

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: P227931

Luminaire Tested: **ISS-AF-450-LED-E1-T4W-8030-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P227931  
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-8030-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, 80 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

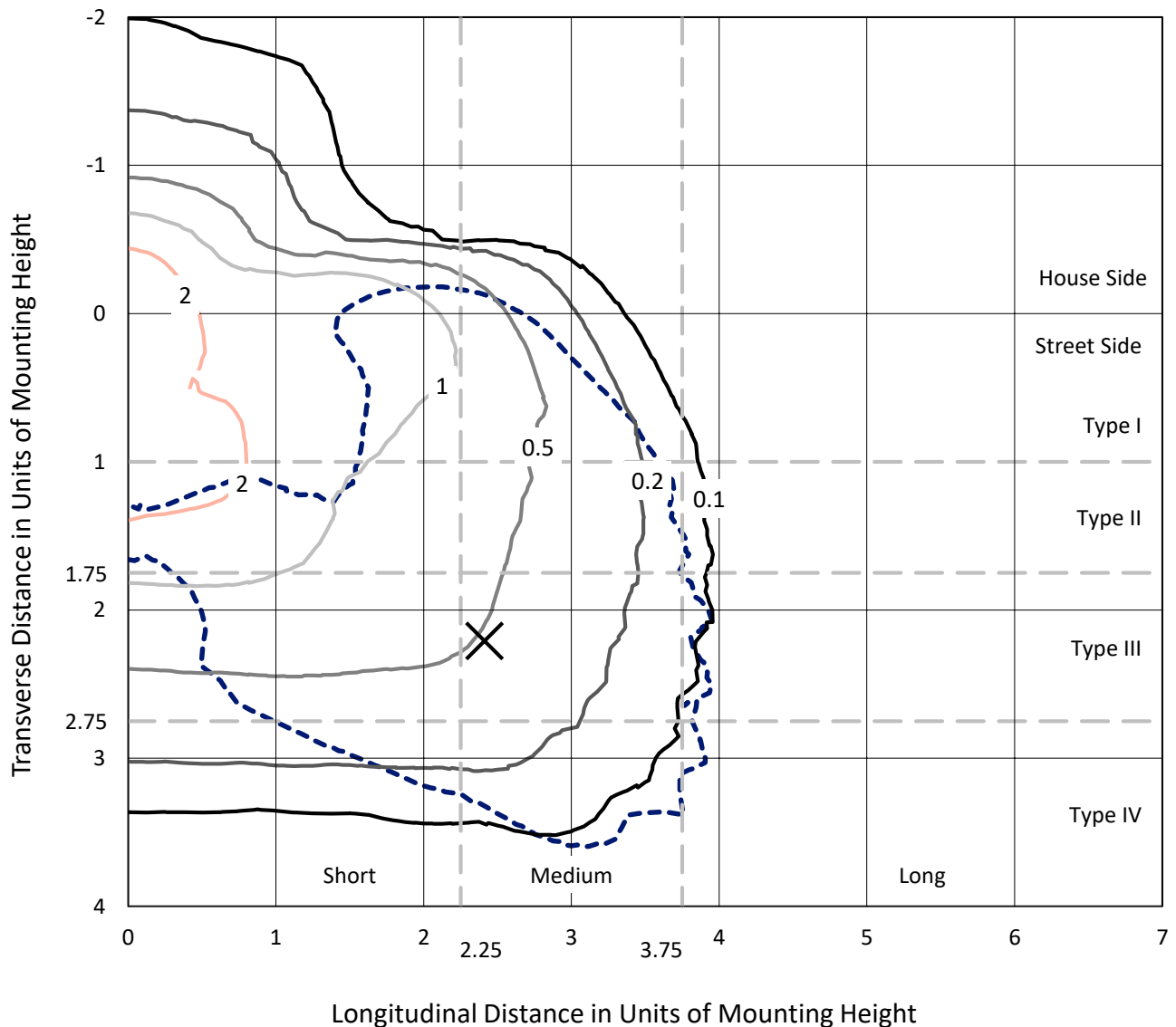
Lumens per Lamp: N/A  
Luminaire Lumens: 3871.2 lumens  
Efficiency: N/A  
Efficacy: 92.1 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')  
IES Classification: Type IV - Medium - Non-Cutoff  
BUG Rating: B1 - U5 - G1  
  
Input Watts (W): 42.01  
Input Voltage (V): 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

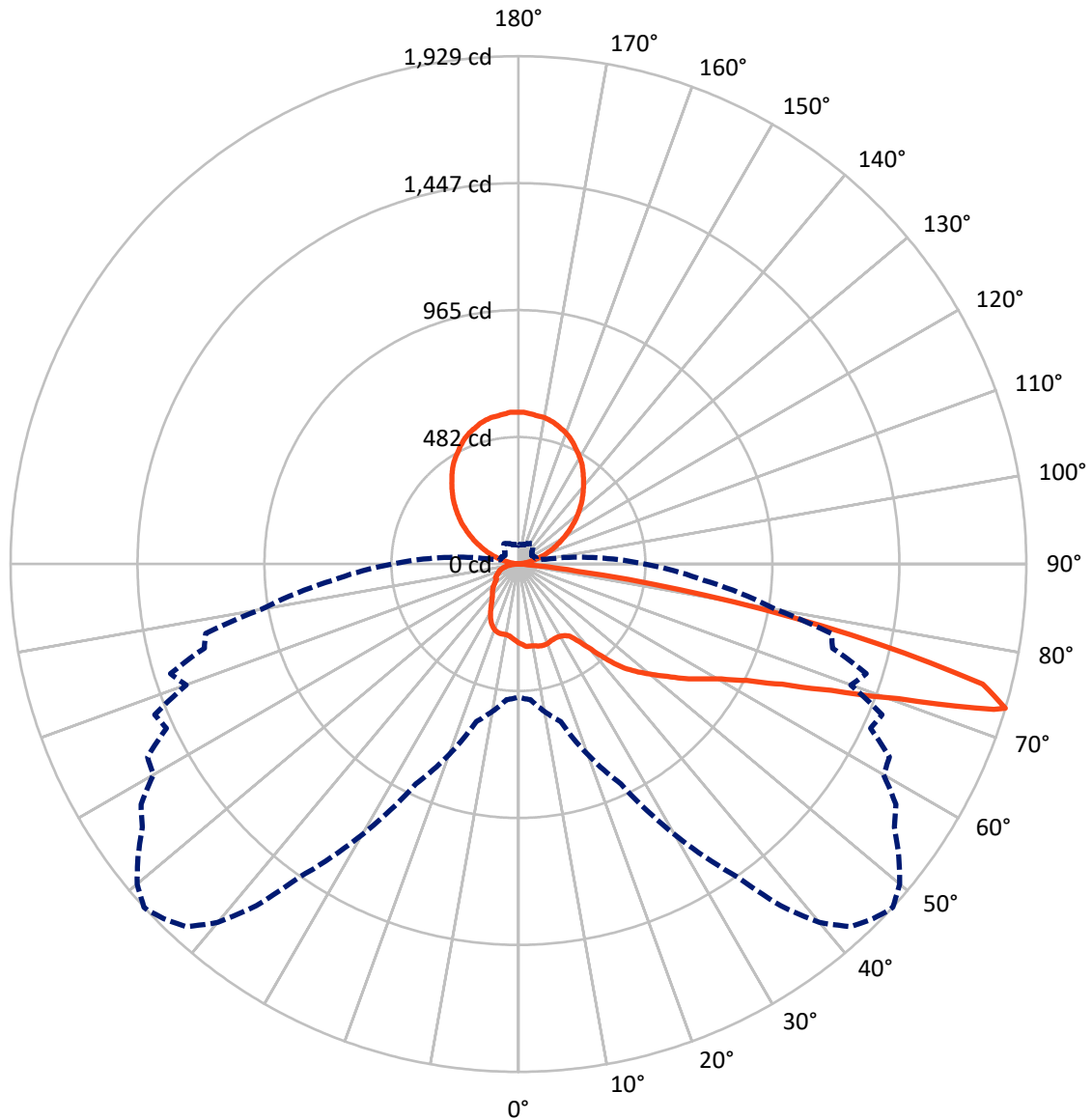
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.5 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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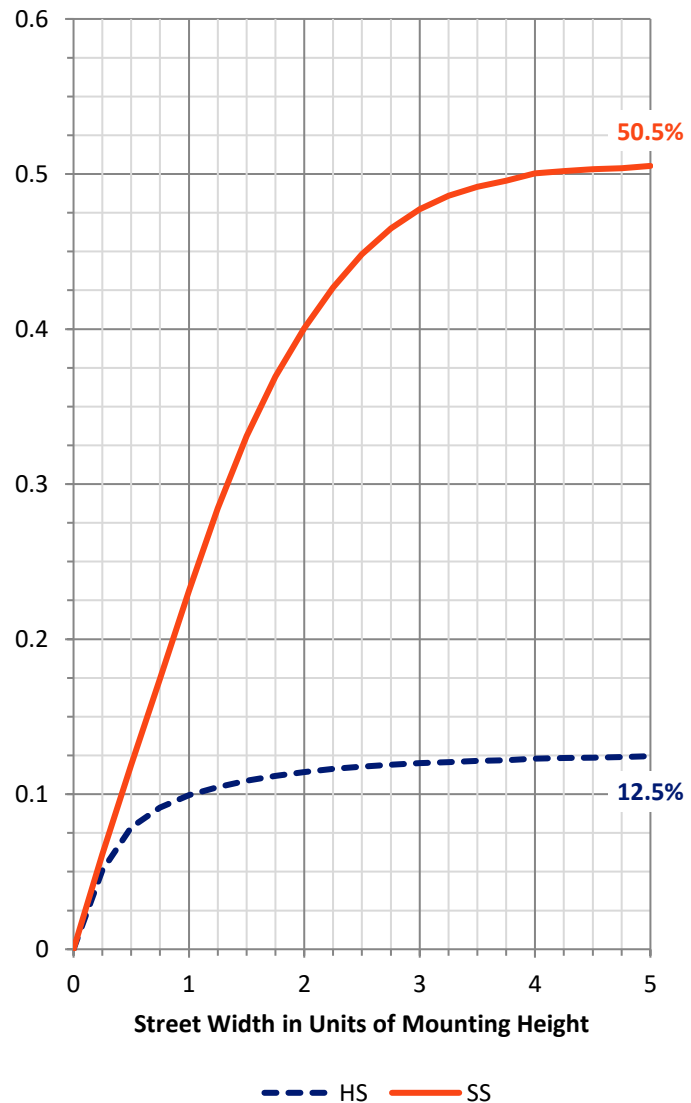
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	488.5	713.1	1201.6
	% Fixture	12.6	18.4	31.0
<b>Street Side</b>	Lumens	1956.5	713.1	2669.6
	% Fixture	50.5	18.4	69.0
<b>Total</b>	Lumens	2445.0	1426.2	3871.2
	% Fixture	63.2	36.8	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	28.6	0.7
10°-20°	85.1	2.2
20°-30°	130.8	3.4
30°-40°	190.8	4.9
40°-50°	314.5	8.1
50°-60°	492.5	12.7
60°-70°	668.1	17.3
70°-80°	494.7	12.8
80°-90°	40.0	1.0
90°-100°	4.7	0.1
100°-110°	69.0	1.8
110°-120°	153.0	4.0
120°-130°	223.9	5.8
130°-140°	265.6	6.9
140°-150°	269.3	7.0
150°-160°	231.1	6.0
160°-170°	155.1	4.0
170°-180°	54.3	1.4
0°-90°	2445.0	63.2
0°-180°	3871.2	100.0



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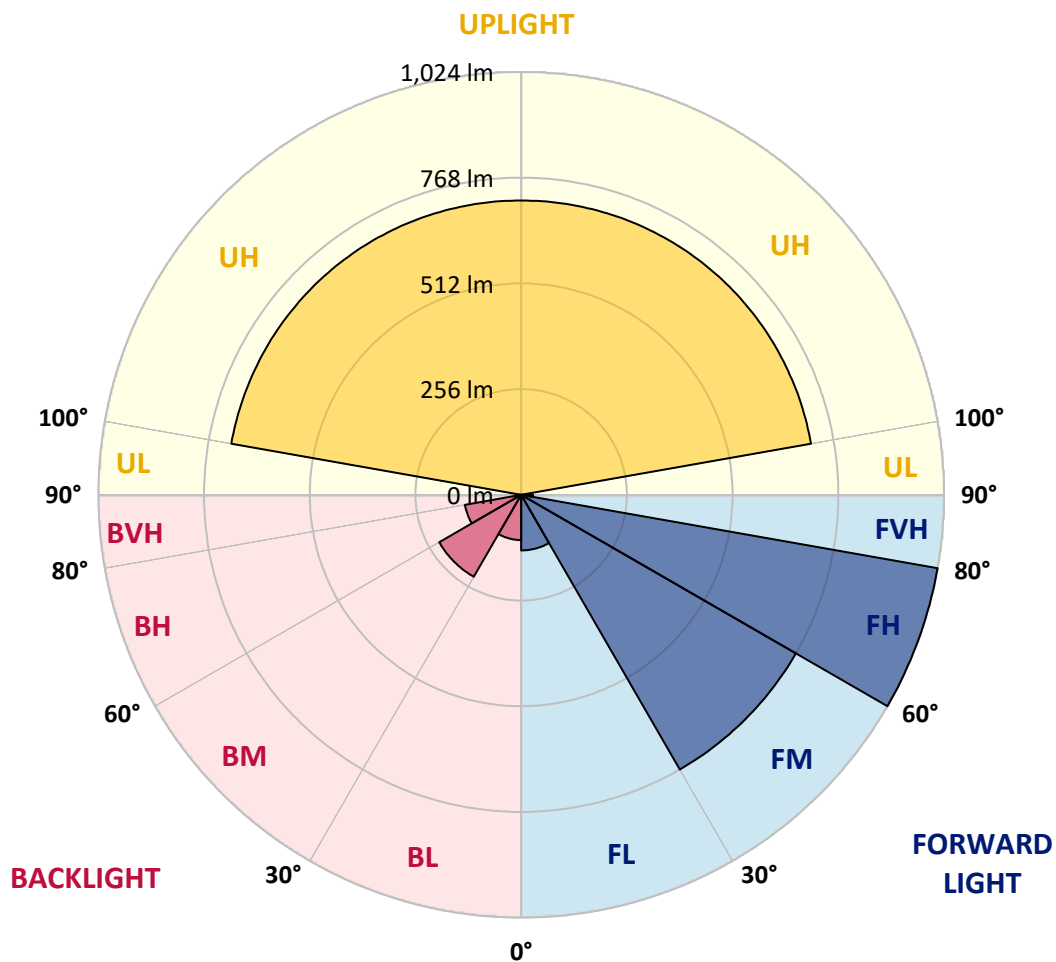
CATALOG NUMBER: ISS-AF-450-LED-E1-T4W-8030-ULG

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	134.8	3.5			
FM (30°-60°)	768.4	19.9			
FH (60°-80°)	1024.5	26.5			G1/1800
FVH (80°-90°)	28.8	0.7			G1/100
BL (0°-30°)	109.6	2.8	B0/110		
BM (30°-60°)	229.4	5.9	B1/1000		
BH (60°-80°)	138.3	3.6	B1/500		G1/500
BVH (80°-90°)	11.1	0.3			G1/100
UL (90°-100°)	4.7	0.1		U1/10	
UH (100°-180°)	713.1	18.4		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°	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2
2.5°	318.0	317.2	314.8	314.0	311.5	309.9	309.1	308.3	310.7	309.1	306.7
5°	338.2	336.6	333.3	328.5	323.7	320.4	319.6	318.0	318.0	316.4	314.8
7.5°	352.7	351.9	347.1	339.8	331.7	326.1	322.8	320.4	321.2	319.6	314.8
10°	366.4	364.8	356.7	347.9	335.8	329.3	325.3	321.2	324.5	322.0	315.6
12.5°	376.9	375.3	364.0	352.7	339.0	331.7	327.7	325.3	328.5	326.9	319.6
15°	382.6	381.0	369.7	355.9	341.4	333.3	331.7	330.1	332.5	329.3	322.8
17.5°	379.3	379.3	368.9	354.3	342.2	334.1	331.7	330.1	333.3	330.1	322.8
20°	367.2	368.9	361.6	346.3	337.4	331.7	329.3	326.1	329.3	326.1	321.2
22.5°	351.9	353.5	349.5	335.8	329.3	325.3	324.5	321.2	323.7	321.2	316.4
25°	338.2	338.2	336.6	324.5	323.7	320.4	321.2	319.6	321.2	318.0	314.8
27.5°	339.0	339.0	332.5	320.4	319.6	319.6	319.6	319.6	320.4	318.0	314.8
30°	386.6	388.2	369.7	335.8	323.7	322.0	322.8	322.0	322.8	322.0	318.0
32.5°	458.4	458.4	440.7	388.2	345.4	335.0	330.9	330.1	327.7	326.9	323.7
35°	529.5	528.7	510.9	452.8	398.7	378.5	365.6	353.5	347.9	342.2	336.6
37.5°	589.2	586.8	584.4	518.2	461.7	438.3	422.9	405.2	393.9	384.2	371.3
40°	644.9	648.9	657.8	578.7	524.6	502.8	487.5	464.9	453.6	441.5	426.2
42.5°	721.6	727.2	728.0	644.1	581.9	567.4	555.3	538.3	526.2	511.7	498.0
45°	795.8	796.6	799.0	714.3	652.1	633.6	624.7	608.6	593.2	574.7	563.4
47.5°	846.7	844.2	854.7	795.0	734.5	713.5	700.6	676.4	653.0	629.5	612.6
50°	908.8	906.4	906.4	887.0	829.7	805.5	782.9	737.7	712.7	683.6	659.4
52.5°	963.7	954.8	960.5	971.8	929.8	899.1	859.6	808.7	775.6	740.1	709.5
55°	1038.8	992.8	1005.7	1045.2	1029.1	981.5	929.0	874.9	837.0	796.6	768.4
57.5°	1012.9	981.5	1019.4	1088.8	1088.0	1043.6	999.2	933.0	895.1	857.2	822.4
60°	920.1	936.3	1018.6	1118.7	1122.7	1088.0	1051.7	990.3	960.5	920.9	886.2
62.5°	848.3	871.7	984.7	1116.2	1162.2	1130.0	1100.1	1063.8	1042.8	1009.7	974.2
65°	844.2	858.0	967.7	1113.8	1217.9	1201.0	1187.3	1170.3	1166.3	1142.1	1100.9
67.5°	883.0	895.9	996.8	1176.0	1300.3	1293.0	1313.2	1309.9	1327.7	1315.6	1281.7
70°	807.1	814.4	938.7	1197.8	1488.3	1520.6	1565.8	1563.4	1601.3	1572.3	1532.7
72.5°	566.6	581.1	690.9	989.5	1492.4	1665.1	1770.0	1858.8	1899.9	1907.2	1888.6
73°	506.1	517.4	619.1	921.7	1452.0	1636.0	1777.3	1868.5	1904.8	1927.4	1929.0
75°	176.0	181.6	270.4	558.5	1160.6	1427.8	1609.4	1691.7	1682.8	1749.0	1821.7
77.5°	56.5	57.3	70.2	144.5	560.1	886.2	1088.8	1164.7	1121.1	1192.9	1289.8
80°	34.7	36.3	46.0	65.4	146.9	268.8	455.2	569.8	546.4	613.4	716.7
82.5°	21.0	21.8	28.2	40.4	58.9	65.4	85.6	116.2	142.9	171.9	225.2
85°	9.7	10.5	13.7	18.6	24.2	25.0	24.2	22.6	25.8	29.9	34.7
87.5°	0.0	0.0	0.8	1.6	0.8	0.0	0.0	0.0	0.0	0.8	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°	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2
2.5°	309.1	306.7	306.7	303.5	305.1	301.9	303.5	300.2	301.9	297.8	300.2
5°	314.0	309.9	309.9	305.1	305.9	300.2	302.7	296.2	299.4	292.2	297.0
7.5°	316.4	309.1	312.4	303.5	307.5	297.8	302.7	292.2	298.6	287.3	295.4
10°	319.6	309.1	314.8	305.1	309.9	298.6	305.1	292.2	300.2	286.5	293.8
12.5°	324.5	313.2	318.0	306.7	313.2	300.2	306.7	293.8	301.9	286.5	295.4
15°	327.7	316.4	321.2	309.9	314.8	300.2	308.3	293.0	301.9	285.7	295.4
17.5°	326.9	316.4	321.2	308.3	314.0	299.4	307.5	292.2	300.2	283.3	293.8
20°	323.7	314.8	318.0	306.7	311.5	297.0	304.3	288.9	297.8	280.9	291.4
22.5°	319.6	310.7	314.8	304.3	309.1	294.6	301.1	287.3	296.2	279.3	288.9
25°	317.2	309.9	312.4	301.9	308.3	295.4	301.9	286.5	296.2	279.3	290.6
27.5°	316.4	309.9	314.8	305.1	310.7	299.4	305.9	292.2	300.2	282.5	293.8
30°	321.2	315.6	319.6	311.5	316.4	305.1	311.5	298.6	306.7	289.8	302.7
32.5°	326.9	321.2	325.3	318.0	325.3	314.0	322.0	309.1	318.8	301.9	314.0
35°	339.0	332.5	338.2	330.1	338.2	329.3	338.2	324.5	336.6	319.6	332.5
37.5°	370.5	352.7	358.4	349.5	357.6	346.3	361.6	347.9	361.6	345.4	363.2
40°	420.5	389.0	394.7	376.1	388.2	371.3	389.8	379.3	397.9	377.7	400.3
42.5°	485.9	456.0	450.4	422.1	432.6	412.4	431.0	412.4	437.5	418.1	446.3
45°	545.6	514.1	505.3	477.8	485.1	458.4	481.8	456.0	489.1	466.5	502.0
47.5°	594.8	557.7	550.5	519.0	531.9	506.9	535.9	508.5	548.8	526.2	567.4
50°	640.0	594.0	592.4	558.5	580.3	555.3	596.5	577.9	617.4	594.8	643.3
52.5°	691.7	633.6	641.7	611.0	645.7	624.7	672.3	645.7	697.3	673.1	726.4
55°	746.6	685.2	706.2	687.7	728.8	715.1	755.5	731.2	782.1	757.9	814.4
57.5°	807.1	754.7	791.8	782.9	819.2	802.3	847.5	825.7	876.5	856.3	912.8
60°	886.2	851.5	887.8	887.0	918.5	917.7	946.7	933.8	982.3	973.4	1025.0
62.5°	988.7	961.3	1000.0	989.5	1027.5	1021.0	1056.5	1056.5	1091.2	1103.3	1155.0
65°	1126.7	1090.4	1136.4	1120.3	1158.2	1159.8	1182.4	1186.5	1228.4	1242.1	1286.5
67.5°	1314.0	1272.0	1308.3	1277.7	1321.2	1318.8	1338.2	1346.3	1351.9	1385.0	1389.9
70°	1583.6	1520.6	1553.7	1511.7	1519.8	1525.4	1489.1	1515.8	1451.2	1503.7	1432.6
72.5°	1874.9	1803.1	1745.8	1703.8	1620.7	1608.6	1502.8	1525.4	1388.2	1433.4	1289.8
73°	1890.3	1820.8	1743.4	1699.8	1601.3	1588.4	1475.4	1494.8	1343.0	1385.8	1234.9
75°	1718.3	1736.9	1550.5	1568.2	1397.1	1417.3	1240.5	1263.1	1076.7	1109.0	914.5
77.5°	1158.2	1220.4	1011.3	1089.6	877.3	955.6	715.9	723.2	527.9	493.1	335.0
80°	573.9	627.1	444.7	485.9	326.1	320.4	195.3	162.2	138.0	141.2	145.3
82.5°	165.5	186.4	115.4	114.6	81.5	77.5	77.5	82.3	83.9	93.6	91.2
85°	31.5	37.9	33.1	44.4	39.5	43.6	40.4	46.8	43.6	54.1	46.8
87.5°	0.8	0.0	0.8	2.4	2.4	5.6	4.0	6.5	6.5	11.3	10.5
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°	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2
2.5°	297.0	301.1	299.4	297.8	296.2	295.4	292.2	293.8	289.8	293.0	289.8
5°	290.6	295.4	293.0	289.8	288.1	286.5	280.9	284.9	278.5	284.1	279.3
7.5°	283.3	291.4	288.9	285.7	282.5	280.9	269.6	278.5	268.8	276.8	268.8
10°	280.9	289.8	286.5	282.5	279.3	277.6	263.9	274.4	263.9	272.8	262.3
12.5°	279.3	289.8	284.9	280.9	277.6	275.2	259.9	272.8	259.1	272.0	259.9
15°	277.6	289.8	283.3	278.5	275.2	272.8	256.7	271.2	255.9	270.4	256.7
17.5°	276.0	287.3	281.7	276.0	272.8	271.2	253.4	268.8	252.6	268.8	255.0
20°	273.6	284.9	278.5	272.8	269.6	267.2	249.4	265.5	248.6	264.7	249.4
22.5°	270.4	282.5	276.8	271.2	268.0	263.9	244.6	261.5	243.7	259.9	245.4
25°	271.2	284.1	276.8	271.2	266.3	262.3	241.3	259.9	239.7	255.9	239.7
27.5°	275.2	286.5	279.3	274.4	268.0	263.1	241.3	258.3	238.1	251.8	234.9
30°	283.3	294.6	288.1	280.9	275.2	268.8	245.4	259.1	238.1	247.0	230.0
32.5°	297.0	307.5	301.1	295.4	288.9	279.3	253.4	263.1	239.7	243.7	226.0
35°	314.8	327.7	324.5	320.4	312.4	295.4	267.2	268.8	242.9	240.5	220.3
37.5°	343.8	361.6	360.8	360.0	351.1	320.4	282.5	280.1	246.2	238.1	213.1
40°	381.8	402.7	408.4	414.0	395.5	350.3	300.2	291.4	247.8	233.3	201.8
42.5°	426.2	454.4	471.4	481.8	447.9	383.4	320.4	304.3	247.8	226.0	188.9
45°	481.0	514.1	546.4	557.7	506.1	418.9	341.4	314.8	244.6	214.7	171.9
47.5°	548.0	586.8	631.2	636.8	569.0	456.8	355.9	322.0	234.1	199.4	156.6
50°	622.3	669.1	734.5	730.4	636.0	496.4	365.6	326.9	215.5	181.6	138.0
52.5°	705.4	764.3	857.2	838.6	717.5	545.6	374.5	333.3	192.9	160.6	119.5
55°	809.5	879.8	996.0	956.4	807.9	599.7	387.4	334.1	163.0	135.6	105.7
57.5°	921.7	996.8	1145.3	1073.5	892.7	641.7	381.8	308.3	133.2	114.6	95.2
60°	1056.5	1147.7	1294.6	1182.4	963.7	656.2	342.2	254.2	113.8	103.3	90.4
62.5°	1207.4	1297.8	1417.3	1258.3	1004.0	632.0	254.2	176.0	97.7	92.0	83.1
65°	1368.1	1453.6	1476.2	1264.7	977.4	525.4	157.4	115.4	84.7	82.3	76.7
67.5°	1515.8	1523.8	1420.5	1159.8	848.3	366.4	107.3	92.0	78.3	77.5	74.3
70°	1553.7	1414.1	1180.8	903.2	612.6	217.9	87.2	79.9	75.1	75.1	72.6
72.5°	1297.8	1076.7	789.4	547.2	334.1	116.2	74.3	72.6	71.0	71.0	69.4
73°	1217.1	991.9	707.0	477.8	282.5	104.1	72.6	71.0	70.2	69.4	68.6
75°	808.7	623.1	401.1	242.1	131.6	75.1	64.6	64.6	63.8	64.6	63.8
77.5°	311.5	234.9	155.0	104.1	75.1	58.9	54.9	55.7	54.9	56.5	55.7
80°	137.2	135.6	102.5	73.4	54.9	44.4	44.4	44.4	45.2	46.0	46.0
82.5°	93.6	79.1	60.5	45.2	33.1	32.3	33.1	33.1	33.9	34.7	33.9
85°	51.7	43.6	32.3	20.2	17.8	21.8	21.8	21.8	21.0	21.0	20.2
87.5°	16.1	12.1	8.9	2.4	4.0	4.0	5.6	4.8	4.8	5.6	5.6
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°
300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2	300.2	110°	114.0
293.0	290.6	293.0	288.9	292.2	288.9	291.4	291.4	290.6	290.6	290.6	112.5°	136.0
283.3	279.3	283.3	280.9	283.3	280.1	282.5	283.3	284.1	286.5	285.7	115°	158.0
276.0	268.0	276.8	268.8	276.0	268.8	275.2	276.0	278.5	281.7	284.1	117.5°	181.0
272.8	262.3	272.8	263.1	272.0	263.9	272.0	272.8	275.2	279.3	283.3	120°	204.0
271.2	259.9	271.2	261.5	271.2	263.1	271.2	273.6	275.2	278.5	283.3	122.5°	228.0
269.6	258.3	271.2	260.7	271.2	263.1	272.0	273.6	276.0	279.3	283.3	125°	254.0
268.8	255.9	269.6	259.9	269.6	261.5	271.2	271.2	274.4	278.5	280.9	127.5°	277.0
265.5	253.4	265.5	255.9	265.5	258.3	266.3	266.3	269.6	271.2	275.2	130°	301.0
260.7	247.8	259.1	250.2	259.1	251.8	258.3	258.3	260.7	263.1	265.5	132.5°	325.0
253.4	241.3	251.0	242.9	249.4	242.9	247.8	247.0	248.6	250.2	251.8	135°	348.0
245.4	233.3	241.3	232.4	236.5	230.0	233.3	231.6	232.4	233.3	234.1	137.5°	369.0
236.5	224.4	228.4	220.3	221.1	214.7	216.3	213.9	213.1	212.3	210.7	140°	390.0
226.8	213.9	213.9	205.8	204.2	198.6	198.6	195.3	192.9	189.7	186.4	142.5°	412.0
214.7	203.4	197.7	191.3	188.1	182.4	181.6	177.6	171.9	166.3	163.0	145°	433.0
202.6	189.7	181.6	175.1	171.9	167.9	167.1	163.8	157.4	150.9	146.1	147.5°	452.0
186.4	173.5	164.7	162.2	159.8	156.6	157.4	153.4	146.9	139.6	135.6	150°	469.0
170.3	159.0	151.7	150.9	149.3	148.5	149.3	146.1	138.8	132.4	127.5	152.5°	486.0
156.6	145.3	138.0	137.2	136.4	139.6	140.4	139.6	131.6	125.1	118.6	155°	503.0
142.9	129.1	124.3	122.7	123.5	128.3	129.9	132.4	125.1	117.8	109.0	157.5°	517.0
126.7	113.8	112.2	110.6	111.4	115.4	119.5	124.3	117.8	107.3	95.2	160°	530.0
112.2	100.9	101.7	100.1	101.7	104.9	108.2	116.2	108.2	97.7	92.0	162.5°	540.0
100.9	92.0	93.6	92.0	93.6	97.7	100.1	106.5	106.5	104.1	99.3	165°	550.0
92.8	86.4	88.0	86.4	88.8	92.0	94.4	108.2	116.2	109.8	100.1	167.5°	558.0
88.0	82.3	83.1	81.5	83.1	88.0	92.8	109.0	121.9	109.0	101.7	170°	564.0
80.7	75.9	75.1	75.1	76.7	84.7	87.2	101.7	120.3	108.2	102.5	172.5°	567.0
75.9	71.8	71.0	70.2	71.8	77.5	79.9	94.4	116.2	102.5	92.8	175°	570.0
73.4	70.2	68.6	67.0	68.6	73.4	75.9	88.8	109.8	97.7	87.2	177.5°	574.0
71.0	67.8	67.0	65.4	66.2	69.4	72.6	81.5	104.1	92.0	81.5	180°	576.0
67.8	64.6	63.8	61.3	62.1	65.4	67.0	76.7	96.9	86.4	75.9		
67.0	63.8	63.0	60.5	61.3	63.8	65.4	75.1	95.2	85.6	75.1		
63.0	59.7	58.9	57.3	58.1	58.1	59.7	68.6	90.4	80.7	70.2		
55.7	53.3	52.5	50.8	50.0	49.2	51.7	60.5	82.3	72.6	56.5		
46.0	43.6	42.8	39.5	39.5	39.5	42.8	51.7	61.3	52.5	43.6		
33.9	32.3	32.3	29.9	29.1	28.2	30.7	35.5	48.4	41.2	33.9		
20.2	19.4	20.2	17.8	18.6	17.8	20.2	25.0	26.6	21.0	16.1		
4.8	5.6	5.6	5.6	4.8	4.8	4.0	3.2	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		

'227931  
 ISS-AF-450-LED-E1-T4W-8030-ULG

REPORT NUMBER: P227931  
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**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°	300.2	300.2
136.0	136.0	136.0	136.0	135.5	135.0	134.0	132.0	129.0	126.0	2.5°	289.8	288.9
158.0	158.0	158.0	158.0	157.5	157.0	156.0	154.0	151.0	149.0	5°	285.7	285.7
180.8	180.5	180.2	180.0	179.8	179.5	179.0	177.0	174.0	172.0	7.5°	284.1	284.1
204.0	204.0	204.0	204.0	203.5	203.0	202.0	201.0	198.0	196.0	10°	284.9	284.9
228.0	228.0	228.0	228.0	227.8	227.5	227.0	226.0	223.0	221.0	12.5°	284.9	286.5
253.8	253.5	253.2	253.0	252.8	252.5	252.0	251.0	248.0	247.0	15°	287.3	286.5
277.2	277.5	277.8	278.0	277.5	277.0	276.0	274.0	272.0	270.0	17.5°	284.9	284.9
301.0	301.0	301.0	301.0	300.5	300.0	299.0	298.0	294.0	293.0	20°	278.5	280.1
325.0	325.0	325.0	325.0	324.2	323.5	322.0	321.0	318.0	317.0	22.5°	269.6	269.6
348.0	348.0	348.0	348.0	347.2	346.5	345.0	345.0	341.0	339.0	25°	255.0	255.9
369.0	369.0	369.0	369.0	368.5	368.0	367.0	367.0	364.0	363.0	27.5°	235.7	237.3
390.0	390.0	390.0	390.0	389.8	389.5	389.0	388.0	386.0	385.0	30°	211.5	213.1
412.0	412.0	412.0	412.0	411.5	411.0	410.0	410.0	407.0	408.0	32.5°	184.0	185.6
433.2	433.5	433.8	434.0	433.5	433.0	432.0	431.0	428.0	428.0	35°	162.2	163.0
452.5	453.0	453.5	454.0	453.8	453.5	453.0	452.0	448.0	447.0	37.5°	147.7	147.7
469.5	470.0	470.5	471.0	470.8	470.5	470.0	469.0	465.0	464.0	40°	135.6	135.6
486.2	486.5	486.8	487.0	486.8	486.5	486.0	485.0	482.0	483.0	42.5°	124.3	123.5
503.2	503.5	503.8	504.0	503.8	503.5	503.0	503.0	501.0	502.0	45°	113.0	111.4
517.5	518.0	518.5	519.0	519.0	519.0	519.0	519.0	516.0	517.0	47.5°	101.7	100.9
530.5	531.0	531.5	532.0	532.0	532.0	532.0	532.0	529.0	529.0	50°	92.0	92.0
540.5	541.0	541.5	542.0	541.8	541.5	541.0	541.0	538.0	539.0	52.5°	93.6	93.6
550.8	551.5	552.2	553.0	552.8	552.5	552.0	552.0	548.0	549.0	55°	100.9	100.9
558.5	559.0	559.5	560.0	560.0	560.0	560.0	561.0	558.0	559.0	57.5°	101.7	100.9
564.2	564.5	564.8	565.0	565.2	565.5	566.0	567.0	565.0	566.0	60°	110.6	109.8
567.5	568.0	568.5	569.0	568.8	568.5	568.0	569.0	567.0	569.0	62.5°	115.4	117.8
570.8	571.5	572.2	573.0	572.8	572.5	572.0	572.0	569.0	570.0	65°	100.9	97.7
574.8	575.5	576.2	577.0	577.0	577.0	577.0	578.0	574.0	575.0	67.5°	96.0	91.2
576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	70°	86.4	79.1
										72.5°	76.7	72.6
										73°	74.3	71.0
										75°	66.2	64.6
										77.5°	50.0	49.2
										80°	42.0	41.2
										82.5°	28.2	26.6
										85°	12.1	11.3
										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

