

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: P226370

Luminaire Tested: **ISW-AF-450-LED-E1-T3-ULG**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P226370
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35938)-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-T3-ULG
Description: IMPACT ELITE LED WEDGE LUMINAIRE WITH UPLIGHT
LIGHT SQUARE WITH ACCULED OPTICS-TYPE III, 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: 4992.9 lumens
Efficiency: N/A
Efficacy: 118.9 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')
IES Classification: Type III - Short - Non-Cutoff
BUG Rating: B1 - U5 - G1

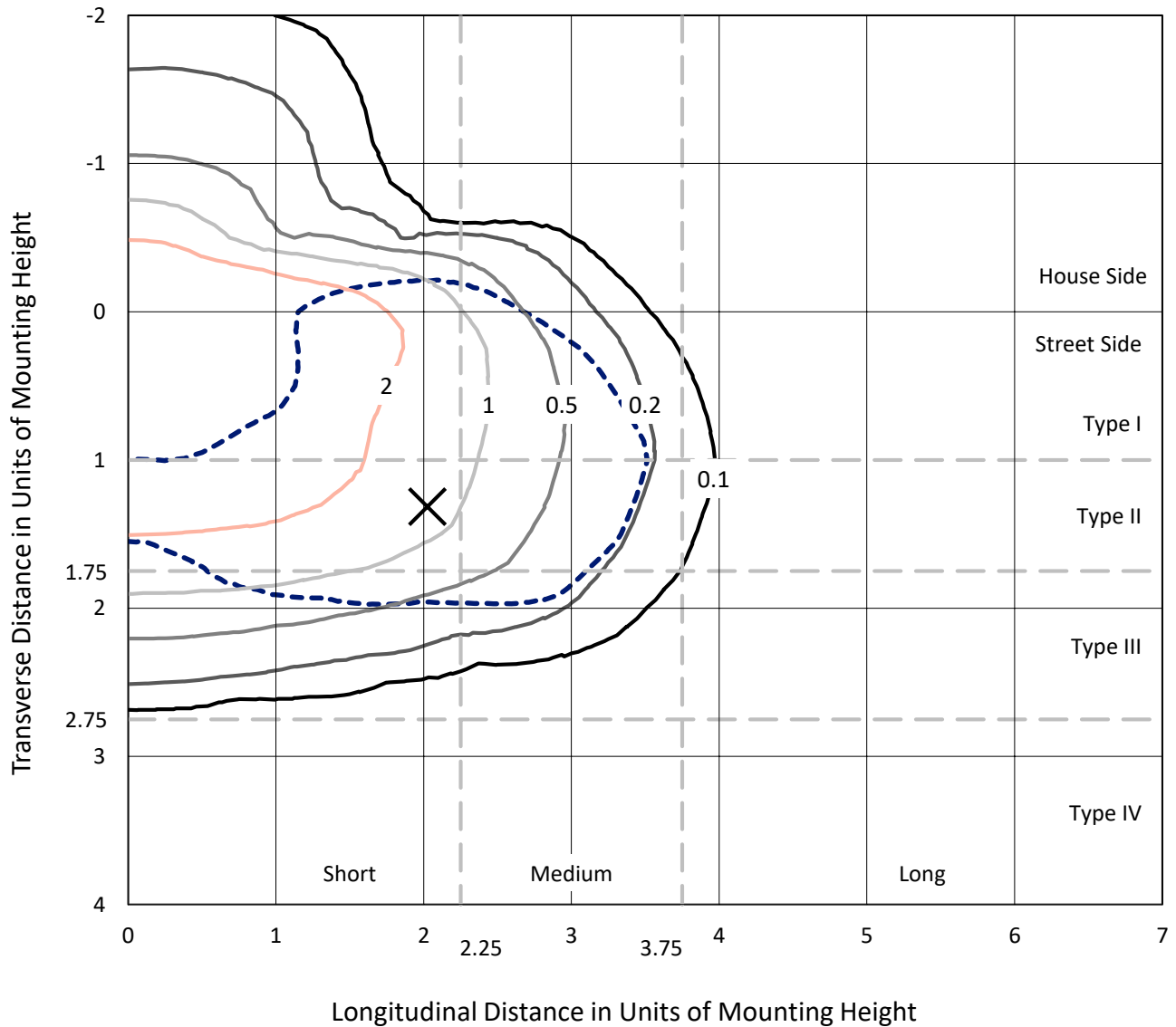
Input Watts (W): 42.01
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

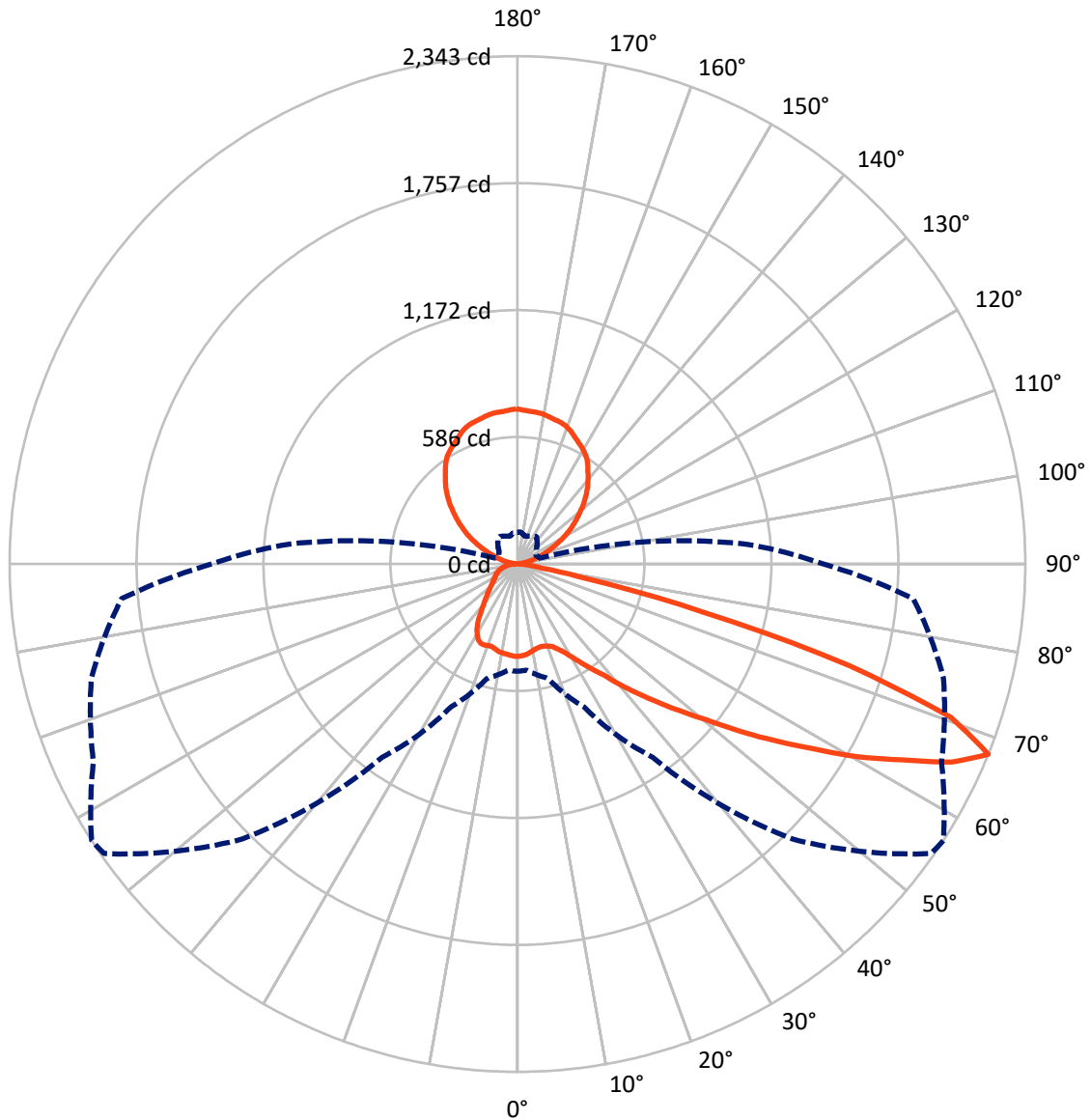
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4.5 fc
 Type III - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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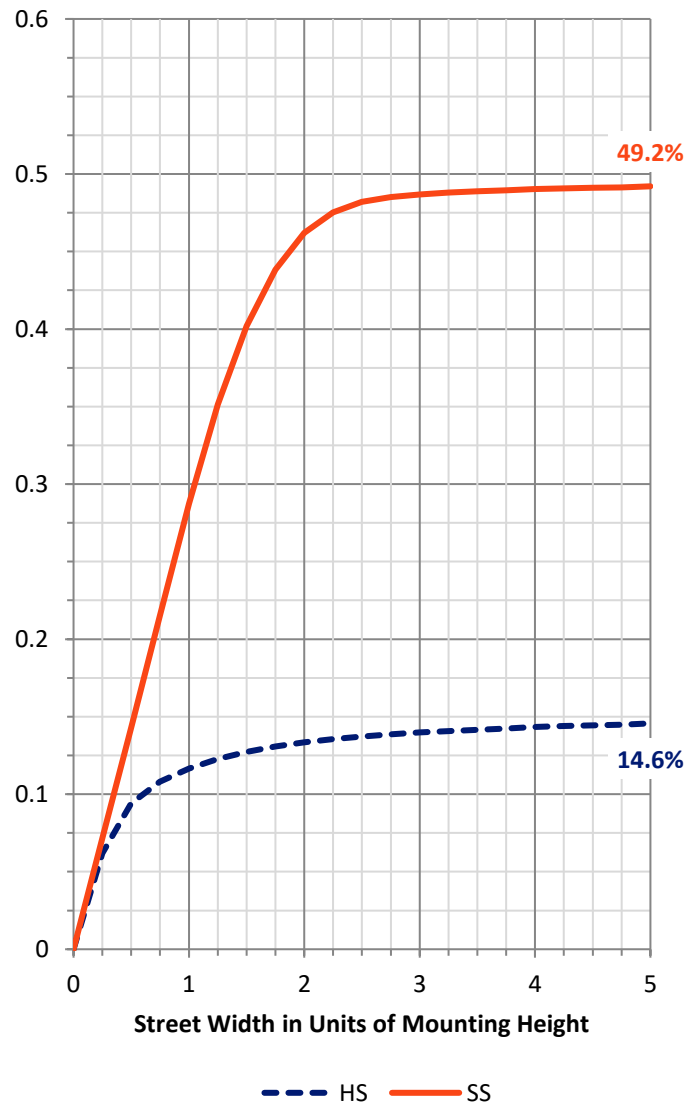
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	749.1	888.4	1637.6
	% Fixture	15.0	17.8	32.8
Street Side	Lumens	2467.6	887.7	3355.3
	% Fixture	49.4	17.8	67.2
Total	Lumens	3216.7	1776.2	4992.9
	% Fixture	64.4	35.6	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.9	0.8
10°-20°	114.6	2.3
20°-30°	197.2	3.9
30°-40°	320.6	6.4
40°-50°	517.2	10.4
50°-60°	771.1	15.4
60°-70°	868.4	17.4
70°-80°	334.8	6.7
80°-90°	52.9	1.1
90°-100°	10.7	0.2
100°-110°	58.7	1.2
110°-120°	169.9	3.4
120°-130°	279.4	5.6
130°-140°	344.6	6.9
140°-150°	352.5	7.1
150°-160°	297.0	5.9
160°-170°	195.5	3.9
170°-180°	67.8	1.4
0°-90°	3216.7	64.4
0°-180°	4992.9	100.0



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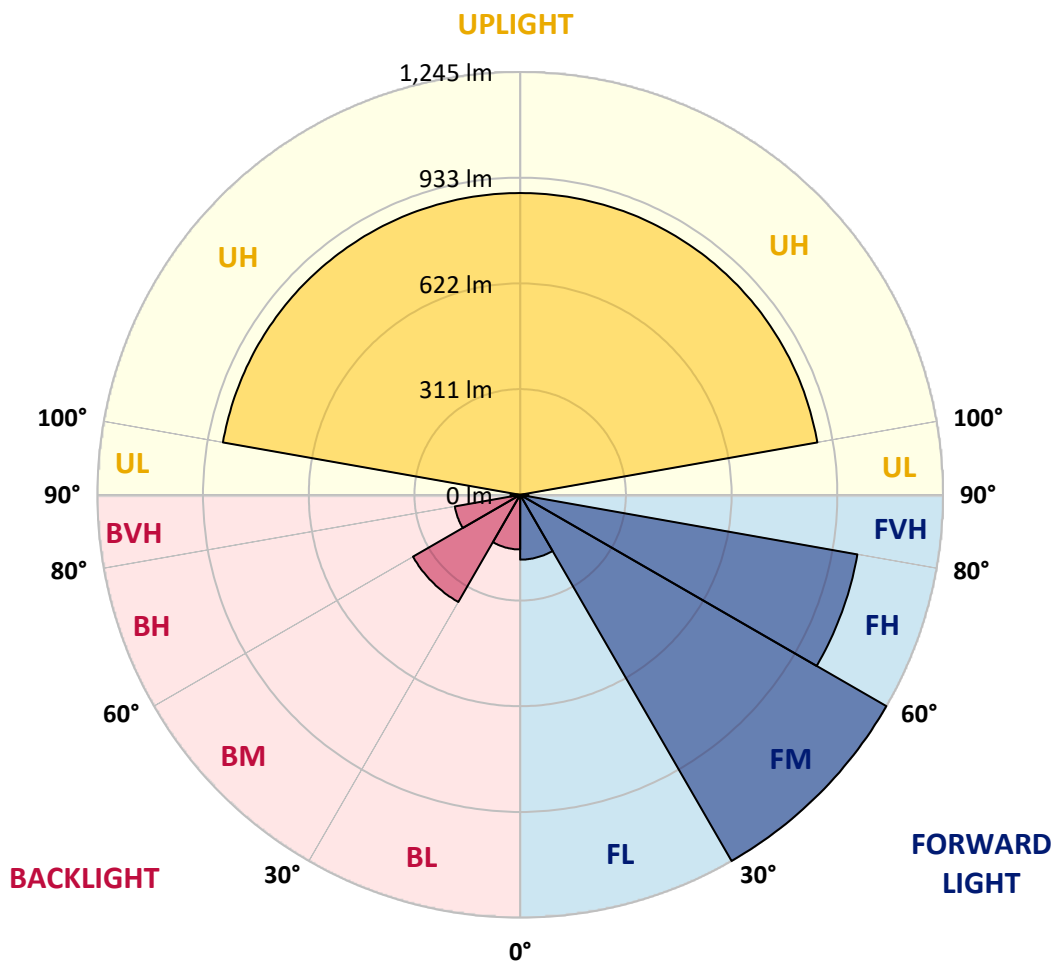
CATALOG NUMBER: ISW-AF-450-LED-E1-T3-ULG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	190.8	3.8			
FM (30°-60°)	1244.6	24.9			
FH (60°-80°)	1007.9	20.2			G1/1800
FVH (80°-90°)	24.3	0.5			G1/100
BL (0°-30°)	160.9	3.2	B1/500		
BM (30°-60°)	364.4	7.3	B1/1000		
BH (60°-80°)	195.3	3.9	B1/500		G1/500
BVH (80°-90°)	28.6	0.6			G1/100
UL (90°-100°)	10.7	0.2		U2/50	
UH (100°-180°)	888.4	17.8		U4/1000	

BUG Rating: B1-U5-G1

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57°	65°	75°	85°
0°	426.3	426.3	426.3	426.3	426.3	426.3	426.3	426.3	426.3	426.3	426.3
2.5°	423.0	424.0	424.9	424.4	424.4	424.4	424.4	423.5	424.9	424.9	424.0
5°	416.0	416.5	417.0	417.9	418.8	419.8	420.2	420.2	420.7	420.2	419.3
7.5°	405.8	406.3	408.2	408.2	409.1	410.9	411.8	412.8	414.2	414.2	413.7
10°	402.5	402.5	402.5	401.1	402.1	402.5	404.0	404.0	407.6	409.5	410.5
12.5°	406.3	405.8	405.8	402.1	398.8	397.4	398.8	399.3	403.5	406.3	408.2
15°	414.6	414.6	413.7	408.2	401.6	396.5	396.0	396.0	399.3	403.5	406.7
17.5°	434.2	436.1	429.5	420.7	410.0	401.6	398.3	397.9	400.2	403.5	406.7
20°	471.5	471.1	461.2	445.4	426.8	412.8	404.9	404.0	403.5	405.3	409.1
22.5°	515.8	513.9	502.3	482.2	456.5	431.0	415.6	413.7	410.0	411.4	416.5
25°	563.2	563.7	549.3	523.2	491.0	460.3	437.0	435.2	427.2	426.3	431.9
27.5°	610.8	616.8	597.3	572.5	534.4	497.6	463.6	460.7	453.8	451.4	457.1
30°	680.3	677.9	653.7	621.5	583.3	537.2	504.6	499.4	485.5	488.8	494.8
32.5°	738.9	744.1	722.1	683.9	633.6	585.1	547.5	544.6	531.1	534.9	543.3
35°	810.7	822.8	793.9	746.9	698.4	648.6	603.3	595.9	585.1	592.6	599.1
37.5°	892.6	898.8	876.4	815.8	766.4	714.2	663.0	651.3	639.7	655.1	666.7
40°	971.0	980.7	951.9	900.6	843.3	793.4	737.5	735.2	708.2	725.0	755.2
42.5°	1087.0	1099.1	1052.9	993.3	941.6	881.5	828.4	815.8	786.4	810.2	861.0
45°	1168.0	1167.6	1136.3	1087.0	1055.3	997.1	925.3	910.3	878.7	910.3	978.4
47.5°	1197.4	1204.3	1193.7	1187.5	1176.4	1134.0	1028.3	1014.3	984.5	1031.5	1094.4
50°	1240.7	1238.8	1238.8	1276.1	1308.3	1299.4	1148.9	1128.9	1097.6	1154.0	1244.4
52.5°	1251.9	1235.1	1261.2	1332.5	1434.5	1442.0	1289.1	1278.0	1240.7	1295.7	1407.1
55°	1220.7	1216.5	1257.9	1361.3	1522.2	1575.2	1451.8	1436.3	1394.5	1441.5	1582.7
57.5°	1150.8	1161.5	1228.2	1355.3	1582.7	1692.6	1630.2	1608.3	1548.2	1576.6	1756.9
60°	1077.7	1082.8	1170.8	1333.8	1599.0	1774.1	1817.5	1804.9	1702.0	1718.7	1886.0
62.5°	996.6	984.5	1075.7	1316.1	1580.8	1886.4	1999.2	1989.4	1867.8	1862.7	1977.8
65°	770.2	787.0	864.7	1087.9	1456.4	1974.0	2215.8	2203.2	2052.8	1981.5	1968.0
67.5°	494.8	491.5	546.5	727.3	1088.3	1794.2	2329.1	2343.1	2158.5	2035.1	1832.8
70°	177.5	182.6	203.2	330.3	596.8	1195.5	2053.3	2122.6	2080.7	1934.9	1491.8
72.5°	108.1	108.1	123.0	148.6	241.8	567.0	1463.4	1600.8	1698.2	1594.3	1101.8
75°	84.8	84.3	89.4	102.5	130.4	185.9	778.1	884.2	1089.2	1101.4	627.1
77.5°	67.1	66.6	71.7	77.8	97.4	98.3	248.4	323.4	499.9	470.6	224.1
80°	54.0	53.6	57.3	59.1	71.3	68.0	99.7	115.6	175.1	153.7	96.9
82.5°	48.9	48.9	52.7	45.2	49.4	48.0	62.0	66.2	88.1	91.3	58.2
85°	31.7	32.6	49.4	43.8	32.1	29.4	39.6	41.9	54.9	60.1	28.4
87.5°	14.9	16.3	37.7	36.3	21.5	15.9	22.4	23.7	29.8	36.8	16.8
90°	7.9	7.9	11.9	13.3	10.9	9.9	10.8	10.8	12.5	13.9	11.9
92.5°	4.1	4.1	5.1	6.1	6.1	6.1	7.2	7.2	7.2	6.1	6.1
95°	5.1	5.1	6.1	7.2	7.2	7.2	7.2	7.4	8.2	7.2	7.2
97.5°	7.2	7.2	8.2	8.2	9.2	9.2	12.3	11.9	10.2	9.2	8.2
100°	8.2	8.2	9.2	10.2	12.3	21.5	29.7	29.1	26.6	23.5	19.4
102.5°	11.3	11.3	13.3	18.4	27.6	40.9	51.1	50.5	48.1	43.0	39.9
105°	21.5	22.5	27.6	36.8	49.1	64.4	73.7	73.2	71.6	66.5	62.4
107.5°	41.9	43.0	50.1	59.3	74.7	90.0	97.2	97.0	96.2	92.1	89.0
110°	67.5	69.6	75.7	89.0	104.3	116.6	122.8	123.0	123.8	121.7	118.7



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CATALOG NUMBER: ISW-AF-450-LED-E1-T3-ULG

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	57°	65°	75°	85°
112.5°	101.3	101.3	108.4	123.8	137.1	146.3	151.4	151.8	153.4	152.4	150.4
115°	143.2	142.2	150.4	162.6	171.9	178.0	183.1	183.7	186.2	183.1	181.1
117.5°	188.2	188.2	193.3	201.5	206.6	209.7	215.8	216.7	219.9	214.8	212.8
120°	230.2	228.1	231.2	238.3	242.4	248.6	251.6	252.5	255.7	250.6	248.6
122.5°	269.0	266.0	267.0	273.1	277.2	283.4	285.4	286.2	289.5	284.4	282.3
125°	304.8	300.7	302.8	305.9	312.0	317.1	320.2	320.6	322.2	317.1	317.1
127.5°	337.6	336.6	336.6	340.6	346.8	347.8	352.9	353.1	353.9	353.9	352.9
130°	371.3	369.3	370.3	374.4	378.5	380.5	385.7	386.5	389.7	389.7	387.7
132.5°	405.1	403.0	402.0	410.2	413.3	414.3	420.4	421.5	425.5	423.5	423.5
135°	438.8	435.8	435.8	441.9	445.0	447.0	453.2	454.2	458.3	457.3	460.3
137.5°	470.6	467.5	469.5	470.6	474.6	478.7	483.9	484.3	485.9	486.9	492.0
140°	499.2	496.1	498.2	500.2	502.3	508.4	511.5	511.9	513.5	515.6	520.7
142.5°	529.9	526.8	528.9	529.9	533.0	537.0	539.1	540.3	545.2	545.2	546.3
145°	562.6	558.5	556.5	559.6	562.6	563.6	568.8	570.0	574.9	573.9	570.8
147.5°	588.2	585.1	584.1	587.2	587.2	588.2	593.3	594.3	598.4	599.4	596.4
150°	608.7	605.6	606.6	606.6	606.6	606.6	610.7	611.3	613.8	616.8	619.9
152.5°	625.0	622.0	622.0	623.0	624.0	624.0	625.0	625.6	628.1	632.2	637.3
155°	643.4	639.3	639.3	641.4	644.5	642.4	640.4	641.4	645.5	650.6	652.6
157.5°	660.8	657.8	657.8	658.8	660.8	659.8	658.8	659.6	662.9	664.9	664.9
160°	678.2	675.1	674.1	671.1	670.0	670.0	673.1	674.3	679.2	676.2	675.1
162.5°	688.4	684.4	684.4	680.3	676.2	678.2	682.3	683.1	686.4	685.4	683.3
165°	696.6	693.6	691.5	691.5	688.4	688.4	687.4	688.4	692.5	695.6	693.6
167.5°	705.8	702.8	699.7	701.7	703.8	700.7	693.6	694.8	699.7	703.8	703.8
170°	714.0	711.0	707.9	707.9	708.9	706.9	701.7	702.4	704.8	709.9	712.0
172.5°	715.0	713.0	711.0	708.9	705.8	705.8	704.8	705.4	707.9	709.9	712.0
175°	716.1	714.0	713.0	711.0	706.9	705.8	705.8	706.9	711.0	712.0	709.9
177.5°	723.2	721.2	716.1	715.0	713.0	711.0	709.9	711.0	715.0	717.1	714.0
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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	426.3	426.3	426.3	426.3	426.3	426.3	426.3	426.3	426.3	426.3	426.3
2.5°	425.3	424.4	424.9	425.3	425.9	427.2	427.7	427.7	427.7	427.2	428.2
5°	420.2	419.3	419.3	420.7	422.1	424.0	426.8	429.1	430.0	430.5	430.5
7.5°	414.6	413.7	414.2	416.5	418.8	420.2	423.0	424.4	428.2	428.2	429.1
10°	410.9	411.8	412.4	414.6	416.5	416.5	416.0	415.1	414.2	416.5	415.6
12.5°	408.6	410.0	409.5	412.4	413.3	409.5	404.0	396.5	395.6	396.5	397.4
15°	407.6	407.6	409.1	409.1	404.4	396.9	389.9	390.5	391.4	394.1	394.1
17.5°	407.6	408.2	409.1	405.8	397.4	390.9	389.5	388.1	383.0	381.6	380.1
20°	410.9	410.0	410.9	404.9	397.4	392.3	381.6	371.3	361.5	357.3	355.5
22.5°	418.8	417.5	417.0	410.9	401.6	384.3	363.4	347.6	330.8	325.2	323.4
25°	432.8	432.4	429.1	424.9	398.8	365.3	338.7	313.5	295.4	285.6	286.0
27.5°	457.6	457.6	455.6	437.0	384.3	341.5	305.7	280.0	261.4	252.1	250.6
30°	494.8	495.7	496.6	440.3	361.5	306.6	269.2	252.1	240.9	233.8	233.4
32.5°	540.9	546.1	540.0	436.6	330.3	264.1	240.9	234.8	229.2	224.5	224.1
35°	601.9	615.9	577.8	421.7	295.4	235.3	223.6	219.4	215.2	212.0	212.5
37.5°	683.9	697.4	601.9	396.5	250.6	219.0	213.9	207.4	200.8	193.8	192.9
40°	780.8	776.6	610.3	348.9	222.7	211.0	204.1	195.7	184.5	174.2	172.4
42.5°	877.8	849.8	603.3	290.2	204.5	204.1	194.3	183.5	172.4	163.6	163.6
45°	986.3	914.1	582.0	235.3	190.1	196.6	184.5	173.3	163.1	156.5	156.1
47.5°	1088.8	974.2	546.5	196.1	175.6	186.8	177.1	166.8	157.0	151.4	150.1
50°	1209.0	1042.7	519.5	169.6	161.6	177.1	172.9	163.6	154.3	147.7	146.8
52.5°	1330.7	1109.3	499.0	151.4	149.0	169.6	170.9	165.4	155.6	143.0	142.1
55°	1457.8	1192.7	458.0	137.0	137.9	164.0	173.3	169.1	162.1	141.7	140.7
57.5°	1564.5	1269.6	386.3	127.2	129.1	159.8	174.2	166.3	158.5	142.6	141.2
60°	1647.9	1322.3	283.3	119.3	121.1	155.2	170.0	156.5	146.3	142.6	140.2
62.5°	1673.5	1324.1	188.2	110.0	115.1	147.2	162.6	151.4	139.3	141.2	140.2
65°	1609.2	1254.2	134.6	101.1	110.0	137.9	159.4	146.3	136.1	143.5	142.6
67.5°	1411.3	1056.7	108.1	94.1	103.0	128.1	153.2	141.7	133.3	148.6	145.9
70°	1099.6	758.0	91.8	87.2	95.5	118.8	144.8	136.5	129.5	144.4	140.7
72.5°	725.0	446.3	81.0	80.6	86.6	110.9	135.5	131.9	123.5	130.9	125.3
75°	378.3	206.8	70.4	73.1	76.8	103.9	127.2	123.5	114.2	116.9	115.1
77.5°	148.6	96.9	61.1	64.3	68.5	93.6	116.5	112.7	104.9	102.5	102.0
80°	81.5	65.3	50.7	54.9	57.8	84.3	105.3	101.1	92.7	91.3	89.9
82.5°	51.8	42.4	41.9	44.7	48.5	75.0	94.6	88.1	81.0	95.5	77.3
85°	24.2	25.2	29.8	33.6	37.7	63.8	82.4	75.5	68.5	66.6	59.1
87.5°	13.5	16.8	19.5	22.8	26.1	44.7	65.3	58.7	51.2	43.8	45.2
90°	10.4	10.4	14.8	14.3	12.8	13.7	40.3	37.0	32.7	17.2	13.0
92.5°	6.1	6.1	6.1	7.2	7.2	6.1	6.1	6.1	5.1	4.1	4.1
95°	7.2	7.2	7.2	8.2	7.2	7.2	7.2	7.2	6.1	5.1	5.1
97.5°	8.2	8.2	9.2	10.2	12.3	9.2	9.2	8.2	8.2	7.2	7.2
100°	19.4	19.4	23.5	26.6	29.7	21.5	12.3	10.2	9.2	8.2	8.2
102.5°	38.9	39.9	43.0	48.1	51.1	40.9	27.6	18.4	13.3	11.3	11.3
105°	62.4	62.4	66.5	71.6	73.7	64.4	49.1	36.8	27.6	22.5	21.5
107.5°	88.0	89.0	92.1	96.2	97.2	90.0	74.7	59.3	50.1	43.0	41.9
110°	119.7	118.7	121.7	123.8	122.8	116.6	104.3	89.0	75.7	69.6	67.5



REPORT NUMBER: P226370

CATALOG NUMBER: ISW-AF-450-LED-E1-T3-ULG

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	150.4	150.4	152.4	153.4	151.4	146.3	137.1	123.8	108.4	101.3	101.3
115°	182.1	181.1	183.1	186.2	183.1	178.0	171.9	162.6	150.4	142.2	143.2
117.5°	213.8	212.8	214.8	219.9	215.8	209.7	206.6	201.5	193.3	188.2	188.2
120°	248.6	248.6	250.6	255.7	251.6	248.6	242.4	238.3	231.2	228.1	230.2
122.5°	283.4	282.3	284.4	289.5	285.4	283.4	277.2	273.1	267.0	266.0	269.0
125°	317.1	317.1	317.1	322.2	320.2	317.1	312.0	305.9	302.8	300.7	304.8
127.5°	355.0	352.9	353.9	353.9	352.9	347.8	346.8	340.6	336.6	336.6	337.6
130°	388.7	387.7	389.7	389.7	385.7	380.5	378.5	374.4	370.3	369.3	371.3
132.5°	424.5	423.5	423.5	425.5	420.4	414.3	413.3	410.2	402.0	403.0	405.1
135°	461.4	460.3	457.3	458.3	453.2	447.0	445.0	441.9	435.8	435.8	438.8
137.5°	493.1	492.0	486.9	485.9	483.9	478.7	474.6	470.6	469.5	467.5	470.6
140°	522.7	520.7	515.6	513.5	511.5	508.4	502.3	500.2	498.2	496.1	499.2
142.5°	548.3	546.3	545.2	545.2	539.1	537.0	533.0	529.9	528.9	526.8	529.9
145°	572.9	570.8	573.9	574.9	568.8	563.6	562.6	559.6	556.5	558.5	562.6
147.5°	598.4	596.4	599.4	598.4	593.3	588.2	587.2	587.2	584.1	585.1	588.2
150°	624.0	619.9	616.8	613.8	610.7	606.6	606.6	606.6	606.6	605.6	608.7
152.5°	642.4	637.3	632.2	628.1	625.0	624.0	624.0	623.0	622.0	622.0	625.0
155°	655.7	652.6	650.6	645.5	640.4	642.4	644.5	641.4	639.3	639.3	643.4
157.5°	670.0	664.9	664.9	662.9	658.8	659.8	660.8	658.8	657.8	657.8	660.8
160°	681.3	675.1	676.2	679.2	673.1	670.0	670.0	671.1	674.1	675.1	678.2
162.5°	689.5	683.3	685.4	686.4	682.3	678.2	676.2	680.3	684.4	684.4	688.4
165°	697.7	693.6	695.6	692.5	687.4	688.4	688.4	691.5	691.5	693.6	696.6
167.5°	709.9	703.8	703.8	699.7	693.6	700.7	703.8	701.7	699.7	702.8	705.8
170°	717.1	712.0	709.9	704.8	701.7	706.9	708.9	707.9	707.9	711.0	714.0
172.5°	717.1	712.0	709.9	707.9	704.8	705.8	705.8	708.9	711.0	713.0	715.0
175°	715.0	709.9	712.0	711.0	705.8	705.8	706.9	711.0	713.0	714.0	716.1
177.5°	718.1	714.0	717.1	715.0	709.9	711.0	713.0	715.0	716.1	721.2	723.2
180°	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1	716.1

(END OF REPORT)