

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: P227934

Luminaire Tested: **ISS-AF-450-LED-E1-T4W-7030-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P227934  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29757)-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-T4W-7030-ULG  
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT  
LIGHT SQUARE WITH ACCULED OPTICS-TYPE IV WIDE, WITH UPLIGHT GLOW  
Light Source: (16) 3000K CCT, 70 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4078.2 lumens  
Efficiency: N/A  
Efficacy: 97.1 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')  
IES Classification: Type IV - Medium - Non-Cutoff  
BUG Rating: B1 - 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

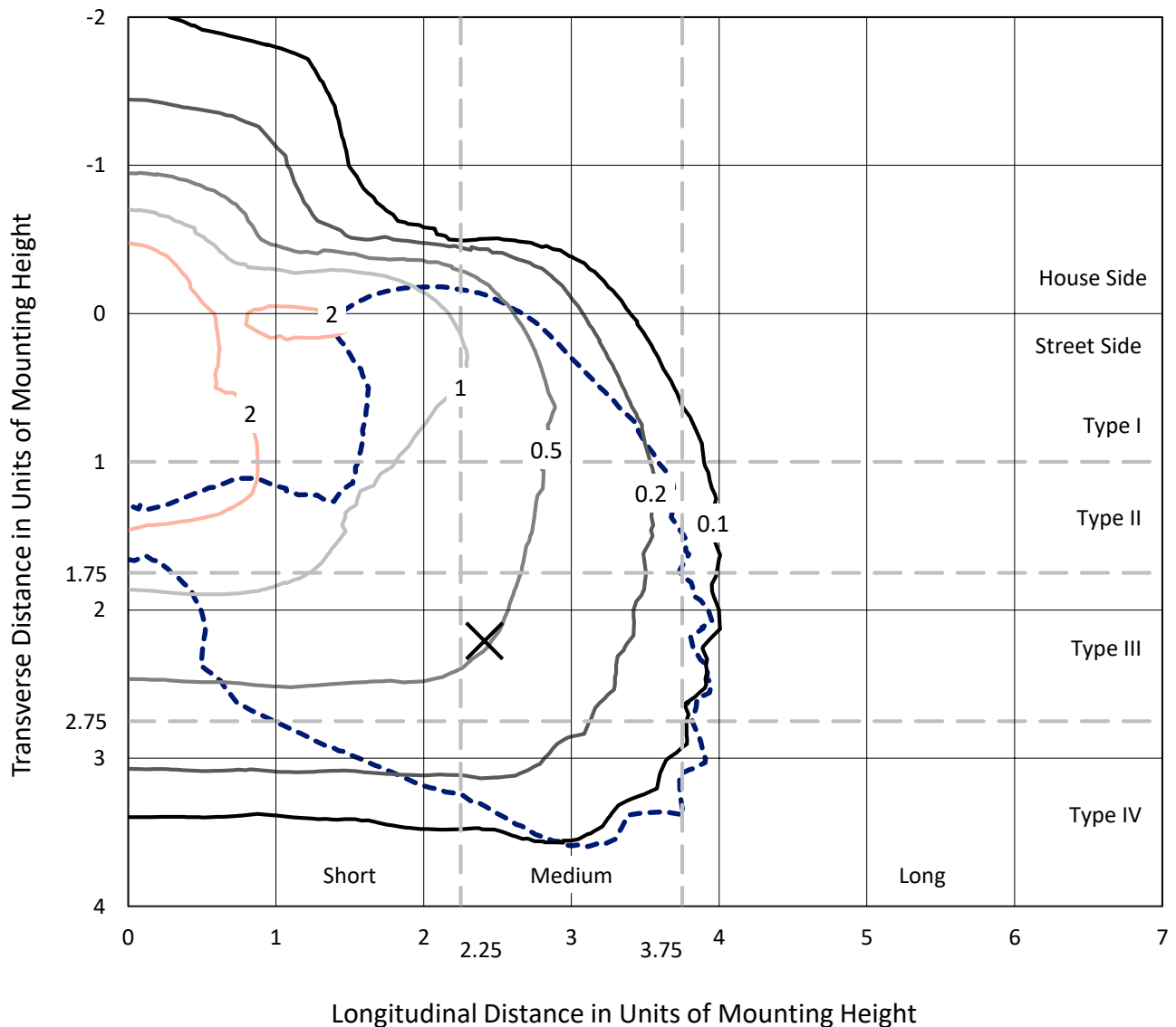


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### Iso-Footcandle Lines of Horizontal Illumination

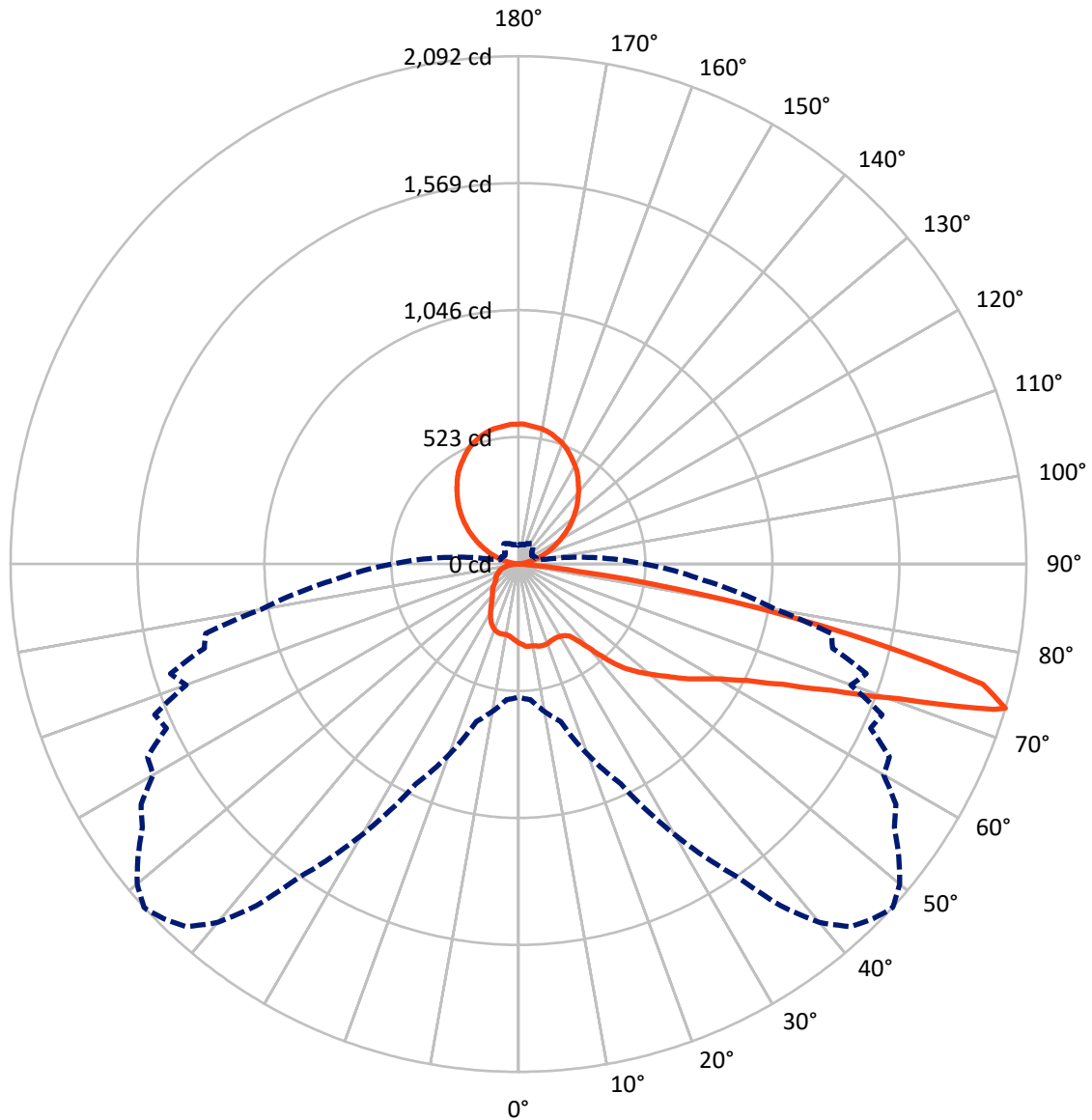
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.8 fc  
 Type IV - Medium - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 47.5-Deg Lateral    - - - Horizontal Cone Through 73-Deg Vertical

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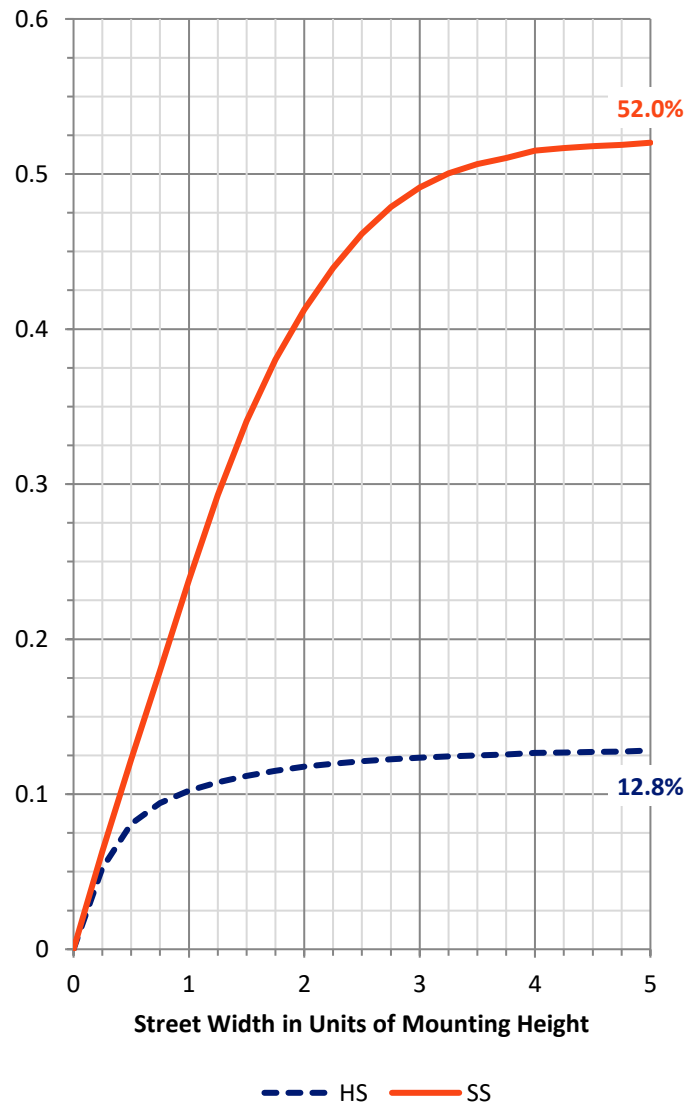
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	529.8	713.1	1242.9
	% Fixture	13.0	17.5	30.5
<b>Street Side</b>	Lumens	2122.2	713.1	2835.2
	% Fixture	52.0	17.5	69.5
<b>Total</b>	Lumens	2652.0	1426.2	4078.2
	% Fixture	65.0	35.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	31.0	0.8
10°-20°	92.3	2.3
20°-30°	141.8	3.5
30°-40°	206.9	5.1
40°-50°	341.2	8.4
50°-60°	534.2	13.1
60°-70°	724.6	17.8
70°-80°	536.6	13.2
80°-90°	43.4	1.1
90°-100°	4.7	0.1
100°-110°	69.0	1.7
110°-120°	153.0	3.8
120°-130°	223.9	5.5
130°-140°	265.6	6.5
140°-150°	269.3	6.6
150°-160°	231.1	5.7
160°-170°	155.1	3.8
170°-180°	54.3	1.3
0°-90°	2652.0	65.0
0°-180°	4078.2	100.0



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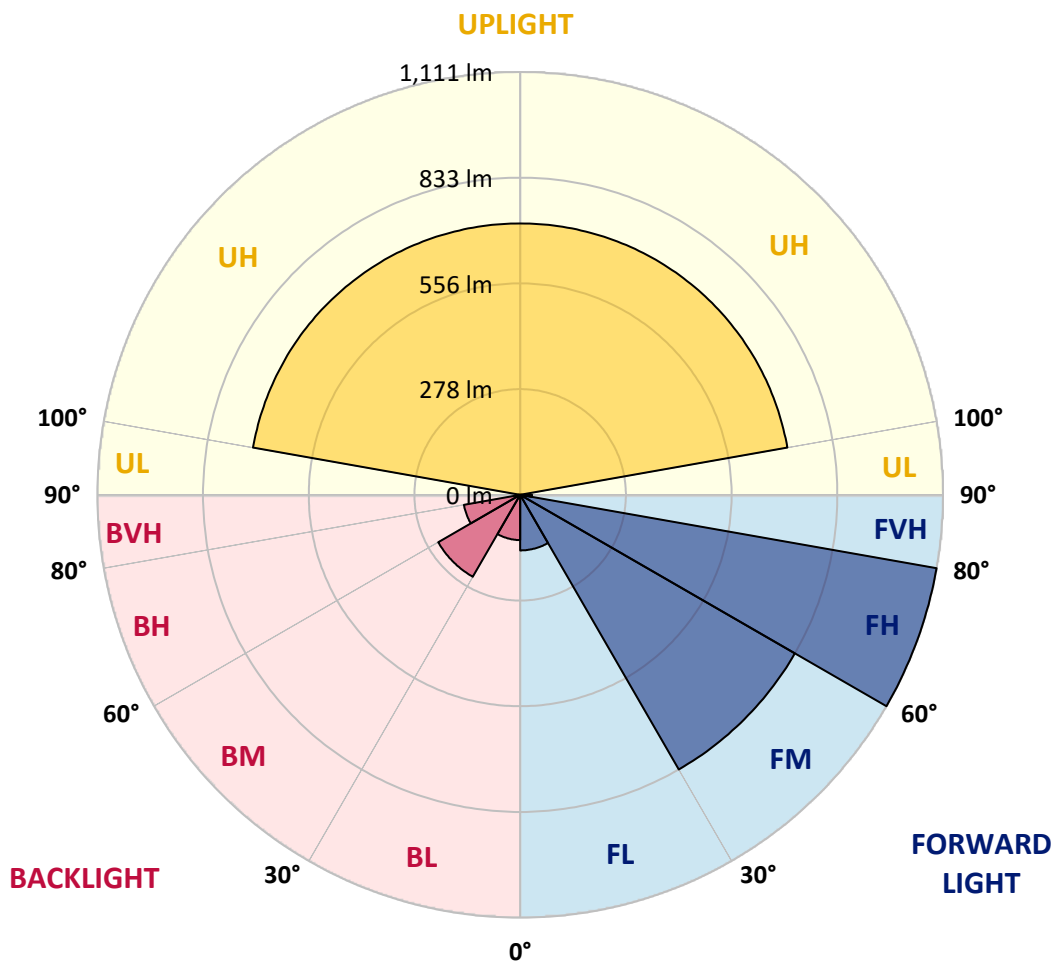
CATALOG NUMBER: ISS-AF-450-LED-E1-T4W-7030-ULG

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	146.2	3.6			
FM (30°-60°)	833.5	20.4			
FH (60°-80°)	1111.2	27.2			G1/1800
FVH (80°-90°)	31.3	0.8			G1/100
BL (0°-30°)	118.9	2.9	B1/500		
BM (30°-60°)	248.8	6.1	B1/1000		
BH (60°-80°)	150.0	3.7	B1/500		G1/500
BVH (80°-90°)	12.1	0.3			G1/100
UL (90°-100°)	4.7	0.1		U1/10	
UH (100°-180°)	713.1	17.5		U4/1000	

**BUG Rating: B1-U5-G1**

Type IV Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47°	47.5°
0°	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7
2.5°	344.9	344.1	341.4	340.5	337.9	336.2	335.3	334.4	337.0	335.3	332.7
5°	366.8	365.1	361.6	356.3	351.1	347.6	346.7	344.9	344.9	343.2	341.4
7.5°	382.6	381.7	376.4	368.6	359.8	353.7	350.2	347.6	348.4	346.7	341.4
10°	397.5	395.7	386.9	377.3	364.2	357.2	352.8	348.4	351.9	349.3	342.3
12.5°	408.8	407.1	394.8	382.6	367.7	359.8	355.4	352.8	356.3	354.6	346.7
15°	415.0	413.2	401.0	386.1	370.3	361.6	359.8	358.1	360.7	357.2	350.2
17.5°	411.5	411.5	400.1	384.3	371.2	362.4	359.8	358.1	361.6	358.1	350.2
20°	398.3	400.1	392.2	375.6	365.9	359.8	357.2	353.7	357.2	353.7	348.4
22.5°	381.7	383.4	379.1	364.2	357.2	352.8	351.9	348.4	351.1	348.4	343.2
25°	366.8	366.8	365.1	351.9	351.1	347.6	348.4	346.7	348.4	344.9	341.4
27.5°	367.7	367.7	360.7	347.6	346.7	346.7	346.7	346.7	347.6	344.9	341.4
30°	419.3	421.1	401.0	364.2	351.1	349.3	350.2	349.3	350.2	349.3	344.9
32.5°	497.3	497.3	478.0	421.1	374.7	363.3	358.9	358.1	355.4	354.6	351.1
35°	574.3	573.4	554.2	491.1	432.5	410.6	396.6	383.4	377.3	371.2	365.1
37.5°	639.1	636.4	633.8	562.0	500.8	475.4	458.7	439.5	427.2	416.7	402.7
40°	699.5	703.9	713.5	627.7	569.0	545.4	528.8	504.3	492.0	478.9	462.2
42.5°	782.6	788.8	789.7	698.6	631.2	615.4	602.3	583.9	570.8	555.0	540.2
45°	863.2	864.1	866.7	774.8	707.4	687.2	677.6	660.1	643.5	623.3	611.1
47.5°	918.3	915.7	927.1	862.3	796.7	773.9	759.9	733.6	708.2	682.8	664.5
50°	985.8	983.1	983.1	962.1	900.0	873.7	849.2	800.2	773.0	741.5	715.2
52.5°	1045.3	1035.7	1041.8	1054.0	1008.5	975.2	932.4	877.2	841.3	802.8	769.5
55°	1126.7	1076.8	1090.8	1133.7	1116.2	1064.5	1007.6	949.0	907.8	864.1	833.4
57.5°	1098.7	1064.5	1105.7	1181.0	1180.1	1132.0	1083.8	1012.0	970.9	929.7	892.1
60°	998.0	1015.5	1104.8	1213.4	1217.7	1180.1	1140.7	1074.2	1041.8	998.9	961.2
62.5°	920.1	945.5	1068.0	1210.7	1260.6	1225.6	1193.2	1153.8	1131.1	1095.2	1056.7
65°	915.7	930.6	1049.7	1208.1	1321.0	1302.7	1287.8	1269.4	1265.0	1238.8	1194.1
67.5°	957.7	971.7	1081.2	1275.5	1410.3	1402.5	1424.4	1420.8	1440.1	1427.0	1390.2
70°	875.4	883.3	1018.1	1299.2	1614.3	1649.3	1698.4	1695.7	1736.9	1705.4	1662.5
72.5°	614.6	630.3	749.4	1073.3	1618.7	1806.0	1919.9	2016.2	2060.8	2068.7	2048.5
73°	548.9	561.2	671.5	999.8	1574.9	1774.5	1927.7	2026.7	2066.1	2090.6	2092.3
75°	190.8	197.0	293.3	605.8	1258.9	1548.7	1745.6	1834.9	1825.3	1897.1	1975.9
77.5°	61.3	62.2	76.2	156.7	607.6	961.2	1181.0	1263.3	1216.0	1293.9	1399.0
80°	37.6	39.4	49.9	70.9	159.3	291.5	493.8	618.1	592.7	665.3	777.4
82.5°	22.8	23.6	30.6	43.8	63.9	70.9	92.8	126.1	155.0	186.5	244.2
85°	10.5	11.4	14.9	20.1	26.3	27.1	26.3	24.5	28.0	32.4	37.6
87.5°	0.0	0.0	0.9	1.8	0.9	0.0	0.0	0.0	0.0	0.9	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°	2.0	2.0	2.0	3.0	4.0	5.2	6.5	7.8	9.0	9.8	10.0
100°	8.0	8.0	10.0	14.0	22.0	24.0	26.0	28.0	30.0	30.4	30.5
102.5°	28.0	28.0	32.0	38.0	45.0	46.2	47.5	48.8	50.0	50.2	50.2
105°	54.0	54.0	56.0	61.0	66.0	67.0	68.0	69.0	70.0	70.2	70.2
107.5°	78.0	77.0	80.0	84.0	88.0	88.8	89.5	90.2	91.0	91.4	91.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47°	47.5°
110°	101.0	102.0	103.0	106.0	110.0	110.5	111.0	111.5	112.0	112.4	112.5
112.5°	124.0	124.0	126.0	129.0	132.0	132.5	133.0	133.5	134.0	134.4	134.5
115°	146.0	147.0	149.0	151.0	154.0	154.5	155.0	155.5	156.0	156.4	156.5
117.5°	169.0	170.0	172.0	174.0	177.0	177.5	178.0	178.5	179.0	179.2	179.2
120°	193.0	195.0	196.0	198.0	201.0	201.2	201.5	201.8	202.0	202.4	202.5
122.5°	219.0	220.0	221.0	223.0	226.0	226.2	226.5	226.8	227.0	227.2	227.2
125°	244.0	246.0	247.0	248.0	251.0	251.2	251.5	251.8	252.0	252.2	252.2
127.5°	267.0	269.0	270.0	272.0	274.0	274.5	275.0	275.5	276.0	276.4	276.5
130°	290.0	292.0	293.0	294.0	298.0	298.2	298.5	298.8	299.0	299.4	299.5
132.5°	313.0	314.0	317.0	318.0	321.0	321.2	321.5	321.8	322.0	322.6	322.8
135°	336.0	337.0	339.0	341.0	345.0	345.0	345.0	345.0	345.0	345.6	345.8
137.5°	359.0	360.0	363.0	364.0	367.0	367.0	367.0	367.0	367.0	367.4	367.5
140°	382.0	383.0	385.0	386.0	388.0	388.2	388.5	388.8	389.0	389.2	389.2
142.5°	404.0	406.0	408.0	407.0	410.0	410.0	410.0	410.0	410.0	410.4	410.5
145°	425.0	426.0	428.0	428.0	431.0	431.2	431.5	431.8	432.0	432.4	432.5
147.5°	444.0	444.0	447.0	448.0	452.0	452.2	452.5	452.8	453.0	453.2	453.2
150°	461.0	462.0	464.0	465.0	469.0	469.2	469.5	469.8	470.0	470.2	470.2
152.5°	479.0	480.0	483.0	482.0	485.0	485.2	485.5	485.8	486.0	486.2	486.2
155°	499.0	500.0	502.0	501.0	503.0	503.0	503.0	503.0	503.0	503.2	503.2
157.5°	513.0	515.0	517.0	516.0	519.0	519.0	519.0	519.0	519.0	519.0	519.0
160°	525.0	527.0	529.0	529.0	532.0	532.0	532.0	532.0	532.0	532.0	532.0
162.5°	535.0	536.0	539.0	538.0	541.0	541.0	541.0	541.0	541.0	541.2	541.2
165°	546.0	547.0	549.0	548.0	552.0	552.0	552.0	552.0	552.0	552.2	552.2
167.5°	555.0	556.0	559.0	558.0	561.0	560.8	560.5	560.2	560.0	560.0	560.0
170°	562.0	563.0	566.0	565.0	567.0	566.8	566.5	566.2	566.0	565.8	565.8
172.5°	565.0	566.0	569.0	567.0	569.0	568.8	568.5	568.2	568.0	568.2	568.2
175°	567.0	569.0	570.0	569.0	572.0	572.0	572.0	572.0	572.0	572.2	572.2
177.5°	572.0	573.0	575.0	574.0	578.0	577.8	577.5	577.2	577.0	577.0	577.0
180°	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0





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**CANDELA DISTRIBUTION (continued):**

	50°	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°
0°	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7
2.5°	335.3	332.7	332.7	329.2	330.9	327.4	329.2	325.7	327.4	323.0	325.7
5°	340.5	336.2	336.2	330.9	331.8	325.7	328.3	321.3	324.8	316.9	322.2
7.5°	343.2	335.3	338.8	329.2	333.5	323.0	328.3	316.9	323.9	311.7	320.4
10°	346.7	335.3	341.4	330.9	336.2	323.9	330.9	316.9	325.7	310.8	318.7
12.5°	351.9	339.7	344.9	332.7	339.7	325.7	332.7	318.7	327.4	310.8	320.4
15°	355.4	343.2	348.4	336.2	341.4	325.7	334.4	317.8	327.4	309.9	320.4
17.5°	354.6	343.2	348.4	334.4	340.5	324.8	333.5	316.9	325.7	307.3	318.7
20°	351.1	341.4	344.9	332.7	337.9	322.2	330.0	313.4	323.0	304.7	316.0
22.5°	346.7	337.0	341.4	330.0	335.3	319.5	326.5	311.7	321.3	302.9	313.4
25°	344.1	336.2	338.8	327.4	334.4	320.4	327.4	310.8	321.3	302.9	315.2
27.5°	343.2	336.2	341.4	330.9	337.0	324.8	331.8	316.9	325.7	306.4	318.7
30°	348.4	342.3	346.7	337.9	343.2	330.9	337.9	323.9	332.7	314.3	328.3
32.5°	354.6	348.4	352.8	344.9	352.8	340.5	349.3	335.3	345.8	327.4	340.5
35°	367.7	360.7	366.8	358.1	366.8	357.2	366.8	351.9	365.1	346.7	360.7
37.5°	401.8	382.6	388.7	379.1	387.8	375.6	392.2	377.3	392.2	374.7	394.0
40°	456.1	422.0	428.1	408.0	421.1	402.7	422.8	411.5	431.6	409.7	434.2
42.5°	527.0	494.6	488.5	457.9	469.2	447.4	467.5	447.4	474.5	453.5	484.1
45°	591.8	557.7	548.0	518.3	526.1	497.3	522.6	494.6	530.5	506.0	544.5
47.5°	645.2	604.9	597.1	562.9	576.9	549.8	581.3	551.5	595.3	570.8	615.4
50°	694.2	644.3	642.6	605.8	629.4	602.3	647.0	626.8	669.7	645.2	697.7
52.5°	750.3	687.2	696.0	662.7	700.4	677.6	729.2	700.4	756.4	730.1	787.9
55°	809.8	743.3	766.0	745.9	790.5	775.6	819.4	793.2	848.3	822.0	883.3
57.5°	875.4	818.5	858.8	849.2	888.6	870.2	919.2	895.6	950.7	928.8	990.1
60°	961.2	923.6	963.0	962.1	996.3	995.4	1026.9	1012.9	1065.4	1055.8	1111.8
62.5°	1072.4	1042.7	1084.7	1073.3	1114.4	1107.4	1146.0	1146.0	1183.6	1196.7	1252.8
65°	1222.1	1182.7	1232.6	1215.1	1256.3	1258.0	1282.5	1286.9	1332.4	1347.3	1395.5
67.5°	1425.2	1379.7	1419.1	1385.8	1433.1	1430.5	1451.5	1460.2	1466.4	1502.3	1507.5
70°	1717.6	1649.3	1685.2	1639.7	1648.5	1654.6	1615.2	1644.1	1574.1	1631.0	1553.9
72.5°	2033.7	1955.7	1893.6	1848.1	1757.9	1744.8	1630.1	1654.6	1505.8	1554.8	1399.0
73°	2050.3	1975.0	1891.0	1843.7	1736.9	1722.9	1600.3	1621.3	1456.7	1503.1	1339.4
75°	1863.8	1884.0	1681.7	1701.0	1515.4	1537.3	1345.6	1370.1	1167.8	1202.9	991.9
77.5°	1256.3	1323.7	1096.9	1181.9	951.6	1036.5	776.5	784.4	572.5	534.9	363.3
80°	622.4	680.2	482.4	527.0	353.7	347.6	211.9	176.0	149.7	153.2	157.6
82.5°	179.5	202.2	125.2	124.3	88.4	84.0	84.0	89.3	91.0	101.6	98.9
85°	34.1	41.1	35.9	48.1	42.9	47.3	43.8	50.8	47.3	58.7	50.8
87.5°	0.9	0.0	0.9	2.6	2.6	6.1	4.4	7.0	7.0	12.3	11.4
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°	11.0	12.0	13.0	11.5	10.0	8.5	7.0	6.5	6.0	5.5	5.0
100°	31.0	31.5	32.0	31.5	31.0	30.5	30.0	29.2	28.5	27.8	27.0
102.5°	50.5	50.8	51.0	50.8	50.5	50.2	50.0	49.5	49.0	48.5	48.0
105°	70.5	70.8	71.0	71.0	71.0	71.0	71.0	70.5	70.0	69.5	69.0
107.5°	92.0	92.5	93.0	92.8	92.5	92.2	92.0	91.8	91.5	91.2	91.0



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**CANDELA DISTRIBUTION (continued):**

	50°	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°
110°	113.0	113.5	114.0	114.0	114.0	114.0	114.0	113.8	113.5	113.2	113.0
112.5°	135.0	135.5	136.0	136.0	136.0	136.0	136.0	135.8	135.5	135.2	135.0
115°	157.0	157.5	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0
117.5°	179.5	179.8	180.0	180.2	180.5	180.8	181.0	180.8	180.5	180.2	180.0
120°	203.0	203.5	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0
122.5°	227.5	227.8	228.0	228.0	228.0	228.0	228.0	228.2	228.5	228.8	229.0
125°	252.5	252.8	253.0	253.2	253.5	253.8	254.0	254.0	254.0	254.0	254.0
127.5°	277.0	277.5	278.0	277.8	277.5	277.2	277.0	277.2	277.5	277.8	278.0
130°	300.0	300.5	301.0	301.0	301.0	301.0	301.0	301.2	301.5	301.8	302.0
132.5°	323.5	324.2	325.0	325.0	325.0	325.0	325.0	325.2	325.5	325.8	326.0
135°	346.5	347.2	348.0	348.0	348.0	348.0	348.0	348.2	348.5	348.8	349.0
137.5°	368.0	368.5	369.0	369.0	369.0	369.0	369.0	369.2	369.5	369.8	370.0
140°	389.5	389.8	390.0	390.0	390.0	390.0	390.0	390.5	391.0	391.5	392.0
142.5°	411.0	411.5	412.0	412.0	412.0	412.0	412.0	412.2	412.5	412.8	413.0
145°	433.0	433.5	434.0	433.8	433.5	433.2	433.0	433.2	433.5	433.8	434.0
147.5°	453.5	453.8	454.0	453.5	453.0	452.5	452.0	452.2	452.5	452.8	453.0
150°	470.5	470.8	471.0	470.5	470.0	469.5	469.0	469.0	469.0	469.0	469.0
152.5°	486.5	486.8	487.0	486.8	486.5	486.2	486.0	486.0	486.0	486.0	486.0
155°	503.5	503.8	504.0	503.8	503.5	503.2	503.0	503.2	503.5	503.8	504.0
157.5°	519.0	519.0	519.0	518.5	518.0	517.5	517.0	517.2	517.5	517.8	518.0
160°	532.0	532.0	532.0	531.5	531.0	530.5	530.0	530.0	530.0	530.0	530.0
162.5°	541.5	541.8	542.0	541.5	541.0	540.5	540.0	539.5	539.0	538.5	538.0
165°	552.5	552.8	553.0	552.2	551.5	550.8	550.0	549.5	549.0	548.5	548.0
167.5°	560.0	560.0	560.0	559.5	559.0	558.5	558.0	558.2	558.5	558.8	559.0
170°	565.5	565.2	565.0	564.8	564.5	564.2	564.0	564.5	565.0	565.5	566.0
172.5°	568.5	568.8	569.0	568.5	568.0	567.5	567.0	567.2	567.5	567.8	568.0
175°	572.5	572.8	573.0	572.2	571.5	570.8	570.0	569.5	569.0	568.5	568.0
177.5°	577.0	577.0	577.0	576.2	575.5	574.8	574.0	574.0	574.0	574.0	574.0
180°	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0



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**CANDELA DISTRIBUTION (continued):**

	77.5°	80°	85°	90°	95°	100°	102.5°	105°	107.5°	110°	112.5°
0°	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7
2.5°	322.2	326.5	324.8	323.0	321.3	320.4	316.9	318.7	314.3	317.8	314.3
5°	315.2	320.4	317.8	314.3	312.5	310.8	304.7	309.0	302.0	308.2	302.9
7.5°	307.3	316.0	313.4	309.9	306.4	304.7	292.4	302.0	291.5	300.3	291.5
10°	304.7	314.3	310.8	306.4	302.9	301.2	286.3	297.7	286.3	295.9	284.5
12.5°	302.9	314.3	309.0	304.7	301.2	298.5	281.9	295.9	281.0	295.0	281.9
15°	301.2	314.3	307.3	302.0	298.5	295.9	278.4	294.1	277.5	293.3	278.4
17.5°	299.4	311.7	305.5	299.4	295.9	294.1	274.9	291.5	274.0	291.5	276.6
20°	296.8	309.0	302.0	295.9	292.4	289.8	270.5	288.0	269.6	287.1	270.5
22.5°	293.3	306.4	300.3	294.1	290.6	286.3	265.3	283.6	264.4	281.9	266.1
25°	294.1	308.2	300.3	294.1	288.9	284.5	261.8	281.9	260.0	277.5	260.0
27.5°	298.5	310.8	302.9	297.7	290.6	285.4	261.8	280.1	258.3	273.1	254.8
30°	307.3	319.5	312.5	304.7	298.5	291.5	266.1	281.0	258.3	267.9	249.5
32.5°	322.2	333.5	326.5	320.4	313.4	302.9	274.9	285.4	260.0	264.4	245.1
35°	341.4	355.4	351.9	347.6	338.8	320.4	289.8	291.5	263.5	260.9	239.0
37.5°	372.9	392.2	391.3	390.4	380.8	347.6	306.4	303.8	267.0	258.3	231.1
40°	414.1	436.8	443.0	449.1	429.0	379.9	325.7	316.0	268.8	253.0	218.9
42.5°	462.2	492.9	511.3	522.6	485.9	415.8	347.6	330.0	268.8	245.1	204.9
45°	521.8	557.7	592.7	604.9	548.9	454.4	370.3	341.4	265.3	232.9	186.5
47.5°	594.4	636.4	684.6	690.7	617.2	495.5	386.1	349.3	253.9	216.2	169.8
50°	675.0	725.7	796.7	792.3	689.9	538.4	396.6	354.6	233.7	197.0	149.7
52.5°	765.1	829.0	929.7	909.6	778.3	591.8	406.2	361.6	209.2	174.2	129.6
55°	878.1	954.2	1080.3	1037.4	876.3	650.5	420.2	362.4	176.8	147.1	114.7
57.5°	999.8	1081.2	1242.3	1164.3	968.2	696.0	414.1	334.4	144.4	124.3	103.3
60°	1146.0	1244.9	1404.2	1282.5	1045.3	711.7	371.2	275.8	123.4	112.1	98.0
62.5°	1309.7	1407.7	1537.3	1364.8	1089.1	685.5	275.8	190.8	105.9	99.8	90.2
65°	1483.9	1576.7	1601.2	1371.8	1060.2	569.9	170.7	125.2	91.9	89.3	83.2
67.5°	1644.1	1652.8	1540.8	1258.0	920.1	397.5	116.4	99.8	84.9	84.0	80.5
70°	1685.2	1533.8	1280.8	979.6	664.5	236.4	94.5	86.7	81.4	81.4	78.8
72.5°	1407.7	1167.8	856.2	593.6	362.4	126.1	80.5	78.8	77.0	77.0	75.3
73°	1320.2	1075.9	766.9	518.3	306.4	112.9	78.8	77.0	76.2	75.3	74.4
75°	877.2	675.8	435.1	262.6	142.7	81.4	70.0	70.0	69.2	70.0	69.2
77.5°	337.9	254.8	168.1	112.9	81.4	63.9	59.5	60.4	59.5	61.3	60.4
80°	148.8	147.1	111.2	79.7	59.5	48.1	48.1	48.1	49.0	49.9	49.9
82.5°	101.6	85.8	65.7	49.0	35.9	35.0	35.9	35.9	36.8	37.6	36.8
85°	56.0	47.3	35.0	21.9	19.3	23.6	23.6	23.6	22.8	22.8	21.9
87.5°	17.5	13.1	9.6	2.6	4.4	4.4	6.1	5.3	5.3	6.1	6.1
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°	4.8	4.5	4.0	4.0	4.0	4.5	4.8	5.0	5.5	6.0	6.5
100°	26.8	26.5	26.0	25.0	26.0	26.5	26.8	27.0	27.8	28.5	29.2
102.5°	48.2	48.5	49.0	48.0	49.0	48.5	48.2	48.0	48.5	49.0	49.5
105°	69.5	70.0	71.0	69.0	71.0	70.0	69.5	69.0	69.5	70.0	70.5
107.5°	91.2	91.5	92.0	91.0	92.0	91.5	91.2	91.0	91.2	91.5	91.8



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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°	113.2	113.5	114.0	113.0	114.0	113.5	113.2	113.0	113.2	113.5	113.8	0°
112.5°	135.5	136.0	137.0	135.0	137.0	136.0	135.5	135.0	135.2	135.5	135.8	2.5°
115°	158.5	159.0	160.0	159.0	160.0	159.0	158.5	158.0	158.0	158.0	158.0	5°
117.5°	180.5	181.0	182.0	180.0	182.0	181.0	180.5	180.0	180.2	180.5	180.8	7.5°
120°	204.5	205.0	206.0	204.0	206.0	205.0	204.5	204.0	204.0	204.0	204.0	10°
122.5°	230.0	231.0	233.0	232.0	233.0	231.0	230.0	229.0	228.8	228.5	228.2	12.5°
125°	254.8	255.5	257.0	256.0	257.0	255.5	254.8	254.0	254.0	254.0	254.0	15°
127.5°	278.8	279.5	281.0	278.0	281.0	279.5	278.8	278.0	277.8	277.5	277.2	17.5°
130°	302.8	303.5	305.0	303.0	305.0	303.5	302.8	302.0	301.8	301.5	301.2	20°
132.5°	326.8	327.5	329.0	327.0	329.0	327.5	326.8	326.0	325.8	325.5	325.2	22.5°
135°	349.5	350.0	351.0	350.0	351.0	350.0	349.5	349.0	348.8	348.5	348.2	25°
137.5°	371.0	372.0	374.0	372.0	374.0	372.0	371.0	370.0	369.8	369.5	369.2	27.5°
140°	393.0	394.0	396.0	394.0	396.0	394.0	393.0	392.0	391.5	391.0	390.5	30°
142.5°	413.8	414.5	416.0	415.0	416.0	414.5	413.8	413.0	412.8	412.5	412.2	32.5°
145°	434.8	435.5	437.0	435.0	437.0	435.5	434.8	434.0	433.8	433.5	433.2	35°
147.5°	453.8	454.5	456.0	453.0	456.0	454.5	453.8	453.0	452.8	452.5	452.2	37.5°
150°	470.0	471.0	473.0	470.0	473.0	471.0	470.0	469.0	469.0	469.0	469.0	40°
152.5°	486.8	487.5	489.0	486.0	489.0	487.5	486.8	486.0	486.0	486.0	486.0	42.5°
155°	504.8	505.5	507.0	505.0	507.0	505.5	504.8	504.0	503.8	503.5	503.2	45°
157.5°	519.2	520.5	523.0	520.0	523.0	520.5	519.2	518.0	517.8	517.5	517.2	47.5°
160°	530.8	531.5	533.0	531.0	533.0	531.5	530.8	530.0	530.0	530.0	530.0	50°
162.5°	538.5	539.0	540.0	537.0	540.0	539.0	538.5	538.0	538.5	539.0	539.5	52.5°
165°	548.5	549.0	550.0	548.0	550.0	549.0	548.5	548.0	548.5	549.0	549.5	55°
167.5°	560.0	561.0	563.0	561.0	563.0	561.0	560.0	559.0	558.8	558.5	558.2	57.5°
170°	567.2	568.5	571.0	569.0	571.0	568.5	567.2	566.0	565.5	565.0	564.5	60°
172.5°	568.8	569.5	571.0	568.0	571.0	569.5	568.8	568.0	567.8	567.5	567.2	62.5°
175°	568.8	569.5	571.0	568.0	571.0	569.5	568.8	568.0	568.5	569.0	569.5	65°
177.5°	574.8	575.5	577.0	574.0	577.0	575.5	574.8	574.0	574.0	574.0	574.0	67.5°
180°	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	70°
												72.5°
												73°
												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  
 CATALOG NUMBER:

**DISTRIBUTION (continued):**

**CANDELA DISTRIBUTION**

115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	155°	165°	110°	115°
325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7	325.7	110°	114.0
317.8	315.2	317.8	313.4	316.9	313.4	316.0	316.0	315.2	315.2	315.2	112.5°	136.0
307.3	302.9	307.3	304.7	307.3	303.8	306.4	307.3	308.2	310.8	309.9	115°	158.0
299.4	290.6	300.3	291.5	299.4	291.5	298.5	299.4	302.0	305.5	308.2	117.5°	181.0
295.9	284.5	295.9	285.4	295.0	286.3	295.0	295.9	298.5	302.9	307.3	120°	204.0
294.1	281.9	294.1	283.6	294.1	285.4	294.1	296.8	298.5	302.0	307.3	122.5°	228.0
292.4	280.1	294.1	282.8	294.1	285.4	295.0	296.8	299.4	302.9	307.3	125°	254.0
291.5	277.5	292.4	281.9	292.4	283.6	294.1	294.1	297.7	302.0	304.7	127.5°	277.0
288.0	274.9	288.0	277.5	288.0	280.1	288.9	288.9	292.4	294.1	298.5	130°	301.0
282.8	268.8	281.0	271.4	281.0	273.1	280.1	280.1	282.8	285.4	288.0	132.5°	325.0
274.9	261.8	272.3	263.5	270.5	263.5	268.8	267.9	269.6	271.4	273.1	135°	348.0
266.1	253.0	261.8	252.1	256.5	249.5	253.0	251.3	252.1	253.0	253.9	137.5°	369.0
256.5	243.4	247.8	239.0	239.9	232.9	234.6	232.0	231.1	230.2	228.5	140°	390.0
246.0	232.0	232.0	223.2	221.5	215.4	215.4	211.9	209.2	205.7	202.2	142.5°	412.0
232.9	220.6	214.5	207.5	204.0	197.9	197.0	192.6	186.5	180.3	176.8	145°	433.0
219.7	205.7	197.0	190.0	186.5	182.1	181.2	177.7	170.7	163.7	158.5	147.5°	452.0
202.2	188.2	178.6	176.0	173.3	169.8	170.7	166.3	159.3	151.5	147.1	150°	469.0
184.7	172.5	164.6	163.7	162.0	161.1	162.0	158.5	150.6	143.6	138.3	152.5°	486.0
169.8	157.6	149.7	148.8	148.0	151.5	152.3	151.5	142.7	135.7	128.7	155°	503.0
155.0	140.1	134.8	133.1	133.9	139.2	140.9	143.6	135.7	127.8	118.2	157.5°	517.0
137.4	123.4	121.7	119.9	120.8	125.2	129.6	134.8	127.8	116.4	103.3	160°	530.0
121.7	109.4	110.3	108.6	110.3	113.8	117.3	126.1	117.3	105.9	99.8	162.5°	540.0
109.4	99.8	101.6	99.8	101.6	105.9	108.6	115.6	115.6	112.9	107.7	165°	550.0
100.7	93.7	95.4	93.7	96.3	99.8	102.4	117.3	126.1	119.1	108.6	167.5°	558.0
95.4	89.3	90.2	88.4	90.2	95.4	100.7	118.2	132.2	118.2	110.3	170°	564.0
87.5	82.3	81.4	81.4	83.2	91.9	94.5	110.3	130.4	117.3	111.2	172.5°	567.0
82.3	77.9	77.0	76.2	77.9	84.0	86.7	102.4	126.1	111.2	100.7	175°	570.0
79.7	76.2	74.4	72.7	74.4	79.7	82.3	96.3	119.1	105.9	94.5	177.5°	574.0
77.0	73.5	72.7	70.9	71.8	75.3	78.8	88.4	112.9	99.8	88.4	180°	576.0
73.5	70.0	69.2	66.5	67.4	70.9	72.7	83.2	105.1	93.7	82.3		
72.7	69.2	68.3	65.7	66.5	69.2	70.9	81.4	103.3	92.8	81.4		
68.3	64.8	63.9	62.2	63.0	63.0	64.8	74.4	98.0	87.5	76.2		
60.4	57.8	56.9	55.2	54.3	53.4	56.0	65.7	89.3	78.8	61.3		
49.9	47.3	46.4	42.9	42.9	42.9	46.4	56.0	66.5	56.9	47.3		
36.8	35.0	35.0	32.4	31.5	30.6	33.3	38.5	52.5	44.6	36.8		
21.9	21.0	21.9	19.3	20.1	19.3	21.9	27.1	28.9	22.8	17.5		
5.3	6.1	6.1	6.1	5.3	5.3	4.4	3.5	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		
7.0	8.5	10.0	11.5	13.0	12.0	11.0	9.0	4.0	3.0	2.0		
30.0	30.5	31.0	31.5	32.0	31.5	31.0	30.0	22.0	14.0	10.0		
50.0	50.2	50.5	50.8	51.0	50.8	50.5	50.0	45.0	38.0	32.0		
71.0	71.0	71.0	71.0	71.0	70.8	70.5	70.0	66.0	61.0	56.0		
92.0	92.2	92.5	92.8	93.0	92.5	92.0	91.0	88.0	84.0	80.0		

'227934  
 ISS-AF-450-LED-E1-T4W-7030-ULG

REPORT NUMBER: P227934  
 CATALOG NUMBER: ISS-AF-450

**TION (continued):**

**CANDELA DISTRIBUTION (con**

117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	155°	165°		175°	180°
114.0	114.0	114.0	114.0	113.5	113.0	112.0	110.0	106.0	103.0	0°	325.7	325.7
136.0	136.0	136.0	136.0	135.5	135.0	134.0	132.0	129.0	126.0	2.5°	314.3	313.4
158.0	158.0	158.0	158.0	157.5	157.0	156.0	154.0	151.0	149.0	5°	309.9	309.9
180.8	180.5	180.2	180.0	179.8	179.5	179.0	177.0	174.0	172.0	7.5°	308.2	308.2
204.0	204.0	204.0	204.0	203.5	203.0	202.0	201.0	198.0	196.0	10°	309.0	309.0
228.0	228.0	228.0	228.0	227.8	227.5	227.0	226.0	223.0	221.0	12.5°	309.0	310.8
253.8	253.5	253.2	253.0	252.8	252.5	252.0	251.0	248.0	247.0	15°	311.7	310.8
277.2	277.5	277.8	278.0	277.5	277.0	276.0	274.0	272.0	270.0	17.5°	309.0	309.0
301.0	301.0	301.0	301.0	300.5	300.0	299.0	298.0	294.0	293.0	20°	302.0	303.8
325.0	325.0	325.0	325.0	324.2	323.5	322.0	321.0	318.0	317.0	22.5°	292.4	292.4
348.0	348.0	348.0	348.0	347.2	346.5	345.0	345.0	341.0	339.0	25°	276.6	277.5
369.0	369.0	369.0	369.0	368.5	368.0	367.0	367.0	364.0	363.0	27.5°	255.6	257.4
390.0	390.0	390.0	390.0	389.8	389.5	389.0	388.0	386.0	385.0	30°	229.4	231.1
412.0	412.0	412.0	412.0	411.5	411.0	410.0	410.0	407.0	408.0	32.5°	199.6	201.4
433.2	433.5	433.8	434.0	433.5	433.0	432.0	431.0	428.0	428.0	35°	176.0	176.8
452.5	453.0	453.5	454.0	453.8	453.5	453.0	452.0	448.0	447.0	37.5°	160.2	160.2
469.5	470.0	470.5	471.0	470.8	470.5	470.0	469.0	465.0	464.0	40°	147.1	147.1
486.2	486.5	486.8	487.0	486.8	486.5	486.0	485.0	482.0	483.0	42.5°	134.8	133.9
503.2	503.5	503.8	504.0	503.8	503.5	503.0	503.0	501.0	502.0	45°	122.6	120.8
517.5	518.0	518.5	519.0	519.0	519.0	519.0	519.0	516.0	517.0	47.5°	110.3	109.4
530.5	531.0	531.5	532.0	532.0	532.0	532.0	532.0	529.0	529.0	50°	99.8	99.8
540.5	541.0	541.5	542.0	541.8	541.5	541.0	541.0	538.0	539.0	52.5°	101.6	101.6
550.8	551.5	552.2	553.0	552.8	552.5	552.0	552.0	548.0	549.0	55°	109.4	109.4
558.5	559.0	559.5	560.0	560.0	560.0	560.0	561.0	558.0	559.0	57.5°	110.3	109.4
564.2	564.5	564.8	565.0	565.2	565.5	566.0	567.0	565.0	566.0	60°	119.9	119.1
567.5	568.0	568.5	569.0	568.8	568.5	568.0	569.0	567.0	569.0	62.5°	125.2	127.8
570.8	571.5	572.2	573.0	572.8	572.5	572.0	572.0	569.0	570.0	65°	109.4	105.9
574.8	575.5	576.2	577.0	577.0	577.0	577.0	578.0	574.0	575.0	67.5°	104.2	98.9
576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	70°	93.7	85.8
										72.5°	83.2	78.8
										73°	80.5	77.0
										75°	71.8	70.0
										77.5°	54.3	53.4
										80°	45.5	44.6
										82.5°	30.6	28.9
										85°	13.1	12.3
										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°	8.0	8.0
										102.5°	28.0	28.0
										105°	54.0	54.0
										107.5°	77.0	78.0



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**CANDELA DISTRIBUTION (continued):**

	175°	180°
110°	102.0	101.0
112.5°	124.0	124.0
115°	147.0	146.0
117.5°	170.0	169.0
120°	195.0	193.0
122.5°	220.0	219.0
125°	246.0	244.0
127.5°	269.0	267.0
130°	292.0	290.0
132.5°	314.0	313.0
135°	337.0	336.0
137.5°	360.0	359.0
140°	383.0	382.0
142.5°	406.0	404.0
145°	426.0	425.0
147.5°	444.0	444.0
150°	462.0	461.0
152.5°	480.0	479.0
155°	500.0	499.0
157.5°	515.0	513.0
160°	527.0	525.0
162.5°	536.0	535.0
165°	547.0	546.0
167.5°	556.0	555.0
170°	563.0	562.0
172.5°	566.0	565.0
175°	569.0	567.0
177.5°	573.0	572.0
180°	576.0	576.0

(END OF REPORT)

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

Scaled Data Report

