°	1586.7	1923.8	2123.0	2445.9	2566.3	2843.6	2789.9	2757.6	2476.3	2680.6	2752.5
70°	1164.7	1521.9	2009.7	2337.6	2684.7	2866.8	3155.3	3184.7	3172.5	3144.1	3191.7
72.5°	530.3	831.9	1360.0	1734.5	2307.3	2429.7	2847.6	2839.5	3268.6	3162.4	3237.2
75°	208.5	320.8	647.6	968.4	1595.8	1746.6	2220.2	2102.8	2638.2	2482.3	2642.2
77.5°	114.4	143.7	242.8	415.9	871.2	951.2	1359.1	1162.7	1636.3	1366.2	1419.8
80°	68.8	86.0	111.3	157.8	370.4	391.6	579.8	467.5	668.9	508.0	492.9
82.5°	37.4	46.5	55.6	77.9	137.6	152.8	200.4	180.1	214.5	183.2	179.1
85°	15.1	20.3	21.3	31.4	45.5	52.6	63.7	68.8	84.0	76.9	74.9
87.5°	0.0	1.0	0.0	2.0	0.0	2.0	0.0	3.1	3.1	5.0	6.0
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°	82.5°	85°	87.5°	90°	95°	100°	102.5°	105°	107.5°
0°	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7
2.5°	403.8	406.8	402.7	402.7	397.7	400.7	397.7	394.7	389.6	390.6	383.5
5°	410.8	412.9	407.9	405.8	402.7	401.7	395.7	389.6	382.5	382.5	374.4
7.5°	418.0	418.0	410.8	410.8	403.8	401.7	392.6	382.5	372.4	371.4	359.3
10°	422.0	420.9	411.8	411.8	401.7	400.7	389.6	374.4	360.3	356.2	339.0
12.5°	430.0	429.0	418.0	415.9	402.7	402.7	386.6	366.3	346.1	339.0	314.8
15°	440.2	441.2	428.1	425.0	409.8	408.9	386.6	356.2	328.9	317.7	288.4
17.5°	456.3	457.4	439.2	436.2	418.0	414.9	387.6	344.0	305.7	293.5	267.2
20°	477.6	474.6	450.3	449.3	425.0	422.0	386.6	325.8	282.3	270.2	246.9
22.5°	503.9	500.9	469.5	466.5	438.1	433.1	385.6	306.6	261.1	248.0	232.7
25°	540.4	536.3	497.9	493.9	458.4	450.3	384.5	286.4	242.8	232.7	223.6
27.5°	585.9	577.9	531.3	527.2	479.7	469.5	380.5	263.1	224.6	217.6	213.5
30°	640.6	633.5	573.8	567.7	508.0	494.8	376.4	241.8	211.5	208.5	205.4
32.5°	705.3	698.3	625.4	618.3	544.4	525.2	369.4	224.6	203.4	203.4	199.4
35°	773.1	767.0	681.1	676.0	584.9	559.7	360.3	209.5	196.3	196.3	192.3
37.5°	833.8	838.9	741.7	737.8	625.4	594.0	350.2	199.4	190.3	188.2	184.1
40°	899.6	911.8	798.4	801.5	667.9	630.4	338.0	191.3	183.2	181.2	180.1
42.5°	966.4	989.7	858.2	869.3	710.3	667.9	328.9	186.2	180.1	176.0	175.0
45°	1049.3	1082.8	932.0	953.3	760.0	713.4	325.8	180.1	171.0	165.9	163.0
47.5°	1152.6	1197.2	1023.1	1047.4	825.7	768.0	331.9	178.1	164.9	158.9	152.8
50°	1275.0	1317.6	1131.4	1141.5	899.6	827.8	345.0	181.2	163.0	153.9	144.7
52.5°	1404.6	1436.9	1245.7	1234.6	976.5	886.5	360.3	182.2	157.8	148.7	137.6
55°	1538.2	1556.4	1351.9	1322.6	1046.4	945.2	380.5	181.2	153.9	143.7	129.5
57.5°	1668.7	1674.8	1446.0	1417.7	1115.1	1015.0	405.8	178.1	147.7	137.6	122.4
60°	1796.2	1806.3	1550.3	1524.0	1190.1	1105.1	442.2	173.1	139.6	132.6	116.4
62.5°	1935.8	1969.3	1674.8	1678.9	1293.3	1245.7	511.1	166.9	131.6	123.5	107.3
65°	2126.1	2253.6	1880.2	1975.3	1491.6	1510.8	642.6	149.8	120.4	110.3	99.1
67.5°	2602.7	2742.4	2379.1	2417.5	1956.1	1841.7	725.6	127.5	106.3	99.1	92.1
70°	3199.8	3099.6	2841.6	2608.8	2227.3	1893.4	638.5	107.3	94.1	90.0	86.0
72.5°	3363.7	3004.5	2791.9	2442.8	2059.3	1651.5	488.8	92.1	84.0	81.9	79.0
75°	2955.9	2435.7	2447.9	1940.9	1707.2	1258.8	334.0	79.0	72.8	71.8	70.8
77.5°	1890.3	1251.8	1524.0	959.3	985.6	582.9	163.0	65.8	62.7	62.7	60.8
80°	672.0	417.0	471.6	302.6	275.3	185.2	88.1	52.6	50.6	51.7	50.6
82.5°	201.4	159.9	156.8	122.4	95.1	77.9	48.6	40.5	38.5	39.5	37.4
85°	80.9	62.7	52.6	40.5	33.3	30.4	26.3	27.3	24.2	26.3	23.3
87.5°	5.0	4.1	3.1	4.1	0.0	2.0	5.0	4.1	1.0	4.1	3.1
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):

	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°
0°	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7
2.5°	388.6	381.5	384.5	381.5	383.5	377.5	379.5	374.4	374.4	373.4	368.4
5°	375.4	368.4	367.3	360.3	361.3	353.1	352.2	343.1	343.1	334.9	319.8
7.5°	357.2	346.1	345.0	330.9	329.9	318.8	314.8	304.6	303.6	294.5	285.4
10°	334.0	316.7	313.7	295.5	296.5	284.4	283.4	276.3	276.3	272.2	272.2
12.5°	307.6	288.4	286.4	272.2	273.2	265.1	266.2	262.1	264.1	266.2	273.2
15°	283.4	268.1	266.2	257.1	258.1	256.0	259.0	259.0	262.1	267.2	279.3
17.5°	263.1	249.9	250.9	246.9	250.9	249.9	256.0	255.0	261.1	267.2	282.3
20°	244.9	237.8	240.8	239.9	244.9	244.9	249.9	250.9	256.0	264.1	281.3
22.5°	232.7	230.7	233.7	233.7	237.8	238.9	243.9	246.9	249.9	258.1	273.2
25°	225.7	224.6	227.7	228.7	231.7	232.7	237.8	237.8	242.8	248.0	256.0
27.5°	215.5	213.5	217.6	217.6	221.6	220.7	226.7	224.6	229.8	231.7	233.7
30°	208.5	205.4	208.5	207.5	210.5	207.5	210.5	207.5	210.5	210.5	207.5
32.5°	201.4	198.4	199.4	195.3	198.4	194.3	195.3	191.3	193.2	191.3	192.3
35°	194.3	190.3	190.3	185.2	185.2	180.1	182.2	178.1	182.2	185.2	184.1
37.5°	184.1	181.2	181.2	177.1	179.1	177.1	181.2	179.1	180.1	176.0	169.0
40°	178.1	180.1	179.1	182.2	180.1	177.1	174.0	168.0	166.9	164.9	160.9
42.5°	169.0	171.0	165.9	170.0	166.9	168.0	165.9	163.0	160.9	158.9	154.9
45°	155.8	155.8	151.8	157.8	154.9	160.9	158.9	158.9	156.8	153.9	150.8
47.5°	144.7	145.8	141.7	146.7	144.7	152.8	151.8	154.9	154.9	152.8	144.7
50°	137.6	135.6	132.6	137.6	136.6	143.7	144.7	150.8	149.8	150.8	143.7
52.5°	131.6	127.5	124.5	127.5	127.5	133.6	135.6	142.7	143.7	145.8	141.7
55°	124.5	119.4	117.4	119.4	119.4	125.5	128.5	133.6	136.6	142.7	140.7
57.5°	118.4	111.3	109.3	111.3	112.3	118.4	121.4	126.5	130.5	138.6	137.6
60°	111.3	105.3	103.2	106.3	107.3	113.3	116.4	121.4	124.5	133.6	133.6
62.5°	103.2	98.2	98.2	99.1	101.2	107.3	109.3	116.4	117.4	128.5	129.5
65°	96.2	93.1	93.1	94.1	96.2	101.2	102.2	109.3	110.3	121.4	124.5
67.5°	90.0	88.1	88.1	89.1	90.0	94.1	95.1	102.2	104.2	114.4	119.4
70°	84.0	81.9	80.9	80.9	84.0	87.1	89.1	96.2	97.2	106.3	112.3
72.5°	76.9	74.9	74.9	73.9	76.9	79.0	83.0	87.1	89.1	98.2	102.2
75°	69.9	67.8	67.8	66.8	68.8	72.8	73.9	77.9	79.0	87.1	91.0
77.5°	60.8	58.7	58.7	58.7	60.8	61.7	62.7	66.8	68.8	75.9	80.0
80°	50.6	48.6	49.6	48.6	51.7	47.6	50.6	54.6	56.7	60.8	58.7
82.5°	38.5	35.4	36.4	36.4	37.4	34.4	36.4	38.5	40.5	43.5	42.5
85°	24.2	21.3	23.3	21.3	23.3	20.3	22.3	22.3	24.2	22.3	21.3
87.5°	5.0	2.0	5.0	2.0	6.0	0.0	3.1	0.0	2.0	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):

	155°	165°	175°	180°
0°	400.7	400.7	400.7	400.7
2.5°	363.2	359.3	357.2	356.2
5°	311.7	304.6	302.6	300.5
7.5°	280.3	278.2	278.2	277.3
10°	274.3	277.3	278.2	278.2
12.5°	281.3	286.4	290.4	290.4
15°	290.4	299.5	304.6	304.6
17.5°	297.5	309.6	314.8	315.7
20°	298.5	310.7	317.7	318.8
22.5°	289.4	297.5	302.6	302.6
25°	266.2	270.2	273.2	273.2
27.5°	236.8	235.8	234.8	238.9
30°	206.4	204.4	200.4	204.4
32.5°	195.3	188.2	178.1	181.2
35°	178.1	176.0	171.0	172.1
37.5°	172.1	189.2	188.2	189.2
40°	164.9	186.2	185.2	187.2
42.5°	158.9	171.0	158.9	159.9
45°	147.7	152.8	142.7	142.7
47.5°	142.7	140.7	136.6	135.6
50°	138.6	138.6	136.6	134.6
52.5°	135.6	133.6	140.7	139.6
55°	131.6	129.5	134.6	134.6
57.5°	128.5	123.5	131.6	131.6
60°	125.5	120.4	128.5	128.5
62.5°	123.5	117.4	127.5	126.5
65°	120.4	114.4	127.5	125.5
67.5°	116.4	108.2	125.5	122.4
70°	108.2	101.2	118.4	110.3
72.5°	100.1	92.1	101.2	94.1
75°	88.1	80.9	81.9	80.9
77.5°	73.9	65.8	63.7	64.8
80°	55.6	50.6	48.6	48.6
82.5°	40.5	34.4	35.4	29.4
85°	18.2	13.2	10.1	10.1
87.5°	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)