

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: P228063

Luminaire Tested: **ISS-AF-450-LED-E1-SL2-7050-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P228063  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29761)-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-SL2-7050-ULG  
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT  
LIGHT SQUARE WITH ACCULED OPTICS-TYPE II W/SPILL CONTROL, WITH UPLIGHT  
GLOW  
Light Source: (16) 5000K CCT, 70 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4260.2 lumens  
Efficiency: N/A  
Efficacy: 101.4 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: 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

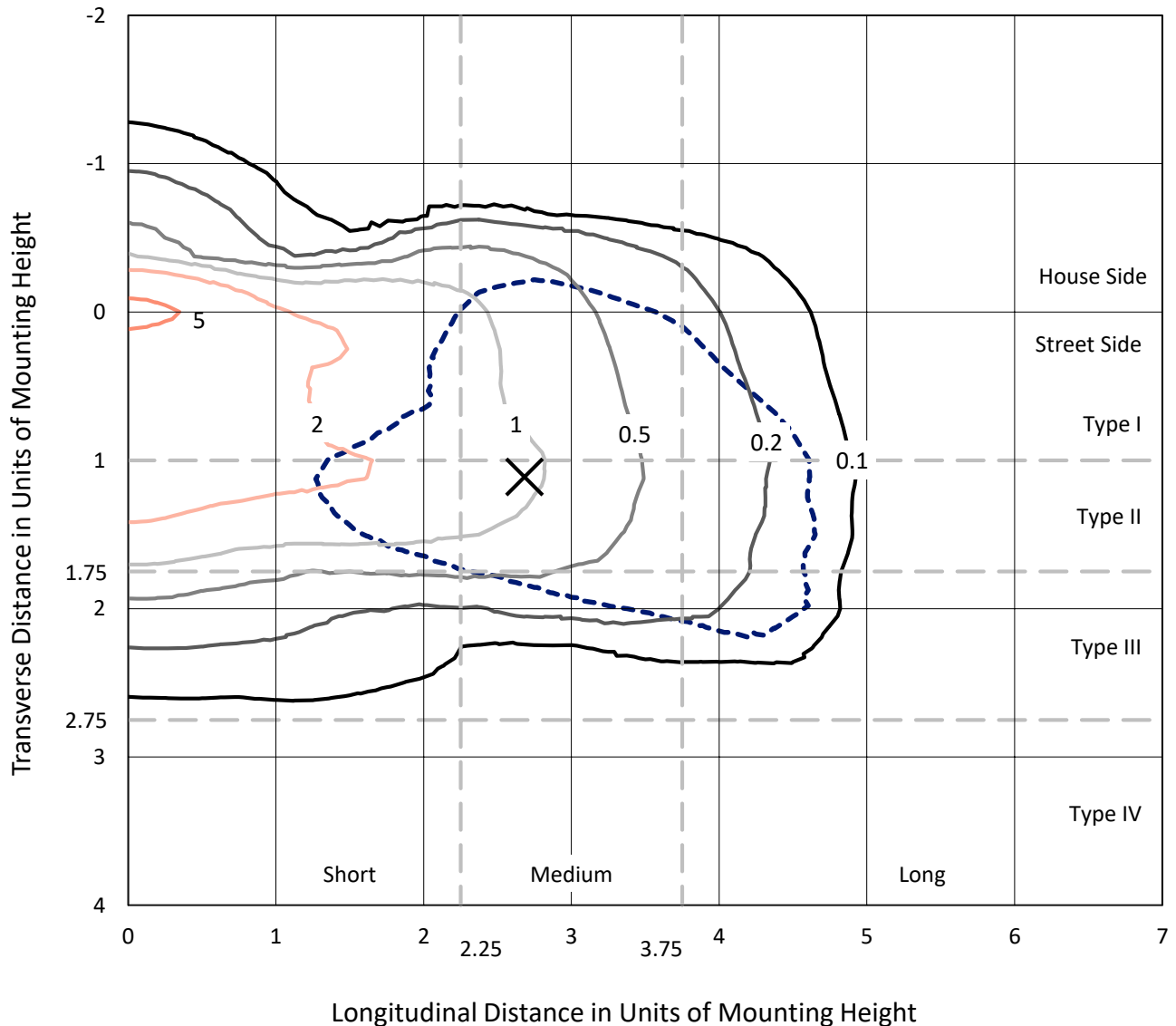


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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

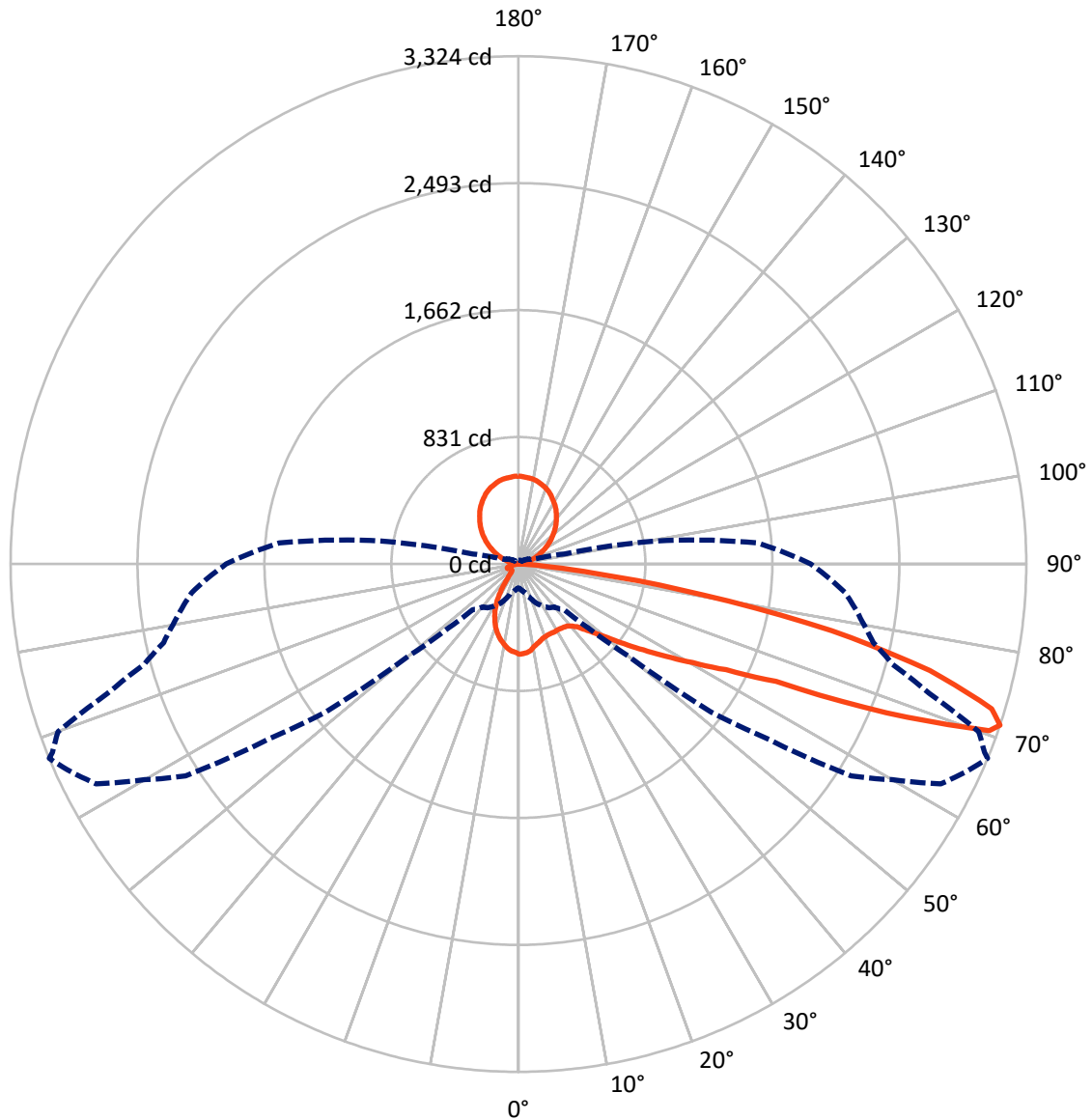


Based on 10 foot mounting height. Maximum calculated value = 5.9 fc  
 Type III - Medium - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 67.5-Deg Lateral    - - - Horizontal Cone Through 71-Deg Vertical

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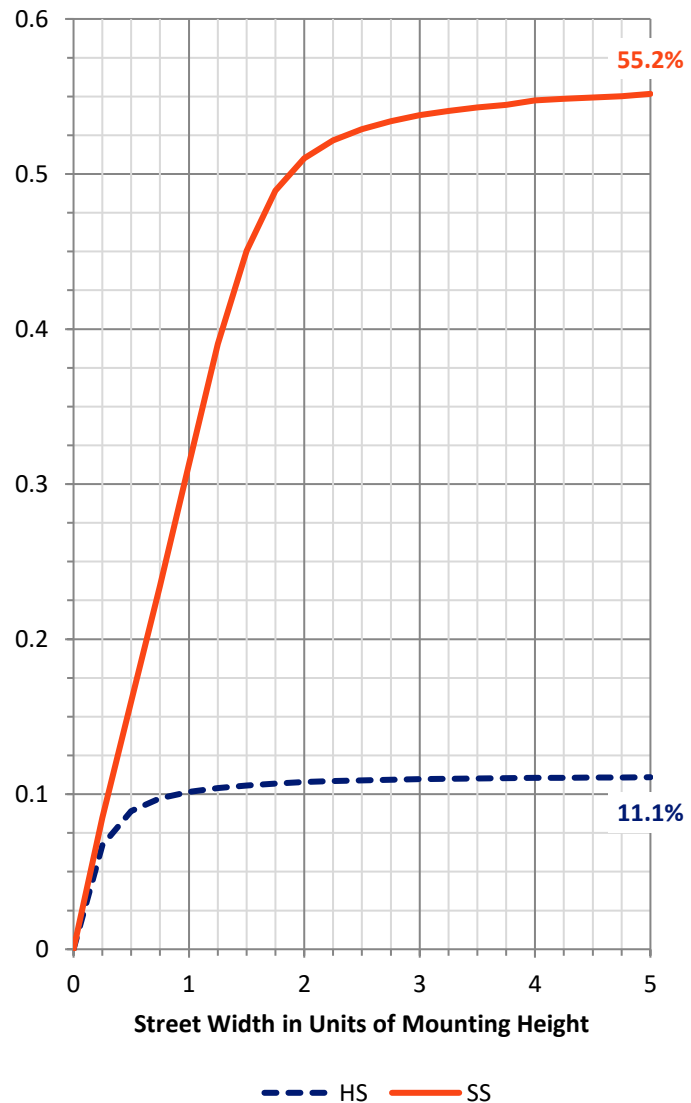
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	477.6	713.1	1190.7
	% Fixture	11.2	16.7	27.9
<b>Street Side</b>	Lumens	2356.4	713.1	3069.5
	% Fixture	55.3	16.7	72.1
<b>Total</b>	Lumens	2834.0	1426.2	4260.2
	% Fixture	66.5	33.5	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	51.5	1.2
10°-20°	123.3	2.9
20°-30°	167.7	3.9
30°-40°	229.1	5.4
40°-50°	345.3	8.1
50°-60°	547.2	12.8
60°-70°	724.4	17.0
70°-80°	577.1	13.5
80°-90°	68.4	1.6
90°-100°	4.7	0.1
100°-110°	69.0	1.6
110°-120°	153.0	3.6
120°-130°	223.9	5.3
130°-140°	265.6	6.2
140°-150°	269.3	6.3
150°-160°	231.1	5.4
160°-170°	155.1	3.6
170°-180°	54.3	1.3
0°-90°	2834.0	66.5
0°-180°	4260.2	100.0



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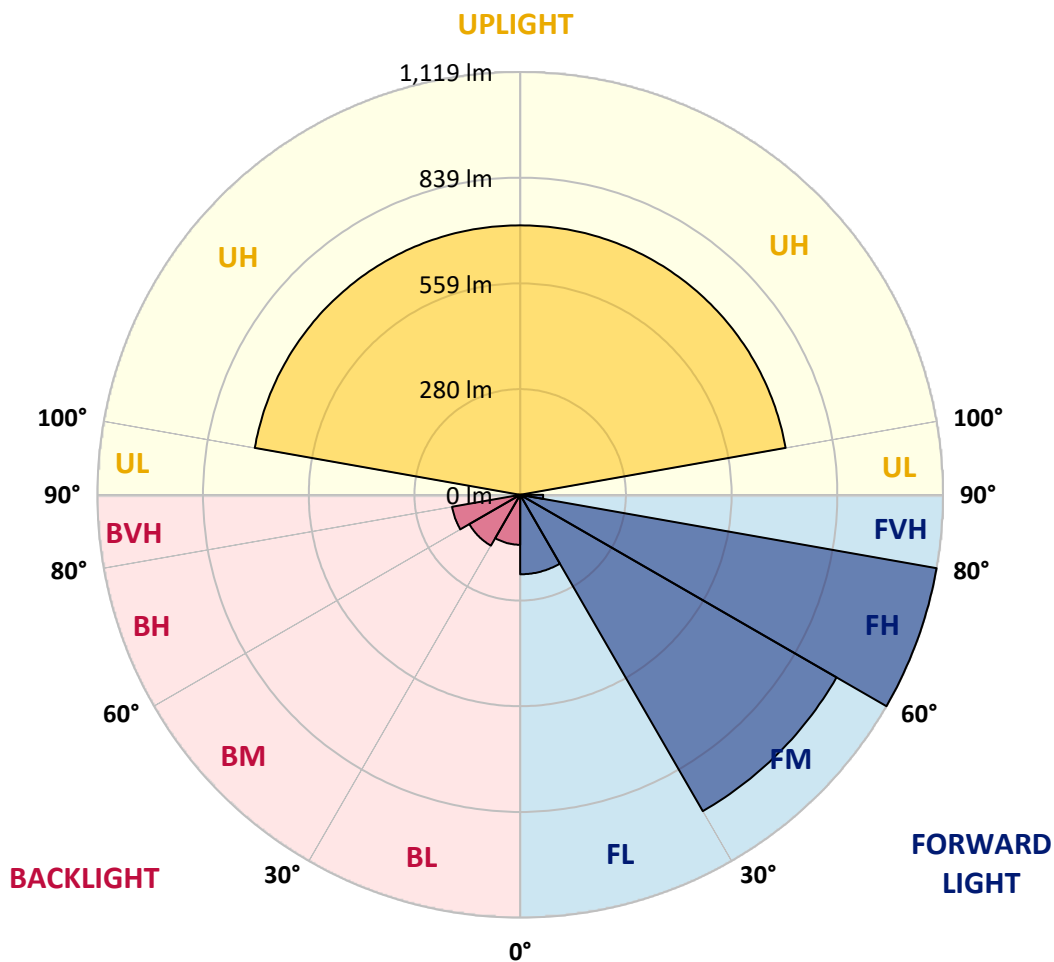
CATALOG NUMBER: ISS-AF-450-LED-E1-SL2-7050-ULG

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

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	210.3	4.9			
FM	(30°-60°)	966.4	22.7			
FH	(60°-80°)	1118.7	26.3			G1/1800
FVH	(80°-90°)	61.0	1.4			G1/100
BL	(0°-30°)	132.2	3.1	B1/500		
BM	(30°-60°)	155.2	3.6	B0/220		
BH	(60°-80°)	182.8	4.3	B1/500		G1/500
BVH	(80°-90°)	7.4	0.2			G0/10
UL	(90°-100°)	4.7	0.1		U1/10	
UH	(100°-180°)	713.1	16.7		U4/1000	

**BUG Rating: B1-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°	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6
2.5°	579.7	577.7	577.7	580.7	585.6	581.7	584.6	584.6	585.6	588.6	589.6
5°	537.2	533.2	537.2	541.1	552.0	550.0	553.0	555.9	561.9	562.9	570.8
7.5°	498.6	496.6	499.6	507.5	521.3	517.4	521.3	525.3	532.2	535.2	543.1
10°	468.9	465.9	469.9	475.8	489.7	488.7	490.7	495.6	503.5	505.5	515.4
12.5°	447.1	447.1	449.1	457.0	468.9	467.9	473.8	476.8	483.7	485.7	496.6
15°	436.3	433.3	437.2	444.2	456.0	456.0	460.0	463.0	472.9	473.8	483.7
17.5°	426.4	427.3	428.3	436.3	447.1	445.2	450.1	452.1	463.0	461.0	472.9
20°	426.4	428.3	427.3	432.3	440.2	436.3	442.2	443.2	455.0	452.1	464.9
22.5°	438.2	440.2	437.2	436.3	439.2	436.3	439.2	441.2	450.1	448.1	460.0
25°	459.0	463.0	459.0	452.1	449.1	441.2	443.2	446.1	453.1	448.1	459.0
27.5°	491.6	494.6	487.7	480.8	466.9	458.0	455.0	454.1	462.0	454.1	463.0
30°	529.2	533.2	527.3	514.4	494.6	479.8	473.8	470.9	475.8	464.0	472.9
32.5°	569.8	573.8	569.8	559.9	533.2	511.4	503.5	496.6	500.6	484.7	488.7
35°	611.3	615.3	619.3	613.3	578.7	554.0	541.1	535.2	534.2	514.4	515.4
37.5°	647.9	651.9	664.8	670.7	639.0	605.4	593.5	580.7	581.7	554.0	554.0
40°	692.5	697.4	714.2	728.1	707.3	666.7	652.9	639.0	639.0	602.4	603.4
42.5°	752.8	758.7	769.6	788.4	781.5	739.9	725.1	706.3	708.3	664.8	663.8
45°	837.9	841.8	841.8	853.7	854.7	815.1	805.2	786.4	790.4	735.0	738.0
47.5°	948.7	943.7	923.9	930.9	938.8	897.2	888.3	876.5	881.4	822.1	828.0
50°	1051.6	1047.6	1007.0	1009.0	1037.7	995.2	992.2	977.4	984.3	924.9	933.8
52.5°	1090.1	1083.2	1042.7	1064.4	1144.5	1120.8	1125.7	1118.8	1122.8	1059.5	1057.5
55°	1046.6	1046.6	1021.9	1061.4	1224.7	1237.5	1278.1	1293.9	1310.7	1247.4	1233.6
57.5°	925.9	933.8	937.8	1008.0	1211.8	1267.2	1344.4	1411.6	1497.7	1493.7	1514.5
60°	726.1	739.9	762.7	877.5	1156.4	1247.4	1347.3	1448.2	1566.9	1643.1	1755.9
62.5°	509.5	521.3	540.1	619.3	995.2	1151.5	1295.9	1451.2	1602.6	1722.3	1870.6
65°	346.2	358.1	397.7	441.2	600.5	828.0	1048.6	1305.8	1536.3	1758.9	1958.7
67.5°	249.3	256.2	286.9	360.1	399.7	441.2	523.3	826.0	1109.9	1558.0	1849.9
70°	187.0	193.9	221.6	302.7	351.2	362.1	381.8	435.3	507.5	875.5	1258.3
71°	156.3	166.2	199.8	284.9	349.2	358.1	367.0	398.7	422.4	619.3	933.8
72.5°	109.8	116.7	148.4	263.1	335.4	356.1	376.9	375.9	373.9	422.4	564.9
75°	70.2	70.2	70.2	148.4	358.1	345.2	353.2	395.7	373.9	355.1	372.0
77.5°	55.4	54.4	51.4	74.2	280.0	350.2	371.0	381.8	402.6	371.0	354.1
80°	41.5	40.6	40.6	46.5	129.6	226.5	313.6	348.2	363.0	394.7	360.1
82.5°	21.8	21.8	23.7	27.7	48.5	79.1	162.2	267.1	298.7	300.7	303.7
85°	6.9	5.9	7.9	12.9	20.8	25.7	45.5	107.8	160.3	193.9	204.8
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	4.0	6.9	8.9
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



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
110°	101.0	102.0	103.0	106.0	110.0	110.5	111.0	111.5	112.0	112.5	113.0
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°	60°	62.5°	65°	67.5°	68°	70°	72.5°	75°
0°	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6
2.5°	586.6	590.6	587.6	591.6	586.6	592.6	587.6	590.6	591.6	587.6	592.6
5°	565.8	577.7	573.8	582.7	578.7	586.6	582.7	590.6	590.6	587.6	594.5
7.5°	540.1	552.0	553.0	561.9	561.9	571.8	571.8	579.7	583.6	583.6	593.5
10°	514.4	525.3	527.3	537.2	539.1	551.0	551.0	561.9	569.8	572.8	584.6
12.5°	494.6	508.5	508.5	519.3	517.4	535.2	537.2	547.0	555.0	561.9	577.7
15°	482.7	495.6	495.6	506.5	504.5	522.3	525.3	535.2	547.0	551.0	572.8
17.5°	470.9	483.7	480.8	495.6	494.6	514.4	512.4	527.3	537.2	543.1	567.8
20°	461.0	475.8	473.8	488.7	484.7	506.5	506.5	521.3	531.2	536.2	564.9
22.5°	456.0	471.9	467.9	482.7	479.8	501.5	501.5	516.4	527.3	535.2	563.9
25°	456.0	469.9	465.9	482.7	477.8	501.5	500.6	515.4	526.3	533.2	564.9
27.5°	458.0	471.9	468.9	484.7	480.8	501.5	503.5	516.4	527.3	535.2	566.8
30°	464.9	477.8	470.9	485.7	482.7	502.5	501.5	515.4	526.3	536.2	566.8
32.5°	479.8	486.7	477.8	490.7	484.7	504.5	504.5	514.4	527.3	539.1	566.8
35°	500.6	505.5	491.6	500.6	489.7	509.5	508.5	519.3	529.2	539.1	568.8
37.5°	530.2	536.2	514.4	522.3	504.5	520.3	516.4	529.2	539.1	545.1	578.7
40°	574.7	576.7	548.0	554.0	529.2	543.1	533.2	551.0	555.9	559.9	593.5
42.5°	629.2	631.1	594.5	598.5	566.8	578.7	561.9	580.7	587.6	586.6	623.2
45°	696.4	697.4	655.9	658.8	622.2	632.1	611.3	627.2	632.1	629.2	666.7
47.5°	769.6	777.5	731.0	735.0	696.4	701.4	675.6	693.5	693.5	690.5	729.1
50°	866.6	878.4	824.0	830.0	785.5	789.4	759.7	778.5	776.5	768.6	812.2
52.5°	987.3	998.1	940.8	948.7	901.2	903.2	866.6	888.3	882.4	869.5	920.0
55°	1134.7	1135.6	1082.2	1089.1	1041.7	1038.7	993.2	1019.9	1011.0	993.2	1039.7
57.5°	1371.1	1342.4	1254.3	1252.4	1200.9	1197.0	1138.6	1171.3	1156.4	1118.8	1180.2
60°	1751.9	1760.8	1536.3	1501.7	1405.7	1387.9	1310.7	1348.3	1330.5	1269.2	1329.5
62.5°	1966.6	2108.1	2094.2	1969.6	1722.3	1655.0	1524.4	1568.9	1522.4	1432.4	1488.8
65°	2125.9	2317.8	2428.6	2548.3	2437.5	2162.5	1853.8	1916.1	1802.4	1631.2	1685.7
67.5°	2185.2	2416.7	2650.2	2820.3	2936.0	2956.8	2599.7	2616.5	2336.6	1994.3	2001.2
70°	1874.6	2215.9	2672.9	2888.6	3118.1	3230.8	3268.4	3250.6	3069.6	2584.9	2399.9
71°	1588.7	2002.2	2581.9	2822.3	3116.1	3224.9	3323.8	3290.2	3206.1	2819.3	2535.4
72.5°	1076.3	1595.6	2315.8	2620.5	3012.2	3091.4	3239.7	3180.4	3162.6	2994.4	2662.0
75°	506.5	795.3	1506.6	1967.6	2549.3	2625.4	2780.7	2707.5	2661.0	2718.4	2532.4
77.5°	372.9	434.3	827.0	1222.7	1853.8	1961.7	2095.2	2005.2	1945.8	2003.2	1873.6
80°	339.3	341.3	428.3	645.0	1106.0	1170.3	1220.7	1147.5	1057.5	1053.5	933.8
82.5°	312.6	295.8	278.0	341.3	566.8	539.1	498.6	462.0	359.1	287.9	207.7
85°	198.8	217.6	197.8	187.0	225.5	186.0	147.4	141.5	99.9	67.3	62.3
87.5°	13.8	15.8	18.8	21.8	26.7	21.8	13.8	16.8	9.9	0.0	4.9
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	10.0	8.5	7.0	6.5	6.4	6.0	5.5	5.0
100°	31.5	32.0	31.5	31.0	30.5	30.0	29.2	29.1	28.5	27.8	27.0
102.5°	50.8	51.0	50.8	50.5	50.2	50.0	49.5	49.4	49.0	48.5	48.0
105°	70.8	71.0	71.0	71.0	71.0	71.0	70.5	70.4	70.0	69.5	69.0
107.5°	92.5	93.0	92.8	92.5	92.2	92.0	91.8	91.7	91.5	91.2	91.0



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**CANDELA DISTRIBUTION (continued):**

	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	68°	70°	72.5°	75°
110°	113.5	114.0	114.0	114.0	114.0	114.0	113.8	113.7	113.5	113.2	113.0
112.5°	135.5	136.0	136.0	136.0	136.0	136.0	135.8	135.7	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	180.5	180.8	181.0	180.8	180.7	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	228.2	228.3	228.5	228.8	229.0
125°	252.8	253.0	253.2	253.5	253.8	254.0	254.0	254.0	254.0	254.0	254.0
127.5°	277.5	278.0	277.8	277.5	277.2	277.0	277.2	277.3	277.5	277.8	278.0
130°	300.5	301.0	301.0	301.0	301.0	301.0	301.2	301.3	301.5	301.8	302.0
132.5°	324.2	325.0	325.0	325.0	325.0	325.0	325.2	325.3	325.5	325.8	326.0
135°	347.2	348.0	348.0	348.0	348.0	348.0	348.2	348.3	348.5	348.8	349.0
137.5°	368.5	369.0	369.0	369.0	369.0	369.0	369.2	369.3	369.5	369.8	370.0
140°	389.8	390.0	390.0	390.0	390.0	390.0	390.5	390.6	391.0	391.5	392.0
142.5°	411.5	412.0	412.0	412.0	412.0	412.0	412.2	412.3	412.5	412.8	413.0
145°	433.5	434.0	433.8	433.5	433.2	433.0	433.2	433.3	433.5	433.8	434.0
147.5°	453.8	454.0	453.5	453.0	452.5	452.0	452.2	452.3	452.5	452.8	453.0
150°	470.8	471.0	470.5	470.0	469.5	469.0	469.0	469.0	469.0	469.0	469.0
152.5°	486.8	487.0	486.8	486.5	486.2	486.0	486.0	486.0	486.0	486.0	486.0
155°	503.8	504.0	503.8	503.5	503.2	503.0	503.2	503.3	503.5	503.8	504.0
157.5°	519.0	519.0	518.5	518.0	517.5	517.0	517.2	517.3	517.5	517.8	518.0
160°	532.0	532.0	531.5	531.0	530.5	530.0	530.0	530.0	530.0	530.0	530.0
162.5°	541.8	542.0	541.5	541.0	540.5	540.0	539.5	539.4	539.0	538.5	538.0
165°	552.8	553.0	552.2	551.5	550.8	550.0	549.5	549.4	549.0	548.5	548.0
167.5°	560.0	560.0	559.5	559.0	558.5	558.0	558.2	558.3	558.5	558.8	559.0
170°	565.2	565.0	564.8	564.5	564.2	564.0	564.5	564.6	565.0	565.5	566.0
172.5°	568.8	569.0	568.5	568.0	567.5	567.0	567.2	567.3	567.5	567.8	568.0
175°	572.8	573.0	572.2	571.5	570.8	570.0	569.5	569.4	569.0	568.5	568.0
177.5°	577.0	577.0	576.2	575.5	574.8	574.0	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°	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6
2.5°	585.6	590.6	592.6	591.6	589.6	587.6	580.7	585.6	578.7	583.6	577.7
5°	588.6	595.5	596.5	594.5	592.6	588.6	576.7	583.6	575.7	579.7	570.8
7.5°	587.6	598.5	599.5	597.5	593.5	586.6	574.7	579.7	566.8	569.8	557.9
10°	582.7	598.5	599.5	594.5	588.6	577.7	563.9	565.8	553.0	553.0	537.2
12.5°	577.7	596.5	601.5	594.5	584.6	569.8	554.0	552.0	537.2	536.2	518.4
15°	577.7	598.5	605.4	596.5	581.7	560.9	542.1	538.1	521.3	516.4	496.6
17.5°	576.7	598.5	608.4	596.5	578.7	552.0	528.3	524.3	502.5	494.6	471.9
20°	575.7	600.5	610.4	594.5	569.8	541.1	514.4	506.5	482.7	469.9	443.2
22.5°	574.7	604.4	612.3	592.6	563.9	527.3	499.6	485.7	458.0	441.2	409.5
25°	579.7	609.4	613.3	590.6	555.0	512.4	482.7	464.0	433.3	411.5	373.9
27.5°	581.7	614.3	615.3	586.6	544.1	496.6	464.9	439.2	404.6	377.9	335.4
30°	587.6	615.3	612.3	578.7	531.2	476.8	444.2	412.5	373.9	339.3	288.9
32.5°	589.6	618.3	610.4	569.8	518.4	457.0	420.4	383.8	337.3	296.8	235.4
35°	593.5	620.2	608.4	564.9	504.5	436.3	395.7	354.1	300.7	249.3	179.1
37.5°	599.5	629.2	613.3	562.9	497.6	418.4	368.0	323.5	257.2	196.9	118.7
40°	614.3	647.0	622.2	565.8	492.6	403.6	341.3	291.8	207.7	145.4	82.1
42.5°	644.0	677.6	645.0	580.7	495.6	390.7	313.6	258.2	157.3	103.9	68.3
45°	688.5	717.2	682.6	605.4	507.5	383.8	287.9	223.6	112.8	83.1	62.3
47.5°	753.8	781.5	738.0	645.0	528.3	380.9	261.2	187.0	87.1	75.2	60.3
50°	839.9	872.5	818.1	707.3	566.8	383.8	232.5	152.3	76.2	73.2	59.4
52.5°	945.7	977.4	923.0	799.3	630.1	400.6	201.8	132.6	72.2	72.2	58.4
55°	1065.4	1109.9	1056.5	926.9	728.1	437.2	183.0	125.6	72.2	73.2	57.4
57.5°	1206.9	1244.5	1197.0	1049.6	845.8	497.6	185.0	132.6	72.2	73.2	56.4
60°	1345.4	1391.9	1337.4	1205.9	980.3	588.6	225.5	168.2	75.2	76.2	56.4
62.5°	1489.8	1525.4	1480.9	1342.4	1132.7	701.4	306.7	243.4	87.1	90.0	60.3
65°	1648.1	1706.4	1659.9	1546.2	1348.3	881.4	461.0	365.0	128.6	104.9	66.3
67.5°	1922.1	1945.8	1923.1	1819.2	1600.6	1029.8	549.0	371.0	128.6	101.9	74.2
70°	2293.0	2239.6	2137.7	1943.8	1627.3	923.9	393.7	226.5	109.8	96.9	78.1
71°	2379.1	2297.0	2146.6	1913.2	1571.9	833.9	305.7	179.1	102.9	95.0	78.1
72.5°	2431.5	2308.9	2081.3	1823.2	1463.1	656.9	201.8	140.5	94.0	90.0	75.2
75°	2363.3	2136.7	1838.0	1577.8	1198.0	341.3	126.6	106.8	80.1	78.1	65.3
77.5°	1876.6	1677.7	1356.2	1146.5	770.6	151.4	91.0	81.1	63.3	61.3	50.5
80°	875.5	702.4	411.5	353.2	242.4	89.0	62.3	55.4	45.5	43.5	35.6
82.5°	159.3	119.7	93.0	90.0	81.1	52.4	36.6	33.6	28.7	27.7	22.8
85°	54.4	52.4	39.6	39.6	40.6	27.7	20.8	19.8	14.8	14.8	9.9
87.5°	1.0	4.9	4.9	6.9	5.9	4.9	2.0	3.0	1.0	3.0	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°	4.8	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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 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°
												71°
												72.5°
												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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**DISTRIBUTION (continued):**

**CANDELA DISTRIBUTION**

115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	155°	165°	110°	115°
590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6	590.6	110°	114.0
582.7	574.7	581.7	574.7	578.7	570.8	575.7	572.8	572.8	569.8	567.8	112.5°	136.0
573.8	563.9	568.8	560.9	564.9	553.0	555.9	551.0	541.1	535.2	527.3	115°	158.0
560.9	546.1	550.0	538.1	541.1	525.3	528.3	519.3	500.6	488.7	476.8	117.5°	181.0
538.1	524.3	525.3	510.4	509.5	493.6	490.7	478.8	451.1	431.3	415.5	120°	204.0
515.4	499.6	497.6	479.8	476.8	458.0	454.1	435.3	394.7	356.1	331.4	122.5°	228.0
491.6	471.9	465.9	447.1	436.3	420.4	409.5	381.8	323.5	273.0	240.4	125°	254.0
464.9	439.2	430.3	408.6	392.7	369.0	353.2	315.6	240.4	186.0	163.2	127.5°	277.0
430.3	402.6	386.8	359.1	338.3	309.6	289.8	241.4	160.3	132.6	129.6	130°	301.0
391.7	359.1	339.3	304.7	279.0	248.3	216.6	163.2	113.8	107.8	111.8	132.5°	325.0
351.2	310.6	284.9	242.4	207.7	172.1	142.4	108.8	93.0	92.0	97.9	135°	348.0
302.7	256.2	219.6	169.2	137.5	109.8	96.9	86.1	79.1	80.1	86.1	137.5°	369.0
249.3	188.9	150.4	105.8	92.0	80.1	78.1	74.2	71.2	73.2	77.2	140°	390.0
186.0	120.7	96.9	76.2	75.2	68.3	70.2	68.3	67.3	68.3	71.2	142.5°	412.0
125.6	80.1	76.2	65.3	67.3	62.3	65.3	64.3	63.3	63.3	65.3	145°	433.0
87.1	66.3	68.3	60.3	63.3	59.4	62.3	61.3	60.3	59.4	60.3	147.5°	452.0
72.2	60.3	63.3	57.4	60.3	56.4	59.4	58.4	57.4	55.4	55.4	150°	469.0
66.3	57.4	60.3	54.4	58.4	53.4	57.4	55.4	53.4	51.4	52.4	152.5°	486.0
64.3	55.4	58.4	52.4	56.4	51.4	54.4	53.4	49.5	48.5	49.5	155°	503.0
62.3	54.4	57.4	51.4	54.4	49.5	52.4	50.5	46.5	45.5	46.5	157.5°	517.0
61.3	52.4	55.4	49.5	52.4	48.5	50.5	48.5	44.5	43.5	43.5	160°	530.0
60.3	51.4	54.4	47.5	50.5	44.5	47.5	45.5	41.5	40.6	40.6	162.5°	540.0
60.3	50.5	52.4	45.5	48.5	42.5	44.5	42.5	40.6	38.6	38.6	165°	550.0
59.4	48.5	51.4	43.5	45.5	40.6	42.5	40.6	37.6	36.6	36.6	167.5°	558.0
59.4	47.5	50.5	42.5	44.5	38.6	40.6	38.6	35.6	34.6	34.6	170°	564.0
62.3	49.5	51.4	43.5	44.5	38.6	39.6	36.6	33.6	33.6	32.6	172.5°	567.0
68.3	55.4	55.4	45.5	45.5	38.6	39.6	35.6	31.7	31.7	31.7	175°	570.0
74.2	61.3	60.3	48.5	47.5	38.6	38.6	33.6	29.7	29.7	29.7	177.5°	574.0
78.1	64.3	62.3	49.5	47.5	37.6	36.6	31.7	27.7	27.7	27.7	180°	576.0
77.2	64.3	61.3	48.5	45.5	35.6	35.6	30.7	26.7	26.7	25.7		
73.2	60.3	57.4	45.5	43.5	33.6	33.6	28.7	24.7	24.7	23.7		
62.3	51.4	48.5	38.6	36.6	29.7	28.7	23.7	21.8	20.8	20.8		
48.5	40.6	37.6	30.7	29.7	23.7	22.8	19.8	17.8	17.8	16.8		
34.6	28.7	26.7	20.8	18.8	15.8	16.8	14.8	13.8	13.8	12.9		
20.8	14.8	14.8	11.9	12.9	9.9	10.9	10.9	9.9	7.9	7.9		
10.9	6.9	8.9	4.9	6.9	3.0	4.9	4.0	4.0	3.0	3.0		
2.0	0.0	1.0	0.0	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	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		

'228063  
 ISS-AF-450-LED-E1-SL2-7050-ULG

REPORT NUMBER: P228063  
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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°	590.6	590.6
136.0	136.0	136.0	136.0	135.5	135.0	134.0	132.0	129.0	126.0	2.5°	561.9	562.9
158.0	158.0	158.0	158.0	157.5	157.0	156.0	154.0	151.0	149.0	5°	523.3	525.3
180.8	180.5	180.2	180.0	179.8	179.5	179.0	177.0	174.0	172.0	7.5°	467.9	470.9
204.0	204.0	204.0	204.0	203.5	203.0	202.0	201.0	198.0	196.0	10°	401.6	403.6
228.0	228.0	228.0	228.0	227.8	227.5	227.0	226.0	223.0	221.0	12.5°	316.6	316.6
253.8	253.5	253.2	253.0	252.8	252.5	252.0	251.0	248.0	247.0	15°	221.6	223.6
277.2	277.5	277.8	278.0	277.5	277.0	276.0	274.0	272.0	270.0	17.5°	155.3	156.3
301.0	301.0	301.0	301.0	300.5	300.0	299.0	298.0	294.0	293.0	20°	130.6	131.6
325.0	325.0	325.0	325.0	324.2	323.5	322.0	321.0	318.0	317.0	22.5°	116.7	117.7
348.0	348.0	348.0	348.0	347.2	346.5	345.0	345.0	341.0	339.0	25°	103.9	104.9
369.0	369.0	369.0	369.0	368.5	368.0	367.0	367.0	364.0	363.0	27.5°	90.0	91.0
390.0	390.0	390.0	390.0	389.8	389.5	389.0	388.0	386.0	385.0	30°	81.1	82.1
412.0	412.0	412.0	412.0	411.5	411.0	410.0	410.0	407.0	408.0	32.5°	73.2	74.2
433.2	433.5	433.8	434.0	433.5	433.0	432.0	431.0	428.0	428.0	35°	66.3	66.3
452.5	453.0	453.5	454.0	453.8	453.5	453.0	452.0	448.0	447.0	37.5°	61.3	61.3
469.5	470.0	470.5	471.0	470.8	470.5	470.0	469.0	465.0	464.0	40°	56.4	56.4
486.2	486.5	486.8	487.0	486.8	486.5	486.0	485.0	482.0	483.0	42.5°	53.4	53.4
503.2	503.5	503.8	504.0	503.8	503.5	503.0	503.0	501.0	502.0	45°	50.5	50.5
517.5	518.0	518.5	519.0	519.0	519.0	519.0	519.0	516.0	517.0	47.5°	47.5	47.5
530.5	531.0	531.5	532.0	532.0	532.0	532.0	532.0	529.0	529.0	50°	44.5	45.5
540.5	541.0	541.5	542.0	541.8	541.5	541.0	541.0	538.0	539.0	52.5°	41.5	41.5
550.8	551.5	552.2	553.0	552.8	552.5	552.0	552.0	548.0	549.0	55°	38.6	38.6
558.5	559.0	559.5	560.0	560.0	560.0	560.0	561.0	558.0	559.0	57.5°	35.6	36.6
564.2	564.5	564.8	565.0	565.2	565.5	566.0	567.0	565.0	566.0	60°	33.6	33.6
567.5	568.0	568.5	569.0	568.8	568.5	568.0	569.0	567.0	569.0	62.5°	31.7	31.7
570.8	571.5	572.2	573.0	572.8	572.5	572.0	572.0	569.0	570.0	65°	30.7	30.7
574.8	575.5	576.2	577.0	577.0	577.0	577.0	578.0	574.0	575.0	67.5°	28.7	28.7
576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	70°	26.7	26.7
										71°	25.7	25.7
										72.5°	23.7	23.7
										75°	20.8	19.8
										77.5°	16.8	16.8
										80°	12.9	11.9
										82.5°	7.9	6.9
										85°	3.0	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°	8.0	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

