

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: P228190

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P228190
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29762)-DOWNLIGHT AND
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: ISS-AF-450-LED-E1-SL3-ULG
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT
LIGHT SQUARE WITH ACCULED OPTICS-TYPE III W/SPILL CONTROL, WITH UPLIGHT
GLOW
Light Source: (16) 4000K CCT, 70 CRI LEDs and (1) UPLIGHT LED
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4309.9 lumens
Efficiency: N/A
Efficacy: 102.6 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

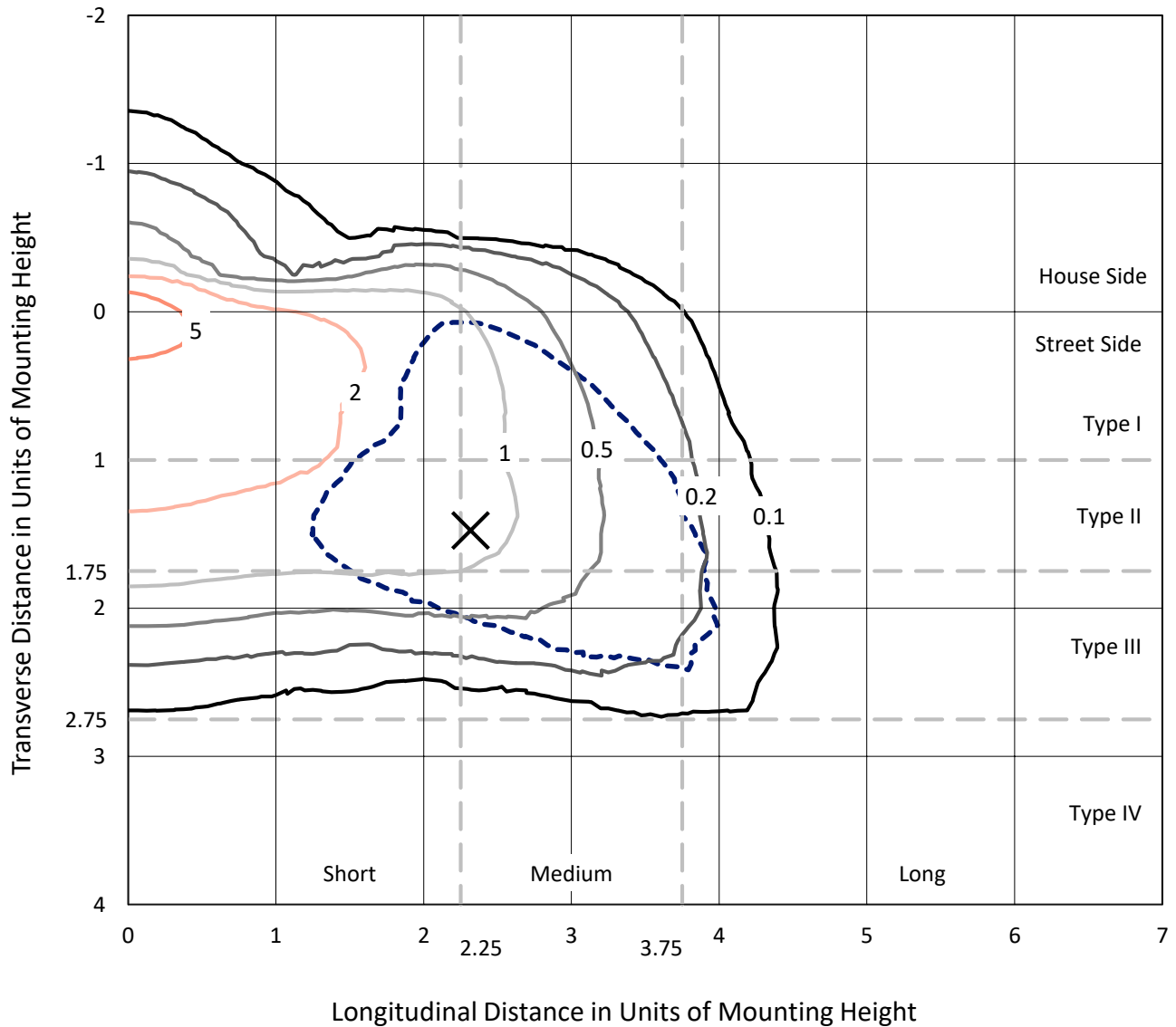
Input Watts (W): 42.01
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P228190
 CATALOG NUMBER: ISS-AF-450-LED-E1-SL3-ULG

Iso-Footcandle Lines of Horizontal Illumination

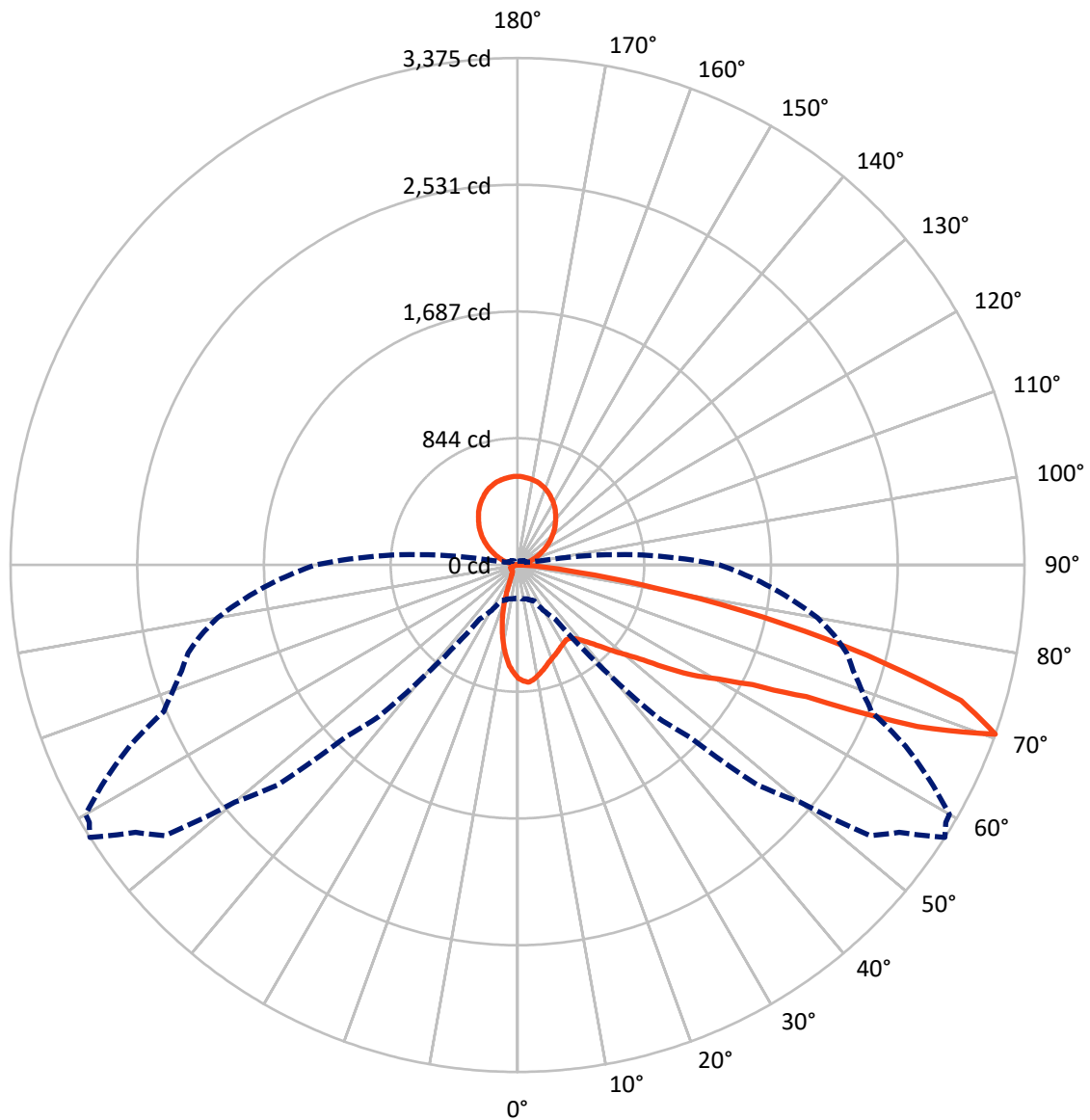
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 7.5 fc
 Type III - Medium - Non-Cutoff

REPORT NUMBER: P228190
CATALOG NUMBER: ISS-AF-450-LED-E1-SL3-ULG

Luminous Intensity Polar Plot



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

REPORT NUMBER: P228190

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

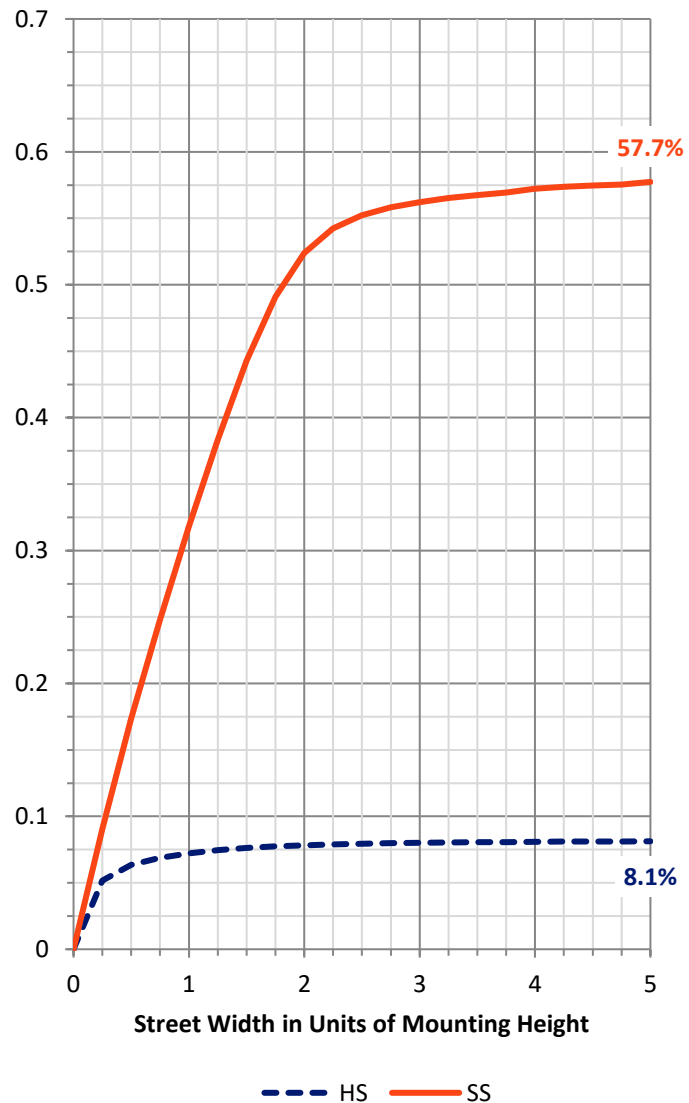
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	352.8	729.4	1082.2
	% Fixture	8.2	16.9	25.1
Street Side	Lumens	2498.2	729.4	3227.6
	% Fixture	58.0	16.9	74.9
Total	Lumens	2851.0	1458.9	4309.9
	% Fixture	66.1	33.9	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	65.2	1.5
10°-20°	141.5	3.3
20°-30°	177.8	4.1
30°-40°	232.3	5.4
40°-50°	348.6	8.1
50°-60°	551.0	12.8
60°-70°	794.3	18.4
70°-80°	491.6	11.4
80°-90°	48.8	1.1
90°-100°	4.8	0.1
100°-110°	70.6	1.6
110°-120°	156.6	3.6
120°-130°	229.0	5.3
130°-140°	271.7	6.3
140°-150°	275.5	6.4
150°-160°	236.4	5.5
160°-170°	158.7	3.7
170°-180°	55.6	1.3
0°-90°	2851.0	66.1
0°-180°	4309.9	100.0



REPORT NUMBER: P228190

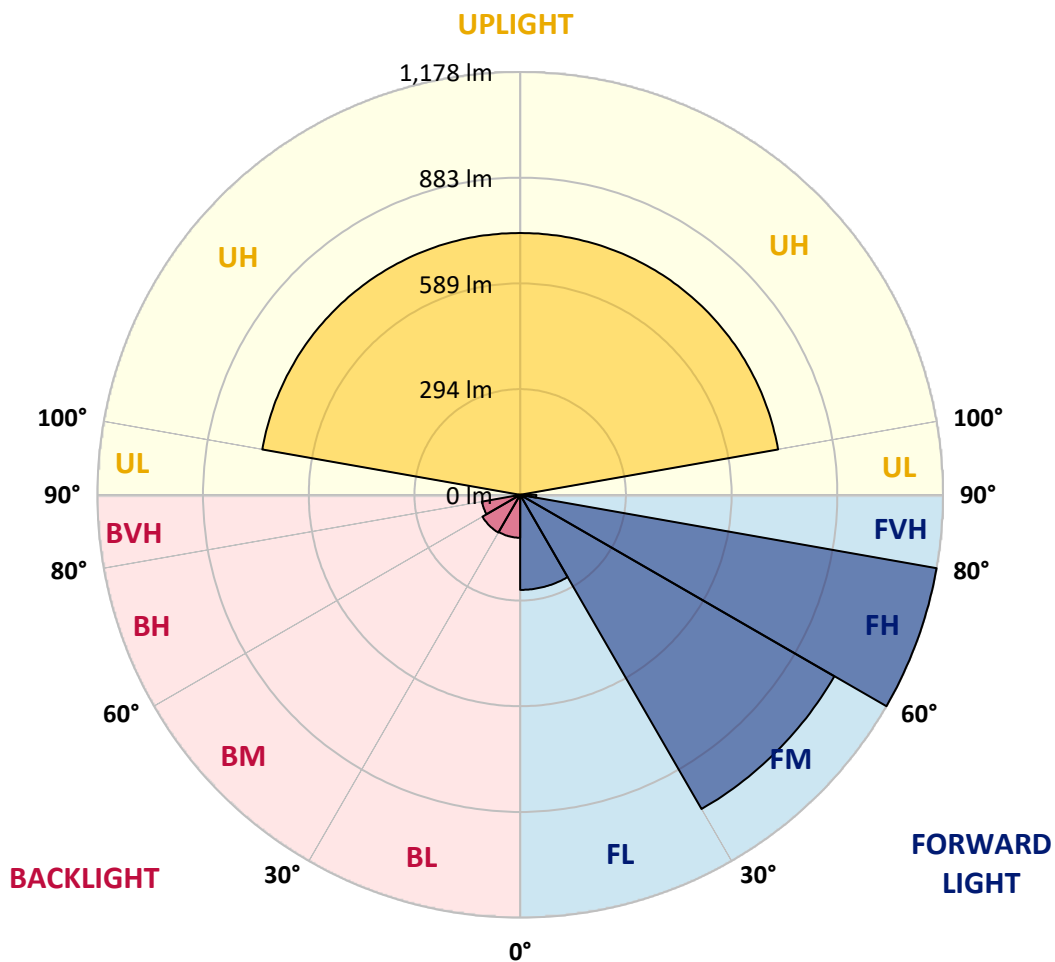
CATALOG NUMBER: ISS-AF-450-LED-E1-SL3-ULG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	264.8	6.1			
FM (30°-60°)	1010.6	23.4			
FH (60°-80°)	1177.9	27.3			G1/1800
FVH (80°-90°)	44.9	1.0			G1/100
BL (0°-30°)	119.6	2.8	B1/500		
BM (30°-60°)	121.3	2.8	B0/220		
BH (60°-80°)	108.0	2.5	B0/110		G0/110
BVH (80°-90°)	3.9	0.1			G0/10
UL (90°-100°)	4.8	0.1		U1/10	
UH (100°-180°)	729.4	16.9		U4/1000	

BUG Rating: B1-U5-G1

Type III Medium





REPORT NUMBER: P228190

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

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
0°	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6
2.5°	792.1	791.0	789.0	784.9	783.0	784.9	783.0	779.9	775.8	778.9	776.8
5°	790.0	792.1	788.0	784.9	790.0	792.1	788.0	788.0	783.9	788.0	785.9
7.5°	750.5	751.6	752.6	751.6	764.8	764.8	762.7	764.8	765.7	767.7	768.7
10°	701.0	702.1	704.0	707.1	723.2	725.3	726.3	728.3	731.3	733.4	739.4
12.5°	651.4	653.5	657.5	667.6	684.8	686.8	689.9	692.9	698.0	701.0	712.1
15°	610.0	611.0	615.0	626.1	651.4	656.5	658.5	662.6	672.7	672.7	684.8
17.5°	571.5	573.6	576.5	589.7	615.0	623.1	629.2	631.2	644.4	647.4	661.5
20°	542.2	543.2	544.2	556.4	579.6	591.8	596.8	604.9	615.0	623.1	635.3
22.5°	526.0	527.0	525.0	530.0	550.2	565.5	571.5	579.6	583.7	597.8	604.9
25°	527.0	528.0	522.9	520.0	530.0	546.3	551.3	559.3	557.3	577.6	577.6
27.5°	537.2	539.1	534.1	525.0	526.0	539.1	542.2	545.2	539.1	559.3	555.4
30°	557.3	559.3	553.3	546.3	535.1	543.2	543.2	543.2	532.0	549.2	542.2
32.5°	578.6	580.6	578.6	573.6	559.3	561.4	557.3	555.4	540.1	554.3	543.2
35°	610.0	611.0	611.9	611.9	591.8	595.8	584.6	578.6	564.5	575.5	560.4
37.5°	647.4	647.4	654.5	657.5	635.3	635.3	623.1	615.0	601.9	605.9	590.8
40°	680.8	683.8	700.0	709.1	688.9	680.8	670.6	663.6	653.5	653.5	638.3
42.5°	719.2	725.3	744.5	761.7	750.5	738.5	728.3	721.2	716.2	715.1	699.0
45°	766.7	773.9	795.0	811.2	814.3	805.2	797.1	790.0	785.9	783.9	769.8
47.5°	820.3	827.5	846.7	865.8	880.0	878.0	868.9	861.8	864.9	862.9	853.8
50°	880.0	884.0	896.2	918.5	950.8	957.9	955.8	950.8	956.9	956.9	948.8
52.5°	927.6	930.6	939.7	966.0	1019.6	1035.8	1048.9	1059.1	1069.2	1075.2	1070.2
55°	971.1	971.1	972.1	1005.5	1085.4	1111.6	1141.0	1162.3	1175.4	1199.7	1209.7
57.5°	1041.9	1036.9	1035.8	1071.2	1164.2	1191.5	1234.1	1264.4	1282.6	1332.2	1331.2
60°	1021.6	1023.7	1060.1	1164.2	1326.2	1350.4	1388.9	1421.2	1455.6	1492.0	1495.0
62.5°	881.1	886.1	940.7	1096.5	1429.3	1555.7	1674.1	1764.1	1814.7	1847.0	1802.5
65°	617.0	629.2	703.0	893.1	1316.0	1511.2	1698.4	1906.8	2066.6	2314.4	2386.2
67.5°	307.5	316.6	328.8	468.3	983.2	1257.3	1515.3	1799.5	2011.9	2376.1	2579.4
70°	220.5	224.5	233.6	263.0	440.0	658.5	962.0	1368.6	1618.4	2167.7	2455.0
72.5°	170.9	175.0	187.1	228.6	291.3	321.6	382.4	625.1	929.6	1497.1	1885.5
75°	132.5	138.6	155.8	206.3	280.2	297.4	300.4	322.6	368.2	664.6	1057.0
77.5°	93.1	94.1	111.3	178.0	272.1	305.5	300.4	300.4	306.5	338.9	452.1
80°	61.7	62.7	73.9	123.4	238.8	278.1	307.5	293.4	294.4	299.4	307.5
82.5°	32.3	34.4	43.5	74.9	139.6	188.1	255.9	267.1	263.0	268.0	266.1
85°	9.1	9.1	15.1	28.3	68.7	72.8	113.2	154.8	157.8	179.0	191.2
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	4.1	9.1	10.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	2.0	2.0	2.0	3.1	4.1	5.3	6.6	8.0	9.2	10.2	11.3
100°	8.2	8.2	10.2	14.3	22.5	24.6	26.6	28.6	30.7	31.2	31.7
102.5°	28.6	28.6	32.7	38.9	46.0	47.3	48.6	49.9	51.1	51.4	51.7
105°	55.2	55.2	57.3	62.4	67.5	68.5	69.6	70.6	71.6	71.8	72.1
107.5°	79.8	78.8	81.8	85.9	90.0	90.8	91.6	92.3	93.1	93.6	94.1
110°	103.3	104.3	105.4	108.4	112.5	113.0	113.5	114.1	114.6	115.1	115.6



REPORT NUMBER: P228190

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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
112.5°	126.8	126.8	128.9	132.0	135.0	135.5	136.1	136.6	137.1	137.6	138.1
115°	149.4	150.4	152.4	154.5	157.5	158.0	158.6	159.1	159.6	160.1	160.6
117.5°	172.9	173.9	175.9	178.0	181.1	181.6	182.1	182.6	183.1	183.3	183.6
120°	197.4	199.5	200.5	202.5	205.6	205.8	206.1	206.4	206.6	207.1	207.7
122.5°	224.0	225.0	226.1	228.1	231.2	231.4	231.7	232.0	232.2	232.4	232.7
125°	249.6	251.6	252.7	253.7	256.8	257.0	257.3	257.6	257.8	258.0	258.3
127.5°	273.1	275.2	276.2	278.2	280.3	280.8	281.3	281.8	282.3	282.8	283.4
130°	296.7	298.7	299.7	300.7	304.8	305.0	305.4	305.7	305.9	306.4	306.9
132.5°	320.2	321.2	324.3	325.3	328.4	328.6	328.9	329.2	329.4	330.2	330.9
135°	343.7	344.7	346.8	348.8	352.9	352.9	352.9	352.9	352.9	353.7	354.5
137.5°	367.2	368.3	371.3	372.4	375.4	375.4	375.4	375.4	375.4	375.9	376.4
140°	390.8	391.8	393.8	394.9	396.9	397.1	397.4	397.7	397.9	398.1	398.4
142.5°	413.3	415.3	417.4	416.3	419.4	419.4	419.4	419.4	419.4	419.9	420.4
145°	434.8	435.8	437.8	437.8	440.9	441.1	441.4	441.7	441.9	442.4	442.9
147.5°	454.2	454.2	457.3	458.3	462.4	462.6	462.9	463.2	463.4	463.6	463.9
150°	471.6	472.6	474.6	475.7	479.8	480.0	480.3	480.6	480.8	481.0	481.3
152.5°	490.0	491.0	494.1	493.1	496.1	496.3	496.6	496.9	497.2	497.4	497.7
155°	510.5	511.5	513.5	512.5	514.5	514.5	514.5	514.5	514.5	514.7	515.1
157.5°	524.8	526.8	528.9	527.8	530.9	530.9	530.9	530.9	530.9	530.9	530.9
160°	537.0	539.1	541.1	541.1	544.2	544.2	544.2	544.2	544.2	544.2	544.2
162.5°	547.3	548.3	551.4	550.3	553.4	553.4	553.4	553.4	553.4	553.6	553.9
165°	558.5	559.6	561.6	560.6	564.7	564.7	564.7	564.7	564.7	564.9	565.2
167.5°	567.7	568.8	571.8	570.8	573.9	573.7	573.4	573.1	572.9	572.9	572.9
170°	574.9	575.9	579.0	578.0	580.0	579.8	579.5	579.2	579.0	578.8	578.5
172.5°	578.0	579.0	582.1	580.0	582.1	581.9	581.5	581.2	581.0	581.2	581.5
175°	580.0	582.1	583.1	582.1	585.1	585.1	585.1	585.1	585.1	585.3	585.6
177.5°	585.1	586.2	588.2	587.2	591.3	591.1	590.8	590.4	590.2	590.2	590.2
180°	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2



REPORT NUMBER: P228190

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

CANDELA DISTRIBUTION (continued):

	52.5°	55°	57.5°	59°	60°	62.5°	65°	67.5°	70°	72.5°	75°
0°	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6
2.5°	778.9	774.8	773.9	771.8	772.8	769.8	768.7	764.8	764.8	762.7	760.7
5°	783.9	779.9	783.9	776.8	777.9	774.8	769.8	769.8	765.7	762.7	756.6
7.5°	769.8	769.8	770.8	766.7	767.7	766.7	760.7	759.6	753.6	753.6	746.5
10°	743.5	743.5	747.5	744.5	745.5	744.5	741.4	740.4	738.5	738.5	727.3
12.5°	713.1	719.2	725.3	722.2	722.2	724.2	724.2	725.3	724.2	723.2	714.1
15°	687.8	696.9	703.0	702.1	703.0	708.1	710.1	711.2	714.1	713.1	705.0
17.5°	664.6	674.7	679.8	683.8	686.8	690.9	696.9	700.0	704.0	703.0	694.9
20°	643.3	652.4	661.5	666.6	667.6	675.7	682.8	691.9	693.9	695.9	685.8
22.5°	621.0	629.2	647.4	644.4	651.4	666.6	670.6	683.8	683.8	690.9	676.7
25°	601.9	602.8	631.2	626.1	632.2	659.5	662.6	685.8	679.8	689.9	673.7
27.5°	582.7	581.6	616.0	610.0	617.0	654.5	656.5	688.9	682.8	694.9	673.7
30°	568.5	565.5	604.9	592.8	602.8	649.4	650.4	691.9	686.8	703.0	680.8
32.5°	565.5	560.4	594.7	585.6	595.8	644.4	650.4	703.0	696.9	717.2	688.9
35°	578.6	570.5	599.9	591.8	599.9	646.4	655.5	720.3	713.1	736.4	708.1
37.5°	602.8	596.8	621.0	613.0	619.1	660.5	668.6	742.5	741.4	769.8	737.4
40°	645.4	639.2	658.5	647.4	652.4	690.9	694.9	773.9	776.8	811.2	778.9
42.5°	703.0	692.9	708.1	694.9	702.1	736.4	732.3	812.2	821.3	868.9	831.5
45°	776.8	763.7	772.8	758.6	763.7	793.0	781.9	863.9	873.0	931.6	898.3
47.5°	857.7	841.6	852.7	834.5	837.6	868.9	848.6	925.6	939.7	1013.5	981.2
50°	954.9	933.6	937.7	920.5	922.5	953.9	931.6	1001.4	1018.7	1100.6	1072.3
52.5°	1079.3	1048.9	1048.9	1025.7	1026.7	1058.0	1030.7	1091.5	1110.6	1193.6	1174.3
55°	1243.2	1218.8	1213.8	1189.6	1181.5	1187.5	1149.1	1191.5	1212.8	1290.8	1275.5
57.5°	1373.6	1370.7	1385.8	1351.4	1343.3	1345.4	1296.8	1299.9	1324.1	1384.8	1389.9
60°	1532.5	1537.5	1539.5	1511.2	1508.2	1479.9	1430.3	1422.2	1452.6	1494.0	1510.2
62.5°	1785.4	1780.3	1755.0	1733.8	1714.6	1638.7	1611.4	1566.9	1609.3	1632.6	1666.0
65°	2328.5	2276.0	2114.1	2128.2	2077.7	1912.8	1889.5	1799.5	1866.3	1867.3	1930.0
67.5°	2866.7	2969.8	2870.7	2872.8	2758.5	2460.0	2388.2	2209.2	2246.6	2203.1	2235.5
70°	2958.7	3103.3	3374.5	3325.9	3319.9	3090.2	2848.5	2550.1	2437.8	2344.7	2269.8
72.5°	2546.0	2690.7	3088.2	2977.9	3019.4	3089.2	2837.4	2613.8	2362.9	2244.6	2082.7
75°	1791.4	1999.8	2403.4	2345.7	2376.1	2491.4	2274.9	2248.7	1958.3	1879.5	1630.6
77.5°	959.9	1217.9	1670.1	1599.2	1612.4	1678.2	1452.6	1406.0	1125.9	1047.9	765.7
80°	431.9	598.8	937.7	858.8	835.5	798.1	587.7	463.3	283.3	188.1	130.5
82.5°	286.2	297.4	415.7	360.1	336.9	278.1	180.0	106.2	84.0	70.8	67.8
85°	192.2	176.0	175.0	154.8	143.6	113.2	84.0	52.6	43.5	36.4	33.3
87.5°	11.2	7.1	10.1	11.2	8.1	7.1	5.0	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°	12.3	13.3	11.8	10.8	10.2	8.7	7.2	6.6	6.1	5.6	5.1
100°	32.2	32.7	32.2	31.9	31.7	31.2	30.7	29.9	29.2	28.4	27.6
102.5°	52.0	52.2	52.0	51.8	51.7	51.4	51.1	50.6	50.1	49.6	49.1
105°	72.4	72.6	72.6	72.6	72.6	72.6	72.6	72.1	71.6	71.1	70.6
107.5°	94.6	95.1	94.9	94.7	94.6	94.3	94.1	93.9	93.6	93.3	93.1
110°	116.1	116.6	116.6	116.6	116.6	116.6	116.6	116.4	116.1	115.8	115.6



REPORT NUMBER: P228190

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

CANDELA DISTRIBUTION (continued):

	52.5°	55°	57.5°	59°	60°	62.5°	65°	67.5°	70°	72.5°	75°
112.5°	138.6	139.1	139.1	139.1	139.1	139.1	139.1	138.9	138.6	138.3	138.1
115°	161.1	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6
117.5°	183.9	184.1	184.3	184.5	184.6	184.9	185.2	184.9	184.6	184.3	184.1
120°	208.2	208.7	208.7	208.7	208.7	208.7	208.7	208.7	208.7	208.7	208.7
122.5°	233.0	233.2	233.2	233.2	233.2	233.2	233.2	233.4	233.7	234.1	234.3
125°	258.6	258.8	259.0	259.2	259.3	259.6	259.8	259.8	259.8	259.8	259.8
127.5°	283.9	284.4	284.2	284.0	283.9	283.6	283.4	283.6	283.9	284.2	284.4
130°	307.4	307.9	307.9	307.9	307.9	307.9	307.9	308.1	308.4	308.7	308.9
132.5°	331.6	332.5	332.5	332.5	332.5	332.5	332.5	332.7	333.0	333.3	333.5
135°	355.2	356.0	356.0	356.0	356.0	356.0	356.0	356.2	356.5	356.8	357.0
137.5°	377.0	377.5	377.5	377.5	377.5	377.5	377.5	377.7	378.0	378.3	378.5
140°	398.7	399.0	399.0	399.0	399.0	399.0	399.0	399.5	400.0	400.5	401.0
142.5°	420.9	421.5	421.5	421.5	421.5	421.5	421.5	421.7	422.0	422.3	422.5
145°	443.4	444.0	443.8	443.6	443.4	443.1	442.9	443.1	443.4	443.8	444.0
147.5°	464.2	464.4	463.9	463.6	463.4	462.9	462.4	462.6	462.9	463.2	463.4
150°	481.6	481.8	481.3	481.0	480.8	480.3	479.8	479.8	479.8	479.8	479.8
152.5°	498.0	498.2	498.0	497.8	497.7	497.4	497.2	497.2	497.2	497.2	497.2
155°	515.4	515.6	515.4	515.2	515.1	514.7	514.5	514.7	515.1	515.4	515.6
157.5°	530.9	530.9	530.4	530.1	529.9	529.4	528.9	529.1	529.4	529.7	529.9
160°	544.2	544.2	543.7	543.4	543.2	542.7	542.2	542.2	542.2	542.2	542.2
162.5°	554.2	554.4	553.9	553.6	553.4	552.9	552.4	551.9	551.4	550.9	550.3
165°	565.5	565.7	564.9	564.5	564.2	563.4	562.6	562.1	561.6	561.1	560.6
167.5°	572.9	572.9	572.3	572.0	571.8	571.3	570.8	571.0	571.3	571.6	571.8
170°	578.2	578.0	577.8	577.6	577.5	577.1	576.9	577.5	578.0	578.5	579.0
172.5°	581.9	582.1	581.5	581.2	581.0	580.5	580.0	580.2	580.5	580.8	581.0
175°	585.9	586.2	585.3	584.9	584.6	583.9	583.1	582.6	582.1	581.5	581.0
177.5°	590.2	590.2	589.4	589.0	588.7	588.0	587.2	587.2	587.2	587.2	587.2
180°	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2



REPORT NUMBER: P228190

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

CANDELA DISTRIBUTION (continued):

	77.5°	80°	85°	90°	95°	100°	102.5°	105°	107.5°	110°	112.5°
0°	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6
2.5°	755.7	755.7	754.6	747.5	743.5	741.4	734.4	733.4	730.3	729.4	729.4
5°	754.6	750.5	745.5	735.4	725.3	716.2	713.1	706.0	701.0	694.9	694.9
7.5°	740.4	736.4	725.3	710.1	696.9	683.8	676.7	666.6	658.5	650.4	648.3
10°	724.2	718.2	703.0	682.8	665.6	642.3	633.2	620.1	611.0	598.8	586.7
12.5°	707.1	703.0	684.8	661.5	635.3	605.9	591.8	573.6	561.4	547.3	529.1
15°	700.0	691.9	668.6	639.2	606.9	571.5	551.3	532.0	513.8	497.7	473.4
17.5°	690.9	680.8	654.5	620.1	579.6	537.2	510.9	489.6	465.3	448.2	420.8
20°	680.8	665.6	637.3	595.8	550.2	499.7	466.4	445.1	412.7	395.5	363.1
22.5°	672.7	653.5	619.1	572.5	517.9	461.2	421.8	397.5	361.1	340.8	300.4
25°	670.6	647.4	605.9	553.3	490.6	423.8	376.2	352.0	306.5	283.3	235.7
27.5°	671.7	644.4	597.8	537.2	466.4	390.5	333.8	305.5	247.9	223.5	168.9
30°	672.7	645.4	589.7	522.9	444.1	356.1	289.3	255.9	187.1	165.9	117.3
32.5°	682.8	649.4	587.7	511.9	423.8	321.6	238.8	208.4	132.5	120.4	87.0
35°	694.9	662.6	591.8	509.8	408.7	287.2	187.1	155.8	95.1	92.1	70.8
37.5°	720.3	682.8	607.9	514.9	399.6	251.9	139.6	119.4	74.9	76.9	61.7
40°	758.6	717.2	634.2	530.0	398.5	216.5	103.2	93.1	64.8	66.8	56.7
42.5°	810.3	764.8	674.7	562.4	403.6	183.1	83.0	79.9	59.6	61.7	54.6
45°	878.0	831.5	731.3	603.8	417.8	155.8	72.8	72.8	57.7	59.6	53.6
47.5°	964.0	912.4	801.2	659.5	440.0	140.6	68.7	69.8	56.7	59.6	53.6
50°	1061.1	1004.4	890.2	731.3	474.4	136.6	69.8	69.8	57.7	59.6	53.6
52.5°	1162.3	1109.7	986.2	813.2	521.9	145.7	71.8	70.8	57.7	59.6	52.6
55°	1265.4	1217.9	1092.4	909.4	587.7	178.0	76.9	73.9	57.7	59.6	53.6
57.5°	1368.6	1335.3	1203.7	1012.5	669.6	236.7	97.1	86.0	63.7	64.8	54.6
60°	1484.9	1460.7	1329.1	1148.1	785.9	327.8	142.6	108.2	75.9	71.8	58.7
62.5°	1635.6	1629.6	1525.4	1343.3	973.1	459.2	202.3	131.4	81.9	74.9	62.7
65°	1901.7	1917.8	1818.7	1572.0	1097.5	462.3	197.2	115.3	76.9	70.8	61.7
67.5°	2168.8	2121.2	1866.3	1537.5	990.3	307.5	125.4	90.0	67.8	65.8	57.7
70°	2158.6	2029.1	1692.3	1344.4	781.9	166.9	91.0	74.9	60.7	60.7	54.6
72.5°	1936.0	1743.9	1383.7	1064.2	521.9	106.2	76.9	65.8	55.6	54.6	50.5
75°	1457.6	1231.0	889.1	613.0	232.6	68.7	58.7	53.6	48.6	48.6	44.5
77.5°	685.8	386.4	214.4	142.6	77.8	46.5	40.5	40.5	39.5	40.5	36.4
80°	93.1	84.0	71.8	62.7	47.6	32.3	29.4	30.4	29.4	30.4	27.3
82.5°	56.7	50.5	41.4	39.5	29.4	22.3	21.3	22.3	20.3	21.3	16.2
85°	27.3	24.2	19.2	18.2	15.1	13.2	11.2	13.2	10.1	11.2	7.1
87.5°	0.0	2.0	1.0	2.0	2.0	2.0	0.0	2.0	0.0	2.0	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°	4.9	4.6	4.1	4.1	4.1	4.6	4.9	5.1	5.6	6.1	6.6
100°	27.4	27.1	26.6	25.6	26.6	27.1	27.4	27.6	28.4	29.2	29.9
102.5°	49.3	49.6	50.1	49.1	50.1	49.6	49.3	49.1	49.6	50.1	50.6
105°	71.1	71.6	72.6	70.6	72.6	71.6	71.1	70.6	71.1	71.6	72.1
107.5°	93.3	93.6	94.1	93.1	94.1	93.6	93.3	93.1	93.3	93.6	93.9
110°	115.8	116.1	116.6	115.6	116.6	116.1	115.8	115.6	115.8	116.1	116.4



REPORT NUMBER: P228190
 CATALOG NUMBER: ISS-AF-450-LED-E1-SL3-ULG

REPORT N
 CATALOG

CANDELA DISTRIBUTION (continued):

CANDELA

	77.5°	80°	85°	90°	95°	100°	102.5°	105°	107.5°	110°	112.5°	
112.5°	138.6	139.1	140.1	138.1	140.1	139.1	138.6	138.1	138.3	138.6	138.9	0°
115°	162.1	162.6	163.7	162.6	163.7	162.6	162.1	161.6	161.6	161.6	161.6	2.5°
117.5°	184.6	185.2	186.2	184.1	186.2	185.2	184.6	184.1	184.3	184.6	184.9	5°
120°	209.2	209.7	210.7	208.7	210.7	209.7	209.2	208.7	208.7	208.7	208.7	7.5°
122.5°	235.3	236.3	238.3	237.3	238.3	236.3	235.3	234.3	234.1	233.7	233.4	10°
125°	260.6	261.4	262.9	261.9	262.9	261.4	260.6	259.8	259.8	259.8	259.8	12.5°
127.5°	285.2	285.9	287.4	284.4	287.4	285.9	285.2	284.4	284.2	283.9	283.6	15°
130°	309.7	310.5	312.0	310.0	312.0	310.5	309.7	308.9	308.7	308.4	308.1	17.5°
132.5°	334.3	335.0	336.6	334.5	336.6	335.0	334.3	333.5	333.3	333.0	332.7	20°
135°	357.5	358.0	359.1	358.0	359.1	358.0	357.5	357.0	356.8	356.5	356.2	22.5°
137.5°	379.5	380.5	382.6	380.5	382.6	380.5	379.5	378.5	378.3	378.0	377.7	25°
140°	402.0	403.0	405.1	403.0	405.1	403.0	402.0	401.0	400.5	400.0	399.5	27.5°
142.5°	423.3	424.0	425.5	424.5	425.5	424.0	423.3	422.5	422.3	422.0	421.7	30°
145°	444.8	445.5	447.0	445.0	447.0	445.5	444.8	444.0	443.8	443.4	443.1	32.5°
147.5°	464.2	464.9	466.5	463.4	466.5	464.9	464.2	463.4	463.2	462.9	462.6	35°
150°	480.8	481.8	483.9	480.8	483.9	481.8	480.8	479.8	479.8	479.8	479.8	37.5°
152.5°	498.0	498.7	500.2	497.2	500.2	498.7	498.0	497.2	497.2	497.2	497.2	40°
155°	516.4	517.1	518.6	516.6	518.6	517.1	516.4	515.6	515.4	515.1	514.7	42.5°
157.5°	531.1	532.4	535.0	531.9	535.0	532.4	531.1	529.9	529.7	529.4	529.1	45°
160°	543.0	543.7	545.2	543.2	545.2	543.7	543.0	542.2	542.2	542.2	542.2	47.5°
162.5°	550.9	551.4	552.4	549.3	552.4	551.4	550.9	550.3	550.9	551.4	551.9	50°
165°	561.1	561.6	562.6	560.6	562.6	561.6	561.1	560.6	561.1	561.6	562.1	52.5°
167.5°	572.9	573.9	575.9	573.9	575.9	573.9	572.9	571.8	571.6	571.3	571.0	55°
170°	580.2	581.5	584.1	582.1	584.1	581.5	580.2	579.0	578.5	578.0	577.5	57.5°
172.5°	581.9	582.6	584.1	581.0	584.1	582.6	581.9	581.0	580.8	580.5	580.2	60°
175°	581.9	582.6	584.1	581.0	584.1	582.6	581.9	581.0	581.5	582.1	582.6	62.5°
177.5°	588.0	588.7	590.2	587.2	590.2	588.7	588.0	587.2	587.2	587.2	587.2	65°
180°	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	67.5°
												70°
												72.5°
												75°
												77.5°
												80°
												82.5°
												85°
												87.5°
												90°
												92.5°
												95°
												97.5°
												100°
												102.5°
												105°
												107.5°
												110°

NUMBER: P228190
 NUMBER: ISS-AF-450-LED-E1-SL3-ULG

REPORT NUMBER: P
 CATALOG NUMBER:

DISTRIBUTION (continued):

CANDELA DISTRIBUTION

115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	155°	165°	115°	115°
754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6	754.6	112.5°	139.1
724.2	721.2	720.3	716.2	715.1	711.2	710.1	706.0	699.0	695.9	690.9	115°	161.6
685.8	680.8	676.7	674.7	666.6	662.6	656.5	648.3	633.2	626.1	614.0	117.5°	185.2
632.2	631.2	619.1	615.0	604.9	597.8	588.7	575.5	553.3	540.1	521.0	120°	208.7
573.6	569.5	555.4	547.3	534.1	524.0	511.9	492.7	458.2	430.9	401.6	122.5°	233.2
518.9	506.8	490.6	478.4	462.3	448.2	433.9	404.6	350.0	305.5	265.0	125°	259.8
462.3	444.1	426.9	406.6	389.4	367.1	351.0	312.6	240.7	186.1	160.8	127.5°	283.4
404.6	379.3	360.1	332.8	313.5	283.3	266.1	219.5	157.8	133.5	125.4	130°	307.9
343.9	310.6	289.3	255.9	236.7	198.2	185.2	151.7	121.4	112.3	110.3	132.5°	332.5
279.2	238.8	215.4	179.0	165.9	142.6	132.5	116.3	102.2	98.1	100.1	135°	356.0
211.4	167.9	152.7	126.4	121.4	109.3	105.2	97.1	90.0	90.0	93.1	137.5°	377.5
150.7	117.3	113.2	97.1	96.1	90.0	87.0	83.0	80.9	83.0	87.0	140°	399.0
110.3	89.0	89.0	79.9	79.9	75.9	74.9	72.8	72.8	76.9	80.9	142.5°	421.5
87.0	72.8	74.9	67.8	68.7	65.8	66.8	65.8	66.8	69.8	72.8	145°	442.9
72.8	62.7	65.8	59.6	61.7	58.7	60.7	60.7	62.7	63.7	64.8	147.5°	462.4
64.8	57.7	59.6	55.6	57.7	54.6	57.7	57.7	58.7	58.7	58.7	150°	479.8
59.6	53.6	56.7	52.6	55.6	52.6	55.6	55.6	54.6	53.6	54.6	152.5°	497.2
56.7	52.6	55.6	51.6	54.6	51.6	53.6	52.6	50.5	50.5	50.5	155°	514.5
55.6	51.6	53.6	50.5	52.6	49.6	51.6	50.5	47.6	46.5	48.6	157.5°	528.9
55.6	50.5	53.6	49.6	51.6	48.6	50.5	47.6	44.5	44.5	47.6	160°	542.2
55.6	50.5	53.6	49.6	51.6	47.6	48.6	45.5	41.4	42.5	46.5	162.5°	552.4
56.7	52.6	54.6	50.5	51.6	45.5	47.6	43.5	40.5	41.4	44.5	165°	562.6
57.7	52.6	54.6	48.6	49.6	45.5	45.5	43.5	40.5	40.5	43.5	167.5°	570.8
57.7	51.6	52.6	47.6	48.6	43.5	44.5	42.5	39.5	38.5	40.5	170°	576.9
59.6	53.6	53.6	46.5	47.6	42.5	43.5	41.4	38.5	36.4	37.4	172.5°	580.0
61.7	54.6	55.6	48.6	48.6	43.5	44.5	40.5	36.4	34.4	35.4	175°	583.1
61.7	54.6	55.6	49.6	49.6	44.5	44.5	40.5	34.4	32.3	32.3	177.5°	587.2
58.7	53.6	54.6	49.6	49.6	44.5	44.5	39.5	33.3	30.4	29.4	180°	589.2
56.7	51.6	52.6	46.5	47.6	42.5	42.5	37.4	31.4	28.3	26.3		
51.6	47.6	47.6	43.5	42.5	37.4	37.4	34.4	29.4	25.3	23.2		
44.5	40.5	39.5	35.4	35.4	32.3	31.4	28.3	24.2	21.3	20.3		
36.4	31.4	31.4	26.3	26.3	23.2	24.2	21.3	18.2	17.2	16.2		
26.3	21.3	21.3	17.2	17.2	14.1	15.1	14.1	13.2	13.2	12.2		
16.2	11.2	12.2	9.1	11.2	8.1	9.1	8.1	8.1	7.1	7.1		
8.1	4.1	6.0	3.1	5.0	1.0	3.1	2.0	2.0	2.0	2.0		
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	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		
7.2	8.7	10.2	11.8	13.3	12.3	11.3	9.2	4.1	3.1	2.0		
30.7	31.2	31.7	32.2	32.7	32.2	31.7	30.7	22.5	14.3	10.2		
51.1	51.4	51.7	52.0	52.2	52.0	51.7	51.1	46.0	38.9	32.7		
72.6	72.6	72.6	72.6	72.6	72.4	72.1	71.6	67.5	62.4	57.3		
94.1	94.3	94.6	94.9	95.1	94.6	94.1	93.1	90.0	85.9	81.8		
116.6	116.6	116.6	116.6	116.6	116.1	115.6	114.6	112.5	108.4	105.4		

'228190
 ISS-AF-450-LED-E1-SL3-ULG

REPORT NUMBER: P228190
 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°
139.1	139.1	139.1	139.1	138.6	138.1	137.1	135.0	132.0	128.9	0°	754.6	754.6
161.6	161.6	161.6	161.6	161.1	160.6	159.6	157.5	154.5	152.4	2.5°	685.8	688.9
184.9	184.6	184.3	184.1	183.9	183.6	183.1	181.1	178.0	175.9	5°	610.0	611.0
208.7	208.7	208.7	208.7	208.2	207.7	206.6	205.6	202.5	200.5	7.5°	517.9	515.9
233.2	233.2	233.2	233.2	233.0	232.7	232.2	231.2	228.1	226.1	10°	395.5	390.5
259.6	259.3	259.0	258.8	258.6	258.3	257.8	256.8	253.7	252.7	12.5°	254.9	247.9
283.6	283.9	284.2	284.4	283.9	283.4	282.3	280.3	278.2	276.2	15°	153.7	151.7
307.9	307.9	307.9	307.9	307.4	306.9	305.9	304.8	300.7	299.7	17.5°	123.4	123.4
332.5	332.5	332.5	332.5	331.6	330.9	329.4	328.4	325.3	324.3	20°	110.3	110.3
356.0	356.0	356.0	356.0	355.2	354.5	352.9	352.9	348.8	346.8	22.5°	102.2	102.2
377.5	377.5	377.5	377.5	377.0	376.4	375.4	375.4	372.4	371.3	25°	96.1	97.1
399.0	399.0	399.0	399.0	398.7	398.4	397.9	396.9	394.9	393.8	27.5°	91.0	91.0
421.5	421.5	421.5	421.5	420.9	420.4	419.4	419.4	416.3	417.4	30°	85.0	85.0
443.1	443.4	443.8	444.0	443.4	442.9	441.9	440.9	437.8	437.8	32.5°	74.9	74.9
462.9	463.4	463.9	464.4	464.2	463.9	463.4	462.4	458.3	457.3	35°	66.8	65.8
480.3	480.8	481.3	481.8	481.6	481.3	480.8	479.8	475.7	474.6	37.5°	59.6	60.7
497.4	497.7	498.0	498.2	498.0	497.7	497.2	496.1	493.1	494.1	40°	54.6	55.6
514.7	515.1	515.4	515.6	515.4	515.1	514.5	514.5	512.5	513.5	42.5°	52.6	52.6
529.4	529.9	530.4	530.9	530.9	530.9	530.9	530.9	527.8	528.9	45°	50.5	50.5
542.7	543.2	543.7	544.2	544.2	544.2	544.2	544.2	541.1	541.1	47.5°	50.5	50.5
552.9	553.4	553.9	554.4	554.2	553.9	553.4	553.4	550.3	551.4	50°	49.6	50.5
563.4	564.2	564.9	565.7	565.5	565.2	564.7	564.7	560.6	561.6	52.5°	48.6	48.6
571.3	571.8	572.3	572.9	572.9	572.9	572.9	573.9	570.8	571.8	55°	45.5	46.5
577.1	577.5	577.8	578.0	578.2	578.5	579.0	580.0	578.0	579.0	57.5°	42.5	43.5
580.5	581.0	581.5	582.1	581.9	581.5	581.0	582.1	580.0	582.1	60°	39.5	39.5
583.9	584.6	585.3	586.2	585.9	585.6	585.1	585.1	582.1	583.1	62.5°	35.4	35.4
588.0	588.7	589.4	590.2	590.2	590.2	590.2	591.3	587.2	588.2	65°	32.3	32.3
589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	67.5°	28.3	28.3
										70°	25.3	25.3
										72.5°	22.3	22.3
										75°	19.2	19.2
										77.5°	16.2	15.1
										80°	12.2	12.2
										82.5°	7.1	7.1
										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°	8.2	8.2
										102.5°	28.6	28.6
										105°	55.2	55.2
										107.5°	78.8	79.8
										110°	104.3	103.3



REPORT NUMBER: P228190

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

CANDELA DISTRIBUTION (continued):

	175°	180°
112.5°	126.8	126.8
115°	150.4	149.4
117.5°	173.9	172.9
120°	199.5	197.4
122.5°	225.0	224.0
125°	251.6	249.6
127.5°	275.2	273.1
130°	298.7	296.7
132.5°	321.2	320.2
135°	344.7	343.7
137.5°	368.3	367.2
140°	391.8	390.8
142.5°	415.3	413.3
145°	435.8	434.8
147.5°	454.2	454.2
150°	472.6	471.6
152.5°	491.0	490.0
155°	511.5	510.5
157.5°	526.8	524.8
160°	539.1	537.0
162.5°	548.3	547.3
165°	559.6	558.5
167.5°	568.8	567.7
170°	575.9	574.9
172.5°	579.0	578.0
175°	582.1	580.0
177.5°	586.2	585.1
180°	589.2	589.2

(END OF REPORT)

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

