

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: P228324

Luminaire Tested: **ISS-AF-450-LED-E1-SL4-7030-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P228324  
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: ISS-AF-450-LED-E1-SL4-7030-ULG  
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT  
LIGHT SQUARE WITH ACCULED OPTICS-TYPE IV W/SPILL CONTROL, WITH UPLIGHT  
GLOW  
Light Source: (16) 3000K CCT, 70 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3771.2 lumens  
Efficiency: N/A  
Efficacy: 89.8 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

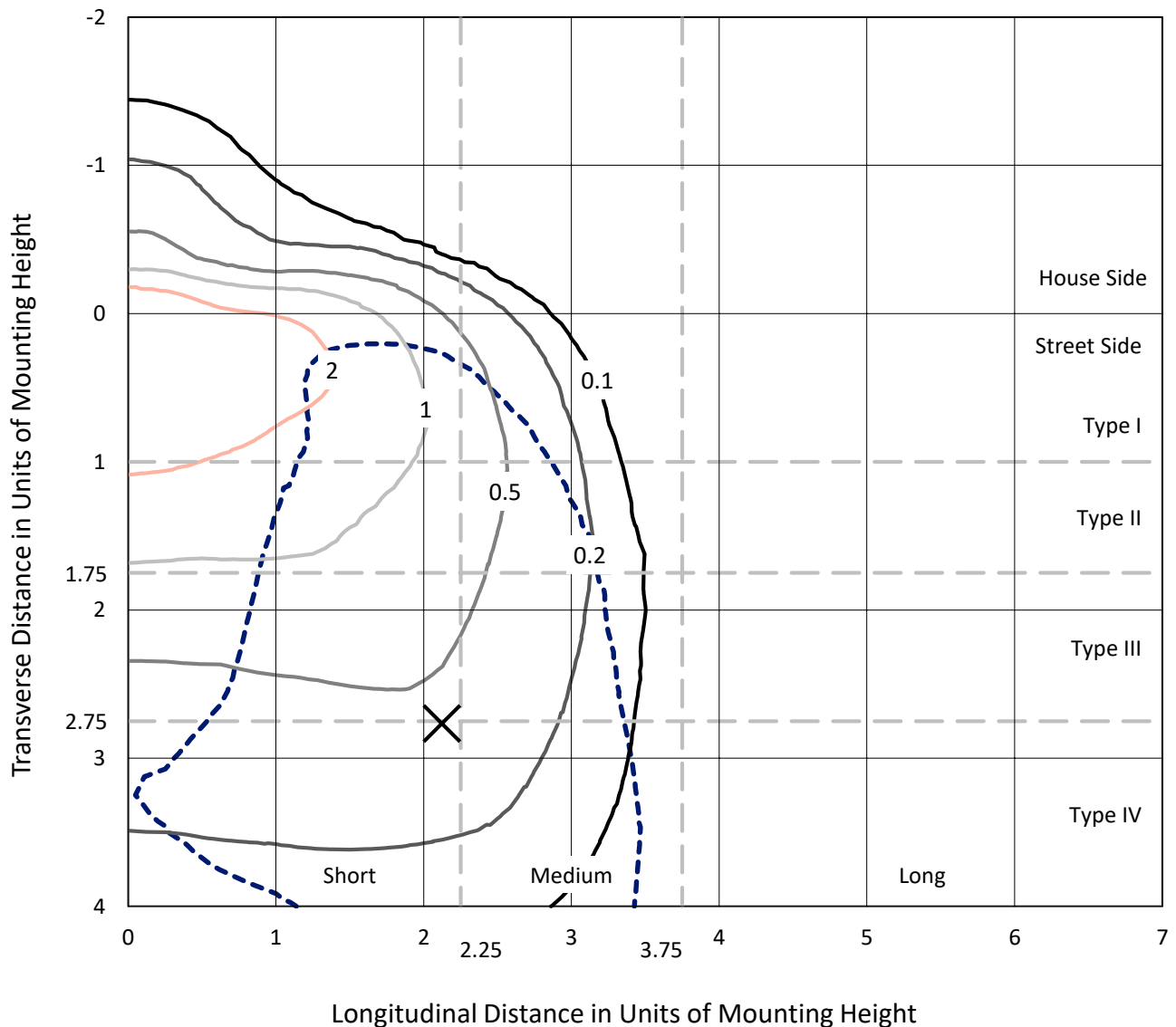


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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

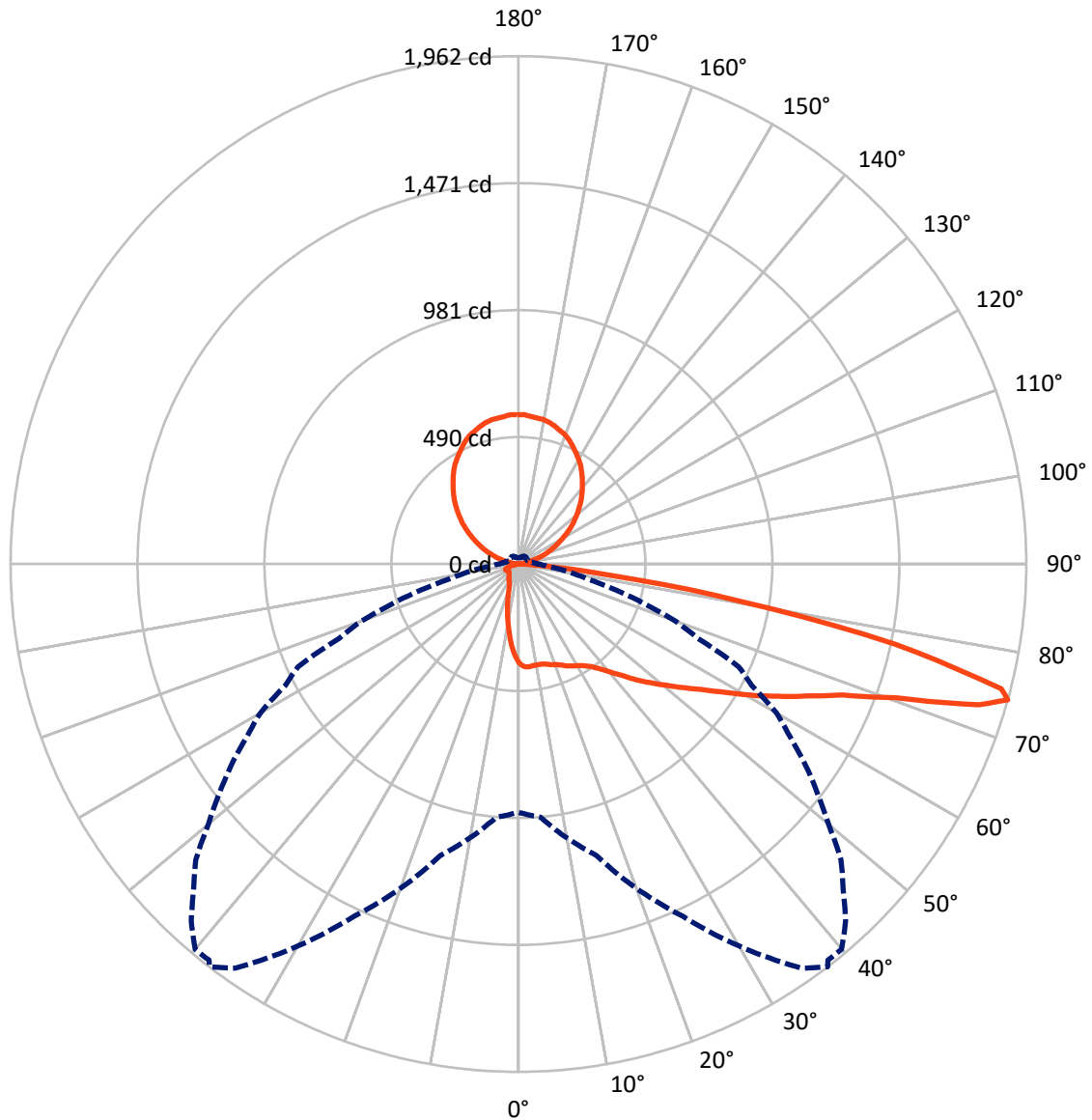


Based on 10 foot mounting height. Maximum calculated value = 4 fc  
 Type IV - Short - Non-Cutoff

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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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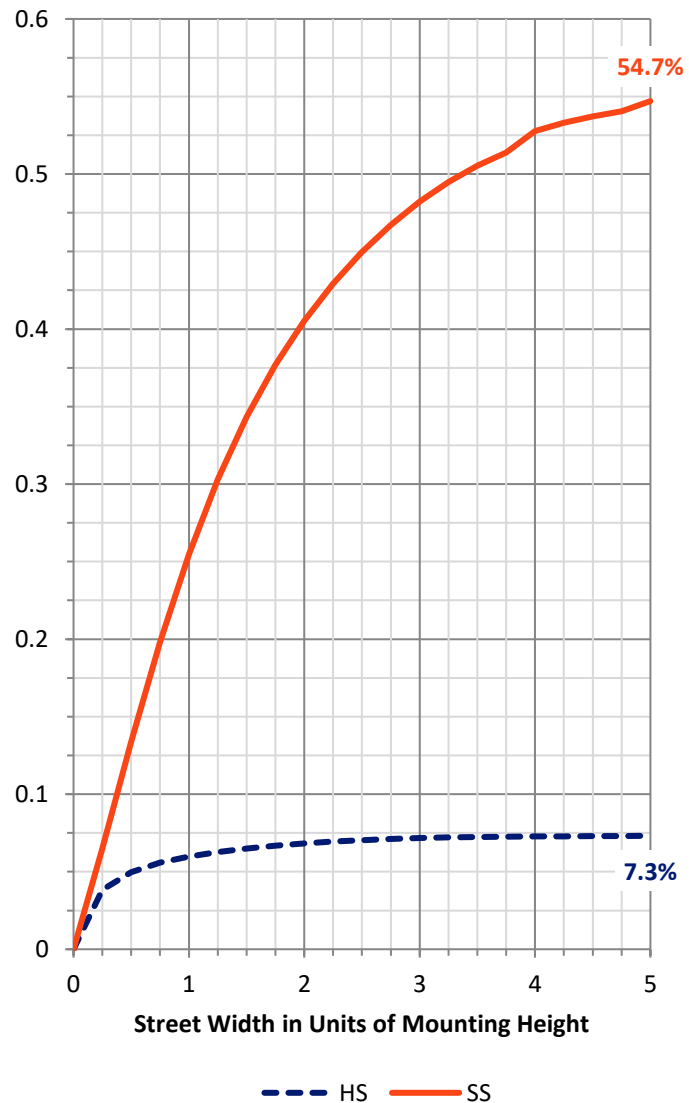
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	278.1	713.1	991.1
	% Fixture	7.4	18.9	26.3
<b>Street Side</b>	Lumens	2066.9	713.1	2780.0
	% Fixture	54.8	18.9	73.7
<b>Total</b>	Lumens	2345.0	1426.2	3771.2
	% Fixture	62.2	37.8	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	33.3	0.9
10°-20°	84.9	2.3
20°-30°	131.5	3.5
30°-40°	195.1	5.2
40°-50°	300.1	8.0
50°-60°	443.6	11.8
60°-70°	591.3	15.7
70°-80°	510.4	13.5
80°-90°	54.9	1.5
90°-100°	4.7	0.1
100°-110°	69.0	1.8
110°-120°	153.0	4.1
120°-130°	223.9	5.9
130°-140°	265.6	7.0
140°-150°	269.3	7.1
150°-160°	231.1	6.1
160°-170°	155.1	4.1
170°-180°	54.3	1.4
0°-90°	2345.0	62.2
0°-180°	3771.2	100.0



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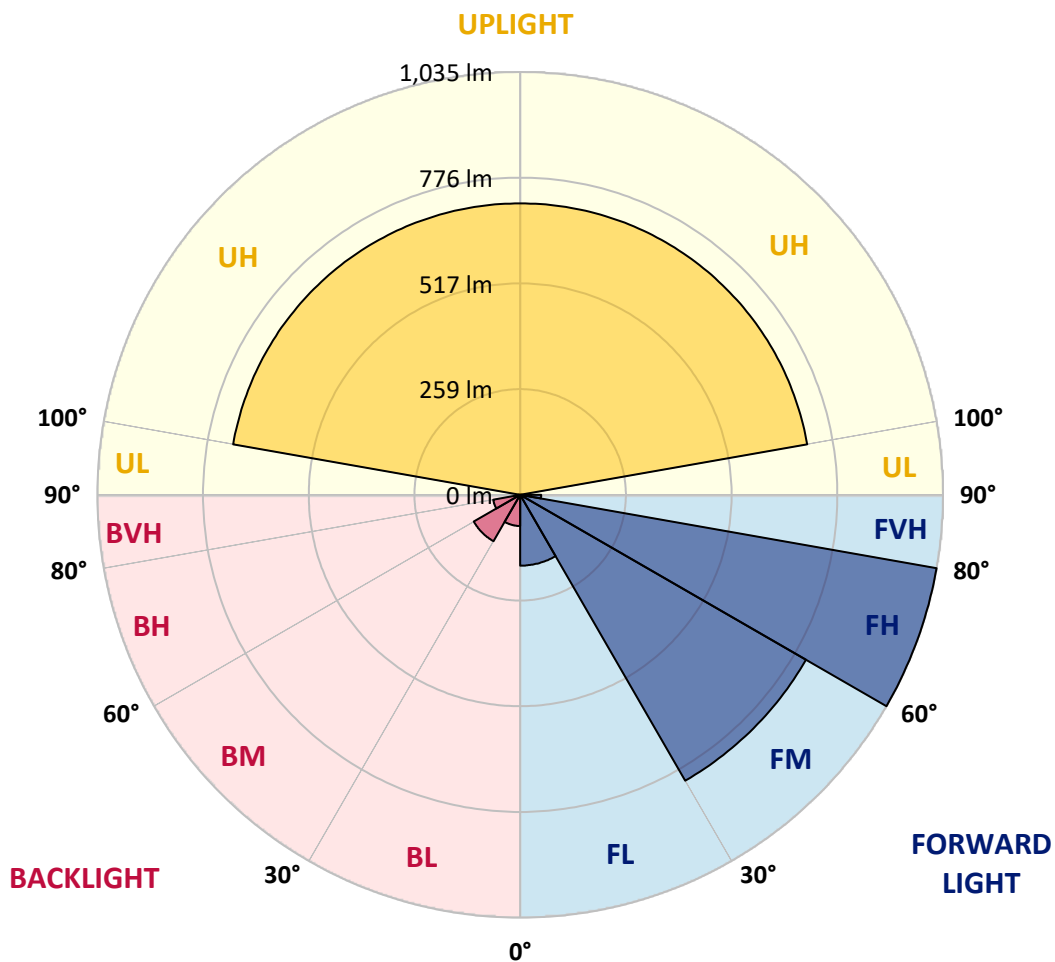
CATALOG NUMBER: ISS-AF-450-LED-E1-SL4-7030-ULG

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	173.4	4.6			
FM (30°-60°)	807.7	21.4			
FH (60°-80°)	1034.6	27.4			G1/1800
FVH (80°-90°)	51.3	1.4			G1/100
BL (0°-30°)	76.3	2.0	B0/110		
BM (30°-60°)	131.1	3.5	B0/220		
BH (60°-80°)	67.0	1.8	B0/110		G0/110
BVH (80°-90°)	3.6	0.1			G0/10
UL (90°-100°)	4.7	0.1		U1/10	
UH (100°-180°)	713.1	18.9		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°	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7
2.5°	404.6	403.7	401.9	401.1	399.3	396.7	399.3	395.8	394.1	395.8	392.3
5°	411.6	410.7	408.9	405.4	403.7	399.3	401.9	397.6	396.7	398.4	394.1
7.5°	412.4	410.7	408.1	403.7	401.9	396.7	398.4	393.2	391.4	393.2	390.5
10°	409.8	408.9	406.3	399.3	397.6	395.8	394.9	391.4	390.5	389.7	388.8
12.5°	405.4	405.4	403.7	401.1	400.2	396.7	397.6	394.1	394.9	393.2	391.4
15°	403.7	402.8	404.6	406.3	406.3	401.1	404.6	401.9	400.2	401.1	398.4
17.5°	401.9	402.8	408.9	412.4	414.2	408.9	414.2	408.9	405.4	409.8	405.4
20°	401.1	403.7	414.2	422.1	422.9	414.2	422.9	414.2	414.2	419.4	411.6
22.5°	405.4	409.8	424.7	433.5	435.2	423.8	434.3	422.9	422.9	427.3	419.4
25°	419.4	423.8	440.5	450.1	448.3	436.1	445.7	434.3	433.5	438.7	428.2
27.5°	437.8	444.0	459.7	468.5	462.4	445.7	459.7	443.1	443.1	451.0	437.0
30°	464.1	468.5	482.5	483.4	475.5	455.3	471.1	452.7	450.1	464.1	446.6
32.5°	493.0	496.5	507.0	500.9	489.5	468.5	486.9	465.0	464.1	479.0	458.9
35°	523.6	527.2	530.7	520.1	509.6	486.9	507.0	485.1	484.2	500.9	481.6
37.5°	555.2	555.2	555.2	542.9	535.9	514.0	532.4	514.9	513.1	530.7	512.3
40°	580.6	582.3	579.7	568.3	564.8	549.0	564.8	549.0	551.7	567.4	552.5
42.5°	601.6	603.3	604.2	594.6	598.1	589.3	601.6	590.2	591.1	608.6	599.8
45°	622.6	621.7	628.7	626.1	636.6	637.5	644.5	640.1	641.9	655.0	652.4
47.5°	644.5	640.1	648.0	659.4	678.6	684.8	689.2	690.9	697.9	704.0	710.2
50°	665.5	661.1	666.4	691.8	722.4	735.6	736.4	745.2	753.1	761.8	774.1
52.5°	687.4	683.9	689.2	725.1	774.1	792.5	789.9	804.7	816.1	825.8	845.9
55°	710.2	706.7	711.9	765.3	829.3	854.7	852.0	873.0	894.9	898.4	921.2
57.5°	732.1	727.7	742.6	812.6	894.9	933.5	921.2	953.6	974.6	972.9	1004.4
60°	755.7	752.2	775.8	870.4	977.2	1027.2	1008.8	1051.7	1066.6	1060.4	1090.2
62.5°	778.5	777.6	817.0	937.8	1077.1	1125.2	1108.6	1146.2	1156.8	1148.9	1163.8
65°	799.5	804.7	861.7	1005.3	1173.4	1228.6	1205.8	1243.4	1255.7	1249.6	1275.0
67.5°	834.5	840.6	916.8	1091.1	1292.5	1349.4	1330.1	1369.5	1387.9	1386.2	1414.2
70°	886.2	897.6	998.3	1212.8	1473.7	1546.4	1535.9	1584.1	1628.7	1625.2	1653.3
72.5°	976.4	994.8	1132.2	1401.9	1771.5	1859.9	1847.7	1874.8	1866.9	1803.0	1751.3
74°	958.9	981.6	1165.5	1500.9	1905.5	1961.5	1941.4	1942.2	1870.4	1773.2	1690.0
75°	894.9	918.6	1117.4	1488.6	1895.8	1926.5	1897.6	1861.7	1775.0	1676.0	1573.6
77.5°	613.8	644.5	821.4	1202.3	1526.3	1484.3	1477.3	1408.9	1294.2	1183.0	1051.7
80°	314.4	336.3	424.7	628.7	905.4	863.4	877.4	822.3	726.8	646.2	512.3
82.5°	75.3	80.6	125.2	243.4	392.3	359.0	364.3	322.2	267.1	218.0	169.0
85°	39.4	44.7	61.3	67.4	103.3	106.8	104.2	100.7	82.3	69.2	60.4
87.5°	0.0	0.0	0.0	1.8	0.9	0.0	0.9	0.0	0.0	0.9	1.8
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°	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°	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7
2.5°	394.9	393.2	394.9	389.7	392.3	387.9	389.7	385.3	387.0	383.5	384.4
5°	396.7	392.3	394.9	390.5	391.4	387.9	387.0	385.3	384.4	381.8	380.0
7.5°	392.3	388.8	387.9	386.2	383.5	384.4	380.9	380.0	377.4	377.4	372.2
10°	387.9	388.8	383.5	385.3	380.9	381.8	375.7	377.4	373.0	376.5	368.7
12.5°	391.4	392.3	387.9	390.5	382.7	384.4	379.2	381.8	375.7	380.0	370.4
15°	399.3	398.4	396.7	396.7	388.8	392.3	386.2	387.9	381.8	387.0	376.5
17.5°	406.3	405.4	402.8	401.9	396.7	397.6	391.4	394.9	387.9	392.3	381.8
20°	414.2	409.8	408.9	408.1	401.9	401.9	397.6	399.3	392.3	397.6	385.3
22.5°	420.3	416.8	415.9	412.4	408.1	409.8	403.7	404.6	397.6	402.8	392.3
25°	430.0	425.6	425.6	420.3	417.7	416.8	413.3	415.9	408.9	412.4	402.8
27.5°	443.1	433.5	437.0	431.7	430.0	429.1	427.3	429.1	423.8	426.5	416.8
30°	455.3	443.1	448.3	441.3	444.8	441.3	444.0	441.3	441.3	441.3	437.0
32.5°	472.0	457.1	467.6	457.1	464.1	458.9	467.6	462.4	465.9	465.0	463.2
35°	495.6	478.1	493.0	479.0	491.2	484.2	496.5	493.9	500.9	497.4	500.9
37.5°	527.2	508.8	526.3	513.1	528.0	517.5	535.0	533.3	548.2	542.9	548.2
40°	566.6	553.4	566.6	556.9	572.7	568.3	586.7	587.6	604.2	601.6	607.7
42.5°	610.3	600.7	613.8	608.6	624.4	627.9	648.9	654.1	669.9	674.3	675.1
45°	657.6	655.9	666.4	671.6	687.4	697.9	716.3	729.4	746.9	756.6	754.8
47.5°	712.8	719.8	726.8	739.9	754.0	775.8	794.2	810.9	831.0	837.1	839.8
50°	775.0	787.2	793.4	811.7	825.8	852.9	878.3	899.3	921.2	918.6	920.3
52.5°	840.6	856.4	865.2	887.1	905.4	937.0	958.9	979.0	1006.1	999.1	996.5
55°	913.3	937.0	944.0	968.5	984.3	1016.7	1035.9	1070.9	1082.3	1075.3	1060.4
57.5°	990.4	1018.4	1026.3	1059.6	1067.4	1102.5	1119.1	1142.7	1152.4	1141.0	1121.7
60°	1077.9	1103.3	1109.5	1139.2	1149.8	1182.2	1194.4	1215.4	1222.4	1194.4	1167.3
62.5°	1165.5	1191.8	1195.3	1221.6	1232.1	1260.1	1274.1	1286.4	1282.9	1241.7	1207.5
65°	1265.3	1290.7	1299.5	1325.8	1331.9	1352.9	1364.3	1350.3	1342.4	1280.2	1241.7
67.5°	1423.8	1451.0	1454.5	1460.6	1459.7	1449.2	1444.0	1395.8	1360.8	1246.1	1190.9
70°	1632.2	1612.1	1572.7	1527.2	1493.9	1434.3	1399.3	1300.4	1226.8	1098.1	1005.3
72.5°	1669.9	1604.2	1507.0	1429.1	1348.5	1254.8	1179.5	1029.8	926.5	791.6	693.5
74°	1563.1	1456.2	1353.8	1244.3	1151.5	1014.9	938.7	749.6	647.1	510.5	391.4
75°	1434.3	1309.1	1193.5	1054.3	967.6	803.9	732.1	528.0	425.6	303.0	204.0
77.5°	915.1	765.3	655.0	493.9	426.5	294.2	215.4	134.0	99.0	86.7	75.3
80°	410.7	292.5	232.1	160.2	134.0	102.5	86.7	70.1	63.9	56.0	53.4
82.5°	131.4	105.1	99.8	89.3	89.3	71.8	61.3	48.2	43.8	37.7	34.2
85°	56.9	53.4	55.2	50.8	51.7	39.4	31.5	23.6	23.6	16.6	14.9
87.5°	1.8	0.0	0.9	0.0	1.8	0.0	0.9	0.0	0.9	0.0	0.9
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°	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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CATALOG NUMBER: ISS-AF-450-LED-E1-SL4-7030-ULG

**CANDELA DISTRIBUTION (continued):**

	77.5°	80°	85°	90°	95°	100°	102.5°	105°	107.5°	110°	112.5°
0°	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7
2.5°	380.9	382.7	381.8	378.3	377.4	374.8	368.7	369.5	366.0	368.7	364.3
5°	377.4	376.5	373.0	368.7	364.3	359.0	354.6	352.9	349.4	347.6	345.0
7.5°	372.2	368.7	362.5	355.5	349.4	342.4	338.9	332.8	331.0	324.9	324.0
10°	370.4	364.3	357.3	348.5	338.0	327.5	326.6	316.1	315.2	305.6	303.0
12.5°	373.9	366.0	357.3	346.8	334.5	319.6	319.6	303.9	303.0	289.8	285.5
15°	380.9	371.3	359.9	347.6	331.9	313.5	312.6	294.2	292.5	276.7	271.5
17.5°	387.0	373.9	363.4	346.8	328.4	307.4	303.0	284.6	281.1	262.7	255.7
20°	391.4	376.5	364.3	345.0	322.2	297.7	291.6	272.3	264.5	246.1	236.4
22.5°	396.7	382.7	366.0	344.1	318.7	289.8	276.7	259.2	247.8	228.5	215.4
25°	404.6	392.3	372.2	346.8	316.1	282.0	264.5	246.1	230.3	211.0	191.8
27.5°	416.8	404.6	380.9	350.3	315.2	274.1	254.8	232.1	212.8	191.8	169.9
30°	434.3	421.2	395.8	359.9	316.1	268.0	244.3	219.8	197.0	172.5	149.7
32.5°	457.1	446.6	415.1	370.4	319.6	262.7	234.7	206.7	178.6	155.0	134.9
35°	488.6	481.6	442.2	390.5	328.4	260.1	225.0	194.4	162.9	139.2	117.3
37.5°	535.0	525.4	481.6	419.4	342.4	258.3	218.0	179.5	149.7	124.3	106.0
40°	593.7	580.6	528.0	454.5	364.3	259.2	211.9	168.1	138.4	111.2	96.3
42.5°	663.8	644.5	584.9	497.4	386.2	260.9	208.4	157.6	129.6	100.7	89.3
45°	742.6	720.7	652.4	550.8	417.7	265.3	205.8	148.9	121.7	92.8	84.9
47.5°	819.6	797.7	721.6	604.2	450.1	273.2	207.5	143.6	116.5	88.4	79.7
50°	894.9	872.2	782.8	652.4	478.1	283.7	214.5	144.5	115.6	86.7	77.1
52.5°	961.5	933.5	835.4	690.0	498.3	290.7	220.7	147.1	116.5	85.8	76.2
55°	1028.0	992.1	877.4	719.8	510.5	291.6	220.7	148.0	117.3	85.8	75.3
57.5°	1077.9	1036.8	909.8	737.3	514.9	287.2	215.4	143.6	112.1	84.9	73.6
60°	1109.5	1065.7	932.6	748.7	508.8	268.8	187.4	127.0	99.0	78.8	68.3
62.5°	1135.7	1091.1	939.6	729.4	457.1	213.7	146.2	103.3	82.3	70.1	63.0
65°	1141.9	1088.5	890.6	644.5	357.3	148.0	106.0	81.4	67.4	62.2	56.9
67.5°	1049.1	985.1	748.7	504.4	243.4	101.6	78.8	66.6	57.8	55.2	53.4
70°	852.9	782.8	548.2	330.1	135.7	70.9	60.4	55.2	49.9	49.9	47.3
72.5°	549.9	477.2	281.1	141.0	69.2	54.3	49.0	47.3	42.9	43.8	41.2
74°	281.1	218.9	114.7	74.4	56.9	48.2	43.8	42.9	38.5	39.4	36.8
75°	142.7	113.0	80.6	62.2	52.5	45.5	40.3	40.3	35.0	35.9	33.3
77.5°	66.6	63.9	55.2	49.0	44.7	38.5	33.3	32.4	27.1	28.9	25.4
80°	46.4	46.4	42.9	41.2	36.8	31.5	25.4	25.4	20.1	21.0	18.4
82.5°	26.3	24.5	24.5	28.0	28.9	23.6	18.4	17.5	14.9	14.9	12.3
85°	11.4	13.1	15.8	19.3	21.0	18.4	13.1	12.3	7.9	7.9	4.4
87.5°	0.0	0.9	0.9	1.8	3.5	3.5	0.0	1.8	0.0	0.9	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	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°

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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°
382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7	382.7	110°	114.0
366.0	361.7	364.3	359.9	361.7	357.3	359.0	356.4	353.8	350.3	349.4	112.5°	136.0
342.4	338.9	338.0	333.6	334.5	331.0	327.5	323.1	317.9	310.9	308.2	115°	158.0
316.1	315.2	309.1	306.5	303.0	299.5	293.3	286.3	275.8	266.2	260.1	117.5°	181.0
293.3	290.7	282.0	277.6	272.3	268.0	259.2	249.6	234.7	219.8	211.9	120°	204.0
274.1	270.6	259.2	253.9	246.1	240.8	230.3	218.0	197.0	176.0	166.4	122.5°	228.0
258.3	253.1	239.9	232.1	221.5	216.3	204.9	187.4	162.0	140.1	127.0	125°	254.0
239.9	232.9	218.9	209.3	198.8	189.1	177.8	159.4	130.5	110.3	97.2	127.5°	277.0
219.8	211.0	196.1	183.0	171.6	162.9	151.5	133.1	104.2	88.4	81.4	130°	301.0
198.8	184.8	171.6	160.2	147.1	138.4	127.0	110.3	88.4	79.7	77.1	132.5°	325.0
176.9	161.1	148.0	136.6	124.3	116.5	106.8	93.7	80.6	77.9	77.9	135°	348.0
155.0	139.2	127.0	115.6	105.1	99.8	91.1	82.3	76.2	77.1	77.9	137.5°	369.0
134.9	119.1	107.7	99.0	89.3	85.8	78.8	73.6	72.7	75.3	76.2	140°	390.0
117.3	103.3	92.8	85.8	77.9	76.2	70.1	67.4	70.1	73.6	72.7	142.5°	412.0
102.5	91.1	80.6	76.2	69.2	68.3	63.9	62.2	65.7	70.1	70.1	145°	433.0
91.1	80.6	72.7	69.2	63.9	63.0	59.5	57.8	60.4	66.6	68.3	147.5°	452.0
81.4	75.3	67.4	63.9	60.4	58.7	56.9	55.2	56.0	63.9	64.8	150°	469.0
75.3	70.9	63.9	62.2	57.8	56.9	54.3	52.5	53.4	59.5	62.2	152.5°	486.0
70.9	67.4	61.3	60.4	56.0	55.2	52.5	50.8	51.7	56.9	59.5	155°	503.0
67.4	63.9	58.7	56.9	54.3	53.4	51.7	49.9	49.9	55.2	57.8	157.5°	517.0
65.7	62.2	56.9	55.2	52.5	51.7	49.9	48.2	49.0	53.4	55.2	160°	530.0
64.8	60.4	56.0	53.4	51.7	49.9	48.2	46.4	47.3	51.7	53.4	162.5°	540.0
64.8	59.5	56.0	53.4	50.8	48.2	47.3	44.7	46.4	49.9	52.5	165°	550.0
64.8	59.5	56.0	53.4	51.7	49.0	47.3	45.5	46.4	49.9	52.5	167.5°	558.0
63.0	58.7	56.9	54.3	53.4	50.8	49.9	48.2	48.2	52.5	56.9	170°	564.0
60.4	57.8	56.9	55.2	55.2	53.4	53.4	51.7	51.7	56.9	61.3	172.5°	567.0
56.9	55.2	56.0	55.2	55.2	55.2	54.3	54.3	54.3	58.7	63.9	175°	570.0
53.4	52.5	53.4	53.4	54.3	53.4	54.3	53.4	53.4	57.8	63.0	177.5°	574.0
48.2	48.2	49.0	48.2	49.0	49.0	49.9	49.9	49.9	52.5	57.8	180°	576.0
42.0	41.2	42.0	41.2	42.9	41.2	42.9	43.8	42.9	43.8	46.4		
37.7	36.8	37.7	36.8	38.5	36.8	37.7	37.7	36.8	29.8	25.4		
34.2	33.3	34.2	33.3	35.0	33.3	35.0	34.2	32.4	21.9	21.0		
27.1	24.5	27.1	24.5	26.3	23.6	25.4	21.9	16.6	15.8	15.8		
20.1	17.5	19.3	16.6	15.8	12.3	13.1	12.3	11.4	12.3	12.3		
12.3	8.8	10.5	7.9	9.6	7.0	8.8	7.9	7.0	7.0	7.0		
6.1	4.4	6.1	3.5	5.3	3.5	4.4	4.4	2.6	2.6	2.6		
0.9	0.0	1.8	0.0	1.8	0.0	0.9	0.9	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		

'228324  
 ISS-AF-450-LED-E1-SL4-7030-ULG

REPORT NUMBER: P228324  
 CATALOG NUMBER: ISS-AF-450

**TION (continued):**

**CANDELA DISTRIBUTION (con**

117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	155°	165°		175°	180°
114.0	114.0	114.0	114.0	113.5	113.0	112.0	110.0	106.0	103.0	0°	382.7	382.7
136.0	136.0	136.0	136.0	135.5	135.0	134.0	132.0	129.0	126.0	2.5°	346.8	347.6
158.0	158.0	158.0	158.0	157.5	157.0	156.0	154.0	151.0	149.0	5°	303.9	306.5
180.8	180.5	180.2	180.0	179.8	179.5	179.0	177.0	174.0	172.0	7.5°	256.6	258.3
204.0	204.0	204.0	204.0	203.5	203.0	202.0	201.0	198.0	196.0	10°	206.7	208.4
228.0	228.0	228.0	228.0	227.8	227.5	227.0	226.0	223.0	221.0	12.5°	159.4	161.1
253.8	253.5	253.2	253.0	252.8	252.5	252.0	251.0	248.0	247.0	15°	120.0	118.2
277.2	277.5	277.8	278.0	277.5	277.0	276.0	274.0	272.0	270.0	17.5°	91.9	90.2
301.0	301.0	301.0	301.0	300.5	300.0	299.0	298.0	294.0	293.0	20°	77.9	77.9
325.0	325.0	325.0	325.0	324.2	323.5	322.0	321.0	318.0	317.0	22.5°	76.2	75.3
348.0	348.0	348.0	348.0	347.2	346.5	345.0	345.0	341.0	339.0	25°	77.1	76.2
369.0	369.0	369.0	369.0	368.5	368.0	367.0	367.0	364.0	363.0	27.5°	77.1	76.2
390.0	390.0	390.0	390.0	389.8	389.5	389.0	388.0	386.0	385.0	30°	75.3	74.4
412.0	412.0	412.0	412.0	411.5	411.0	410.0	410.0	407.0	408.0	32.5°	72.7	71.8
433.2	433.5	433.8	434.0	433.5	433.0	432.0	431.0	428.0	428.0	35°	70.1	70.1
452.5	453.0	453.5	454.0	453.8	453.5	453.0	452.0	448.0	447.0	37.5°	68.3	69.2
469.5	470.0	470.5	471.0	470.8	470.5	470.0	469.0	465.0	464.0	40°	65.7	66.6
486.2	486.5	486.8	487.0	486.8	486.5	486.0	485.0	482.0	483.0	42.5°	63.0	63.9
503.2	503.5	503.8	504.0	503.8	503.5	503.0	503.0	501.0	502.0	45°	60.4	61.3
517.5	518.0	518.5	519.0	519.0	519.0	519.0	519.0	516.0	517.0	47.5°	57.8	57.8
530.5	531.0	531.5	532.0	532.0	532.0	532.0	532.0	529.0	529.0	50°	54.3	54.3
540.5	541.0	541.5	542.0	541.8	541.5	541.0	541.0	538.0	539.0	52.5°	53.4	53.4
550.8	551.5	552.2	553.0	552.8	552.5	552.0	552.0	548.0	549.0	55°	53.4	53.4
558.5	559.0	559.5	560.0	560.0	560.0	560.0	561.0	558.0	559.0	57.5°	55.2	55.2
564.2	564.5	564.8	565.0	565.2	565.5	566.0	567.0	565.0	566.0	60°	60.4	61.3
567.5	568.0	568.5	569.0	568.8	568.5	568.0	569.0	567.0	569.0	62.5°	70.9	71.8
570.8	571.5	572.2	573.0	572.8	572.5	572.0	572.0	569.0	570.0	65°	81.4	83.2
574.8	575.5	576.2	577.0	577.0	577.0	577.0	578.0	574.0	575.0	67.5°	82.3	84.9
576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	70°	79.7	82.3
										72.5°	55.2	55.2
										74°	24.5	23.6
										75°	21.0	20.1
										77.5°	15.8	15.8
										80°	11.4	10.5
										82.5°	6.1	6.1
										85°	1.8	1.8
										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

