

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: P228386

Luminaire Tested: **ISC-AF-450-LED-E1-SL4-8030-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P228386  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29763)-DOWNLIGHT AND  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: ISC-AF-450-LED-E1-SL4-8030-ULG  
Description: IMPACT ELITE LED CYLINDER LUMINAIRE WITH UPLIGHT  
LIGHT SQUARE WITH ACCULED OPTICS-TYPE IV 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: 3587.2 lumens  
Efficiency: N/A  
Efficacy: 85.4 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B0 - U5 - G1  
  
Input Watts (W): 42.01  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT

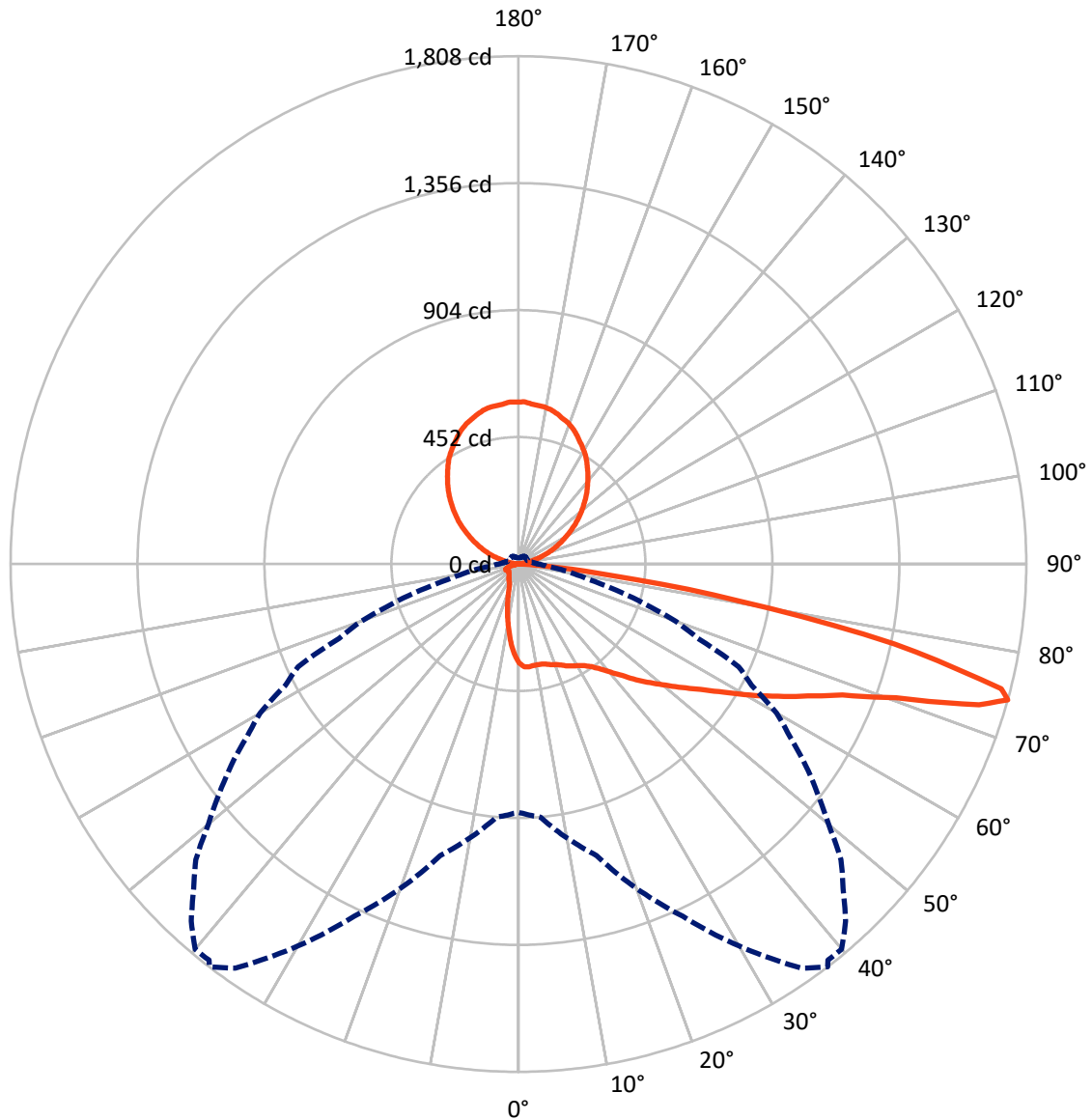




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### Luminous Intensity Polar Plot



— Vertical Plane Through 37.5-Deg Lateral    - - - Horizontal Cone Through 74-Deg Vertical

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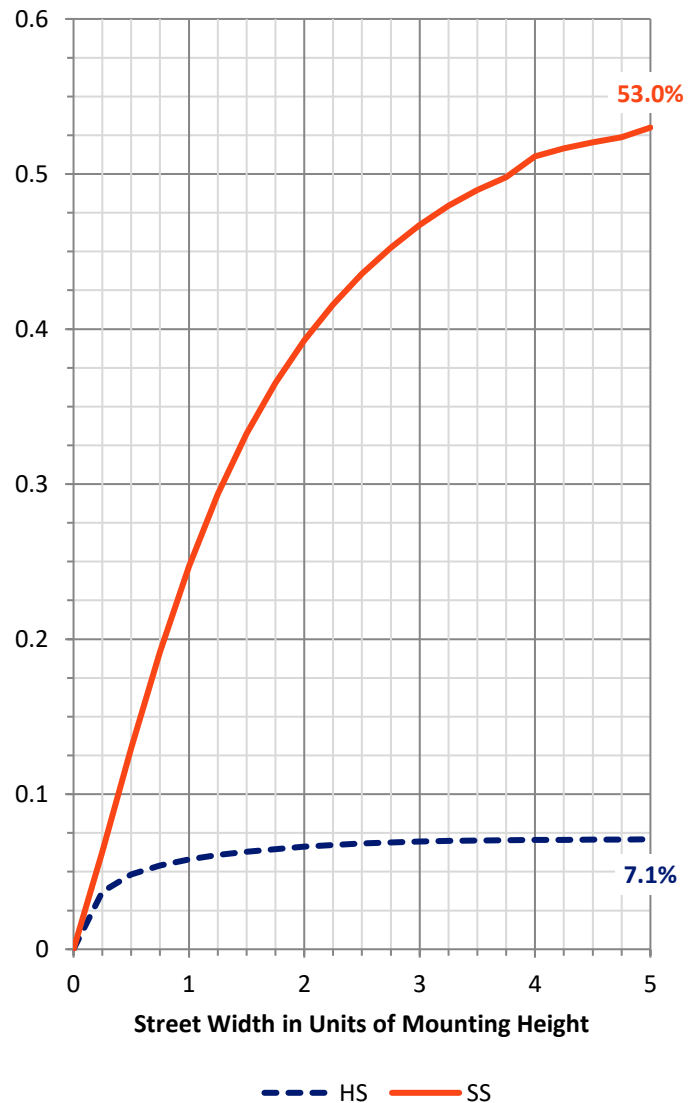
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	256.2	713.1	969.3
	% Fixture	7.1	19.9	27.0
<b>Street Side</b>	Lumens	1904.8	713.1	2617.8
	% Fixture	53.1	19.9	73.0
<b>Total</b>	Lumens	2161.0	1426.2	3587.2
	% Fixture	60.2	39.8	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	30.7	0.9
10°-20°	78.2	2.2
20°-30°	121.2	3.4
30°-40°	179.8	5.0
40°-50°	276.5	7.7
50°-60°	408.8	11.4
60°-70°	544.9	15.2
70°-80°	470.3	13.1
80°-90°	50.6	1.4
90°-100°	4.7	0.1
100°-110°	69.0	1.9
110°-120°	153.0	4.3
120°-130°	223.9	6.2
130°-140°	265.6	7.4
140°-150°	269.3	7.5
150°-160°	231.1	6.4
160°-170°	155.1	4.3
170°-180°	54.3	1.5
0°-90°	2161.0	60.2
0°-180°	3587.2	100.0



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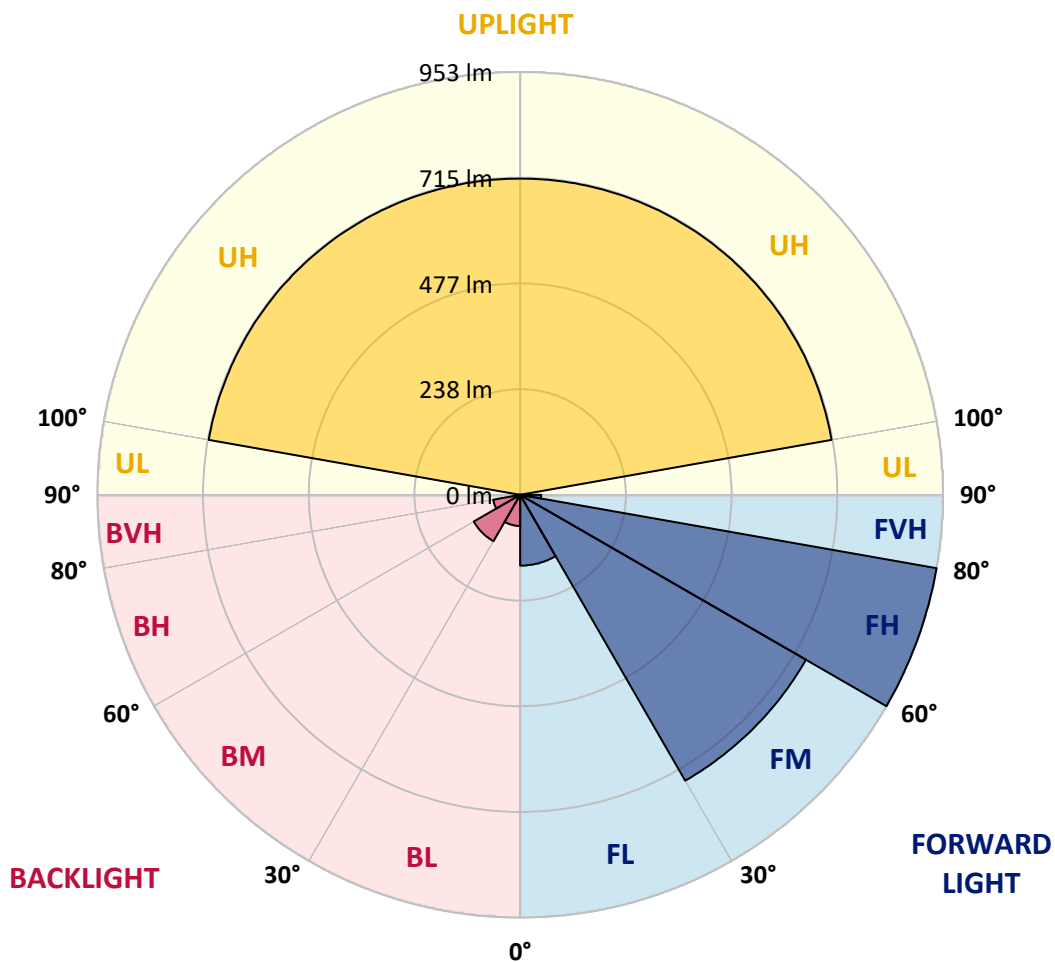
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	159.8	4.5			
FM (30°-60°)	744.3	20.7			
FH (60°-80°)	953.4	26.6			G1/1800
FVH (80°-90°)	47.3	1.3			G1/100
BL (0°-30°)	70.3	2.0	B0/110		
BM (30°-60°)	120.8	3.4	B0/220		
BH (60°-80°)	61.8	1.7	B0/110		G0/110
BVH (80°-90°)	3.3	0.1			G0/10
UL (90°-100°)	4.7	0.1		U1/10	
UH (100°-180°)	713.1	19.9		U4/1000	

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

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	37.5°	38°	40°	42.5°	45°	47.5°
0°	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6
2.5°	372.8	372.0	370.4	369.6	368.0	365.6	368.0	364.7	363.1	364.7	361.5
5°	379.3	378.5	376.8	373.6	372.0	368.0	370.4	366.4	365.6	367.2	363.1
7.5°	380.1	378.5	376.0	372.0	370.4	365.6	367.2	362.3	360.7	362.3	359.9
10°	377.7	376.8	374.4	368.0	366.4	364.7	363.9	360.7	359.9	359.1	358.3
12.5°	373.6	373.6	372.0	369.6	368.8	365.6	366.4	363.1	363.9	362.3	360.7
15°	372.0	371.2	372.8	374.4	374.4	369.6	372.8	370.4	368.8	369.6	367.2
17.5°	370.4	371.2	376.8	380.1	381.7	376.8	381.7	376.8	373.6	377.7	373.6
20°	369.6	372.0	381.7	389.0	389.8	381.7	389.8	381.7	381.7	386.5	379.3
22.5°	373.6	377.7	391.4	399.4	401.1	390.6	400.3	389.8	389.8	393.8	386.5
25°	386.5	390.6	405.9	414.8	413.2	401.9	410.7	400.3	399.4	404.3	394.6
27.5°	403.5	409.1	423.7	431.7	426.1	410.7	423.7	408.3	408.3	415.6	402.7
30°	427.7	431.7	444.6	445.4	438.2	419.6	434.1	417.2	414.8	427.7	411.5
32.5°	454.3	457.5	467.2	461.6	451.1	431.7	448.7	428.5	427.7	441.4	422.8
35°	482.6	485.8	489.0	479.3	469.7	448.7	467.2	447.1	446.2	461.6	443.8
37.5°	511.6	511.6	511.6	500.3	493.9	473.7	490.6	474.5	472.9	489.0	472.1
40°	535.0	536.6	534.2	523.7	520.5	506.0	520.5	506.0	508.4	522.9	509.2
42.5°	554.4	556.0	556.8	547.9	551.2	543.1	554.4	543.9	544.7	560.8	552.8
45°	573.7	572.9	579.4	577.0	586.7	587.5	593.9	589.9	591.5	603.6	601.2
47.5°	593.9	589.9	597.1	607.6	625.4	631.0	635.1	636.7	643.1	648.8	654.4
50°	613.3	609.3	614.1	637.5	665.7	677.8	678.7	686.7	694.0	702.1	713.4
52.5°	633.5	630.2	635.1	668.2	713.4	730.3	727.9	741.6	752.1	761.0	779.5
55°	654.4	651.2	656.1	705.3	764.2	787.6	785.2	804.5	824.7	827.9	848.9
57.5°	674.6	670.6	684.3	748.9	824.7	860.2	848.9	878.8	898.1	896.5	925.6
60°	696.4	693.2	715.0	802.1	900.6	946.6	929.6	969.2	982.9	977.2	1004.7
62.5°	717.4	716.6	752.9	864.3	992.6	1036.9	1021.6	1056.3	1066.0	1058.7	1072.4
65°	736.8	741.6	794.0	926.4	1081.3	1132.2	1111.2	1145.9	1157.2	1151.5	1174.9
67.5°	769.0	774.7	844.9	1005.5	1191.1	1243.5	1225.8	1262.1	1279.0	1277.4	1303.2
70°	816.6	827.1	919.9	1117.6	1358.1	1425.1	1415.4	1459.8	1500.9	1497.7	1523.5
72.5°	899.8	916.7	1043.4	1291.9	1632.5	1714.0	1702.7	1727.7	1720.4	1661.5	1613.9
74°	883.6	904.6	1074.1	1383.1	1755.9	1807.6	1789.0	1789.8	1723.7	1634.1	1557.4
75°	824.7	846.5	1029.7	1371.8	1747.1	1775.3	1748.7	1715.6	1635.7	1544.5	1450.1
77.5°	565.7	593.9	756.9	1108.0	1406.5	1367.8	1361.3	1298.4	1192.7	1090.2	969.2
80°	289.7	309.9	391.4	579.4	834.4	795.7	808.6	757.7	669.8	595.5	472.1
82.5°	69.4	74.2	115.4	224.3	361.5	330.9	335.7	297.0	246.1	200.9	155.7
85°	36.3	41.2	56.5	62.1	95.2	98.4	96.0	92.8	75.9	63.7	55.7
87.5°	0.0	0.0	0.0	1.6	0.8	0.0	0.8	0.0	0.0	0.8	1.6
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°	2.0	2.0	2.0	3.0	4.0	5.2	5.5	6.5	7.8	9.0	10.0
100°	8.0	8.0	10.0	14.0	22.0	24.0	24.4	26.0	28.0	30.0	30.5
102.5°	28.0	28.0	32.0	38.0	45.0	46.2	46.5	47.5	48.8	50.0	50.2
105°	54.0	54.0	56.0	61.0	66.0	67.0	67.2	68.0	69.0	70.0	70.2
107.5°	78.0	77.0	80.0	84.0	88.0	88.8	88.9	89.5	90.2	91.0	91.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	37.5°	38°	40°	42.5°	45°	47.5°
110°	101.0	102.0	103.0	106.0	110.0	110.5	110.6	111.0	111.5	112.0	112.5
112.5°	124.0	124.0	126.0	129.0	132.0	132.5	132.6	133.0	133.5	134.0	134.5
115°	146.0	147.0	149.0	151.0	154.0	154.5	154.6	155.0	155.5	156.0	156.5
117.5°	169.0	170.0	172.0	174.0	177.0	177.5	177.6	178.0	178.5	179.0	179.2
120°	193.0	195.0	196.0	198.0	201.0	201.2	201.3	201.5	201.8	202.0	202.5
122.5°	219.0	220.0	221.0	223.0	226.0	226.2	226.3	226.5	226.8	227.0	227.2
125°	244.0	246.0	247.0	248.0	251.0	251.2	251.3	251.5	251.8	252.0	252.2
127.5°	267.0	269.0	270.0	272.0	274.0	274.5	274.6	275.0	275.5	276.0	276.5
130°	290.0	292.0	293.0	294.0	298.0	298.2	298.3	298.5	298.8	299.0	299.5
132.5°	313.0	314.0	317.0	318.0	321.0	321.2	321.3	321.5	321.8	322.0	322.8
135°	336.0	337.0	339.0	341.0	345.0	345.0	345.0	345.0	345.0	345.0	345.8
137.5°	359.0	360.0	363.0	364.0	367.0	367.0	367.0	367.0	367.0	367.0	367.5
140°	382.0	383.0	385.0	386.0	388.0	388.2	388.3	388.5	388.8	389.0	389.2
142.5°	404.0	406.0	408.0	407.0	410.0	410.0	410.0	410.0	410.0	410.0	410.5
145°	425.0	426.0	428.0	428.0	431.0	431.2	431.3	431.5	431.8	432.0	432.5
147.5°	444.0	444.0	447.0	448.0	452.0	452.2	452.3	452.5	452.8	453.0	453.2
150°	461.0	462.0	464.0	465.0	469.0	469.2	469.3	469.5	469.8	470.0	470.2
152.5°	479.0	480.0	483.0	482.0	485.0	485.2	485.3	485.5	485.8	486.0	486.2
155°	499.0	500.0	502.0	501.0	503.0	503.0	503.0	503.0	503.0	503.0	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	541.0	541.2
165°	546.0	547.0	549.0	548.0	552.0	552.0	552.0	552.0	552.0	552.0	552.2
167.5°	555.0	556.0	559.0	558.0	561.0	560.8	560.7	560.5	560.2	560.0	560.0
170°	562.0	563.0	566.0	565.0	567.0	566.8	566.7	566.5	566.2	566.0	565.8
172.5°	565.0	566.0	569.0	567.0	569.0	568.8	568.7	568.5	568.2	568.0	568.2
175°	567.0	569.0	570.0	569.0	572.0	572.0	572.0	572.0	572.0	572.0	572.2
177.5°	572.0	573.0	575.0	574.0	578.0	577.8	577.7	577.5	577.2	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°	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6
2.5°	363.9	362.3	363.9	359.1	361.5	357.5	359.1	355.1	356.7	353.4	354.3
5°	365.6	361.5	363.9	359.9	360.7	357.5	356.7	355.1	354.3	351.8	350.2
7.5°	361.5	358.3	357.5	355.9	353.4	354.3	351.0	350.2	347.8	347.8	343.0
10°	357.5	358.3	353.4	355.1	351.0	351.8	346.2	347.8	343.8	347.0	339.7
12.5°	360.7	361.5	357.5	359.9	352.6	354.3	349.4	351.8	346.2	350.2	341.3
15°	368.0	367.2	365.6	365.6	358.3	361.5	355.9	357.5	351.8	356.7	347.0
17.5°	374.4	373.6	371.2	370.4	365.6	366.4	360.7	363.9	357.5	361.5	351.8
20°	381.7	377.7	376.8	376.0	370.4	370.4	366.4	368.0	361.5	366.4	355.1
22.5°	387.3	384.1	383.3	380.1	376.0	377.7	372.0	372.8	366.4	371.2	361.5
25°	396.2	392.2	392.2	387.3	384.9	384.1	380.9	383.3	376.8	380.1	371.2
27.5°	408.3	399.4	402.7	397.8	396.2	395.4	393.8	395.4	390.6	393.0	384.1
30°	419.6	408.3	413.2	406.7	409.9	406.7	409.1	406.7	406.7	406.7	402.7
32.5°	435.0	421.2	430.9	421.2	427.7	422.8	430.9	426.1	429.3	428.5	426.9
35°	456.7	440.6	454.3	441.4	452.7	446.2	457.5	455.1	461.6	458.4	461.6
37.5°	485.8	468.8	485.0	472.9	486.6	476.9	493.1	491.4	505.2	500.3	505.2
40°	522.1	510.0	522.1	513.2	527.8	523.7	540.7	541.5	556.8	554.4	560.0
42.5°	562.5	553.6	565.7	560.8	575.4	578.6	598.0	602.8	617.3	621.4	622.2
45°	606.0	604.4	614.1	618.9	633.5	643.1	660.1	672.2	688.3	697.2	695.6
47.5°	656.9	663.3	669.8	681.9	694.8	715.0	731.9	747.2	765.8	771.5	773.9
50°	714.2	725.5	731.1	748.1	761.0	786.0	809.4	828.7	848.9	846.5	848.1
52.5°	774.7	789.2	797.3	817.4	834.4	863.4	883.6	902.2	927.2	920.7	918.3
55°	841.7	863.4	869.9	892.5	907.0	936.9	954.6	986.9	997.4	990.9	977.2
57.5°	912.7	938.5	945.8	976.4	983.7	1016.0	1031.3	1053.1	1062.0	1051.5	1033.7
60°	993.4	1016.8	1022.4	1049.9	1059.5	1089.4	1100.7	1120.1	1126.5	1100.7	1075.7
62.5°	1074.1	1098.3	1101.5	1125.7	1135.4	1161.2	1174.1	1185.4	1182.2	1144.3	1112.8
65°	1166.1	1189.5	1197.5	1221.7	1227.4	1246.8	1257.2	1244.3	1237.1	1179.8	1144.3
67.5°	1312.1	1337.1	1340.4	1346.0	1345.2	1335.5	1330.7	1286.3	1254.0	1148.3	1097.5
70°	1504.2	1485.6	1449.3	1407.3	1376.7	1321.8	1289.5	1198.3	1130.5	1011.9	926.4
72.5°	1538.9	1478.3	1388.8	1317.0	1242.7	1156.4	1087.0	949.0	853.8	729.5	639.1
74°	1440.4	1342.0	1247.6	1146.7	1061.2	935.3	865.1	690.8	596.3	470.5	360.7
75°	1321.8	1206.4	1099.9	971.6	891.7	740.8	674.6	486.6	392.2	279.2	188.0
77.5°	843.3	705.3	603.6	455.1	393.0	271.1	198.5	123.5	91.2	79.9	69.4
80°	378.5	269.5	213.8	147.7	123.5	94.4	79.9	64.6	58.9	51.6	49.2
82.5°	121.0	96.8	92.0	82.3	82.3	66.2	56.5	44.4	40.3	34.7	31.5
85°	52.5	49.2	50.8	46.8	47.6	36.3	29.1	21.8	21.8	15.3	13.7
87.5°	1.6	0.0	0.8	0.0	1.6	0.0	0.8	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°	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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CATALOG NUMBER: ISC-AF-450-LED-E1-SL4-8030-ULG

**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



REPORT NUMBER: P228386

CATALOG NUMBER: ISC-AF-450-LED-E1-SL4-8030-ULG

**CANDELA DISTRIBUTION (continued):**

	77.5°	80°	85°	90°	95°	100°	102.5°	105°	107.5°	110°	112.5°
0°	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6
2.5°	351.0	352.6	351.8	348.6	347.8	345.4	339.7	340.5	337.3	339.7	335.7
5°	347.8	347.0	343.8	339.7	335.7	330.9	326.8	325.2	322.0	320.4	317.9
7.5°	343.0	339.7	334.1	327.6	322.0	315.5	312.3	306.6	305.0	299.4	298.6
10°	341.3	335.7	329.2	321.2	311.5	301.8	301.0	291.3	290.5	281.6	279.2
12.5°	344.6	337.3	329.2	319.6	308.3	294.5	294.5	280.0	279.2	267.1	263.1
15°	351.0	342.2	331.7	320.4	305.8	288.9	288.1	271.1	269.5	255.0	250.2
17.5°	356.7	344.6	334.9	319.6	302.6	283.2	279.2	262.3	259.0	242.1	235.6
20°	360.7	347.0	335.7	317.9	297.0	274.4	268.7	251.0	243.7	226.8	217.9
22.5°	365.6	352.6	337.3	317.1	293.7	267.1	255.0	238.9	228.4	210.6	198.5
25°	372.8	361.5	343.0	319.6	291.3	259.8	243.7	226.8	212.2	194.5	176.7
27.5°	384.1	372.8	351.0	322.8	290.5	252.6	234.8	213.8	196.1	176.7	156.6
30°	400.3	388.1	364.7	331.7	291.3	246.9	225.1	202.5	181.6	159.0	138.0
32.5°	421.2	411.5	382.5	341.3	294.5	242.1	216.3	190.4	164.6	142.8	124.3
35°	450.3	443.8	407.5	359.9	302.6	239.7	207.4	179.1	150.1	128.3	108.1
37.5°	493.1	484.2	443.8	386.5	315.5	238.1	200.9	165.4	138.0	114.6	97.6
40°	547.1	535.0	486.6	418.8	335.7	238.9	195.3	154.9	127.5	102.5	88.8
42.5°	611.7	593.9	539.0	458.4	355.9	240.5	192.1	145.3	119.4	92.8	82.3
45°	684.3	664.1	601.2	507.6	384.9	244.5	189.6	137.2	112.2	85.5	78.3
47.5°	755.3	735.1	664.9	556.8	414.8	251.8	191.2	132.3	107.3	81.5	73.4
50°	824.7	803.7	721.4	601.2	440.6	261.5	197.7	133.1	106.5	79.9	71.0
52.5°	886.0	860.2	769.8	635.9	459.2	267.9	203.4	135.6	107.3	79.1	70.2
55°	947.4	914.3	808.6	663.3	470.5	268.7	203.4	136.4	108.1	79.1	69.4
57.5°	993.4	955.4	838.4	679.5	474.5	264.7	198.5	132.3	103.3	78.3	67.8
60°	1022.4	982.1	859.4	689.9	468.8	247.7	172.7	117.0	91.2	72.6	62.9
62.5°	1046.6	1005.5	865.9	672.2	421.2	196.9	134.8	95.2	75.9	64.6	58.1
65°	1052.3	1003.0	820.7	593.9	329.2	136.4	97.6	75.0	62.1	57.3	52.5
67.5°	966.7	907.8	689.9	464.8	224.3	93.6	72.6	61.3	53.3	50.8	49.2
70°	786.0	721.4	505.2	304.2	125.1	65.4	55.7	50.8	46.0	46.0	43.6
72.5°	506.8	439.8	259.0	129.9	63.7	50.0	45.2	43.6	39.5	40.3	37.9
74°	259.0	201.7	105.7	68.6	52.5	44.4	40.3	39.5	35.5	36.3	33.9
75°	131.5	104.1	74.2	57.3	48.4	42.0	37.1	37.1	32.3	33.1	30.7
77.5°	61.3	58.9	50.8	45.2	41.2	35.5	30.7	29.9	25.0	26.6	23.4
80°	42.8	42.8	39.5	37.9	33.9	29.1	23.4	23.4	18.6	19.4	16.9
82.5°	24.2	22.6	22.6	25.8	26.6	21.8	16.9	16.1	13.7	13.7	11.3
85°	10.5	12.1	14.5	17.8	19.4	16.9	12.1	11.3	7.3	7.3	4.0
87.5°	0.0	0.8	0.8	1.6	3.2	3.2	0.0	1.6	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°	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°
												74°
												75°
												77.5°
												80°
												82.5°
												85°
												87.5°
												90°
												92.5°
												95°
												97.5°
												100°
												102.5°
												105°
												107.5°



NUMBER: P228386  
 NUMBER: ISC-AF-450-LED-E1-SL4-8030-ULG

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°
352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6	352.6	110°	114.0
337.3	333.3	335.7	331.7	333.3	329.2	330.9	328.4	326.0	322.8	322.0	112.5°	136.0
315.5	312.3	311.5	307.5	308.3	305.0	301.8	297.8	292.9	286.5	284.0	115°	158.0
291.3	290.5	284.9	282.4	279.2	276.0	270.3	263.9	254.2	245.3	239.7	117.5°	181.0
270.3	267.9	259.8	255.8	251.0	246.9	238.9	230.0	216.3	202.5	195.3	120°	204.0
252.6	249.4	238.9	234.0	226.8	221.9	212.2	200.9	181.6	162.2	153.3	122.5°	228.0
238.1	233.2	221.1	213.8	204.2	199.3	188.8	172.7	149.3	129.1	117.0	125°	254.0
221.1	214.7	201.7	192.9	183.2	174.3	163.8	146.9	120.2	101.7	89.6	127.5°	277.0
202.5	194.5	180.8	168.7	158.2	150.1	139.6	122.7	96.0	81.5	75.0	130°	301.0
183.2	170.3	158.2	147.7	135.6	127.5	117.0	101.7	81.5	73.4	71.0	132.5°	325.0
163.0	148.5	136.4	125.9	114.6	107.3	98.4	86.3	74.2	71.8	71.8	135°	348.0
142.8	128.3	117.0	106.5	96.8	92.0	83.9	75.9	70.2	71.0	71.8	137.5°	369.0
124.3	109.7	99.3	91.2	82.3	79.1	72.6	67.8	67.0	69.4	70.2	140°	390.0
108.1	95.2	85.5	79.1	71.8	70.2	64.6	62.1	64.6	67.8	67.0	142.5°	412.0
94.4	83.9	74.2	70.2	63.7	62.9	58.9	57.3	60.5	64.6	64.6	145°	433.0
83.9	74.2	67.0	63.7	58.9	58.1	54.9	53.3	55.7	61.3	62.9	147.5°	452.0
75.0	69.4	62.1	58.9	55.7	54.1	52.5	50.8	51.6	58.9	59.7	150°	469.0
69.4	65.4	58.9	57.3	53.3	52.5	50.0	48.4	49.2	54.9	57.3	152.5°	486.0
65.4	62.1	56.5	55.7	51.6	50.8	48.4	46.8	47.6	52.5	54.9	155°	503.0
62.1	58.9	54.1	52.5	50.0	49.2	47.6	46.0	46.0	50.8	53.3	157.5°	517.0
60.5	57.3	52.5	50.8	48.4	47.6	46.0	44.4	45.2	49.2	50.8	160°	530.0
59.7	55.7	51.6	49.2	47.6	46.0	44.4	42.8	43.6	47.6	49.2	162.5°	540.0
59.7	54.9	51.6	49.2	46.8	44.4	43.6	41.2	42.8	46.0	48.4	165°	550.0
59.7	54.9	51.6	49.2	47.6	45.2	43.6	42.0	42.8	46.0	48.4	167.5°	558.0
58.1	54.1	52.5	50.0	49.2	46.8	46.0	44.4	44.4	48.4	52.5	170°	564.0
55.7	53.3	52.5	50.8	50.8	49.2	49.2	47.6	47.6	52.5	56.5	172.5°	567.0
52.5	50.8	51.6	50.8	50.8	50.8	50.0	50.0	50.0	54.1	58.9	175°	570.0
49.2	48.4	49.2	49.2	50.0	49.2	50.0	49.2	49.2	53.3	58.1	177.5°	574.0
44.4	44.4	45.2	44.4	45.2	45.2	46.0	46.0	46.0	48.4	53.3	180°	576.0
38.7	37.9	38.7	37.9	39.5	37.9	39.5	40.3	39.5	40.3	42.8		
34.7	33.9	34.7	33.9	35.5	33.9	34.7	34.7	33.9	27.4	23.4		
31.5	30.7	31.5	30.7	32.3	30.7	32.3	31.5	29.9	20.2	19.4		
25.0	22.6	25.0	22.6	24.2	21.8	23.4	20.2	15.3	14.5	14.5		
18.6	16.1	17.8	15.3	14.5	11.3	12.1	11.3	10.5	11.3	11.3		
11.3	8.1	9.7	7.3	8.9	6.5	8.1	7.3	6.5	6.5	6.5		
5.6	4.0	5.6	3.2	4.8	3.2	4.0	4.0	2.4	2.4	2.4		
0.8	0.0	1.6	0.0	1.6	0.0	0.8	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		
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		

'228386  
 ISC-AF-450-LED-E1-SL4-8030-ULG

REPORT NUMBER: P228386  
 CATALOG NUMBER: ISC-AF-45

**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°	352.6	352.6
136.0	136.0	136.0	136.0	135.5	135.0	134.0	132.0	129.0	126.0	2.5°	319.6	320.4
158.0	158.0	158.0	158.0	157.5	157.0	156.0	154.0	151.0	149.0	5°	280.0	282.4
180.8	180.5	180.2	180.0	179.8	179.5	179.0	177.0	174.0	172.0	7.5°	236.4	238.1
204.0	204.0	204.0	204.0	203.5	203.0	202.0	201.0	198.0	196.0	10°	190.4	192.1
228.0	228.0	228.0	228.0	227.8	227.5	227.0	226.0	223.0	221.0	12.5°	146.9	148.5
253.8	253.5	253.2	253.0	252.8	252.5	252.0	251.0	248.0	247.0	15°	110.6	108.9
277.2	277.5	277.8	278.0	277.5	277.0	276.0	274.0	272.0	270.0	17.5°	84.7	83.1
301.0	301.0	301.0	301.0	300.5	300.0	299.0	298.0	294.0	293.0	20°	71.8	71.8
325.0	325.0	325.0	325.0	324.2	323.5	322.0	321.0	318.0	317.0	22.5°	70.2	69.4
348.0	348.0	348.0	348.0	347.2	346.5	345.0	345.0	341.0	339.0	25°	71.0	70.2
369.0	369.0	369.0	369.0	368.5	368.0	367.0	367.0	364.0	363.0	27.5°	71.0	70.2
390.0	390.0	390.0	390.0	389.8	389.5	389.0	388.0	386.0	385.0	30°	69.4	68.6
412.0	412.0	412.0	412.0	411.5	411.0	410.0	410.0	407.0	408.0	32.5°	67.0	66.2
433.2	433.5	433.8	434.0	433.5	433.0	432.0	431.0	428.0	428.0	35°	64.6	64.6
452.5	453.0	453.5	454.0	453.8	453.5	453.0	452.0	448.0	447.0	37.5°	62.9	63.7
469.5	470.0	470.5	471.0	470.8	470.5	470.0	469.0	465.0	464.0	40°	60.5	61.3
486.2	486.5	486.8	487.0	486.8	486.5	486.0	485.0	482.0	483.0	42.5°	58.1	58.9
503.2	503.5	503.8	504.0	503.8	503.5	503.0	503.0	501.0	502.0	45°	55.7	56.5
517.5	518.0	518.5	519.0	519.0	519.0	519.0	519.0	516.0	517.0	47.5°	53.3	53.3
530.5	531.0	531.5	532.0	532.0	532.0	532.0	532.0	529.0	529.0	50°	50.0	50.0
540.5	541.0	541.5	542.0	541.8	541.5	541.0	541.0	538.0	539.0	52.5°	49.2	49.2
550.8	551.5	552.2	553.0	552.8	552.5	552.0	552.0	548.0	549.0	55°	49.2	49.2
558.5	559.0	559.5	560.0	560.0	560.0	560.0	561.0	558.0	559.0	57.5°	50.8	50.8
564.2	564.5	564.8	565.0	565.2	565.5	566.0	567.0	565.0	566.0	60°	55.7	56.5
567.5	568.0	568.5	569.0	568.8	568.5	568.0	569.0	567.0	569.0	62.5°	65.4	66.2
570.8	571.5	572.2	573.0	572.8	572.5	572.0	572.0	569.0	570.0	65°	75.0	76.7
574.8	575.5	576.2	577.0	577.0	577.0	577.0	578.0	574.0	575.0	67.5°	75.9	78.3
576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	70°	73.4	75.9
										72.5°	50.8	50.8
										74°	22.6	21.8
										75°	19.4	18.6
										77.5°	14.5	14.5
										80°	10.5	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



REPORT NUMBER: P228386

CATALOG NUMBER: ISC-AF-450-LED-E1-S

**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

