

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: P227150

Luminaire Tested: **ISW-AF-450-LED-E1-SLL-ULG**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P227150
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35948)-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-SLL-ULG
Description: IMPACT ELITE LED WEDGE LUMINAIRE WITH UPLIGHT
LIGHT SQUARE WITH ACCULED OPTICS-90° SPILL LIGHT ELIMINATOR LEFT, 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: 4543.4 lumens
Efficiency: N/A
Efficacy: 108.1 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: B1 - U5 - G1

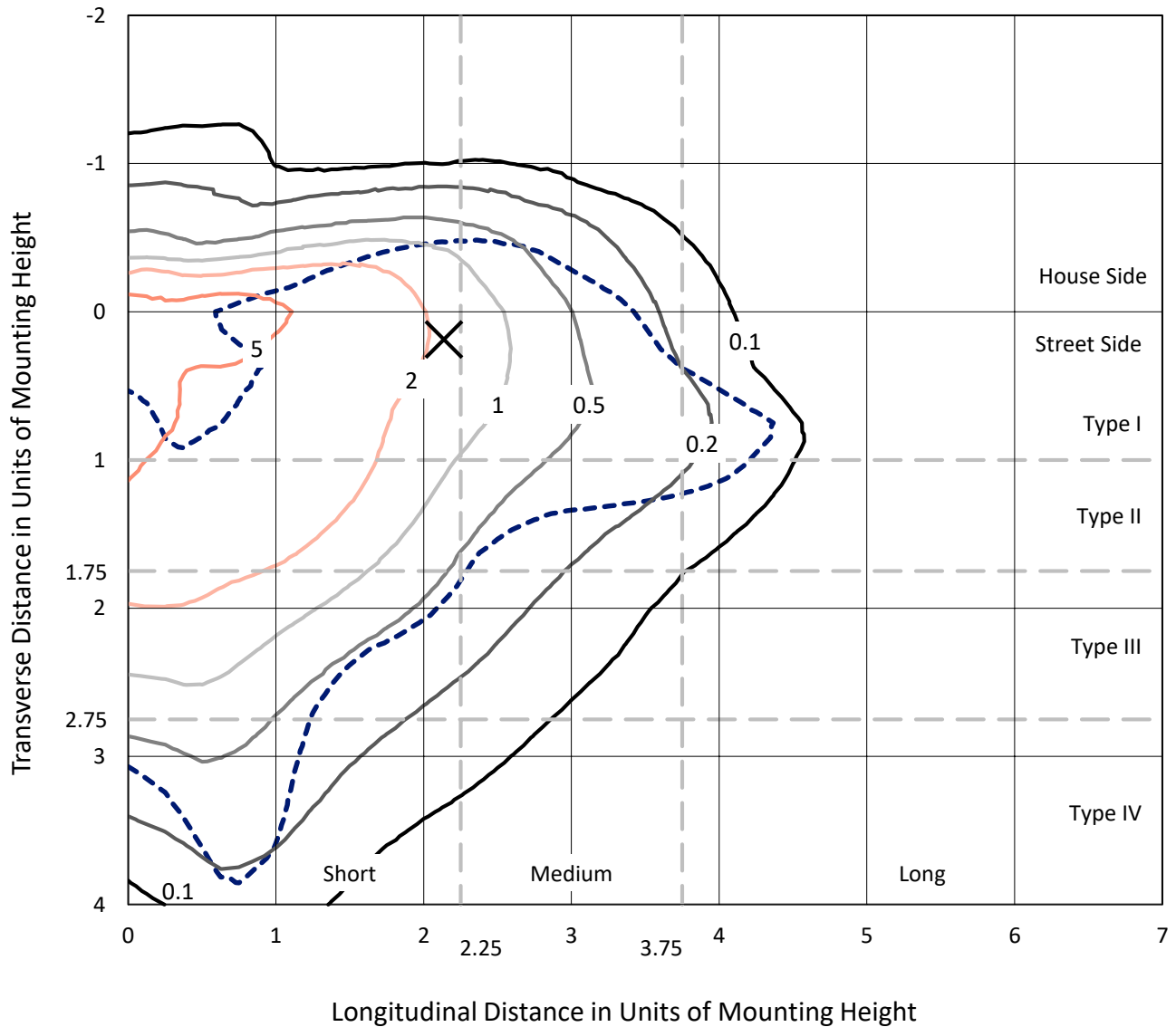
Input Watts (W): 42.01
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

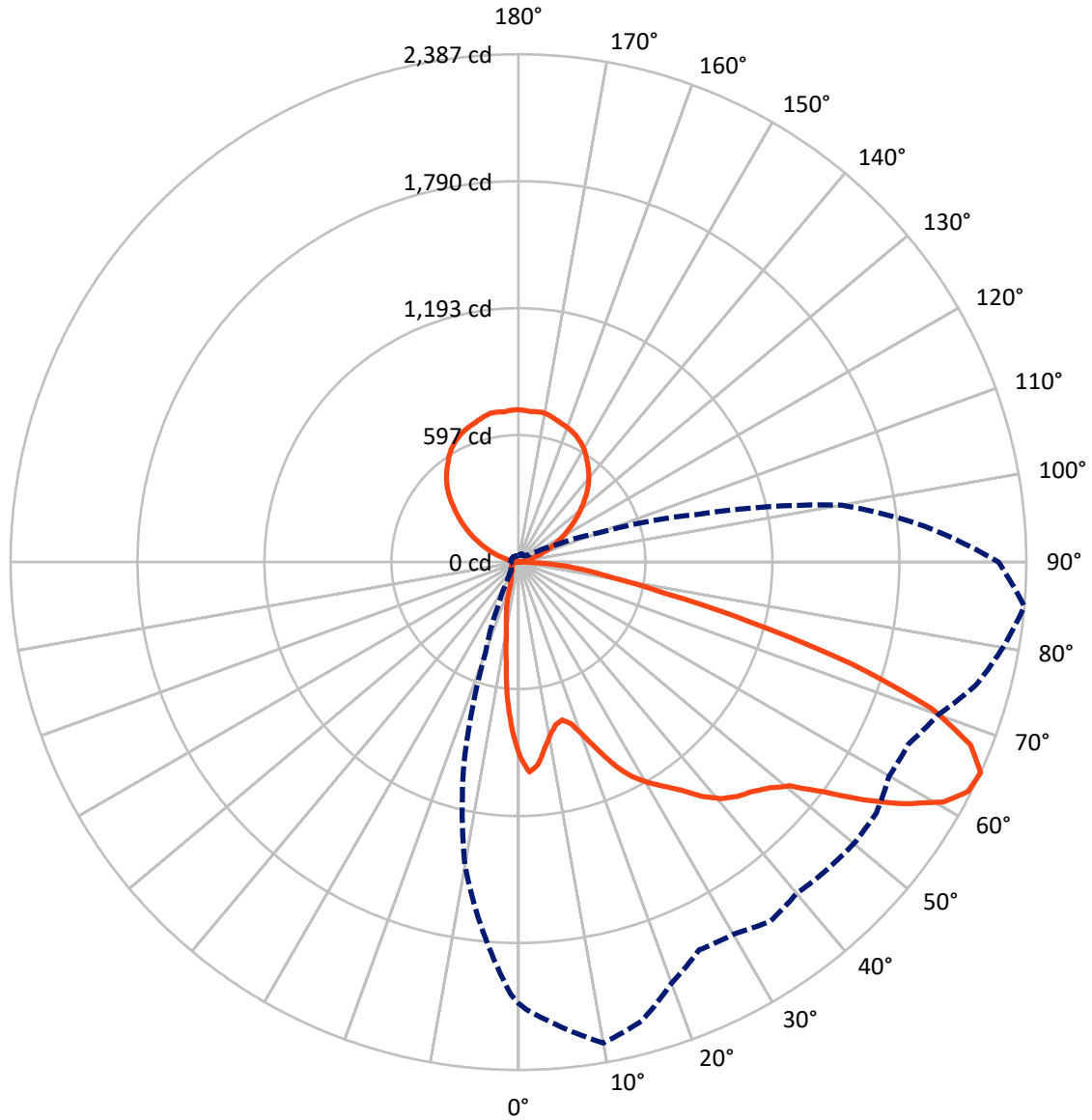
✕ Max cd
 - - - 1/2 Max cd



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

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Luminous Intensity Polar Plot



— Vertical Plane Through 85-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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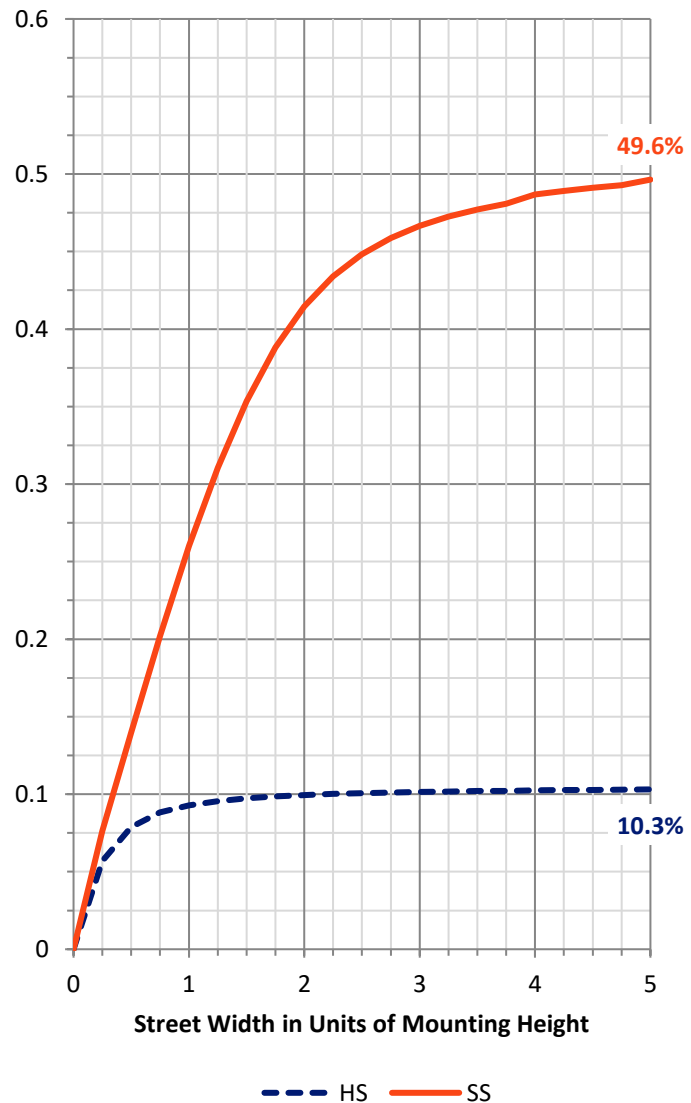
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	475.2	887.5	1362.7
	% Fixture	10.5	19.5	30.0
Street Side	Lumens	2293.1	887.6	3180.6
	% Fixture	50.5	19.5	70.0
Total	Lumens	2768.3	1775.1	4543.4
	% Fixture	60.9	39.1	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	67.7	1.5
10°-20°	130.3	2.9
20°-30°	185.8	4.1
30°-40°	269.6	5.9
40°-50°	385.7	8.5
50°-60°	592.1	13.0
60°-70°	685.4	15.1
70°-80°	349.7	7.7
80°-90°	102.0	2.2
90°-100°	9.6	0.2
100°-110°	58.7	1.3
110°-120°	169.9	3.7
120°-130°	279.4	6.2
130°-140°	344.6	7.6
140°-150°	352.5	7.8
150°-160°	297.0	6.5
160°-170°	195.5	4.3
170°-180°	67.8	1.5
0°-90°	2768.3	60.9
0°-180°	4543.4	100.0



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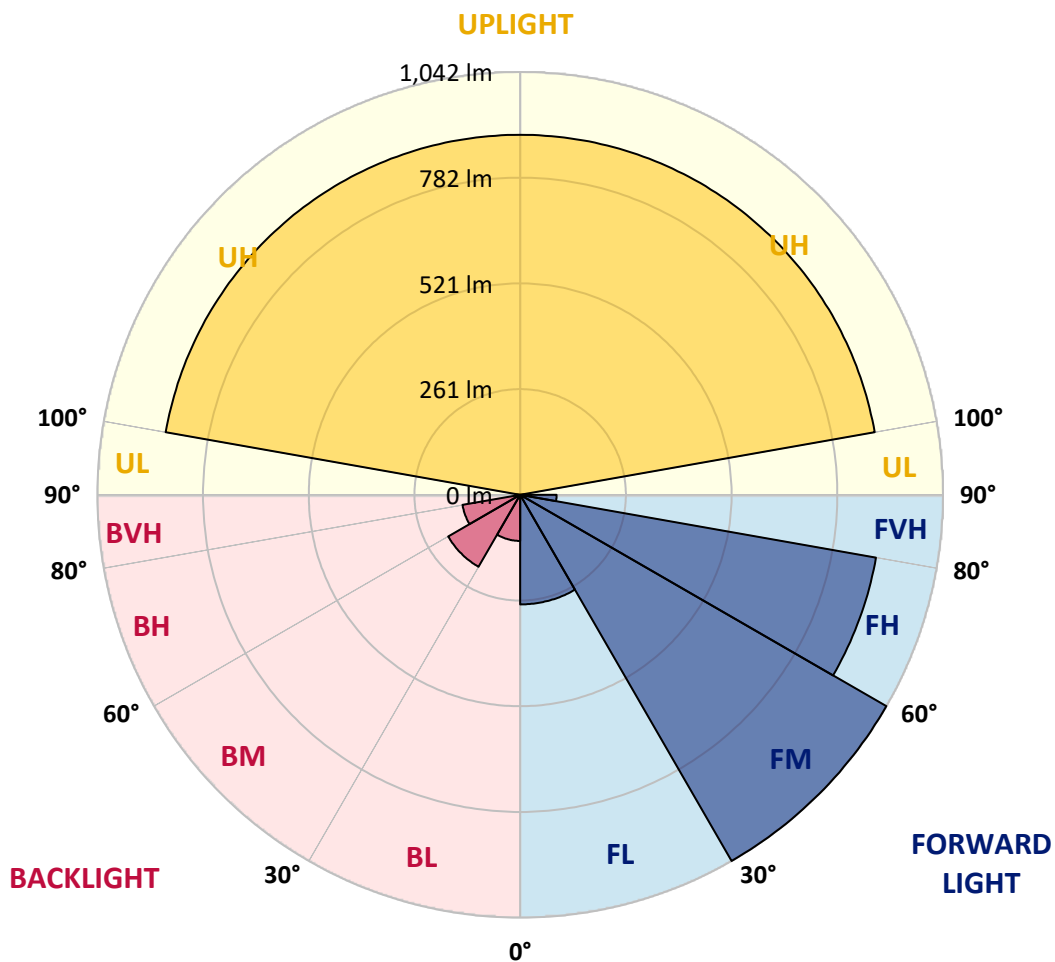
CATALOG NUMBER: ISW-AF-450-LED-E1-SLL-ULG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	270.3	5.9			
FM	(30°-60°)	1042.4	22.9			
FH	(60°-80°)	890.7	19.6			G1/1800
FVH	(80°-90°)	89.7	2.0			G1/100
BL	(0°-30°)	113.6	2.5	B1/500		
BM	(30°-60°)	205.0	4.5	B0/220		
BH	(60°-80°)	144.4	3.2	B1/500		G1/500
BVH	(80°-90°)	12.3	0.3			G1/100
UL	(90°-100°)	9.6	0.2		U1/10	
UH	(100°-180°)	887.5	19.5		U4/1000	

BUG Rating: B1-U5-G1

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	10°	15°	20°	25°	30°	35°	40°	45°
0°	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2
2.5°	946.3	947.3	960.3	972.9	988.8	986.4	999.4	1009.2	1018.0	1019.5	1026.0
5°	888.6	897.9	927.3	952.4	984.1	1008.7	1035.3	1056.3	1071.6	1086.1	1087.9
7.5°	807.5	814.6	848.5	888.1	933.7	966.4	1006.5	1041.4	1066.0	1089.3	1094.5
10°	738.2	744.7	782.5	833.6	873.7	916.1	957.5	985.9	1018.0	1038.1	1047.9
12.5°	704.6	712.6	748.4	795.0	836.0	877.0	908.2	932.8	951.0	954.7	957.5
15°	717.7	721.9	761.5	802.9	835.5	856.0	864.4	879.3	877.9	885.4	886.7
17.5°	770.3	768.4	810.4	839.2	855.1	852.7	839.7	831.8	817.8	813.7	825.7
20°	860.7	867.2	894.2	911.9	895.6	857.8	822.0	797.3	777.7	771.2	769.9
22.5°	966.4	974.8	1004.1	994.8	953.4	884.4	819.2	779.6	755.4	748.4	745.6
25°	1077.3	1082.8	1097.7	1066.0	1007.8	918.4	838.8	783.4	751.3	740.9	739.6
27.5°	1166.7	1172.2	1165.2	1128.9	1044.6	956.6	865.8	800.2	758.2	748.0	743.3
30°	1239.7	1242.6	1219.3	1174.1	1090.3	999.0	901.2	829.4	780.5	757.3	754.0
32.5°	1321.8	1319.9	1274.7	1212.3	1128.9	1037.2	941.7	862.6	802.0	773.6	768.4
35°	1411.6	1395.3	1315.7	1250.0	1155.4	1066.5	978.5	897.4	836.5	798.7	792.2
37.5°	1491.8	1475.0	1368.3	1279.8	1182.0	1089.3	1007.4	942.6	889.0	854.6	851.8
40°	1554.2	1533.6	1408.4	1299.9	1195.0	1106.1	1041.4	999.4	964.0	936.1	936.1
42.5°	1604.4	1582.1	1447.5	1323.1	1206.7	1131.7	1098.1	1083.7	1076.2	1060.9	1066.5
45°	1652.9	1630.1	1479.6	1338.0	1232.8	1181.5	1186.2	1198.8	1221.1	1212.3	1220.2
47.5°	1698.9	1676.6	1515.9	1361.8	1283.1	1271.0	1295.2	1345.5	1389.3	1423.7	1448.0
50°	1776.3	1749.8	1581.2	1431.6	1362.3	1368.3	1438.2	1536.9	1608.2	1639.8	1637.9
52.5°	1922.9	1885.3	1721.3	1562.0	1475.4	1509.0	1591.4	1715.7	1808.9	1833.5	1843.4
55°	2102.3	2072.5	1923.9	1734.8	1671.9	1683.6	1786.1	1926.7	1998.4	2024.0	2032.4
57.5°	2207.5	2199.7	2106.5	1919.8	1858.7	1854.1	1987.7	2102.8	2164.7	2188.9	2181.4
59°	2232.2	2234.5	2181.4	2050.6	1966.7	1956.5	2092.5	2199.1	2250.9	2258.3	2254.6
60°	2229.9	2242.9	2236.4	2122.3	2035.3	2022.2	2136.7	2238.3	2281.6	2293.3	2280.2
62.5°	2182.0	2204.3	2266.2	2254.1	2190.3	2123.7	2177.8	2251.3	2279.2	2268.1	2258.3
65°	2072.9	2102.3	2188.4	2295.6	2234.1	2105.5	2011.0	2019.4	2061.8	2033.8	2047.3
67.5°	1884.8	1918.3	1964.0	2207.1	2117.6	1902.1	1739.5	1659.8	1639.8	1666.8	1709.7
70°	1533.2	1555.1	1670.6	2014.3	1859.6	1563.5	1359.5	1253.2	1217.8	1280.3	1324.1
72.5°	1081.5	1114.0	1266.3	1666.8	1529.9	1252.3	1028.8	931.0	895.6	898.4	936.6
75°	658.1	702.4	884.9	1318.0	1205.8	959.4	783.8	713.5	702.8	696.7	690.2
77.5°	434.0	450.8	581.6	909.6	813.1	682.3	588.2	617.0	649.3	656.2	664.6
80°	294.3	299.4	377.3	638.0	535.6	503.9	475.5	543.5	604.5	615.7	609.7
82.5°	181.2	196.5	263.1	430.4	427.1	412.1	375.8	428.9	469.4	476.4	489.0
85°	62.9	65.7	161.6	380.0	434.0	438.7	309.7	244.5	274.8	269.6	193.7
87.5°	27.0	30.3	50.3	254.3	293.9	243.2	141.6	125.7	96.9	54.5	52.6
90°	7.0	7.0	6.5	8.5	14.1	12.4	12.4	9.6	8.2	7.7	7.2
92.5°	4.1	4.1	4.1	4.6	5.1	5.6	6.1	6.1	6.1	6.1	6.1
95°	5.1	5.1	5.1	5.6	6.1	6.6	7.2	7.2	7.2	7.2	7.2
97.5°	7.2	7.2	7.2	7.7	8.2	8.2	8.2	8.7	9.2	9.2	9.2
100°	8.2	8.2	8.2	8.7	9.2	9.7	10.2	11.3	12.3	16.9	21.5
102.5°	11.3	11.3	11.3	12.3	13.3	15.9	18.4	23.0	27.6	34.3	40.9
105°	21.5	21.7	22.5	25.1	27.6	32.2	36.8	43.0	49.1	56.8	64.4
107.5°	41.9	42.1	43.0	46.5	50.1	54.7	59.3	67.0	74.7	82.3	90.0



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CATALOG NUMBER: ISW-AF-450-LED-E1-SLL-ULG

CANDELA DISTRIBUTION (continued):

	0°	1°	5°	10°	15°	20°	25°	30°	35°	40°	45°
110°	67.5	67.9	69.6	72.6	75.7	82.3	89.0	96.7	104.3	110.5	116.6
112.5°	101.3	101.3	101.3	104.9	108.4	116.1	123.8	130.4	137.1	141.7	146.3
115°	143.2	143.0	142.2	146.3	150.4	156.5	162.6	167.3	171.9	174.9	178.0
117.5°	188.2	188.2	188.2	190.8	193.3	197.4	201.5	204.1	206.6	208.2	209.7
120°	230.2	229.8	228.1	229.7	231.2	234.8	238.3	240.4	242.4	245.5	248.6
122.5°	269.0	268.4	266.0	266.5	267.0	270.1	273.1	275.2	277.2	280.3	283.4
125°	304.8	304.0	300.7	301.8	302.8	304.3	305.9	308.9	312.0	314.6	317.1
127.5°	337.6	337.4	336.6	336.6	336.6	338.6	340.6	343.7	346.8	347.3	347.8
130°	371.3	370.9	369.3	369.8	370.3	372.4	374.4	376.4	378.5	379.5	380.5
132.5°	405.1	404.7	403.0	402.5	402.0	406.1	410.2	411.7	413.3	413.8	414.3
135°	438.8	438.2	435.8	435.8	435.8	438.8	441.9	443.4	445.0	446.0	447.0
137.5°	470.6	469.9	467.5	468.5	469.5	470.0	470.6	472.6	474.6	476.7	478.7
140°	499.2	498.6	496.1	497.2	498.2	499.2	500.2	501.2	502.3	505.3	508.4
142.5°	529.9	529.3	526.8	527.8	528.9	529.4	529.9	531.4	533.0	535.0	537.0
145°	562.6	561.8	558.5	557.5	556.5	558.0	559.6	561.1	562.6	563.1	563.6
147.5°	588.2	587.6	585.1	584.6	584.1	585.6	587.2	587.2	587.2	587.7	588.2
150°	608.7	608.0	605.6	606.1	606.6	606.6	606.6	606.6	606.6	606.6	606.6
152.5°	625.0	624.4	622.0	622.0	622.0	622.5	623.0	623.5	624.0	624.0	624.0
155°	643.4	642.6	639.3	639.3	639.3	640.4	641.4	642.9	644.5	643.4	642.4
157.5°	660.8	660.2	657.8	657.8	657.8	658.3	658.8	659.8	660.8	660.3	659.8
160°	678.2	677.6	675.1	674.6	674.1	672.6	671.1	670.5	670.0	670.0	670.0
162.5°	688.4	687.6	684.4	684.4	684.4	682.3	680.3	678.2	676.2	677.2	678.2
165°	696.6	696.0	693.6	692.5	691.5	691.5	691.5	690.0	688.4	688.4	688.4
167.5°	705.8	705.2	702.8	701.2	699.7	700.7	701.7	702.8	703.8	702.3	700.7
170°	714.0	713.4	711.0	709.4	707.9	707.9	707.9	708.4	708.9	707.9	706.9
172.5°	715.0	714.6	713.0	712.0	711.0	709.9	708.9	707.4	705.8	705.8	705.8
175°	716.1	715.7	714.0	713.5	713.0	712.0	711.0	708.9	706.9	706.3	705.8
177.5°	723.2	722.8	721.2	718.6	716.1	715.6	715.0	714.0	713.0	712.0	711.0
180°	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2
2.5°	1024.6	1018.6	1022.2	1017.1	1008.7	1003.2	996.7	988.3	978.5	965.5	952.4
5°	1083.7	1079.1	1067.4	1050.7	1027.3	1007.8	984.6	957.1	934.3	904.9	877.4
7.5°	1088.8	1081.5	1060.0	1028.8	993.0	956.6	929.1	884.4	855.5	808.9	777.7
10°	1042.3	1042.8	1021.3	992.0	954.7	911.9	872.3	823.4	781.0	733.6	681.4
12.5°	973.8	980.4	981.3	955.2	918.9	873.7	829.4	782.9	730.3	679.4	631.6
15°	896.1	914.7	916.1	909.6	890.5	852.3	811.7	769.9	716.3	660.8	606.8
17.5°	826.6	844.3	860.7	875.5	876.5	858.4	833.6	797.8	744.2	679.0	615.7
20°	774.1	793.1	821.1	848.5	878.8	888.1	890.0	867.2	809.9	730.3	644.6
22.5°	752.2	774.5	802.9	854.6	908.2	941.2	959.8	959.8	899.8	806.6	692.0
25°	747.5	765.7	808.9	873.2	945.0	1002.7	1038.1	1061.8	1018.6	904.9	750.7
27.5°	750.7	775.4	829.0	894.7	969.7	1043.7	1101.9	1143.4	1102.8	972.0	805.3
30°	763.8	800.6	856.0	924.0	1001.3	1079.5	1149.9	1202.5	1172.7	1033.0	856.9
32.5°	786.6	831.4	894.2	955.6	1032.5	1117.3	1186.6	1256.1	1234.2	1075.3	884.4
35°	820.6	873.2	930.5	992.5	1066.0	1150.8	1224.9	1315.7	1307.7	1128.4	911.9
37.5°	875.5	929.6	982.2	1035.3	1105.2	1187.6	1279.8	1395.8	1389.3	1207.2	956.2
40°	972.4	1004.1	1043.2	1077.3	1142.8	1221.6	1320.3	1461.9	1485.2	1274.7	995.2
42.5°	1092.6	1111.2	1122.4	1131.7	1165.2	1239.3	1349.7	1506.2	1544.3	1325.0	1025.5
45°	1245.9	1240.2	1217.8	1196.4	1192.8	1249.5	1363.2	1538.7	1590.9	1373.9	1056.3
47.5°	1427.0	1414.8	1353.9	1283.5	1244.4	1268.2	1386.9	1586.7	1648.2	1438.2	1094.5
50°	1636.1	1607.7	1508.0	1389.3	1317.0	1320.8	1447.0	1653.3	1723.7	1521.9	1165.8
52.5°	1829.9	1779.1	1660.4	1503.3	1400.0	1412.6	1555.1	1791.2	1878.2	1660.8	1285.4
55°	2000.8	1935.5	1807.5	1635.6	1542.0	1563.9	1727.9	1973.8	2056.1	1826.1	1406.5
57.5°	2146.0	2076.7	1950.5	1799.1	1682.7	1700.9	1882.0	2143.3	2198.7	1974.7	1522.5
59°	2212.2	2143.7	2027.3	1887.5	1778.6	1816.8	1991.0	2227.6	2251.3	2032.0	1566.8
60°	2244.4	2175.9	2073.4	1937.0	1837.3	1887.5	2048.8	2291.4	2270.8	2040.4	1583.4
62.5°	2242.0	2194.0	2126.5	2033.3	2015.2	2099.0	2236.4	2373.3	2284.4	2016.1	1594.2
65°	2058.1	2053.9	2011.9	2022.7	2098.6	2228.0	2312.3	2386.9	2256.4	1919.8	1542.5
67.5°	1716.7	1733.9	1739.5	1805.2	1982.6	2202.4	2276.5	2290.9	2134.9	1713.4	1381.8
70°	1325.4	1287.3	1350.1	1466.1	1721.8	2005.0	2110.2	2059.9	1886.2	1434.9	1128.4
72.5°	938.5	949.6	1039.9	1190.4	1450.7	1744.1	1909.0	1634.7	1419.0	1074.0	800.2
75°	706.0	758.6	802.4	934.3	1178.3	1494.0	1630.1	1123.8	924.4	740.5	523.4
77.5°	676.7	672.5	638.9	667.0	849.5	1046.5	1162.9	701.3	578.9	484.4	316.2
80°	625.4	589.6	528.6	501.6	535.1	672.1	738.2	450.8	385.1	338.6	178.4
82.5°	485.3	461.0	396.8	395.0	446.2	477.4	507.7	319.5	289.7	274.4	109.5
85°	307.8	316.2	324.2	395.4	495.1	500.6	395.0	194.7	152.7	215.1	69.9
87.5°	91.2	148.5	180.2	306.0	446.2	447.5	297.2	63.8	57.3	67.1	40.5
90°	7.2	7.2	8.2	9.2	9.2	9.2	8.7	7.2	7.2	7.2	8.2
92.5°	6.6	7.2	7.2	7.2	6.6	6.1	6.1	6.1	6.1	6.1	6.1
95°	7.2	7.2	7.7	8.2	7.7	7.2	7.2	7.2	7.2	7.2	7.2
97.5°	10.7	12.3	11.3	10.2	9.7	9.2	8.7	8.2	8.2	8.2	8.7
100°	25.6	29.7	28.1	26.6	25.1	23.5	21.5	19.4	19.4	19.4	21.5
102.5°	46.0	51.1	49.6	48.1	45.5	43.0	41.4	39.9	38.9	39.9	41.4
105°	69.0	73.7	72.6	71.6	69.0	66.5	64.4	62.4	62.4	62.4	64.4
107.5°	93.6	97.2	96.7	96.2	94.1	92.1	90.5	89.0	88.0	89.0	90.5



REPORT NUMBER: P227150

CATALOG NUMBER: ISW-AF-450-LED-E1-SLL-ULG

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
110°	119.7	122.8	123.3	123.8	122.8	121.7	120.2	118.7	119.7	118.7	120.2
112.5°	148.8	151.4	152.4	153.4	152.9	152.4	151.4	150.4	150.4	150.4	151.4
115°	180.6	183.1	184.6	186.2	184.6	183.1	182.1	181.1	182.1	181.1	182.1
117.5°	212.8	215.8	217.9	219.9	217.4	214.8	213.8	212.8	213.8	212.8	213.8
120°	250.1	251.6	253.7	255.7	253.2	250.6	249.6	248.6	248.6	248.6	249.6
122.5°	284.4	285.4	287.4	289.5	286.9	284.4	283.4	282.3	283.4	282.3	283.4
125°	318.6	320.2	321.2	322.2	319.7	317.1	317.1	317.1	317.1	317.1	317.1
127.5°	350.4	352.9	353.4	353.9	353.9	353.9	353.4	352.9	355.0	352.9	353.4
130°	383.1	385.7	387.7	389.7	389.7	389.7	388.7	387.7	388.7	387.7	388.7
132.5°	417.4	420.4	423.0	425.5	424.5	423.5	423.5	423.5	424.5	423.5	423.5
135°	450.1	453.2	455.7	458.3	457.8	457.3	458.8	460.3	461.4	460.3	458.8
137.5°	481.3	483.9	484.9	485.9	486.4	486.9	489.5	492.0	493.1	492.0	489.5
140°	509.9	511.5	512.5	513.5	514.5	515.6	518.1	520.7	522.7	520.7	518.1
142.5°	538.1	539.1	542.2	545.2	545.2	545.2	545.7	546.3	548.3	546.3	545.7
145°	566.2	568.8	571.8	574.9	574.4	573.9	572.3	570.8	572.9	570.8	572.3
147.5°	590.8	593.3	595.9	598.4	598.9	599.4	597.9	596.4	598.4	596.4	597.9
150°	608.7	610.7	612.2	613.8	615.3	616.8	618.4	619.9	624.0	619.9	618.4
152.5°	624.5	625.0	626.6	628.1	630.1	632.2	634.7	637.3	642.4	637.3	634.7
155°	641.4	640.4	642.9	645.5	648.0	650.6	651.6	652.6	655.7	652.6	651.6
157.5°	659.3	658.8	660.8	662.9	663.9	664.9	664.9	664.9	670.0	664.9	664.9
160°	671.6	673.1	676.2	679.2	677.7	676.2	675.7	675.1	681.3	675.1	675.7
162.5°	680.3	682.3	684.4	686.4	685.9	685.4	684.4	683.3	689.5	683.3	684.4
165°	687.9	687.4	690.0	692.5	694.1	695.6	694.6	693.6	697.7	693.6	694.6
167.5°	697.1	693.6	696.6	699.7	701.7	703.8	703.8	703.8	709.9	703.8	703.8
170°	704.3	701.7	703.3	704.8	707.4	709.9	711.0	712.0	717.1	712.0	711.0
172.5°	705.3	704.8	706.3	707.9	708.9	709.9	711.0	712.0	717.1	712.0	711.0
175°	705.8	705.8	708.4	711.0	711.5	712.0	711.0	709.9	715.0	709.9	711.0
177.5°	710.4	709.9	712.5	715.0	716.1	717.1	715.6	714.0	718.1	714.0	715.6
180°	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1



REPORT NUMBER: P227150

CATALOG NUMBER: ISW-AF-450-LED-E1-SLL-ULG

CANDELA DISTRIBUTION (continued):

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2
2.5°	938.9	937.0	924.0	902.1	904.0	893.8	880.7	859.7	855.5	843.9	842.0
5°	854.2	832.3	803.8	769.4	756.4	738.7	720.5	707.5	691.1	676.3	696.2
7.5°	740.9	708.8	675.8	639.4	618.5	589.6	574.3	544.4	522.5	518.3	501.1
10°	646.4	605.9	568.1	535.6	496.4	469.4	449.9	433.6	418.7	400.5	389.3
12.5°	583.6	537.9	497.9	457.4	438.7	416.3	404.3	388.9	367.4	352.1	337.2
15°	555.2	505.7	462.0	426.6	399.6	378.6	357.2	338.6	315.3	298.1	280.8
17.5°	551.4	487.1	431.7	392.1	362.8	340.0	311.6	286.9	258.5	239.4	224.9
20°	555.6	473.2	403.8	352.1	322.3	282.2	255.6	225.5	197.4	172.4	149.5
22.5°	572.3	465.7	376.3	319.5	275.3	229.7	201.2	162.5	138.8	114.6	105.7
25°	595.2	461.0	352.5	283.7	227.7	182.6	143.9	111.8	101.1	95.0	91.8
27.5°	619.4	452.7	326.0	250.5	189.6	134.6	107.6	94.1	89.9	86.6	84.3
30°	637.6	436.4	293.4	215.1	150.9	115.1	96.0	87.1	84.3	80.6	78.3
32.5°	645.5	411.2	264.0	181.7	127.2	98.7	83.8	78.7	75.9	72.6	71.3
35°	644.0	382.8	249.2	168.6	116.4	87.6	73.6	70.3	66.6	63.3	60.0
37.5°	645.5	356.7	237.5	165.3	111.8	79.2	67.1	64.8	62.0	58.7	55.9
40°	651.1	342.3	231.9	158.4	108.0	75.9	62.0	59.6	59.1	55.4	53.1
42.5°	653.5	343.7	229.1	148.5	98.7	75.0	62.0	56.8	56.8	54.0	51.2
45°	650.6	353.9	231.0	143.0	91.8	70.3	65.2	56.8	55.4	53.1	50.3
47.5°	659.0	361.4	231.0	142.1	87.1	65.7	62.0	62.4	56.4	53.6	49.4
50°	693.5	368.4	226.4	140.7	85.7	61.0	58.7	61.5	63.3	54.5	49.8
52.5°	754.4	377.3	221.3	138.3	83.8	57.3	54.5	57.8	64.8	57.3	49.8
55°	816.9	393.1	218.0	134.6	81.0	54.9	49.4	55.4	59.1	56.8	49.4
57.5°	883.5	410.3	214.7	125.7	74.5	52.6	47.5	48.4	53.1	54.9	48.0
59°	903.5	418.7	212.0	119.3	68.9	50.7	46.1	44.7	47.5	52.6	47.1
60°	918.0	419.1	208.7	113.6	65.7	49.8	45.2	43.3	44.3	54.0	47.5
62.5°	919.3	418.7	198.4	102.0	59.1	48.0	43.8	41.4	40.5	45.2	48.4
65°	861.6	399.2	179.7	96.0	59.6	46.1	41.4	39.6	37.7	38.7	41.9
67.5°	753.5	348.8	160.2	97.4	62.9	44.7	39.6	37.7	36.3	35.4	36.8
70°	570.1	289.7	154.7	100.6	65.7	43.8	36.8	34.9	34.0	33.6	33.6
72.5°	395.0	238.4	148.5	102.9	68.0	43.3	34.0	32.1	31.7	31.2	31.2
75°	254.3	173.3	123.0	87.6	62.0	39.6	30.7	28.8	28.4	27.9	28.4
77.5°	150.5	121.1	90.3	61.5	45.2	31.7	26.6	25.2	25.2	25.2	25.6
80°	83.4	71.7	60.0	39.6	32.1	23.7	21.9	20.5	20.5	21.0	21.9
82.5°	49.8	39.6	34.0	25.2	21.9	16.8	16.3	15.3	15.9	16.3	17.2
85°	32.6	25.2	20.5	16.8	14.9	10.7	9.3	9.8	10.2	11.2	11.7
87.5°	18.2	14.0	11.2	9.8	8.9	4.7	3.7	3.7	4.7	5.6	6.5
90°	9.2	9.2	9.2	8.2	7.2	7.2	7.2	7.7	8.2	8.2	8.2
92.5°	6.1	6.6	7.2	7.2	7.2	6.6	6.1	6.1	6.1	6.1	6.1
95°	7.2	7.7	8.2	7.7	7.2	7.2	7.2	7.2	7.2	7.2	7.2
97.5°	9.2	9.7	10.2	11.3	12.3	10.7	9.2	9.2	9.2	8.7	8.2
100°	23.5	25.1	26.6	28.1	29.7	25.6	21.5	16.9	12.3	11.3	10.2
102.5°	43.0	45.5	48.1	49.6	51.1	46.0	40.9	34.3	27.6	23.0	18.4
105°	66.5	69.0	71.6	72.6	73.7	69.0	64.4	56.8	49.1	43.0	36.8
107.5°	92.1	94.1	96.2	96.7	97.2	93.6	90.0	82.3	74.7	67.0	59.3



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REPORT N
 CATALOG

CANDELA DISTRIBUTION (continued):

CANDELA

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	
110°	121.7	122.8	123.8	123.3	122.8	119.7	116.6	110.5	104.3	96.7	89.0	0°
112.5°	152.4	152.9	153.4	152.4	151.4	148.8	146.3	141.7	137.1	130.4	123.8	2.5°
115°	183.1	184.6	186.2	184.6	183.1	180.6	178.0	174.9	171.9	167.3	162.6	5°
117.5°	214.8	217.4	219.9	217.9	215.8	212.8	209.7	208.2	206.6	204.1	201.5	7.5°
120°	250.6	253.2	255.7	253.7	251.6	250.1	248.6	245.5	242.4	240.4	238.3	10°
122.5°	284.4	286.9	289.5	287.4	285.4	284.4	283.4	280.3	277.2	275.2	273.1	12.5°
125°	317.1	319.7	322.2	321.2	320.2	318.6	317.1	314.6	312.0	308.9	305.9	15°
127.5°	353.9	353.9	353.9	353.4	352.9	350.4	347.8	347.3	346.8	343.7	340.6	17.5°
130°	389.7	389.7	389.7	387.7	385.7	383.1	380.5	379.5	378.5	376.4	374.4	20°
132.5°	423.5	424.5	425.5	423.0	420.4	417.4	414.3	413.8	413.3	411.7	410.2	22.5°
135°	457.3	457.8	458.3	455.7	453.2	450.1	447.0	446.0	445.0	443.4	441.9	25°
137.5°	486.9	486.4	485.9	484.9	483.9	481.3	478.7	476.7	474.6	472.6	470.6	27.5°
140°	515.6	514.5	513.5	512.5	511.5	509.9	508.4	505.3	502.3	501.2	500.2	30°
142.5°	545.2	545.2	545.2	542.2	539.1	538.1	537.0	535.0	533.0	531.4	529.9	32.5°
145°	573.9	574.4	574.9	571.8	568.8	566.2	563.6	563.1	562.6	561.1	559.6	35°
147.5°	599.4	598.9	598.4	595.9	593.3	590.8	588.2	587.7	587.2	587.2	587.2	37.5°
150°	616.8	615.3	613.8	612.2	610.7	608.7	606.6	606.6	606.6	606.6	606.6	40°
152.5°	632.2	630.1	628.1	626.6	625.0	624.5	624.0	624.0	624.0	623.5	623.0	42.5°
155°	650.6	648.0	645.5	642.9	640.4	641.4	642.4	643.4	644.5	642.9	641.4	45°
157.5°	664.9	663.9	662.9	660.8	658.8	659.3	659.8	660.3	660.8	659.8	658.8	47.5°
160°	676.2	677.7	679.2	676.2	673.1	671.6	670.0	670.0	670.0	670.5	671.1	50°
162.5°	685.4	685.9	686.4	684.4	682.3	680.3	678.2	677.2	676.2	678.2	680.3	52.5°
165°	695.6	694.1	692.5	690.0	687.4	687.9	688.4	688.4	688.4	690.0	691.5	55°
167.5°	703.8	701.7	699.7	696.6	693.6	697.1	700.7	702.3	703.8	702.8	701.7	57.5°
170°	709.9	707.4	704.8	703.3	701.7	704.3	706.9	707.9	708.9	708.4	707.9	59°
172.5°	709.9	708.9	707.9	706.3	704.8	705.3	705.8	705.8	705.8	707.4	708.9	60°
175°	712.0	711.5	711.0	708.4	705.8	705.8	705.8	706.3	706.9	708.9	711.0	62.5°
177.5°	717.1	716.1	715.0	712.5	709.9	710.4	711.0	712.0	713.0	714.0	715.0	65°
180°	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	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

160°	165°	170°	175°	180°	185°	190°	195°	200°	205°	210°	110°	160°
914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	110°	82.3
848.5	835.0	820.6	809.9	814.6	799.2	800.6	796.4	794.5	793.6	783.8	112.5°	116.1
672.1	677.2	655.7	658.1	664.6	648.8	638.0	655.7	653.5	637.6	646.4	115°	156.5
484.4	485.8	476.0	454.1	454.1	465.7	469.9	478.3	483.9	503.5	491.3	117.5°	197.4
370.2	357.2	347.4	337.7	332.0	320.4	323.3	333.5	340.0	351.2	360.0	120°	234.8
321.8	307.4	290.1	275.3	267.3	256.7	249.6	247.3	249.6	242.6	243.2	122.5°	270.1
267.3	254.3	235.2	227.3	212.4	204.0	199.4	193.2	188.6	178.8	174.6	125°	304.3
207.2	190.1	170.4	170.4	159.8	152.7	150.9	149.5	146.7	141.6	136.5	127.5°	338.6
137.9	126.6	115.5	109.9	110.9	109.9	107.1	111.8	111.8	113.6	112.7	130°	372.4
100.6	98.7	94.5	91.2	89.4	89.0	89.4	90.8	93.6	96.0	98.3	132.5°	406.1
90.3	89.4	85.7	82.4	81.9	81.0	81.0	82.4	82.9	83.4	82.9	135°	438.8
83.8	81.9	78.7	76.4	75.5	75.0	75.5	74.1	73.1	73.6	73.1	137.5°	470.0
75.9	74.5	71.3	69.4	68.9	68.9	67.5	67.1	66.1	66.6	66.1	140°	499.2
69.9	68.0	64.8	62.4	62.4	62.0	62.4	62.0	61.5	61.0	61.0	142.5°	529.4
58.7	58.2	54.9	54.0	54.5	55.9	55.9	55.9	56.4	55.9	55.9	145°	558.0
54.5	54.0	50.7	48.4	48.0	48.0	48.0	48.9	50.3	50.7	51.7	147.5°	585.6
51.7	51.2	48.0	46.1	45.2	44.7	44.3	44.3	44.7	46.5	48.0	150°	606.6
49.8	48.9	45.6	43.3	42.9	42.4	41.9	41.9	41.9	42.4	43.8	152.5°	622.5
48.9	47.5	43.8	41.4	40.5	40.1	40.1	40.5	40.1	40.1	40.1	155°	640.4
47.5	46.5	42.9	40.1	39.1	39.1	38.7	38.7	38.7	37.7	37.7	157.5°	658.3
47.1	45.6	41.9	39.1	38.2	37.7	37.2	37.7	36.8	36.3	35.9	160°	672.6
46.1	44.3	40.1	37.7	37.2	36.3	35.9	35.9	35.9	34.9	34.9	162.5°	682.3
45.6	43.3	39.1	36.8	35.9	34.9	34.5	34.5	35.4	34.5	34.5	165°	691.5
45.2	41.9	37.7	34.9	34.5	33.6	33.0	33.6	34.9	34.0	33.6	167.5°	700.7
43.3	41.0	36.8	34.5	33.6	32.6	32.1	32.6	33.6	33.6	33.6	170°	707.9
42.4	40.1	35.9	33.6	33.0	32.1	31.7	31.7	33.0	33.0	32.6	172.5°	709.9
41.0	39.1	34.9	32.1	31.2	31.2	30.7	30.7	31.2	31.2	31.7	175°	712.0
39.1	38.2	34.0	30.7	30.3	29.8	29.8	29.8	29.8	30.7	30.7	177.5°	715.6
37.2	36.8	32.6	29.8	28.8	28.8	28.8	28.8	28.8	29.4	29.8	180°	716.1
34.5	34.5	30.7	27.9	27.5	27.0	27.0	27.0	27.0	27.5	27.9		
31.7	32.1	28.4	25.6	25.2	25.2	25.2	25.2	25.6	25.6	26.1		
28.8	29.4	25.6	22.8	22.8	22.8	22.8	22.8	22.8	22.8	23.7		
26.1	26.1	21.9	19.1	19.5	20.0	20.5	20.0	20.0	20.5	21.9		
22.4	21.9	18.2	15.9	15.9	16.8	17.2	16.8	17.2	17.2	19.1		
17.7	17.7	14.0	11.7	11.7	13.5	13.5	13.5	14.0	14.4	15.9		
13.5	13.0	9.8	7.9	7.9	9.3	9.8	10.2	10.7	11.2	12.1		
7.9	7.9	5.1	3.3	3.7	4.2	5.6	5.6	5.6	6.5	7.9		
7.7	7.7	6.1	5.1	5.1	5.1	6.1	7.2	7.7	8.2	8.2		
5.6	5.1	4.6	4.1	4.1	4.1	4.6	5.1	5.6	6.1	6.1		
6.6	6.1	5.6	5.1	5.1	5.1	5.6	6.1	6.6	7.2	7.2		
8.2	8.2	7.7	7.2	7.2	7.2	7.7	8.2	8.2	8.2	8.7		
9.7	9.2	8.7	8.2	8.2	8.2	8.7	9.2	9.7	10.2	11.3		
15.9	13.3	12.3	11.3	11.3	11.3	12.3	13.3	15.9	18.4	23.0		
32.2	27.6	25.1	22.5	21.5	22.5	25.1	27.6	32.2	36.8	43.0		
54.7	50.1	46.5	43.0	41.9	43.0	46.5	50.1	54.7	59.3	67.0		

'227150
 ISW-AF-450-LED-E1-SLL-ULG

REPORT NUMBER: P227150
 CATALOG NUMBER: ISW-AF-4!

TION (continued):

CANDELA DISTRIBUTION (con

165°	170°	175°	180°	185°	190°	195°	200°	205°	210°		215°	220°
75.7	72.6	69.6	67.5	69.6	72.6	75.7	82.3	89.0	96.7	0°	914.2	914.2
108.4	104.9	101.3	101.3	101.3	104.9	108.4	116.1	123.8	130.4	2.5°	792.2	791.8
150.4	146.3	142.2	143.2	142.2	146.3	150.4	156.5	162.6	167.3	5°	650.2	646.0
193.3	190.8	188.2	188.2	188.2	190.8	193.3	197.4	201.5	204.1	7.5°	503.9	519.2
231.2	229.7	228.1	230.2	228.1	229.7	231.2	234.8	238.3	240.4	10°	363.2	374.0
267.0	266.5	266.0	269.0	266.0	266.5	267.0	270.1	273.1	275.2	12.5°	252.9	258.5
302.8	301.8	300.7	304.8	300.7	301.8	302.8	304.3	305.9	308.9	15°	174.2	185.4
336.6	336.6	336.6	337.6	336.6	336.6	336.6	338.6	340.6	343.7	17.5°	135.5	137.0
370.3	369.8	369.3	371.3	369.3	369.8	370.3	372.4	374.4	376.4	20°	111.8	112.7
402.0	402.5	403.0	405.1	403.0	402.5	402.0	406.1	410.2	411.7	22.5°	99.2	101.1
435.8	435.8	435.8	438.8	435.8	435.8	435.8	438.8	441.9	443.4	25°	83.4	85.2
469.5	468.5	467.5	470.6	467.5	468.5	469.5	470.0	470.6	472.6	27.5°	73.6	75.5
498.2	497.2	496.1	499.2	496.1	497.2	498.2	499.2	500.2	501.2	30°	67.5	68.4
528.9	527.8	526.8	529.9	526.8	527.8	528.9	529.4	529.9	531.4	32.5°	61.5	61.5
556.5	557.5	558.5	562.6	558.5	557.5	556.5	558.0	559.6	561.1	35°	56.4	56.8
584.1	584.6	585.1	588.2	585.1	584.6	584.1	585.6	587.2	587.2	37.5°	52.6	53.6
606.6	606.1	605.6	608.7	605.6	606.1	606.6	606.6	606.6	606.6	40°	49.4	49.8
622.0	622.0	622.0	625.0	622.0	622.0	622.0	622.5	623.0	623.5	42.5°	44.7	45.6
639.3	639.3	639.3	643.4	639.3	639.3	639.3	640.4	641.4	642.9	45°	40.5	41.0
657.8	657.8	657.8	660.8	657.8	657.8	657.8	658.3	658.8	659.8	47.5°	37.7	37.7
674.1	674.6	675.1	678.2	675.1	674.6	674.1	672.6	671.1	670.5	50°	35.9	36.3
684.4	684.4	684.4	688.4	684.4	684.4	684.4	682.3	680.3	678.2	52.5°	34.9	35.4
691.5	692.5	693.6	696.6	693.6	692.5	691.5	691.5	691.5	690.0	55°	34.5	35.4
699.7	701.2	702.8	705.8	702.8	701.2	699.7	700.7	701.7	702.8	57.5°	34.5	34.9
707.9	709.4	711.0	714.0	711.0	709.4	707.9	707.9	707.9	708.4	59°	34.0	34.5
711.0	712.0	713.0	715.0	713.0	712.0	711.0	709.9	708.9	707.4	60°	34.0	34.9
713.0	713.5	714.0	716.1	714.0	713.5	713.0	712.0	711.0	708.9	62.5°	32.6	33.6
716.1	718.6	721.2	723.2	721.2	718.6	716.1	715.6	715.0	714.0	65°	31.7	32.6
716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	67.5°	30.3	31.7
										70°	28.8	30.3
										72.5°	27.0	28.8
										75°	25.2	26.6
										77.5°	22.8	24.2
										80°	20.0	20.5
										82.5°	16.8	16.8
										85°	12.6	11.2
										87.5°	7.0	7.5
										90°	8.2	7.7
										92.5°	6.1	6.1
										95°	7.2	7.2
										97.5°	9.2	9.2
										100°	12.3	16.9
										102.5°	27.6	34.3
										105°	49.1	56.8
										107.5°	74.7	82.3



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CATALOG NUMBER: ISW-AF-450-LED-E1-

50-LED-E1-SLL-ULG

tinued):

CANDELA DISTRIBUTION (continued):

225°	230°	235°	240°	245°	250°	255°	260°	265°		215°	220°	225°
914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	914.2	110°	104.3	110.5	116.6
781.9	781.9	796.0	797.3	781.0	785.2	793.1	783.8	794.0	112.5°	137.1	141.7	146.3
656.2	650.6	651.1	647.3	653.9	646.4	654.4	651.5	649.3	115°	171.9	174.9	178.0
509.5	519.2	512.3	498.8	509.5	501.1	485.3	486.7	469.0	117.5°	206.6	208.2	209.7
382.8	375.8	372.1	365.6	348.3	351.6	333.9	336.8	342.8	120°	242.4	245.5	248.6
264.0	258.9	265.0	260.9	253.8	255.2	258.9	262.7	272.4	122.5°	277.2	280.3	283.4
185.4	183.0	181.7	184.4	192.3	196.5	202.5	213.8	219.3	125°	312.0	314.6	317.1
139.2	139.7	138.3	142.5	149.0	152.3	153.6	154.7	161.1	127.5°	346.8	347.3	347.8
115.1	116.9	116.4	117.8	116.0	114.1	115.5	112.7	110.4	130°	378.5	379.5	380.5
100.6	101.1	98.7	98.3	95.4	93.2	91.2	91.2	90.3	132.5°	413.3	413.8	414.3
85.2	85.7	83.4	83.4	82.9	84.3	83.4	81.5	81.0	135°	445.0	446.0	447.0
76.4	75.5	74.1	74.1	73.1	73.1	73.6	74.1	73.6	137.5°	474.6	476.7	478.7
68.4	67.5	67.1	67.5	67.1	67.5	68.0	67.5	68.0	140°	502.3	505.3	508.4
62.9	62.0	62.0	62.4	62.0	62.4	62.4	62.4	62.0	142.5°	533.0	535.0	537.0
58.2	57.3	57.3	57.3	56.8	55.9	54.9	53.6	52.2	145°	562.6	563.1	563.6
54.5	54.0	53.1	52.6	51.2	48.4	47.5	47.5	47.5	147.5°	587.2	587.7	588.2
51.2	50.3	49.8	48.0	46.1	45.2	45.2	45.2	45.2	150°	606.6	606.6	606.6
47.1	45.6	44.7	44.3	43.8	43.8	43.3	43.3	43.3	152.5°	624.0	624.0	624.0
41.9	41.4	41.4	41.9	41.9	41.9	41.9	41.4	41.9	155°	644.5	643.4	642.4
38.7	38.7	39.1	39.6	40.1	40.5	41.0	40.5	41.0	157.5°	660.8	660.3	659.8
37.2	37.2	37.2	38.2	38.7	39.1	40.1	40.1	40.1	160°	670.0	670.0	670.0
36.3	36.3	36.8	37.2	37.7	38.2	38.7	39.1	39.6	162.5°	676.2	677.2	678.2
35.9	36.3	35.9	36.3	36.8	37.7	38.2	38.2	38.7	165°	688.4	688.4	688.4
35.9	35.9	35.9	35.9	36.8	37.2	36.8	37.2	37.7	167.5°	703.8	702.3	700.7
35.9	35.9	35.4	35.9	36.3	36.8	36.3	36.3	37.2	170°	708.9	707.9	706.9
35.4	35.9	35.4	35.4	35.9	36.3	35.9	36.3	36.8	172.5°	705.8	705.8	705.8
34.5	34.9	34.5	34.9	34.9	35.4	35.4	35.4	35.9	175°	706.9	706.3	705.8
33.6	33.6	33.6	34.0	34.0	34.5	34.5	34.9	34.5	177.5°	713.0	712.0	711.0
32.6	32.6	32.6	33.0	33.0	33.6	34.0	33.6	33.6	180°	716.1	716.1	716.1
31.7	31.2	30.7	31.2	31.7	31.7	32.1	31.7	32.1				
30.3	29.8	29.4	29.4	29.8	29.8	30.3	29.8	29.8				
27.9	27.9	27.0	27.0	27.0	27.0	27.5	27.0	26.6				
25.2	25.2	24.2	24.2	24.2	24.2	23.7	23.7	23.7				
21.0	21.4	21.4	21.0	21.0	20.5	20.5	20.0	19.5				
15.9	16.8	17.2	17.2	17.2	17.2	17.2	16.3	15.3				
11.2	12.6	14.0	14.0	13.5	13.5	13.5	12.1	10.7				
7.0	8.4	8.9	9.8	8.4	7.9	7.9	7.0	6.5				
7.2	7.2	8.1	8.7	10.6	10.6	11.0	9.1	7.7				
6.1	6.6	7.2	7.2	7.2	6.6	6.1	6.1	6.1				
7.2	7.2	7.2	7.7	8.2	7.7	7.2	7.2	7.2				
9.2	10.7	12.3	11.3	10.2	9.7	9.2	8.7	8.2				
21.5	25.6	29.7	28.1	26.6	25.1	23.5	21.5	19.4				
40.9	46.0	51.1	49.6	48.1	45.5	43.0	41.4	39.9				
64.4	69.0	73.7	72.6	71.6	69.0	66.5	64.4	62.4				
90.0	93.6	97.2	96.7	96.2	94.1	92.1	90.5	89.0				



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CATALOG NUMBER: ISW-AF-450-LED-E1-SLL-ULG

SLL-ULG

CANDELA DISTRIBUTION (continued):

230°	235°	240°	245°	250°	255°	260°	265°		270°	275°	280°	285°
119.7	122.8	123.3	123.8	122.8	121.7	120.2	118.7	0°	914.2	914.2	914.2	914.2
148.8	151.4	152.4	153.4	152.9	152.4	151.4	150.4	2.5°	785.2	802.4	804.8	807.1
180.6	183.1	184.6	186.2	184.6	183.1	182.1	181.1	5°	645.5	662.8	652.9	657.1
212.8	215.8	217.9	219.9	217.4	214.8	213.8	212.8	7.5°	471.3	460.1	474.5	483.4
250.1	251.6	253.7	255.7	253.2	250.6	249.6	248.6	10°	344.1	357.2	362.8	373.1
284.4	285.4	287.4	289.5	286.9	284.4	283.4	282.3	12.5°	285.5	293.9	304.1	320.4
318.6	320.2	321.2	322.2	319.7	317.1	317.1	317.1	15°	231.5	237.5	250.5	266.4
350.4	352.9	353.4	353.9	353.9	353.9	353.4	352.9	17.5°	168.6	177.5	185.9	198.9
383.1	385.7	387.7	389.7	389.7	389.7	388.7	387.7	20°	113.1	116.9	127.2	133.2
417.4	420.4	423.0	425.5	424.5	423.5	423.5	423.5	22.5°	90.8	92.2	94.1	99.2
450.1	453.2	455.7	458.3	457.8	457.3	458.8	460.3	25°	81.5	82.4	83.8	85.7
481.3	483.9	484.9	485.9	486.4	486.9	489.5	492.0	27.5°	74.1	74.5	75.9	76.8
509.9	511.5	512.5	513.5	514.5	515.6	518.1	520.7	30°	67.5	67.1	67.5	68.9
538.1	539.1	542.2	545.2	545.2	545.2	545.7	546.3	32.5°	60.6	60.6	61.5	61.5
566.2	568.8	571.8	574.9	574.4	573.9	572.3	570.8	35°	52.2	51.7	52.6	54.0
590.8	593.3	595.9	598.4	598.9	599.4	597.9	596.4	37.5°	48.0	48.4	49.4	50.3
608.7	610.7	612.2	613.8	615.3	616.8	618.4	619.9	40°	45.6	46.1	47.1	48.0
624.5	625.0	626.6	628.1	630.1	632.2	634.7	637.3	42.5°	43.3	44.3	45.2	46.5
641.4	640.4	642.9	645.5	648.0	650.6	651.6	652.6	45°	41.9	42.9	44.3	45.6
659.3	658.8	660.8	662.9	663.9	664.9	664.9	664.9	47.5°	41.4	42.4	43.8	45.6
671.6	673.1	676.2	679.2	677.7	676.2	675.7	675.1	50°	40.5	41.9	43.3	45.2
680.3	682.3	684.4	686.4	685.9	685.4	684.4	683.3	52.5°	40.5	41.4	42.9	45.2
687.9	687.4	690.0	692.5	694.1	695.6	694.6	693.6	55°	39.1	40.5	41.9	44.3
697.1	693.6	696.6	699.7	701.7	703.8	703.8	703.8	57.5°	38.2	39.1	41.0	43.8
704.3	701.7	703.3	704.8	707.4	709.9	711.0	712.0	59°	37.7	38.7	40.5	43.3
705.3	704.8	706.3	707.9	708.9	709.9	711.0	712.0	60°	36.8	38.2	40.1	42.9
705.8	705.8	708.4	711.0	711.5	712.0	711.0	709.9	62.5°	35.9	37.2	39.1	41.9
710.4	709.9	712.5	715.0	716.1	717.1	715.6	714.0	65°	34.5	36.3	38.2	40.1
716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	67.5°	33.6	34.5	36.3	38.2
								70°	31.7	32.6	34.0	35.4
								72.5°	29.4	29.8	30.7	32.1
								75°	26.1	26.6	27.0	28.4
								77.5°	22.8	22.8	23.3	25.2
								80°	19.1	19.1	19.5	20.5
								82.5°	14.4	14.4	15.3	16.8
								85°	10.2	9.8	11.2	12.1
								87.5°	6.0	5.6	6.0	6.0
								90°	7.7	8.6	9.1	10.1
								92.5°	6.1	6.1	6.1	6.1
								95°	7.2	7.2	7.2	7.2
								97.5°	8.2	8.2	8.7	9.2
								100°	19.4	19.4	21.5	23.5
								102.5°	38.9	39.9	41.4	43.0
								105°	62.4	62.4	64.4	66.5
								107.5°	88.0	89.0	90.5	92.1



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CATALOG NUMBER: ISW-AF-450-LED-E1-SLL-ULG

CANDELA DISTRIBUTION (continued):

290°	295°	300°	305°	310°	315°	320°		270°	275°	280°	285°	290°
914.2	914.2	914.2	914.2	914.2	914.2	914.2	110°	119.7	118.7	120.2	121.7	122.8
816.4	811.7	815.5	829.9	835.0	841.6	863.5	112.5°	150.4	150.4	151.4	152.4	152.9
667.4	673.4	667.4	696.7	698.2	717.7	725.6	115°	182.1	181.1	182.1	183.1	184.6
490.4	498.3	511.4	530.9	536.5	564.5	588.2	117.5°	213.8	212.8	213.8	214.8	217.4
382.8	393.1	411.2	423.3	435.5	451.7	470.9	120°	248.6	248.6	249.6	250.6	253.2
340.0	350.7	366.5	381.9	399.2	411.7	427.5	122.5°	283.4	282.3	283.4	284.4	286.9
284.1	300.8	316.2	336.2	350.7	373.5	392.1	125°	317.1	317.1	317.1	317.1	319.7
217.1	240.3	255.6	279.9	301.8	321.8	347.0	127.5°	355.0	352.9	353.4	353.9	353.9
150.9	169.1	188.6	214.7	243.2	270.6	304.1	130°	388.7	387.7	388.7	389.7	389.7
103.8	113.6	128.6	155.6	184.8	224.4	260.9	132.5°	424.5	423.5	423.5	423.5	424.5
88.5	92.2	97.8	110.9	135.5	178.8	218.9	135°	461.4	460.3	458.8	457.3	457.8
78.7	81.5	85.2	91.8	104.8	134.6	178.8	137.5°	493.1	492.0	489.5	486.9	486.4
72.2	75.5	79.2	83.8	90.8	111.3	144.3	140°	522.7	520.7	518.1	515.6	514.5
63.3	65.7	68.9	74.1	79.2	95.4	127.6	142.5°	548.3	546.3	545.7	545.2	545.2
55.9	58.7	62.9	66.6	71.7	84.8	116.0	145°	572.9	570.8	572.3	573.9	574.4
52.2	54.9	58.7	62.0	65.7	76.4	107.6	147.5°	598.4	596.4	597.9	599.4	598.9
49.8	52.6	56.4	59.1	61.5	73.6	104.3	150°	624.0	619.9	618.4	616.8	615.3
48.4	51.7	54.9	56.8	61.5	75.0	96.4	152.5°	642.4	637.3	634.7	632.2	630.1
48.0	51.2	54.9	58.2	67.5	70.8	91.2	155°	655.7	652.6	651.6	650.6	648.0
48.4	51.2	55.9	65.2	65.7	67.1	85.7	157.5°	670.0	664.9	664.9	664.9	663.9
48.4	52.6	62.4	68.0	62.4	63.3	80.6	160°	681.3	675.1	675.7	676.2	677.7
48.9	54.5	64.8	63.3	60.6	59.1	75.0	162.5°	689.5	683.3	684.4	685.4	685.9
48.9	53.6	62.0	59.6	55.9	56.4	68.4	165°	697.7	693.6	694.6	695.6	694.1
47.5	53.6	59.6	54.0	51.2	53.6	62.9	167.5°	709.9	703.8	703.8	703.8	701.7
46.5	54.9	53.1	49.8	49.8	52.2	60.0	170°	717.1	712.0	711.0	709.9	707.4
46.1	56.4	50.3	48.4	48.4	51.7	58.7	172.5°	717.1	712.0	711.0	709.9	708.9
44.7	52.6	46.1	45.2	46.5	48.9	56.8	175°	715.0	709.9	711.0	712.0	711.5
41.9	43.8	42.4	42.4	44.3	47.1	55.9	177.5°	718.1	714.0	715.6	717.1	716.1
38.7	39.6	39.6	40.1	41.9	44.3	56.8	180°	716.1	716.1	716.1	716.1	716.1
35.9	35.9	36.8	37.2	38.7	41.9	54.5						
32.6	33.0	33.0	34.0	34.9	38.2	52.6						
28.8	28.8	29.8	29.8	31.2	34.5	47.1						
25.2	25.2	25.2	25.6	26.6	29.8	38.7						
21.0	21.0	21.0	21.4	21.9	24.7	29.4						
16.8	16.3	15.9	15.9	16.8	19.1	22.8						
11.7	11.7	11.2	11.2	11.2	12.6	15.3						
6.5	5.6	6.0	6.5	6.0	7.0	8.4						
9.7	10.1	9.6	9.0	9.0	9.0	10.4						
6.6	7.2	7.2	7.2	6.6	6.1	6.1						
7.7	8.2	7.7	7.2	7.2	7.2	7.2						
9.7	10.2	11.3	12.3	10.7	9.2	9.2						
25.1	26.6	28.1	29.7	25.6	21.5	16.9						
45.5	48.1	49.6	51.1	46.0	40.9	34.3						
69.0	71.6	72.6	73.7	69.0	64.4	56.8						
94.1	96.2	96.7	97.2	93.6	90.0	82.3						



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CANDELA DISTRIBUTION (continued):

295°	300°	305°	310°	315°	320°		325°	330°	335°	340°	345°	350°
123.8	123.3	122.8	119.7	116.6	110.5	0°	914.2	914.2	914.2	914.2	914.2	914.2
153.4	152.4	151.4	148.8	146.3	141.7	2.5°	860.7	872.8	891.9	895.6	910.9	921.7
186.2	184.6	183.1	180.6	178.0	174.9	5°	729.4	758.2	768.4	788.5	823.4	841.1
219.9	217.9	215.8	212.8	209.7	208.2	7.5°	601.7	623.6	648.2	680.5	706.0	736.3
255.7	253.7	251.6	250.1	248.6	245.5	10°	495.1	526.3	558.4	584.5	620.3	656.6
289.5	287.4	285.4	284.4	283.4	280.3	12.5°	439.7	456.8	488.6	525.4	570.1	610.6
322.2	321.2	320.2	318.6	317.1	314.6	15°	410.8	431.3	465.2	504.4	551.9	602.2
353.9	353.4	352.9	350.4	347.8	347.3	17.5°	374.9	407.5	446.2	502.1	563.5	633.4
389.7	387.7	385.7	383.1	380.5	379.5	20°	339.5	379.1	429.8	503.5	588.7	679.4
425.5	423.0	420.4	417.4	414.3	413.8	22.5°	308.3	355.4	419.6	511.8	620.8	741.9
458.3	455.7	453.2	450.1	447.0	446.0	25°	271.5	334.4	411.7	529.1	670.1	825.7
485.9	484.9	483.9	481.3	478.7	476.7	27.5°	242.1	314.4	400.1	544.0	715.3	906.3
513.5	512.5	511.5	509.9	508.4	505.3	30°	209.6	291.0	383.7	549.1	770.3	972.4
545.2	542.2	539.1	538.1	537.0	535.0	32.5°	183.5	269.1	365.1	544.4	795.0	1018.6
574.9	571.8	568.8	566.2	563.6	563.1	35°	170.9	253.4	349.3	528.1	815.5	1068.4
598.4	595.9	593.3	590.8	588.2	587.7	37.5°	162.5	236.1	333.9	501.1	838.8	1117.8
613.8	612.2	610.7	608.7	606.6	606.6	40°	151.8	222.6	321.3	481.6	856.9	1158.7
628.1	626.6	625.0	624.5	624.0	624.0	42.5°	142.1	210.5	311.6	464.3	861.6	1195.5
645.5	642.9	640.4	641.4	642.4	643.4	45°	133.7	203.1	304.1	465.2	864.8	1246.8
662.9	660.8	658.8	659.3	659.8	660.3	47.5°	127.2	196.1	301.4	481.1	899.3	1318.0
679.2	676.2	673.1	671.6	670.0	670.0	50°	121.1	190.1	296.7	511.8	954.7	1414.4
686.4	684.4	682.3	680.3	678.2	677.2	52.5°	114.1	181.7	290.6	543.5	1015.3	1543.4
692.5	690.0	687.4	687.9	688.4	688.4	55°	104.8	170.4	284.1	570.1	1097.7	1700.3
699.7	696.6	693.6	697.1	700.7	702.3	57.5°	90.3	157.4	279.9	583.6	1148.5	1790.7
704.8	703.3	701.7	704.3	706.9	707.9	59°	82.9	144.8	277.5	577.0	1162.0	1806.1
707.9	706.3	704.8	705.3	705.8	705.8	60°	78.7	137.4	273.8	569.1	1165.8	1796.3
711.0	708.4	705.8	705.8	705.8	706.3	62.5°	73.1	119.7	258.5	529.5	1113.6	1678.0
715.0	712.5	709.9	710.4	711.0	712.0	65°	74.5	113.1	223.5	450.8	993.9	1447.0
716.1	716.1	716.1	716.1	716.1	716.1	67.5°	76.4	110.4	193.2	364.2	792.2	1197.4
						70°	75.0	108.9	175.5	289.7	593.3	896.5
						72.5°	73.1	102.9	152.3	232.8	376.3	627.8
						75°	64.8	86.6	119.7	159.8	237.5	457.4
						77.5°	50.7	66.6	84.8	99.2	120.6	322.7
						80°	37.2	48.4	55.4	59.6	67.1	220.2
						82.5°	26.6	32.6	35.4	37.7	44.7	164.9
						85°	20.0	22.8	24.7	24.7	30.3	116.4
						87.5°	11.2	11.7	11.7	12.6	14.9	31.7
						90°	11.5	11.5	10.9	10.9	9.5	8.0
						92.5°	6.1	6.1	6.1	5.6	5.1	4.6
						95°	7.2	7.2	7.2	6.6	6.1	5.6
						97.5°	9.2	8.7	8.2	8.2	8.2	7.7
						100°	12.3	11.3	10.2	9.7	9.2	8.7
						102.5°	27.6	23.0	18.4	15.9	13.3	12.3
						105°	49.1	43.0	36.8	32.2	27.6	25.1
						107.5°	74.7	67.0	59.3	54.7	50.1	46.5



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CATALOG NUMBER: ISW-AF-450-LED-E1-SLL-ULG

CANDELA DISTRIBUTION (continued):

355°	359°	360°		325°	330°	335°	340°	345°	350°	355°
914.2	914.2	914.2	110°	104.3	96.7	89.0	82.3	75.7	72.6	69.6
933.7	940.8	946.3	112.5°	137.1	130.4	123.8	116.1	108.4	104.9	101.3
868.1	885.4	888.6	115°	171.9	167.3	162.6	156.5	150.4	146.3	142.2
769.9	797.8	807.5	117.5°	206.6	204.1	201.5	197.4	193.3	190.8	188.2
697.7	727.9	738.2	120°	242.4	240.4	238.3	234.8	231.2	229.7	228.1
658.1	693.5	704.6	122.5°	277.2	275.2	273.1	270.1	267.0	266.5	266.0
659.0	701.3	717.7	125°	312.0	308.9	305.9	304.3	302.8	301.8	300.7
701.8	750.3	770.3	127.5°	346.8	343.7	340.6	338.6	336.6	336.6	336.6
775.4	845.8	860.7	130°	378.5	376.4	374.4	372.4	370.3	369.8	369.3
875.1	944.0	966.4	132.5°	413.3	411.7	410.2	406.1	402.0	402.5	403.0
968.7	1060.0	1077.3	135°	445.0	443.4	441.9	438.8	435.8	435.8	435.8
1060.9	1151.2	1166.7	137.5°	474.6	472.6	470.6	470.0	469.5	468.5	467.5
1132.2	1226.7	1239.7	140°	502.3	501.2	500.2	499.2	498.2	497.2	496.1
1200.6	1307.3	1321.8	142.5°	533.0	531.4	529.9	529.4	528.9	527.8	526.8
1277.1	1394.9	1411.6	145°	562.6	561.1	559.6	558.0	556.5	557.5	558.5
1345.9	1481.0	1491.8	147.5°	587.2	587.2	587.2	585.6	584.1	584.6	585.1
1422.3	1551.3	1554.2	150°	606.6	606.6	606.6	606.6	606.6	606.1	605.6
1484.7	1603.5	1604.4	152.5°	624.0	623.5	623.0	622.5	622.0	622.0	622.0
1545.3	1652.4	1652.9	155°	644.5	642.9	641.4	640.4	639.3	639.3	639.3
1608.6	1706.0	1698.9	157.5°	660.8	659.8	658.8	658.3	657.8	657.8	657.8
1708.7	1769.3	1776.3	160°	670.0	670.5	671.1	672.6	674.1	674.6	675.1
1861.1	1915.1	1922.9	162.5°	676.2	678.2	680.3	682.3	684.4	684.4	684.4
2038.0	2113.0	2102.3	165°	688.4	690.0	691.5	691.5	691.5	692.5	693.6
2113.0	2198.7	2207.5	167.5°	703.8	702.8	701.7	700.7	699.7	701.2	702.8
2100.4	2217.3	2232.2	170°	708.9	708.4	707.9	707.9	707.9	709.4	711.0
2080.4	2211.7	2229.9	172.5°	705.8	707.4	708.9	709.9	711.0	712.0	713.0
1966.7	2153.5	2182.0	175°	706.9	708.9	711.0	712.0	713.0	713.5	714.0
1775.8	2032.9	2072.9	177.5°	713.0	714.0	715.0	715.6	716.1	718.6	721.2
1530.3	1852.7	1884.8	180°	716.1	716.1	716.1	716.1	716.1	716.1	716.1
1194.1	1505.7	1533.2								
793.6	1033.9	1081.5								
504.4	667.0	658.1								
372.1	433.6	434.0								
270.2	297.6	294.3								
209.1	181.7	181.2								
73.1	64.2	62.9								
31.7	26.6	27.0								
6.5	6.5	7.0								
4.1	4.1	4.1								
5.1	5.1	5.1								
7.2	7.2	7.2								
8.2	8.2	8.2								
11.3	11.3	11.3								
22.5	21.7	21.5								
43.0	42.1	41.9								



359°	360°
67.9	67.5
101.3	101.3
143.0	143.2
188.2	188.2
229.8	230.2
268.4	269.0
304.0	304.8
337.4	337.6
370.9	371.3
404.7	405.1
438.2	438.8
469.9	470.6
498.6	499.2
529.3	529.9
561.8	562.6
587.6	588.2
608.0	608.7
624.4	625.0
642.6	643.4
660.2	660.8
677.6	678.2
687.6	688.4
696.0	696.6
705.2	705.8
713.4	714.0
714.6	715.0
715.7	716.1
722.8	723.2
716.1	716.1

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