

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: P226959

Luminaire Tested: **IST-AF-450-LED-E1-SL3-7030-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P226959  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35946)-DOWNLIGHT AND  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: IST-AF-450-LED-E1-SL3-7030-ULG  
Description: IMPACT ELITE LED TRAPEZOID LUMINAIRE WITH UPLIGHT  
LIGHT SQUARE WITH ACCULED OPTICS-TYPE III W/SPILL CONTROL, WITH UPLIGHT  
GLOW  
Light Source: (16) 3000K CCT, 70 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4366 lumens  
Efficiency: N/A  
Efficacy: 103.9 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')  
IES Classification: Type II - Short - Non-Cutoff  
BUG Rating: B1 - U5 - G1

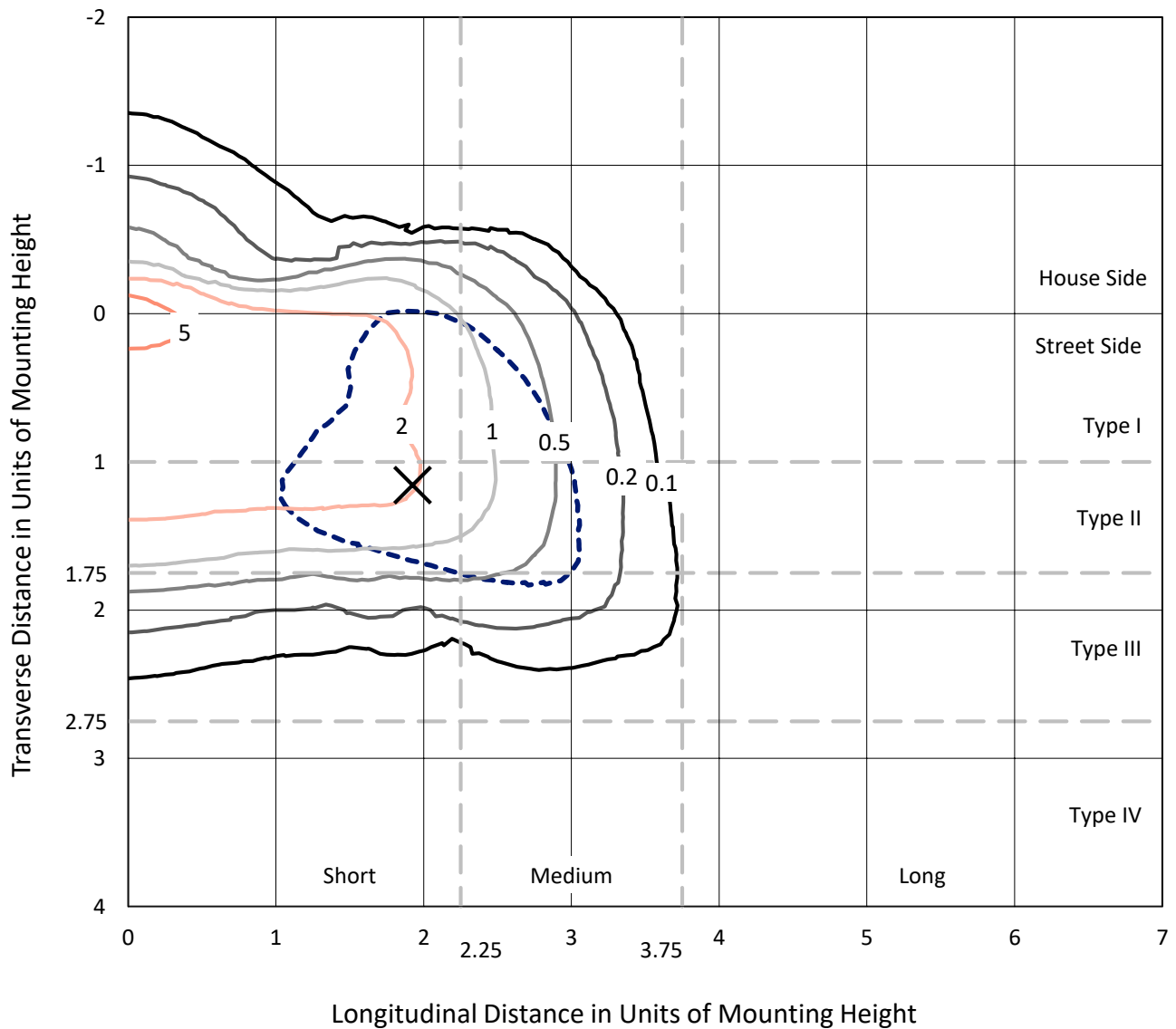
Input Watts (W): 42.01  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

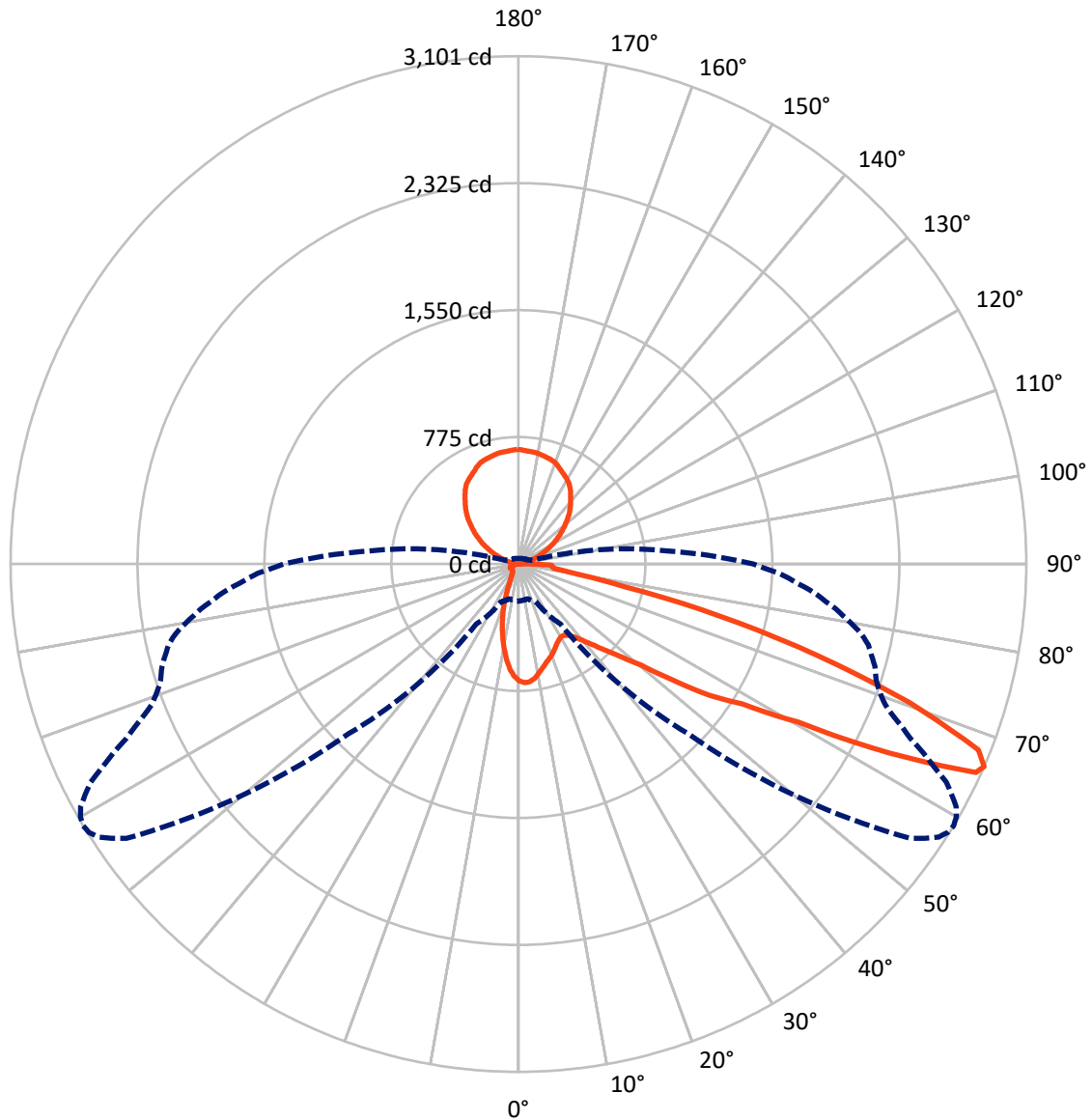


Based on 10 foot mounting height. Maximum calculated value = 7.1 fc  
 Type II - Short - Non-Cutoff

REPORT NUMBER: P226959

CATALOG NUMBER: IST-AF-450-LED-E1-SL3-7030-ULG

### Luminous Intensity Polar Plot



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

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CATALOG NUMBER: IST-AF-450-LED-E1-SL3-7030-ULG

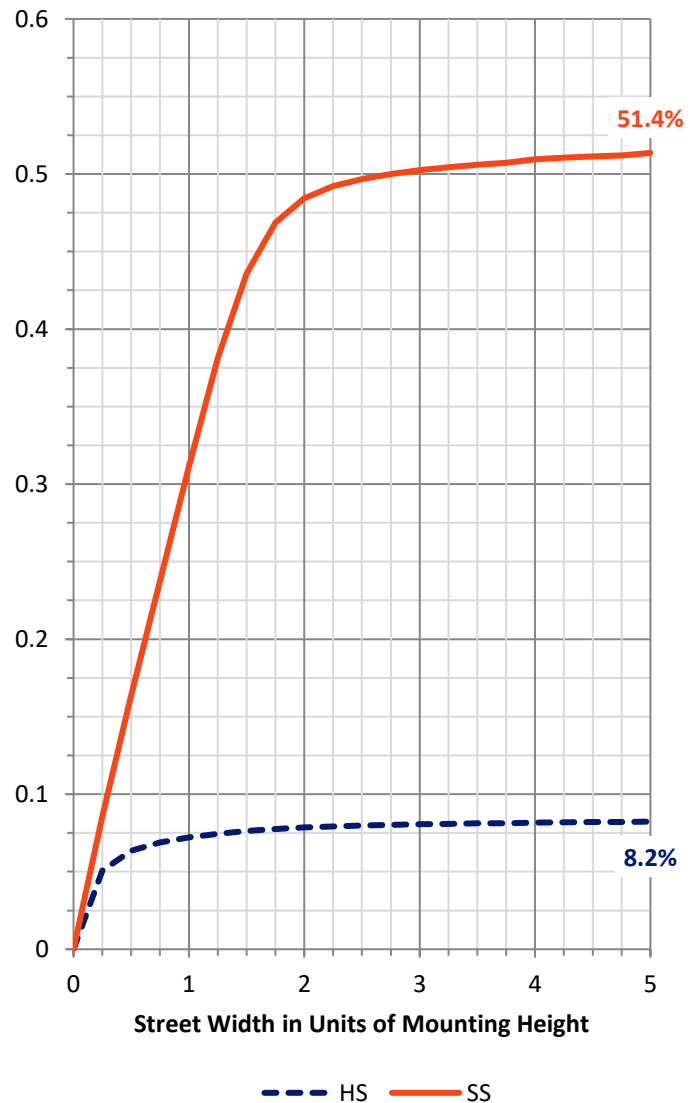
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	365.4	867.7	1233.1
	% Fixture	8.4	19.9	28.2
<b>Street Side</b>	Lumens	2264.4	868.5	3132.9
	% Fixture	51.9	19.9	71.8
<b>Total</b>	Lumens	2629.7	1736.3	4366.0
	% Fixture	60.2	39.8	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	60.9	1.4
10°-20°	128.7	2.9
20°-30°	161.4	3.7
30°-40°	220.8	5.1
40°-50°	355.2	8.1
50°-60°	617.2	14.1
60°-70°	749.9	17.2
70°-80°	279.7	6.4
80°-90°	56.0	1.3
90°-100°	10.4	0.2
100°-110°	57.4	1.3
110°-120°	166.1	3.8
120°-130°	273.2	6.3
130°-140°	336.8	7.7
140°-150°	344.6	7.9
150°-160°	290.3	6.6
160°-170°	191.2	4.4
170°-180°	66.3	1.5
0°-90°	2629.7	60.2
0°-180°	4366.0	100.0



REPORT NUMBER: P226959

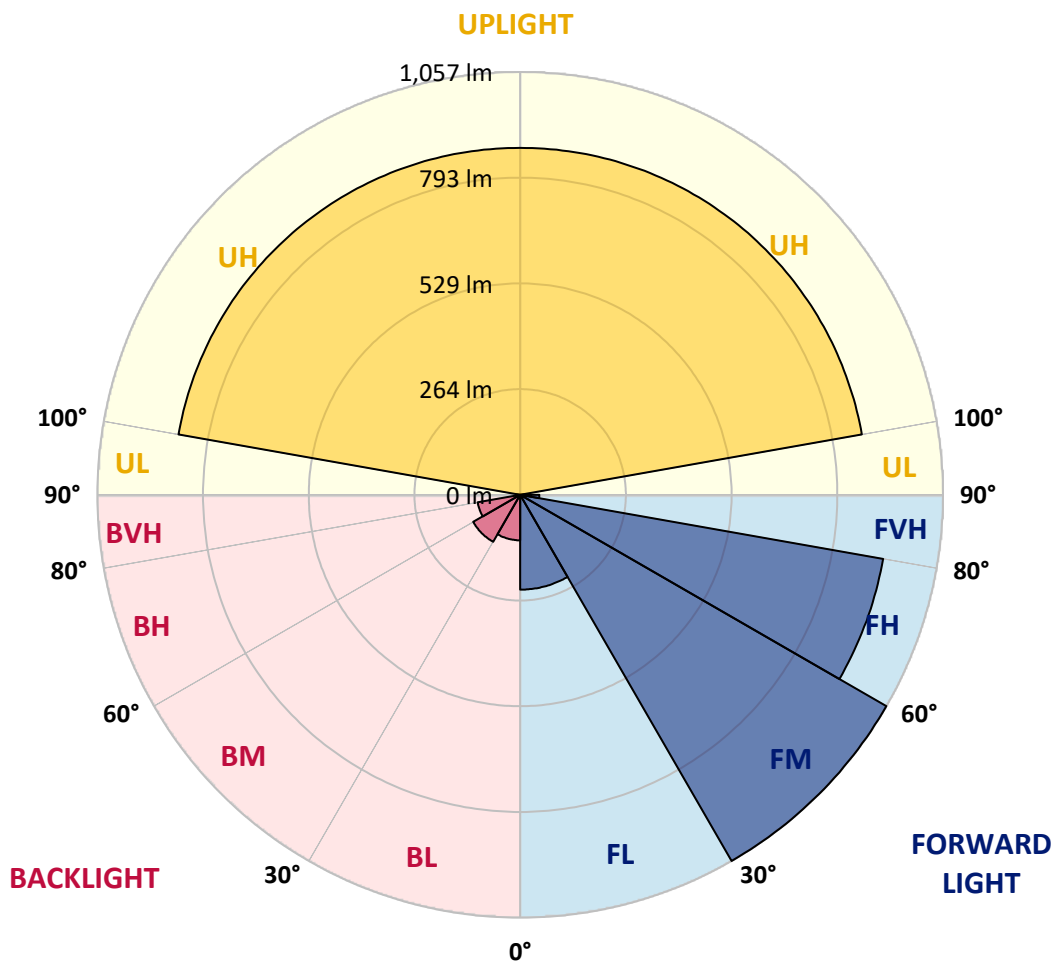
CATALOG NUMBER: IST-AF-450-LED-E1-SL3-7030-ULG

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	237.2	5.4			
FM (30°-60°)	1057.5	24.2			
FH (60°-80°)	921.7	21.1			G1/1800
FVH (80°-90°)	48.0	1.1			G1/100
BL (0°-30°)	113.8	2.6	B1/500		
BM (30°-60°)	135.7	3.1	B0/220		
BH (60°-80°)	107.9	2.5	B0/110		G0/110
BVH (80°-90°)	8.1	0.2			G0/10
UL (90°-100°)	10.4	0.2		U2/50	
UH (100°-180°)	867.7	19.9		U4/1000	

**BUG Rating: B1-U5-G1**

Type II Short





REPORT NUMBER: P226959

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	56°	57°	58°	59°
0°	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5
2.5°	733.0	730.6	735.0	733.4	734.6	728.6	727.4	726.1	727.0	725.7	725.7
5°	715.7	714.5	719.7	722.5	724.9	724.1	723.7	723.7	724.1	721.3	721.7
7.5°	664.9	664.1	671.3	676.6	688.2	695.1	704.0	704.4	705.2	704.0	706.4
10°	610.8	613.3	619.7	628.2	645.5	656.0	672.9	676.2	677.4	677.8	678.2
12.5°	559.2	556.8	564.9	581.0	604.4	621.3	642.7	644.3	646.3	649.1	652.0
15°	513.3	516.1	522.5	539.5	564.1	587.9	615.7	617.3	621.3	623.7	627.8
17.5°	481.8	481.8	489.1	504.8	527.8	558.0	593.1	595.9	599.1	602.4	606.8
20°	466.1	466.1	468.9	478.2	498.3	527.4	569.7	572.9	578.6	582.2	588.3
22.5°	464.9	464.5	464.1	466.1	478.2	500.8	544.7	549.1	554.0	559.6	564.9
25°	477.8	479.0	474.2	470.9	472.1	482.6	520.9	523.3	532.6	536.2	542.7
27.5°	496.3	498.3	494.3	489.5	482.2	475.4	500.8	504.8	510.8	516.9	525.0
30°	522.9	522.5	522.1	518.9	504.8	483.4	494.7	497.5	502.8	507.6	514.5
32.5°	551.6	554.8	557.2	555.6	541.1	504.8	503.2	505.6	510.4	513.3	517.7
35°	588.7	590.3	599.5	599.5	585.0	543.1	527.0	529.0	531.4	532.6	535.8
37.5°	629.4	635.0	648.7	656.8	634.2	590.7	564.5	564.5	565.7	566.5	568.5
40°	676.6	684.6	703.6	718.9	704.4	649.9	613.7	617.3	616.1	614.5	618.9
42.5°	731.4	740.3	763.2	777.8	769.3	721.3	679.8	677.4	681.0	676.2	677.8
45°	795.1	801.9	825.3	840.7	847.5	808.8	766.5	761.6	761.6	751.1	755.6
47.5°	852.3	854.4	876.9	904.0	926.1	926.9	867.3	864.0	856.4	849.5	847.9
50°	905.6	911.6	926.1	955.6	1001.9	1042.2	1006.0	995.9	987.4	962.0	969.7
52.5°	997.9	1009.6	1018.9	1036.6	1091.4	1173.3	1218.0	1202.3	1200.3	1177.3	1172.1
55°	1015.2	1016.4	1047.1	1149.5	1278.5	1337.4	1423.3	1422.9	1429.3	1422.1	1415.2
57.5°	933.8	924.1	975.3	1110.4	1369.6	1672.0	1645.8	1648.6	1640.2	1618.0	1611.2
60°	727.4	735.4	790.7	962.8	1303.9	1888.1	2061.1	2009.9	2046.6	1988.9	1957.9
62.5°	409.2	400.0	437.5	618.5	1069.7	1899.4	2626.8	2632.4	2650.2	2617.9	2542.1
65°	264.1	260.1	256.4	312.9	641.1	1661.5	2939.7	3009.0	3050.5	3067.5	3068.7
66°	227.0	223.8	219.3	256.0	446.7	1464.0	2919.5	2993.7	3059.8	3091.3	3100.5
67.5°	193.1	188.3	187.5	212.1	310.9	1135.8	2727.2	2843.7	2902.2	2983.6	3028.0
70°	147.6	145.1	152.4	183.0	238.7	534.6	2173.2	2325.2	2426.0	2489.7	2530.8
72.5°	123.8	123.0	133.1	167.3	226.2	303.2	1521.2	1684.5	1789.8	1850.6	1907.1
75°	96.8	97.6	110.9	159.7	225.0	264.1	883.8	1039.4	1100.7	1196.7	1270.1
77.5°	72.6	71.8	82.3	129.0	219.3	267.7	459.2	523.7	591.1	639.9	657.6
80°	50.8	51.6	58.9	88.7	171.0	275.4	286.3	301.2	315.3	331.0	334.2
82.5°	33.9	34.3	43.5	60.9	118.5	262.9	267.3	260.5	249.6	235.9	220.9
85°	20.6	21.4	31.0	41.1	91.9	237.9	276.6	258.4	241.9	223.8	205.6
87.5°	10.5	11.7	18.5	24.2	54.4	117.3	287.9	274.6	252.0	224.2	204.0
90°	7.8	7.8	11.0	14.0	18.9	30.8	79.6	72.5	40.1	69.7	38.4
92.5°	4.0	4.0	5.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0
95°	5.0	5.0	6.0	7.0	7.0	7.0	7.0	7.1	7.2	7.3	7.4
97.5°	7.0	7.0	8.0	8.0	9.0	9.0	12.0	11.8	11.6	11.4	11.2
100°	8.0	8.0	9.0	10.0	12.0	21.0	29.0	28.7	28.4	28.1	27.8
102.5°	11.0	11.0	13.0	18.0	27.0	40.0	50.0	49.7	49.4	49.1	48.8
105°	21.0	22.0	27.0	36.0	48.0	63.0	72.0	71.8	71.6	71.4	71.2
107.5°	41.0	42.0	49.0	58.0	73.0	88.0	95.0	94.9	94.8	94.7	94.6



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**CANDELA DISTRIBUTION (continued):**

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



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**CANDELA DISTRIBUTION (continued):**

	60°	61°	62°	63°	64°	65°	66°	67°	68°	69°	70°
0°	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5
2.5°	725.3	726.1	725.3	724.1	725.3	724.1	723.7	723.3	723.7	722.9	722.5
5°	721.7	722.5	722.5	720.1	719.7	721.3	718.9	719.7	718.9	718.1	716.5
7.5°	704.4	704.8	705.2	703.6	704.8	704.8	704.0	704.0	703.2	703.6	702.0
10°	680.2	681.8	683.4	682.6	682.2	685.8	684.2	685.4	685.4	684.2	684.6
12.5°	654.0	656.8	658.8	658.8	660.4	664.5	664.1	664.9	668.1	668.1	666.9
15°	629.8	632.6	635.8	638.3	641.5	644.3	646.3	649.5	651.2	651.2	653.2
17.5°	610.8	614.9	618.5	619.7	624.1	629.0	630.2	634.2	636.6	637.8	640.3
20°	592.3	596.7	601.2	605.2	609.2	614.9	617.7	620.1	624.1	626.6	630.2
22.5°	570.5	577.4	583.0	587.9	594.7	599.5	605.2	609.2	614.1	617.7	620.5
25°	550.0	559.2	566.9	571.7	581.0	587.9	594.7	600.8	606.8	612.0	616.1
27.5°	531.0	541.5	550.8	558.4	568.5	579.4	586.2	596.3	604.4	611.6	616.5
30°	521.7	530.6	540.3	549.1	559.2	572.9	584.2	597.1	607.2	616.5	623.7
32.5°	523.7	531.8	540.3	547.9	558.4	573.7	585.4	600.4	615.3	627.4	636.6
35°	539.9	547.1	552.8	559.6	568.9	580.6	593.1	608.8	627.4	643.5	655.6
37.5°	573.7	575.8	581.4	586.6	591.5	602.4	614.1	627.4	648.7	665.7	682.6
40°	615.7	620.9	626.2	628.6	634.2	641.1	646.3	660.4	679.4	701.6	720.1
42.5°	678.2	680.2	681.0	681.8	683.8	688.6	696.3	709.2	727.8	747.5	768.1
45°	748.3	750.7	753.2	754.4	751.5	754.4	762.4	768.5	786.6	805.2	831.4
47.5°	845.5	838.2	834.6	839.4	837.0	843.1	846.7	850.3	872.1	894.3	916.5
50°	970.1	965.6	960.0	960.4	964.8	960.8	963.2	976.5	983.8	1002.3	1031.8
52.5°	1169.3	1155.5	1134.2	1124.9	1130.1	1126.9	1128.1	1130.9	1126.1	1143.4	1168.4
55°	1415.2	1397.5	1383.3	1375.3	1345.4	1343.0	1323.3	1316.0	1300.3	1316.8	1311.2
57.5°	1590.6	1579.3	1572.0	1547.8	1534.1	1506.7	1498.7	1489.0	1467.2	1478.1	1487.8
60°	1929.3	1888.9	1875.2	1832.9	1818.8	1792.6	1759.1	1742.6	1731.3	1741.8	1735.3
62.5°	2494.5	2438.5	2427.6	2327.2	2302.6	2242.1	2179.2	2170.8	2135.3	2113.1	2107.9
65°	3046.5	2966.3	2906.2	2796.5	2722.3	2636.1	2540.1	2469.9	2397.8	2361.5	2313.5
66°	3087.6	3055.8	2995.3	2931.2	2823.1	2728.8	2619.9	2544.1	2463.1	2399.4	2358.3
67.5°	3017.5	3000.5	2979.2	2935.6	2867.9	2780.0	2676.8	2580.0	2482.4	2407.5	2341.7
70°	2550.6	2569.1	2593.3	2582.0	2543.3	2509.1	2417.9	2363.9	2290.5	2192.1	2151.8
72.5°	1925.2	1974.8	1957.9	1894.2	1864.4	1840.6	1807.5	1771.2	1666.0	1653.9	1606.3
75°	1238.6	1222.1	1233.0	1155.5	1102.7	1081.0	1002.3	970.1	891.1	839.8	800.7
77.5°	652.8	620.5	595.5	527.4	478.6	450.0	411.7	366.5	297.2	293.1	229.8
80°	302.8	278.2	255.6	231.8	208.0	176.6	153.2	125.0	110.5	94.7	88.3
82.5°	205.6	189.9	176.2	160.5	142.3	120.6	104.0	88.3	75.4	67.7	61.7
85°	186.3	169.3	154.0	134.3	115.3	97.2	79.4	65.7	53.6	46.8	42.7
87.5°	181.0	160.1	143.9	122.6	104.0	85.5	68.5	53.2	41.5	33.9	29.0
90°	31.0	32.8	26.1	25.5	16.1	18.3	15.9	13.0	13.4	12.2	12.6
92.5°	7.0	7.0	7.0	7.0	7.0	7.0	6.9	6.8	6.7	6.6	6.5
95°	7.5	7.6	7.7	7.8	7.9	8.0	7.9	7.8	7.7	7.6	7.5
97.5°	11.0	10.8	10.6	10.4	10.2	10.0	9.9	9.8	9.7	9.6	9.5
100°	27.5	27.2	26.9	26.6	26.3	26.0	25.7	25.4	25.1	24.8	24.5
102.5°	48.5	48.2	47.9	47.6	47.3	47.0	46.5	46.0	45.5	45.0	44.5
105°	71.0	70.8	70.6	70.4	70.2	70.0	69.5	69.0	68.5	68.0	67.5
107.5°	94.5	94.4	94.3	94.2	94.1	94.0	93.6	93.2	92.8	92.4	92.0



REPORT NUMBER: P226959

CATALOG NUMBER: IST-AF-450-LED-E1-SL3-7030-ULG

**CANDELA DISTRIBUTION (continued):**

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

REPORT NUMBER: P226959

CATALOG NUMBER: IST-AF-450-LED-E1-SL3-7030-ULG

**CANDELA DISTRIBUTION (continued):**

	71°	72°	73°	74°	75°	76°	77°	78°	79°	80°	81°
0°	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5
2.5°	721.7	720.5	721.7	721.3	719.7	720.1	720.5	718.9	718.1	718.1	717.7
5°	715.3	714.5	715.3	714.9	712.4	712.0	712.0	710.8	709.2	708.0	707.2
7.5°	699.9	700.7	700.3	699.1	697.9	697.9	696.7	693.9	692.3	690.7	689.1
10°	682.6	682.6	683.0	682.6	680.6	679.8	678.2	676.6	677.0	672.9	669.7
12.5°	667.3	667.3	666.9	666.1	664.9	664.5	664.5	659.6	658.4	657.2	653.6
15°	652.8	653.6	653.6	653.6	651.6	651.6	649.5	646.3	646.3	642.7	639.1
17.5°	641.5	642.7	642.3	642.7	643.1	640.7	637.0	635.0	632.6	630.6	625.8
20°	631.8	632.6	633.0	633.0	631.8	630.2	627.0	623.7	622.1	618.1	612.0
22.5°	622.9	624.5	624.9	624.9	623.3	622.1	618.9	614.1	610.8	606.0	600.4
25°	619.3	621.3	620.1	620.9	619.3	616.5	612.0	608.0	603.2	597.1	591.1
27.5°	620.5	623.3	622.5	622.1	620.1	618.1	612.4	607.6	602.0	594.7	587.0
30°	627.8	632.6	630.6	629.0	628.6	623.7	618.5	611.6	605.2	596.7	587.9
32.5°	641.5	643.9	644.3	643.1	641.1	637.0	629.8	620.9	613.7	603.6	593.1
35°	664.1	666.5	665.7	665.7	663.7	657.2	648.3	639.5	629.4	618.1	607.2
37.5°	695.5	699.9	699.1	697.5	695.1	687.4	680.6	669.7	658.4	643.5	631.0
40°	735.0	741.9	747.9	746.7	741.1	734.2	727.8	715.3	704.0	687.4	673.7
42.5°	788.2	797.5	805.2	810.8	808.4	799.5	788.2	783.0	766.9	749.9	735.8
45°	856.4	875.7	882.6	889.4	889.4	883.8	881.4	870.9	854.0	831.4	818.1
47.5°	946.3	972.1	979.8	991.4	998.3	992.3	987.8	970.1	958.8	927.7	924.5
50°	1055.6	1081.4	1102.3	1116.0	1114.0	1119.3	1108.8	1098.7	1083.0	1057.6	1048.7
52.5°	1195.1	1215.6	1234.6	1242.6	1251.1	1249.9	1247.5	1240.6	1220.9	1207.2	1184.6
55°	1338.2	1355.1	1378.1	1391.4	1402.3	1400.3	1391.0	1374.5	1378.1	1349.5	1337.0
57.5°	1501.1	1519.6	1544.6	1557.1	1562.0	1586.6	1580.5	1578.5	1571.6	1561.6	1548.7
60°	1781.3	1786.5	1807.1	1838.5	1877.3	1869.6	1879.3	1885.7	1890.6	1868.0	1866.4
62.5°	2115.1	2121.6	2139.3	2145.8	2151.4	2152.2	2139.3	2139.3	2117.2	2088.1	2065.5
65°	2297.4	2284.1	2272.0	2265.1	2250.2	2236.9	2217.5	2191.3	2153.8	2109.1	2068.8
66°	2323.6	2296.6	2280.8	2263.5	2239.7	2215.1	2192.1	2156.3	2112.3	2059.1	2005.9
67.5°	2298.2	2261.1	2224.4	2199.0	2165.9	2121.6	2081.3	2039.3	1997.8	1924.8	1875.2
70°	2066.4	2022.0	1981.7	1926.0	1873.6	1830.1	1760.7	1687.8	1627.7	1551.1	1502.3
72.5°	1534.5	1482.1	1429.7	1351.5	1275.3	1264.0	1176.9	1091.0	1045.1	983.4	933.8
75°	758.0	691.9	597.9	556.0	495.1	465.3	448.8	386.7	371.7	310.9	310.1
77.5°	214.1	183.9	163.3	142.3	133.5	127.0	104.8	100.4	91.1	89.5	84.3
80°	81.0	76.6	74.6	72.6	70.6	69.3	68.5	65.3	63.7	61.3	60.1
82.5°	58.5	56.8	53.2	52.0	50.4	48.0	47.6	45.6	44.4	41.9	41.1
85°	39.5	37.5	35.5	33.5	32.7	32.3	31.0	30.2	29.4	28.2	27.8
87.5°	26.6	24.6	22.2	21.4	21.0	21.4	21.8	21.0	20.6	19.8	19.4
90°	12.2	13.4	13.0	13.0	13.8	12.8	12.6	12.8	12.2	12.0	11.4
92.5°	6.4	6.3	6.2	6.1	6.0	6.0	6.0	6.0	6.0	6.0	6.0
95°	7.4	7.3	7.2	7.1	7.0	7.0	7.0	7.0	7.0	7.0	7.0
97.5°	9.4	9.3	9.2	9.1	9.0	8.9	8.8	8.7	8.6	8.5	8.4
100°	24.2	23.9	23.6	23.3	23.0	22.6	22.2	21.8	21.4	21.0	20.6
102.5°	44.0	43.5	43.0	42.5	42.0	41.7	41.4	41.1	40.8	40.5	40.2
105°	67.0	66.5	66.0	65.5	65.0	64.6	64.2	63.8	63.4	63.0	62.6
107.5°	91.6	91.2	90.8	90.4	90.0	89.7	89.4	89.1	88.8	88.5	88.2



REPORT NUMBER: P226959  
 CATALOG NUMBER: IST-AF-450-LED-E1-SL3-7030-ULG

REPORT N  
 CATALOG

**CANDELA DISTRIBUTION (continued):**

**CANDELA**

	71°	72°	73°	74°	75°	76°	77°	78°	79°	80°	81°	
110°	119.8	119.6	119.4	119.2	119.0	118.7	118.4	118.1	117.8	117.5	117.2	0°
112.5°	149.4	149.3	149.2	149.1	149.0	148.8	148.6	148.4	148.2	148.0	147.8	2.5°
115°	180.2	179.9	179.6	179.3	179.0	178.8	178.6	178.4	178.2	178.0	177.8	5°
117.5°	212.0	211.5	211.0	210.5	210.0	209.8	209.6	209.4	209.2	209.0	208.8	7.5°
120°	247.0	246.5	246.0	245.5	245.0	244.8	244.6	244.4	244.2	244.0	243.8	10°
122.5°	280.0	279.5	279.0	278.5	278.0	277.8	277.6	277.4	277.2	277.0	276.8	12.5°
125°	312.0	311.5	311.0	310.5	310.0	310.0	310.0	310.0	310.0	310.0	310.0	15°
127.5°	346.0	346.0	346.0	346.0	346.0	345.9	345.8	345.7	345.6	345.5	345.4	17.5°
130°	381.0	381.0	381.0	381.0	381.0	380.8	380.6	380.4	380.2	380.0	379.8	20°
132.5°	414.8	414.6	414.4	414.2	414.0	414.0	414.0	414.0	414.0	414.0	414.0	22.5°
135°	447.4	447.3	447.2	447.1	447.0	447.3	447.6	447.9	448.2	448.5	448.8	25°
137.5°	475.6	475.7	475.8	475.9	476.0	476.5	477.0	477.5	478.0	478.5	479.0	27.5°
140°	503.2	503.4	503.6	503.8	504.0	504.5	505.0	505.5	506.0	506.5	507.0	30°
142.5°	533.0	533.0	533.0	533.0	533.0	533.1	533.2	533.3	533.4	533.5	533.6	32.5°
145°	561.4	561.3	561.2	561.1	561.0	560.7	560.4	560.1	559.8	559.5	559.2	35°
147.5°	585.6	585.7	585.8	585.9	586.0	585.7	585.4	585.1	584.8	584.5	584.2	37.5°
150°	601.8	602.1	602.4	602.7	603.0	603.3	603.6	603.9	604.2	604.5	604.8	40°
152.5°	616.4	616.8	617.2	617.6	618.0	618.5	619.0	619.5	620.0	620.5	621.0	42.5°
155°	634.0	634.5	635.0	635.5	636.0	636.2	636.4	636.6	636.8	637.0	637.2	45°
157.5°	649.2	649.4	649.6	649.8	650.0	650.0	650.0	650.0	650.0	650.0	650.0	47.5°
160°	662.2	661.9	661.6	661.3	661.0	660.9	660.8	660.7	660.6	660.5	660.4	50°
162.5°	670.4	670.3	670.2	670.1	670.0	669.8	669.6	669.4	669.2	669.0	668.8	52.5°
165°	678.8	679.1	679.4	679.7	680.0	679.8	679.6	679.4	679.2	679.0	678.8	55°
167.5°	686.4	686.8	687.2	687.6	688.0	688.0	688.0	688.0	688.0	688.0	688.0	57.5°
170°	692.0	692.5	693.0	693.5	694.0	694.2	694.4	694.6	694.8	695.0	695.2	60°
172.5°	693.2	693.4	693.6	693.8	694.0	694.2	694.4	694.6	694.8	695.0	695.2	62.5°
175°	695.6	695.7	695.8	695.9	696.0	695.8	695.6	695.4	695.2	695.0	694.8	65°
177.5°	700.2	700.4	700.6	700.8	701.0	700.7	700.4	700.1	699.8	699.5	699.2	66°
180°	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	67.5°
												70°
												72.5°
												75°
												77.5°
												80°
												82.5°
												85°
												87.5°
												90°
												92.5°
												95°
												97.5°
												100°
												102.5°
												105°
												107.5°

NUMBER: P226959  
 NUMBER: IST-AF-450-LED-E1-SL3-7030-ULG

REPORT NUMBER: P  
 CATALOG NUMBER:

**DISTRIBUTION (continued):**

**CANDELA DISTRIBUTION**

82°	83°	84°	85°	86°	87°	88°	89°	90°	95°	105°	82°	
714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5	714.5	110°	116.9
716.9	715.7	716.1	714.5	714.1	714.9	715.3	715.3	714.1	706.8	698.3	112.5°	147.6
706.4	704.0	703.6	702.4	700.3	702.8	701.6	699.5	697.1	688.6	672.1	115°	177.6
687.0	685.4	683.4	681.8	680.6	679.8	679.4	677.4	672.9	657.2	629.4	117.5°	208.6
668.5	666.5	664.1	660.4	658.8	656.4	656.4	651.6	648.3	628.6	587.4	120°	243.6
650.3	646.7	645.5	643.1	638.7	636.6	633.8	629.0	624.1	600.4	546.3	122.5°	276.6
636.6	633.0	627.8	626.2	621.3	616.9	613.3	606.8	601.6	570.1	503.2	125°	310.0
621.7	618.9	613.3	609.6	604.4	599.1	593.1	585.0	581.4	541.5	462.1	127.5°	345.3
609.6	603.2	596.7	593.5	587.0	581.0	574.9	565.3	558.0	513.3	418.5	130°	379.6
595.5	589.9	583.0	577.4	568.5	561.6	554.8	544.7	535.8	484.6	374.6	132.5°	414.0
585.8	577.8	570.5	564.1	554.0	545.9	536.2	525.4	516.5	457.2	326.2	135°	449.1
580.2	572.1	562.9	554.8	543.1	533.8	523.3	511.2	500.0	435.0	280.6	137.5°	479.5
578.6	568.9	559.2	549.1	537.1	525.4	512.9	500.8	486.2	413.7	231.0	140°	507.5
583.4	571.7	560.8	548.7	534.6	521.3	508.8	493.1	478.6	395.1	182.2	142.5°	533.7
596.7	582.6	570.1	556.8	540.7	526.2	511.2	493.5	477.4	382.2	139.5	145°	558.9
617.7	604.4	589.9	576.6	558.0	541.9	525.4	506.4	487.1	377.0	105.2	147.5°	583.9
660.0	642.3	627.4	613.3	591.9	575.4	556.4	533.4	511.6	381.8	87.9	150°	605.1
719.3	697.1	683.4	670.9	644.3	626.2	604.4	578.2	553.6	395.5	77.4	152.5°	621.5
801.1	784.2	759.6	740.3	713.2	693.1	668.9	637.4	610.0	414.9	72.2	155°	637.4
903.6	881.4	857.2	837.4	808.0	772.9	747.5	709.6	678.6	445.1	69.8	157.5°	650.0
1028.9	1002.3	969.7	953.1	912.4	885.0	851.1	810.4	770.9	491.9	71.0	160°	660.3
1165.2	1136.6	1111.2	1079.7	1042.7	1012.0	979.8	936.6	887.0	580.6	75.8	162.5°	668.6
1309.2	1290.6	1266.4	1225.7	1205.5	1166.8	1125.7	1078.1	1042.2	695.9	87.5	165°	678.6
1518.8	1498.7	1495.8	1455.9	1425.3	1390.2	1357.9	1318.4	1276.1	900.7	114.9	167.5°	688.0
1841.4	1820.4	1796.6	1765.6	1729.3	1685.7	1645.8	1592.6	1545.4	1106.0	127.8	170°	695.4
2032.5	1993.8	1951.0	1903.9	1851.0	1797.0	1743.4	1675.3	1606.7	1118.5	115.3	172.5°	695.4
2016.4	1968.4	1913.9	1849.8	1794.2	1727.7	1670.0	1582.1	1519.6	995.9	93.9	175°	694.6
1956.7	1891.0	1839.8	1780.9	1711.1	1651.5	1590.6	1503.9	1432.5	913.2	85.9	177.5°	698.9
1803.9	1747.8	1676.9	1620.4	1568.8	1497.5	1440.2	1359.2	1310.0	791.9	77.0	180°	700.0
1441.8	1364.4	1304.3	1260.4	1201.9	1137.4	1086.6	1018.5	974.9	524.1	66.5		
839.8	820.5	753.2	715.3	679.8	627.4	587.0	554.4	497.1	254.0	58.9		
258.8	240.7	238.3	202.4	214.1	183.0	178.2	162.1	162.1	97.6	46.4		
82.7	81.0	77.8	73.4	71.8	71.8	69.8	69.3	66.1	52.4	34.7		
58.5	57.3	56.0	54.8	54.0	54.4	52.8	52.0	51.2	37.9	27.4		
40.3	39.1	36.7	36.7	35.9	35.5	35.9	34.3	33.9	26.6	23.0		
27.4	27.0	26.6	26.2	25.8	25.4	25.0	23.8	23.0	18.5	16.1		
18.1	15.3	14.9	12.9	12.5	12.1	11.3	12.1	13.3	13.3	10.5		
11.6	11.0	11.2	11.0	10.2	10.6	10.6	9.8	9.8	11.0	12.6		
6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		
7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
8.3	8.2	8.1	8.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0		
20.2	19.8	19.4	19.0	19.0	19.0	19.0	19.0	19.0	19.0	23.0		
39.9	39.6	39.3	39.0	38.8	38.6	38.4	38.2	38.0	39.0	42.0		
62.2	61.8	61.4	61.0	61.0	61.0	61.0	61.0	61.0	61.0	65.0		
87.9	87.6	87.3	87.0	86.8	86.6	86.4	86.2	86.0	87.0	90.0		

'226959  
 IST-AF-450-LED-E1-SL3-7030-ULG

REPORT NUMBER: P226959  
 CATALOG NUMBER: IST-AF-450

**TION (continued):**

**CANDELA DISTRIBUTION (con**

83°	84°	85°	86°	87°	88°	89°	90°	95°	105°		115°	125°
116.6	116.3	116.0	116.2	116.4	116.6	116.8	117.0	116.0	119.0	0°	714.5	714.5
147.4	147.2	147.0	147.0	147.0	147.0	147.0	147.0	147.0	149.0	2.5°	691.1	684.6
177.4	177.2	177.0	177.2	177.4	177.6	177.8	178.0	177.0	179.0	5°	654.4	639.9
208.4	208.2	208.0	208.2	208.4	208.6	208.8	209.0	208.0	210.0	7.5°	604.8	576.6
243.4	243.2	243.0	243.0	243.0	243.0	243.0	243.0	243.0	245.0	10°	547.9	507.2
276.4	276.2	276.0	276.2	276.4	276.6	276.8	277.0	276.0	278.0	12.5°	489.1	437.1
310.0	310.0	310.0	310.0	310.0	310.0	310.0	310.0	310.0	310.0	15°	434.2	365.3
345.2	345.1	345.0	345.4	345.8	346.2	346.6	347.0	345.0	346.0	17.5°	376.6	291.5
379.4	379.2	379.0	379.2	379.4	379.6	379.8	380.0	379.0	381.0	20°	321.3	220.1
414.0	414.0	414.0	414.2	414.4	414.6	414.8	415.0	414.0	414.0	22.5°	258.8	154.4
449.4	449.7	450.0	450.2	450.4	450.6	450.8	451.0	450.0	447.0	25°	189.9	112.1
480.0	480.5	481.0	481.2	481.4	481.6	481.8	482.0	481.0	476.0	27.5°	135.5	89.5
508.0	508.5	509.0	509.4	509.8	510.2	510.6	511.0	509.0	504.0	30°	101.2	75.4
533.8	533.9	534.0	534.4	534.8	535.2	535.6	536.0	534.0	533.0	32.5°	81.0	65.3
558.6	558.3	558.0	558.4	558.8	559.2	559.6	560.0	558.0	561.0	35°	68.9	59.3
583.6	583.3	583.0	583.4	583.8	584.2	584.6	585.0	583.0	586.0	37.5°	61.7	55.2
605.4	605.7	606.0	606.8	607.6	608.4	609.2	610.0	606.0	603.0	40°	57.7	53.2
622.0	622.5	623.0	624.0	625.0	626.0	627.0	628.0	623.0	618.0	42.5°	55.2	51.2
637.6	637.8	638.0	638.6	639.2	639.8	640.4	641.0	638.0	636.0	45°	54.0	50.0
650.0	650.0	650.0	651.0	652.0	653.0	654.0	655.0	650.0	650.0	47.5°	53.2	48.4
660.2	660.1	660.0	661.2	662.4	663.6	664.8	666.0	660.0	661.0	50°	52.4	48.4
668.4	668.2	668.0	669.2	670.4	671.6	672.8	674.0	668.0	670.0	52.5°	52.8	49.2
678.4	678.2	678.0	678.8	679.6	680.4	681.2	682.0	678.0	680.0	55°	54.8	49.2
688.0	688.0	688.0	689.2	690.4	691.6	692.8	694.0	688.0	688.0	57.5°	58.1	49.2
695.6	695.8	696.0	697.0	698.0	699.0	700.0	701.0	696.0	694.0	60°	60.5	50.0
695.6	695.8	696.0	697.0	698.0	699.0	700.0	701.0	696.0	694.0	62.5°	61.3	51.6
694.4	694.2	694.0	695.0	696.0	697.0	698.0	699.0	694.0	696.0	65°	60.5	52.4
698.6	698.3	698.0	698.8	699.6	700.4	701.2	702.0	698.0	701.0	66°	59.7	52.4
700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	67.5°	58.5	51.6
										70°	55.6	48.4
										72.5°	50.0	43.5
										75°	42.7	35.1
										77.5°	34.7	28.2
										80°	25.8	21.4
										82.5°	18.9	16.5
										85°	13.3	11.7
										87.5°	8.1	7.3
										90°	11.0	9.0
										92.5°	7.0	7.0
										95°	8.0	7.0
										97.5°	10.0	12.0
										100°	26.0	29.0
										102.5°	47.0	50.0
										105°	70.0	72.0
										107.5°	94.0	95.0



REPORT NUMBER: P226959

CATALOG NUMBER: IST-AF-450-LED-E1-S

0-LED-E1-SL3-7030-ULG

**tinued):**

135°	145°	155°	165°	175°	180°
714.5	714.5	714.5	714.5	714.5	714.5
680.2	679.8	669.7	667.7	660.8	664.5
622.5	615.7	597.5	593.9	586.2	584.2
553.6	534.6	520.1	504.0	488.7	496.3
472.9	441.1	409.2	388.3	379.8	377.0
396.3	339.1	299.2	258.0	243.5	248.8
303.6	238.3	185.1	161.3	147.6	145.1
214.1	152.8	128.2	122.2	119.3	119.3
145.1	116.5	107.2	104.4	104.4	104.8
110.5	98.0	93.9	94.3	96.0	96.4
91.5	86.7	84.7	87.5	90.7	91.1
79.0	77.8	78.2	81.8	85.1	85.5
69.3	70.6	72.2	75.4	78.2	79.0
62.5	64.5	65.7	67.7	69.3	69.8
57.7	60.1	59.7	60.9	62.1	62.5
54.8	56.0	54.8	55.6	55.6	56.4
52.4	52.8	50.8	51.2	52.0	52.0
50.0	49.6	47.6	48.4	49.6	50.0
47.6	46.8	45.2	46.8	48.8	49.2
45.6	44.8	43.9	46.0	48.4	48.8
44.8	43.9	43.1	46.0	48.4	48.8
44.8	43.9	43.1	45.2	47.6	48.0
45.2	44.4	42.7	44.8	46.4	46.8
45.6	44.8	41.9	43.1	43.9	44.4
45.6	43.9	41.1	41.5	41.5	41.9
44.8	42.7	39.5	39.5	39.1	39.1
44.8	41.1	37.9	37.1	36.3	36.3
44.4	40.7	37.5	36.3	35.1	35.1
43.5	39.9	36.7	35.1	33.9	33.9
40.7	38.3	34.7	33.1	31.9	31.4
36.3	35.1	32.3	31.0	29.8	29.4
30.6	31.0	29.4	28.6	27.4	27.0
25.8	26.6	25.8	25.4	24.6	24.2
20.6	22.2	21.4	21.4	21.8	21.0
15.7	17.7	16.9	17.7	18.5	17.3
10.9	12.9	12.9	13.3	13.7	12.9
6.9	8.5	8.1	8.5	8.5	8.1
8.6	10.8	9.6	9.4	7.0	6.6
6.0	6.0	6.0	5.0	4.0	4.0
7.0	7.0	7.0	6.0	5.0	5.0
9.0	9.0	8.0	8.0	7.0	7.0
21.0	12.0	10.0	9.0	8.0	8.0
40.0	27.0	18.0	13.0	11.0	11.0
63.0	48.0	36.0	27.0	22.0	21.0
88.0	73.0	58.0	49.0	42.0	41.0

**CANDELA DISTRIBUTION (continued):**

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



IL3-7030-ULG

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

(END OF REPORT)