

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: P228320

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P228320  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29763)-DOWNLIGHT AND  
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-ULG  
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT  
LIGHT SQUARE WITH ACCUED OPTICS-TYPE IV W/SPILL CONTROL, WITH UPLIGHT  
GLOW  
Light Source: (16) 4000K CCT, 70 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

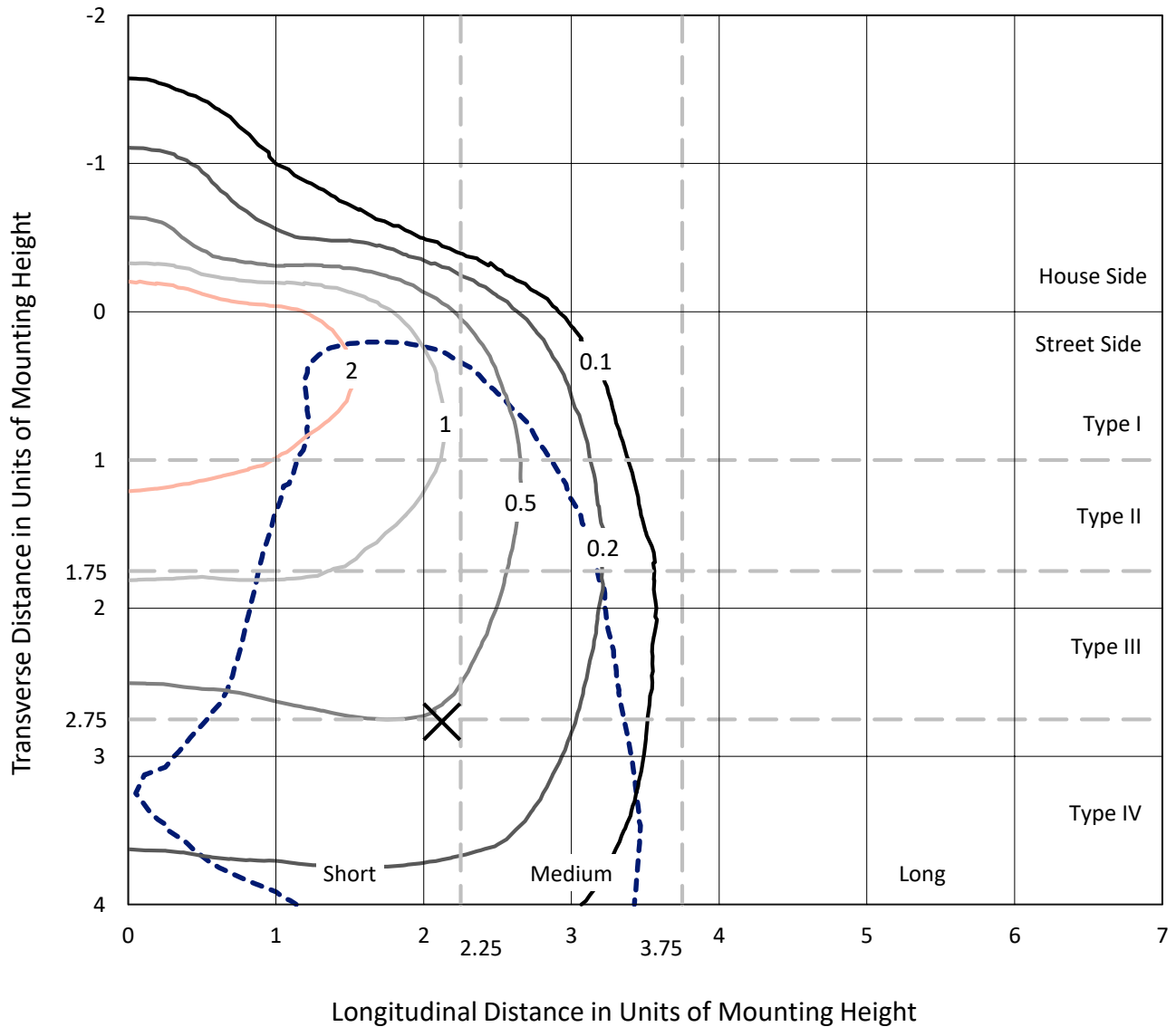
Lumens per Lamp: N/A  
Luminaire Lumens: 4168.7 lumens  
Efficiency: N/A  
Efficacy: 99.2 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B0 - U5 - G1  
  
Input Watts (W): 42.01  
Input Voltage (V): 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

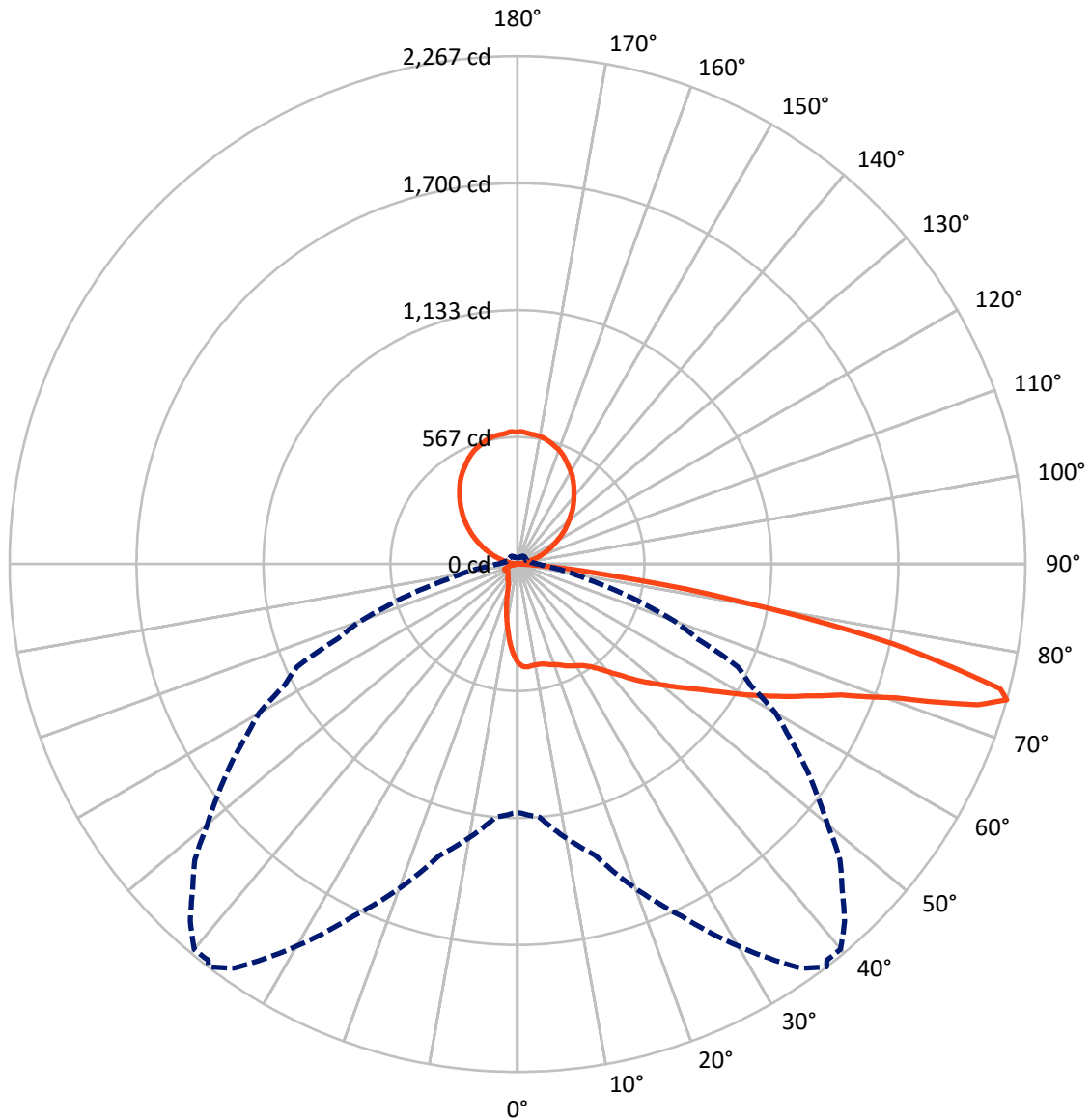
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4.7 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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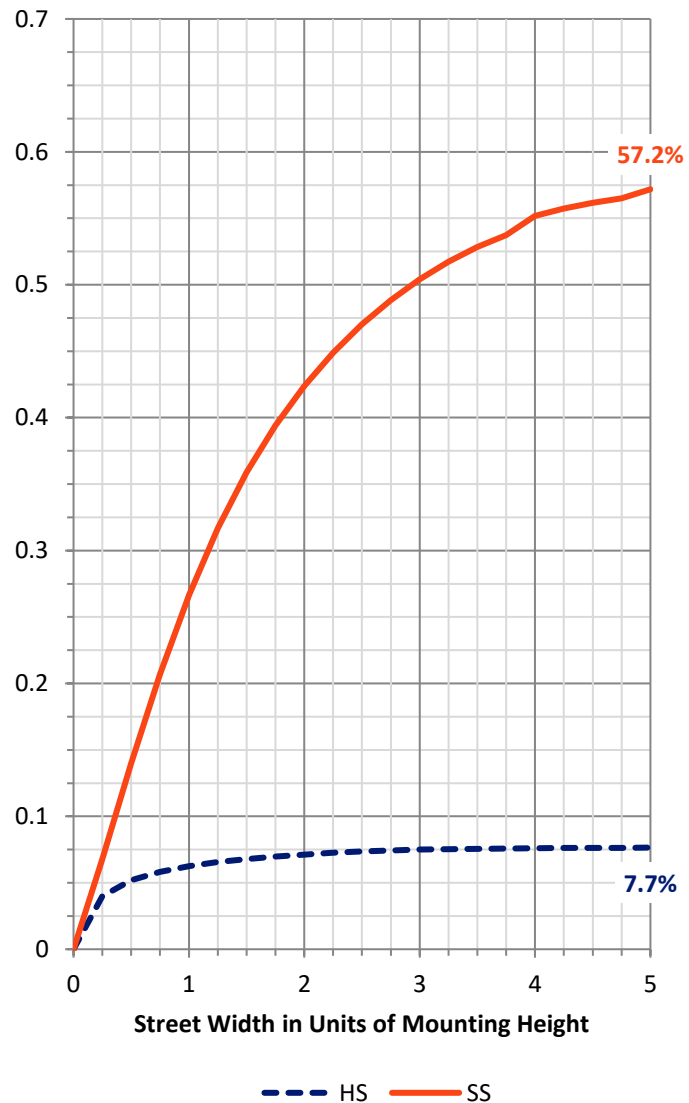
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	321.3	729.4	1050.8
	% Fixture	7.7	17.5	25.2
<b>Street Side</b>	Lumens	2388.5	729.4	3117.9
	% Fixture	57.3	17.5	74.8
<b>Total</b>	Lumens	2709.8	1458.9	4168.7
	% Fixture	65.0	35.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	38.5	0.9
10°-20°	98.1	2.4
20°-30°	152.0	3.6
30°-40°	225.4	5.4
40°-50°	346.8	8.3
50°-60°	512.6	12.3
60°-70°	683.3	16.4
70°-80°	589.8	14.1
80°-90°	63.4	1.5
90°-100°	4.8	0.1
100°-110°	70.6	1.7
110°-120°	156.6	3.8
120°-130°	229.0	5.5
130°-140°	271.7	6.5
140°-150°	275.5	6.6
150°-160°	236.4	5.7
160°-170°	158.7	3.8
170°-180°	55.6	1.3
0°-90°	2709.8	65.0
0°-180°	4168.7	100.0



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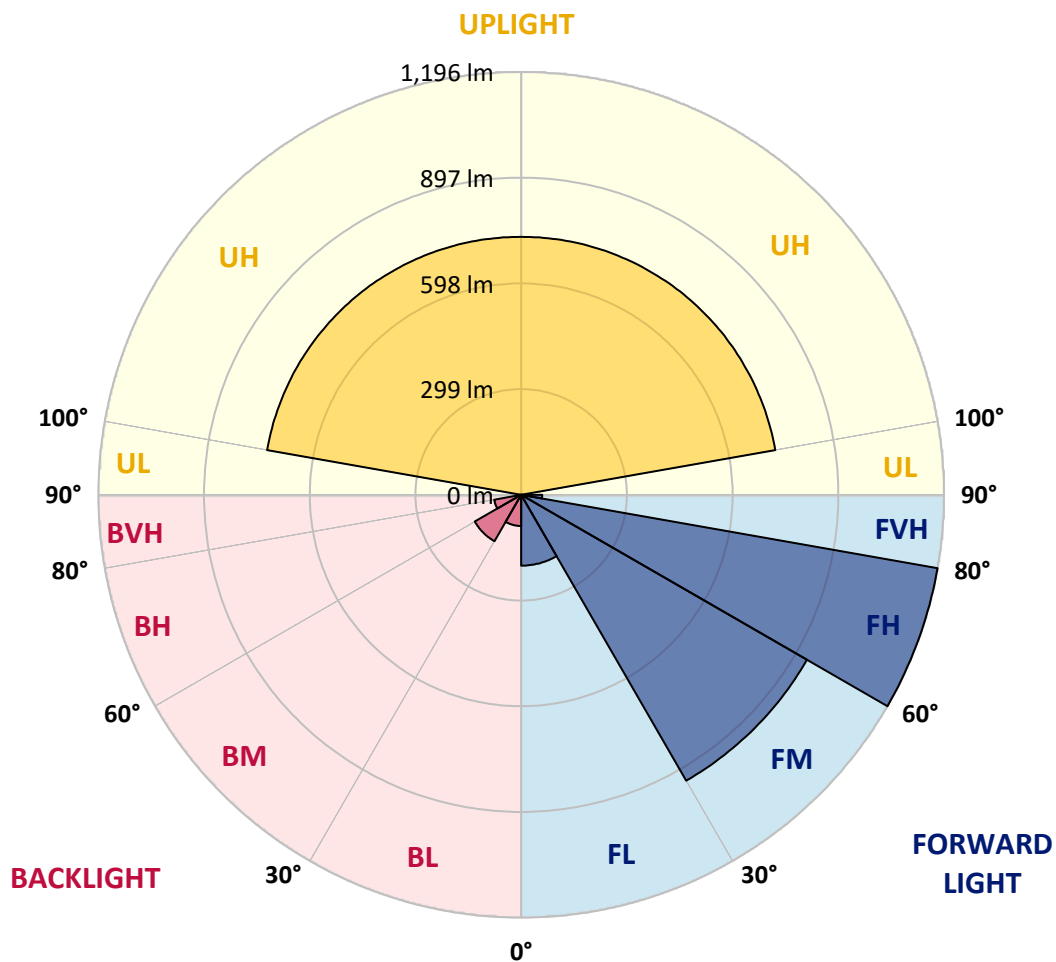
CATALOG NUMBER: ISS-AF-450-LED-E1-SL4-ULG

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	200.3	4.8			
FM (30°-60°)	933.3	22.4			
FH (60°-80°)	1195.6	28.7			G1/1800
FVH (80°-90°)	59.3	1.4			G1/100
BL (0°-30°)	88.2	2.1	B0/110		
BM (30°-60°)	151.5	3.6	B0/220		
BH (60°-80°)	77.5	1.9	B0/110		G0/110
BVH (80°-90°)	4.2	0.1			G0/10
UL (90°-100°)	4.8	0.1		U1/10	
UH (100°-180°)	729.4	17.5		U4/1000	

**BUG Rating: B0-U5-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°	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2
2.5°	467.5	466.5	464.4	463.4	461.5	458.4	461.5	457.4	455.3	457.4	453.4
5°	475.6	474.5	472.6	468.5	466.5	461.5	464.4	459.4	458.4	460.4	455.3
7.5°	476.6	474.5	471.6	466.5	464.4	458.4	460.4	454.3	452.3	454.3	451.3
10°	473.5	472.6	469.5	461.5	459.4	457.4	456.3	452.3	451.3	450.3	449.3
12.5°	468.5	468.5	466.5	463.4	462.5	458.4	459.4	455.3	456.3	454.3	452.3
15°	466.5	465.4	467.5	469.5	469.5	463.4	467.5	464.4	462.5	463.4	460.4
17.5°	464.4	465.4	472.6	476.6	478.6	472.6	478.6	472.6	468.5	473.5	468.5
20°	463.4	466.5	478.6	487.7	488.8	478.6	488.8	478.6	478.6	484.7	475.6
22.5°	468.5	473.5	490.8	500.8	502.9	489.8	501.9	488.8	488.8	493.8	484.7
25°	484.7	489.8	509.0	520.1	518.1	503.9	515.1	501.9	500.8	507.0	494.8
27.5°	506.0	513.0	531.2	541.3	534.3	515.1	531.2	512.0	512.0	521.1	504.9
30°	536.3	541.3	557.5	558.5	549.4	526.2	544.4	523.1	520.1	536.3	516.1
32.5°	569.7	573.8	585.8	578.8	565.7	541.3	562.6	537.4	536.3	553.5	530.2
35°	605.1	609.2	613.2	601.1	588.9	562.6	585.8	560.6	559.6	578.8	556.6
37.5°	641.5	641.5	641.5	627.4	619.3	594.0	615.2	594.9	593.0	613.2	592.0
40°	670.9	672.9	669.8	656.7	652.6	634.4	652.6	634.4	637.5	655.7	638.5
42.5°	695.2	697.2	698.2	687.1	691.1	681.0	695.2	682.0	683.0	703.3	693.2
45°	719.4	718.4	726.5	723.5	735.6	736.6	744.7	739.7	741.7	756.9	753.8
47.5°	744.7	739.7	748.8	762.0	784.2	791.3	796.4	798.4	806.5	813.6	820.6
50°	769.1	763.9	770.1	799.4	834.8	850.0	851.0	861.1	870.2	880.4	894.5
52.5°	794.3	790.3	796.4	837.8	894.5	915.7	912.7	930.0	943.1	954.2	977.5
55°	820.6	816.6	822.7	884.3	958.3	987.6	984.6	1008.8	1034.1	1038.2	1064.5
57.5°	846.0	840.9	858.1	939.1	1034.1	1078.7	1064.5	1101.9	1126.3	1124.2	1160.6
60°	873.3	869.2	896.5	1005.9	1129.2	1186.9	1165.7	1215.3	1232.5	1225.4	1259.8
62.5°	899.6	898.6	944.1	1083.7	1244.6	1300.3	1281.0	1324.5	1336.7	1327.6	1344.8
65°	923.8	930.0	995.7	1161.7	1355.9	1419.7	1393.4	1436.8	1451.1	1444.0	1473.4
67.5°	964.3	971.4	1059.5	1260.8	1493.5	1559.3	1537.1	1582.6	1603.9	1601.8	1634.2
70°	1024.1	1037.2	1153.6	1401.4	1703.0	1787.0	1774.8	1830.5	1882.1	1878.0	1910.5
72.5°	1128.2	1149.5	1308.4	1620.0	2047.0	2149.2	2135.1	2166.5	2157.3	2083.4	2023.8
74°	1108.1	1134.4	1346.8	1734.4	2201.9	2266.7	2243.3	2244.4	2161.4	2049.1	1952.9
75°	1034.1	1061.5	1291.2	1720.2	2190.8	2226.1	2192.8	2151.3	2051.1	1936.8	1818.4
77.5°	709.3	744.7	949.2	1389.4	1763.8	1715.2	1707.1	1628.1	1495.6	1367.1	1215.3
80°	363.2	388.5	490.8	726.5	1046.3	997.7	1013.9	950.1	839.8	746.8	592.0
82.5°	87.1	93.1	144.7	281.3	453.4	414.9	420.9	372.4	308.6	252.0	195.3
85°	45.5	51.6	70.8	77.9	119.4	123.5	120.4	116.4	95.1	79.9	69.9
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
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	2.0	2.0	2.0	3.1	4.1	5.3	5.6	6.6	8.0	9.2	10.2
100°	8.2	8.2	10.2	14.3	22.5	24.6	25.0	26.6	28.6	30.7	31.2
102.5°	28.6	28.6	32.7	38.9	46.0	47.3	47.6	48.6	49.9	51.1	51.4
105°	55.2	55.2	57.3	62.4	67.5	68.5	68.7	69.6	70.6	71.6	71.8
107.5°	79.8	78.8	81.8	85.9	90.0	90.8	90.9	91.6	92.3	93.1	93.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	37.5°	38°	40°	42.5°	45°	47.5°
110°	103.3	104.3	105.4	108.4	112.5	113.0	113.1	113.5	114.1	114.6	115.1
112.5°	126.8	126.8	128.9	132.0	135.0	135.5	135.6	136.1	136.6	137.1	137.6
115°	149.4	150.4	152.4	154.5	157.5	158.0	158.1	158.6	159.1	159.6	160.1
117.5°	172.9	173.9	175.9	178.0	181.1	181.6	181.7	182.1	182.6	183.1	183.3
120°	197.4	199.5	200.5	202.5	205.6	205.8	205.9	206.1	206.4	206.6	207.1
122.5°	224.0	225.0	226.1	228.1	231.2	231.4	231.5	231.7	232.0	232.2	232.4
125°	249.6	251.6	252.7	253.7	256.8	257.0	257.1	257.3	257.6	257.8	258.0
127.5°	273.1	275.2	276.2	278.2	280.3	280.8	280.9	281.3	281.8	282.3	282.8
130°	296.7	298.7	299.7	300.7	304.8	305.0	305.1	305.4	305.7	305.9	306.4
132.5°	320.2	321.2	324.3	325.3	328.4	328.6	328.7	328.9	329.2	329.4	330.2
135°	343.7	344.7	346.8	348.8	352.9	352.9	352.9	352.9	352.9	352.9	353.7
137.5°	367.2	368.3	371.3	372.4	375.4	375.4	375.4	375.4	375.4	375.4	375.9
140°	390.8	391.8	393.8	394.9	396.9	397.1	397.2	397.4	397.7	397.9	398.1
142.5°	413.3	415.3	417.4	416.3	419.4	419.4	419.4	419.4	419.4	419.4	419.9
145°	434.8	435.8	437.8	437.8	440.9	441.1	441.2	441.4	441.7	441.9	442.4
147.5°	454.2	454.2	457.3	458.3	462.4	462.6	462.7	462.9	463.2	463.4	463.6
150°	471.6	472.6	474.6	475.7	479.8	480.0	480.1	480.3	480.6	480.8	481.0
152.5°	490.0	491.0	494.1	493.1	496.1	496.3	496.4	496.6	496.9	497.2	497.4
155°	510.5	511.5	513.5	512.5	514.5	514.5	514.5	514.5	514.5	514.5	514.7
157.5°	524.8	526.8	528.9	527.8	530.9	530.9	530.9	530.9	530.9	530.9	530.9
160°	537.0	539.1	541.1	541.1	544.2	544.2	544.2	544.2	544.2	544.2	544.2
162.5°	547.3	548.3	551.4	550.3	553.4	553.4	553.4	553.4	553.4	553.4	553.6
165°	558.5	559.6	561.6	560.6	564.7	564.7	564.7	564.7	564.7	564.7	564.9
167.5°	567.7	568.8	571.8	570.8	573.9	573.7	573.6	573.4	573.1	572.9	572.9
170°	574.9	575.9	579.0	578.0	580.0	579.8	579.7	579.5	579.2	579.0	578.8
172.5°	578.0	579.0	582.1	580.0	582.1	581.9	581.8	581.5	581.2	581.0	581.2
175°	580.0	582.1	583.1	582.1	585.1	585.1	585.1	585.1	585.1	585.1	585.3
177.5°	585.1	586.2	588.2	587.2	591.3	591.1	591.0	590.8	590.4	590.2	590.2
180°	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2





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**CANDELA DISTRIBUTION (continued):**

	50°	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°
0°	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2
2.5°	456.3	454.3	456.3	450.3	453.4	448.3	450.3	445.2	447.2	443.2	444.3
5°	458.4	453.4	456.3	451.3	452.3	448.3	447.2	445.2	444.3	441.2	439.2
7.5°	453.4	449.3	448.3	446.2	443.2	444.3	440.2	439.2	436.1	436.1	430.0
10°	448.3	449.3	443.2	445.2	440.2	441.2	434.1	436.1	431.1	435.2	426.0
12.5°	452.3	453.4	448.3	451.3	442.2	444.3	438.1	441.2	434.1	439.2	428.0
15°	461.5	460.4	458.4	458.4	449.3	453.4	446.2	448.3	441.2	447.2	435.2
17.5°	469.5	468.5	465.4	464.4	458.4	459.4	452.3	456.3	448.3	453.4	441.2
20°	478.6	473.5	472.6	471.6	464.4	464.4	459.4	461.5	453.4	459.4	445.2
22.5°	485.7	481.7	480.7	476.6	471.6	473.5	466.5	467.5	459.4	465.4	453.4
25°	496.8	491.7	491.7	485.7	482.6	481.7	477.6	480.7	472.6	476.6	465.4
27.5°	512.0	500.8	504.9	498.9	496.8	495.8	493.8	495.8	489.8	492.8	481.7
30°	526.2	512.0	518.1	510.0	514.0	510.0	513.0	510.0	510.0	510.0	504.9
32.5°	545.4	528.3	540.3	528.3	536.3	530.2	540.3	534.3	538.3	537.4	535.3
35°	572.8	552.5	569.7	553.5	567.6	559.6	573.8	570.7	578.8	574.8	578.8
37.5°	609.2	587.9	608.1	593.0	610.2	598.0	618.3	616.2	633.4	627.4	633.4
40°	654.7	639.5	654.7	643.5	661.7	656.7	678.0	678.9	698.2	695.2	702.3
42.5°	705.3	694.2	709.3	703.3	721.5	725.5	749.8	755.9	774.1	779.2	780.2
45°	760.0	757.9	770.1	776.1	794.3	806.5	827.8	842.9	863.2	874.3	872.3
47.5°	823.7	831.8	839.8	855.1	871.2	896.5	917.8	937.0	960.2	967.4	970.4
50°	895.5	909.7	916.8	938.0	954.2	985.6	1015.0	1039.2	1064.5	1061.5	1063.5
52.5°	971.4	989.6	999.7	1025.0	1046.3	1082.7	1108.1	1131.3	1162.7	1154.6	1151.5
55°	1055.4	1082.7	1090.8	1119.1	1137.3	1174.8	1197.1	1237.6	1250.7	1242.6	1225.4
57.5°	1144.5	1176.8	1185.9	1224.4	1233.5	1274.0	1293.2	1320.5	1331.7	1318.5	1296.2
60°	1245.6	1275.0	1282.1	1316.4	1328.6	1366.0	1380.3	1404.5	1412.6	1380.3	1348.9
62.5°	1346.8	1377.2	1381.2	1411.6	1423.7	1456.1	1472.3	1486.4	1482.5	1434.9	1395.4
65°	1462.2	1491.6	1501.7	1532.0	1539.1	1563.4	1576.6	1560.3	1551.2	1479.4	1434.9
67.5°	1645.3	1676.7	1680.7	1687.9	1686.8	1674.7	1668.6	1613.0	1572.5	1439.9	1376.2
70°	1886.1	1862.9	1817.4	1764.7	1726.3	1657.5	1617.0	1502.6	1417.7	1268.9	1161.7
72.5°	1929.7	1853.8	1741.5	1651.5	1558.3	1450.0	1363.0	1190.0	1070.6	914.7	801.4
74°	1806.2	1682.8	1564.4	1437.9	1330.7	1172.8	1084.7	866.1	747.8	589.9	452.3
75°	1657.5	1512.7	1379.2	1218.3	1118.2	928.9	846.0	610.2	491.7	350.2	235.8
77.5°	1057.4	884.3	756.9	570.7	492.8	340.0	248.9	154.8	114.4	100.1	87.1
80°	474.5	338.0	268.1	185.2	154.8	118.4	100.1	80.9	73.9	64.8	61.7
82.5°	151.8	121.4	115.4	103.2	103.2	83.0	70.8	55.6	50.6	43.5	39.5
85°	65.8	61.7	63.7	58.7	59.7	45.5	36.4	27.3	27.3	19.2	17.2
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
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	11.3	12.3	13.3	11.8	10.2	8.7	7.2	6.6	6.1	5.6	5.1
100°	31.7	32.2	32.7	32.2	31.7	31.2	30.7	29.9	29.2	28.4	27.6
102.5°	51.7	52.0	52.2	52.0	51.7	51.4	51.1	50.6	50.1	49.6	49.1
105°	72.1	72.4	72.6	72.6	72.6	72.6	72.6	72.1	71.6	71.1	70.6
107.5°	94.1	94.6	95.1	94.9	94.6	94.3	94.1	93.9	93.6	93.3	93.1



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**CANDELA DISTRIBUTION (continued):**

	50°	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°
110°	115.6	116.1	116.6	116.6	116.6	116.6	116.6	116.4	116.1	115.8	115.6
112.5°	138.1	138.6	139.1	139.1	139.1	139.1	139.1	138.9	138.6	138.3	138.1
115°	160.6	161.1	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6
117.5°	183.6	183.9	184.1	184.3	184.6	184.9	185.2	184.9	184.6	184.3	184.1
120°	207.7	208.2	208.7	208.7	208.7	208.7	208.7	208.7	208.7	208.7	208.7
122.5°	232.7	233.0	233.2	233.2	233.2	233.2	233.2	233.4	233.7	234.1	234.3
125°	258.3	258.6	258.8	259.0	259.3	259.6	259.8	259.8	259.8	259.8	259.8
127.5°	283.4	283.9	284.4	284.2	283.9	283.6	283.4	283.6	283.9	284.2	284.4
130°	306.9	307.4	307.9	307.9	307.9	307.9	307.9	308.1	308.4	308.7	308.9
132.5°	330.9	331.6	332.5	332.5	332.5	332.5	332.5	332.7	333.0	333.3	333.5
135°	354.5	355.2	356.0	356.0	356.0	356.0	356.0	356.2	356.5	356.8	357.0
137.5°	376.4	377.0	377.5	377.5	377.5	377.5	377.5	377.7	378.0	378.3	378.5
140°	398.4	398.7	399.0	399.0	399.0	399.0	399.0	399.5	400.0	400.5	401.0
142.5°	420.4	420.9	421.5	421.5	421.5	421.5	421.5	421.7	422.0	422.3	422.5
145°	442.9	443.4	444.0	443.8	443.4	443.1	442.9	443.1	443.4	443.8	444.0
147.5°	463.9	464.2	464.4	463.9	463.4	462.9	462.4	462.6	462.9	463.2	463.4
150°	481.3	481.6	481.8	481.3	480.8	480.3	479.8	479.8	479.8	479.8	479.8
152.5°	497.7	498.0	498.2	498.0	497.7	497.4	497.2	497.2	497.2	497.2	497.2
155°	515.1	515.4	515.6	515.4	515.1	514.7	514.5	514.7	515.1	515.4	515.6
157.5°	530.9	530.9	530.9	530.4	529.9	529.4	528.9	529.1	529.4	529.7	529.9
160°	544.2	544.2	544.2	543.7	543.2	542.7	542.2	542.2	542.2	542.2	542.2
162.5°	553.9	554.2	554.4	553.9	553.4	552.9	552.4	551.9	551.4	550.9	550.3
165°	565.2	565.5	565.7	564.9	564.2	563.4	562.6	562.1	561.6	561.1	560.6
167.5°	572.9	572.9	572.9	572.3	571.8	571.3	570.8	571.0	571.3	571.6	571.8
170°	578.5	578.2	578.0	577.8	577.5	577.1	576.9	577.5	578.0	578.5	579.0
172.5°	581.5	581.9	582.1	581.5	581.0	580.5	580.0	580.2	580.5	580.8	581.0
175°	585.6	585.9	586.2	585.3	584.6	583.9	583.1	582.6	582.1	581.5	581.0
177.5°	590.2	590.2	590.2	589.4	588.7	588.0	587.2	587.2	587.2	587.2	587.2
180°	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2



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**CANDELA DISTRIBUTION (continued):**

	77.5°	80°	85°	90°	95°	100°	102.5°	105°	107.5°	110°	112.5°
0°	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2
2.5°	440.2	442.2	441.2	437.1	436.1	433.1	426.0	427.0	423.0	426.0	420.9
5°	436.1	435.2	431.1	426.0	420.9	414.9	409.8	407.7	403.8	401.7	398.6
7.5°	430.0	426.0	418.9	410.8	403.8	395.7	391.6	384.5	382.5	375.4	374.4
10°	428.0	420.9	412.9	402.7	390.6	378.5	377.5	365.3	364.3	353.1	350.2
12.5°	432.1	423.0	412.9	400.7	386.6	369.4	369.4	351.1	350.2	334.9	329.9
15°	440.2	429.0	415.9	401.7	383.5	362.2	361.2	340.0	338.0	319.8	313.6
17.5°	447.2	432.1	419.9	400.7	379.4	355.2	350.2	328.9	324.8	303.6	295.4
20°	452.3	435.2	420.9	398.6	372.4	344.0	337.0	314.7	305.6	284.4	273.2
22.5°	458.4	442.2	423.0	397.7	368.4	334.9	319.8	299.5	286.3	264.1	248.9
25°	467.5	453.4	430.0	400.7	365.3	325.8	305.6	284.4	266.2	243.9	221.6
27.5°	481.7	467.5	440.2	404.8	364.3	316.7	294.5	268.1	245.9	221.6	196.3
30°	501.9	486.7	457.4	415.9	365.3	309.6	282.3	254.0	227.7	199.4	173.1
32.5°	528.3	516.1	479.7	428.0	369.4	303.6	271.2	238.8	206.4	179.1	155.8
35°	564.7	556.6	511.0	451.3	379.4	300.5	260.0	224.6	188.2	160.9	135.6
37.5°	618.3	607.1	556.6	484.7	395.7	298.5	252.0	207.5	173.1	143.7	122.4
40°	686.1	670.9	610.2	525.2	420.9	299.5	244.9	194.3	159.9	128.5	111.3
42.5°	767.0	744.7	676.0	574.8	446.2	301.6	240.8	182.2	149.8	116.4	103.2
45°	858.1	832.8	753.8	636.5	482.6	306.6	237.8	172.1	140.7	107.3	98.2
47.5°	947.2	921.8	833.8	698.2	520.1	315.7	239.8	165.9	134.6	102.2	92.1
50°	1034.1	1007.8	904.6	753.8	552.5	327.9	248.0	166.9	133.6	100.1	89.0
52.5°	1111.0	1078.7	965.4	797.4	575.7	335.9	255.0	170.0	134.6	99.1	88.1
55°	1188.0	1146.4	1013.9	831.8	589.9	337.0	255.0	171.0	135.6	99.1	87.1
57.5°	1245.6	1198.1	1051.4	852.0	594.9	331.9	248.9	165.9	129.5	98.2	85.0
60°	1282.1	1231.4	1077.7	865.2	587.9	310.7	216.6	146.7	114.4	91.0	79.0
62.5°	1312.4	1260.8	1085.8	842.9	528.3	246.9	169.0	119.4	95.1	80.9	72.8
65°	1319.5	1257.8	1029.1	744.7	412.9	171.0	122.4	94.1	77.9	71.8	65.8
67.5°	1212.2	1138.3	865.2	582.9	281.3	117.3	91.0	76.9	66.8	63.7	61.7
70°	985.6	904.6	633.4	381.5	156.8	81.9	69.9	63.7	57.7	57.7	54.6
72.5°	635.5	551.5	324.8	163.0	79.9	62.7	56.7	54.6	49.6	50.6	47.6
74°	324.8	253.0	132.6	86.0	65.8	55.6	50.6	49.6	44.5	45.5	42.5
75°	164.9	130.5	93.1	71.8	60.8	52.6	46.5	46.5	40.5	41.5	38.5
77.5°	76.9	73.9	63.7	56.7	51.6	44.5	38.5	37.4	31.4	33.3	29.4
80°	53.6	53.6	49.6	47.6	42.5	36.4	29.4	29.4	23.3	24.2	21.3
82.5°	30.4	28.3	28.3	32.4	33.3	27.3	21.3	20.3	17.2	17.2	14.1
85°	13.2	15.1	18.2	22.3	24.2	21.3	15.1	14.1	9.1	9.1	5.0
87.5°	0.0	1.0	1.0	2.0	4.1	4.1	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
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	4.9	4.6	4.1	4.1	4.1	4.6	4.9	5.1	5.6	6.1	6.6
100°	27.4	27.1	26.6	25.6	26.6	27.1	27.4	27.6	28.4	29.2	29.9
102.5°	49.3	49.6	50.1	49.1	50.1	49.6	49.3	49.1	49.6	50.1	50.6
105°	71.1	71.6	72.6	70.6	72.6	71.6	71.1	70.6	71.1	71.6	72.1
107.5°	93.3	93.6	94.1	93.1	94.1	93.6	93.3	93.1	93.3	93.6	93.9



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REPORT N  
 CATALOG

**CANDELA DISTRIBUTION (continued):**

**CANDELA**

	77.5°	80°	85°	90°	95°	100°	102.5°	105°	107.5°	110°	112.5°	
110°	115.8	116.1	116.6	115.6	116.6	116.1	115.8	115.6	115.8	116.1	116.4	0°
112.5°	138.6	139.1	140.1	138.1	140.1	139.1	138.6	138.1	138.3	138.6	138.9	2.5°
115°	162.1	162.6	163.7	162.6	163.7	162.6	162.1	161.6	161.6	161.6	161.6	5°
117.5°	184.6	185.2	186.2	184.1	186.2	185.2	184.6	184.1	184.3	184.6	184.9	7.5°
120°	209.2	209.7	210.7	208.7	210.7	209.7	209.2	208.7	208.7	208.7	208.7	10°
122.5°	235.3	236.3	238.3	237.3	238.3	236.3	235.3	234.3	234.1	233.7	233.4	12.5°
125°	260.6	261.4	262.9	261.9	262.9	261.4	260.6	259.8	259.8	259.8	259.8	15°
127.5°	285.2	285.9	287.4	284.4	287.4	285.9	285.2	284.4	284.2	283.9	283.6	17.5°
130°	309.7	310.5	312.0	310.0	312.0	310.5	309.7	308.9	308.7	308.4	308.1	20°
132.5°	334.3	335.0	336.6	334.5	336.6	335.0	334.3	333.5	333.3	333.0	332.7	22.5°
135°	357.5	358.0	359.1	358.0	359.1	358.0	357.5	357.0	356.8	356.5	356.2	25°
137.5°	379.5	380.5	382.6	380.5	382.6	380.5	379.5	378.5	378.3	378.0	377.7	27.5°
140°	402.0	403.0	405.1	403.0	405.1	403.0	402.0	401.0	400.5	400.0	399.5	30°
142.5°	423.3	424.0	425.5	424.5	425.5	424.0	423.3	422.5	422.3	422.0	421.7	32.5°
145°	444.8	445.5	447.0	445.0	447.0	445.5	444.8	444.0	443.8	443.4	443.1	35°
147.5°	464.2	464.9	466.5	463.4	466.5	464.9	464.2	463.4	463.2	462.9	462.6	37.5°
150°	480.8	481.8	483.9	480.8	483.9	481.8	480.8	479.8	479.8	479.8	479.8	40°
152.5°	498.0	498.7	500.2	497.2	500.2	498.7	498.0	497.2	497.2	497.2	497.2	42.5°
155°	516.4	517.1	518.6	516.6	518.6	517.1	516.4	515.6	515.4	515.1	514.7	45°
157.5°	531.1	532.4	535.0	531.9	535.0	532.4	531.1	529.9	529.7	529.4	529.1	47.5°
160°	543.0	543.7	545.2	543.2	545.2	543.7	543.0	542.2	542.2	542.2	542.2	50°
162.5°	550.9	551.4	552.4	549.3	552.4	551.4	550.9	550.3	550.9	551.4	551.9	52.5°
165°	561.1	561.6	562.6	560.6	562.6	561.6	561.1	560.6	561.1	561.6	562.1	55°
167.5°	572.9	573.9	575.9	573.9	575.9	573.9	572.9	571.8	571.6	571.3	571.0	57.5°
170°	580.2	581.5	584.1	582.1	584.1	581.5	580.2	579.0	578.5	578.0	577.5	60°
172.5°	581.9	582.6	584.1	581.0	584.1	582.6	581.9	581.0	580.8	580.5	580.2	62.5°
175°	581.9	582.6	584.1	581.0	584.1	582.6	581.9	581.0	581.5	582.1	582.6	65°
177.5°	588.0	588.7	590.2	587.2	590.2	588.7	588.0	587.2	587.2	587.2	587.2	67.5°
180°	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	70°
												72.5°
												74°
												75°
												77.5°
												80°
												82.5°
												85°
												87.5°
												90°
												92.5°
												95°
												97.5°
												100°
												102.5°
												105°
												107.5°

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REPORT NUMBER: P  
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**DISTRIBUTION (continued):**

**CANDELA DISTRIBUTION**

115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	155°	165°	115°	115°
442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2	442.2	110°	116.6
423.0	417.9	420.9	415.9	417.9	412.9	414.9	411.8	408.8	404.8	403.8	112.5°	139.1
395.7	391.6	390.6	385.6	386.6	382.5	378.5	373.4	367.3	359.3	356.2	115°	161.6
365.3	364.3	357.2	354.1	350.2	346.1	339.0	330.9	318.8	307.6	300.5	117.5°	185.2
339.0	335.9	325.8	320.8	314.7	309.6	299.5	288.4	271.2	254.0	244.9	120°	208.7
316.7	312.7	299.5	293.5	284.4	278.2	266.2	252.0	227.7	203.4	192.2	122.5°	233.2
298.5	292.5	277.2	268.1	256.0	249.9	236.8	216.6	187.2	161.9	146.7	125°	259.8
277.2	269.1	253.0	241.8	229.7	218.6	205.4	184.1	150.8	127.5	112.3	127.5°	283.4
254.0	243.9	226.7	211.4	198.4	188.2	175.0	153.9	120.4	102.2	94.1	130°	307.9
229.7	213.5	198.4	185.2	170.0	159.9	146.7	127.5	102.2	92.1	89.0	132.5°	332.5
204.4	186.2	171.0	157.8	143.7	134.6	123.5	108.2	93.1	90.0	90.0	135°	356.0
179.1	160.9	146.7	133.6	121.4	115.4	105.3	95.1	88.1	89.0	90.0	137.5°	377.5
155.8	137.6	124.5	114.4	103.2	99.1	91.0	85.0	84.0	87.1	88.1	140°	399.0
135.6	119.4	107.3	99.1	90.0	88.1	80.9	77.9	80.9	85.0	84.0	142.5°	421.5
118.4	105.3	93.1	88.1	79.9	79.0	73.9	71.8	75.9	80.9	80.9	145°	442.9
105.3	93.1	84.0	79.9	73.9	72.8	68.8	66.8	69.9	76.9	79.0	147.5°	462.4
94.1	87.1	77.9	73.9	69.9	67.8	65.8	63.7	64.8	73.9	74.9	150°	479.8
87.1	81.9	73.9	71.8	66.8	65.8	62.7	60.8	61.7	68.8	71.8	152.5°	497.2
81.9	77.9	70.8	69.9	64.8	63.7	60.8	58.7	59.7	65.8	68.8	155°	514.5
77.9	73.9	67.8	65.8	62.7	61.7	59.7	57.7	57.7	63.7	66.8	157.5°	528.9
75.9	71.8	65.8	63.7	60.8	59.7	57.7	55.6	56.7	61.7	63.7	160°	542.2
74.9	69.9	64.8	61.7	59.7	57.7	55.6	53.6	54.6	59.7	61.7	162.5°	552.4
74.9	68.8	64.8	61.7	58.7	55.6	54.6	51.6	53.6	57.7	60.8	165°	562.6
74.9	68.8	64.8	61.7	59.7	56.7	54.6	52.6	53.6	57.7	60.8	167.5°	570.8
72.8	67.8	65.8	62.7	61.7	58.7	57.7	55.6	55.6	60.8	65.8	170°	576.9
69.9	66.8	65.8	63.7	63.7	61.7	61.7	59.7	59.7	65.8	70.8	172.5°	580.0
65.8	63.7	64.8	63.7	63.7	63.7	62.7	62.7	62.7	67.8	73.9	175°	583.1
61.7	60.8	61.7	61.7	62.7	61.7	62.7	61.7	61.7	66.8	72.8	177.5°	587.2
55.6	55.6	56.7	55.6	56.7	56.7	57.7	57.7	57.7	60.8	66.8	180°	589.2
48.6	47.6	48.6	47.6	49.6	47.6	49.6	50.6	49.6	50.6	53.6		
43.5	42.5	43.5	42.5	44.5	42.5	43.5	43.5	42.5	34.4	29.4		
39.5	38.5	39.5	38.5	40.5	38.5	40.5	39.5	37.4	25.3	24.2		
31.4	28.3	31.4	28.3	30.4	27.3	29.4	25.3	19.2	18.2	18.2		
23.3	20.3	22.3	19.2	18.2	14.1	15.1	14.1	13.2	14.1	14.1		
14.1	10.1	12.2	9.1	11.2	8.1	10.1	9.1	8.1	8.1	8.1		
7.1	5.0	7.1	4.1	6.0	4.1	5.0	5.0	3.1	3.1	3.1		
1.0	0.0	2.0	0.0	2.0	0.0	1.0	1.0	0.0	0.0	0.0		
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
7.2	8.7	10.2	11.8	13.3	12.3	11.3	9.2	4.1	3.1	2.0		
30.7	31.2	31.7	32.2	32.7	32.2	31.7	30.7	22.5	14.3	10.2		
51.1	51.4	51.7	52.0	52.2	52.0	51.7	51.1	46.0	38.9	32.7		
72.6	72.6	72.6	72.6	72.6	72.4	72.1	71.6	67.5	62.4	57.3		
94.1	94.3	94.6	94.9	95.1	94.6	94.1	93.1	90.0	85.9	81.8		

'228320  
 ISS-AF-450-LED-E1-SL4-ULG

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**TION (continued):**

**CANDELA DISTRIBUTION (con**

117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	155°	165°		175°	180°
116.6	116.6	116.6	116.6	116.1	115.6	114.6	112.5	108.4	105.4	0°	442.2	442.2
139.1	139.1	139.1	139.1	138.6	138.1	137.1	135.0	132.0	128.9	2.5°	400.7	401.7
161.6	161.6	161.6	161.6	161.1	160.6	159.6	157.5	154.5	152.4	5°	351.1	354.1
184.9	184.6	184.3	184.1	183.9	183.6	183.1	181.1	178.0	175.9	7.5°	296.5	298.5
208.7	208.7	208.7	208.7	208.2	207.7	206.6	205.6	202.5	200.5	10°	238.8	240.8
233.2	233.2	233.2	233.2	233.0	232.7	232.2	231.2	228.1	226.1	12.5°	184.1	186.2
259.6	259.3	259.0	258.8	258.6	258.3	257.8	256.8	253.7	252.7	15°	138.6	136.6
283.6	283.9	284.2	284.4	283.9	283.4	282.3	280.3	278.2	276.2	17.5°	106.3	104.2
307.9	307.9	307.9	307.9	307.4	306.9	305.9	304.8	300.7	299.7	20°	90.0	90.0
332.5	332.5	332.5	332.5	331.6	330.9	329.4	328.4	325.3	324.3	22.5°	88.1	87.1
356.0	356.0	356.0	356.0	355.2	354.5	352.9	352.9	348.8	346.8	25°	89.0	88.1
377.5	377.5	377.5	377.5	377.0	376.4	375.4	375.4	372.4	371.3	27.5°	89.0	88.1
399.0	399.0	399.0	399.0	398.7	398.4	397.9	396.9	394.9	393.8	30°	87.1	86.0
421.5	421.5	421.5	421.5	420.9	420.4	419.4	419.4	416.3	417.4	32.5°	84.0	83.0
443.1	443.4	443.8	444.0	443.4	442.9	441.9	440.9	437.8	437.8	35°	80.9	80.9
462.9	463.4	463.9	464.4	464.2	463.9	463.4	462.4	458.3	457.3	37.5°	79.0	79.9
480.3	480.8	481.3	481.8	481.6	481.3	480.8	479.8	475.7	474.6	40°	75.9	76.9
497.4	497.7	498.0	498.2	498.0	497.7	497.2	496.1	493.1	494.1	42.5°	72.8	73.9
514.7	515.1	515.4	515.6	515.4	515.1	514.5	514.5	512.5	513.5	45°	69.9	70.8
529.4	529.9	530.4	530.9	530.9	530.9	530.9	530.9	527.8	528.9	47.5°	66.8	66.8
542.7	543.2	543.7	544.2	544.2	544.2	544.2	544.2	541.1	541.1	50°	62.7	62.7
552.9	553.4	553.9	554.4	554.2	553.9	553.4	553.4	550.3	551.4	52.5°	61.7	61.7
563.4	564.2	564.9	565.7	565.5	565.2	564.7	564.7	560.6	561.6	55°	61.7	61.7
571.3	571.8	572.3	572.9	572.9	572.9	572.9	573.9	570.8	571.8	57.5°	63.7	63.7
577.1	577.5	577.8	578.0	578.2	578.5	579.0	580.0	578.0	579.0	60°	69.9	70.8
580.5	581.0	581.5	582.1	581.9	581.5	581.0	582.1	580.0	582.1	62.5°	81.9	83.0
583.9	584.6	585.3	586.2	585.9	585.6	585.1	585.1	582.1	583.1	65°	94.1	96.2
588.0	588.7	589.4	590.2	590.2	590.2	590.2	591.3	587.2	588.2	67.5°	95.1	98.2
589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	70°	92.1	95.1
										72.5°	63.7	63.7
										74°	28.3	27.3
										75°	24.2	23.3
										77.5°	18.2	18.2
										80°	13.2	12.2
										82.5°	7.1	7.1
										85°	2.0	2.0
										87.5°	0.0	0.0
										90°	0.0	0.0
										92.5°	0.0	0.0
										95°	1.0	1.0
										97.5°	2.0	2.0
										100°	8.2	8.2
										102.5°	28.6	28.6
										105°	55.2	55.2
										107.5°	78.8	79.8



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**CANDELA DISTRIBUTION (continued):**

	175°	180°
110°	104.3	103.3
112.5°	126.8	126.8
115°	150.4	149.4
117.5°	173.9	172.9
120°	199.5	197.4
122.5°	225.0	224.0
125°	251.6	249.6
127.5°	275.2	273.1
130°	298.7	296.7
132.5°	321.2	320.2
135°	344.7	343.7
137.5°	368.3	367.2
140°	391.8	390.8
142.5°	415.3	413.3
145°	435.8	434.8
147.5°	454.2	454.2
150°	472.6	471.6
152.5°	491.0	490.0
155°	511.5	510.5
157.5°	526.8	524.8
160°	539.1	537.0
162.5°	548.3	547.3
165°	559.6	558.5
167.5°	568.8	567.7
170°	575.9	574.9
172.5°	579.0	578.0
175°	582.1	580.0
177.5°	586.2	585.1
180°	589.2	589.2

(END OF REPORT)

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report

