

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: P227151

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P227151
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-8030-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) 3000K CCT, 80 CRI LEDs and (1) UPLIGHT LED
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3943.6 lumens
Efficiency: N/A
Efficacy: 93.9 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

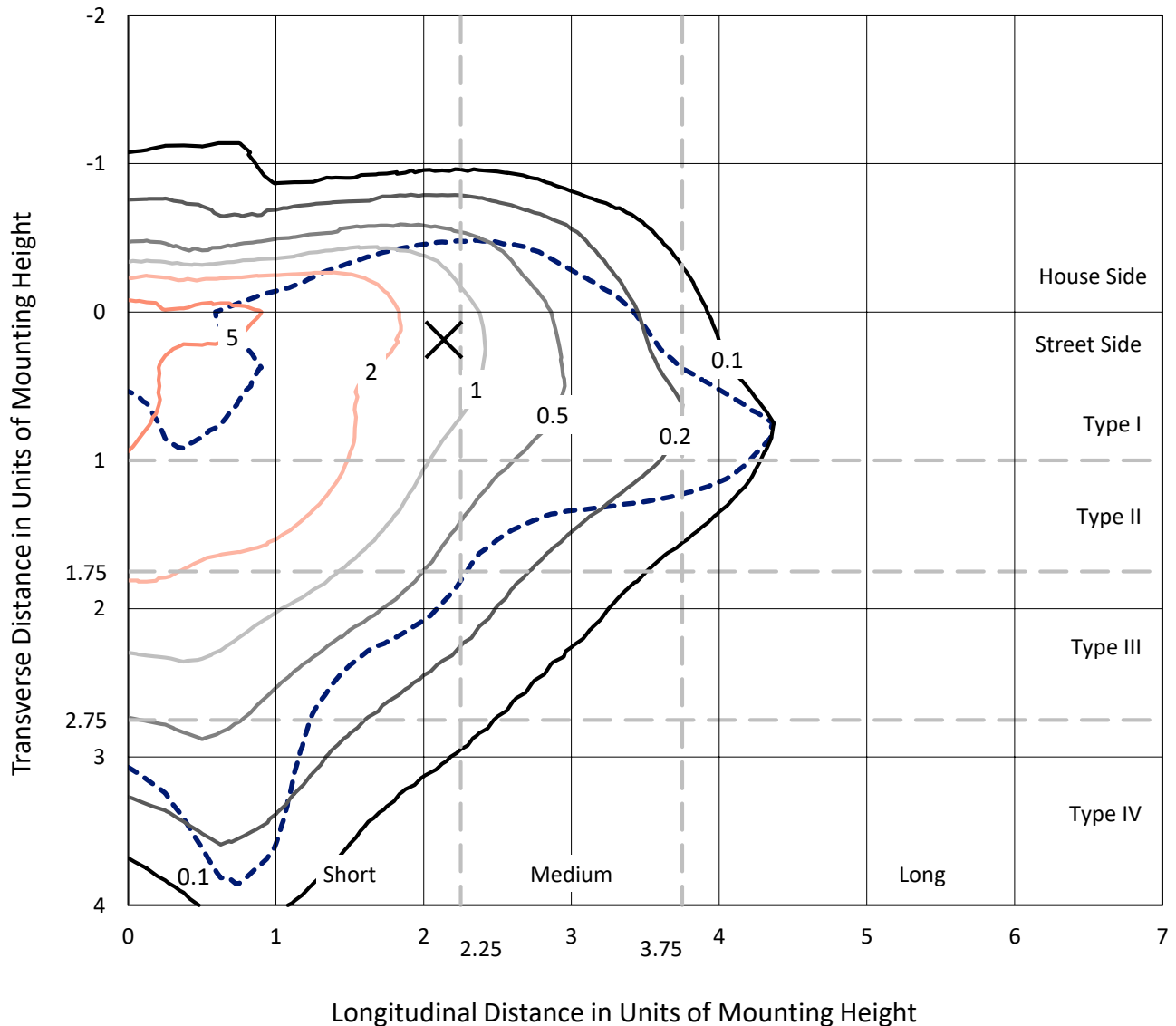
Input Watts (W): 42.01
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

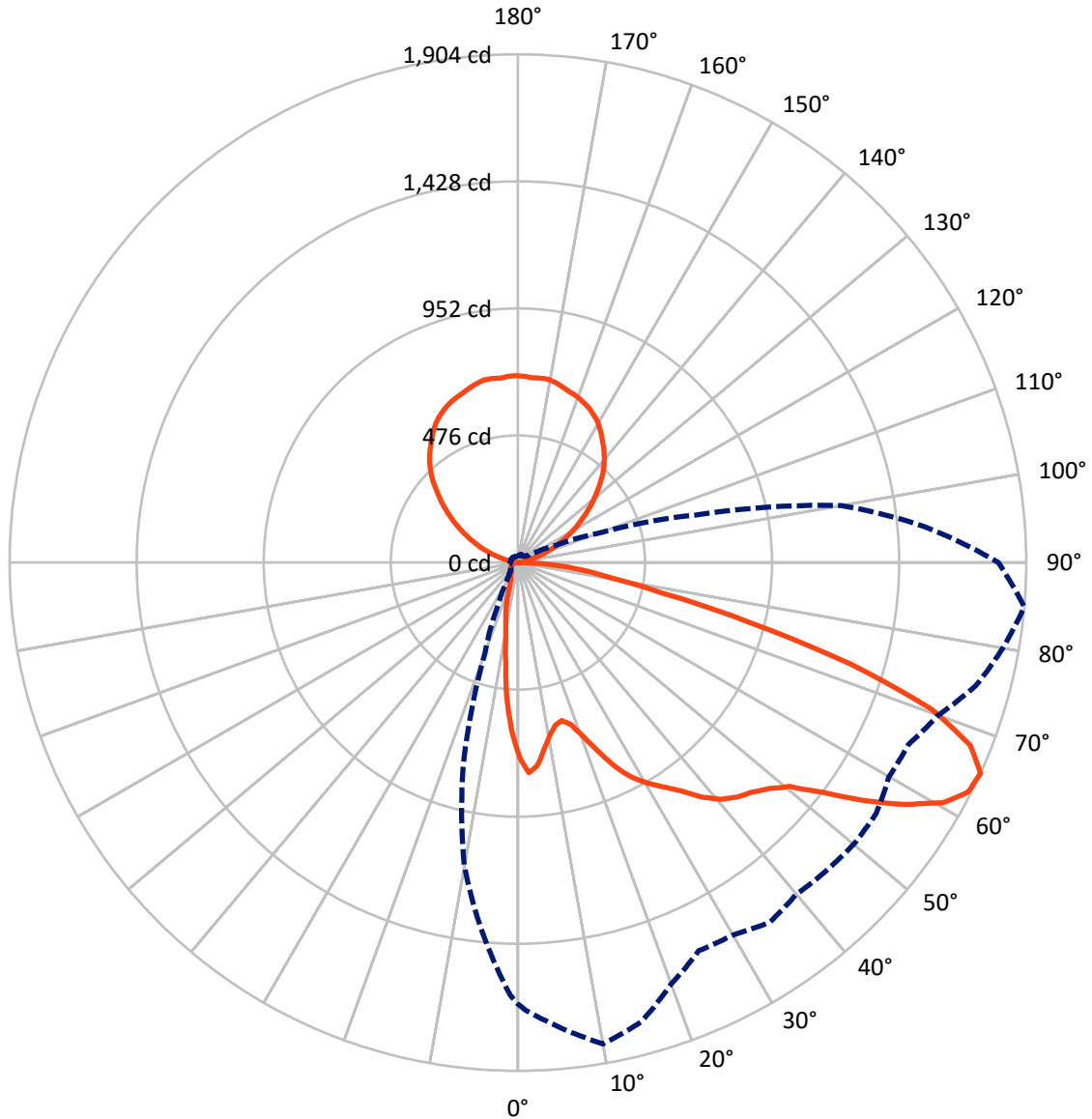
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 8 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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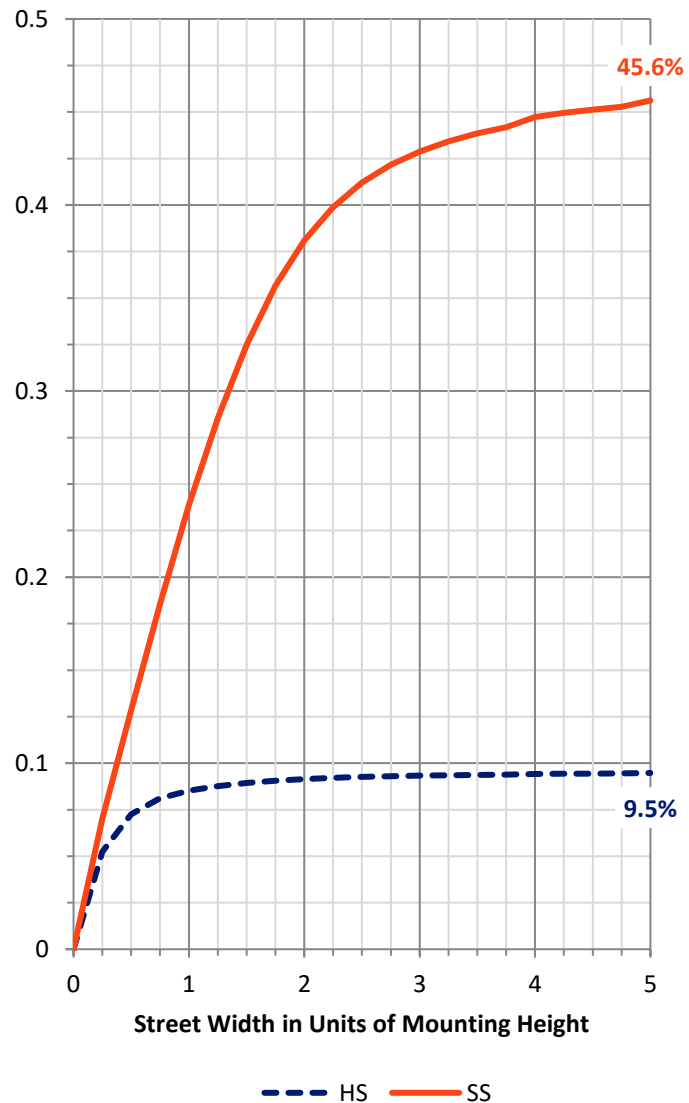
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	379.2	867.6	1246.7
	% Fixture	9.6	22.0	31.6
Street Side	Lumens	1829.3	867.7	2696.9
	% Fixture	46.4	22.0	68.4
Total	Lumens	2208.4	1735.2	3943.6
	% Fixture	56.0	44.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	54.0	1.4
10°-20°	104.0	2.6
20°-30°	148.2	3.8
30°-40°	215.1	5.5
40°-50°	307.6	7.8
50°-60°	472.3	12.0
60°-70°	546.7	13.9
70°-80°	278.9	7.1
80°-90°	81.5	2.1
90°-100°	9.4	0.2
100°-110°	57.4	1.5
110°-120°	166.1	4.2
120°-130°	273.2	6.9
130°-140°	336.8	8.5
140°-150°	344.6	8.7
150°-160°	290.3	7.4
160°-170°	191.2	4.8
170°-180°	66.3	1.7
0°-90°	2208.4	56.0
0°-180°	3943.6	100.0



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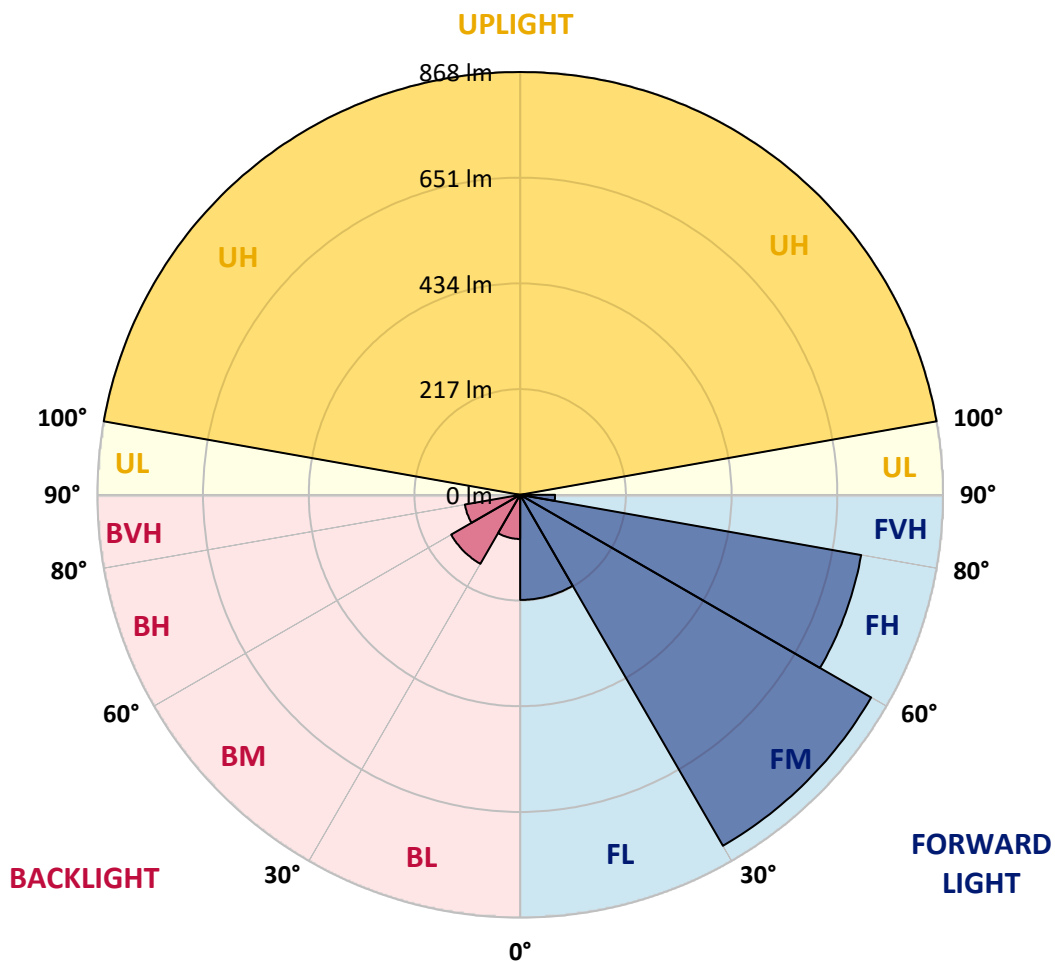
CATALOG NUMBER: ISW-AF-450-LED-E1-SLL-8030-ULG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	215.6	5.5			
FM	(30°-60°)	831.5	21.1			
FH	(60°-80°)	710.5	18.0			G1/1800
FVH	(80°-90°)	71.7	1.8			G1/100
BL	(0°-30°)	90.6	2.3	B0/110		
BM	(30°-60°)	163.5	4.1	B0/220		
BH	(60°-80°)	115.2	2.9	B1/500		G1/500
BVH	(80°-90°)	9.9	0.3			G0/10
UL	(90°-100°)	9.4	0.2		U1/10	
UH	(100°-180°)	867.6	22.0		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°	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3
2.5°	754.9	755.6	766.0	776.1	788.7	786.8	797.3	805.1	812.1	813.2	818.4
5°	708.8	716.3	739.7	759.7	785.0	804.7	825.9	842.6	854.8	866.4	867.8
7.5°	644.2	649.8	676.9	708.5	744.9	770.9	802.8	830.7	850.4	869.0	873.0
10°	588.8	594.0	624.1	665.0	696.9	730.8	763.8	786.5	812.1	828.1	835.9
12.5°	562.1	568.4	597.0	634.2	666.9	699.5	724.4	744.1	758.6	761.6	763.8
15°	572.5	575.8	607.4	640.5	666.5	682.8	689.5	701.4	700.3	706.2	707.3
17.5°	614.5	613.0	646.4	669.5	682.1	680.2	669.8	663.5	652.4	649.0	658.7
20°	686.5	691.7	713.3	727.4	714.4	684.3	655.7	636.0	620.4	615.2	614.1
22.5°	770.9	777.6	801.0	793.5	760.5	705.5	653.5	621.9	602.6	597.0	594.8
25°	859.3	863.8	875.6	850.4	803.9	732.6	669.1	624.9	599.2	591.1	590.0
27.5°	930.6	935.1	929.5	900.5	833.3	763.1	690.6	638.2	604.8	596.6	592.9
30°	988.9	991.2	972.6	936.6	869.7	796.9	718.9	661.7	622.6	604.1	601.5
32.5°	1054.3	1052.8	1016.8	967.0	900.5	827.3	751.2	688.0	639.7	617.1	613.0
35°	1126.0	1113.0	1049.5	997.1	921.7	850.7	780.5	715.9	667.2	637.1	631.9
37.5°	1189.9	1176.6	1091.5	1020.9	942.9	869.0	803.6	751.9	709.2	681.7	679.5
40°	1239.7	1223.4	1123.4	1036.9	953.3	882.3	830.7	797.3	769.0	746.7	746.7
42.5°	1279.8	1262.0	1154.6	1055.4	962.6	902.8	876.0	864.5	858.6	846.3	850.7
45°	1318.5	1300.3	1180.3	1067.3	983.4	942.5	946.2	956.3	974.1	967.0	973.3
47.5°	1355.3	1337.4	1209.3	1086.3	1023.5	1013.8	1033.2	1073.3	1108.2	1135.7	1155.0
50°	1416.9	1395.7	1261.3	1142.0	1086.7	1091.5	1147.2	1226.0	1282.8	1308.1	1306.6
52.5°	1533.9	1503.9	1373.1	1246.0	1176.9	1203.7	1269.4	1368.6	1442.9	1462.6	1470.4
55°	1677.0	1653.2	1534.7	1383.9	1333.7	1343.0	1424.7	1536.9	1594.1	1614.6	1621.3
57.5°	1760.9	1754.6	1680.3	1531.3	1482.7	1479.0	1585.6	1677.3	1726.8	1746.1	1740.1
59°	1780.6	1782.5	1740.1	1635.7	1568.9	1560.7	1669.2	1754.3	1795.5	1801.4	1798.5
60°	1778.8	1789.2	1784.0	1693.0	1623.5	1613.1	1704.5	1785.5	1820.0	1829.3	1818.9
62.5°	1740.5	1758.3	1807.7	1798.1	1747.2	1694.1	1737.2	1795.9	1818.1	1809.2	1801.4
65°	1653.6	1677.0	1745.7	1831.2	1782.1	1679.6	1604.2	1610.8	1644.7	1622.4	1633.1
67.5°	1503.5	1530.2	1566.6	1760.6	1689.2	1517.2	1387.6	1324.0	1308.1	1329.6	1363.8
70°	1223.0	1240.5	1332.6	1606.8	1483.4	1247.1	1084.4	999.7	971.5	1021.3	1056.2
72.5°	862.6	888.6	1010.1	1329.6	1220.4	999.0	820.7	742.6	714.4	716.6	747.1
75°	524.9	560.2	705.9	1051.4	961.8	765.3	625.2	569.1	560.6	555.8	550.6
77.5°	346.2	359.6	464.0	725.6	648.6	544.3	469.2	492.2	517.9	523.5	530.1
80°	234.8	238.9	300.9	509.0	427.2	402.0	379.3	433.5	482.2	491.1	486.3
82.5°	144.5	156.8	209.9	343.3	340.7	328.8	299.8	342.2	374.5	380.1	390.1
85°	50.2	52.4	128.9	303.1	346.2	350.0	247.1	195.0	219.2	215.1	154.5
87.5°	21.5	24.1	40.1	202.8	234.4	193.9	112.9	100.3	77.3	43.5	42.0
90°	6.5	6.5	6.1	7.9	12.6	11.2	11.3	9.1	8.0	7.5	7.0
92.5°	4.0	4.0	4.0	4.5	5.0	5.5	6.0	6.0	6.0	6.0	6.0
95°	5.0	5.0	5.0	5.5	6.0	6.5	7.0	7.0	7.0	7.0	7.0
97.5°	7.0	7.0	7.0	7.5	8.0	8.0	8.0	8.5	9.0	9.0	9.0
100°	8.0	8.0	8.0	8.5	9.0	9.5	10.0	11.0	12.0	16.5	21.0
102.5°	11.0	11.0	11.0	12.0	13.0	15.5	18.0	22.5	27.0	33.5	40.0
105°	21.0	21.2	22.0	24.5	27.0	31.5	36.0	42.0	48.0	55.5	63.0
107.5°	41.0	41.2	42.0	45.5	49.0	53.5	58.0	65.5	73.0	80.5	88.0



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

CANDELA DISTRIBUTION (continued):

	0°	1°	5°	10°	15°	20°	25°	30°	35°	40°	45°
110°	66.0	66.4	68.0	71.0	74.0	80.5	87.0	94.5	102.0	108.0	114.0
112.5°	99.0	99.0	99.0	102.5	106.0	113.5	121.0	127.5	134.0	138.5	143.0
115°	140.0	139.8	139.0	143.0	147.0	153.0	159.0	163.5	168.0	171.0	174.0
117.5°	184.0	184.0	184.0	186.5	189.0	193.0	197.0	199.5	202.0	203.5	205.0
120°	225.0	224.6	223.0	224.5	226.0	229.5	233.0	235.0	237.0	240.0	243.0
122.5°	263.0	262.4	260.0	260.5	261.0	264.0	267.0	269.0	271.0	274.0	277.0
125°	298.0	297.2	294.0	295.0	296.0	297.5	299.0	302.0	305.0	307.5	310.0
127.5°	330.0	329.8	329.0	329.0	329.0	331.0	333.0	336.0	339.0	339.5	340.0
130°	363.0	362.6	361.0	361.5	362.0	364.0	366.0	368.0	370.0	371.0	372.0
132.5°	396.0	395.6	394.0	393.5	393.0	397.0	401.0	402.5	404.0	404.5	405.0
135°	429.0	428.4	426.0	426.0	426.0	429.0	432.0	433.5	435.0	436.0	437.0
137.5°	460.0	459.4	457.0	458.0	459.0	459.5	460.0	462.0	464.0	466.0	468.0
140°	488.0	487.4	485.0	486.0	487.0	488.0	489.0	490.0	491.0	494.0	497.0
142.5°	518.0	517.4	515.0	516.0	517.0	517.5	518.0	519.5	521.0	523.0	525.0
145°	550.0	549.2	546.0	545.0	544.0	545.5	547.0	548.5	550.0	550.5	551.0
147.5°	575.0	574.4	572.0	571.5	571.0	572.5	574.0	574.0	574.0	574.5	575.0
150°	595.0	594.4	592.0	592.5	593.0	593.0	593.0	593.0	593.0	593.0	593.0
152.5°	611.0	610.4	608.0	608.0	608.0	608.5	609.0	609.5	610.0	610.0	610.0
155°	629.0	628.2	625.0	625.0	625.0	626.0	627.0	628.5	630.0	629.0	628.0
157.5°	646.0	645.4	643.0	643.0	643.0	643.5	644.0	645.0	646.0	645.5	645.0
160°	663.0	662.4	660.0	659.5	659.0	657.5	656.0	655.5	655.0	655.0	655.0
162.5°	673.0	672.2	669.0	669.0	669.0	667.0	665.0	663.0	661.0	662.0	663.0
165°	681.0	680.4	678.0	677.0	676.0	676.0	676.0	674.5	673.0	673.0	673.0
167.5°	690.0	689.4	687.0	685.5	684.0	685.0	686.0	687.0	688.0	686.5	685.0
170°	698.0	697.4	695.0	693.5	692.0	692.0	692.0	692.5	693.0	692.0	691.0
172.5°	699.0	698.6	697.0	696.0	695.0	694.0	693.0	691.5	690.0	690.0	690.0
175°	700.0	699.6	698.0	697.5	697.0	696.0	695.0	693.0	691.0	690.5	690.0
177.5°	707.0	706.6	705.0	702.5	700.0	699.5	699.0	698.0	697.0	696.0	695.0
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):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3
2.5°	817.3	812.5	815.5	811.4	804.7	800.2	795.0	788.3	780.5	770.1	759.7
5°	864.5	860.8	851.5	838.1	819.5	803.9	785.4	763.4	745.2	721.8	699.9
7.5°	868.6	862.6	845.5	820.7	792.1	763.1	741.2	705.5	682.5	645.3	620.4
10°	831.4	831.8	814.7	791.3	761.6	727.4	695.8	656.8	623.0	585.1	543.5
12.5°	776.8	782.0	782.8	762.0	733.0	696.9	661.7	624.5	582.5	542.0	503.8
15°	714.8	729.6	730.8	725.6	710.3	679.9	647.5	614.1	571.4	527.2	484.1
17.5°	659.4	673.5	686.5	698.4	699.2	684.7	665.0	636.4	593.7	541.7	491.1
20°	617.4	632.7	655.0	676.9	701.0	708.5	709.9	691.7	646.0	582.5	514.2
22.5°	600.0	617.8	640.5	681.7	724.4	750.8	765.7	765.7	717.7	643.4	552.1
25°	596.3	610.8	645.3	696.6	753.8	799.9	828.1	847.0	812.5	721.8	598.9
27.5°	598.9	618.6	661.3	713.7	773.5	832.5	879.0	912.0	879.7	775.3	642.3
30°	609.3	638.6	682.8	737.1	798.7	861.2	917.2	959.2	935.5	824.0	683.6
32.5°	627.5	663.1	713.3	762.3	823.6	891.2	946.6	1002.0	984.5	857.8	705.5
35°	654.6	696.6	742.3	791.7	850.4	918.0	977.1	1049.5	1043.2	900.2	727.4
37.5°	698.4	741.5	783.5	825.9	881.6	947.3	1020.9	1113.4	1108.2	962.9	762.7
40°	775.7	801.0	832.2	859.3	911.7	974.5	1053.2	1166.2	1184.7	1016.8	793.9
42.5°	871.6	886.4	895.3	902.8	929.5	988.6	1076.6	1201.4	1231.9	1056.9	818.1
45°	993.8	989.3	971.5	954.4	951.4	996.8	1087.4	1227.5	1269.1	1095.9	842.6
47.5°	1138.3	1128.6	1080.0	1023.9	992.7	1011.6	1106.3	1265.7	1314.8	1147.2	873.0
50°	1305.1	1282.4	1202.9	1108.2	1050.6	1053.6	1154.3	1318.8	1374.9	1214.1	929.9
52.5°	1459.6	1419.2	1324.4	1199.2	1116.7	1126.8	1240.5	1428.8	1498.3	1324.8	1025.4
55°	1596.0	1544.0	1441.8	1304.7	1230.1	1247.5	1378.3	1574.4	1640.2	1456.7	1121.9
57.5°	1711.9	1656.5	1555.9	1435.1	1342.3	1356.7	1501.3	1709.7	1753.9	1575.2	1214.5
59°	1764.7	1710.0	1617.2	1505.7	1418.8	1449.2	1588.2	1776.9	1795.9	1620.9	1249.7
60°	1790.3	1735.7	1653.9	1545.1	1465.6	1505.7	1634.3	1827.8	1811.5	1627.6	1263.1
62.5°	1788.4	1750.2	1696.3	1622.0	1607.5	1674.4	1784.0	1893.2	1822.2	1608.2	1271.7
65°	1641.7	1638.3	1604.9	1613.4	1674.0	1777.3	1844.5	1904.0	1799.9	1531.3	1230.4
67.5°	1369.4	1383.1	1387.6	1440.0	1581.5	1756.9	1815.9	1827.4	1703.0	1366.8	1102.3
70°	1057.3	1026.8	1077.0	1169.5	1373.5	1599.3	1683.3	1643.2	1504.6	1144.6	900.2
72.5°	748.6	757.5	829.6	949.6	1157.2	1391.3	1522.8	1304.0	1132.0	856.7	638.2
75°	563.2	605.2	640.1	745.2	939.9	1191.8	1300.3	896.4	737.4	590.7	417.6
77.5°	539.8	536.5	509.7	532.0	677.6	834.8	927.7	559.5	461.8	386.4	252.3
80°	498.9	470.3	421.7	400.1	426.9	536.1	588.8	359.6	307.2	270.1	142.3
82.5°	387.1	367.8	316.5	315.0	355.9	380.8	404.9	254.9	231.1	218.8	87.3
85°	245.6	252.3	258.6	315.4	394.9	399.4	315.0	155.3	121.9	171.6	55.7
87.5°	72.8	118.5	143.8	244.1	355.9	357.0	237.0	50.9	45.7	53.5	32.3
90°	7.0	7.0	8.0	9.0	9.0	9.0	8.4	7.0	7.0	7.0	8.0
92.5°	6.5	7.0	7.0	7.0	6.5	6.0	6.0	6.0	6.0	6.0	6.0
95°	7.0	7.0	7.5	8.0	7.5	7.0	7.0	7.0	7.0	7.0	7.0
97.5°	10.5	12.0	11.0	10.0	9.5	9.0	8.5	8.0	8.0	8.0	8.5
100°	25.0	29.0	27.5	26.0	24.5	23.0	21.0	19.0	19.0	19.0	21.0
102.5°	45.0	50.0	48.5	47.0	44.5	42.0	40.5	39.0	38.0	39.0	40.5
105°	67.5	72.0	71.0	70.0	67.5	65.0	63.0	61.0	61.0	61.0	63.0
107.5°	91.5	95.0	94.5	94.0	92.0	90.0	88.5	87.0	86.0	87.0	88.5



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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
110°	117.0	120.0	120.5	121.0	120.0	119.0	117.5	116.0	117.0	116.0	117.5
112.5°	145.5	148.0	149.0	150.0	149.5	149.0	148.0	147.0	147.0	147.0	148.0
115°	176.5	179.0	180.5	182.0	180.5	179.0	178.0	177.0	178.0	177.0	178.0
117.5°	208.0	211.0	213.0	215.0	212.5	210.0	209.0	208.0	209.0	208.0	209.0
120°	244.5	246.0	248.0	250.0	247.5	245.0	244.0	243.0	243.0	243.0	244.0
122.5°	278.0	279.0	281.0	283.0	280.5	278.0	277.0	276.0	277.0	276.0	277.0
125°	311.5	313.0	314.0	315.0	312.5	310.0	310.0	310.0	310.0	310.0	310.0
127.5°	342.5	345.0	345.5	346.0	346.0	346.0	345.5	345.0	347.0	345.0	345.5
130°	374.5	377.0	379.0	381.0	381.0	381.0	380.0	379.0	380.0	379.0	380.0
132.5°	408.0	411.0	413.5	416.0	415.0	414.0	414.0	414.0	415.0	414.0	414.0
135°	440.0	443.0	445.5	448.0	447.5	447.0	448.5	450.0	451.0	450.0	448.5
137.5°	470.5	473.0	474.0	475.0	475.5	476.0	478.5	481.0	482.0	481.0	478.5
140°	498.5	500.0	501.0	502.0	503.0	504.0	506.5	509.0	511.0	509.0	506.5
142.5°	526.0	527.0	530.0	533.0	533.0	533.0	533.5	534.0	536.0	534.0	533.5
145°	553.5	556.0	559.0	562.0	561.5	561.0	559.5	558.0	560.0	558.0	559.5
147.5°	577.5	580.0	582.5	585.0	585.5	586.0	584.5	583.0	585.0	583.0	584.5
150°	595.0	597.0	598.5	600.0	601.5	603.0	604.5	606.0	610.0	606.0	604.5
152.5°	610.5	611.0	612.5	614.0	616.0	618.0	620.5	623.0	628.0	623.0	620.5
155°	627.0	626.0	628.5	631.0	633.5	636.0	637.0	638.0	641.0	638.0	637.0
157.5°	644.5	644.0	646.0	648.0	649.0	650.0	650.0	650.0	655.0	650.0	650.0
160°	656.5	658.0	661.0	664.0	662.5	661.0	660.5	660.0	666.0	660.0	660.5
162.5°	665.0	667.0	669.0	671.0	670.5	670.0	669.0	668.0	674.0	668.0	669.0
165°	672.5	672.0	674.5	677.0	678.5	680.0	679.0	678.0	682.0	678.0	679.0
167.5°	681.5	678.0	681.0	684.0	686.0	688.0	688.0	688.0	694.0	688.0	688.0
170°	688.5	686.0	687.5	689.0	691.5	694.0	695.0	696.0	701.0	696.0	695.0
172.5°	689.5	689.0	690.5	692.0	693.0	694.0	695.0	696.0	701.0	696.0	695.0
175°	690.0	690.0	692.5	695.0	695.5	696.0	695.0	694.0	699.0	694.0	695.0
177.5°	694.5	694.0	696.5	699.0	700.0	701.0	699.5	698.0	702.0	698.0	699.5
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-SLL-8030-ULG

CANDELA DISTRIBUTION (continued):

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3
2.5°	749.0	747.5	737.1	719.6	721.1	712.9	702.5	685.8	682.5	673.2	671.7
5°	681.3	663.9	641.2	613.7	603.3	589.2	574.7	564.3	551.3	539.4	555.4
7.5°	591.1	565.4	539.1	510.1	493.4	470.3	458.1	434.3	416.8	413.5	399.7
10°	515.7	483.3	453.2	427.2	396.0	374.5	358.9	345.9	334.0	319.5	310.6
12.5°	465.5	429.1	397.1	364.8	350.0	332.1	322.5	310.2	293.1	280.9	269.0
15°	442.8	403.5	368.5	340.3	318.8	302.0	284.9	270.1	251.5	237.8	224.0
17.5°	439.9	388.6	344.4	312.8	289.4	271.2	248.5	228.8	206.2	191.0	179.4
20°	443.2	377.4	322.1	280.9	257.1	225.1	204.0	179.8	157.5	137.5	119.3
22.5°	456.6	371.5	300.2	254.9	219.6	183.2	160.5	129.7	110.7	91.4	84.3
25°	474.8	367.8	281.2	226.2	181.7	145.6	114.8	89.2	80.6	75.8	73.2
27.5°	494.1	361.1	260.1	199.9	151.2	107.4	85.8	75.0	71.7	69.1	67.2
30°	508.6	348.1	234.0	171.6	120.4	91.8	76.5	69.5	67.2	64.3	62.4
32.5°	514.9	328.0	210.6	144.9	101.4	78.8	66.9	62.8	60.6	58.0	56.8
35°	513.8	305.4	198.8	134.5	92.9	69.8	58.7	56.1	53.1	50.5	47.9
37.5°	514.9	284.6	189.5	131.9	89.2	63.2	53.5	51.6	49.4	46.8	44.6
40°	519.4	273.1	185.0	126.3	86.2	60.6	49.4	47.6	47.2	44.2	42.4
42.5°	521.2	274.2	182.8	118.5	78.8	59.8	49.4	45.3	45.3	43.1	40.9
45°	519.0	282.3	184.3	114.1	73.2	56.1	52.0	45.3	44.2	42.4	40.1
47.5°	525.7	288.3	184.3	113.3	69.5	52.4	49.4	49.8	45.0	42.7	39.4
50°	553.2	293.9	180.6	112.2	68.4	48.7	46.8	49.0	50.5	43.5	39.8
52.5°	601.8	300.9	176.5	110.3	66.9	45.7	43.5	46.1	51.6	45.7	39.8
55°	651.6	313.6	173.9	107.4	64.6	43.8	39.4	44.2	47.2	45.3	39.4
57.5°	704.7	327.3	171.3	100.3	59.4	42.0	37.9	38.6	42.4	43.8	38.3
59°	720.7	334.0	169.0	95.1	55.0	40.5	36.8	35.7	37.9	42.0	37.5
60°	732.2	334.4	166.4	90.6	52.4	39.8	36.0	34.6	35.3	43.1	37.9
62.5°	733.4	334.0	158.3	81.4	47.2	38.3	34.9	33.1	32.3	36.0	38.6
65°	687.3	318.4	143.4	76.5	47.6	36.8	33.1	31.6	30.1	30.8	33.4
67.5°	601.1	278.3	127.8	77.6	50.2	35.7	31.6	30.1	29.0	28.2	29.3
70°	454.7	231.1	123.3	80.2	52.4	34.9	29.3	27.9	27.1	26.7	26.7
72.5°	315.0	190.2	118.5	82.1	54.2	34.6	27.1	25.6	25.3	24.9	24.9
75°	202.8	138.2	98.1	69.8	49.4	31.6	24.5	23.0	22.7	22.3	22.7
77.5°	120.0	96.6	72.1	49.0	36.0	25.3	21.2	20.1	20.1	20.1	20.4
80°	66.5	57.2	47.9	31.6	25.6	18.9	17.5	16.3	16.3	16.7	17.5
82.5°	39.8	31.6	27.1	20.1	17.5	13.4	13.0	12.3	12.6	13.0	13.7
85°	26.0	20.1	16.3	13.4	11.9	8.5	7.4	7.8	8.2	8.9	9.3
87.5°	14.5	11.1	8.9	7.8	7.1	3.7	3.0	3.0	3.7	4.5	5.2
90°	9.0	9.0	9.0	8.0	7.0	7.0	7.0	7.5	8.0	8.0	8.0
92.5°	6.0	6.5	7.0	7.0	7.0	6.5	6.0	6.0	6.0	6.0	6.0
95°	7.0	7.5	8.0	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0
97.5°	9.0	9.5	10.0	11.0	12.0	10.5	9.0	9.0	9.0	8.5	8.0
100°	23.0	24.5	26.0	27.5	29.0	25.0	21.0	16.5	12.0	11.0	10.0
102.5°	42.0	44.5	47.0	48.5	50.0	45.0	40.0	33.5	27.0	22.5	18.0
105°	65.0	67.5	70.0	71.0	72.0	67.5	63.0	55.5	48.0	42.0	36.0
107.5°	90.0	92.0	94.0	94.5	95.0	91.5	88.0	80.5	73.0	65.5	58.0



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REPORT N
 CATALOG

CANDELA DISTRIBUTION (continued):

CANDELA

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	
110°	119.0	120.0	121.0	120.5	120.0	117.0	114.0	108.0	102.0	94.5	87.0	0°
112.5°	149.0	149.5	150.0	149.0	148.0	145.5	143.0	138.5	134.0	127.5	121.0	2.5°
115°	179.0	180.5	182.0	180.5	179.0	176.5	174.0	171.0	168.0	163.5	159.0	5°
117.5°	210.0	212.5	215.0	213.0	211.0	208.0	205.0	203.5	202.0	199.5	197.0	7.5°
120°	245.0	247.5	250.0	248.0	246.0	244.5	243.0	240.0	237.0	235.0	233.0	10°
122.5°	278.0	280.5	283.0	281.0	279.0	278.0	277.0	274.0	271.0	269.0	267.0	12.5°
125°	310.0	312.5	315.0	314.0	313.0	311.5	310.0	307.5	305.0	302.0	299.0	15°
127.5°	346.0	346.0	346.0	345.5	345.0	342.5	340.0	339.5	339.0	336.0	333.0	17.5°
130°	381.0	381.0	381.0	379.0	377.0	374.5	372.0	371.0	370.0	368.0	366.0	20°
132.5°	414.0	415.0	416.0	413.5	411.0	408.0	405.0	404.5	404.0	402.5	401.0	22.5°
135°	447.0	447.5	448.0	445.5	443.0	440.0	437.0	436.0	435.0	433.5	432.0	25°
137.5°	476.0	475.5	475.0	474.0	473.0	470.5	468.0	466.0	464.0	462.0	460.0	27.5°
140°	504.0	503.0	502.0	501.0	500.0	498.5	497.0	494.0	491.0	490.0	489.0	30°
142.5°	533.0	533.0	533.0	530.0	527.0	526.0	525.0	523.0	521.0	519.5	518.0	32.5°
145°	561.0	561.5	562.0	559.0	556.0	553.5	551.0	550.5	550.0	548.5	547.0	35°
147.5°	586.0	585.5	585.0	582.5	580.0	577.5	575.0	574.5	574.0	574.0	574.0	37.5°
150°	603.0	601.5	600.0	598.5	597.0	595.0	593.0	593.0	593.0	593.0	593.0	40°
152.5°	618.0	616.0	614.0	612.5	611.0	610.5	610.0	610.0	610.0	609.5	609.0	42.5°
155°	636.0	633.5	631.0	628.5	626.0	627.0	628.0	629.0	630.0	628.5	627.0	45°
157.5°	650.0	649.0	648.0	646.0	644.0	644.5	645.0	645.5	646.0	645.0	644.0	47.5°
160°	661.0	662.5	664.0	661.0	658.0	656.5	655.0	655.0	655.0	655.5	656.0	50°
162.5°	670.0	670.5	671.0	669.0	667.0	665.0	663.0	662.0	661.0	663.0	665.0	52.5°
165°	680.0	678.5	677.0	674.5	672.0	672.5	673.0	673.0	673.0	674.5	676.0	55°
167.5°	688.0	686.0	684.0	681.0	678.0	681.5	685.0	686.5	688.0	687.0	686.0	57.5°
170°	694.0	691.5	689.0	687.5	686.0	688.5	691.0	692.0	693.0	692.5	692.0	59°
172.5°	694.0	693.0	692.0	690.5	689.0	689.5	690.0	690.0	690.0	691.5	693.0	60°
175°	696.0	695.5	695.0	692.5	690.0	690.0	690.0	690.5	691.0	693.0	695.0	62.5°
177.5°	701.0	700.0	699.0	696.5	694.0	694.5	695.0	696.0	697.0	698.0	699.0	65°
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

160°	165°	170°	175°	180°	185°	190°	195°	200°	205°	210°	110°	160°
729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	110°	80.5
676.9	666.1	654.6	646.0	649.8	637.5	638.6	635.3	633.8	633.0	625.2	112.5°	113.5
536.1	540.2	523.1	524.9	530.1	517.5	509.0	523.1	521.2	508.6	515.7	115°	153.0
386.4	387.5	379.7	362.2	362.2	371.5	374.8	381.5	386.0	401.6	391.9	117.5°	193.0
295.3	284.9	277.1	269.3	264.9	255.6	257.8	266.0	271.2	280.1	287.2	120°	229.5
256.7	245.2	231.4	219.6	213.2	204.7	199.1	197.3	199.1	193.6	193.9	122.5°	264.0
213.2	202.8	187.6	181.3	169.4	162.7	159.0	154.2	150.5	142.7	139.3	125°	297.5
165.3	151.6	136.0	136.0	127.4	121.9	120.4	119.3	117.0	112.9	108.9	127.5°	331.0
110.0	101.0	92.1	87.7	88.4	87.7	85.4	89.2	89.2	90.6	89.9	130°	364.0
80.2	78.8	75.4	72.8	71.3	71.0	71.3	72.4	74.7	76.5	78.4	132.5°	397.0
72.1	71.3	68.4	65.8	65.4	64.6	64.6	65.8	66.1	66.5	66.1	135°	429.0
66.9	65.4	62.8	60.9	60.2	59.8	60.2	59.1	58.3	58.7	58.3	137.5°	459.5
60.6	59.4	56.8	55.4	55.0	55.0	53.9	53.5	52.8	53.1	52.8	140°	488.0
55.7	54.2	51.6	49.8	49.8	49.4	49.8	49.4	49.0	48.7	48.7	142.5°	517.5
46.8	46.4	43.8	43.1	43.5	44.6	44.6	44.6	45.0	44.6	44.6	145°	545.5
43.5	43.1	40.5	38.6	38.3	38.3	38.3	39.0	40.1	40.5	41.2	147.5°	572.5
41.2	40.9	38.3	36.8	36.0	35.7	35.3	35.3	35.7	37.2	38.3	150°	593.0
39.8	39.0	36.4	34.6	34.2	33.8	33.4	33.4	33.4	33.8	34.9	152.5°	608.5
39.0	37.9	34.9	33.1	32.3	31.9	31.9	32.3	31.9	31.9	31.9	155°	626.0
37.9	37.2	34.2	31.9	31.2	31.2	30.8	30.8	30.8	30.1	30.1	157.5°	643.5
37.5	36.4	33.4	31.2	30.5	30.1	29.7	30.1	29.3	29.0	28.6	160°	657.5
36.8	35.3	31.9	30.1	29.7	29.0	28.6	28.6	28.6	27.9	27.9	162.5°	667.0
36.4	34.6	31.2	29.3	28.6	27.9	27.5	27.5	28.2	27.5	27.5	165°	676.0
36.0	33.4	30.1	27.9	27.5	26.7	26.4	26.7	27.9	27.1	26.7	167.5°	685.0
34.6	32.7	29.3	27.5	26.7	26.0	25.6	26.0	26.7	26.7	26.7	170°	692.0
33.8	31.9	28.6	26.7	26.4	25.6	25.3	25.3	26.4	26.4	26.0	172.5°	694.0
32.7	31.2	27.9	25.6	24.9	24.9	24.5	24.5	24.9	24.9	25.3	175°	696.0
31.2	30.5	27.1	24.5	24.1	23.8	23.8	23.8	23.8	24.5	24.5	177.5°	699.5
29.7	29.3	26.0	23.8	23.0	23.0	23.0	23.0	23.0	23.4	23.8	180°	700.0
27.5	27.5	24.5	22.3	21.9	21.5	21.5	21.5	21.5	21.9	22.3		
25.3	25.6	22.7	20.4	20.1	20.1	20.1	20.1	20.4	20.4	20.8		
23.0	23.4	20.4	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.9		
20.8	20.8	17.5	15.2	15.6	16.0	16.3	16.0	16.0	16.3	17.5		
17.8	17.5	14.5	12.6	12.6	13.4	13.7	13.4	13.7	13.7	15.2		
14.1	14.1	11.1	9.3	9.3	10.8	10.8	10.8	11.1	11.5	12.6		
10.8	10.4	7.8	6.3	6.3	7.4	7.8	8.2	8.5	8.9	9.7		
6.3	6.3	4.1	2.6	3.0	3.3	4.5	4.5	4.5	5.2	6.3		
7.5	7.4	6.0	5.0	5.0	5.0	6.0	7.0	7.5	8.0	8.0		
5.5	5.0	4.5	4.0	4.0	4.0	4.5	5.0	5.5	6.0	6.0		
6.5	6.0	5.5	5.0	5.0	5.0	5.5	6.0	6.5	7.0	7.0		
8.0	8.0	7.5	7.0	7.0	7.0	7.5	8.0	8.0	8.0	8.5		
9.5	9.0	8.5	8.0	8.0	8.0	8.5	9.0	9.5	10.0	11.0		
15.5	13.0	12.0	11.0	11.0	11.0	12.0	13.0	15.5	18.0	22.5		
31.5	27.0	24.5	22.0	21.0	22.0	24.5	27.0	31.5	36.0	42.0		
53.5	49.0	45.5	42.0	41.0	42.0	45.5	49.0	53.5	58.0	65.5		

'227151
 ISW-AF-450-LED-E1-SLL-8030-ULG

REPORT NUMBER: P227151
 CATALOG NUMBER: ISW-AF-4!

TION (continued):

CANDELA DISTRIBUTION (con

165°	170°	175°	180°	185°	190°	195°	200°	205°	210°		215°	220°
74.0	71.0	68.0	66.0	68.0	71.0	74.0	80.5	87.0	94.5	0°	729.3	729.3
106.0	102.5	99.0	99.0	99.0	102.5	106.0	113.5	121.0	127.5	2.5°	631.9	631.6
147.0	143.0	139.0	140.0	139.0	143.0	147.0	153.0	159.0	163.5	5°	518.6	515.3
189.0	186.5	184.0	184.0	184.0	186.5	189.0	193.0	197.0	199.5	7.5°	402.0	414.2
226.0	224.5	223.0	225.0	223.0	224.5	226.0	229.5	233.0	235.0	10°	289.8	298.3
261.0	260.5	260.0	263.0	260.0	260.5	261.0	264.0	267.0	269.0	12.5°	201.7	206.2
296.0	295.0	294.0	298.0	294.0	295.0	296.0	297.5	299.0	302.0	15°	138.9	147.9
329.0	329.0	329.0	330.0	329.0	329.0	329.0	331.0	333.0	336.0	17.5°	108.1	109.2
362.0	361.5	361.0	363.0	361.0	361.5	362.0	364.0	366.0	368.0	20°	89.2	89.9
393.0	393.5	394.0	396.0	394.0	393.5	393.0	397.0	401.0	402.5	22.5°	79.1	80.6
426.0	426.0	426.0	429.0	426.0	426.0	426.0	429.0	432.0	433.5	25°	66.5	68.0
459.0	458.0	457.0	460.0	457.0	458.0	459.0	459.5	460.0	462.0	27.5°	58.7	60.2
487.0	486.0	485.0	488.0	485.0	486.0	487.0	488.0	489.0	490.0	30°	53.9	54.6
517.0	516.0	515.0	518.0	515.0	516.0	517.0	517.5	518.0	519.5	32.5°	49.0	49.0
544.0	545.0	546.0	550.0	546.0	545.0	544.0	545.5	547.0	548.5	35°	45.0	45.3
571.0	571.5	572.0	575.0	572.0	571.5	571.0	572.5	574.0	574.0	37.5°	42.0	42.7
593.0	592.5	592.0	595.0	592.0	592.5	593.0	593.0	593.0	593.0	40°	39.4	39.8
608.0	608.0	608.0	611.0	608.0	608.0	608.0	608.5	609.0	609.5	42.5°	35.7	36.4
625.0	625.0	625.0	629.0	625.0	625.0	625.0	626.0	627.0	628.5	45°	32.3	32.7
643.0	643.0	643.0	646.0	643.0	643.0	643.0	643.5	644.0	645.0	47.5°	30.1	30.1
659.0	659.5	660.0	663.0	660.0	659.5	659.0	657.5	656.0	655.5	50°	28.6	29.0
669.0	669.0	669.0	673.0	669.0	669.0	669.0	667.0	665.0	663.0	52.5°	27.9	28.2
676.0	677.0	678.0	681.0	678.0	677.0	676.0	676.0	676.0	674.5	55°	27.5	28.2
684.0	685.5	687.0	690.0	687.0	685.5	684.0	685.0	686.0	687.0	57.5°	27.5	27.9
692.0	693.5	695.0	698.0	695.0	693.5	692.0	692.0	692.0	692.5	59°	27.1	27.5
695.0	696.0	697.0	699.0	697.0	696.0	695.0	694.0	693.0	691.5	60°	27.1	27.9
697.0	697.5	698.0	700.0	698.0	697.5	697.0	696.0	695.0	693.0	62.5°	26.0	26.7
700.0	702.5	705.0	707.0	705.0	702.5	700.0	699.5	699.0	698.0	65°	25.3	26.0
700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	67.5°	24.1	25.3
										70°	23.0	24.1
										72.5°	21.5	23.0
										75°	20.1	21.2
										77.5°	18.2	19.3
										80°	16.0	16.3
										82.5°	13.4	13.4
										85°	10.0	8.9
										87.5°	5.6	5.9
										90°	8.0	7.5
										92.5°	6.0	6.0
										95°	7.0	7.0
										97.5°	9.0	9.0
										100°	12.0	16.5
										102.5°	27.0	33.5
										105°	48.0	55.5
										107.5°	73.0	80.5



REPORT NUMBER: P227151

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

50-LED-E1-SLL-8030-ULG

tinued):

CANDELA DISTRIBUTION (continued):

225°	230°	235°	240°	245°	250°	255°	260°	265°		215°	220°	225°
729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	729.3	110°	102.0	108.0	114.0
623.8	623.8	634.9	636.0	623.0	626.4	632.7	625.2	633.4	112.5°	134.0	138.5	143.0
523.5	519.0	519.4	516.4	521.6	515.7	522.0	519.7	517.9	115°	168.0	171.0	174.0
406.4	414.2	408.7	397.9	406.4	399.7	387.1	388.2	374.1	117.5°	202.0	203.5	205.0
305.4	299.8	296.8	291.6	277.9	280.5	266.4	268.6	273.4	120°	237.0	240.0	243.0
210.6	206.6	211.4	208.0	202.5	203.6	206.6	209.5	217.3	122.5°	271.0	274.0	277.0
147.9	146.0	144.9	147.1	153.4	156.8	161.6	170.5	175.0	125°	305.0	307.5	310.0
111.1	111.5	110.3	113.7	118.9	121.5	122.6	123.3	128.5	127.5°	339.0	339.5	340.0
91.8	93.2	92.9	94.0	92.5	91.0	92.1	89.9	88.0	130°	370.0	371.0	372.0
80.2	80.6	78.8	78.4	76.2	74.3	72.8	72.8	72.1	132.5°	404.0	404.5	405.0
68.0	68.4	66.5	66.5	66.1	67.2	66.5	65.0	64.6	135°	435.0	436.0	437.0
60.9	60.2	59.1	59.1	58.3	58.3	58.7	59.1	58.7	137.5°	464.0	466.0	468.0
54.6	53.9	53.5	53.9	53.5	53.9	54.2	53.9	54.2	140°	491.0	494.0	497.0
50.2	49.4	49.4	49.8	49.4	49.8	49.8	49.8	49.4	142.5°	521.0	523.0	525.0
46.4	45.7	45.7	45.7	45.3	44.6	43.8	42.7	41.6	145°	550.0	550.5	551.0
43.5	43.1	42.4	42.0	40.9	38.6	37.9	37.9	37.9	147.5°	574.0	574.5	575.0
40.9	40.1	39.8	38.3	36.8	36.0	36.0	36.0	36.0	150°	593.0	593.0	593.0
37.5	36.4	35.7	35.3	34.9	34.9	34.6	34.6	34.6	152.5°	610.0	610.0	610.0
33.4	33.1	33.1	33.4	33.4	33.4	33.4	33.1	33.4	155°	630.0	629.0	628.0
30.8	30.8	31.2	31.6	31.9	32.3	32.7	32.3	32.7	157.5°	646.0	645.5	645.0
29.7	29.7	29.7	30.5	30.8	31.2	31.9	31.9	31.9	160°	655.0	655.0	655.0
29.0	29.0	29.3	29.7	30.1	30.5	30.8	31.2	31.6	162.5°	661.0	662.0	663.0
28.6	29.0	28.6	29.0	29.3	30.1	30.5	30.5	30.8	165°	673.0	673.0	673.0
28.6	28.6	28.6	28.6	29.3	29.7	29.3	29.7	30.1	167.5°	688.0	686.5	685.0
28.6	28.6	28.2	28.6	29.0	29.3	29.0	29.0	29.7	170°	693.0	692.0	691.0
28.2	28.6	28.2	28.2	28.6	29.0	28.6	29.0	29.3	172.5°	690.0	690.0	690.0
27.5	27.9	27.5	27.9	27.9	28.2	28.2	28.2	28.6	175°	691.0	690.5	690.0
26.7	26.7	26.7	27.1	27.1	27.5	27.5	27.9	27.5	177.5°	697.0	696.0	695.0
26.0	26.0	26.0	26.4	26.4	26.7	27.1	26.7	26.7	180°	700.0	700.0	700.0
25.3	24.9	24.5	24.9	25.3	25.3	25.6	25.3	25.6				
24.1	23.8	23.4	23.4	23.8	23.8	24.1	23.8	23.8				
22.3	22.3	21.5	21.5	21.5	21.5	21.9	21.5	21.2				
20.1	20.1	19.3	19.3	19.3	19.3	18.9	18.9	18.9				
16.7	17.1	17.1	16.7	16.7	16.3	16.3	16.0	15.6				
12.6	13.4	13.7	13.7	13.7	13.7	13.7	13.0	12.3				
8.9	10.0	11.1	11.1	10.8	10.8	10.8	9.7	8.5				
5.6	6.7	7.1	7.8	6.7	6.3	6.3	5.6	5.2				
7.0	7.0	7.7	8.4	10.1	10.1	10.5	8.7	7.4				
6.0	6.5	7.0	7.0	7.0	6.5	6.0	6.0	6.0				
7.0	7.0	7.0	7.5	8.0	7.5	7.0	7.0	7.0				
9.0	10.5	12.0	11.0	10.0	9.5	9.0	8.5	8.0				
21.0	25.0	29.0	27.5	26.0	24.5	23.0	21.0	19.0				
40.0	45.0	50.0	48.5	47.0	44.5	42.0	40.5	39.0				
63.0	67.5	72.0	71.0	70.0	67.5	65.0	63.0	61.0				
88.0	91.5	95.0	94.5	94.0	92.0	90.0	88.5	87.0				



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CATALOG NUMBER: ISW-AF-450-LED-E1-SLL-8030-

SLL-8030-ULG

CANDELA DISTRIBUTION (continued):

230°	235°	240°	245°	250°	255°	260°	265°		270°	275°	280°	285°
117.0	120.0	120.5	121.0	120.0	119.0	117.5	116.0	0°	729.3	729.3	729.3	729.3
145.5	148.0	149.0	150.0	149.5	149.0	148.0	147.0	2.5°	626.4	640.1	642.0	643.8
176.5	179.0	180.5	182.0	180.5	179.0	178.0	177.0	5°	514.9	528.7	520.9	524.2
208.0	211.0	213.0	215.0	212.5	210.0	209.0	208.0	7.5°	376.0	367.0	378.6	385.6
244.5	246.0	248.0	250.0	247.5	245.0	244.0	243.0	10°	274.5	284.9	289.4	297.6
278.0	279.0	281.0	283.0	280.5	278.0	277.0	276.0	12.5°	227.7	234.4	242.6	255.6
311.5	313.0	314.0	315.0	312.5	310.0	310.0	310.0	15°	184.6	189.5	199.9	212.5
342.5	345.0	345.5	346.0	346.0	346.0	345.5	345.0	17.5°	134.5	141.5	148.2	158.6
374.5	377.0	379.0	381.0	381.0	381.0	380.0	379.0	20°	90.3	93.2	101.4	106.3
408.0	411.0	413.5	416.0	415.0	414.0	414.0	414.0	22.5°	72.4	73.6	75.0	79.1
440.0	443.0	445.5	448.0	447.5	447.0	448.5	450.0	25°	65.0	65.8	66.9	68.4
470.5	473.0	474.0	475.0	475.5	476.0	478.5	481.0	27.5°	59.1	59.4	60.6	61.3
498.5	500.0	501.0	502.0	503.0	504.0	506.5	509.0	30°	53.9	53.5	53.9	55.0
526.0	527.0	530.0	533.0	533.0	533.0	533.5	534.0	32.5°	48.3	48.3	49.0	49.0
553.5	556.0	559.0	562.0	561.5	561.0	559.5	558.0	35°	41.6	41.2	42.0	43.1
577.5	580.0	582.5	585.0	585.5	586.0	584.5	583.0	37.5°	38.3	38.6	39.4	40.1
595.0	597.0	598.5	600.0	601.5	603.0	604.5	606.0	40°	36.4	36.8	37.5	38.3
610.5	611.0	612.5	614.0	616.0	618.0	620.5	623.0	42.5°	34.6	35.3	36.0	37.2
627.0	626.0	628.5	631.0	633.5	636.0	637.0	638.0	45°	33.4	34.2	35.3	36.4
644.5	644.0	646.0	648.0	649.0	650.0	650.0	650.0	47.5°	33.1	33.8	34.9	36.4
656.5	658.0	661.0	664.0	662.5	661.0	660.5	660.0	50°	32.3	33.4	34.6	36.0
665.0	667.0	669.0	671.0	670.5	670.0	669.0	668.0	52.5°	32.3	33.1	34.2	36.0
672.5	672.0	674.5	677.0	678.5	680.0	679.0	678.0	55°	31.2	32.3	33.4	35.3
681.5	678.0	681.0	684.0	686.0	688.0	688.0	688.0	57.5°	30.5	31.2	32.7	34.9
688.5	686.0	687.5	689.0	691.5	694.0	695.0	696.0	59°	30.1	30.8	32.3	34.6
689.5	689.0	690.5	692.0	693.0	694.0	695.0	696.0	60°	29.3	30.5	31.9	34.2
690.0	690.0	692.5	695.0	695.5	696.0	695.0	694.0	62.5°	28.6	29.7	31.2	33.4
694.5	694.0	696.5	699.0	700.0	701.0	699.5	698.0	65°	27.5	29.0	30.5	31.9
700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	67.5°	26.7	27.5	29.0	30.5
								70°	25.3	26.0	27.1	28.2
								72.5°	23.4	23.8	24.5	25.6
								75°	20.8	21.2	21.5	22.7
								77.5°	18.2	18.2	18.6	20.1
								80°	15.2	15.2	15.6	16.3
								82.5°	11.5	11.5	12.3	13.4
								85°	8.2	7.8	8.9	9.7
								87.5°	4.8	4.5	4.8	4.8
								90°	7.4	8.1	8.7	9.7
								92.5°	6.0	6.0	6.0	6.0
								95°	7.0	7.0	7.0	7.0
								97.5°	8.0	8.0	8.5	9.0
								100°	19.0	19.0	21.0	23.0
								102.5°	38.0	39.0	40.5	42.0
								105°	61.0	61.0	63.0	65.0
								107.5°	86.0	87.0	88.5	90.0

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

ULG

CANDELA DISTRIBUTION (continued):

290°	295°	300°	305°	310°	315°	320°		270°	275°	280°	285°	290°
729.3	729.3	729.3	729.3	729.3	729.3	729.3	110°	117.0	116.0	117.5	119.0	120.0
651.2	647.5	650.5	662.0	666.1	671.3	688.8	112.5°	147.0	147.0	148.0	149.0	149.5
532.4	537.2	532.4	555.8	556.9	572.5	578.8	115°	178.0	177.0	178.0	179.0	180.5
391.2	397.5	407.9	423.5	428.0	450.3	469.2	117.5°	209.0	208.0	209.0	210.0	212.5
305.4	313.6	328.0	337.7	347.4	360.4	375.6	120°	243.0	243.0	244.0	245.0	247.5
271.2	279.7	292.4	304.6	318.4	328.4	341.0	122.5°	277.0	276.0	277.0	278.0	280.5
226.6	240.0	252.3	268.2	279.7	297.9	312.8	125°	310.0	310.0	310.0	310.0	312.5
173.1	191.7	204.0	223.3	240.7	256.7	276.8	127.5°	347.0	345.0	345.5	346.0	346.0
120.4	134.9	150.5	171.3	193.9	215.8	242.6	130°	380.0	379.0	380.0	381.0	381.0
82.8	90.6	102.5	124.1	147.5	179.1	208.0	132.5°	415.0	414.0	414.0	414.0	415.0
70.6	73.6	78.0	88.4	108.1	142.7	174.6	135°	451.0	450.0	448.5	447.0	447.5
62.8	65.0	68.0	73.2	83.6	107.4	142.7	137.5°	482.0	481.0	478.5	476.0	475.5
57.6	60.2	63.2	66.9	72.4	88.8	115.2	140°	511.0	509.0	506.5	504.0	503.0
50.5	52.4	55.0	59.1	63.2	76.2	101.8	142.5°	536.0	534.0	533.5	533.0	533.0
44.6	46.8	50.2	53.1	57.2	67.6	92.5	145°	560.0	558.0	559.5	561.0	561.5
41.6	43.8	46.8	49.4	52.4	60.9	85.8	147.5°	585.0	583.0	584.5	586.0	585.5
39.8	42.0	45.0	47.2	49.0	58.7	83.2	150°	610.0	606.0	604.5	603.0	601.5
38.6	41.2	43.8	45.3	49.0	59.8	76.9	152.5°	628.0	623.0	620.5	618.0	616.0
38.3	40.9	43.8	46.4	53.9	56.5	72.8	155°	641.0	638.0	637.0	636.0	633.5
38.6	40.9	44.6	52.0	52.4	53.5	68.4	157.5°	655.0	650.0	650.0	650.0	649.0
38.6	42.0	49.8	54.2	49.8	50.5	64.3	160°	666.0	660.0	660.5	661.0	662.5
39.0	43.5	51.6	50.5	48.3	47.2	59.8	162.5°	674.0	668.0	669.0	670.0	670.5
39.0	42.7	49.4	47.6	44.6	45.0	54.6	165°	682.0	678.0	679.0	680.0	678.5
37.9	42.7	47.6	43.1	40.9	42.7	50.2	167.5°	694.0	688.0	688.0	688.0	686.0
37.2	43.8	42.4	39.8	39.8	41.6	47.9	170°	701.0	696.0	695.0	694.0	691.5
36.8	45.0	40.1	38.6	38.6	41.2	46.8	172.5°	701.0	696.0	695.0	694.0	693.0
35.7	42.0	36.8	36.0	37.2	39.0	45.3	175°	699.0	694.0	695.0	696.0	695.5
33.4	34.9	33.8	33.8	35.3	37.5	44.6	177.5°	702.0	698.0	699.5	701.0	700.0
30.8	31.6	31.6	31.9	33.4	35.3	45.3	180°	700.0	700.0	700.0	700.0	700.0
28.6	28.6	29.3	29.7	30.8	33.4	43.5						
26.0	26.4	26.4	27.1	27.9	30.5	42.0						
23.0	23.0	23.8	23.8	24.9	27.5	37.5						
20.1	20.1	20.1	20.4	21.2	23.8	30.8						
16.7	16.7	16.7	17.1	17.5	19.7	23.4						
13.4	13.0	12.6	12.6	13.4	15.2	18.2						
9.3	9.3	8.9	8.9	8.9	10.0	12.3						
5.2	4.5	4.8	5.2	4.8	5.6	6.7						
9.4	9.7	9.1	8.5	8.5	8.5	9.7						
6.5	7.0	7.0	7.0	6.5	6.0	6.0						
7.5	8.0	7.5	7.0	7.0	7.0	7.0						
9.5	10.0	11.0	12.0	10.5	9.0	9.0						
24.5	26.0	27.5	29.0	25.0	21.0	16.5						
44.5	47.0	48.5	50.0	45.0	40.0	33.5						
67.5	70.0	71.0	72.0	67.5	63.0	55.5						
92.0	94.0	94.5	95.0	91.5	88.0	80.5						



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CANDELA DISTRIBUTION (continued):

295°	300°	305°	310°	315°	320°		325°	330°	335°	340°	345°	350°
121.0	120.5	120.0	117.0	114.0	108.0	0°	729.3	729.3	729.3	729.3	729.3	729.3
150.0	149.0	148.0	145.5	143.0	138.5	2.5°	686.5	696.2	711.4	714.4	726.7	735.2
182.0	180.5	179.0	176.5	174.0	171.0	5°	581.8	604.8	613.0	629.0	656.8	670.9
215.0	213.0	211.0	208.0	205.0	203.5	7.5°	480.0	497.4	517.1	542.8	563.2	587.4
250.0	248.0	246.0	244.5	243.0	240.0	10°	394.9	419.8	445.4	466.2	494.8	523.8
283.0	281.0	279.0	278.0	277.0	274.0	12.5°	350.7	364.4	389.7	419.1	454.7	487.0
315.0	314.0	313.0	311.5	310.0	307.5	15°	327.7	344.0	371.1	402.3	440.2	480.4
346.0	345.5	345.0	342.5	340.0	339.5	17.5°	299.1	325.1	355.9	400.5	449.5	505.2
381.0	379.0	377.0	374.5	372.0	371.0	20°	270.8	302.4	342.9	401.6	469.6	542.0
416.0	413.5	411.0	408.0	405.0	404.5	22.5°	245.9	283.5	334.7	408.3	495.2	591.8
448.0	445.5	443.0	440.0	437.0	436.0	25°	216.6	266.7	328.4	422.0	534.6	658.7
475.0	474.0	473.0	470.5	468.0	466.0	27.5°	193.2	250.8	319.1	433.9	570.6	723.0
502.0	501.0	500.0	498.5	497.0	494.0	30°	167.2	232.2	306.1	438.0	614.5	775.7
533.0	530.0	527.0	526.0	525.0	523.0	32.5°	146.4	214.7	291.3	434.3	634.2	812.5
562.0	559.0	556.0	553.5	551.0	550.5	35°	136.3	202.1	278.6	421.3	650.5	852.2
585.0	582.5	580.0	577.5	575.0	574.5	37.5°	129.7	188.4	266.4	399.7	669.1	891.6
600.0	598.5	597.0	595.0	593.0	593.0	40°	121.1	177.6	256.3	384.1	683.6	924.3
614.0	612.5	611.0	610.5	610.0	610.0	42.5°	113.3	167.9	248.5	370.4	687.3	953.7
631.0	628.5	626.0	627.0	628.0	629.0	45°	106.6	162.0	242.6	371.1	689.9	994.5
648.0	646.0	644.0	644.5	645.0	645.5	47.5°	101.4	156.4	240.4	383.8	717.4	1051.4
664.0	661.0	658.0	656.5	655.0	655.0	50°	96.6	151.6	236.6	408.3	761.6	1128.3
671.0	669.0	667.0	665.0	663.0	662.0	52.5°	91.0	144.9	231.8	433.5	809.9	1231.2
677.0	674.5	672.0	672.5	673.0	673.0	55°	83.6	136.0	226.6	454.7	875.6	1356.4
684.0	681.0	678.0	681.5	685.0	686.5	57.5°	72.1	125.6	223.3	465.5	916.1	1428.4
689.0	687.5	686.0	688.5	691.0	692.0	59°	66.1	115.5	221.4	460.3	926.9	1440.7
692.0	690.5	689.0	689.5	690.0	690.0	60°	62.8	109.6	218.4	454.0	929.9	1432.9
695.0	692.5	690.0	690.0	690.0	690.5	62.5°	58.3	95.5	206.2	422.4	888.3	1338.5
699.0	696.5	694.0	694.5	695.0	696.0	65°	59.4	90.3	178.3	359.6	792.8	1154.3
700.0	700.0	700.0	700.0	700.0	700.0	67.5°	60.9	88.0	154.2	290.5	631.9	955.1
						70°	59.8	86.9	140.1	231.1	473.3	715.1
						72.5°	58.3	82.1	121.5	185.8	300.2	500.8
						75°	51.6	69.1	95.5	127.4	189.5	364.8
						77.5°	40.5	53.1	67.6	79.1	96.2	257.5
						80°	29.7	38.6	44.2	47.6	53.5	175.7
						82.5°	21.2	26.0	28.2	30.1	35.7	131.5
						85°	16.0	18.2	19.7	19.7	24.1	92.9
						87.5°	8.9	9.3	9.3	10.0	11.9	25.3
						90°	10.6	10.6	10.2	10.1	8.9	7.5
						92.5°	6.0	6.0	6.0	5.5	5.0	4.5
						95°	7.0	7.0	7.0	6.5	6.0	5.5
						97.5°	9.0	8.5	8.0	8.0	8.0	7.5
						100°	12.0	11.0	10.0	9.5	9.0	8.5
						102.5°	27.0	22.5	18.0	15.5	13.0	12.0
						105°	48.0	42.0	36.0	31.5	27.0	24.5
						107.5°	73.0	65.5	58.0	53.5	49.0	45.5



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

CANDELA DISTRIBUTION (continued):

355°	359°	360°		325°	330°	335°	340°	345°	350°	355°
729.3	729.3	729.3	110°	102.0	94.5	87.0	80.5	74.0	71.0	68.0
744.9	750.4	754.9	112.5°	134.0	127.5	121.0	113.5	106.0	102.5	99.0
692.5	706.2	708.8	115°	168.0	163.5	159.0	153.0	147.0	143.0	139.0
614.1	636.4	644.2	117.5°	202.0	199.5	197.0	193.0	189.0	186.5	184.0
556.5	580.7	588.8	120°	237.0	235.0	233.0	229.5	226.0	224.5	223.0
524.9	553.2	562.1	122.5°	271.0	269.0	267.0	264.0	261.0	260.5	260.0
525.7	559.5	572.5	125°	305.0	302.0	299.0	297.5	296.0	295.0	294.0
559.9	598.5	614.5	127.5°	339.0	336.0	333.0	331.0	329.0	329.0	329.0
618.6	674.7	686.5	130°	370.0	368.0	366.0	364.0	362.0	361.5	361.0
698.1	753.0	770.9	132.5°	404.0	402.5	401.0	397.0	393.0	393.5	394.0
772.7	845.5	859.3	135°	435.0	433.5	432.0	429.0	426.0	426.0	426.0
846.3	918.4	930.6	137.5°	464.0	462.0	460.0	459.5	459.0	458.0	457.0
903.1	978.5	988.9	140°	491.0	490.0	489.0	488.0	487.0	486.0	485.0
957.7	1042.8	1054.3	142.5°	521.0	519.5	518.0	517.5	517.0	516.0	515.0
1018.7	1112.7	1126.0	145°	550.0	548.5	547.0	545.5	544.0	545.0	546.0
1073.7	1181.4	1189.9	147.5°	574.0	574.0	574.0	572.5	571.0	571.5	572.0
1134.6	1237.5	1239.7	150°	593.0	593.0	593.0	593.0	593.0	592.5	592.0
1184.4	1279.1	1279.8	152.5°	610.0	609.5	609.0	608.5	608.0	608.0	608.0
1232.7	1318.1	1318.5	155°	630.0	628.5	627.0	626.0	625.0	625.0	625.0
1283.2	1360.8	1355.3	157.5°	646.0	645.0	644.0	643.5	643.0	643.0	643.0
1363.1	1411.4	1416.9	160°	655.0	655.5	656.0	657.5	659.0	659.5	660.0
1484.5	1527.6	1533.9	162.5°	661.0	663.0	665.0	667.0	669.0	669.0	669.0
1625.7	1685.5	1677.0	165°	673.0	674.5	676.0	676.0	676.0	677.0	678.0
1685.5	1753.9	1760.9	167.5°	688.0	687.0	686.0	685.0	684.0	685.5	687.0
1675.5	1768.7	1780.6	170°	693.0	692.5	692.0	692.0	692.0	693.5	695.0
1659.5	1764.3	1778.8	172.5°	690.0	691.5	693.0	694.0	695.0	696.0	697.0
1568.9	1717.8	1740.5	175°	691.0	693.0	695.0	696.0	697.0	697.5	698.0
1416.6	1621.6	1653.6	177.5°	697.0	698.0	699.0	699.5	700.0	702.5	705.0
1220.8	1477.9	1503.5	180°	700.0	700.0	700.0	700.0	700.0	700.0	700.0
952.5	1201.1	1223.0								
633.0	824.7	862.6								
402.3	532.0	524.9								
296.8	345.9	346.2								
215.5	237.4	234.8								
166.8	144.9	144.5								
58.3	51.3	50.2								
25.3	21.2	21.5								
6.1	6.1	6.5								
4.0	4.0	4.0								
5.0	5.0	5.0								
7.0	7.0	7.0								
8.0	8.0	8.0								
11.0	11.0	11.0								
22.0	21.2	21.0								
42.0	41.2	41.0								



359°	360°
66.4	66.0
99.0	99.0
139.8	140.0
184.0	184.0
224.6	225.0
262.4	263.0
297.2	298.0
329.8	330.0
362.6	363.0
395.6	396.0
428.4	429.0
459.4	460.0
487.4	488.0
517.4	518.0
549.2	550.0
574.4	575.0
594.4	595.0
610.4	611.0
628.2	629.0
645.4	646.0
662.4	663.0
672.2	673.0
680.4	681.0
689.4	690.0
697.4	698.0
698.6	699.0
699.6	700.0
706.6	707.0
700.0	700.0

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