

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: P228095

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P228095
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29761)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: ISS-AF-450-LED-E1-SL2
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE
LIGHT SQUARE WITH ACCULED OPTICS-TYPE II W/SPILL CONTROL
Light Source: (16) 4000K CCT, 70 CRI LEDs
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2899 lumens
Efficiency: N/A
Efficacy: 114.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B1 - U0 - G1

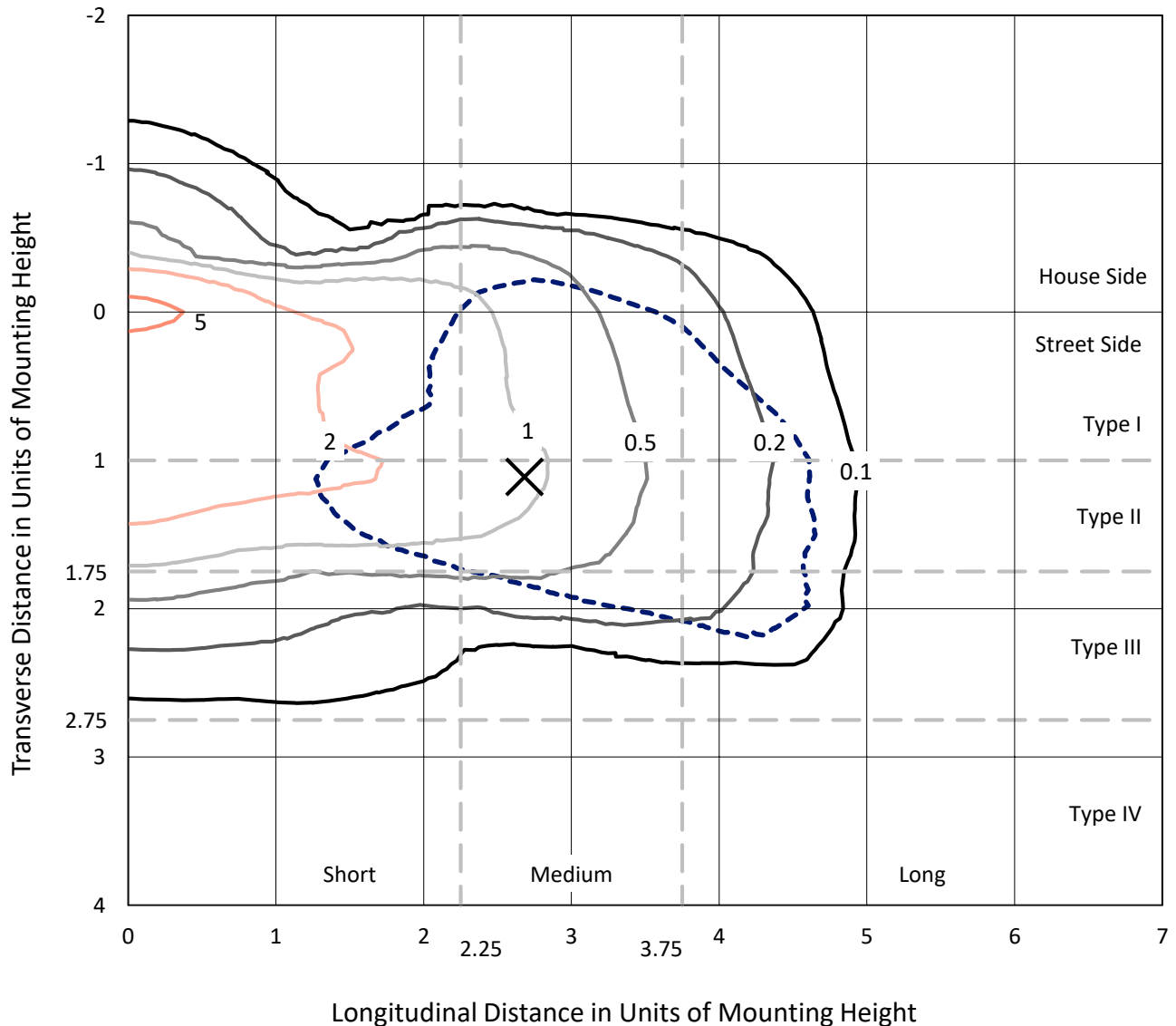
Input Watts (W): 25.31
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P228095
 CATALOG NUMBER: ISS-AF-450-LED-E1-SL2

Iso-Footcandle Lines of Horizontal Illumination

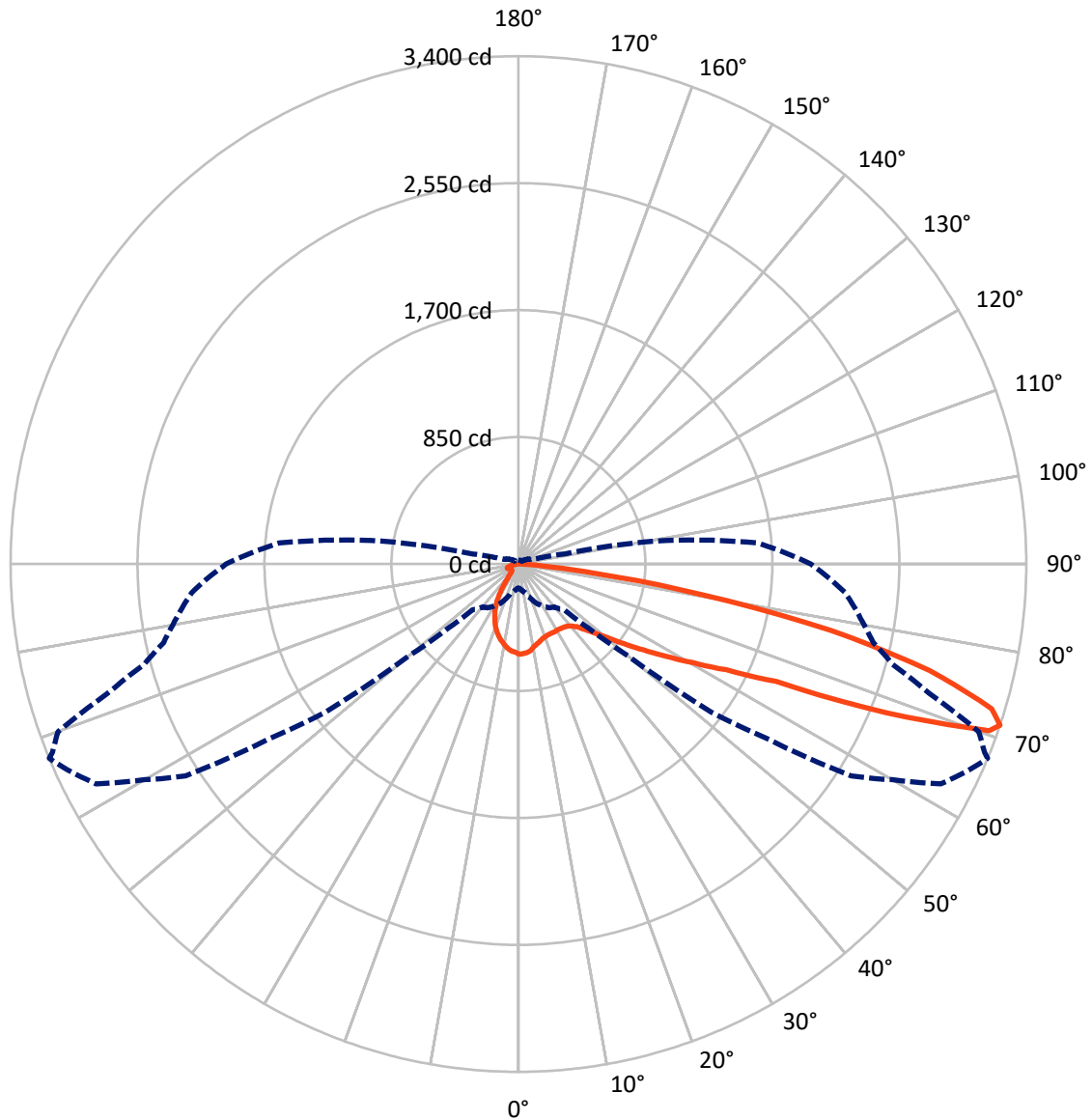
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 6 fc
 Type III - Medium - Non-Cutoff

REPORT NUMBER: P228095
CATALOG NUMBER: ISS-AF-450-LED-E1-SL2

Luminous Intensity Polar Plot



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

REPORT NUMBER: P228095

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

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	488.5	0.0	488.5
	% Fixture	16.9	0.0	16.9
Street Side	Lumens	2410.5	0.0	2410.5
	% Fixture	83.1	0.0	83.1
Total	Lumens	2899.0	0.0	2899.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.7	1.8
10°-20°	126.1	4.4
20°-30°	171.5	5.9
30°-40°	234.4	8.1
40°-50°	353.2	12.2
50°-60°	559.8	19.3
60°-70°	741.0	25.6
70°-80°	590.3	20.4
80°-90°	70.0	2.4
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	2899.0	100.0
0°-180°	2899.0	100.0



REPORT NUMBER: P228095

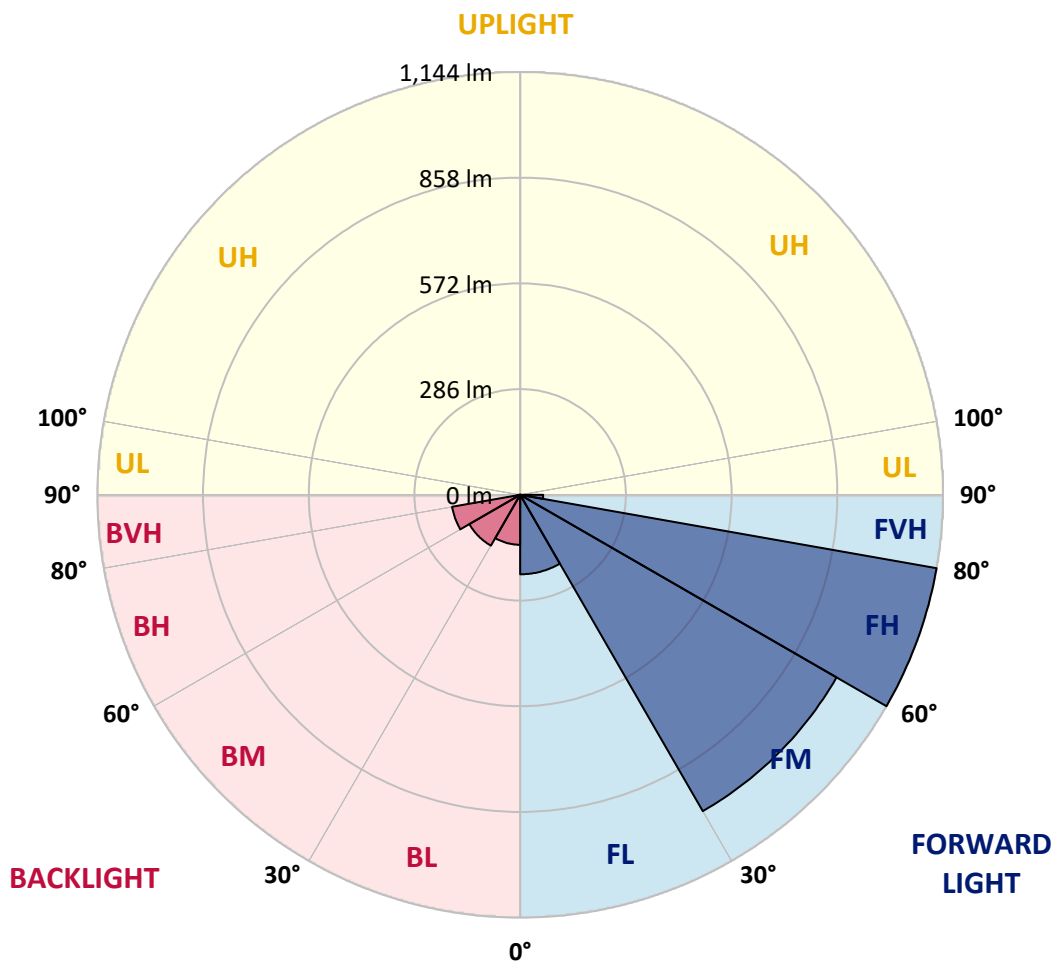
CATALOG NUMBER: ISS-AF-450-LED-E1-SL2

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	215.1	7.4			
FM (30°-60°)	988.6	34.1			
FH (60°-80°)	1144.4	39.5			G1/1800
FVH (80°-90°)	62.4	2.2			G1/100
BL (0°-30°)	135.2	4.7	B1/500		
BM (30°-60°)	158.7	5.5	B0/220		
BH (60°-80°)	187.0	6.4	B1/500		G1/500
BVH (80°-90°)	7.6	0.3			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1

Type III Medium





REPORT NUMBER: P228095

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

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
0°	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2
2.5°	593.0	591.0	591.0	594.0	599.0	595.1	598.0	598.0	599.0	602.1	603.1
5°	549.5	545.4	549.5	553.5	564.7	562.6	565.7	568.7	574.8	575.8	583.9
7.5°	510.0	508.0	511.1	519.1	533.3	529.3	533.3	537.4	544.4	547.5	555.6
10°	479.7	476.6	480.7	486.7	500.9	499.9	502.0	507.0	515.1	517.1	527.2
12.5°	457.4	457.4	459.4	467.5	479.7	478.6	484.7	487.7	494.8	496.8	508.0
15°	446.3	443.2	447.2	454.4	466.5	466.5	470.6	473.6	483.8	484.7	494.8
17.5°	436.2	437.1	438.1	446.3	457.4	455.4	460.4	462.5	473.6	471.6	483.8
20°	436.2	438.1	437.1	442.2	450.3	446.3	452.3	453.4	465.4	462.5	475.6
22.5°	448.3	450.3	447.2	446.3	449.3	446.3	449.3	451.3	460.4	458.4	470.6
25°	469.5	473.6	469.5	462.5	459.4	451.3	453.4	456.3	463.5	458.4	469.5
27.5°	502.9	506.0	498.9	491.8	477.6	468.5	465.4	464.5	472.6	464.5	473.6
30°	541.3	545.4	539.4	526.2	506.0	490.8	484.7	481.7	486.7	474.6	483.8
32.5°	582.9	587.0	582.9	572.8	545.4	523.1	515.1	508.0	512.1	495.8	499.9
35°	625.3	629.4	633.5	627.4	592.0	566.7	553.5	547.5	546.5	526.2	527.2
37.5°	662.8	666.9	680.1	686.1	653.7	619.3	607.1	594.0	595.1	566.7	566.7
40°	708.4	713.4	730.6	744.8	723.5	682.0	667.9	653.7	653.7	616.2	617.2
42.5°	770.1	776.1	787.3	806.5	799.4	756.9	741.7	722.5	724.6	680.1	679.0
45°	857.1	861.1	861.1	873.3	874.3	833.8	823.7	804.4	808.5	751.9	754.9
47.5°	970.5	965.4	945.1	952.3	960.3	917.8	908.7	896.6	901.6	841.0	847.0
50°	1075.7	1071.6	1030.1	1032.2	1061.5	1018.0	1015.0	999.8	1006.9	946.1	955.2
52.5°	1115.1	1108.1	1066.6	1088.8	1170.8	1146.5	1151.5	1144.5	1148.6	1083.8	1081.8
55°	1070.6	1070.6	1045.4	1085.8	1252.8	1265.9	1307.4	1323.6	1340.8	1276.0	1261.9
57.5°	947.2	955.2	959.3	1031.1	1239.6	1296.3	1375.3	1444.0	1532.1	1528.0	1549.3
60°	742.8	756.9	780.2	897.6	1182.9	1276.0	1378.2	1481.4	1602.9	1680.8	1796.2
62.5°	521.2	533.3	552.5	633.5	1018.0	1177.9	1325.6	1484.5	1639.4	1761.8	1913.5
65°	354.1	366.3	406.8	451.3	614.3	847.0	1072.7	1335.8	1571.6	1799.3	2003.7
67.5°	255.0	262.1	293.5	368.4	408.9	451.3	535.3	845.0	1135.4	1593.8	1892.4
70°	191.3	198.4	226.7	309.6	359.3	370.4	390.6	445.3	519.1	895.6	1287.2
71°	159.9	170.0	204.4	291.4	357.2	366.3	375.4	407.9	432.1	633.5	955.2
72.5°	112.3	119.4	151.8	269.1	343.1	364.3	385.6	384.5	382.5	432.1	577.9
75°	71.8	71.8	71.8	151.8	366.3	353.1	361.3	404.8	382.5	363.2	380.5
77.5°	56.7	55.6	52.6	75.9	286.4	358.2	379.5	390.6	411.8	379.5	362.2
80°	42.5	41.5	41.5	47.6	132.6	231.7	320.8	356.2	371.3	403.8	368.4
82.5°	22.3	22.3	24.2	28.3	49.6	80.9	165.9	273.2	305.6	307.6	310.7
85°	7.1	6.0	8.1	13.2	21.3	26.3	46.5	110.3	164.0	198.4	209.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	4.1	7.1	9.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P228095

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

CANDELA DISTRIBUTION (continued):

	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	68°	70°	72.5°	75°
0°	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2
2.5°	600.1	604.2	601.1	605.2	600.1	606.2	601.1	604.2	605.2	601.1	606.2
5°	578.8	591.0	587.0	596.1	592.0	600.1	596.1	604.2	604.2	601.1	608.1
7.5°	552.5	564.7	565.7	574.8	574.8	584.9	584.9	593.0	597.0	597.0	607.1
10°	526.2	537.4	539.4	549.5	551.5	563.6	563.6	574.8	582.9	585.9	598.0
12.5°	506.0	520.2	520.2	531.2	529.3	547.5	549.5	559.6	567.7	574.8	591.0
15°	493.8	507.0	507.0	518.1	516.1	534.3	537.4	547.5	559.6	563.6	585.9
17.5°	481.7	494.8	491.8	507.0	506.0	526.2	524.2	539.4	549.5	555.6	580.8
20°	471.6	486.7	484.7	499.9	495.8	518.1	518.1	533.3	543.4	548.5	577.9
22.5°	466.5	482.7	478.6	493.8	490.8	513.0	513.0	528.3	539.4	547.5	576.8
25°	466.5	480.7	476.6	493.8	488.8	513.0	512.1	527.2	538.4	545.4	577.9
27.5°	468.5	482.7	479.7	495.8	491.8	513.0	515.1	528.3	539.4	547.5	579.8
30°	475.6	488.8	481.7	496.8	493.8	514.0	513.0	527.2	538.4	548.5	579.8
32.5°	490.8	497.9	488.8	502.0	495.8	516.1	516.1	526.2	539.4	551.5	579.8
35°	512.1	517.1	502.9	512.1	500.9	521.2	520.2	531.2	541.3	551.5	581.9
37.5°	542.4	548.5	526.2	534.3	516.1	532.2	528.3	541.3	551.5	557.6	592.0
40°	587.9	589.9	560.6	566.7	541.3	555.6	545.4	563.6	568.7	572.8	607.1
42.5°	643.6	645.6	608.1	612.2	579.8	592.0	574.8	594.0	601.1	600.1	637.5
45°	712.4	713.4	671.0	673.9	636.5	646.6	625.3	641.6	646.6	643.6	682.0
47.5°	787.3	795.3	747.8	751.9	712.4	717.5	691.1	709.4	709.4	706.3	745.8
50°	886.5	898.6	842.9	849.0	803.5	807.5	777.1	796.4	794.3	786.2	830.8
52.5°	1010.0	1021.0	962.4	970.5	921.9	923.9	886.5	908.7	902.7	889.5	941.1
55°	1160.7	1161.7	1107.0	1114.1	1065.6	1062.5	1016.0	1043.3	1034.2	1016.0	1063.6
57.5°	1402.6	1373.2	1283.1	1281.1	1228.5	1224.5	1164.7	1198.2	1182.9	1144.5	1207.3
60°	1792.1	1801.2	1571.6	1536.2	1438.0	1419.8	1340.8	1379.2	1361.0	1298.3	1360.0
62.5°	2011.7	2156.5	2142.3	2014.8	1761.8	1693.0	1559.4	1604.9	1557.3	1465.3	1523.0
65°	2174.7	2371.0	2484.3	2606.8	2493.4	2212.1	1896.3	1960.1	1843.8	1668.6	1724.4
67.5°	2235.4	2472.2	2711.0	2885.0	3003.4	3024.7	2659.4	2676.6	2390.2	2040.1	2047.1
70°	1917.6	2266.8	2734.2	2954.9	3189.7	3304.9	3343.4	3325.2	3140.0	2644.2	2455.0
71°	1625.2	2048.2	2641.2	2887.1	3187.6	3298.9	3400.1	3365.7	3279.7	2884.0	2593.6
72.5°	1101.0	1632.2	2368.9	2680.6	3081.3	3162.4	3314.1	3253.4	3235.2	3063.1	2723.1
75°	518.1	813.6	1541.2	2012.8	2607.8	2685.7	2844.5	2769.6	2722.1	2780.8	2590.5
77.5°	381.5	444.3	846.0	1250.8	1896.3	2006.7	2143.3	2051.2	1990.5	2049.2	1916.6
80°	347.1	349.1	438.1	659.8	1131.4	1197.2	1248.7	1173.8	1081.8	1077.7	955.2
82.5°	319.8	302.6	284.4	349.1	579.8	551.5	510.0	472.6	367.3	294.5	212.5
85°	203.4	222.6	202.3	191.3	230.7	190.3	150.8	144.7	102.2	68.8	63.7
87.5°	14.1	16.2	19.2	22.3	27.3	22.3	14.1	17.2	10.1	0.0	5.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P228095

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

CANDELA DISTRIBUTION (continued):

	77.5°	80°	85°	90°	95°	100°	102.5°	105°	107.5°	110°	112.5°
0°	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2
2.5°	599.0	604.2	606.2	605.2	603.1	601.1	594.0	599.0	592.0	597.0	591.0
5°	602.1	609.2	610.2	608.1	606.2	602.1	589.9	597.0	588.9	593.0	583.9
7.5°	601.1	612.2	613.3	611.2	607.1	600.1	587.9	593.0	579.8	582.9	570.7
10°	596.1	612.2	613.3	608.1	602.1	591.0	576.8	578.8	565.7	565.7	549.5
12.5°	591.0	610.2	615.3	608.1	598.0	582.9	566.7	564.7	549.5	548.5	530.3
15°	591.0	612.2	619.3	610.2	595.1	573.8	554.5	550.4	533.3	528.3	508.0
17.5°	589.9	612.2	622.4	610.2	592.0	564.7	540.4	536.3	514.0	506.0	482.7
20°	588.9	614.3	624.4	608.1	582.9	553.5	526.2	518.1	493.8	480.7	453.4
22.5°	587.9	618.3	626.4	606.2	576.8	539.4	511.1	496.8	468.5	451.3	418.9
25°	593.0	623.4	627.4	604.2	567.7	524.2	493.8	474.6	443.2	420.9	382.5
27.5°	595.1	628.4	629.4	600.1	556.6	508.0	475.6	449.3	413.9	386.6	343.1
30°	601.1	629.4	626.4	592.0	543.4	487.7	454.4	422.0	382.5	347.1	295.5
32.5°	603.1	632.5	624.4	582.9	530.3	467.5	430.0	392.6	345.0	303.6	240.8
35°	607.1	634.4	622.4	577.9	516.1	446.3	404.8	362.2	307.6	255.0	183.2
37.5°	613.3	643.6	627.4	575.8	509.0	428.0	376.4	330.9	263.1	201.4	121.4
40°	628.4	661.8	636.5	578.8	503.9	412.9	349.1	298.5	212.5	148.7	84.0
42.5°	658.8	693.2	659.8	594.0	507.0	399.7	320.8	264.1	160.9	106.3	69.9
45°	704.3	733.7	698.3	619.3	519.1	392.6	294.5	228.7	115.4	85.0	63.7
47.5°	771.1	799.4	754.9	659.8	540.4	389.6	267.2	191.3	89.1	76.9	61.7
50°	859.2	892.5	836.9	723.5	579.8	392.6	237.8	155.8	77.9	74.9	60.8
52.5°	967.4	999.8	944.2	817.6	644.6	409.8	206.4	135.6	73.9	73.9	59.7
55°	1089.9	1135.4	1080.7	948.2	744.8	447.2	187.2	128.5	73.9	74.9	58.7
57.5°	1234.6	1273.1	1224.5	1073.7	865.2	509.0	189.2	135.6	73.9	74.9	57.7
60°	1376.3	1423.8	1368.1	1233.6	1002.8	602.1	230.7	172.1	76.9	77.9	57.7
62.5°	1524.0	1560.4	1514.9	1373.2	1158.7	717.5	313.7	249.0	89.1	92.1	61.7
65°	1685.9	1745.6	1698.0	1581.7	1379.2	901.6	471.6	373.4	131.6	107.3	67.8
67.5°	1966.2	1990.5	1967.2	1861.0	1637.3	1053.4	561.6	379.5	131.6	104.2	75.9
70°	2345.6	2291.0	2186.8	1988.4	1664.6	945.1	402.7	231.7	112.3	99.1	79.9
71°	2433.7	2349.7	2195.9	1957.1	1608.0	853.0	312.7	183.2	105.3	97.2	79.9
72.5°	2487.3	2361.9	2129.1	1865.0	1496.7	672.0	206.4	143.7	96.2	92.1	76.9
75°	2417.5	2185.7	1880.2	1614.0	1225.5	349.1	129.5	109.3	81.9	79.9	66.8
77.5°	1919.7	1716.2	1387.3	1172.8	788.3	154.9	93.1	83.0	64.8	62.7	51.7
80°	895.6	718.5	420.9	361.3	248.0	91.0	63.7	56.7	46.5	44.5	36.4
82.5°	163.0	122.4	95.1	92.1	83.0	53.6	37.4	34.4	29.4	28.3	23.3
85°	55.6	53.6	40.5	40.5	41.5	28.3	21.3	20.3	15.1	15.1	10.1
87.5°	1.0	5.0	5.0	7.1	6.0	5.0	2.0	3.1	1.0	3.1	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

REPORT NUMBER: P228095

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

CANDELA DISTRIBUTION (continued):

	115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	155°	165°
0°	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2
2.5°	596.1	587.9	595.1	587.9	592.0	583.9	588.9	585.9	585.9	582.9	580.8
5°	587.0	576.8	581.9	573.8	577.9	565.7	568.7	563.6	553.5	547.5	539.4
7.5°	573.8	558.6	562.6	550.4	553.5	537.4	540.4	531.2	512.1	499.9	487.7
10°	550.4	536.3	537.4	522.1	521.2	504.9	502.0	489.8	461.5	441.2	425.0
12.5°	527.2	511.1	509.0	490.8	487.7	468.5	464.5	445.3	403.8	364.3	339.0
15°	502.9	482.7	476.6	457.4	446.3	430.0	418.9	390.6	330.9	279.3	245.9
17.5°	475.6	449.3	440.2	418.0	401.7	377.5	361.3	322.8	245.9	190.3	166.9
20°	440.2	411.8	395.7	367.3	346.1	316.7	296.5	246.9	164.0	135.6	132.6
22.5°	400.7	367.3	347.1	311.7	285.4	254.0	221.6	166.9	116.4	110.3	114.4
25°	359.3	317.7	291.4	248.0	212.5	176.0	145.7	111.3	95.1	94.1	100.1
27.5°	309.6	262.1	224.6	173.1	140.7	112.3	99.1	88.1	80.9	81.9	88.1
30°	255.0	193.2	153.9	108.2	94.1	81.9	79.9	75.9	72.8	74.9	79.0
32.5°	190.3	123.5	99.1	77.9	76.9	69.9	71.8	69.9	68.8	69.9	72.8
35°	128.5	81.9	77.9	66.8	68.8	63.7	66.8	65.8	64.8	64.8	66.8
37.5°	89.1	67.8	69.9	61.7	64.8	60.8	63.7	62.7	61.7	60.8	61.7
40°	73.9	61.7	64.8	58.7	61.7	57.7	60.8	59.7	58.7	56.7	56.7
42.5°	67.8	58.7	61.7	55.6	59.7	54.6	58.7	56.7	54.6	52.6	53.6
45°	65.8	56.7	59.7	53.6	57.7	52.6	55.6	54.6	50.6	49.6	50.6
47.5°	63.7	55.6	58.7	52.6	55.6	50.6	53.6	51.7	47.6	46.5	47.6
50°	62.7	53.6	56.7	50.6	53.6	49.6	51.7	49.6	45.5	44.5	44.5
52.5°	61.7	52.6	55.6	48.6	51.7	45.5	48.6	46.5	42.5	41.5	41.5
55°	61.7	51.7	53.6	46.5	49.6	43.5	45.5	43.5	41.5	39.5	39.5
57.5°	60.8	49.6	52.6	44.5	46.5	41.5	43.5	41.5	38.5	37.4	37.4
60°	60.8	48.6	51.7	43.5	45.5	39.5	41.5	39.5	36.4	35.4	35.4
62.5°	63.7	50.6	52.6	44.5	45.5	39.5	40.5	37.4	34.4	34.4	33.3
65°	69.9	56.7	56.7	46.5	46.5	39.5	40.5	36.4	32.4	32.4	32.4
67.5°	75.9	62.7	61.7	49.6	48.6	39.5	39.5	34.4	30.4	30.4	30.4
70°	79.9	65.8	63.7	50.6	48.6	38.5	37.4	32.4	28.3	28.3	28.3
71°	79.0	65.8	62.7	49.6	46.5	36.4	36.4	31.4	27.3	27.3	26.3
72.5°	74.9	61.7	58.7	46.5	44.5	34.4	34.4	29.4	25.3	25.3	24.2
75°	63.7	52.6	49.6	39.5	37.4	30.4	29.4	24.2	22.3	21.3	21.3
77.5°	49.6	41.5	38.5	31.4	30.4	24.2	23.3	20.3	18.2	18.2	17.2
80°	35.4	29.4	27.3	21.3	19.2	16.2	17.2	15.1	14.1	14.1	13.2
82.5°	21.3	15.1	15.1	12.2	13.2	10.1	11.2	11.2	10.1	8.1	8.1
85°	11.2	7.1	9.1	5.0	7.1	3.1	5.0	4.1	4.1	3.1	3.1
87.5°	2.0	0.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	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

REPORT NUMBER: P228095

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

CANDELA DISTRIBUTION (continued):

	175°	180°
0°	604.2	604.2
2.5°	574.8	575.8
5°	535.3	537.4
7.5°	478.6	481.7
10°	410.8	412.9
12.5°	323.9	323.9
15°	226.7	228.7
17.5°	158.9	159.9
20°	133.6	134.6
22.5°	119.4	120.4
25°	106.3	107.3
27.5°	92.1	93.1
30°	83.0	84.0
32.5°	74.9	75.9
35°	67.8	67.8
37.5°	62.7	62.7
40°	57.7	57.7
42.5°	54.6	54.6
45°	51.7	51.7
47.5°	48.6	48.6
50°	45.5	46.5
52.5°	42.5	42.5
55°	39.5	39.5
57.5°	36.4	37.4
60°	34.4	34.4
62.5°	32.4	32.4
65°	31.4	31.4
67.5°	29.4	29.4
70°	27.3	27.3
71°	26.3	26.3
72.5°	24.2	24.2
75°	21.3	20.3
77.5°	17.2	17.2
80°	13.2	12.2
82.5°	8.1	7.1
85°	3.1	2.0
87.5°	0.0	0.0
90°	0.0	0.0

(END OF REPORT)