

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: P228322

Luminaire Tested: **ISS-AF-450-LED-E1-SL4-7060-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P228322  
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-SL4-7060-ULG  
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT  
LIGHT SQUARE WITH ACCUED OPTICS-TYPE IV W/SPILL CONTROL, WITH UPLIGHT  
GLOW  
Light Source: (16) 5700K CCT, 70 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

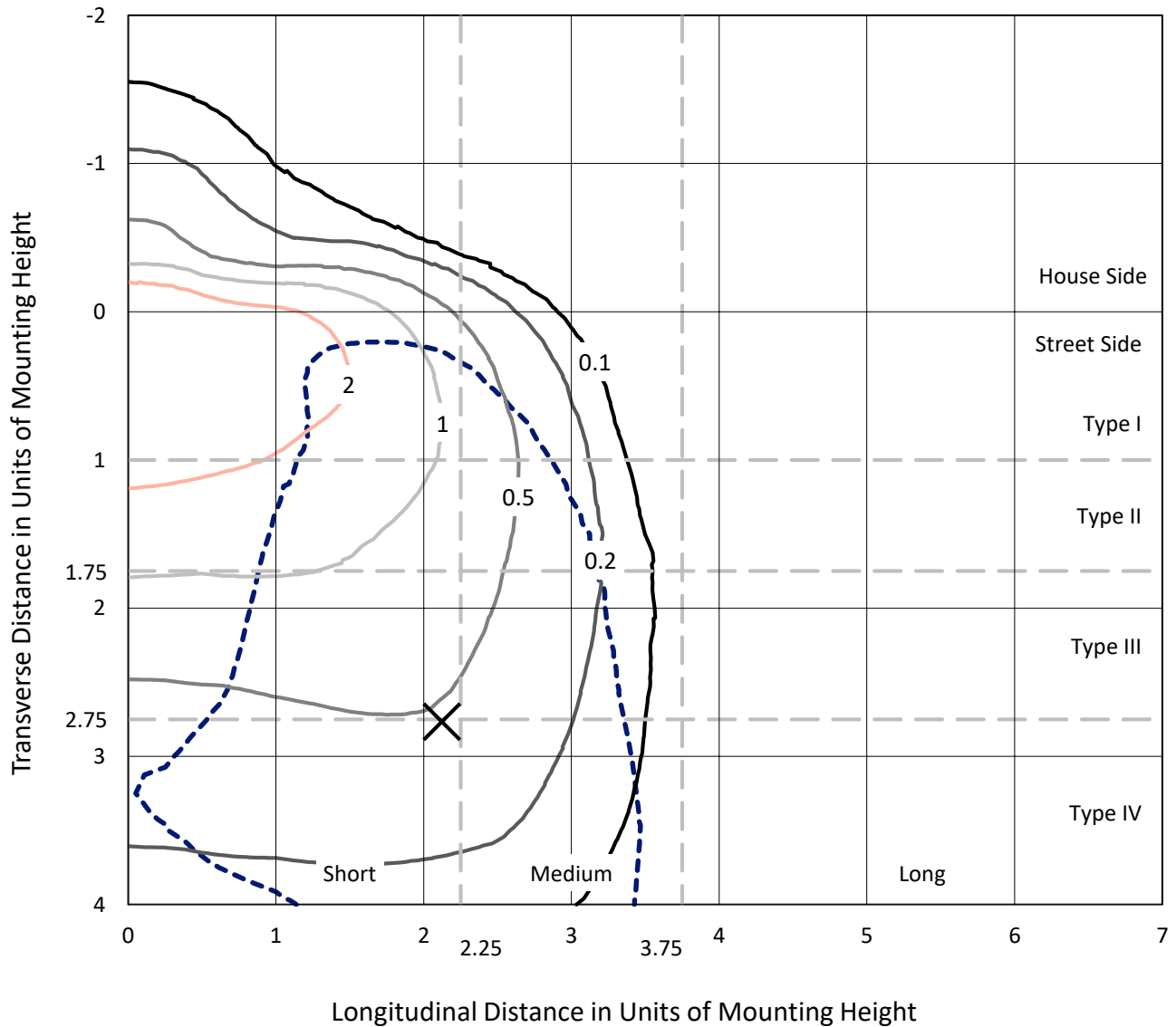
Lumens per Lamp: N/A  
Luminaire Lumens: 4075.2 lumens  
Efficiency: N/A  
Efficacy: 97.0 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B0 - U5 - G1  
  
Input Watts (W): 42.01  
Input Voltage (V): 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

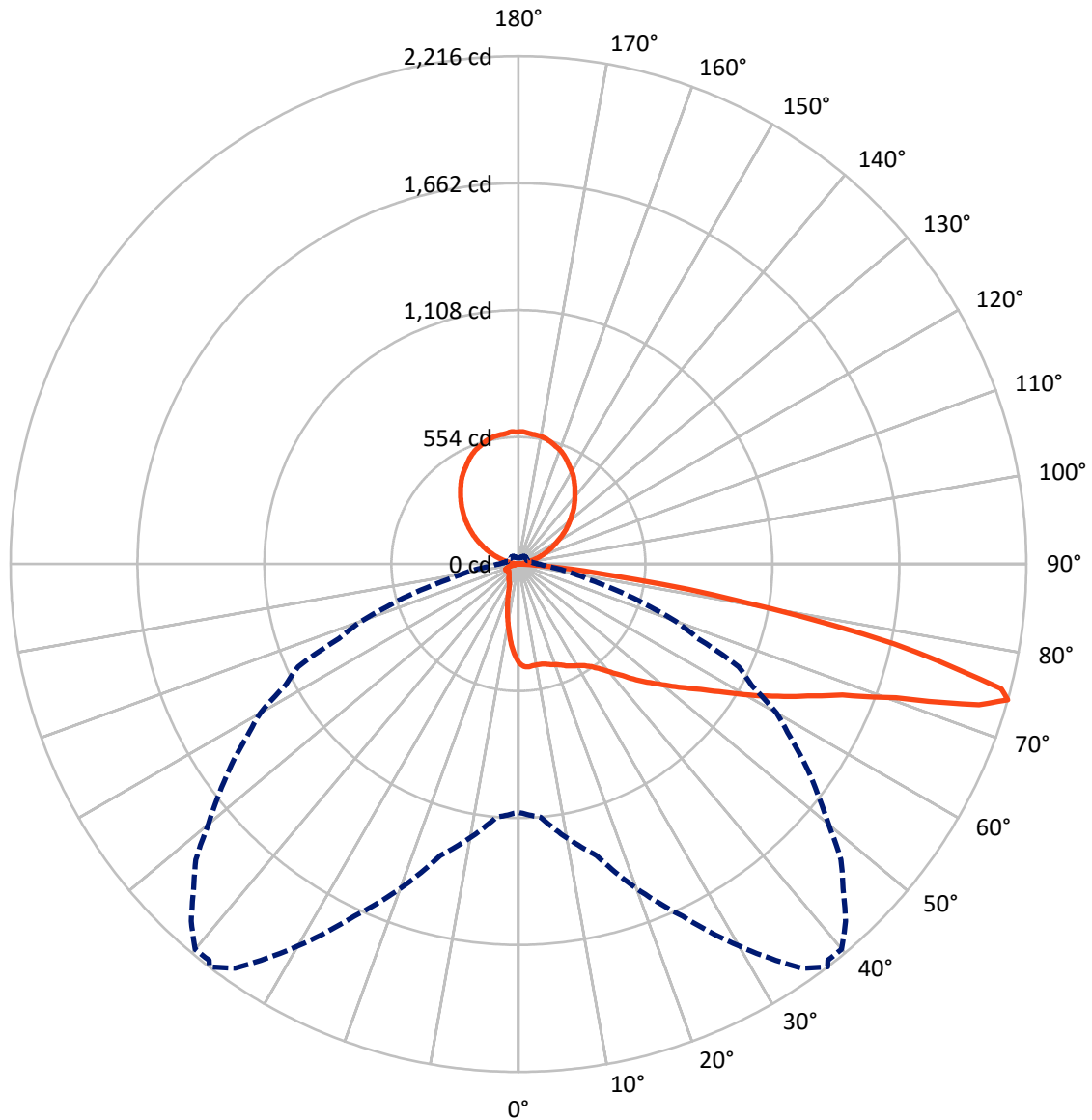


Based on 10 foot mounting height. Maximum calculated value = 4.6 fc  
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P228322

CATALOG NUMBER: ISS-AF-450-LED-E1-SL4-7060-ULG

### Luminous Intensity Polar Plot



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

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CATALOG NUMBER: ISS-AF-450-LED-E1-SL4-7060-ULG

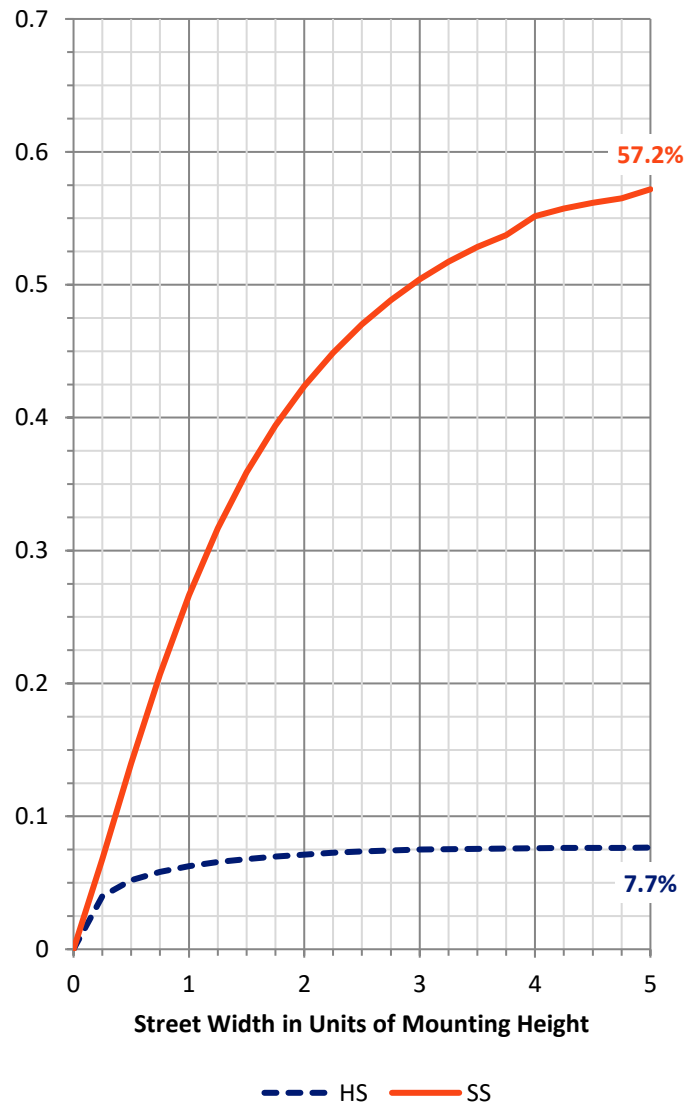
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	314.1	713.1	1027.2
	% Fixture	7.7	17.5	25.2
<b>Street Side</b>	Lumens	2334.9	713.1	3048.0
	% Fixture	57.3	17.5	74.8
<b>Total</b>	Lumens	2649.0	1426.2	4075.2
	% Fixture	65.0	35.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.6	0.9
10°-20°	95.9	2.4
20°-30°	148.6	3.6
30°-40°	220.4	5.4
40°-50°	339.0	8.3
50°-60°	501.1	12.3
60°-70°	667.9	16.4
70°-80°	576.5	14.1
80°-90°	62.0	1.5
90°-100°	4.7	0.1
100°-110°	69.0	1.7
110°-120°	153.0	3.8
120°-130°	223.9	5.5
130°-140°	265.6	6.5
140°-150°	269.3	6.6
150°-160°	231.1	5.7
160°-170°	155.1	3.8
170°-180°	54.3	1.3
0°-90°	2649.0	65.0
0°-180°	4075.2	100.0



REPORT NUMBER: P228322

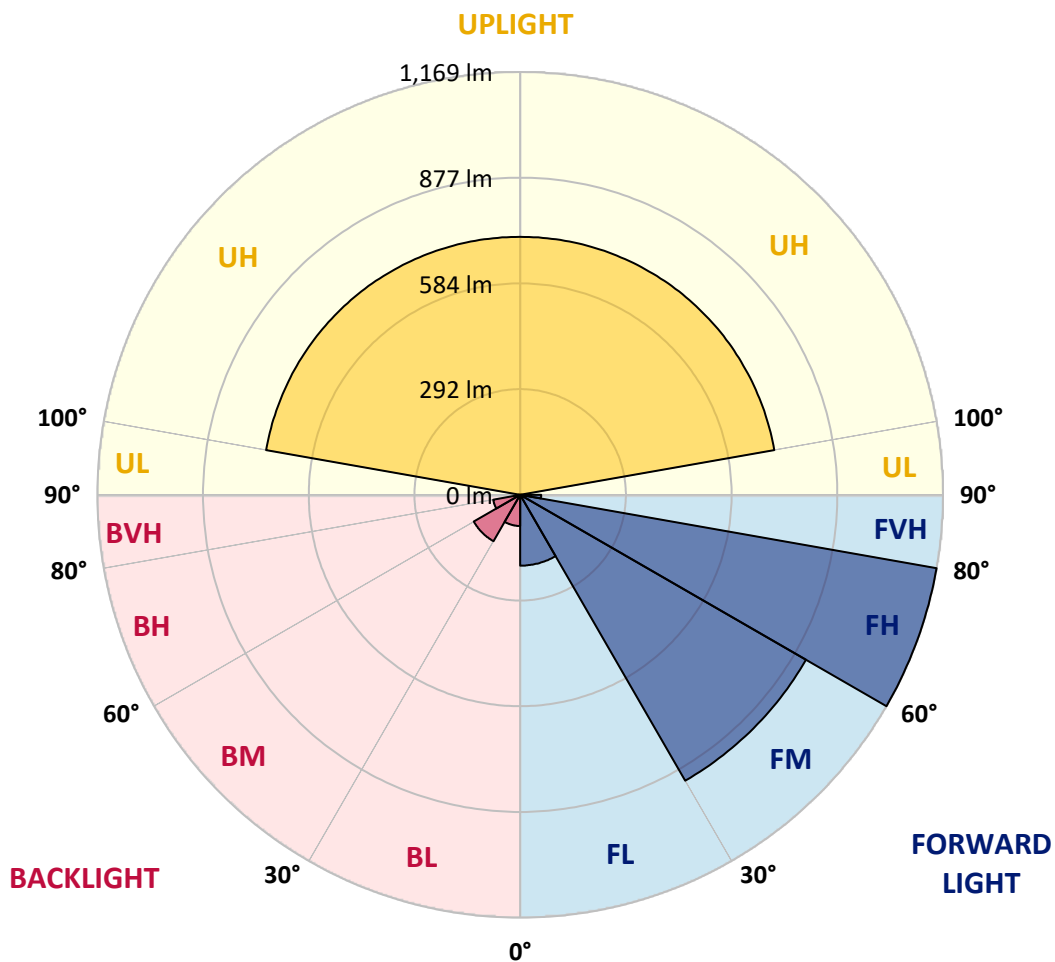
CATALOG NUMBER: ISS-AF-450-LED-E1-SL4-7060-ULG

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	195.8	4.8			
FM (30°-60°)	912.4	22.4			
FH (60°-80°)	1168.7	28.7			G1/1800
FVH (80°-90°)	57.9	1.4			G1/100
BL (0°-30°)	86.2	2.1	B0/110		
BM (30°-60°)	148.1	3.6	B0/220		
BH (60°-80°)	75.7	1.9	B0/110		G0/110
BVH (80°-90°)	4.1	0.1			G0/10
UL (90°-100°)	4.7	0.1		U1/10	
UH (100°-180°)	713.1	17.5		U4/1000	

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

Type IV Short





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CATALOG NUMBER: ISS-AF-450-LED-E1-SL4-7060-ULG

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	37.5°	38°	40°	42.5°	45°	47.5°
0°	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3
2.5°	457.0	456.0	454.0	453.0	451.1	448.1	451.1	447.1	445.1	447.1	443.2
5°	464.9	463.9	462.0	458.0	456.0	451.1	454.0	449.1	448.1	450.1	445.1
7.5°	465.9	463.9	461.0	456.0	454.0	448.1	450.1	444.1	442.2	444.1	441.2
10°	462.9	462.0	459.0	451.1	449.1	447.1	446.1	442.2	441.2	440.2	439.2
12.5°	458.0	458.0	456.0	453.0	452.1	448.1	449.1	445.1	446.1	444.1	442.2
15°	456.0	455.0	457.0	459.0	459.0	453.0	457.0	454.0	452.1	453.0	450.1
17.5°	454.0	455.0	462.0	465.9	467.9	462.0	467.9	462.0	458.0	462.9	458.0
20°	453.0	456.0	467.9	476.8	477.8	467.9	477.8	467.9	467.9	473.8	464.9
22.5°	458.0	462.9	479.8	489.6	491.6	478.8	490.6	477.8	477.8	482.7	473.8
25°	473.8	478.8	497.6	508.4	506.5	492.6	503.5	490.6	489.6	495.6	483.7
27.5°	494.6	501.5	519.3	529.2	522.3	503.5	519.3	500.5	500.5	509.4	493.6
30°	524.3	529.2	545.0	546.0	537.1	514.4	532.2	511.4	508.4	524.3	504.5
32.5°	556.9	560.9	572.7	565.8	553.0	529.2	550.0	525.3	524.3	541.1	518.3
35°	591.5	595.5	599.4	587.6	575.7	550.0	572.7	548.0	547.0	565.8	544.1
37.5°	627.1	627.1	627.1	613.3	605.4	580.7	601.4	581.6	579.7	599.4	578.7
40°	655.8	657.8	654.8	642.0	638.0	620.2	638.0	620.2	623.2	641.0	624.2
42.5°	679.6	681.6	682.5	671.7	675.6	665.7	679.6	666.7	667.7	687.5	677.6
45°	703.3	702.3	710.2	707.3	719.1	720.1	728.0	723.1	725.1	739.9	736.9
47.5°	728.0	723.1	732.0	744.9	766.6	773.5	778.5	780.5	788.4	795.3	802.2
50°	751.8	746.8	752.8	781.5	816.1	830.9	831.9	841.8	850.7	860.6	874.4
52.5°	776.5	772.6	778.5	819.0	874.4	895.2	892.2	909.1	921.9	932.8	955.6
55°	802.2	798.3	804.2	864.5	936.8	965.4	962.5	986.2	1010.9	1014.9	1040.6
57.5°	827.0	822.0	838.8	918.0	1010.9	1054.5	1040.6	1077.2	1101.0	1099.0	1134.6
60°	853.7	849.7	876.4	983.3	1103.9	1160.3	1139.5	1188.0	1204.8	1197.9	1231.5
62.5°	879.4	878.4	922.9	1059.4	1216.7	1271.1	1252.3	1294.8	1306.7	1297.8	1314.6
65°	903.1	909.1	973.4	1135.6	1325.5	1387.8	1362.1	1404.6	1418.5	1411.6	1440.3
67.5°	942.7	949.6	1035.7	1232.5	1460.0	1524.3	1502.6	1547.1	1567.9	1565.9	1597.5
70°	1001.1	1013.9	1127.7	1370.0	1664.8	1746.9	1735.0	1789.4	1839.9	1835.9	1867.6
72.5°	1102.9	1123.7	1279.0	1583.7	2001.1	2101.0	2087.2	2117.9	2108.9	2036.7	1978.4
74°	1083.2	1108.9	1316.6	1695.5	2152.5	2215.8	2193.0	2194.0	2112.9	2003.1	1909.1
75°	1010.9	1037.7	1262.2	1681.6	2141.6	2176.2	2143.6	2103.0	2005.1	1893.3	1777.6
77.5°	693.4	728.0	927.9	1358.2	1724.2	1676.7	1668.8	1591.6	1462.0	1336.4	1188.0
80°	355.1	379.8	479.8	710.2	1022.8	975.3	991.2	928.8	821.0	730.0	578.7
82.5°	85.1	91.0	141.5	275.0	443.2	405.6	411.5	364.0	301.7	246.3	190.9
85°	44.5	50.4	69.2	76.2	116.7	120.7	117.7	113.8	93.0	78.1	68.3
87.5°	0.0	0.0	0.0	2.0	1.0	0.0	1.0	0.0	0.0	1.0	2.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	2.0	2.0	2.0	3.0	4.0	5.2	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



REPORT NUMBER: P228322

CATALOG NUMBER: ISS-AF-450-LED-E1-SL4-7060-ULG

**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°	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3
2.5°	446.1	444.1	446.1	440.2	443.2	438.2	440.2	435.2	437.2	433.3	434.3
5°	448.1	443.2	446.1	441.2	442.2	438.2	437.2	435.2	434.3	431.3	429.3
7.5°	443.2	439.2	438.2	436.2	433.3	434.3	430.3	429.3	426.3	426.3	420.4
10°	438.2	439.2	433.3	435.2	430.3	431.3	424.4	426.3	421.4	425.4	416.4
12.5°	442.2	443.2	438.2	441.2	432.3	434.3	428.3	431.3	424.4	429.3	418.4
15°	451.1	450.1	448.1	448.1	439.2	443.2	436.2	438.2	431.3	437.2	425.4
17.5°	459.0	458.0	455.0	454.0	448.1	449.1	442.2	446.1	438.2	443.2	431.3
20°	467.9	462.9	462.0	461.0	454.0	454.0	449.1	451.1	443.2	449.1	435.2
22.5°	474.8	470.9	469.9	465.9	461.0	462.9	456.0	457.0	449.1	455.0	443.2
25°	485.7	480.7	480.7	474.8	471.8	470.9	466.9	469.9	462.0	465.9	455.0
27.5°	500.5	489.6	493.6	487.7	485.7	484.7	482.7	484.7	478.8	481.7	470.9
30°	514.4	500.5	506.5	498.6	502.5	498.6	501.5	498.6	498.6	498.6	493.6
32.5°	533.2	516.4	528.2	516.4	524.3	518.3	528.2	522.3	526.2	525.3	523.3
35°	559.9	540.1	556.9	541.1	554.9	547.0	560.9	557.9	565.8	561.9	565.8
37.5°	595.5	574.7	594.5	579.7	596.5	584.6	604.4	602.4	619.2	613.3	619.2
40°	640.0	625.2	640.0	629.1	646.9	642.0	662.8	663.7	682.5	679.6	686.5
42.5°	689.5	678.6	693.4	687.5	705.3	709.2	733.0	738.9	756.7	761.7	762.7
45°	742.9	740.9	752.8	758.7	776.5	788.4	809.2	824.0	843.8	854.7	852.7
47.5°	805.2	813.1	821.0	835.9	851.7	876.4	897.2	916.0	938.7	945.7	948.6
50°	875.4	889.3	896.2	917.0	932.8	963.5	992.2	1015.9	1040.6	1037.7	1039.6
52.5°	949.6	967.4	977.3	1002.0	1022.8	1058.4	1083.2	1105.9	1136.6	1128.7	1125.7
55°	1031.7	1058.4	1066.3	1094.0	1111.8	1148.4	1170.2	1209.8	1222.6	1214.7	1197.9
57.5°	1118.8	1150.4	1159.3	1196.9	1205.8	1245.4	1264.2	1290.9	1301.8	1288.9	1267.1
60°	1217.7	1246.4	1253.3	1286.9	1298.8	1335.4	1349.3	1373.0	1380.9	1349.3	1318.6
62.5°	1316.6	1346.3	1350.2	1379.9	1391.8	1423.4	1439.3	1453.1	1449.2	1402.7	1364.1
65°	1429.4	1458.1	1468.0	1497.6	1504.6	1528.3	1541.2	1525.3	1516.4	1446.2	1402.7
67.5°	1608.4	1639.1	1643.0	1650.0	1649.0	1637.1	1631.2	1576.8	1537.2	1407.6	1345.3
70°	1843.8	1821.1	1776.6	1725.1	1687.6	1620.3	1580.7	1468.9	1385.9	1240.4	1135.6
72.5°	1886.4	1812.2	1702.4	1614.4	1523.3	1417.5	1332.4	1163.3	1046.6	894.2	783.4
74°	1765.7	1645.0	1529.3	1405.6	1300.8	1146.5	1060.4	846.7	731.0	576.7	442.2
75°	1620.3	1478.8	1348.3	1191.0	1093.1	908.1	827.0	596.5	480.7	342.3	230.5
77.5°	1033.7	864.5	739.9	557.9	481.7	332.4	243.3	151.3	111.8	97.9	85.1
80°	463.9	330.4	262.1	181.0	151.3	115.7	97.9	79.1	72.2	63.3	60.3
82.5°	148.4	118.7	112.8	100.9	100.9	81.1	69.2	54.4	49.5	42.5	38.6
85°	64.3	60.3	62.3	57.4	58.4	44.5	35.6	26.7	26.7	18.8	16.8
87.5°	2.0	0.0	1.0	0.0	2.0	0.0	1.0	0.0	1.0	0.0	1.0
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°	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



REPORT NUMBER: P228322

CATALOG NUMBER: ISS-AF-450-LED-E1-SL4-7060-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: P228322

CATALOG NUMBER: ISS-AF-450-LED-E1-SL4-7060-ULG

**CANDELA DISTRIBUTION (continued):**

	77.5°	80°	85°	90°	95°	100°	102.5°	105°	107.5°	110°	112.5°
0°	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3
2.5°	430.3	432.3	431.3	427.3	426.3	423.4	416.4	417.4	413.5	416.4	411.5
5°	426.3	425.4	421.4	416.4	411.5	405.6	400.6	398.6	394.7	392.7	389.7
7.5°	420.4	416.4	409.5	401.6	394.7	386.8	382.8	375.9	373.9	367.0	366.0
10°	418.4	411.5	403.6	393.7	381.8	370.0	369.0	357.1	356.1	345.2	342.3
12.5°	422.4	413.5	403.6	391.7	377.9	361.1	361.1	343.2	342.3	327.4	322.5
15°	430.3	419.4	406.6	392.7	374.9	354.1	353.1	332.4	330.4	312.6	306.6
17.5°	437.2	422.4	410.5	391.7	370.9	347.2	342.3	321.5	317.5	296.8	288.8
20°	442.2	425.4	411.5	389.7	364.0	336.3	329.4	307.6	298.7	278.0	267.1
22.5°	448.1	432.3	413.5	388.8	360.1	327.4	312.6	292.8	279.9	258.2	243.3
25°	457.0	443.2	420.4	391.7	357.1	318.5	298.7	278.0	260.2	238.4	216.6
27.5°	470.9	457.0	430.3	395.7	356.1	309.6	287.9	262.1	240.4	216.6	191.9
30°	490.6	475.8	447.1	406.6	357.1	302.7	276.0	248.3	222.6	194.9	169.2
32.5°	516.4	504.5	468.9	418.4	361.1	296.8	265.1	233.4	201.8	175.1	152.3
35°	552.0	544.1	499.5	441.2	370.9	293.8	254.2	219.6	184.0	157.3	132.6
37.5°	604.4	593.5	544.1	473.8	386.8	291.8	246.3	202.8	169.2	140.5	119.7
40°	670.7	655.8	596.5	513.4	411.5	292.8	239.4	189.9	156.3	125.6	108.8
42.5°	749.8	728.0	660.8	561.9	436.2	294.8	235.4	178.1	146.4	113.8	100.9
45°	838.8	814.1	736.9	622.2	471.8	299.7	232.5	168.2	137.5	104.9	96.0
47.5°	925.9	901.1	815.1	682.5	508.4	308.6	234.4	162.2	131.6	99.9	90.0
50°	1010.9	985.2	884.3	736.9	540.1	320.5	242.4	163.2	130.6	97.9	87.0
52.5°	1086.1	1054.5	943.7	779.5	562.8	328.4	249.3	166.2	131.6	96.9	86.1
55°	1161.3	1120.7	991.2	813.1	576.7	329.4	249.3	167.2	132.6	96.9	85.1
57.5°	1217.7	1171.2	1027.8	832.9	581.6	324.5	243.3	162.2	126.6	96.0	83.1
60°	1253.3	1203.8	1053.5	845.8	574.7	303.7	211.7	143.4	111.8	89.0	77.2
62.5°	1283.0	1232.5	1061.4	824.0	516.4	241.4	165.2	116.7	93.0	79.1	71.2
65°	1289.9	1229.6	1006.0	728.0	403.6	167.2	119.7	92.0	76.2	70.2	64.3
67.5°	1185.0	1112.8	845.8	569.8	275.0	114.7	89.0	75.2	65.3	62.3	60.3
70°	963.5	884.3	619.2	372.9	153.3	80.1	68.3	62.3	56.4	56.4	53.4
72.5°	621.2	539.1	317.5	159.3	78.1	61.3	55.4	53.4	48.5	49.5	46.5
74°	317.5	247.3	129.6	84.1	64.3	54.4	49.5	48.5	43.5	44.5	41.5
75°	161.2	127.6	91.0	70.2	59.4	51.4	45.5	45.5	39.6	40.6	37.6
77.5°	75.2	72.2	62.3	55.4	50.4	43.5	37.6	36.6	30.7	32.6	28.7
80°	52.4	52.4	48.5	46.5	41.5	35.6	28.7	28.7	22.8	23.7	20.8
82.5°	29.7	27.7	27.7	31.7	32.6	26.7	20.8	19.8	16.8	16.8	13.8
85°	12.9	14.8	17.8	21.8	23.7	20.8	14.8	13.8	8.9	8.9	4.9
87.5°	0.0	1.0	1.0	2.0	4.0	4.0	0.0	2.0	0.0	1.0	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



REPORT NUMBER: P228322  
 CATALOG NUMBER: ISS-AF-450-LED-E1-SL4-7060-ULG

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: P228322  
 NUMBER: ISS-AF-450-LED-E1-SL4-7060-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°
432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	432.3	110°	114.0
413.5	408.5	411.5	406.6	408.5	403.6	405.6	402.6	399.6	395.7	394.7	112.5°	136.0
386.8	382.8	381.8	376.9	377.9	373.9	370.0	365.0	359.1	351.2	348.2	115°	158.0
357.1	356.1	349.2	346.2	342.3	338.3	331.4	323.5	311.6	300.7	293.8	117.5°	181.0
331.4	328.4	318.5	313.6	307.6	302.7	292.8	281.9	265.1	248.3	239.4	120°	204.0
309.6	305.7	292.8	286.9	278.0	272.0	260.2	246.3	222.6	198.8	187.9	122.5°	228.0
291.8	285.9	271.0	262.1	250.3	244.3	231.5	211.7	183.0	158.3	143.4	125°	254.0
271.0	263.1	247.3	236.4	224.5	213.7	200.8	180.0	147.4	124.6	109.8	127.5°	277.0
248.3	238.4	221.6	206.7	193.9	184.0	171.1	150.4	117.7	99.9	92.0	130°	301.0
224.5	208.7	193.9	181.0	166.2	156.3	143.4	124.6	99.9	90.0	87.0	132.5°	325.0
199.8	182.0	167.2	154.3	140.5	131.6	120.7	105.8	91.0	88.0	88.0	135°	348.0
175.1	157.3	143.4	130.6	118.7	112.8	102.9	93.0	86.1	87.0	88.0	137.5°	369.0
152.3	134.5	121.7	111.8	100.9	96.9	89.0	83.1	82.1	85.1	86.1	140°	390.0
132.6	116.7	104.9	96.9	88.0	86.1	79.1	76.2	79.1	83.1	82.1	142.5°	412.0
115.7	102.9	91.0	86.1	78.1	77.2	72.2	70.2	74.2	79.1	79.1	145°	433.0
102.9	91.0	82.1	78.1	72.2	71.2	67.3	65.3	68.3	75.2	77.2	147.5°	452.0
92.0	85.1	76.2	72.2	68.3	66.3	64.3	62.3	63.3	72.2	73.2	150°	469.0
85.1	80.1	72.2	70.2	65.3	64.3	61.3	59.4	60.3	67.3	70.2	152.5°	486.0
80.1	76.2	69.2	68.3	63.3	62.3	59.4	57.4	58.4	64.3	67.3	155°	503.0
76.2	72.2	66.3	64.3	61.3	60.3	58.4	56.4	56.4	62.3	65.3	157.5°	517.0
74.2	70.2	64.3	62.3	59.4	58.4	56.4	54.4	55.4	60.3	62.3	160°	530.0
73.2	68.3	63.3	60.3	58.4	56.4	54.4	52.4	53.4	58.4	60.3	162.5°	540.0
73.2	67.3	63.3	60.3	57.4	54.4	53.4	50.4	52.4	56.4	59.4	165°	550.0
73.2	67.3	63.3	60.3	58.4	55.4	53.4	51.4	52.4	56.4	59.4	167.5°	558.0
71.2	66.3	64.3	61.3	60.3	57.4	56.4	54.4	54.4	59.4	64.3	170°	564.0
68.3	65.3	64.3	62.3	62.3	60.3	60.3	58.4	58.4	64.3	69.2	172.5°	567.0
64.3	62.3	63.3	62.3	62.3	62.3	61.3	61.3	61.3	66.3	72.2	175°	570.0
60.3	59.4	60.3	60.3	61.3	60.3	61.3	60.3	60.3	65.3	71.2	177.5°	574.0
54.4	54.4	55.4	54.4	55.4	55.4	56.4	56.4	56.4	59.4	65.3	180°	576.0
47.5	46.5	47.5	46.5	48.5	46.5	48.5	49.5	48.5	49.5	52.4		
42.5	41.5	42.5	41.5	43.5	41.5	42.5	42.5	41.5	33.6	28.7		
38.6	37.6	38.6	37.6	39.6	37.6	39.6	38.6	36.6	24.7	23.7		
30.7	27.7	30.7	27.7	29.7	26.7	28.7	24.7	18.8	17.8	17.8		
22.8	19.8	21.8	18.8	17.8	13.8	14.8	13.8	12.9	13.8	13.8		
13.8	9.9	11.9	8.9	10.9	7.9	9.9	8.9	7.9	7.9	7.9		
6.9	4.9	6.9	4.0	5.9	4.0	4.9	4.9	3.0	3.0	3.0		
1.0	0.0	2.0	0.0	2.0	0.0	1.0	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		
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		

'228322  
 ISS-AF-450-LED-E1-SL4-7060-ULG

REPORT NUMBER: P228322  
 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°	432.3	432.3
136.0	136.0	136.0	136.0	135.5	135.0	134.0	132.0	129.0	126.0	2.5°	391.7	392.7
158.0	158.0	158.0	158.0	157.5	157.0	156.0	154.0	151.0	149.0	5°	343.2	346.2
180.8	180.5	180.2	180.0	179.8	179.5	179.0	177.0	174.0	172.0	7.5°	289.8	291.8
204.0	204.0	204.0	204.0	203.5	203.0	202.0	201.0	198.0	196.0	10°	233.4	235.4
228.0	228.0	228.0	228.0	227.8	227.5	227.0	226.0	223.0	221.0	12.5°	180.0	182.0
253.8	253.5	253.2	253.0	252.8	252.5	252.0	251.0	248.0	247.0	15°	135.5	133.5
277.2	277.5	277.8	278.0	277.5	277.0	276.0	274.0	272.0	270.0	17.5°	103.9	101.9
301.0	301.0	301.0	301.0	300.5	300.0	299.0	298.0	294.0	293.0	20°	88.0	88.0
325.0	325.0	325.0	325.0	324.2	323.5	322.0	321.0	318.0	317.0	22.5°	86.1	85.1
348.0	348.0	348.0	348.0	347.2	346.5	345.0	345.0	341.0	339.0	25°	87.0	86.1
369.0	369.0	369.0	369.0	368.5	368.0	367.0	367.0	364.0	363.0	27.5°	87.0	86.1
390.0	390.0	390.0	390.0	389.8	389.5	389.0	388.0	386.0	385.0	30°	85.1	84.1
412.0	412.0	412.0	412.0	411.5	411.0	410.0	410.0	407.0	408.0	32.5°	82.1	81.1
433.2	433.5	433.8	434.0	433.5	433.0	432.0	431.0	428.0	428.0	35°	79.1	79.1
452.5	453.0	453.5	454.0	453.8	453.5	453.0	452.0	448.0	447.0	37.5°	77.2	78.1
469.5	470.0	470.5	471.0	470.8	470.5	470.0	469.0	465.0	464.0	40°	74.2	75.2
486.2	486.5	486.8	487.0	486.8	486.5	486.0	485.0	482.0	483.0	42.5°	71.2	72.2
503.2	503.5	503.8	504.0	503.8	503.5	503.0	503.0	501.0	502.0	45°	68.3	69.2
517.5	518.0	518.5	519.0	519.0	519.0	519.0	519.0	516.0	517.0	47.5°	65.3	65.3
530.5	531.0	531.5	532.0	532.0	532.0	532.0	532.0	529.0	529.0	50°	61.3	61.3
540.5	541.0	541.5	542.0	541.8	541.5	541.0	541.0	538.0	539.0	52.5°	60.3	60.3
550.8	551.5	552.2	553.0	552.8	552.5	552.0	552.0	548.0	549.0	55°	60.3	60.3
558.5	559.0	559.5	560.0	560.0	560.0	560.0	561.0	558.0	559.0	57.5°	62.3	62.3
564.2	564.5	564.8	565.0	565.2	565.5	566.0	567.0	565.0	566.0	60°	68.3	69.2
567.5	568.0	568.5	569.0	568.8	568.5	568.0	569.0	567.0	569.0	62.5°	80.1	81.1
570.8	571.5	572.2	573.0	572.8	572.5	572.0	572.0	569.0	570.0	65°	92.0	94.0
574.8	575.5	576.2	577.0	577.0	577.0	577.0	578.0	574.0	575.0	67.5°	93.0	96.0
576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	70°	90.0	93.0
										72.5°	62.3	62.3
										74°	27.7	26.7
										75°	23.7	22.8
										77.5°	17.8	17.8
										80°	12.9	11.9
										82.5°	6.9	6.9
										85°	2.0	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



REPORT NUMBER: P228322

CATALOG NUMBER: ISS-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

