

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: P226891

Luminaire Tested: **ISW-AF-450-LED-E1-SL3-8030-ULG**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P226891
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35946)-DOWNLIGHT AND
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: ISW-AF-450-LED-E1-SL3-8030-ULG
Description: IMPACT ELITE LED WEDGE LUMINAIRE WITH UPLIGHT
LIGHT SQUARE WITH ACCULED OPTICS-TYPE III W/SPILL CONTROL, WITH UPLIGHT
GLOW
Light Source: (16) 3000K CCT, 80 CRI LEDs and (1) UPLIGHT LED
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4160.4 lumens
Efficiency: N/A
Efficacy: 99.0 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')
IES Classification: Type II - Short - Non-Cutoff
BUG Rating: B0 - U5 - G1

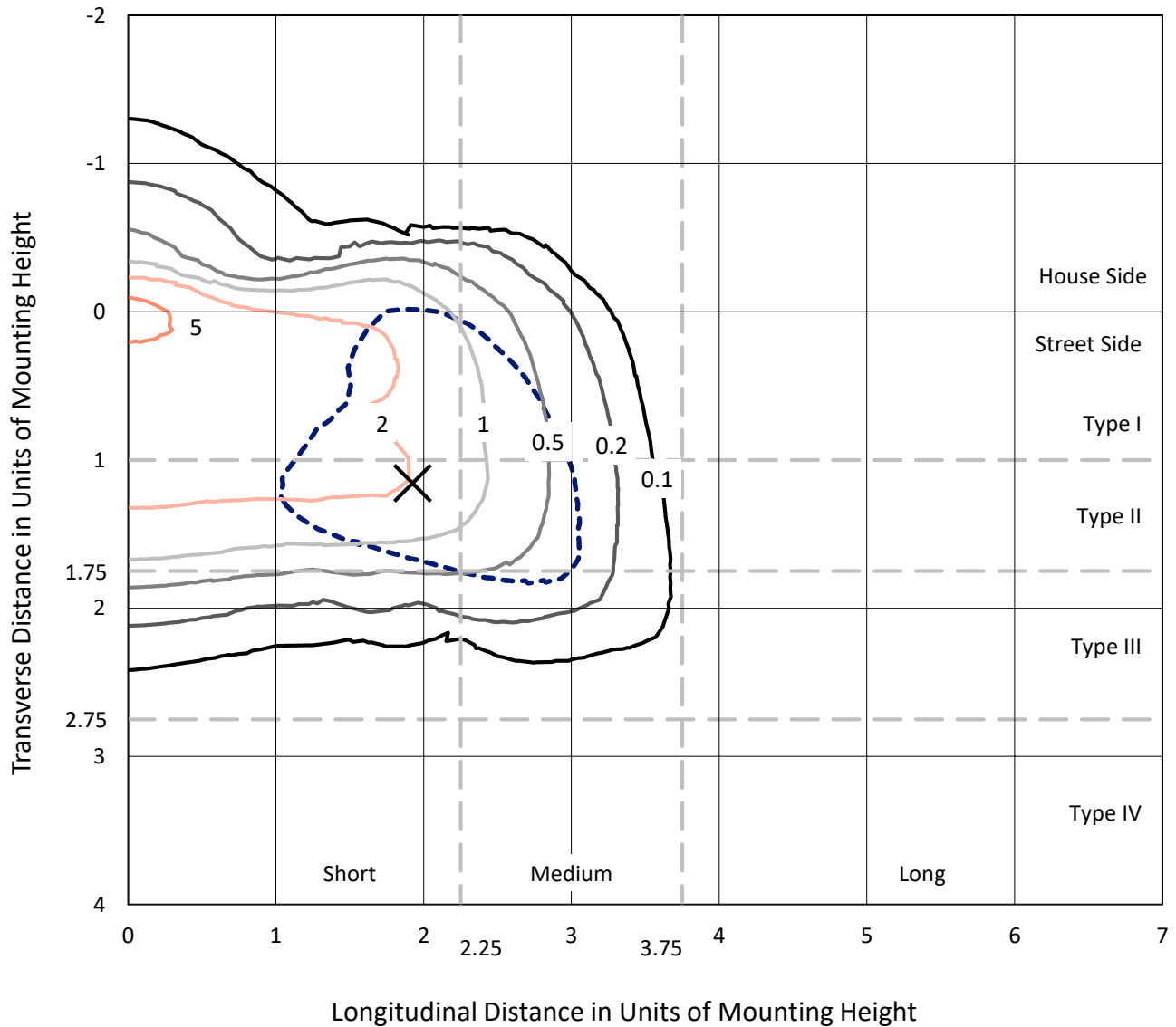
Input Watts (W): 42.01
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

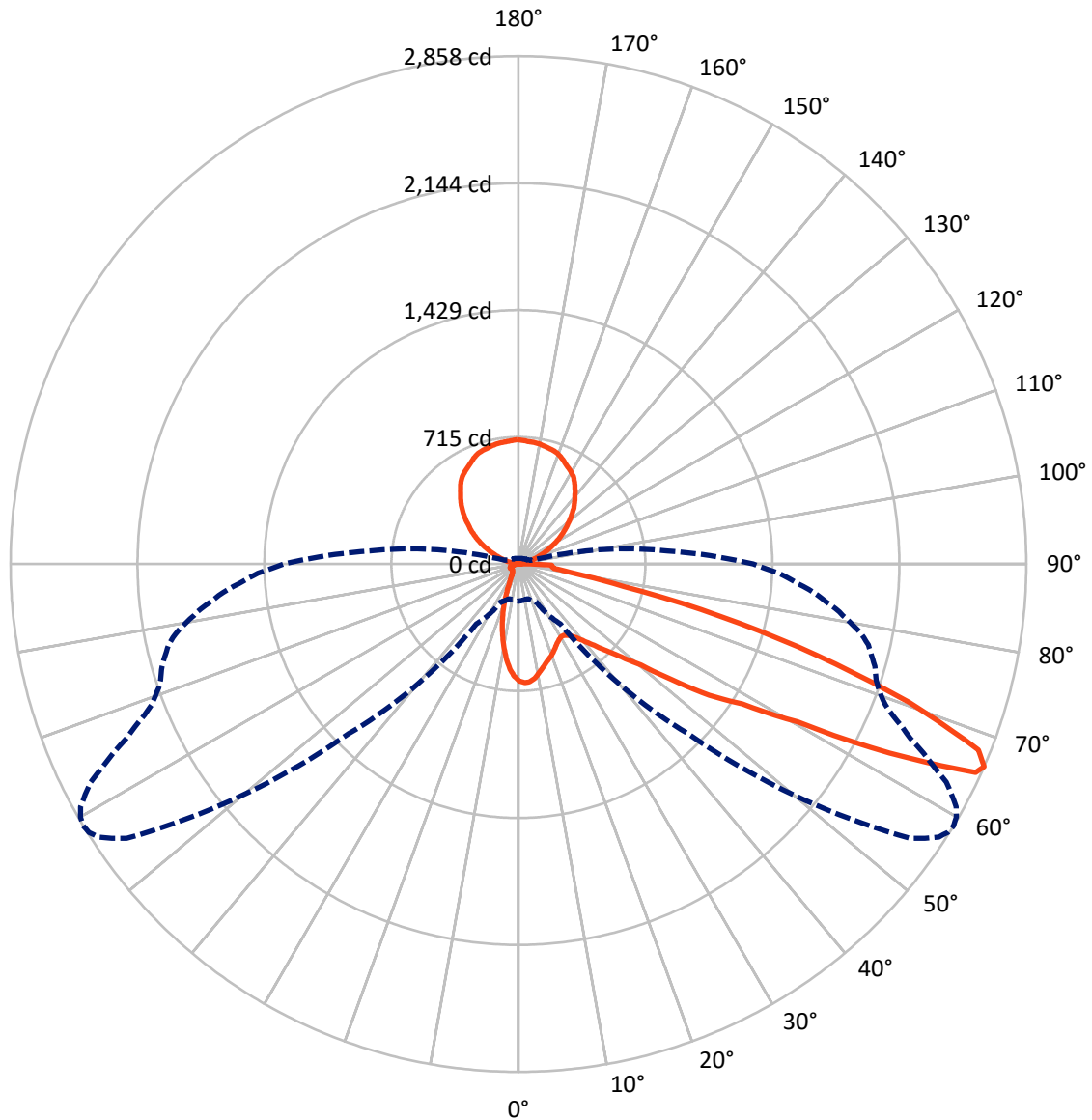
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 6.6 fc
 Type II - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral - - - Horizontal Cone Through 66-Deg Vertical

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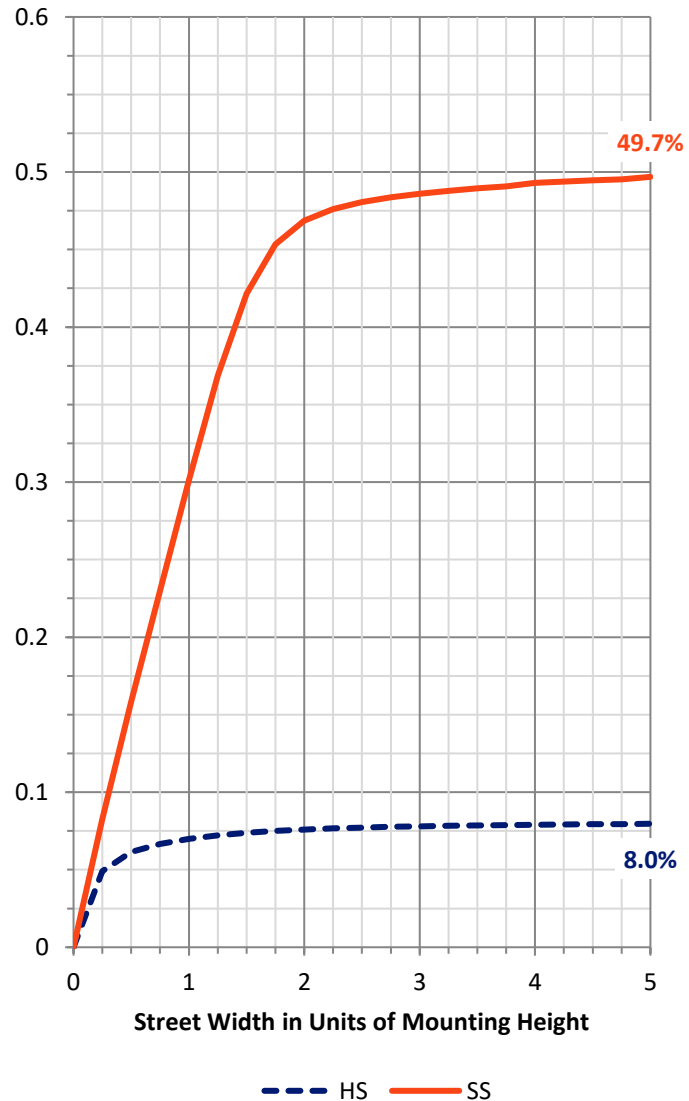
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	336.9	867.7	1204.6
	% Fixture	8.1	20.9	29.0
Street Side	Lumens	2087.4	868.5	2955.8
	% Fixture	50.2	20.9	71.0
Total	Lumens	2424.2	1736.2	4160.4
	% Fixture	58.3	41.7	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	56.1	1.3
10°-20°	118.6	2.9
20°-30°	148.8	3.6
30°-40°	203.5	4.9
40°-50°	327.4	7.9
50°-60°	568.9	13.7
60°-70°	691.3	16.6
70°-80°	257.9	6.2
80°-90°	51.7	1.2
90°-100°	10.3	0.2
100°-110°	57.4	1.4
110°-120°	166.1	4.0
120°-130°	273.2	6.6
130°-140°	336.8	8.1
140°-150°	344.6	8.3
150°-160°	290.3	7.0
160°-170°	191.2	4.6
170°-180°	66.3	1.6
0°-90°	2424.2	58.3
0°-180°	4160.4	100.0



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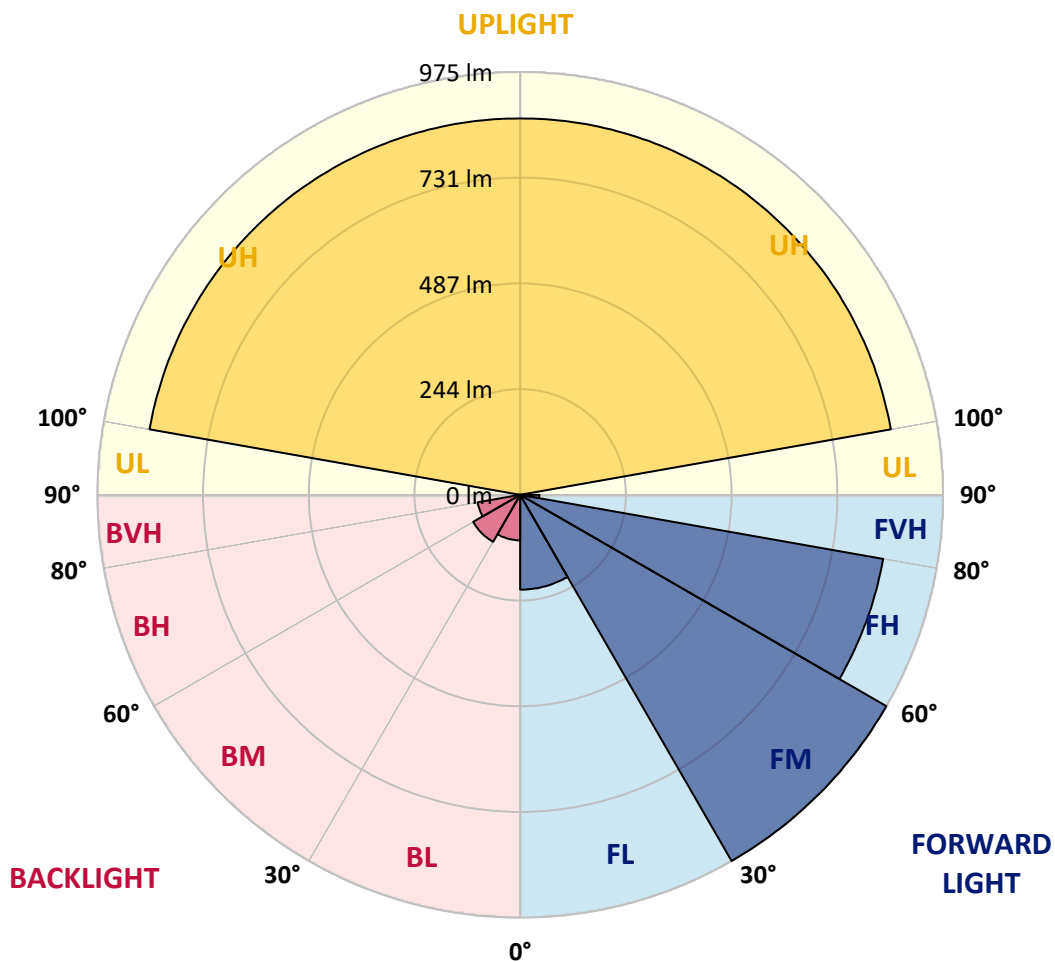
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	218.6	5.3			
FM (30°-60°)	974.8	23.4			
FH (60°-80°)	849.7	20.4			G1/1800
FVH (80°-90°)	44.3	1.1			G1/100
BL (0°-30°)	104.9	2.5	B0/110		
BM (30°-60°)	125.1	3.0	B0/220		
BH (60°-80°)	99.5	2.4	B0/110		G0/110
BVH (80°-90°)	7.5	0.2			G0/10
UL (90°-100°)	10.3	0.2		U2/50	
UH (100°-180°)	867.7	20.9		U4/1000	

BUG Rating: B0-U5-G1

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	56°	57°	58°	59°
0°	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6
2.5°	675.7	673.5	677.6	676.1	677.2	671.6	670.5	669.4	670.1	669.0	669.0
5°	659.7	658.6	663.4	666.0	668.3	667.5	667.2	667.2	667.5	664.9	665.3
7.5°	612.9	612.1	618.8	623.7	634.4	640.8	648.9	649.3	650.1	648.9	651.2
10°	563.1	565.3	571.3	579.1	595.0	604.7	620.3	623.3	624.4	624.8	625.2
12.5°	515.5	513.3	520.7	535.6	557.1	572.7	592.4	593.9	595.8	598.4	601.0
15°	473.1	475.7	481.7	497.3	520.0	541.9	567.5	569.0	572.7	575.0	578.7
17.5°	444.1	444.1	450.8	465.3	486.5	514.4	546.7	549.3	552.3	555.3	559.4
20°	429.7	429.7	432.3	440.8	459.4	486.1	525.2	528.1	533.3	536.7	542.3
22.5°	428.5	428.2	427.8	429.7	440.8	461.6	502.1	506.2	510.7	515.9	520.7
25°	440.4	441.5	437.1	434.1	435.2	444.9	480.2	482.4	491.0	494.3	500.3
27.5°	457.5	459.4	455.7	451.2	444.5	438.2	461.6	465.3	470.9	476.5	483.9
30°	482.1	481.7	481.3	478.3	465.3	445.6	456.0	458.6	463.5	467.9	474.3
32.5°	508.4	511.4	513.7	512.2	498.8	465.3	463.8	466.1	470.5	473.1	477.2
35°	542.6	544.1	552.7	552.7	539.3	500.6	485.8	487.6	489.9	491.0	494.0
37.5°	580.2	585.4	598.0	605.5	584.6	544.5	520.3	520.3	521.5	522.2	524.1
40°	623.7	631.1	648.6	662.7	649.3	599.1	565.7	569.0	567.9	566.4	570.5
42.5°	674.2	682.4	703.6	717.0	709.1	664.9	626.6	624.4	627.8	623.3	624.8
45°	732.9	739.3	760.8	774.9	781.3	745.6	706.5	702.1	702.1	692.4	696.5
47.5°	785.7	787.6	808.4	833.3	853.7	854.5	799.5	796.5	789.4	783.1	781.6
50°	834.8	840.3	853.7	880.9	923.6	960.8	927.3	918.0	910.2	886.8	893.9
52.5°	919.9	930.7	939.2	955.6	1006.1	1081.6	1122.8	1108.3	1106.5	1085.3	1080.4
55°	935.9	937.0	965.2	1059.6	1178.6	1232.8	1312.0	1311.6	1317.6	1310.9	1304.6
57.5°	860.8	851.9	899.1	1023.6	1262.6	1541.3	1517.2	1519.8	1512.0	1491.5	1485.2
60°	670.5	677.9	728.8	887.6	1202.0	1740.5	1900.0	1852.8	1886.6	1833.5	1804.8
62.5°	377.2	368.7	403.3	570.1	986.0	1750.9	2421.4	2426.6	2443.0	2413.3	2343.4
65°	243.4	239.7	236.4	288.4	591.0	1531.7	2709.9	2773.8	2812.1	2827.7	2828.8
66°	209.3	206.3	202.2	236.0	411.8	1349.5	2691.3	2759.7	2820.6	2849.6	2858.2
67.5°	178.0	173.6	172.8	195.5	286.6	1047.0	2514.0	2621.4	2675.3	2750.4	2791.3
70°	136.0	133.8	140.5	168.7	220.0	492.8	2003.3	2143.4	2236.3	2295.1	2333.0
72.5°	114.1	113.4	122.7	154.2	208.5	279.5	1402.3	1552.8	1649.8	1706.0	1758.0
75°	89.2	89.9	102.2	147.2	207.4	243.4	814.7	958.2	1014.7	1103.1	1170.8
77.5°	66.9	66.2	75.8	118.9	202.2	246.8	423.3	482.8	544.9	589.8	606.2
80°	46.8	47.6	54.3	81.8	157.6	253.9	263.9	277.6	290.6	305.1	308.1
82.5°	31.2	31.6	40.1	56.1	109.3	242.3	246.4	240.1	230.1	217.4	203.7
85°	19.0	19.7	28.6	37.9	84.7	219.3	255.0	238.2	223.0	206.3	189.6
87.5°	9.7	10.8	17.1	22.3	50.2	108.2	265.4	253.1	232.3	206.6	188.1
90°	7.6	7.6	10.7	13.6	18.0	28.9	73.9	67.4	37.5	64.8	36.0
92.5°	4.0	4.0	5.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0
95°	5.0	5.0	6.0	7.0	7.0	7.0	7.0	7.1	7.2	7.3	7.4
97.5°	7.0	7.0	8.0	8.0	9.0	9.0	12.0	11.8	11.6	11.4	11.2
100°	8.0	8.0	9.0	10.0	12.0	21.0	29.0	28.7	28.4	28.1	27.8
102.5°	11.0	11.0	13.0	18.0	27.0	40.0	50.0	49.7	49.4	49.1	48.8
105°	21.0	22.0	27.0	36.0	48.0	63.0	72.0	71.8	71.6	71.4	71.2
107.5°	41.0	42.0	49.0	58.0	73.0	88.0	95.0	94.9	94.8	94.7	94.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	56°	57°	58°	59°
110°	66.0	68.0	74.0	87.0	102.0	114.0	120.0	120.1	120.2	120.3	120.4
112.5°	99.0	99.0	106.0	121.0	134.0	143.0	148.0	148.2	148.4	148.6	148.8
115°	140.0	139.0	147.0	159.0	168.0	174.0	179.0	179.3	179.6	179.9	180.2
117.5°	184.0	184.0	189.0	197.0	202.0	205.0	211.0	211.4	211.8	212.2	212.6
120°	225.0	223.0	226.0	233.0	237.0	243.0	246.0	246.4	246.8	247.2	247.6
122.5°	263.0	260.0	261.0	267.0	271.0	277.0	279.0	279.4	279.8	280.2	280.6
125°	298.0	294.0	296.0	299.0	305.0	310.0	313.0	313.2	313.4	313.6	313.8
127.5°	330.0	329.0	329.0	333.0	339.0	340.0	345.0	345.1	345.2	345.3	345.4
130°	363.0	361.0	362.0	366.0	370.0	372.0	377.0	377.4	377.8	378.2	378.6
132.5°	396.0	394.0	393.0	401.0	404.0	405.0	411.0	411.5	412.0	412.5	413.0
135°	429.0	426.0	426.0	432.0	435.0	437.0	443.0	443.5	444.0	444.5	445.0
137.5°	460.0	457.0	459.0	460.0	464.0	468.0	473.0	473.2	473.4	473.6	473.8
140°	488.0	485.0	487.0	489.0	491.0	497.0	500.0	500.2	500.4	500.6	500.8
142.5°	518.0	515.0	517.0	518.0	521.0	525.0	527.0	527.6	528.2	528.8	529.4
145°	550.0	546.0	544.0	547.0	550.0	551.0	556.0	556.6	557.2	557.8	558.4
147.5°	575.0	572.0	571.0	574.0	574.0	575.0	580.0	580.5	581.0	581.5	582.0
150°	595.0	592.0	593.0	593.0	593.0	593.0	597.0	597.3	597.6	597.9	598.2
152.5°	611.0	608.0	608.0	609.0	610.0	610.0	611.0	611.3	611.6	611.9	612.2
155°	629.0	625.0	625.0	627.0	630.0	628.0	626.0	626.5	627.0	627.5	628.0
157.5°	646.0	643.0	643.0	644.0	646.0	645.0	644.0	644.4	644.8	645.2	645.6
160°	663.0	660.0	659.0	656.0	655.0	655.0	658.0	658.6	659.2	659.8	660.4
162.5°	673.0	669.0	669.0	665.0	661.0	663.0	667.0	667.4	667.8	668.2	668.6
165°	681.0	678.0	676.0	676.0	673.0	673.0	672.0	672.5	673.0	673.5	674.0
167.5°	690.0	687.0	684.0	686.0	688.0	685.0	678.0	678.6	679.2	679.8	680.4
170°	698.0	695.0	692.0	692.0	693.0	691.0	686.0	686.3	686.6	686.9	687.2
172.5°	699.0	697.0	695.0	693.0	690.0	690.0	689.0	689.3	689.6	689.9	690.2
175°	700.0	698.0	697.0	695.0	691.0	690.0	690.0	690.5	691.0	691.5	692.0
177.5°	707.0	705.0	700.0	699.0	697.0	695.0	694.0	694.5	695.0	695.5	696.0
180°	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0



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CANDELA DISTRIBUTION (continued):

	60°	61°	62°	63°	64°	65°	66°	67°	68°	69°	70°
0°	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6
2.5°	668.6	669.4	668.6	667.5	668.6	667.5	667.2	666.8	667.2	666.4	666.0
5°	665.3	666.0	666.0	663.8	663.4	664.9	662.7	663.4	662.7	661.9	660.5
7.5°	649.3	649.7	650.1	648.6	649.7	649.7	648.9	648.9	648.2	648.6	647.1
10°	627.0	628.5	630.0	629.2	628.9	632.2	630.7	631.8	631.8	630.7	631.1
12.5°	602.9	605.5	607.3	607.3	608.8	612.5	612.1	612.9	615.9	615.9	614.7
15°	580.6	583.2	586.1	588.4	591.3	593.9	595.8	598.8	600.2	600.2	602.1
17.5°	563.1	566.8	570.1	571.3	575.3	579.8	580.9	584.6	586.9	588.0	590.2
20°	546.0	550.1	554.2	557.9	561.6	566.8	569.4	571.6	575.3	577.6	580.9
22.5°	525.9	532.2	537.4	541.9	548.2	552.7	557.9	561.6	566.1	569.4	572.0
25°	507.0	515.5	522.6	527.0	535.6	541.9	548.2	553.8	559.4	564.2	567.9
27.5°	489.5	499.2	507.7	514.8	524.1	534.1	540.4	549.7	557.1	563.8	568.3
30°	480.9	489.1	498.0	506.2	515.5	528.1	538.6	550.4	559.7	568.3	575.0
32.5°	482.8	490.2	498.0	505.1	514.8	528.9	539.7	553.4	567.2	578.3	586.9
35°	497.7	504.4	509.6	515.9	524.4	535.2	546.7	561.2	578.3	593.2	604.3
37.5°	528.9	530.7	536.0	540.8	545.2	555.3	566.1	578.3	598.0	613.6	629.2
40°	567.5	572.4	577.2	579.4	584.6	591.0	595.8	608.8	626.3	646.7	663.8
42.5°	625.2	627.0	627.8	628.5	630.4	634.8	641.9	653.8	670.9	689.1	708.0
45°	689.8	692.1	694.3	695.4	692.8	695.4	702.8	708.4	725.1	742.2	766.4
47.5°	779.4	772.7	769.4	773.8	771.6	777.2	780.5	783.9	803.9	824.4	844.8
50°	894.2	890.2	884.9	885.3	889.4	885.7	887.9	900.2	906.9	924.0	951.1
52.5°	1077.8	1065.2	1045.5	1037.0	1041.8	1038.8	1039.9	1042.5	1038.1	1054.1	1077.1
55°	1304.6	1288.2	1275.2	1267.8	1240.3	1238.0	1219.8	1213.1	1198.6	1213.9	1208.7
57.5°	1466.2	1455.8	1449.1	1426.8	1414.2	1388.9	1381.5	1372.6	1352.5	1362.5	1371.5
60°	1778.4	1741.3	1728.6	1689.6	1676.6	1652.5	1621.6	1606.4	1596.0	1605.6	1599.7
62.5°	2299.5	2247.9	2237.8	2145.3	2122.6	2066.9	2008.9	2001.1	1968.4	1947.9	1943.1
65°	2808.3	2734.4	2679.0	2577.9	2509.5	2430.0	2341.5	2276.9	2210.3	2176.9	2132.7
66°	2846.3	2816.9	2761.1	2702.1	2602.4	2515.5	2415.1	2345.2	2270.5	2211.8	2173.9
67.5°	2781.6	2766.0	2746.3	2706.1	2643.7	2562.7	2467.5	2378.3	2288.4	2219.3	2158.7
70°	2351.2	2368.3	2390.6	2380.2	2344.5	2312.9	2228.9	2179.1	2111.5	2020.8	1983.6
72.5°	1774.7	1820.4	1804.8	1746.1	1718.6	1696.7	1666.2	1632.8	1535.7	1524.6	1480.7
75°	1141.8	1126.5	1136.6	1065.2	1016.5	996.5	924.0	894.2	821.4	774.2	738.1
77.5°	601.7	572.0	549.0	486.1	441.2	414.8	379.5	337.8	273.9	270.2	211.9
80°	279.1	256.5	235.6	213.7	191.8	162.8	141.2	115.2	101.8	87.3	81.4
82.5°	189.6	175.1	162.4	147.9	131.2	111.1	95.9	81.4	69.5	62.4	56.9
85°	171.7	156.1	142.0	123.8	106.3	89.6	73.2	60.6	49.4	43.1	39.4
87.5°	166.9	147.6	132.7	113.0	95.9	78.8	63.2	49.1	38.3	31.2	26.8
90°	29.2	30.9	24.8	24.2	15.5	17.5	15.3	12.7	13.1	12.0	12.3
92.5°	7.0	7.0	7.0	7.0	7.0	7.0	6.9	6.8	6.7	6.6	6.5
95°	7.5	7.6	7.7	7.8	7.9	8.0	7.9	7.8	7.7	7.6	7.5
97.5°	11.0	10.8	10.6	10.4	10.2	10.0	9.9	9.8	9.7	9.6	9.5
100°	27.5	27.2	26.9	26.6	26.3	26.0	25.7	25.4	25.1	24.8	24.5
102.5°	48.5	48.2	47.9	47.6	47.3	47.0	46.5	46.0	45.5	45.0	44.5
105°	71.0	70.8	70.6	70.4	70.2	70.0	69.5	69.0	68.5	68.0	67.5
107.5°	94.5	94.4	94.3	94.2	94.1	94.0	93.6	93.2	92.8	92.4	92.0



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CATALOG NUMBER: ISW-AF-450-LED-E1-SL3-8030-ULG

CANDELA DISTRIBUTION (continued):

	60°	61°	62°	63°	64°	65°	66°	67°	68°	69°	70°
110°	120.5	120.6	120.7	120.8	120.9	121.0	120.8	120.6	120.4	120.2	120.0
112.5°	149.0	149.2	149.4	149.6	149.8	150.0	149.9	149.8	149.7	149.6	149.5
115°	180.5	180.8	181.1	181.4	181.7	182.0	181.7	181.4	181.1	180.8	180.5
117.5°	213.0	213.4	213.8	214.2	214.6	215.0	214.5	214.0	213.5	213.0	212.5
120°	248.0	248.4	248.8	249.2	249.6	250.0	249.5	249.0	248.5	248.0	247.5
122.5°	281.0	281.4	281.8	282.2	282.6	283.0	282.5	282.0	281.5	281.0	280.5
125°	314.0	314.2	314.4	314.6	314.8	315.0	314.5	314.0	313.5	313.0	312.5
127.5°	345.5	345.6	345.7	345.8	345.9	346.0	346.0	346.0	346.0	346.0	346.0
130°	379.0	379.4	379.8	380.2	380.6	381.0	381.0	381.0	381.0	381.0	381.0
132.5°	413.5	414.0	414.5	415.0	415.5	416.0	415.8	415.6	415.4	415.2	415.0
135°	445.5	446.0	446.5	447.0	447.5	448.0	447.9	447.8	447.7	447.6	447.5
137.5°	474.0	474.2	474.4	474.6	474.8	475.0	475.1	475.2	475.3	475.4	475.5
140°	501.0	501.2	501.4	501.6	501.8	502.0	502.2	502.4	502.6	502.8	503.0
142.5°	530.0	530.6	531.2	531.8	532.4	533.0	533.0	533.0	533.0	533.0	533.0
145°	559.0	559.6	560.2	560.8	561.4	562.0	561.9	561.8	561.7	561.6	561.5
147.5°	582.5	583.0	583.5	584.0	584.5	585.0	585.1	585.2	585.3	585.4	585.5
150°	598.5	598.8	599.1	599.4	599.7	600.0	600.3	600.6	600.9	601.2	601.5
152.5°	612.5	612.8	613.1	613.4	613.7	614.0	614.4	614.8	615.2	615.6	616.0
155°	628.5	629.0	629.5	630.0	630.5	631.0	631.5	632.0	632.5	633.0	633.5
157.5°	646.0	646.4	646.8	647.2	647.6	648.0	648.2	648.4	648.6	648.8	649.0
160°	661.0	661.6	662.2	662.8	663.4	664.0	663.7	663.4	663.1	662.8	662.5
162.5°	669.0	669.4	669.8	670.2	670.6	671.0	670.9	670.8	670.7	670.6	670.5
165°	674.5	675.0	675.5	676.0	676.5	677.0	677.3	677.6	677.9	678.2	678.5
167.5°	681.0	681.6	682.2	682.8	683.4	684.0	684.4	684.8	685.2	685.6	686.0
170°	687.5	687.8	688.1	688.4	688.7	689.0	689.5	690.0	690.5	691.0	691.5
172.5°	690.5	690.8	691.1	691.4	691.7	692.0	692.2	692.4	692.6	692.8	693.0
175°	692.5	693.0	693.5	694.0	694.5	695.0	695.1	695.2	695.3	695.4	695.5
177.5°	696.5	697.0	697.5	698.0	698.5	699.0	699.2	699.4	699.6	699.8	700.0
180°	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0



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CATALOG NUMBER: ISW-AF-450-LED-E1-SL3-8030-ULG

CANDELA DISTRIBUTION (continued):

	71°	72°	73°	74°	75°	76°	77°	78°	79°	80°	81°
0°	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6
2.5°	665.3	664.2	665.3	664.9	663.4	663.8	664.2	662.7	661.9	661.9	661.6
5°	659.3	658.6	659.3	659.0	656.7	656.4	656.4	655.3	653.8	652.7	651.9
7.5°	645.2	646.0	645.6	644.5	643.4	643.4	642.2	639.6	638.2	636.7	635.2
10°	629.2	629.2	629.6	629.2	627.4	626.6	625.2	623.7	624.0	620.3	617.3
12.5°	615.1	615.1	614.7	614.0	612.9	612.5	612.5	608.1	606.9	605.8	602.5
15°	601.7	602.5	602.5	602.5	600.6	600.6	598.8	595.8	595.8	592.4	589.1
17.5°	591.3	592.4	592.1	592.4	592.8	590.6	587.2	585.4	583.2	581.3	576.8
20°	582.4	583.2	583.5	583.5	582.4	580.9	577.9	575.0	573.5	569.8	564.2
22.5°	574.2	575.7	576.1	576.1	574.6	573.5	570.5	566.1	563.1	558.6	553.4
25°	570.9	572.7	571.6	572.4	570.9	568.3	564.2	560.5	556.0	550.4	544.9
27.5°	572.0	574.6	573.9	573.5	571.6	569.8	564.6	560.1	554.9	548.2	541.2
30°	578.7	583.2	581.3	579.8	579.4	575.0	570.1	563.8	557.9	550.1	541.9
32.5°	591.3	593.6	593.9	592.8	591.0	587.2	580.6	572.4	565.7	556.4	546.7
35°	612.1	614.4	613.6	613.6	611.8	605.8	597.6	589.5	580.2	569.8	559.7
37.5°	641.1	645.2	644.5	643.0	640.8	633.7	627.4	617.3	606.9	593.2	581.7
40°	677.6	683.9	689.5	688.3	683.1	676.8	670.9	659.3	648.9	633.7	621.1
42.5°	726.6	735.2	742.2	747.4	745.2	737.0	726.6	721.8	706.9	691.3	678.3
45°	789.4	807.3	813.6	819.9	819.9	814.7	812.5	802.8	787.2	766.4	754.1
47.5°	872.3	896.1	903.2	913.9	920.3	914.7	910.6	894.2	883.8	855.2	852.2
50°	973.0	996.8	1016.1	1028.8	1026.9	1031.8	1022.1	1012.8	998.3	974.9	966.7
52.5°	1101.6	1120.6	1138.1	1145.5	1153.3	1152.2	1150.0	1143.6	1125.4	1112.8	1092.0
55°	1233.6	1249.2	1270.4	1282.6	1292.7	1290.8	1282.3	1267.0	1270.4	1244.0	1232.5
57.5°	1383.7	1400.8	1423.9	1435.4	1439.9	1462.5	1457.0	1455.1	1448.8	1439.5	1427.6
60°	1642.0	1646.9	1665.8	1694.8	1730.5	1723.4	1732.4	1738.3	1742.8	1722.0	1720.5
62.5°	1949.8	1955.7	1972.1	1978.0	1983.2	1984.0	1972.1	1972.1	1951.6	1924.9	1904.1
65°	2117.8	2105.5	2094.4	2088.1	2074.3	2062.0	2044.2	2020.0	1985.5	1944.2	1907.0
66°	2141.9	2117.0	2102.5	2086.6	2064.6	2042.0	2020.8	1987.7	1947.2	1898.1	1849.1
67.5°	2118.5	2084.3	2050.5	2027.1	1996.6	1955.7	1918.6	1879.9	1841.6	1774.4	1728.6
70°	1904.8	1863.9	1826.8	1775.5	1727.2	1687.0	1623.1	1555.8	1500.4	1429.8	1384.8
72.5°	1414.6	1366.3	1317.9	1245.8	1175.6	1165.2	1084.9	1005.7	963.4	906.5	860.8
75°	698.7	637.8	551.2	512.5	456.4	428.9	413.7	356.4	342.7	286.6	285.8
77.5°	197.4	169.5	150.5	131.2	123.0	117.1	96.6	92.5	84.0	82.5	77.7
80°	74.7	70.6	68.8	66.9	65.0	63.9	63.2	60.2	58.7	56.5	55.4
82.5°	53.9	52.4	49.1	47.9	46.5	44.2	43.9	42.0	40.9	38.7	37.9
85°	36.4	34.6	32.7	30.8	30.1	29.7	28.6	27.9	27.1	26.0	25.6
87.5°	24.5	22.7	20.4	19.7	19.3	19.7	20.1	19.3	19.0	18.2	17.8
90°	12.0	13.1	12.7	12.7	13.5	12.5	12.3	12.5	11.9	11.7	11.1
92.5°	6.4	6.3	6.2	6.1	6.0	6.0	6.0	6.0	6.0	6.0	6.0
95°	7.4	7.3	7.2	7.1	7.0	7.0	7.0	7.0	7.0	7.0	7.0
97.5°	9.4	9.3	9.2	9.1	9.0	8.9	8.8	8.7	8.6	8.5	8.4
100°	24.2	23.9	23.6	23.3	23.0	22.6	22.2	21.8	21.4	21.0	20.6
102.5°	44.0	43.5	43.0	42.5	42.0	41.7	41.4	41.1	40.8	40.5	40.2
105°	67.0	66.5	66.0	65.5	65.0	64.6	64.2	63.8	63.4	63.0	62.6
107.5°	91.6	91.2	90.8	90.4	90.0	89.7	89.4	89.1	88.8	88.5	88.2



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REPORT N
 CATALOG

CANDELA DISTRIBUTION (continued):

CANDELA

	71°	72°	73°	74°	75°	76°	77°	78°	79°	80°	81°	
110°	119.8	119.6	119.4	119.2	119.0	118.7	118.4	118.1	117.8	117.5	117.2	0°
112.5°	149.4	149.3	149.2	149.1	149.0	148.8	148.6	148.4	148.2	148.0	147.8	2.5°
115°	180.2	179.9	179.6	179.3	179.0	178.8	178.6	178.4	178.2	178.0	177.8	5°
117.5°	212.0	211.5	211.0	210.5	210.0	209.8	209.6	209.4	209.2	209.0	208.8	7.5°
120°	247.0	246.5	246.0	245.5	245.0	244.8	244.6	244.4	244.2	244.0	243.8	10°
122.5°	280.0	279.5	279.0	278.5	278.0	277.8	277.6	277.4	277.2	277.0	276.8	12.5°
125°	312.0	311.5	311.0	310.5	310.0	310.0	310.0	310.0	310.0	310.0	310.0	15°
127.5°	346.0	346.0	346.0	346.0	346.0	345.9	345.8	345.7	345.6	345.5	345.4	17.5°
130°	381.0	381.0	381.0	381.0	381.0	380.8	380.6	380.4	380.2	380.0	379.8	20°
132.5°	414.8	414.6	414.4	414.2	414.0	414.0	414.0	414.0	414.0	414.0	414.0	22.5°
135°	447.4	447.3	447.2	447.1	447.0	447.3	447.6	447.9	448.2	448.5	448.8	25°
137.5°	475.6	475.7	475.8	475.9	476.0	476.5	477.0	477.5	478.0	478.5	479.0	27.5°
140°	503.2	503.4	503.6	503.8	504.0	504.5	505.0	505.5	506.0	506.5	507.0	30°
142.5°	533.0	533.0	533.0	533.0	533.0	533.1	533.2	533.3	533.4	533.5	533.6	32.5°
145°	561.4	561.3	561.2	561.1	561.0	560.7	560.4	560.1	559.8	559.5	559.2	35°
147.5°	585.6	585.7	585.8	585.9	586.0	585.7	585.4	585.1	584.8	584.5	584.2	37.5°
150°	601.8	602.1	602.4	602.7	603.0	603.3	603.6	603.9	604.2	604.5	604.8	40°
152.5°	616.4	616.8	617.2	617.6	618.0	618.5	619.0	619.5	620.0	620.5	621.0	42.5°
155°	634.0	634.5	635.0	635.5	636.0	636.2	636.4	636.6	636.8	637.0	637.2	45°
157.5°	649.2	649.4	649.6	649.8	650.0	650.0	650.0	650.0	650.0	650.0	650.0	47.5°
160°	662.2	661.9	661.6	661.3	661.0	660.9	660.8	660.7	660.6	660.5	660.4	50°
162.5°	670.4	670.3	670.2	670.1	670.0	669.8	669.6	669.4	669.2	669.0	668.8	52.5°
165°	678.8	679.1	679.4	679.7	680.0	679.8	679.6	679.4	679.2	679.0	678.8	55°
167.5°	686.4	686.8	687.2	687.6	688.0	688.0	688.0	688.0	688.0	688.0	688.0	57.5°
170°	692.0	692.5	693.0	693.5	694.0	694.2	694.4	694.6	694.8	695.0	695.2	60°
172.5°	693.2	693.4	693.6	693.8	694.0	694.2	694.4	694.6	694.8	695.0	695.2	62.5°
175°	695.6	695.7	695.8	695.9	696.0	695.8	695.6	695.4	695.2	695.0	694.8	65°
177.5°	700.2	700.4	700.6	700.8	701.0	700.7	700.4	700.1	699.8	699.5	699.2	66°
180°	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	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°

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REPORT NUMBER: P
 CATALOG NUMBER:

DISTRIBUTION (continued):

CANDELA DISTRIBUTION

82°	83°	84°	85°	86°	87°	88°	89°	90°	95°	105°	82°	
658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6	658.6	110°	116.9
660.8	659.7	660.1	658.6	658.2	659.0	659.3	659.3	658.2	651.5	643.7	112.5°	147.6
651.2	648.9	648.6	647.5	645.6	647.8	646.7	644.9	642.6	634.8	619.6	115°	177.6
633.3	631.8	630.0	628.5	627.4	626.6	626.3	624.4	620.3	605.8	580.2	117.5°	208.6
616.2	614.4	612.1	608.8	607.3	605.1	605.1	600.6	597.6	579.4	541.5	120°	243.6
599.5	596.2	595.0	592.8	588.7	586.9	584.3	579.8	575.3	553.4	503.6	122.5°	276.6
586.9	583.5	578.7	577.2	572.7	568.7	565.3	559.4	554.5	525.5	463.8	125°	310.0
573.1	570.5	565.3	562.0	557.1	552.3	546.7	539.3	536.0	499.2	425.9	127.5°	345.3
562.0	556.0	550.1	547.1	541.2	535.6	530.0	521.1	514.4	473.1	385.8	130°	379.6
549.0	543.8	537.4	532.2	524.1	517.7	511.4	502.1	494.0	446.7	345.3	132.5°	414.0
540.0	532.6	525.9	520.0	510.7	503.2	494.3	484.3	476.1	421.5	300.7	135°	449.1
534.8	527.4	518.9	511.4	500.6	492.1	482.4	471.3	460.9	401.0	258.7	137.5°	479.5
533.3	524.4	515.5	506.2	495.1	484.3	472.8	461.6	448.2	381.3	213.0	140°	507.5
537.8	527.0	517.0	505.8	492.8	480.6	469.0	454.6	441.2	364.2	168.0	142.5°	533.7
550.1	537.1	525.5	513.3	498.4	485.0	471.3	454.9	440.1	352.3	128.6	145°	558.9
569.4	557.1	543.8	531.5	514.4	499.5	484.3	466.8	449.0	347.5	97.0	147.5°	583.9
608.4	592.1	578.3	565.3	545.6	530.4	512.9	491.7	471.7	352.0	81.0	150°	605.1
663.1	642.6	630.0	618.5	593.9	577.2	557.1	533.0	510.3	364.6	71.4	152.5°	621.5
738.5	722.9	700.2	682.4	657.5	638.9	616.6	587.6	562.3	382.4	66.5	155°	637.4
832.9	812.5	790.2	772.0	744.8	712.5	689.1	654.1	625.5	410.3	64.3	157.5°	650.0
948.5	924.0	893.9	878.6	841.1	815.8	784.6	747.1	710.6	453.4	65.4	160°	660.3
1074.1	1047.7	1024.3	995.3	961.1	932.9	903.2	863.4	817.7	535.2	69.9	162.5°	668.6
1206.8	1189.7	1167.4	1129.9	1111.3	1075.6	1037.7	993.8	960.8	641.5	80.7	165°	678.6
1400.1	1381.5	1378.9	1342.1	1313.9	1281.5	1251.8	1215.4	1176.3	830.3	105.9	167.5°	688.0
1697.4	1678.1	1656.2	1627.5	1594.1	1554.0	1517.2	1468.1	1424.6	1019.5	117.8	170°	695.4
1873.6	1837.9	1798.5	1755.0	1706.3	1656.5	1607.1	1544.3	1481.1	1031.0	106.3	172.5°	695.4
1858.7	1814.5	1764.3	1705.2	1653.9	1592.6	1539.5	1458.4	1400.8	918.0	86.6	175°	694.6
1803.7	1743.1	1695.9	1641.7	1577.4	1522.4	1466.2	1386.3	1320.5	841.8	79.2	177.5°	698.9
1662.9	1611.2	1545.8	1493.7	1446.2	1380.4	1327.6	1252.9	1207.6	730.0	71.0	180°	700.0
1329.1	1257.7	1202.4	1161.8	1108.0	1048.5	1001.7	938.8	898.7	483.2	61.3		
774.2	756.4	694.3	659.3	626.6	578.3	541.2	511.0	458.3	234.2	54.3		
238.6	221.9	219.7	186.6	197.4	168.7	164.3	149.4	149.4	89.9	42.7		
76.2	74.7	71.7	67.6	66.2	66.2	64.3	63.9	61.0	48.3	32.0		
53.9	52.8	51.7	50.5	49.8	50.2	48.7	47.9	47.2	34.9	25.3		
37.2	36.1	33.8	33.8	33.1	32.7	33.1	31.6	31.2	24.5	21.2		
25.3	24.9	24.5	24.2	23.8	23.4	23.0	21.9	21.2	17.1	14.9		
16.7	14.1	13.8	11.9	11.5	11.2	10.4	11.2	12.3	12.3	9.7		
11.3	10.7	10.9	10.7	10.0	10.3	10.3	9.6	9.6	10.7	12.3		
6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		
7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
8.3	8.2	8.1	8.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0		
20.2	19.8	19.4	19.0	19.0	19.0	19.0	19.0	19.0	19.0	23.0		
39.9	39.6	39.3	39.0	38.8	38.6	38.4	38.2	38.0	39.0	42.0		
62.2	61.8	61.4	61.0	61.0	61.0	61.0	61.0	61.0	61.0	65.0		
87.9	87.6	87.3	87.0	86.8	86.6	86.4	86.2	86.0	87.0	90.0		

'226891
 ISW-AF-450-LED-E1-SL3-8030-ULG

REPORT NUMBER: P226891
 CATALOG NUMBER: ISW-AF-4!

TION (continued):

CANDELA DISTRIBUTION (con

83°	84°	85°	86°	87°	88°	89°	90°	95°	105°		115°	125°
116.6	116.3	116.0	116.2	116.4	116.6	116.8	117.0	116.0	119.0	0°	658.6	658.6
147.4	147.2	147.0	147.0	147.0	147.0	147.0	147.0	147.0	149.0	2.5°	637.0	631.1
177.4	177.2	177.0	177.2	177.4	177.6	177.8	178.0	177.0	179.0	5°	603.2	589.8
208.4	208.2	208.0	208.2	208.4	208.6	208.8	209.0	208.0	210.0	7.5°	557.5	531.5
243.4	243.2	243.0	243.0	243.0	243.0	243.0	243.0	243.0	245.0	10°	505.1	467.6
276.4	276.2	276.0	276.2	276.4	276.6	276.8	277.0	276.0	278.0	12.5°	450.8	402.9
310.0	310.0	310.0	310.0	310.0	310.0	310.0	310.0	310.0	310.0	15°	400.3	336.7
345.2	345.1	345.0	345.4	345.8	346.2	346.6	347.0	345.0	346.0	17.5°	347.1	268.7
379.4	379.2	379.0	379.2	379.4	379.6	379.8	380.0	379.0	381.0	20°	296.2	202.9
414.0	414.0	414.0	414.2	414.4	414.6	414.8	415.0	414.0	414.0	22.5°	238.6	142.4
449.4	449.7	450.0	450.2	450.4	450.6	450.8	451.0	450.0	447.0	25°	175.1	103.3
480.0	480.5	481.0	481.2	481.4	481.6	481.8	482.0	481.0	476.0	27.5°	124.9	82.5
508.0	508.5	509.0	509.4	509.8	510.2	510.6	511.0	509.0	504.0	30°	93.3	69.5
533.8	533.9	534.0	534.4	534.8	535.2	535.6	536.0	534.0	533.0	32.5°	74.7	60.2
558.6	558.3	558.0	558.4	558.8	559.2	559.6	560.0	558.0	561.0	35°	63.6	54.6
583.6	583.3	583.0	583.4	583.8	584.2	584.6	585.0	583.0	586.0	37.5°	56.9	50.9
605.4	605.7	606.0	606.8	607.6	608.4	609.2	610.0	606.0	603.0	40°	53.1	49.1
622.0	622.5	623.0	624.0	625.0	626.0	627.0	628.0	623.0	618.0	42.5°	50.9	47.2
637.6	637.8	638.0	638.6	639.2	639.8	640.4	641.0	638.0	636.0	45°	49.8	46.1
650.0	650.0	650.0	651.0	652.0	653.0	654.0	655.0	650.0	650.0	47.5°	49.1	44.6
660.2	660.1	660.0	661.2	662.4	663.6	664.8	666.0	660.0	661.0	50°	48.3	44.6
668.4	668.2	668.0	669.2	670.4	671.6	672.8	674.0	668.0	670.0	52.5°	48.7	45.3
678.4	678.2	678.0	678.8	679.6	680.4	681.2	682.0	678.0	680.0	55°	50.5	45.3
688.0	688.0	688.0	689.2	690.4	691.6	692.8	694.0	688.0	688.0	57.5°	53.5	45.3
695.6	695.8	696.0	697.0	698.0	699.0	700.0	701.0	696.0	694.0	60°	55.8	46.1
695.6	695.8	696.0	697.0	698.0	699.0	700.0	701.0	696.0	694.0	62.5°	56.5	47.6
694.4	694.2	694.0	695.0	696.0	697.0	698.0	699.0	694.0	696.0	65°	55.8	48.3
698.6	698.3	698.0	698.8	699.6	700.4	701.2	702.0	698.0	701.0	66°	55.0	48.3
700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	67.5°	53.9	47.6
										70°	51.3	44.6
										72.5°	46.1	40.1
										75°	39.4	32.3
										77.5°	32.0	26.0
										80°	23.8	19.7
										82.5°	17.5	15.2
										85°	12.3	10.8
										87.5°	7.4	6.7
										90°	10.9	8.9
										92.5°	7.0	7.0
										95°	8.0	7.0
										97.5°	10.0	12.0
										100°	26.0	29.0
										102.5°	47.0	50.0
										105°	70.0	72.0
										107.5°	94.0	95.0



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tinued):

135°	145°	155°	165°	175°	180°
658.6	658.6	658.6	658.6	658.6	658.6
627.0	626.6	617.3	615.5	609.2	612.5
573.9	567.5	550.8	547.5	540.4	538.6
510.3	492.8	479.5	464.6	450.5	457.5
436.0	406.6	377.2	357.9	350.1	347.5
365.4	312.6	275.8	237.9	224.5	229.3
279.9	219.7	170.6	148.7	136.0	133.8
197.4	140.9	118.2	112.6	110.0	110.0
133.8	107.4	98.9	96.3	96.3	96.6
101.8	90.3	86.6	87.0	88.5	88.8
84.4	79.9	78.1	80.7	83.6	84.0
72.8	71.7	72.1	75.4	78.4	78.8
63.9	65.0	66.5	69.5	72.1	72.8
57.6	59.5	60.6	62.4	63.9	64.3
53.1	55.4	55.0	56.1	57.2	57.6
50.5	51.7	50.5	51.3	51.3	52.0
48.3	48.7	46.8	47.2	47.9	47.9
46.1	45.7	43.9	44.6	45.7	46.1
43.9	43.1	41.6	43.1	45.0	45.3
42.0	41.3	40.5	42.4	44.6	45.0
41.3	40.5	39.8	42.4	44.6	45.0
41.3	40.5	39.8	41.6	43.9	44.2
41.6	40.9	39.4	41.3	42.7	43.1
42.0	41.3	38.7	39.8	40.5	40.9
42.0	40.5	37.9	38.3	38.3	38.7
41.3	39.4	36.4	36.4	36.1	36.1
41.3	37.9	34.9	34.2	33.5	33.5
40.9	37.5	34.6	33.5	32.3	32.3
40.1	36.8	33.8	32.3	31.2	31.2
37.5	35.3	32.0	30.5	29.4	29.0
33.5	32.3	29.7	28.6	27.5	27.1
28.2	28.6	27.1	26.4	25.3	24.9
23.8	24.5	23.8	23.4	22.7	22.3
19.0	20.4	19.7	19.7	20.1	19.3
14.5	16.4	15.6	16.4	17.1	16.0
10.0	11.9	11.9	12.3	12.6	11.9
6.3	7.8	7.4	7.8	7.8	7.4
8.5	10.6	9.5	9.2	6.9	6.5
6.0	6.0	6.0	5.0	4.0	4.0
7.0	7.0	7.0	6.0	5.0	5.0
9.0	9.0	8.0	8.0	7.0	7.0
21.0	12.0	10.0	9.0	8.0	8.0
40.0	27.0	18.0	13.0	11.0	11.0
63.0	48.0	36.0	27.0	22.0	21.0
88.0	73.0	58.0	49.0	42.0	41.0

CANDELA DISTRIBUTION (continued):

	115°	125°	135°
110°	121.0	120.0	114.0
112.5°	150.0	148.0	143.0
115°	182.0	179.0	174.0
117.5°	215.0	211.0	205.0
120°	250.0	246.0	243.0
122.5°	283.0	279.0	277.0
125°	315.0	313.0	310.0
127.5°	346.0	345.0	340.0
130°	381.0	377.0	372.0
132.5°	416.0	411.0	405.0
135°	448.0	443.0	437.0
137.5°	475.0	473.0	468.0
140°	502.0	500.0	497.0
142.5°	533.0	527.0	525.0
145°	562.0	556.0	551.0
147.5°	585.0	580.0	575.0
150°	600.0	597.0	593.0
152.5°	614.0	611.0	610.0
155°	631.0	626.0	628.0
157.5°	648.0	644.0	645.0
160°	664.0	658.0	655.0
162.5°	671.0	667.0	663.0
165°	677.0	672.0	673.0
167.5°	684.0	678.0	685.0
170°	689.0	686.0	691.0
172.5°	692.0	689.0	690.0
175°	695.0	690.0	690.0
177.5°	699.0	694.0	695.0
180°	700.0	700.0	700.0



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145°	155°	165°	175°	180°
102.0	87.0	74.0	68.0	66.0
134.0	121.0	106.0	99.0	99.0
168.0	159.0	147.0	139.0	140.0
202.0	197.0	189.0	184.0	184.0
237.0	233.0	226.0	223.0	225.0
271.0	267.0	261.0	260.0	263.0
305.0	299.0	296.0	294.0	298.0
339.0	333.0	329.0	329.0	330.0
370.0	366.0	362.0	361.0	363.0
404.0	401.0	393.0	394.0	396.0
435.0	432.0	426.0	426.0	429.0
464.0	460.0	459.0	457.0	460.0
491.0	489.0	487.0	485.0	488.0
521.0	518.0	517.0	515.0	518.0
550.0	547.0	544.0	546.0	550.0
574.0	574.0	571.0	572.0	575.0
593.0	593.0	593.0	592.0	595.0
610.0	609.0	608.0	608.0	611.0
630.0	627.0	625.0	625.0	629.0
646.0	644.0	643.0	643.0	646.0
655.0	656.0	659.0	660.0	663.0
661.0	665.0	669.0	669.0	673.0
673.0	676.0	676.0	678.0	681.0
688.0	686.0	684.0	687.0	690.0
693.0	692.0	692.0	695.0	698.0
690.0	693.0	695.0	697.0	699.0
691.0	695.0	697.0	698.0	700.0
697.0	699.0	700.0	705.0	707.0
700.0	700.0	700.0	700.0	700.0

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