

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: P228191

Luminaire Tested: **ISS-AF-450-LED-E1-SL3-8030-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P228191  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29762)-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-SL3-8030-ULG  
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT  
LIGHT SQUARE WITH ACCULED OPTICS-TYPE III W/SPILL CONTROL, WITH UPLIGHT  
GLOW  
Light Source: (16) 3000K CCT, 80 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

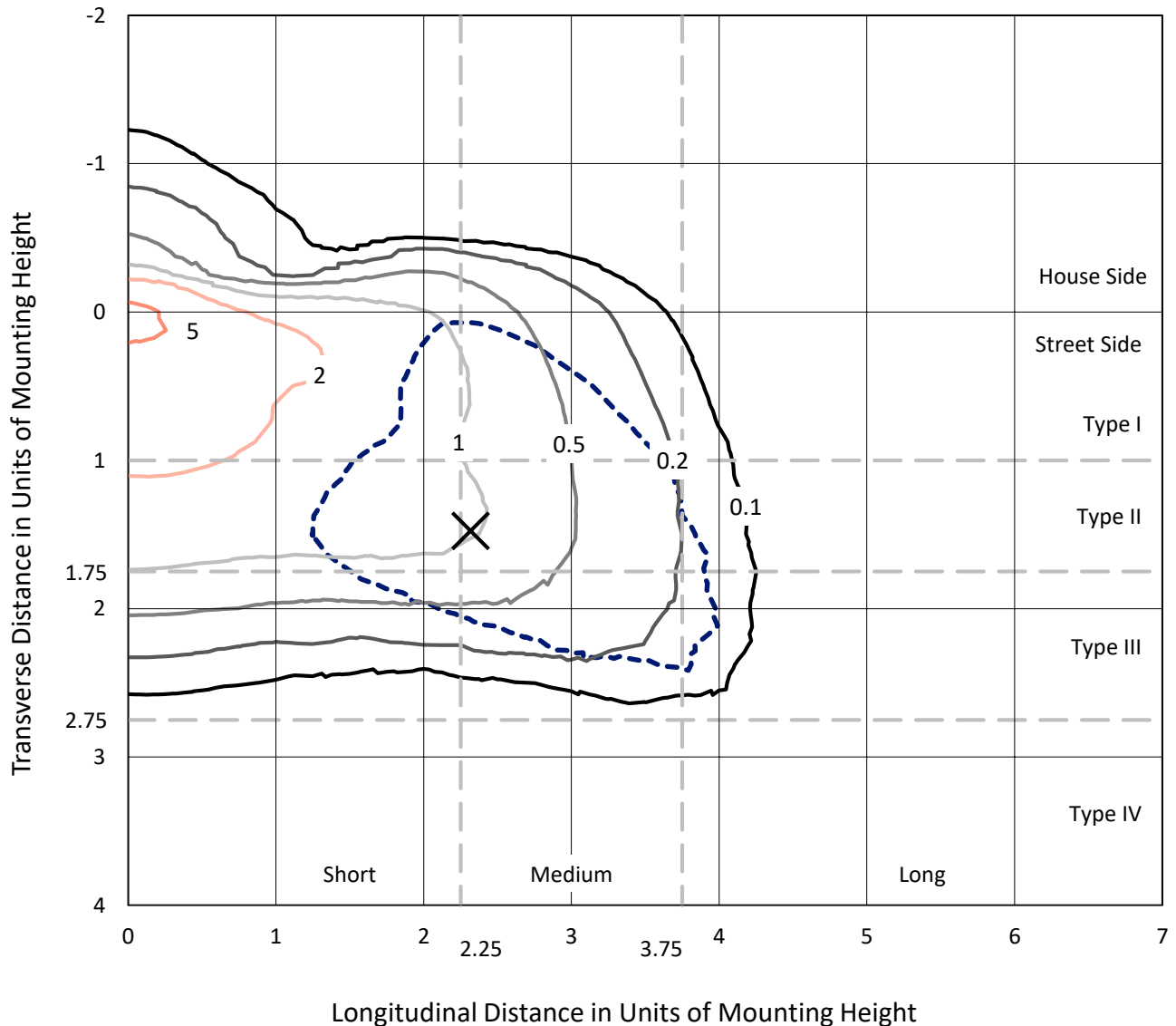
Lumens per Lamp: N/A  
Luminaire Lumens: 3700.2 lumens  
Efficiency: N/A  
Efficacy: 88.1 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')  
IES Classification: Type III - Medium - Non-Cutoff  
BUG Rating: B0 - U5 - G1  
  
Input Watts (W): 42.01  
Input Voltage (V): 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

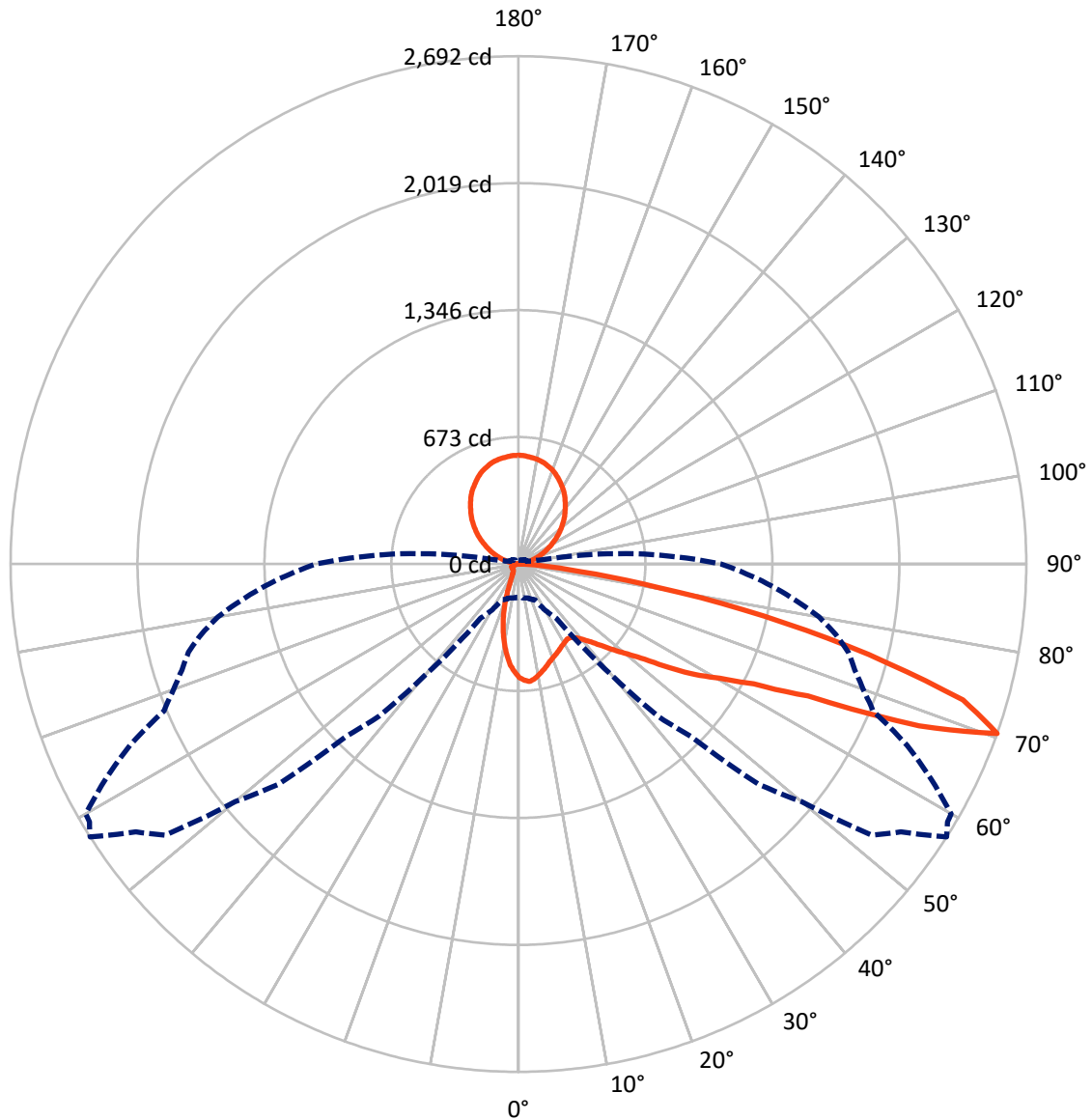
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 6 fc  
 Type III - Medium - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 57.5-Deg Lateral    - - - Horizontal Cone Through 70-Deg Vertical

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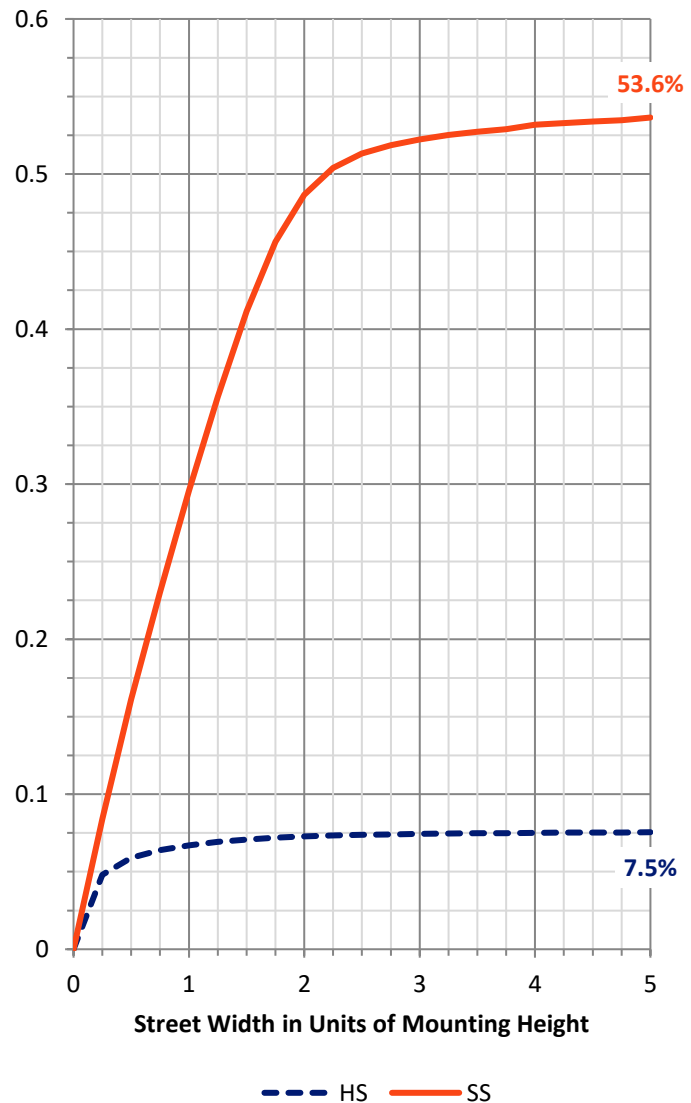
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	281.4	713.1	994.5
	% Fixture	7.6	19.3	26.9
<b>Street Side</b>	Lumens	1992.6	713.1	2705.7
	% Fixture	53.9	19.3	73.1
<b>Total</b>	Lumens	2274.0	1426.2	3700.2
	% Fixture	61.5	38.5	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	52.0	1.4
10°-20°	112.8	3.0
20°-30°	141.8	3.8
30°-40°	185.3	5.0
40°-50°	278.0	7.5
50°-60°	439.5	11.9
60°-70°	633.5	17.1
70°-80°	392.1	10.6
80°-90°	38.9	1.1
90°-100°	4.7	0.1
100°-110°	69.0	1.9
110°-120°	153.0	4.1
120°-130°	223.9	6.0
130°-140°	265.6	7.2
140°-150°	269.3	7.3
150°-160°	231.1	6.2
160°-170°	155.1	4.2
170°-180°	54.3	1.5
0°-90°	2274.0	61.5
0°-180°	3700.2	100.0



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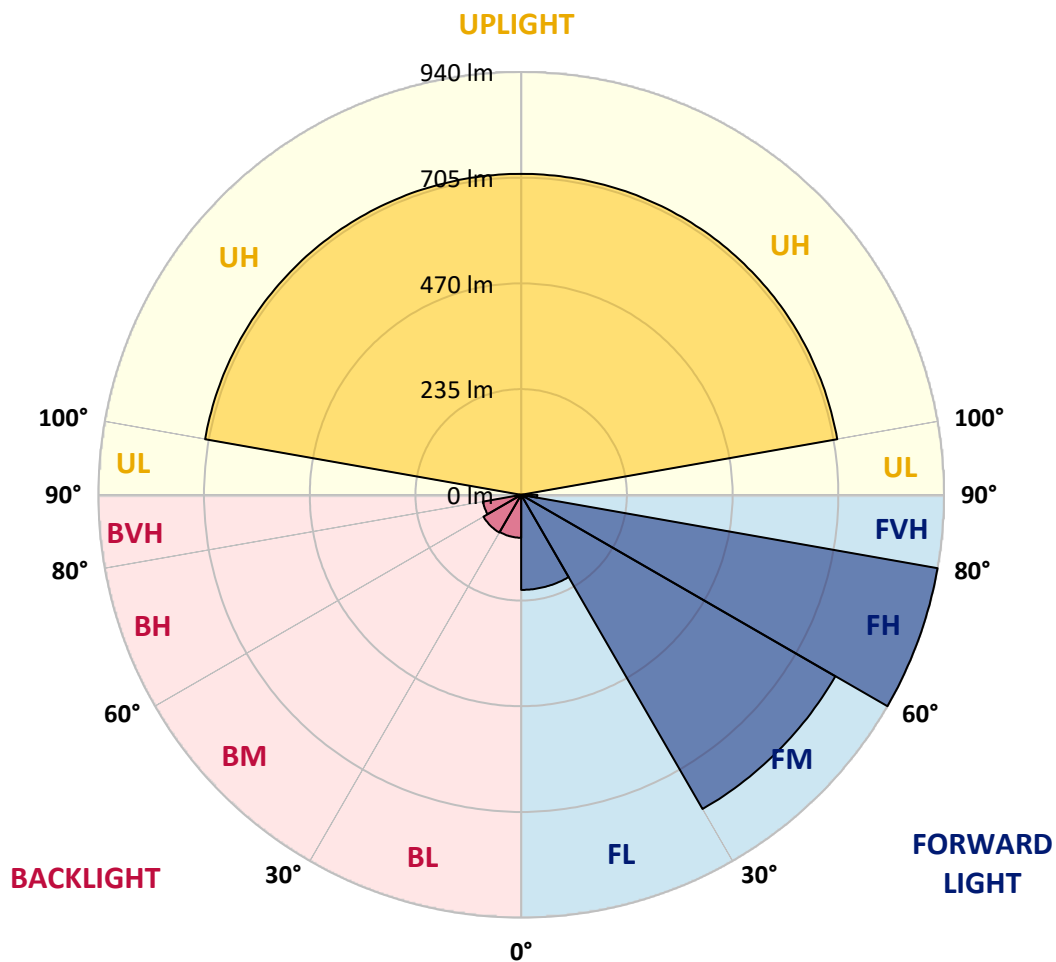
CATALOG NUMBER: ISS-AF-450-LED-E1-SL3-8030-ULG

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

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	211.2	5.7			
FM	(30°-60°)	806.1	21.8			
FH	(60°-80°)	939.5	25.4			G1/1800
FVH	(80°-90°)	35.8	1.0			G1/100
BL	(0°-30°)	95.4	2.6	B0/110		
BM	(30°-60°)	96.8	2.6	B0/220		
BH	(60°-80°)	86.1	2.3	B0/110		G0/110
BVH	(80°-90°)	3.1	0.1			G0/10
UL	(90°-100°)	4.7	0.1		U1/10	
UH	(100°-180°)	713.1	19.3		U4/1000	

**BUG Rating: B0-U5-G1**

Type III Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
0°	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9
2.5°	631.7	630.9	629.3	626.1	624.5	626.1	624.5	622.1	618.8	621.3	619.6
5°	630.1	631.7	628.5	626.1	630.1	631.7	628.5	628.5	625.3	628.5	626.9
7.5°	598.7	599.5	600.3	599.5	610.0	610.0	608.3	610.0	610.8	612.4	613.2
10°	559.1	559.9	561.5	564.0	576.9	578.5	579.3	580.9	583.3	584.9	589.8
12.5°	519.6	521.2	524.4	532.5	546.2	547.8	550.3	552.7	556.7	559.1	568.0
15°	486.5	487.3	490.5	499.4	519.6	523.6	525.2	528.5	536.5	536.5	546.2
17.5°	455.9	457.5	459.9	470.4	490.5	497.0	501.8	503.5	513.9	516.4	527.7
20°	432.5	433.3	434.1	443.8	462.3	472.0	476.0	482.5	490.5	497.0	506.7
22.5°	419.5	420.4	418.7	422.8	438.9	451.0	455.9	462.3	465.5	476.8	482.5
25°	420.4	421.2	417.1	414.7	422.8	435.7	439.7	446.2	444.6	460.7	460.7
27.5°	428.4	430.0	426.0	418.7	419.5	430.0	432.5	434.9	430.0	446.2	442.9
30°	444.6	446.2	441.3	435.7	426.8	433.3	433.3	433.3	424.4	438.1	432.5
32.5°	461.5	463.1	461.5	457.5	446.2	447.8	444.6	442.9	430.8	442.1	433.3
35°	486.5	487.3	488.1	488.1	472.0	475.2	466.3	461.5	450.2	459.1	447.0
37.5°	516.4	516.4	522.0	524.4	506.7	506.7	497.0	490.5	480.1	483.3	471.2
40°	543.0	545.4	558.3	565.6	549.4	543.0	534.9	529.3	521.2	521.2	509.1
42.5°	573.7	578.5	593.8	607.5	598.7	589.0	580.9	575.3	571.2	570.4	557.5
45°	611.6	617.2	634.2	647.1	649.5	642.2	635.8	630.1	626.9	625.3	614.0
47.5°	654.3	660.0	675.3	690.6	701.9	700.3	693.1	687.4	689.8	688.2	681.0
50°	701.9	705.2	714.8	732.6	758.4	764.1	762.4	758.4	763.3	763.3	756.8
52.5°	739.9	742.3	749.5	770.5	813.3	826.2	836.7	844.7	852.8	857.7	853.6
55°	774.5	774.5	775.4	802.0	865.7	886.7	910.1	927.0	937.5	956.9	965.0
57.5°	831.0	827.0	826.2	854.4	928.7	950.4	984.3	1008.5	1023.1	1062.6	1061.8
60°	814.9	816.5	845.5	928.7	1057.7	1077.1	1107.8	1133.6	1161.0	1190.1	1192.5
62.5°	702.7	706.8	750.3	874.6	1140.0	1240.9	1335.3	1407.1	1447.4	1473.3	1437.8
65°	492.2	501.8	560.7	712.4	1049.7	1205.4	1354.7	1520.9	1648.3	1846.0	1903.3
67.5°	245.3	252.5	262.2	373.6	784.2	1002.9	1208.6	1435.3	1604.8	1895.2	2057.4
70°	175.9	179.1	186.4	209.8	351.0	525.2	767.3	1091.6	1290.9	1729.0	1958.2
72.5°	136.4	139.6	149.3	182.3	232.4	256.6	305.0	498.6	741.5	1194.1	1503.9
75°	105.7	110.5	124.3	164.6	223.5	237.2	239.6	257.4	293.7	530.1	843.1
77.5°	74.2	75.0	88.8	142.0	217.0	243.7	239.6	239.6	244.5	270.3	360.6
80°	49.2	50.0	58.9	98.4	190.4	221.9	245.3	234.0	234.8	238.8	245.3
82.5°	25.8	27.4	34.7	59.7	111.3	150.1	204.1	213.0	209.8	213.8	212.2
85°	7.3	7.3	12.1	22.6	54.9	58.1	90.4	123.4	125.9	142.8	152.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	3.2	7.3	8.1
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°	2.0	2.0	2.0	3.0	4.0	5.2	6.5	7.8	9.0	10.0	11.0
100°	8.0	8.0	10.0	14.0	22.0	24.0	26.0	28.0	30.0	30.5	31.0
102.5°	28.0	28.0	32.0	38.0	45.0	46.2	47.5	48.8	50.0	50.2	50.5
105°	54.0	54.0	56.0	61.0	66.0	67.0	68.0	69.0	70.0	70.2	70.5
107.5°	78.0	77.0	80.0	84.0	88.0	88.8	89.5	90.2	91.0	91.5	92.0
110°	101.0	102.0	103.0	106.0	110.0	110.5	111.0	111.5	112.0	112.5	113.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
112.5°	124.0	124.0	126.0	129.0	132.0	132.5	133.0	133.5	134.0	134.5	135.0
115°	146.0	147.0	149.0	151.0	154.0	154.5	155.0	155.5	156.0	156.5	157.0
117.5°	169.0	170.0	172.0	174.0	177.0	177.5	178.0	178.5	179.0	179.2	179.5
120°	193.0	195.0	196.0	198.0	201.0	201.2	201.5	201.8	202.0	202.5	203.0
122.5°	219.0	220.0	221.0	223.0	226.0	226.2	226.5	226.8	227.0	227.2	227.5
125°	244.0	246.0	247.0	248.0	251.0	251.2	251.5	251.8	252.0	252.2	252.5
127.5°	267.0	269.0	270.0	272.0	274.0	274.5	275.0	275.5	276.0	276.5	277.0
130°	290.0	292.0	293.0	294.0	298.0	298.2	298.5	298.8	299.0	299.5	300.0
132.5°	313.0	314.0	317.0	318.0	321.0	321.2	321.5	321.8	322.0	322.8	323.5
135°	336.0	337.0	339.0	341.0	345.0	345.0	345.0	345.0	345.0	345.8	346.5
137.5°	359.0	360.0	363.0	364.0	367.0	367.0	367.0	367.0	367.0	367.5	368.0
140°	382.0	383.0	385.0	386.0	388.0	388.2	388.5	388.8	389.0	389.2	389.5
142.5°	404.0	406.0	408.0	407.0	410.0	410.0	410.0	410.0	410.0	410.5	411.0
145°	425.0	426.0	428.0	428.0	431.0	431.2	431.5	431.8	432.0	432.5	433.0
147.5°	444.0	444.0	447.0	448.0	452.0	452.2	452.5	452.8	453.0	453.2	453.5
150°	461.0	462.0	464.0	465.0	469.0	469.2	469.5	469.8	470.0	470.2	470.5
152.5°	479.0	480.0	483.0	482.0	485.0	485.2	485.5	485.8	486.0	486.2	486.5
155°	499.0	500.0	502.0	501.0	503.0	503.0	503.0	503.0	503.0	503.2	503.5
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	541.5
165°	546.0	547.0	549.0	548.0	552.0	552.0	552.0	552.0	552.0	552.2	552.5
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	565.5
172.5°	565.0	566.0	569.0	567.0	569.0	568.8	568.5	568.2	568.0	568.2	568.5
175°	567.0	569.0	570.0	569.0	572.0	572.0	572.0	572.0	572.0	572.2	572.5
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):**

	52.5°	55°	57.5°	59°	60°	62.5°	65°	67.5°	70°	72.5°	75°
0°	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9
2.5°	621.3	618.0	617.2	615.6	616.4	614.0	613.2	610.0	610.0	608.3	606.7
5°	625.3	622.1	625.3	619.6	620.4	618.0	614.0	614.0	610.8	608.3	603.5
7.5°	614.0	614.0	614.8	611.6	612.4	611.6	606.7	605.9	601.1	601.1	595.4
10°	593.0	593.0	596.2	593.8	594.6	593.8	591.4	590.6	589.0	589.0	580.1
12.5°	568.8	573.7	578.5	576.1	576.1	577.7	577.7	578.5	577.7	576.9	569.6
15°	548.6	555.9	560.7	559.9	560.7	564.8	566.4	567.2	569.6	568.8	562.4
17.5°	530.1	538.2	542.2	545.4	547.8	551.1	555.9	558.3	561.5	560.7	554.3
20°	513.1	520.4	527.7	531.7	532.5	539.0	544.6	551.9	553.5	555.1	547.0
22.5°	495.4	501.8	516.4	513.9	519.6	531.7	534.9	545.4	545.4	551.1	539.8
25°	480.1	480.9	503.5	499.4	504.3	526.0	528.5	547.0	542.2	550.3	537.3
27.5°	464.7	463.9	491.4	486.5	492.2	522.0	523.6	549.4	544.6	554.3	537.3
30°	453.4	451.0	482.5	472.8	480.9	518.0	518.8	551.9	547.8	560.7	543.0
32.5°	451.0	447.0	474.4	467.1	475.2	513.9	518.8	560.7	555.9	572.0	549.4
35°	461.5	455.0	478.4	472.0	478.4	515.6	522.8	574.5	568.8	587.4	564.8
37.5°	480.9	476.0	495.4	488.9	493.8	526.9	533.3	592.2	591.4	614.0	588.2
40°	514.8	509.9	525.2	516.4	520.4	551.1	554.3	617.2	619.6	647.1	621.3
42.5°	560.7	552.7	564.8	554.3	559.9	587.4	584.1	647.9	655.1	693.1	663.2
45°	619.6	609.2	616.4	605.1	609.2	632.5	623.7	689.0	696.3	743.1	716.5
47.5°	684.2	671.3	680.2	665.6	668.0	693.1	676.9	738.2	749.5	808.4	782.6
50°	761.6	744.7	747.9	734.2	735.8	760.8	743.1	798.8	812.5	877.8	855.2
52.5°	860.9	836.7	836.7	818.1	818.9	843.9	822.2	870.6	885.9	952.0	936.7
55°	991.6	972.2	968.2	948.8	942.4	947.2	916.5	950.4	967.4	1029.5	1017.4
57.5°	1095.7	1093.2	1105.3	1077.9	1071.5	1073.1	1034.3	1036.8	1056.1	1104.5	1108.6
60°	1222.3	1226.4	1228.0	1205.4	1203.0	1180.4	1140.8	1134.4	1158.6	1191.7	1204.6
62.5°	1424.0	1420.0	1399.8	1382.9	1367.6	1307.1	1285.3	1249.8	1283.7	1302.2	1328.8
65°	1857.3	1815.3	1686.3	1697.6	1657.2	1525.7	1507.1	1435.3	1488.6	1489.4	1539.4
67.5°	2286.5	2368.8	2289.8	2291.4	2200.2	1962.2	1904.9	1762.1	1792.0	1757.3	1783.1
70°	2360.0	2475.3	2691.6	2652.8	2648.0	2464.8	2272.0	2034.0	1944.4	1870.2	1810.5
72.5°	2030.8	2146.1	2463.2	2375.3	2408.4	2464.0	2263.1	2084.8	1884.7	1790.3	1661.2
75°	1428.9	1595.1	1917.0	1871.0	1895.2	1987.2	1814.5	1793.6	1562.0	1499.1	1300.6
77.5°	765.7	971.4	1332.1	1275.6	1286.1	1338.5	1158.6	1121.5	898.0	835.9	610.8
80°	344.5	477.6	747.9	685.0	666.4	636.6	468.8	369.5	225.9	150.1	104.1
82.5°	228.3	237.2	331.6	287.2	268.7	221.9	143.6	84.7	67.0	56.5	54.1
85°	153.3	140.4	139.6	123.4	114.6	90.4	67.0	42.0	34.7	29.0	26.6
87.5°	8.9	5.6	8.1	8.9	6.5	5.6	4.0	0.0	0.8	0.0	0.8
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°	12.0	13.0	11.5	10.6	10.0	8.5	7.0	6.5	6.0	5.5	5.0
100°	31.5	32.0	31.5	31.2	31.0	30.5	30.0	29.2	28.5	27.8	27.0
102.5°	50.8	51.0	50.8	50.6	50.5	50.2	50.0	49.5	49.0	48.5	48.0
105°	70.8	71.0	71.0	71.0	71.0	71.0	71.0	70.5	70.0	69.5	69.0
107.5°	92.5	93.0	92.8	92.6	92.5	92.2	92.0	91.8	91.5	91.2	91.0
110°	113.5	114.0	114.0	114.0	114.0	114.0	114.0	113.8	113.5	113.2	113.0



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**CANDELA DISTRIBUTION (continued):**

	52.5°	55°	57.5°	59°	60°	62.5°	65°	67.5°	70°	72.5°	75°
112.5°	135.5	136.0	136.0	136.0	136.0	136.0	136.0	135.8	135.5	135.2	135.0
115°	157.5	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0
117.5°	179.8	180.0	180.2	180.4	180.5	180.8	181.0	180.8	180.5	180.2	180.0
120°	203.5	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0
122.5°	227.8	228.0	228.0	228.0	228.0	228.0	228.0	228.2	228.5	228.8	229.0
125°	252.8	253.0	253.2	253.4	253.5	253.8	254.0	254.0	254.0	254.0	254.0
127.5°	277.5	278.0	277.8	277.6	277.5	277.2	277.0	277.2	277.5	277.8	278.0
130°	300.5	301.0	301.0	301.0	301.0	301.0	301.0	301.2	301.5	301.8	302.0
132.5°	324.2	325.0	325.0	325.0	325.0	325.0	325.0	325.2	325.5	325.8	326.0
135°	347.2	348.0	348.0	348.0	348.0	348.0	348.0	348.2	348.5	348.8	349.0
137.5°	368.5	369.0	369.0	369.0	369.0	369.0	369.0	369.2	369.5	369.8	370.0
140°	389.8	390.0	390.0	390.0	390.0	390.0	390.0	390.5	391.0	391.5	392.0
142.5°	411.5	412.0	412.0	412.0	412.0	412.0	412.0	412.2	412.5	412.8	413.0
145°	433.5	434.0	433.8	433.6	433.5	433.2	433.0	433.2	433.5	433.8	434.0
147.5°	453.8	454.0	453.5	453.2	453.0	452.5	452.0	452.2	452.5	452.8	453.0
150°	470.8	471.0	470.5	470.2	470.0	469.5	469.0	469.0	469.0	469.0	469.0
152.5°	486.8	487.0	486.8	486.6	486.5	486.2	486.0	486.0	486.0	486.0	486.0
155°	503.8	504.0	503.8	503.6	503.5	503.2	503.0	503.2	503.5	503.8	504.0
157.5°	519.0	519.0	518.5	518.2	518.0	517.5	517.0	517.2	517.5	517.8	518.0
160°	532.0	532.0	531.5	531.2	531.0	530.5	530.0	530.0	530.0	530.0	530.0
162.5°	541.8	542.0	541.5	541.2	541.0	540.5	540.0	539.5	539.0	538.5	538.0
165°	552.8	553.0	552.2	551.8	551.5	550.8	550.0	549.5	549.0	548.5	548.0
167.5°	560.0	560.0	559.5	559.2	559.0	558.5	558.0	558.2	558.5	558.8	559.0
170°	565.2	565.0	564.8	564.6	564.5	564.2	564.0	564.5	565.0	565.5	566.0
172.5°	568.8	569.0	568.5	568.2	568.0	567.5	567.0	567.2	567.5	567.8	568.0
175°	572.8	573.0	572.2	571.8	571.5	570.8	570.0	569.5	569.0	568.5	568.0
177.5°	577.0	577.0	576.2	575.8	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°	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9
2.5°	602.7	602.7	601.9	596.2	593.0	591.4	585.8	584.9	582.5	581.7	581.7
5°	601.9	598.7	594.6	586.6	578.5	571.2	568.8	563.2	559.1	554.3	554.3
7.5°	590.6	587.4	578.5	566.4	555.9	545.4	539.8	531.7	525.2	518.8	517.2
10°	577.7	572.8	560.7	544.6	530.9	512.3	505.1	494.6	487.3	477.6	468.0
12.5°	564.0	560.7	546.2	527.7	506.7	483.3	472.0	457.5	447.8	436.5	422.0
15°	558.3	551.9	533.3	509.9	484.1	455.9	439.7	424.4	409.9	397.0	377.6
17.5°	551.1	543.0	522.0	494.6	462.3	428.4	407.4	390.5	371.1	357.4	335.6
20°	543.0	530.9	508.3	475.2	438.9	398.6	371.9	355.0	329.2	315.5	289.6
22.5°	536.5	521.2	493.8	456.7	413.1	367.9	336.4	317.1	288.0	271.9	239.6
25°	534.9	516.4	483.3	441.3	391.3	338.1	300.1	280.8	244.5	225.9	188.0
27.5°	535.7	513.9	476.8	428.4	371.9	311.4	266.3	243.7	197.7	178.3	134.7
30°	536.5	514.8	470.4	417.1	354.2	284.0	230.8	204.1	149.3	132.3	93.6
32.5°	544.6	518.0	468.8	408.3	338.1	256.6	190.4	166.2	105.7	96.0	69.4
35°	554.3	528.5	472.0	406.6	326.0	229.1	149.3	124.3	75.8	73.4	56.5
37.5°	574.5	544.6	484.9	410.7	318.7	200.9	111.3	95.2	59.7	61.3	49.2
40°	605.1	572.0	505.9	422.8	317.9	172.7	82.3	74.2	51.6	53.3	45.2
42.5°	646.3	610.0	538.2	448.6	321.9	146.0	66.2	63.7	47.6	49.2	43.6
45°	700.3	663.2	583.3	481.7	333.2	124.3	58.1	58.1	46.0	47.6	42.8
47.5°	768.9	727.8	639.0	526.0	351.0	112.1	54.9	55.7	45.2	47.6	42.8
50°	846.4	801.2	710.0	583.3	378.4	108.9	55.7	55.7	46.0	47.6	42.8
52.5°	927.0	885.1	786.7	648.7	416.3	116.2	57.3	56.5	46.0	47.6	42.0
55°	1009.3	971.4	871.4	725.3	468.8	142.0	61.3	58.9	46.0	47.6	42.8
57.5°	1091.6	1065.0	960.1	807.6	534.1	188.8	77.5	68.6	50.8	51.6	43.6
60°	1184.4	1165.1	1060.2	915.7	626.9	261.4	113.8	86.3	60.5	57.3	46.8
62.5°	1304.6	1299.8	1216.7	1071.5	776.2	366.3	161.4	104.9	65.4	59.7	50.0
65°	1516.8	1529.7	1450.7	1253.8	875.4	368.7	157.3	92.0	61.3	56.5	49.2
67.5°	1729.8	1691.9	1488.6	1226.4	789.9	245.3	100.0	71.8	54.1	52.4	46.0
70°	1721.8	1618.5	1349.8	1072.3	623.7	133.1	72.6	59.7	48.4	48.4	43.6
72.5°	1544.3	1391.0	1103.7	848.8	416.3	84.7	61.3	52.4	44.4	43.6	40.3
75°	1162.6	981.9	709.2	488.9	185.6	54.9	46.8	42.8	38.7	38.7	35.5
77.5°	547.0	308.2	171.0	113.8	62.1	37.1	32.3	32.3	31.5	32.3	29.0
80°	74.2	67.0	57.3	50.0	37.9	25.8	23.4	24.2	23.4	24.2	21.8
82.5°	45.2	40.3	33.1	31.5	23.4	17.8	16.9	17.8	16.1	16.9	12.9
85°	21.8	19.4	15.3	14.5	12.1	10.5	8.9	10.5	8.1	8.9	5.6
87.5°	0.0	1.6	0.8	1.6	1.6	1.6	0.0	1.6	0.0	1.6	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°	4.8	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
110°	113.2	113.5	114.0	113.0	114.0	113.5	113.2	113.0	113.2	113.5	113.8



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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°	
112.5°	135.5	136.0	137.0	135.0	137.0	136.0	135.5	135.0	135.2	135.5	135.8	0°
115°	158.5	159.0	160.0	159.0	160.0	159.0	158.5	158.0	158.0	158.0	158.0	2.5°
117.5°	180.5	181.0	182.0	180.0	182.0	181.0	180.5	180.0	180.2	180.5	180.8	5°
120°	204.5	205.0	206.0	204.0	206.0	205.0	204.5	204.0	204.0	204.0	204.0	7.5°
122.5°	230.0	231.0	233.0	232.0	233.0	231.0	230.0	229.0	228.8	228.5	228.2	10°
125°	254.8	255.5	257.0	256.0	257.0	255.5	254.8	254.0	254.0	254.0	254.0	12.5°
127.5°	278.8	279.5	281.0	278.0	281.0	279.5	278.8	278.0	277.8	277.5	277.2	15°
130°	302.8	303.5	305.0	303.0	305.0	303.5	302.8	302.0	301.8	301.5	301.2	17.5°
132.5°	326.8	327.5	329.0	327.0	329.0	327.5	326.8	326.0	325.8	325.5	325.2	20°
135°	349.5	350.0	351.0	350.0	351.0	350.0	349.5	349.0	348.8	348.5	348.2	22.5°
137.5°	371.0	372.0	374.0	372.0	374.0	372.0	371.0	370.0	369.8	369.5	369.2	25°
140°	393.0	394.0	396.0	394.0	396.0	394.0	393.0	392.0	391.5	391.0	390.5	27.5°
142.5°	413.8	414.5	416.0	415.0	416.0	414.5	413.8	413.0	412.8	412.5	412.2	30°
145°	434.8	435.5	437.0	435.0	437.0	435.5	434.8	434.0	433.8	433.5	433.2	32.5°
147.5°	453.8	454.5	456.0	453.0	456.0	454.5	453.8	453.0	452.8	452.5	452.2	35°
150°	470.0	471.0	473.0	470.0	473.0	471.0	470.0	469.0	469.0	469.0	469.0	37.5°
152.5°	486.8	487.5	489.0	486.0	489.0	487.5	486.8	486.0	486.0	486.0	486.0	40°
155°	504.8	505.5	507.0	505.0	507.0	505.5	504.8	504.0	503.8	503.5	503.2	42.5°
157.5°	519.2	520.5	523.0	520.0	523.0	520.5	519.2	518.0	517.8	517.5	517.2	45°
160°	530.8	531.5	533.0	531.0	533.0	531.5	530.8	530.0	530.0	530.0	530.0	47.5°
162.5°	538.5	539.0	540.0	537.0	540.0	539.0	538.5	538.0	538.5	539.0	539.5	50°
165°	548.5	549.0	550.0	548.0	550.0	549.0	548.5	548.0	548.5	549.0	549.5	52.5°
167.5°	560.0	561.0	563.0	561.0	563.0	561.0	560.0	559.0	558.8	558.5	558.2	55°
170°	567.2	568.5	571.0	569.0	571.0	568.5	567.2	566.0	565.5	565.0	564.5	57.5°
172.5°	568.8	569.5	571.0	568.0	571.0	569.5	568.8	568.0	567.8	567.5	567.2	60°
175°	568.8	569.5	571.0	568.0	571.0	569.5	568.8	568.0	568.5	569.0	569.5	62.5°
177.5°	574.8	575.5	577.0	574.0	577.0	575.5	574.8	574.0	574.0	574.0	574.0	65°
180°	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	67.5°
												70°
												72.5°
												75°
												77.5°
												80°
												82.5°
												85°
												87.5°
												90°
												92.5°
												95°
												97.5°
												100°
												102.5°
												105°
												107.5°
												110°

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**DISTRIBUTION (continued):**

**CANDELA DISTRIBUTION**

115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	155°	165°	115°	115°
601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9	601.9	112.5°	136.0
577.7	575.3	574.5	571.2	570.4	567.2	566.4	563.2	557.5	555.1	551.1	115°	158.0
547.0	543.0	539.8	538.2	531.7	528.5	523.6	517.2	505.1	499.4	489.7	117.5°	181.0
504.3	503.5	493.8	490.5	482.5	476.8	469.6	459.1	441.3	430.8	415.5	120°	204.0
457.5	454.2	442.9	436.5	426.0	417.9	408.3	392.9	365.5	343.7	320.3	122.5°	228.0
413.9	404.2	391.3	381.6	368.7	357.4	346.1	322.7	279.2	243.7	211.4	125°	254.0
368.7	354.2	340.5	324.3	310.6	292.9	280.0	249.3	192.0	148.5	128.3	127.5°	277.0
322.7	302.6	287.2	265.4	250.1	225.9	212.2	175.1	125.9	106.5	100.0	130°	301.0
274.3	247.7	230.8	204.1	188.8	158.1	147.6	121.0	96.8	89.6	87.9	132.5°	325.0
222.7	190.4	171.9	142.8	132.3	113.8	105.7	92.8	81.5	78.3	79.9	135°	348.0
168.6	133.9	121.8	100.9	96.8	87.1	83.9	77.5	71.8	71.8	74.2	137.5°	369.0
120.2	93.6	90.4	77.5	76.6	71.8	69.4	66.2	64.5	66.2	69.4	140°	390.0
87.9	71.0	71.0	63.7	63.7	60.5	59.7	58.1	58.1	61.3	64.5	142.5°	412.0
69.4	58.1	59.7	54.1	54.9	52.4	53.3	52.4	53.3	55.7	58.1	145°	433.0
58.1	50.0	52.4	47.6	49.2	46.8	48.4	48.4	50.0	50.8	51.6	147.5°	452.0
51.6	46.0	47.6	44.4	46.0	43.6	46.0	46.0	46.8	46.8	46.8	150°	469.0
47.6	42.8	45.2	42.0	44.4	42.0	44.4	44.4	43.6	42.8	43.6	152.5°	486.0
45.2	42.0	44.4	41.1	43.6	41.1	42.8	42.0	40.3	40.3	40.3	155°	503.0
44.4	41.1	42.8	40.3	42.0	39.5	41.1	40.3	37.9	37.1	38.7	157.5°	517.0
44.4	40.3	42.8	39.5	41.1	38.7	40.3	37.9	35.5	35.5	37.9	160°	530.0
44.4	40.3	42.8	39.5	41.1	37.9	38.7	36.3	33.1	33.9	37.1	162.5°	540.0
45.2	42.0	43.6	40.3	41.1	36.3	37.9	34.7	32.3	33.1	35.5	165°	550.0
46.0	42.0	43.6	38.7	39.5	36.3	36.3	34.7	32.3	32.3	34.7	167.5°	558.0
46.0	41.1	42.0	37.9	38.7	34.7	35.5	33.9	31.5	30.7	32.3	170°	564.0
47.6	42.8	42.8	37.1	37.9	33.9	34.7	33.1	30.7	29.0	29.9	172.5°	567.0
49.2	43.6	44.4	38.7	38.7	34.7	35.5	32.3	29.0	27.4	28.2	175°	570.0
49.2	43.6	44.4	39.5	39.5	35.5	35.5	32.3	27.4	25.8	25.8	177.5°	574.0
46.8	42.8	43.6	39.5	39.5	35.5	35.5	31.5	26.6	24.2	23.4	180°	576.0
45.2	41.1	42.0	37.1	37.9	33.9	34.7	33.1	30.7	29.0	29.9		
41.1	37.9	37.9	34.7	33.9	29.9	29.9	27.4	23.4	20.2	18.6		
35.5	32.3	31.5	28.2	28.2	25.8	25.0	22.6	19.4	16.9	16.1		
29.0	25.0	25.0	21.0	21.0	18.6	19.4	16.9	14.5	13.7	12.9		
21.0	16.9	16.9	13.7	13.7	11.3	12.1	11.3	10.5	10.5	9.7		
12.9	8.9	9.7	7.3	8.9	6.5	7.3	6.5	6.5	5.6	5.6		
6.5	3.2	4.8	2.4	4.0	0.8	2.4	1.6	1.6	1.6	1.6		
0.8	0.0	0.8	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	0.0	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		
114.0	114.0	114.0	114.0	114.0	113.5	113.0	112.0	110.0	106.0	103.0		

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 ISS-AF-450-LED-E1-SL3-8030-ULG

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 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°
136.0	136.0	136.0	136.0	135.5	135.0	134.0	132.0	129.0	126.0	0°	601.9	601.9
158.0	158.0	158.0	158.0	157.5	157.0	156.0	154.0	151.0	149.0	2.5°	547.0	549.4
180.8	180.5	180.2	180.0	179.8	179.5	179.0	177.0	174.0	172.0	5°	486.5	487.3
204.0	204.0	204.0	204.0	203.5	203.0	202.0	201.0	198.0	196.0	7.5°	413.1	411.5
228.0	228.0	228.0	228.0	227.8	227.5	227.0	226.0	223.0	221.0	10°	315.5	311.4
253.8	253.5	253.2	253.0	252.8	252.5	252.0	251.0	248.0	247.0	12.5°	203.3	197.7
277.2	277.5	277.8	278.0	277.5	277.0	276.0	274.0	272.0	270.0	15°	122.6	121.0
301.0	301.0	301.0	301.0	300.5	300.0	299.0	298.0	294.0	293.0	17.5°	98.4	98.4
325.0	325.0	325.0	325.0	324.2	323.5	322.0	321.0	318.0	317.0	20°	87.9	87.9
348.0	348.0	348.0	348.0	347.2	346.5	345.0	345.0	341.0	339.0	22.5°	81.5	81.5
369.0	369.0	369.0	369.0	368.5	368.0	367.0	367.0	364.0	363.0	25°	76.6	77.5
390.0	390.0	390.0	390.0	389.8	389.5	389.0	388.0	386.0	385.0	27.5°	72.6	72.6
412.0	412.0	412.0	412.0	411.5	411.0	410.0	410.0	407.0	408.0	30°	67.8	67.8
433.2	433.5	433.8	434.0	433.5	433.0	432.0	431.0	428.0	428.0	32.5°	59.7	59.7
452.5	453.0	453.5	454.0	453.8	453.5	453.0	452.0	448.0	447.0	35°	53.3	52.4
469.5	470.0	470.5	471.0	470.8	470.5	470.0	469.0	465.0	464.0	37.5°	47.6	48.4
486.2	486.5	486.8	487.0	486.8	486.5	486.0	485.0	482.0	483.0	40°	43.6	44.4
503.2	503.5	503.8	504.0	503.8	503.5	503.0	503.0	501.0	502.0	42.5°	42.0	42.0
517.5	518.0	518.5	519.0	519.0	519.0	519.0	519.0	516.0	517.0	45°	40.3	40.3
530.5	531.0	531.5	532.0	532.0	532.0	532.0	532.0	529.0	529.0	47.5°	40.3	40.3
540.5	541.0	541.5	542.0	541.8	541.5	541.0	541.0	538.0	539.0	50°	39.5	40.3
550.8	551.5	552.2	553.0	552.8	552.5	552.0	552.0	548.0	549.0	52.5°	38.7	38.7
558.5	559.0	559.5	560.0	560.0	560.0	560.0	561.0	558.0	559.0	55°	36.3	37.1
564.2	564.5	564.8	565.0	565.2	565.5	566.0	567.0	565.0	566.0	57.5°	33.9	34.7
567.5	568.0	568.5	569.0	568.8	568.5	568.0	569.0	567.0	569.0	60°	31.5	31.5
570.8	571.5	572.2	573.0	572.8	572.5	572.0	572.0	569.0	570.0	62.5°	28.2	28.2
574.8	575.5	576.2	577.0	577.0	577.0	577.0	578.0	574.0	575.0	65°	25.8	25.8
576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	67.5°	22.6	22.6
										70°	20.2	20.2
										72.5°	17.8	17.8
										75°	15.3	15.3
										77.5°	12.9	12.1
										80°	9.7	9.7
										82.5°	5.6	5.6
										85°	1.6	1.6
										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
										110°	102.0	101.0



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**CANDELA DISTRIBUTION (continued):**

	175°	180°
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  
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Scaled Data Report

