

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: P226957

Luminaire Tested: **IST-AF-450-LED-E1-SL3-7060-ULG**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P226957
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-SL3-7060-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) 5700K CCT, 70 CRI LEDs and (1) UPLIGHT LED
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4707.1 lumens
Efficiency: N/A
Efficacy: 112.0 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')
IES Classification: Type II - Short - Non-Cutoff
BUG Rating: 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

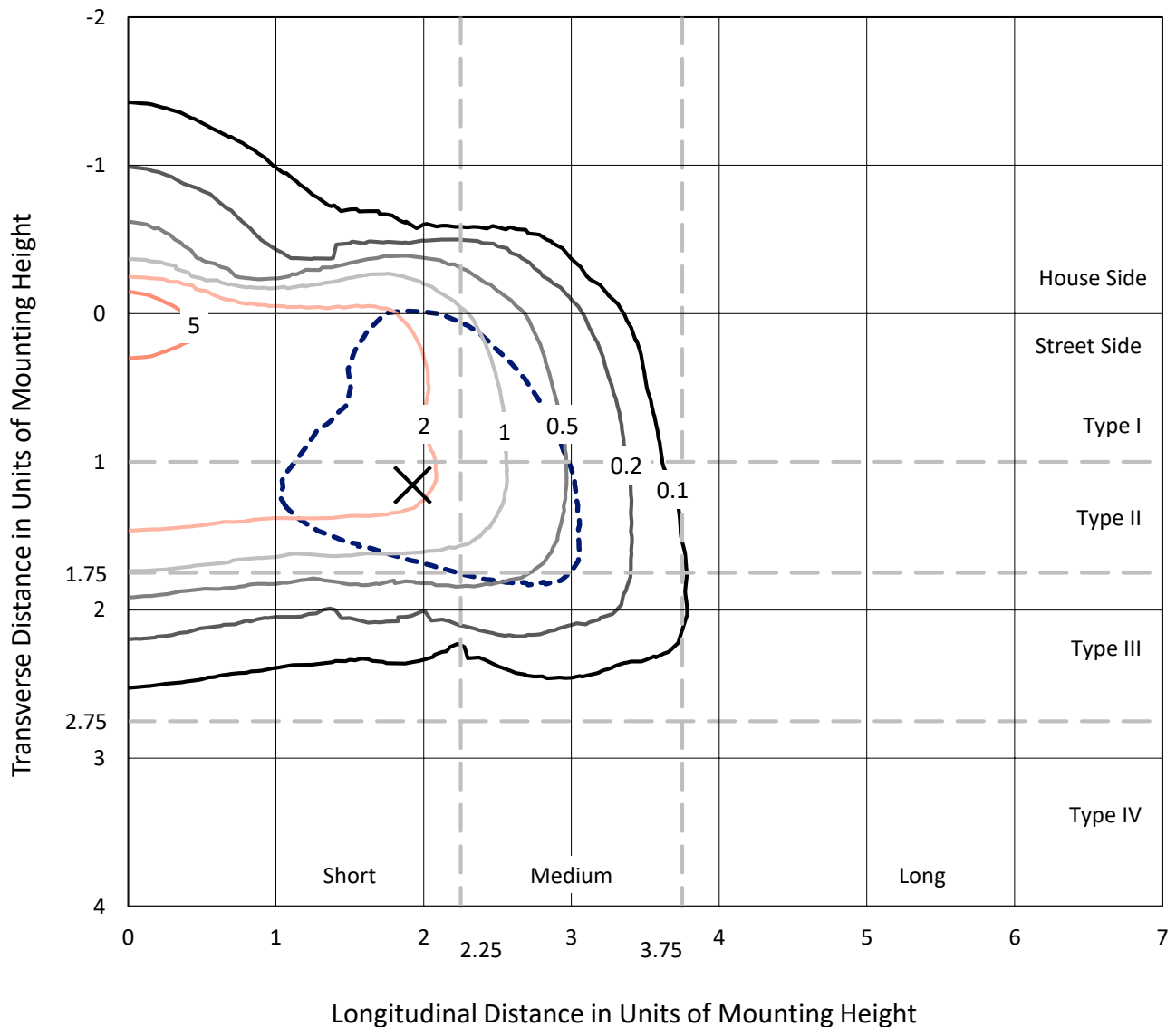


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

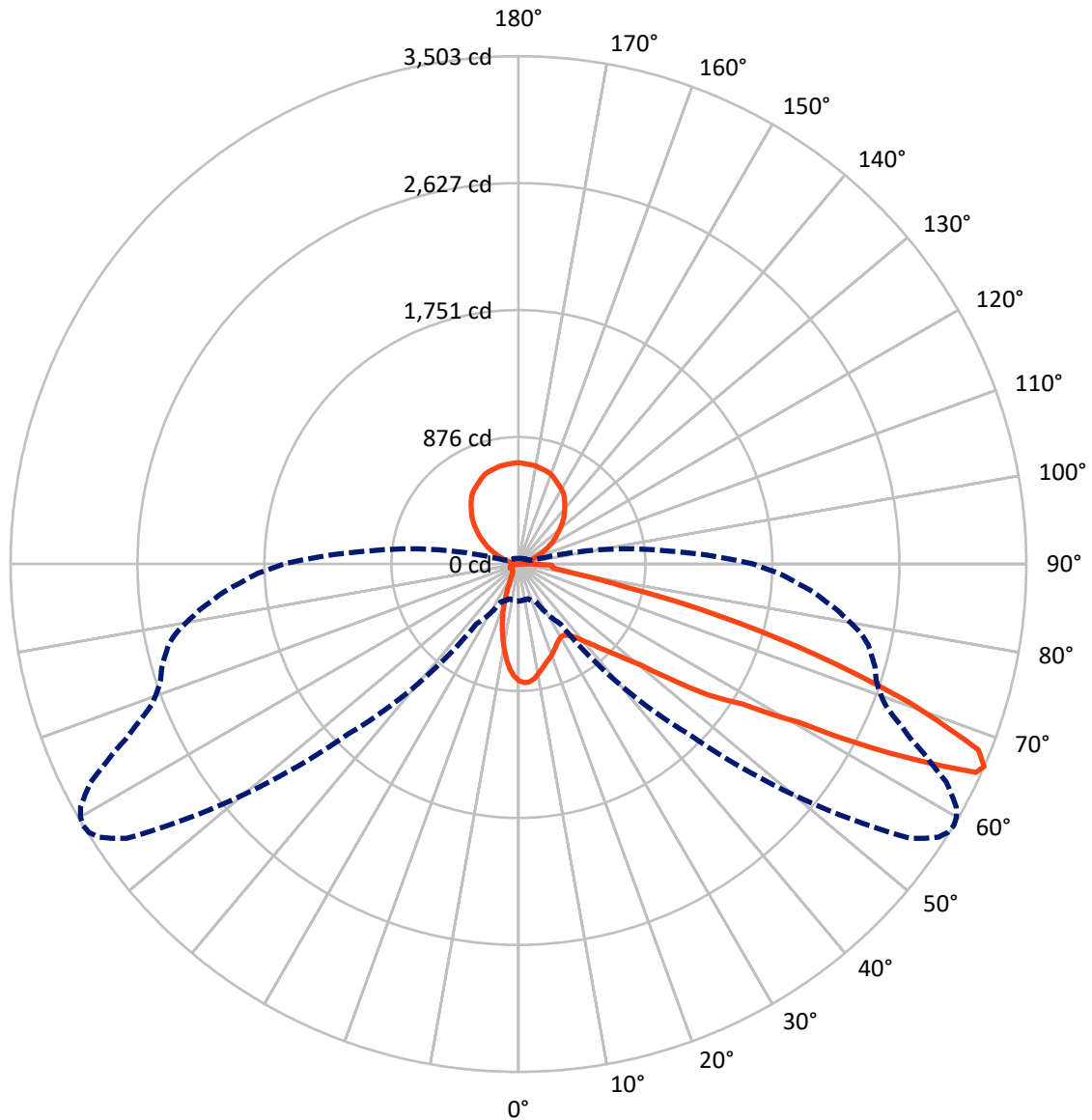


Based on 10 foot mounting height. Maximum calculated value = 8.1 fc
 Type II - Short - Non-Cutoff

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Luminous Intensity Polar Plot



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

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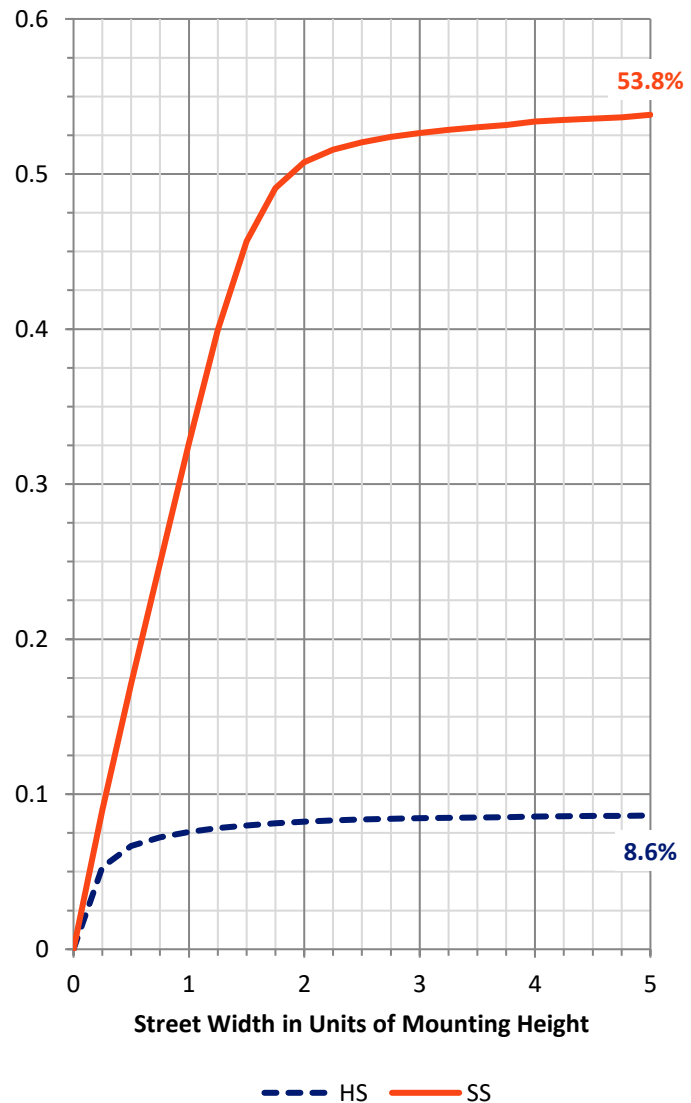
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	412.7	867.8	1280.5
	% Fixture	8.8	18.4	27.2
Street Side	Lumens	2558.0	868.7	3426.6
	% Fixture	54.3	18.5	72.8
Total	Lumens	2970.7	1736.4	4707.1
	% Fixture	63.1	36.9	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	68.8	1.5
10°-20°	145.3	3.1
20°-30°	182.3	3.9
30°-40°	249.4	5.3
40°-50°	401.2	8.5
50°-60°	697.2	14.8
60°-70°	847.1	18.0
70°-80°	316.0	6.7
80°-90°	63.2	1.3
90°-100°	10.5	0.2
100°-110°	57.4	1.2
110°-120°	166.1	3.5
120°-130°	273.2	5.8
130°-140°	336.8	7.2
140°-150°	344.6	7.3
150°-160°	290.3	6.2
160°-170°	191.2	4.1
170°-180°	66.3	1.4
0°-90°	2970.7	63.1
0°-180°	4707.1	100.0



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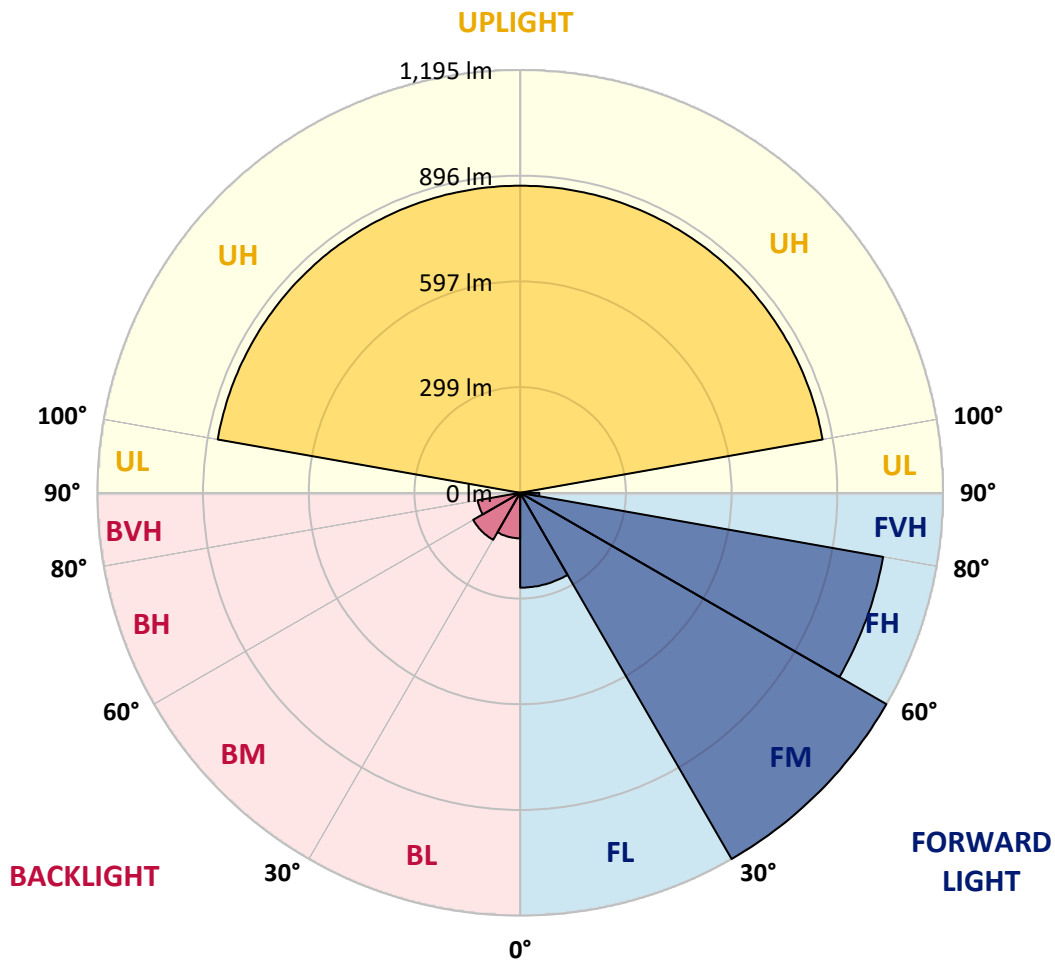
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	267.9	5.7			
FM	(30°-60°)	1194.6	25.4			
FH	(60°-80°)	1041.3	22.1			G1/1800
FVH	(80°-90°)	54.1	1.2			G1/100
BL	(0°-30°)	128.5	2.7	B1/500		
BM	(30°-60°)	153.3	3.3	B0/220		
BH	(60°-80°)	121.9	2.6	B1/500		G1/500
BVH	(80°-90°)	9.0	0.2			G0/10
UL	(90°-100°)	10.5	0.2		U2/50	
UH	(100°-180°)	867.8	18.4		U4/1000	

BUG Rating: B1-U5-G1

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	56°	57°	58°	59°
0°	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1
2.5°	828.1	825.3	830.3	828.5	829.9	823.1	821.7	820.3	821.2	819.9	819.9
5°	808.5	807.1	813.0	816.2	819.0	818.0	817.6	817.6	818.0	814.9	815.3
7.5°	751.1	750.2	758.4	764.3	777.5	785.2	795.3	795.7	796.6	795.3	798.0
10°	690.1	692.8	700.1	709.6	729.2	741.1	760.2	763.8	765.2	765.7	766.1
12.5°	631.8	629.0	638.1	656.3	682.8	701.9	726.0	727.9	730.1	733.3	736.5
15°	579.8	583.0	590.3	609.4	637.2	664.1	695.5	697.3	701.9	704.6	709.2
17.5°	544.3	544.3	552.5	570.3	596.2	630.4	670.0	673.2	676.8	680.5	685.5
20°	526.5	526.5	529.7	540.2	563.0	595.8	643.6	647.2	653.6	657.7	664.5
22.5°	525.2	524.7	524.3	526.5	540.2	565.7	615.4	620.4	625.8	632.2	638.1
25°	539.7	541.1	535.6	532.0	533.4	545.2	588.5	591.2	601.7	605.8	613.1
27.5°	560.7	563.0	558.4	553.0	544.8	537.0	565.7	570.3	577.1	583.9	593.0
30°	590.8	590.3	589.8	586.2	570.3	546.1	558.9	562.1	568.0	573.4	581.2
32.5°	623.1	626.7	629.5	627.7	611.3	570.3	568.4	571.2	576.6	579.8	584.8
35°	665.0	666.8	677.3	677.3	660.9	613.5	595.3	597.6	600.3	601.7	605.3
37.5°	711.0	717.4	732.9	742.0	716.5	667.3	637.7	637.7	639.0	639.9	642.2
40°	764.3	773.4	794.8	812.1	795.7	734.2	693.2	697.3	696.0	694.2	699.2
42.5°	826.2	836.3	862.2	878.6	869.1	814.9	767.9	765.2	769.3	763.8	765.7
45°	898.2	905.9	932.4	949.7	957.4	913.7	865.9	860.4	860.4	848.6	853.6
47.5°	962.9	965.2	990.7	1021.2	1046.2	1047.1	979.7	976.1	967.4	959.7	957.9
50°	1023.0	1029.8	1046.2	1079.5	1131.9	1177.4	1136.4	1125.0	1115.5	1086.8	1095.4
52.5°	1127.3	1140.5	1151.0	1171.0	1233.0	1325.4	1376.0	1358.2	1356.0	1330.0	1324.1
55°	1146.9	1148.3	1182.9	1298.6	1444.3	1510.8	1607.8	1607.4	1614.7	1606.5	1598.7
57.5°	1054.9	1044.0	1101.8	1254.4	1547.3	1888.9	1859.3	1862.5	1852.9	1827.8	1820.1
60°	821.7	830.8	893.2	1087.7	1473.0	2133.0	2328.4	2270.6	2312.0	2246.9	2211.8
62.5°	462.3	451.8	494.2	698.7	1208.4	2145.8	2967.5	2973.8	2993.9	2957.4	2871.8
65°	298.3	293.8	289.7	353.5	724.2	1877.0	3320.9	3399.2	3446.2	3465.3	3466.7
66°	256.4	252.8	247.8	289.2	504.7	1653.8	3298.1	3381.9	3456.6	3492.2	3502.6
67.5°	218.2	212.7	211.8	239.6	351.2	1283.1	3080.9	3212.5	3278.5	3370.6	3420.7
70°	166.7	164.0	172.2	206.8	269.6	604.0	2455.0	2626.8	2740.6	2812.6	2859.0
72.5°	139.8	138.9	150.3	189.0	255.5	342.5	1718.5	1903.0	2021.9	2090.7	2154.4
75°	109.3	110.2	125.3	180.4	254.2	298.3	998.4	1174.2	1243.5	1351.9	1434.8
77.5°	82.0	81.1	92.9	145.8	247.8	302.4	518.8	591.7	667.7	722.8	742.9
80°	57.4	58.3	66.5	100.2	193.1	311.1	323.4	340.2	356.2	373.9	377.6
82.5°	38.3	38.7	49.2	68.8	133.9	297.0	302.0	294.2	281.9	266.5	249.6
85°	23.2	24.1	35.1	46.5	103.8	268.7	312.5	292.0	273.3	252.8	232.3
87.5°	11.8	13.2	21.0	27.3	61.5	132.5	325.2	310.2	284.7	253.2	230.5
90°	8.2	8.2	11.6	14.8	20.3	33.9	89.0	81.0	44.3	77.7	42.4
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°	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1
2.5°	819.4	820.3	819.4	818.0	819.4	818.0	817.6	817.1	817.6	816.7	816.2
5°	815.3	816.2	816.2	813.5	813.0	814.9	812.1	813.0	812.1	811.2	809.4
7.5°	795.7	796.2	796.6	794.8	796.2	796.2	795.3	795.3	794.4	794.8	793.0
10°	768.4	770.2	772.0	771.1	770.7	774.8	772.9	774.3	774.3	772.9	773.4
12.5°	738.8	742.0	744.3	744.3	746.1	750.6	750.2	751.1	754.7	754.7	753.4
15°	711.5	714.6	718.3	721.0	724.7	727.9	730.1	733.8	735.6	735.6	737.9
17.5°	690.1	694.6	698.7	700.1	705.1	710.5	711.9	716.5	719.2	720.6	723.3
20°	669.1	674.1	679.1	683.7	688.2	694.6	697.8	700.5	705.1	707.8	711.9
22.5°	644.5	652.2	658.6	664.1	671.8	677.3	683.7	688.2	693.7	697.8	701.0
25°	621.3	631.8	640.4	645.9	656.3	664.1	671.8	678.7	685.5	691.4	696.0
27.5°	599.9	611.7	622.2	630.8	642.2	654.5	662.3	673.7	682.8	691.0	696.4
30°	589.4	599.4	610.3	620.4	631.8	647.2	660.0	674.6	686.0	696.4	704.6
32.5°	591.7	600.8	610.3	619.0	630.8	648.1	661.4	678.2	695.1	708.7	719.2
35°	609.9	618.1	624.5	632.2	642.7	655.9	670.0	687.8	708.7	726.9	740.6
37.5°	648.1	650.4	656.8	662.7	668.2	680.5	693.7	708.7	732.9	752.0	771.1
40°	695.5	701.4	707.4	710.1	716.5	724.2	730.1	746.1	767.5	792.5	813.5
42.5°	766.1	768.4	769.3	770.2	772.5	778.0	786.6	801.2	822.1	844.5	867.7
45°	845.4	848.1	850.8	852.2	849.0	852.2	861.3	868.1	888.6	909.6	939.2
47.5°	955.1	946.9	942.8	948.3	945.6	952.4	956.5	960.6	985.2	1010.3	1035.3
50°	1095.9	1090.9	1084.5	1085.0	1090.0	1085.4	1088.1	1103.2	1111.4	1132.3	1165.6
52.5°	1320.9	1305.4	1281.3	1270.8	1276.7	1273.1	1274.4	1277.6	1272.2	1291.7	1320.0
55°	1598.7	1578.7	1562.8	1553.6	1519.9	1517.2	1494.9	1486.7	1468.9	1487.6	1481.2
57.5°	1796.9	1784.1	1775.9	1748.6	1733.1	1702.1	1693.0	1682.1	1657.5	1669.8	1680.7
60°	2179.5	2133.9	2118.4	2070.6	2054.7	2025.1	1987.3	1968.6	1955.8	1967.7	1960.4
62.5°	2818.1	2754.7	2742.4	2629.0	2601.2	2532.9	2461.9	2452.3	2412.2	2387.2	2381.2
65°	3441.6	3351.0	3283.1	3159.2	3075.4	2977.9	2869.5	2790.3	2708.7	2667.7	2613.5
66°	3488.1	3452.1	3383.8	3311.3	3189.3	3082.7	2959.7	2874.1	2782.5	2710.6	2664.1
67.5°	3408.8	3389.7	3365.5	3316.3	3239.8	3140.5	3023.9	2914.6	2804.4	2719.7	2645.4
70°	2881.4	2902.3	2929.6	2916.9	2873.2	2834.5	2731.5	2670.5	2587.6	2476.4	2430.9
72.5°	2174.9	2230.9	2211.8	2139.8	2106.1	2079.3	2041.9	2000.9	1882.0	1868.4	1814.6
75°	1399.2	1380.6	1392.9	1305.4	1245.7	1221.1	1132.3	1095.9	1006.6	948.8	904.6
77.5°	737.4	701.0	672.7	595.8	540.7	508.3	465.0	414.0	335.7	331.1	259.6
80°	342.1	314.3	288.8	261.9	235.0	199.5	173.1	141.2	124.8	107.0	99.8
82.5°	232.3	214.5	199.0	181.3	160.8	136.2	117.5	99.8	85.2	76.5	69.7
85°	210.4	191.3	174.0	151.7	130.3	109.8	89.7	74.2	60.6	52.8	48.3
87.5°	204.5	180.8	162.6	138.5	117.5	96.6	77.4	60.1	46.9	38.3	32.8
90°	34.0	36.0	28.4	27.7	17.0	19.5	16.7	13.6	14.0	12.6	13.1
92.5°	7.0	7.0	7.0	7.0	7.0	7.0	6.9	6.8	6.7	6.6	6.5
95°	7.5	7.6	7.7	7.8	7.9	8.0	7.9	7.8	7.7	7.6	7.5
97.5°	11.0	10.8	10.6	10.4	10.2	10.0	9.9	9.8	9.7	9.6	9.5
100°	27.5	27.2	26.9	26.6	26.3	26.0	25.7	25.4	25.1	24.8	24.5
102.5°	48.5	48.2	47.9	47.6	47.3	47.0	46.5	46.0	45.5	45.0	44.5
105°	71.0	70.8	70.6	70.4	70.2	70.0	69.5	69.0	68.5	68.0	67.5
107.5°	94.5	94.4	94.3	94.2	94.1	94.0	93.6	93.2	92.8	92.4	92.0



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CATALOG NUMBER: IST-AF-450-LED-E1-SL3-7060-ULG

CANDELA DISTRIBUTION (continued):

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



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CANDELA DISTRIBUTION (continued):

	71°	72°	73°	74°	75°	76°	77°	78°	79°	80°	81°
0°	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1
2.5°	815.3	813.9	815.3	814.9	813.0	813.5	813.9	812.1	811.2	811.2	810.8
5°	808.0	807.1	808.0	807.6	804.8	804.4	804.4	803.0	801.2	799.8	798.9
7.5°	790.7	791.6	791.2	789.8	788.4	788.4	787.1	783.9	782.1	780.2	778.4
10°	771.1	771.1	771.6	771.1	768.8	767.9	766.1	764.3	764.8	760.2	756.6
12.5°	753.8	753.8	753.4	752.5	751.1	750.6	750.6	745.2	743.8	742.4	738.3
15°	737.4	738.3	738.3	738.3	736.1	736.1	733.8	730.1	730.1	726.0	721.9
17.5°	724.7	726.0	725.6	726.0	726.5	723.8	719.7	717.4	714.6	712.4	706.9
20°	713.7	714.6	715.1	715.1	713.7	711.9	708.3	704.6	702.8	698.3	691.4
22.5°	703.7	705.5	706.0	706.0	704.2	702.8	699.2	693.7	690.1	684.6	678.2
25°	699.6	701.9	700.5	701.4	699.6	696.4	691.4	686.9	681.4	674.6	667.7
27.5°	701.0	704.2	703.3	702.8	700.5	698.3	691.9	686.4	680.0	671.8	663.2
30°	709.2	714.6	712.4	710.5	710.1	704.6	698.7	691.0	683.7	674.1	664.1
32.5°	724.7	727.4	727.9	726.5	724.2	719.7	711.5	701.4	693.2	681.9	670.0
35°	750.2	752.9	752.0	752.0	749.7	742.4	732.4	722.4	711.0	698.3	686.0
37.5°	785.7	790.7	789.8	788.0	785.2	776.6	768.8	756.6	743.8	726.9	712.8
40°	830.3	838.1	844.9	843.5	837.2	829.4	822.1	808.0	795.3	776.6	761.1
42.5°	890.5	900.9	909.6	916.0	913.2	903.2	890.5	884.5	866.3	847.2	831.3
45°	967.4	989.3	997.0	1004.8	1004.8	998.4	995.7	983.8	964.7	939.2	924.2
47.5°	1069.0	1098.2	1106.8	1120.0	1127.8	1120.9	1115.9	1095.9	1083.1	1048.1	1044.4
50°	1192.4	1221.6	1245.3	1260.8	1258.5	1264.4	1252.6	1241.2	1223.4	1194.7	1184.7
52.5°	1350.0	1373.3	1394.7	1403.8	1413.4	1412.0	1409.3	1401.5	1379.2	1363.7	1338.2
55°	1511.7	1530.9	1556.8	1571.9	1584.2	1581.9	1571.4	1552.7	1556.8	1524.5	1510.4
57.5°	1695.8	1716.7	1744.9	1759.1	1764.5	1792.3	1785.5	1783.2	1775.5	1764.1	1749.5
60°	2012.3	2018.2	2041.5	2077.0	2120.7	2112.1	2123.0	2130.3	2135.7	2110.2	2108.4
62.5°	2389.4	2396.7	2416.8	2424.1	2430.4	2431.4	2416.8	2416.8	2391.7	2358.9	2333.4
65°	2595.3	2580.3	2566.6	2558.9	2542.0	2527.0	2505.1	2475.5	2433.2	2382.6	2337.1
66°	2624.9	2594.4	2576.6	2557.1	2530.2	2502.4	2476.4	2435.9	2386.3	2326.1	2266.0
67.5°	2596.2	2554.3	2512.9	2484.2	2446.8	2396.7	2351.2	2303.8	2256.9	2174.5	2118.4
70°	2334.3	2284.2	2238.7	2175.8	2116.6	2067.4	1989.1	1906.6	1838.8	1752.2	1697.1
72.5°	1733.6	1674.3	1615.1	1526.8	1440.7	1427.9	1329.5	1232.5	1180.6	1110.9	1054.9
75°	856.3	781.6	675.5	628.1	559.3	525.6	506.9	436.8	420.0	351.2	350.3
77.5°	241.9	207.7	184.5	160.8	150.8	143.5	118.4	113.4	102.9	101.1	95.2
80°	91.6	86.5	84.3	82.0	79.7	78.3	77.4	73.8	72.0	69.2	67.9
82.5°	66.0	64.2	60.1	58.8	56.9	54.2	53.7	51.5	50.1	47.4	46.5
85°	44.6	42.4	40.1	37.8	36.9	36.4	35.1	34.2	33.3	31.9	31.4
87.5°	30.1	27.8	25.1	24.1	23.7	24.1	24.6	23.7	23.2	22.3	21.9
90°	12.6	14.0	13.6	13.6	14.5	13.4	13.2	13.4	12.8	12.6	11.9
92.5°	6.4	6.3	6.2	6.1	6.0	6.0	6.0	6.0	6.0	6.0	6.0
95°	7.4	7.3	7.2	7.1	7.0	7.0	7.0	7.0	7.0	7.0	7.0
97.5°	9.4	9.3	9.2	9.1	9.0	8.9	8.8	8.7	8.6	8.5	8.4
100°	24.2	23.9	23.6	23.3	23.0	22.6	22.2	21.8	21.4	21.0	20.6
102.5°	44.0	43.5	43.0	42.5	42.0	41.7	41.4	41.1	40.8	40.5	40.2
105°	67.0	66.5	66.0	65.5	65.0	64.6	64.2	63.8	63.4	63.0	62.6
107.5°	91.6	91.2	90.8	90.4	90.0	89.7	89.4	89.1	88.8	88.5	88.2



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REPORT N
 CATALOG

CANDELA DISTRIBUTION (continued):

CANDELA

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

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REPORT NUMBER: P
 CATALOG NUMBER:

DISTRIBUTION (continued):

CANDELA DISTRIBUTION

82°	83°	84°	85°	86°	87°	88°	89°	90°	95°	105°	82°	
807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1	807.1	110°	116.9
809.8	808.5	808.9	807.1	806.7	807.6	808.0	808.0	806.7	798.5	788.9	112.5°	147.6
798.0	795.3	794.8	793.4	791.2	793.9	792.5	790.3	787.5	778.0	759.3	115°	177.6
776.1	774.3	772.0	770.2	768.8	767.9	767.5	765.2	760.2	742.4	711.0	117.5°	208.6
755.2	752.9	750.2	746.1	744.3	741.5	741.5	736.1	732.4	710.1	663.6	120°	243.6
734.7	730.6	729.2	726.5	721.5	719.2	716.0	710.5	705.1	678.2	617.2	122.5°	276.6
719.2	715.1	709.2	707.4	701.9	696.9	692.8	685.5	679.6	644.0	568.4	125°	310.0
702.3	699.2	692.8	688.7	682.8	676.8	670.0	660.9	656.8	611.7	522.0	127.5°	345.3
688.7	681.4	674.1	670.5	663.2	656.3	649.5	638.6	630.4	579.8	472.8	130°	379.6
672.7	666.4	658.6	652.2	642.2	634.5	626.7	615.4	605.3	547.5	423.1	132.5°	414.0
661.8	652.7	644.5	637.2	625.8	616.7	605.8	593.5	583.5	516.5	368.5	135°	449.1
655.4	646.3	635.8	626.7	613.5	603.1	591.2	577.5	564.8	491.5	317.0	137.5°	479.5
653.6	642.7	631.8	620.4	606.7	593.5	579.4	565.7	549.3	467.3	261.0	140°	507.5
659.1	645.9	633.6	619.9	604.0	588.9	574.8	557.1	540.7	446.4	205.9	142.5°	533.7
674.1	658.2	644.0	629.0	610.8	594.4	577.5	557.5	539.3	431.8	157.6	145°	558.9
697.8	682.8	666.4	651.3	630.4	612.2	593.5	572.1	550.2	425.9	118.9	147.5°	583.9
745.6	725.6	708.7	692.8	668.6	650.0	628.6	602.6	578.0	431.3	99.3	150°	605.1
812.6	787.5	772.0	757.9	727.9	707.4	682.8	653.2	625.4	446.8	87.5	152.5°	621.5
905.0	885.9	858.1	836.3	805.7	783.0	755.6	720.1	689.1	468.7	81.5	155°	637.4
1020.7	995.7	968.4	946.0	912.8	873.2	844.5	801.6	766.6	502.8	78.8	157.5°	650.0
1162.4	1132.3	1095.4	1076.8	1030.8	999.8	961.5	915.5	870.9	555.7	80.2	160°	660.3
1316.3	1284.0	1255.3	1219.8	1177.9	1143.3	1106.8	1058.1	1002.1	655.9	85.6	162.5°	668.6
1478.9	1458.0	1430.7	1384.7	1361.9	1318.2	1271.7	1218.0	1177.4	786.2	98.8	165°	678.6
1715.8	1693.0	1689.8	1644.7	1610.1	1570.5	1534.1	1489.4	1441.6	1017.5	129.8	167.5°	688.0
2080.2	2056.5	2029.6	1994.5	1953.6	1904.4	1859.3	1799.1	1745.9	1249.4	144.4	170°	695.4
2296.1	2252.3	2204.1	2150.8	2091.1	2030.1	1969.5	1892.5	1815.1	1263.5	130.3	172.5°	695.4
2277.9	2223.7	2162.2	2089.7	2026.9	1951.7	1886.6	1787.3	1716.7	1125.0	106.1	175°	694.6
2210.4	2136.2	2078.4	2011.9	1933.1	1865.6	1796.9	1698.9	1618.3	1031.7	97.0	177.5°	698.9
2037.8	1974.5	1894.3	1830.6	1772.3	1691.7	1627.0	1535.4	1479.9	894.6	87.0	180°	700.0
1628.8	1541.3	1473.5	1423.8	1357.8	1284.9	1227.5	1150.5	1101.4	592.1	75.2		
948.8	926.9	850.8	808.0	767.9	708.7	663.2	626.3	561.6	287.0	66.5		
292.4	271.9	269.2	228.7	241.9	206.8	201.3	183.1	183.1	110.2	52.4		
93.4	91.6	87.9	82.9	81.1	81.1	78.8	78.3	74.7	59.2	39.2		
66.0	64.7	63.3	61.9	61.0	61.5	59.7	58.8	57.8	42.8	31.0		
45.5	44.2	41.4	41.4	40.5	40.1	40.5	38.7	38.3	30.1	26.0		
31.0	30.5	30.1	29.6	29.2	28.7	28.2	26.9	26.0	21.0	18.2		
20.5	17.3	16.9	14.6	14.1	13.7	12.8	13.7	15.0	15.0	11.8		
12.2	11.5	11.8	11.6	10.6	11.1	11.1	10.2	10.2	11.6	13.1		
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		

'226957
 IST-AF-450-LED-E1-SL3-7060-ULG

REPORT NUMBER: P226957
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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°	807.1	807.1
147.4	147.2	147.0	147.0	147.0	147.0	147.0	147.0	147.0	149.0	2.5°	780.7	773.4
177.4	177.2	177.0	177.2	177.4	177.6	177.8	178.0	177.0	179.0	5°	739.2	722.8
208.4	208.2	208.0	208.2	208.4	208.6	208.8	209.0	208.0	210.0	7.5°	683.2	651.3
243.4	243.2	243.0	243.0	243.0	243.0	243.0	243.0	243.0	245.0	10°	619.0	573.0
276.4	276.2	276.0	276.2	276.4	276.6	276.8	277.0	276.0	278.0	12.5°	552.5	493.7
310.0	310.0	310.0	310.0	310.0	310.0	310.0	310.0	310.0	310.0	15°	490.6	412.7
345.2	345.1	345.0	345.4	345.8	346.2	346.6	347.0	345.0	346.0	17.5°	425.4	329.3
379.4	379.2	379.0	379.2	379.4	379.6	379.8	380.0	379.0	381.0	20°	363.0	248.7
414.0	414.0	414.0	414.2	414.4	414.6	414.8	415.0	414.0	414.0	22.5°	292.4	174.4
449.4	449.7	450.0	450.2	450.4	450.6	450.8	451.0	450.0	447.0	25°	214.5	126.6
480.0	480.5	481.0	481.2	481.4	481.6	481.8	482.0	481.0	476.0	27.5°	153.0	101.1
508.0	508.5	509.0	509.4	509.8	510.2	510.6	511.0	509.0	504.0	30°	114.3	85.2
533.8	533.9	534.0	534.4	534.8	535.2	535.6	536.0	534.0	533.0	32.5°	91.6	73.8
558.6	558.3	558.0	558.4	558.8	559.2	559.6	560.0	558.0	561.0	35°	77.9	67.0
583.6	583.3	583.0	583.4	583.8	584.2	584.6	585.0	583.0	586.0	37.5°	69.7	62.4
605.4	605.7	606.0	606.8	607.6	608.4	609.2	610.0	606.0	603.0	40°	65.1	60.1
622.0	622.5	623.0	624.0	625.0	626.0	627.0	628.0	623.0	618.0	42.5°	62.4	57.8
637.6	637.8	638.0	638.6	639.2	639.8	640.4	641.0	638.0	636.0	45°	61.0	56.5
650.0	650.0	650.0	651.0	652.0	653.0	654.0	655.0	650.0	650.0	47.5°	60.1	54.7
660.2	660.1	660.0	661.2	662.4	663.6	664.8	666.0	660.0	661.0	50°	59.2	54.7
668.4	668.2	668.0	669.2	670.4	671.6	672.8	674.0	668.0	670.0	52.5°	59.7	55.6
678.4	678.2	678.0	678.8	679.6	680.4	681.2	682.0	678.0	680.0	55°	61.9	55.6
688.0	688.0	688.0	689.2	690.4	691.6	692.8	694.0	688.0	688.0	57.5°	65.6	55.6
695.6	695.8	696.0	697.0	698.0	699.0	700.0	701.0	696.0	694.0	60°	68.3	56.5
695.6	695.8	696.0	697.0	698.0	699.0	700.0	701.0	696.0	694.0	62.5°	69.2	58.3
694.4	694.2	694.0	695.0	696.0	697.0	698.0	699.0	694.0	696.0	65°	68.3	59.2
698.6	698.3	698.0	698.8	699.6	700.4	701.2	702.0	698.0	701.0	66°	67.4	59.2
700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	700.0	67.5°	66.0	58.3
										70°	62.9	54.7
										72.5°	56.5	49.2
										75°	48.3	39.6
										77.5°	39.2	31.9
										80°	29.2	24.1
										82.5°	21.4	18.7
										85°	15.0	13.2
										87.5°	9.1	8.2
										90°	11.3	9.3
										92.5°	7.0	7.0
										95°	8.0	7.0
										97.5°	10.0	12.0
										100°	26.0	29.0
										102.5°	47.0	50.0
										105°	70.0	72.0
										107.5°	94.0	95.0



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tinued):

135°	145°	155°	165°	175°	180°
807.1	807.1	807.1	807.1	807.1	807.1
768.4	767.9	756.6	754.3	746.5	750.6
703.3	695.5	675.0	670.9	662.3	660.0
625.4	604.0	587.6	569.3	552.0	560.7
534.3	498.3	462.3	438.6	429.1	425.9
447.7	383.1	338.0	291.5	275.1	281.0
343.0	269.2	209.1	182.2	166.7	164.0
241.9	172.6	144.8	138.0	134.8	134.8
164.0	131.6	121.2	118.0	118.0	118.4
124.8	110.7	106.1	106.6	108.4	108.9
103.4	97.9	95.7	98.8	102.5	102.9
89.3	87.9	88.4	92.5	96.1	96.6
78.3	79.7	81.5	85.2	88.4	89.3
70.6	72.9	74.2	76.5	78.3	78.8
65.1	67.9	67.4	68.8	70.1	70.6
61.9	63.3	61.9	62.9	62.9	63.8
59.2	59.7	57.4	57.8	58.8	58.8
56.5	56.0	53.7	54.7	56.0	56.5
53.7	52.8	51.0	52.8	55.1	55.6
51.5	50.6	49.6	51.9	54.7	55.1
50.6	49.6	48.7	51.9	54.7	55.1
50.6	49.6	48.7	51.0	53.7	54.2
51.0	50.1	48.3	50.6	52.4	52.8
51.5	50.6	47.4	48.7	49.6	50.1
51.5	49.6	46.5	46.9	46.9	47.4
50.6	48.3	44.6	44.6	44.2	44.2
50.6	46.5	42.8	41.9	41.0	41.0
50.1	46.0	42.4	41.0	39.6	39.6
49.2	45.1	41.4	39.6	38.3	38.3
46.0	43.3	39.2	37.3	36.0	35.5
41.0	39.6	36.4	35.1	33.7	33.3
34.6	35.1	33.3	32.3	31.0	30.5
29.2	30.1	29.2	28.7	27.8	27.3
23.2	25.1	24.1	24.1	24.6	23.7
17.8	20.0	19.1	20.0	21.0	19.6
12.3	14.6	14.6	15.0	15.5	14.6
7.7	9.6	9.1	9.6	9.6	9.1
8.8	11.2	9.8	9.7	7.3	6.8
6.0	6.0	6.0	5.0	4.0	4.0
7.0	7.0	7.0	6.0	5.0	5.0
9.0	9.0	8.0	8.0	7.0	7.0
21.0	12.0	10.0	9.0	8.0	8.0
40.0	27.0	18.0	13.0	11.0	11.0
63.0	48.0	36.0	27.0	22.0	21.0
88.0	73.0	58.0	49.0	42.0	41.0

CANDELA DISTRIBUTION (continued):

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



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

(END OF REPORT)