

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: P271703

Luminaire Tested: **IST-AF-450-LED-E1-SL3-7027-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P271703  
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-SL3-7027-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) 2700K CCT, 70 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4285.1 lumens  
Efficiency: N/A  
Efficacy: 102.0 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

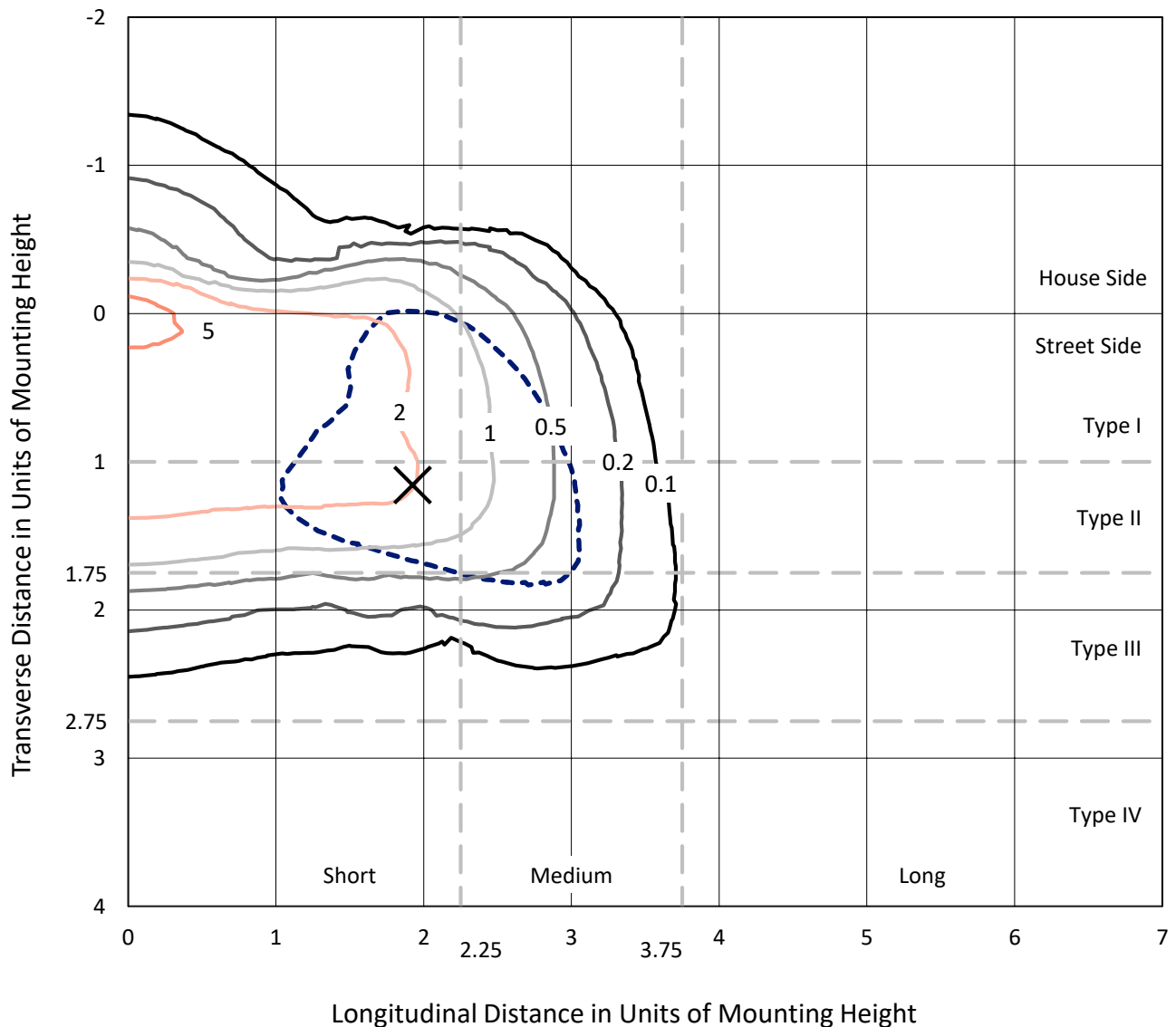


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### Iso-Footcandle Lines of Horizontal Illumination

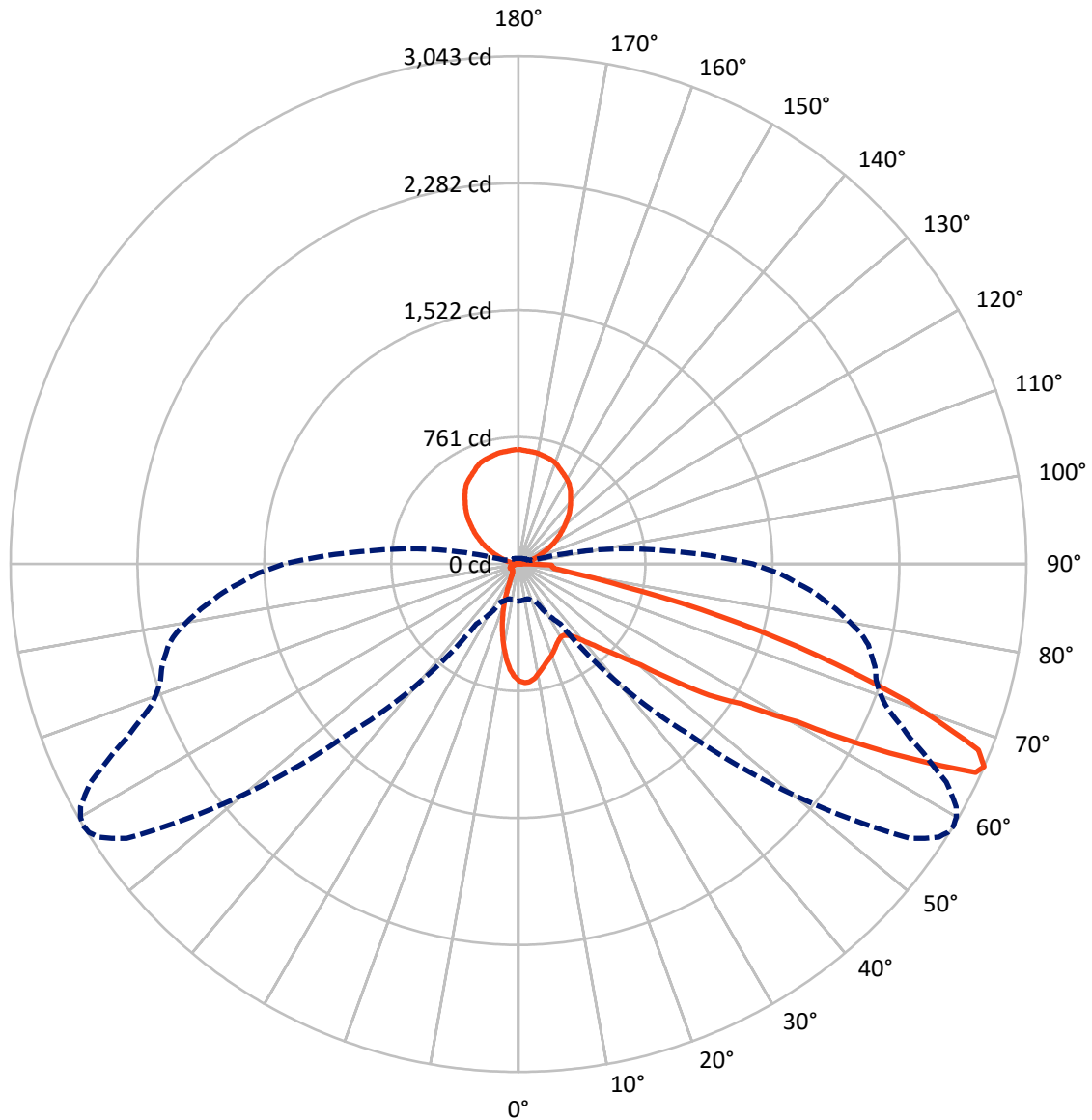
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 7 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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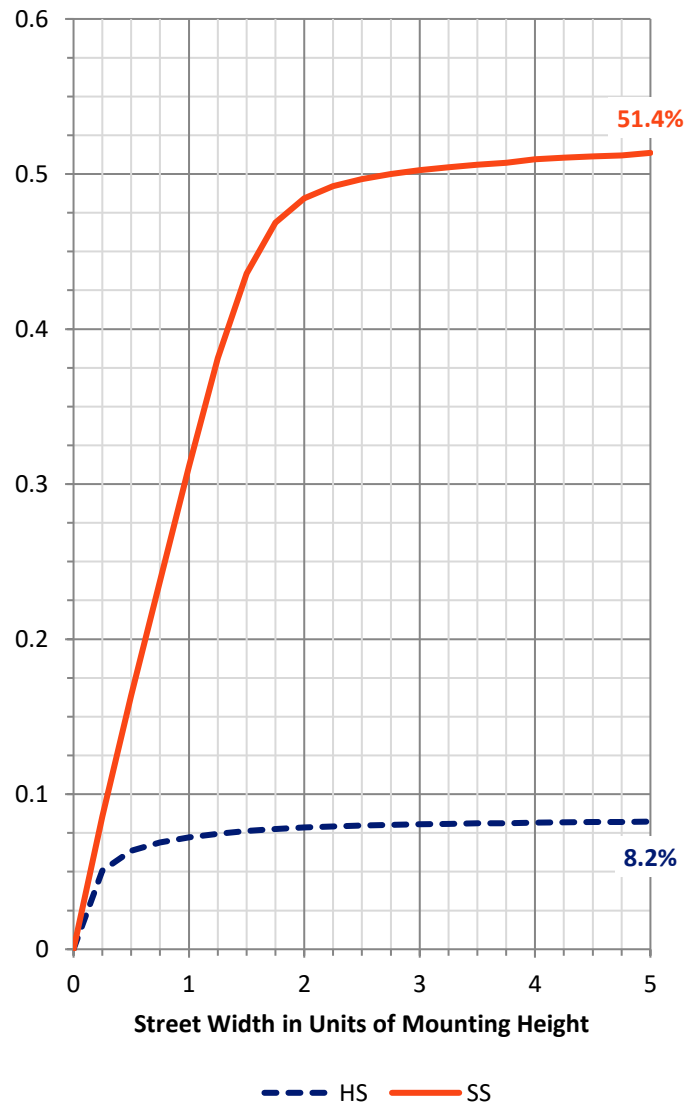
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	358.6	851.6	1210.3
	% Fixture	8.4	19.9	28.2
<b>Street Side</b>	Lumens	2222.4	852.4	3074.9
	% Fixture	51.9	19.9	71.8
<b>Total</b>	Lumens	2581.0	1704.1	4285.1
	% Fixture	60.2	39.8	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	59.8	1.4
10°-20°	126.3	2.9
20°-30°	158.4	3.7
30°-40°	216.7	5.1
40°-50°	348.6	8.1
50°-60°	605.7	14.1
60°-70°	736.0	17.2
70°-80°	274.6	6.4
80°-90°	55.0	1.3
90°-100°	10.2	0.2
100°-110°	56.3	1.3
110°-120°	163.0	3.8
120°-130°	268.1	6.3
130°-140°	330.6	7.7
140°-150°	338.2	7.9
150°-160°	284.9	6.6
160°-170°	187.6	4.4
170°-180°	65.0	1.5
0°-90°	2581.0	60.2
0°-180°	4285.1	100.0



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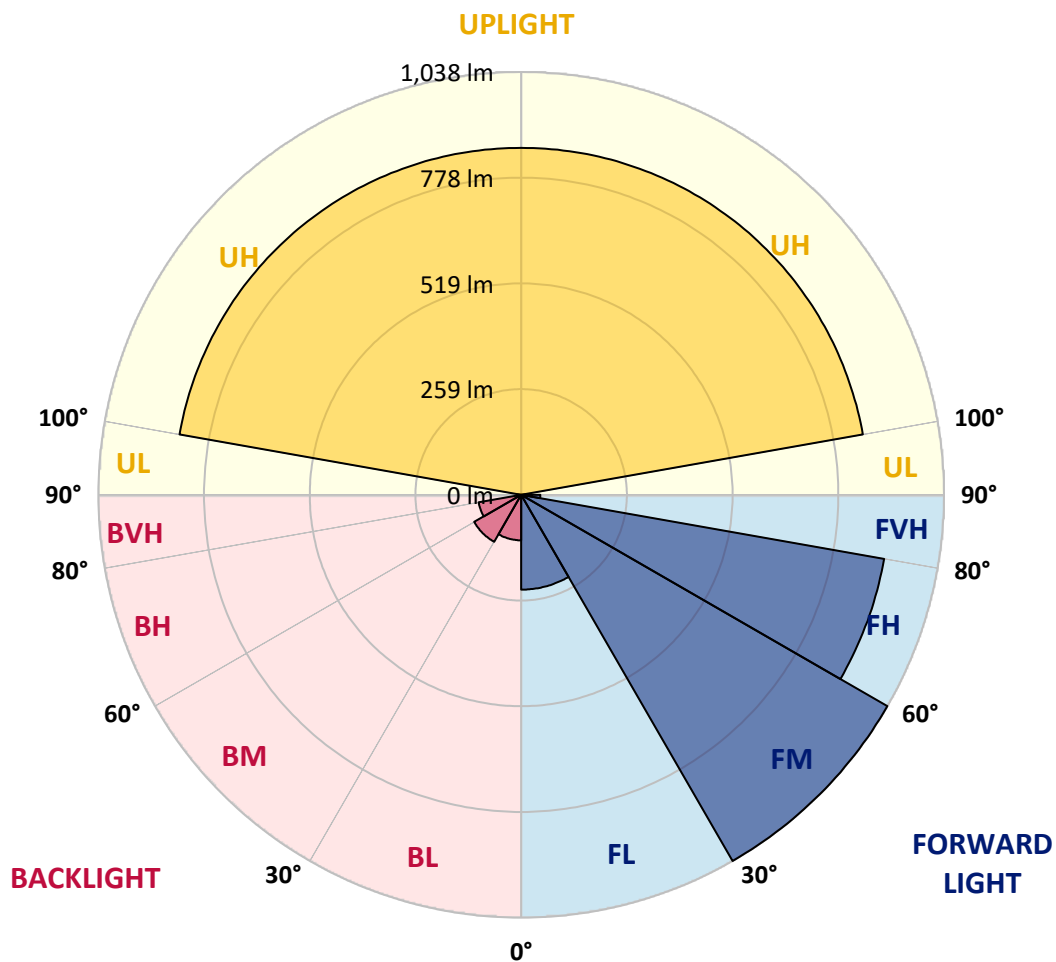
CATALOG NUMBER: IST-AF-450-LED-E1-SL3-7027-ULG

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	232.8	5.4			
FM (30°-60°)	1037.9	24.2			
FH (60°-80°)	904.7	21.1			G1/1800
FVH (80°-90°)	47.1	1.1			G1/100
BL (0°-30°)	111.7	2.6	B1/500		
BM (30°-60°)	133.1	3.1	B0/220		
BH (60°-80°)	105.9	2.5	B0/110		G0/110
BVH (80°-90°)	7.9	0.2			G0/10
UL (90°-100°)	10.2	0.2		U2/50	
UH (100°-180°)	851.6	19.9		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°	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3
2.5°	719.5	717.0	721.4	719.8	721.0	715.1	714.0	712.6	713.5	712.3	712.3
5°	702.5	701.3	706.3	709.1	711.5	710.6	710.3	710.3	710.6	708.0	708.3
7.5°	652.6	651.8	658.9	664.0	675.4	682.3	691.0	691.3	692.1	691.0	693.3
10°	599.5	602.0	608.2	616.6	633.6	643.8	660.4	663.7	664.8	665.3	665.6
12.5°	548.9	546.5	554.4	570.2	593.2	609.8	630.8	632.4	634.3	637.1	640.0
15°	503.8	506.6	512.8	529.6	553.6	577.0	604.3	605.9	609.8	612.1	616.1
17.5°	472.9	472.9	480.1	495.4	518.1	547.7	582.1	584.9	588.0	591.3	595.6
20°	457.5	457.5	460.2	469.4	489.0	517.6	559.1	562.2	567.9	571.4	577.4
22.5°	456.2	455.9	455.5	457.5	469.4	491.6	534.6	538.9	543.7	549.2	554.4
25°	468.9	470.2	465.4	462.2	463.3	473.7	511.2	513.7	522.7	526.2	532.7
27.5°	487.2	489.0	485.2	480.4	473.2	466.6	491.6	495.4	501.3	507.4	515.3
30°	513.2	512.8	512.4	509.2	495.4	474.5	485.5	488.3	493.5	498.2	504.9
32.5°	541.4	544.6	546.9	545.3	531.1	495.4	493.9	496.2	501.0	503.8	508.1
35°	577.8	579.4	588.4	588.4	574.2	533.1	517.2	519.2	521.6	522.7	525.9
37.5°	617.8	623.2	636.7	644.6	622.4	579.8	554.1	554.1	555.2	556.1	557.9
40°	664.0	671.9	690.5	705.6	691.3	637.9	602.3	605.9	604.6	603.1	607.4
42.5°	717.8	726.5	749.1	763.4	755.0	708.0	667.2	664.8	668.4	663.7	665.3
45°	780.4	787.1	810.0	825.1	831.8	793.8	752.3	747.5	747.5	737.1	741.6
47.5°	836.5	838.6	860.7	887.3	908.9	909.7	851.2	848.0	840.5	833.8	832.2
50°	888.9	894.7	908.9	937.9	983.4	1022.9	987.3	977.4	969.1	944.2	951.8
52.5°	979.4	990.9	1000.0	1017.4	1071.2	1151.5	1195.5	1180.0	1178.0	1155.5	1150.4
55°	996.4	997.6	1027.8	1128.2	1254.8	1312.6	1397.0	1396.5	1402.8	1395.8	1389.0
57.5°	916.5	907.0	957.2	1089.8	1344.2	1641.0	1615.3	1618.0	1609.9	1588.0	1581.4
60°	714.0	721.8	776.0	944.9	1279.7	1853.1	2022.9	1972.7	2008.7	1952.1	1921.7
62.5°	401.6	392.6	429.4	607.1	1049.8	1864.3	2578.1	2583.6	2601.1	2569.4	2495.0
65°	259.3	255.3	251.6	307.1	629.3	1630.7	2885.3	2953.3	2994.1	3010.7	3011.8
66°	222.8	219.6	215.2	251.3	438.5	1436.9	2865.4	2938.3	3003.1	3034.0	3043.1
67.5°	189.5	184.8	184.1	208.1	305.2	1114.8	2676.7	2791.0	2848.4	2928.4	2972.0
70°	144.9	142.4	149.6	179.6	234.3	524.7	2132.9	2282.1	2381.0	2443.6	2483.9
72.5°	121.5	120.7	130.6	164.2	222.0	297.6	1493.1	1653.3	1756.6	1816.4	1871.8
75°	95.0	95.8	108.9	156.8	220.8	259.3	867.4	1020.1	1080.3	1174.5	1246.6
77.5°	71.2	70.4	80.8	126.6	215.2	262.8	450.7	514.0	580.1	628.1	645.4
80°	49.9	50.7	57.9	87.0	167.8	270.3	281.0	295.6	309.5	324.8	328.0
82.5°	33.2	33.7	42.7	59.7	116.3	258.0	262.3	255.7	245.0	231.5	216.9
85°	20.2	21.0	30.5	40.3	90.2	233.5	271.5	253.6	237.4	219.6	201.8
87.5°	10.3	11.5	18.1	23.7	53.4	115.2	282.6	269.5	247.3	220.1	200.2
90°	7.6	7.6	10.8	13.7	18.5	30.3	78.2	71.1	39.3	68.5	37.7
92.5°	4.0	4.0	4.9	5.9	5.9	5.9	6.8	6.8	6.8	6.8	6.8
95°	4.9	4.9	5.9	6.8	6.8	6.8	6.8	7.0	7.1	7.2	7.3
97.5°	6.8	6.8	7.8	7.8	8.8	8.8	11.8	11.6	11.4	11.2	11.0
100°	7.8	7.8	8.8	9.8	11.8	20.6	28.5	28.2	27.8	27.6	27.3
102.5°	10.8	10.8	12.8	17.7	26.5	39.3	49.0	48.8	48.5	48.1	47.9
105°	20.6	21.6	26.5	35.3	47.1	61.8	70.7	70.4	70.2	70.1	69.9
107.5°	40.2	41.2	48.1	57.0	71.7	86.3	93.2	93.2	93.1	93.0	92.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	56°	57°	58°	59°
110°	64.8	66.7	72.7	85.4	100.1	111.9	117.8	117.9	117.9	118.0	118.1
112.5°	97.2	97.2	104.0	118.8	131.5	140.3	145.3	145.4	145.6	145.9	146.1
115°	137.4	136.5	144.3	156.0	164.9	170.8	175.7	176.0	176.2	176.6	176.9
117.5°	180.6	180.6	185.5	193.3	198.3	201.2	207.1	207.5	207.9	208.2	208.7
120°	220.8	218.8	221.8	228.7	232.6	238.5	241.5	241.8	242.3	242.6	243.0
122.5°	258.2	255.2	256.2	262.0	266.0	271.8	273.8	274.3	274.6	275.0	275.4
125°	292.5	288.5	290.5	293.5	299.3	304.3	307.2	307.4	307.6	307.8	308.0
127.5°	323.9	322.9	322.9	326.8	332.7	333.7	338.6	338.8	338.8	338.9	339.0
130°	356.3	354.3	355.3	359.2	363.2	365.1	370.0	370.4	370.8	371.2	371.6
132.5°	388.7	386.7	385.7	393.5	396.5	397.5	403.4	403.9	404.3	404.9	405.3
135°	421.0	418.1	418.1	424.0	427.0	428.9	434.8	435.3	435.8	436.3	436.8
137.5°	451.5	448.5	450.5	451.5	455.4	459.3	464.2	464.4	464.6	464.9	465.1
140°	479.0	476.0	478.0	480.0	481.9	487.8	490.7	490.9	491.1	491.4	491.6
142.5°	508.4	505.5	507.5	508.4	511.3	515.3	517.2	517.9	518.4	519.0	519.6
145°	539.8	535.9	534.0	536.8	539.8	540.8	545.7	546.3	546.9	547.4	548.1
147.5°	564.3	561.4	560.5	563.3	563.3	564.3	569.3	569.7	570.2	570.7	571.2
150°	584.0	581.0	582.0	582.0	582.0	582.0	586.0	586.2	586.5	586.9	587.1
152.5°	599.7	596.7	596.7	597.7	598.7	598.7	599.7	600.0	600.2	600.6	600.9
155°	617.3	613.5	613.5	615.4	618.3	616.3	614.4	614.9	615.4	615.9	616.3
157.5°	634.0	631.1	631.1	632.0	634.0	633.0	632.0	632.5	632.9	633.2	633.7
160°	650.7	647.8	646.8	643.8	642.8	642.8	645.8	646.4	647.0	647.6	648.1
162.5°	660.5	656.6	656.6	652.7	648.8	650.7	654.7	655.0	655.4	655.9	656.2
165°	668.4	665.5	663.5	663.5	660.5	660.5	659.5	660.1	660.5	661.1	661.5
167.5°	677.2	674.3	671.3	673.3	675.3	672.3	665.5	666.0	666.6	667.2	667.8
170°	685.0	682.2	679.2	679.2	680.2	678.2	673.3	673.5	673.9	674.2	674.4
172.5°	686.0	684.1	682.2	680.2	677.2	677.2	676.2	676.5	676.9	677.1	677.4
175°	687.0	685.0	684.1	682.2	678.2	677.2	677.2	677.7	678.2	678.7	679.2
177.5°	693.9	692.0	687.0	686.0	684.1	682.2	681.2	681.6	682.2	682.6	683.1
180°	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0





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**CANDELA DISTRIBUTION (continued):**

	60°	61°	62°	63°	64°	65°	66°	67°	68°	69°	70°
0°	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3
2.5°	711.9	712.6	711.9	710.6	711.9	710.6	710.3	709.9	710.3	709.5	709.1
5°	708.3	709.1	709.1	706.8	706.3	708.0	705.6	706.3	705.6	704.8	703.2
7.5°	691.3	691.8	692.1	690.5	691.8	691.8	691.0	691.0	690.2	690.5	689.0
10°	667.6	669.1	670.8	670.0	669.6	673.1	671.6	672.7	672.7	671.6	671.9
12.5°	641.9	644.6	646.6	646.6	648.1	652.2	651.8	652.6	655.8	655.8	654.5
15°	618.1	620.9	624.1	626.5	629.6	632.4	634.3	637.4	639.1	639.1	641.1
17.5°	599.5	603.5	607.1	608.2	612.6	617.3	618.6	622.4	624.8	626.0	628.5
20°	581.3	585.7	590.1	594.0	597.9	603.5	606.3	608.6	612.6	615.0	618.6
22.5°	559.9	566.7	572.2	577.0	583.7	588.4	594.0	597.9	602.8	606.3	609.1
25°	539.8	548.9	556.4	561.1	570.2	577.0	583.7	589.6	595.6	600.7	604.6
27.5°	521.2	531.4	540.6	548.1	557.9	568.6	575.4	585.2	593.2	600.2	605.1
30°	512.0	520.7	530.3	538.9	548.9	562.2	573.4	586.1	595.9	605.1	612.1
32.5°	514.0	521.9	530.3	537.7	548.1	563.1	574.6	589.3	603.9	615.8	624.8
35°	529.9	537.0	542.6	549.2	558.4	569.9	582.1	597.6	615.8	631.6	643.5
37.5°	563.1	565.1	570.6	575.7	580.6	591.3	602.8	615.8	636.7	653.3	670.0
40°	604.3	609.4	614.6	617.0	622.4	629.3	634.3	648.1	666.8	688.6	706.8
42.5°	665.6	667.6	668.4	669.1	671.1	675.9	683.4	696.1	714.3	733.6	753.9
45°	734.5	736.8	739.2	740.5	737.6	740.5	748.3	754.3	772.0	790.3	816.0
47.5°	829.9	822.7	819.2	823.8	821.5	827.5	831.0	834.5	855.9	877.7	899.6
50°	952.1	947.7	942.2	942.6	946.9	943.0	945.4	958.4	965.6	983.7	1012.7
52.5°	1147.7	1134.1	1113.2	1104.1	1109.1	1106.0	1107.3	1109.9	1105.3	1122.3	1146.8
55°	1389.0	1371.6	1357.7	1349.8	1320.5	1318.2	1298.8	1291.7	1276.2	1292.4	1286.9
57.5°	1561.2	1550.0	1542.9	1519.1	1505.6	1478.8	1471.0	1461.5	1440.1	1450.8	1460.3
60°	1893.5	1853.9	1840.4	1798.9	1785.1	1759.4	1726.5	1710.4	1699.2	1709.6	1703.2
62.5°	2448.3	2393.4	2382.7	2284.1	2260.0	2200.6	2138.9	2130.6	2095.7	2074.0	2068.9
65°	2990.1	2911.4	2852.4	2744.7	2671.9	2587.3	2493.1	2424.2	2353.4	2317.8	2270.6
66°	3030.4	2999.2	2939.8	2876.9	2770.8	2678.3	2571.4	2497.0	2417.5	2355.0	2314.7
67.5°	2961.6	2944.9	2924.1	2881.2	2814.7	2728.5	2627.3	2532.2	2436.5	2362.9	2298.3
70°	2503.4	2521.5	2545.3	2534.2	2496.2	2462.6	2373.1	2320.1	2248.1	2151.5	2111.9
72.5°	1889.6	1938.3	1921.7	1859.1	1829.8	1806.5	1774.1	1738.4	1635.2	1623.2	1576.5
75°	1215.7	1199.5	1210.2	1134.1	1082.3	1061.0	983.7	952.1	874.6	824.3	785.8
77.5°	640.7	609.1	584.4	517.6	469.7	441.7	404.1	359.7	291.7	287.6	225.6
80°	297.2	273.1	250.9	227.5	204.2	173.4	150.4	122.7	108.4	93.0	86.7
82.5°	201.8	186.4	172.9	157.6	139.7	118.4	102.0	86.7	74.0	66.5	60.5
85°	182.9	166.2	151.2	131.8	113.2	95.4	78.0	64.5	52.6	45.9	42.0
87.5°	177.7	157.1	141.2	120.4	102.0	83.9	67.2	52.2	40.7	33.2	28.5
90°	30.5	32.2	25.6	25.1	15.8	18.0	15.6	12.8	13.1	11.9	12.4
92.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.7	6.6	6.6	6.5	6.4
95°	7.4	7.5	7.5	7.6	7.7	7.8	7.7	7.6	7.5	7.5	7.4
97.5°	10.8	10.6	10.4	10.2	10.0	9.8	9.7	9.6	9.5	9.4	9.3
100°	26.9	26.7	26.4	26.1	25.8	25.5	25.2	25.0	24.6	24.3	24.1
102.5°	47.6	47.3	47.0	46.7	46.4	46.2	45.6	45.2	44.6	44.2	43.7
105°	69.7	69.5	69.3	69.1	68.9	68.7	68.2	67.7	67.2	66.7	66.3
107.5°	92.7	92.6	92.5	92.4	92.3	92.3	91.9	91.4	91.1	90.7	90.3



REPORT NUMBER: P271703

CATALOG NUMBER: IST-AF-450-LED-E1-SL3-7027-ULG

**CANDELA DISTRIBUTION (continued):**

	60°	61°	62°	63°	64°	65°	66°	67°	68°	69°	70°
110°	118.3	118.4	118.5	118.6	118.7	118.8	118.6	118.4	118.1	117.9	117.8
112.5°	146.2	146.4	146.6	146.9	147.1	147.2	147.1	147.1	147.0	146.9	146.7
115°	177.1	177.4	177.8	178.0	178.3	178.7	178.3	178.0	177.8	177.4	177.1
117.5°	209.0	209.5	209.8	210.2	210.7	211.0	210.6	210.0	209.6	209.0	208.6
120°	243.4	243.8	244.2	244.6	245.0	245.3	244.9	244.4	243.9	243.4	242.9
122.5°	275.8	276.2	276.6	276.9	277.4	277.8	277.3	276.8	276.3	275.8	275.3
125°	308.2	308.4	308.6	308.7	308.9	309.2	308.7	308.2	307.7	307.2	306.7
127.5°	339.1	339.2	339.3	339.4	339.5	339.6	339.6	339.6	339.6	339.6	339.6
130°	372.0	372.3	372.8	373.2	373.5	374.0	374.0	374.0	374.0	374.0	374.0
132.5°	405.9	406.3	406.8	407.3	407.8	408.3	408.1	407.9	407.7	407.5	407.3
135°	437.3	437.7	438.2	438.7	439.2	439.7	439.6	439.5	439.5	439.3	439.2
137.5°	465.2	465.4	465.6	465.8	466.0	466.2	466.3	466.4	466.5	466.6	466.7
140°	491.7	491.9	492.1	492.3	492.5	492.7	492.9	493.1	493.3	493.5	493.7
142.5°	520.2	520.7	521.4	521.9	522.5	523.2	523.2	523.2	523.2	523.2	523.2
145°	548.7	549.2	549.9	550.4	551.0	551.6	551.5	551.4	551.3	551.2	551.1
147.5°	571.7	572.2	572.7	573.2	573.7	574.2	574.3	574.4	574.5	574.6	574.6
150°	587.4	587.7	588.0	588.3	588.6	588.9	589.2	589.5	589.7	590.1	590.4
152.5°	601.1	601.4	601.8	602.0	602.3	602.7	603.0	603.4	603.8	604.2	604.6
155°	616.9	617.3	617.9	618.3	618.8	619.3	619.8	620.3	620.8	621.3	621.8
157.5°	634.0	634.5	634.8	635.2	635.6	636.0	636.2	636.4	636.6	636.8	637.0
160°	648.8	649.4	649.9	650.6	651.1	651.7	651.5	651.1	650.8	650.6	650.2
162.5°	656.6	657.0	657.4	657.8	658.2	658.5	658.5	658.4	658.3	658.2	658.1
165°	662.1	662.5	662.9	663.5	663.9	664.5	664.7	665.0	665.4	665.6	665.9
167.5°	668.4	669.0	669.6	670.1	670.8	671.3	671.8	672.1	672.5	672.9	673.3
170°	674.8	675.1	675.3	675.6	676.0	676.2	676.7	677.2	677.7	678.2	678.7
172.5°	677.7	678.0	678.3	678.6	678.8	679.2	679.4	679.6	679.7	679.9	680.2
175°	679.7	680.2	680.6	681.2	681.6	682.2	682.3	682.4	682.4	682.5	682.6
177.5°	683.6	684.1	684.6	685.0	685.6	686.0	686.2	686.5	686.7	686.8	687.0
180°	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0



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CATALOG NUMBER: IST-AF-450-LED-E1-SL3-7027-ULG

**CANDELA DISTRIBUTION (continued):**

	71°	72°	73°	74°	75°	76°	77°	78°	79°	80°	81°
0°	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3
2.5°	708.3	707.1	708.3	708.0	706.3	706.8	707.1	705.6	704.8	704.8	704.5
5°	702.0	701.3	702.0	701.7	699.2	698.8	698.8	697.6	696.1	694.9	694.1
7.5°	686.9	687.7	687.3	686.1	685.0	685.0	683.8	681.1	679.5	678.0	676.3
10°	670.0	670.0	670.3	670.0	668.0	667.2	665.6	664.0	664.5	660.4	657.3
12.5°	655.0	655.0	654.5	653.8	652.6	652.2	652.2	647.4	646.2	645.1	641.5
15°	640.7	641.5	641.5	641.5	639.5	639.5	637.4	634.3	634.3	630.8	627.3
17.5°	629.6	630.8	630.4	630.8	631.1	628.8	625.2	623.2	620.9	618.9	614.2
20°	620.1	620.9	621.3	621.3	620.1	618.6	615.4	612.1	610.6	606.6	600.7
22.5°	611.4	612.9	613.4	613.4	611.7	610.6	607.4	602.8	599.5	594.8	589.3
25°	607.8	609.8	608.6	609.4	607.8	605.1	600.7	596.7	592.1	586.1	580.1
27.5°	609.1	611.7	610.9	610.6	608.6	606.6	601.1	596.4	590.8	583.7	576.2
30°	616.1	620.9	618.9	617.3	617.0	612.1	607.1	600.2	594.0	585.7	577.0
32.5°	629.6	632.0	632.4	631.1	629.3	625.2	618.1	609.4	602.3	592.4	582.1
35°	651.8	654.1	653.3	653.3	651.5	645.1	636.3	627.6	617.8	606.6	595.9
37.5°	682.6	686.9	686.1	684.6	682.3	674.6	668.0	657.3	646.2	631.6	619.3
40°	721.4	728.2	734.1	732.8	727.4	720.6	714.3	702.0	691.0	674.6	661.2
42.5°	773.6	782.7	790.3	795.8	793.5	784.7	773.6	768.5	752.7	736.0	722.1
45°	840.5	859.5	866.2	873.0	873.0	867.4	865.1	854.7	838.2	816.0	802.9
47.5°	928.8	954.1	961.6	973.0	979.8	973.9	969.5	952.1	941.1	910.5	907.4
50°	1036.0	1061.3	1081.9	1095.3	1093.3	1098.5	1088.3	1078.3	1063.0	1038.0	1029.3
52.5°	1173.0	1193.1	1211.7	1219.6	1227.9	1226.7	1224.4	1217.7	1198.2	1184.9	1162.7
55°	1313.4	1330.0	1352.6	1365.6	1376.3	1374.4	1365.2	1349.1	1352.6	1324.6	1312.2
57.5°	1473.3	1491.5	1516.0	1528.3	1533.0	1557.2	1551.2	1549.3	1542.5	1532.7	1520.0
60°	1748.3	1753.4	1773.6	1804.4	1842.5	1835.0	1844.5	1850.8	1855.6	1833.4	1831.8
62.5°	2075.9	2082.3	2099.7	2106.1	2111.6	2112.4	2099.7	2099.7	2078.0	2049.4	2027.3
65°	2254.8	2241.8	2230.0	2223.1	2208.6	2195.5	2176.4	2150.7	2113.9	2070.1	2030.5
66°	2280.5	2254.0	2238.6	2221.6	2198.2	2174.1	2151.5	2116.4	2073.2	2021.0	1968.7
67.5°	2255.6	2219.3	2183.2	2158.3	2125.7	2082.3	2042.7	2001.5	1960.8	1889.1	1840.4
70°	2028.1	1984.5	1945.0	1890.3	1838.9	1796.3	1728.1	1656.6	1597.5	1522.4	1474.5
72.5°	1506.1	1454.6	1403.2	1326.4	1251.7	1240.6	1155.1	1070.8	1025.8	965.2	916.5
75°	744.0	679.1	586.9	545.7	485.9	456.7	440.5	379.5	364.8	305.2	304.3
77.5°	210.1	180.5	160.3	139.7	131.1	124.7	102.9	98.5	89.4	87.9	82.7
80°	79.5	75.2	73.2	71.2	69.3	68.0	67.2	64.0	62.5	60.2	59.0
82.5°	57.4	55.8	52.2	51.0	49.5	47.1	46.7	44.7	43.6	41.1	40.3
85°	38.8	36.8	34.9	32.9	32.1	31.7	30.5	29.6	28.8	27.7	27.3
87.5°	26.1	24.2	21.8	21.0	20.6	21.0	21.4	20.6	20.2	19.4	19.0
90°	11.9	13.1	12.8	12.8	13.6	12.6	12.4	12.6	11.9	11.8	11.2
92.5°	6.3	6.2	6.1	6.0	5.9	5.9	5.9	5.9	5.9	5.9	5.9
95°	7.3	7.2	7.1	7.0	6.8	6.8	6.8	6.8	6.8	6.8	6.8
97.5°	9.3	9.2	9.1	8.9	8.8	8.7	8.6	8.5	8.4	8.4	8.3
100°	23.7	23.4	23.2	22.9	22.5	22.2	21.8	21.4	21.0	20.6	20.2
102.5°	43.2	42.7	42.2	41.7	41.2	41.0	40.6	40.3	40.1	39.7	39.4
105°	65.8	65.3	64.8	64.3	63.8	63.4	63.0	62.6	62.3	61.8	61.4
107.5°	89.9	89.5	89.1	88.8	88.3	88.0	87.8	87.5	87.1	86.9	86.6



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REPORT N  
 CATALOG

**CANDELA DISTRIBUTION (continued):**

**CANDELA**

	71°	72°	73°	74°	75°	76°	77°	78°	79°	80°	81°	
110°	117.6	117.4	117.2	117.0	116.8	116.5	116.2	115.9	115.6	115.3	115.1	0°
112.5°	146.6	146.5	146.4	146.3	146.2	146.1	145.9	145.6	145.4	145.3	145.1	2.5°
115°	176.9	176.6	176.2	176.0	175.7	175.5	175.3	175.1	174.9	174.7	174.5	5°
117.5°	208.0	207.6	207.1	206.6	206.1	205.9	205.7	205.5	205.4	205.2	204.9	7.5°
120°	242.5	241.9	241.5	240.9	240.5	240.3	240.0	239.8	239.7	239.5	239.3	10°
122.5°	274.8	274.3	273.8	273.4	272.8	272.6	272.5	272.3	272.1	271.8	271.6	12.5°
125°	306.2	305.7	305.2	304.7	304.3	304.3	304.3	304.3	304.3	304.3	304.3	15°
127.5°	339.6	339.6	339.6	339.6	339.6	339.5	339.4	339.3	339.2	339.1	339.0	17.5°
130°	374.0	374.0	374.0	374.0	374.0	373.8	373.5	373.3	373.2	373.0	372.8	20°
132.5°	407.1	406.9	406.8	406.6	406.3	406.3	406.3	406.3	406.3	406.3	406.3	22.5°
135°	439.1	439.0	438.9	438.8	438.7	439.0	439.3	439.6	439.9	440.2	440.5	25°
137.5°	466.8	466.8	467.0	467.1	467.2	467.7	468.2	468.6	469.2	469.6	470.2	27.5°
140°	493.9	494.1	494.2	494.4	494.7	495.1	495.7	496.1	496.7	497.1	497.6	30°
142.5°	523.2	523.2	523.2	523.2	523.2	523.3	523.4	523.4	523.5	523.6	523.7	32.5°
145°	551.0	550.9	550.8	550.8	550.6	550.3	550.0	549.8	549.4	549.1	548.9	35°
147.5°	574.7	574.8	574.9	575.1	575.2	574.8	574.6	574.3	573.9	573.7	573.4	37.5°
150°	590.6	590.9	591.3	591.5	591.8	592.2	592.4	592.7	593.0	593.3	593.6	40°
152.5°	605.0	605.4	605.7	606.2	606.5	607.1	607.5	608.1	608.5	609.1	609.5	42.5°
155°	622.3	622.7	623.2	623.7	624.2	624.4	624.6	624.8	625.0	625.2	625.4	45°
157.5°	637.2	637.3	637.5	637.8	638.0	638.0	638.0	638.0	638.0	638.0	638.0	47.5°
160°	649.9	649.7	649.4	649.0	648.8	648.7	648.6	648.5	648.4	648.3	648.1	50°
162.5°	658.0	657.9	657.8	657.6	657.6	657.4	657.2	657.0	656.8	656.6	656.4	52.5°
165°	666.3	666.5	666.8	667.1	667.4	667.2	667.0	666.8	666.6	666.5	666.3	55°
167.5°	673.7	674.1	674.4	674.9	675.3	675.3	675.3	675.3	675.3	675.3	675.3	57.5°
170°	679.2	679.7	680.2	680.6	681.2	681.4	681.5	681.7	681.9	682.2	682.4	60°
172.5°	680.4	680.6	680.7	680.9	681.2	681.4	681.5	681.7	681.9	682.2	682.4	62.5°
175°	682.7	682.8	682.9	683.0	683.1	682.9	682.7	682.5	682.4	682.2	681.9	65°
177.5°	687.2	687.5	687.7	687.8	688.0	687.7	687.5	687.1	686.8	686.6	686.2	66°
180°	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	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°	
701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3	701.3	110°	114.7
703.6	702.5	702.8	701.3	700.9	701.7	702.0	702.0	700.9	693.7	685.4	112.5°	144.9
693.3	691.0	690.5	689.4	687.3	689.8	688.6	686.6	684.1	675.9	659.6	115°	174.3
674.3	672.7	670.8	669.1	668.0	667.2	666.8	664.8	660.4	645.1	617.8	117.5°	204.7
656.1	654.1	651.8	648.1	646.6	644.3	644.3	639.5	636.3	617.0	576.5	120°	239.1
638.2	634.7	633.6	631.1	626.8	624.8	622.1	617.3	612.6	589.3	536.2	122.5°	271.5
624.8	621.3	616.1	614.6	609.8	605.5	602.0	595.6	590.5	559.6	493.9	125°	304.3
610.2	607.4	602.0	598.3	593.2	588.0	582.1	574.2	570.6	531.4	453.6	127.5°	338.9
598.3	592.1	585.7	582.6	576.2	570.2	564.2	554.8	547.7	503.8	410.7	130°	372.5
584.4	579.0	572.2	566.7	557.9	551.2	544.6	534.6	525.9	475.7	367.7	132.5°	406.3
574.9	567.1	559.9	553.6	543.7	535.7	526.2	515.6	506.9	448.7	320.2	135°	440.8
569.4	561.5	552.5	544.6	533.1	523.9	513.7	501.7	490.7	427.0	275.4	137.5°	470.6
567.9	558.4	548.9	538.9	527.1	515.6	503.4	491.6	477.2	406.0	226.7	140°	498.1
572.6	561.1	550.4	538.5	524.7	511.7	499.4	484.0	469.7	387.8	178.9	142.5°	523.8
585.7	571.8	559.6	546.5	530.7	516.4	501.7	484.4	468.6	375.1	136.9	145°	548.5
606.3	593.2	579.0	565.9	547.7	531.9	515.6	497.0	478.1	370.0	103.2	147.5°	573.1
647.8	630.4	615.8	602.0	580.9	564.8	546.1	523.5	502.2	374.8	86.2	150°	593.9
706.0	684.1	670.8	658.5	632.4	614.6	593.2	567.5	543.4	388.2	76.0	152.5°	609.9
786.3	769.7	745.5	726.5	700.0	680.3	656.5	625.6	598.7	407.2	70.9	155°	625.6
886.9	865.1	841.4	821.9	793.0	758.6	733.6	696.5	666.0	436.8	68.5	157.5°	638.0
1009.9	983.7	951.8	935.5	895.5	868.6	835.3	795.4	756.6	482.7	69.7	160°	648.0
1143.6	1115.5	1090.6	1059.7	1023.3	993.3	961.6	919.2	870.5	569.9	74.4	162.5°	656.2
1284.9	1266.7	1243.0	1203.0	1183.2	1145.2	1104.8	1058.1	1022.9	683.0	85.9	165°	666.0
1490.6	1471.0	1468.1	1428.9	1398.9	1364.4	1332.7	1294.0	1252.5	884.0	112.7	167.5°	675.3
1807.3	1786.7	1763.4	1732.9	1697.3	1654.5	1615.3	1563.1	1516.8	1085.5	125.4	170°	682.5
1994.9	1956.9	1914.8	1868.7	1816.7	1763.7	1711.1	1644.3	1577.0	1097.8	113.2	172.5°	682.5
1979.1	1932.0	1878.4	1815.6	1760.9	1695.7	1639.0	1552.8	1491.5	977.4	92.2	175°	681.7
1920.5	1856.0	1805.8	1747.9	1679.4	1620.9	1561.2	1476.1	1405.9	896.3	84.4	177.5°	685.9
1770.5	1715.4	1645.9	1590.4	1539.8	1469.8	1413.6	1334.1	1285.7	777.2	75.5	180°	687.0
1415.1	1339.1	1280.2	1237.1	1179.7	1116.3	1066.5	999.6	956.9	514.4	65.3		
824.3	805.3	739.2	702.0	667.2	615.8	576.2	544.1	487.9	249.3	57.9		
254.0	236.3	233.9	198.6	210.1	179.6	174.9	159.1	159.1	95.8	45.5		
81.2	79.5	76.4	72.0	70.4	70.4	68.5	68.0	64.9	51.5	34.0		
57.4	56.2	55.0	53.8	53.0	53.4	51.8	51.0	50.2	37.2	26.9		
39.5	38.4	36.0	36.0	35.2	34.9	35.2	33.7	33.2	26.1	22.5		
26.9	26.5	26.1	25.7	25.3	25.0	24.5	23.4	22.5	18.1	15.8		
17.8	15.0	14.6	12.7	12.3	11.9	11.0	11.9	13.0	13.0	10.3		
11.4	10.8	11.0	10.8	10.0	10.4	10.4	9.6	9.6	10.8	12.4		
5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9		
6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8		
8.2	8.1	7.9	7.8	7.8	7.8	7.8	7.8	7.8	7.8	8.8		
19.9	19.4	19.0	18.7	18.7	18.7	18.7	18.7	18.7	18.7	22.5		
39.2	38.9	38.5	38.3	38.1	37.9	37.7	37.5	37.3	38.3	41.2		
61.1	60.6	60.3	59.8	59.8	59.8	59.8	59.8	59.8	59.8	63.8		
86.2	86.0	85.7	85.4	85.2	85.0	84.8	84.6	84.4	85.4	88.3		

271703  
 IST-AF-450-LED-E1-SL3-7027-ULG

REPORT NUMBER: P271703  
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**TION (continued):**

**CANDELA DISTRIBUTION (con**

83°	84°	85°	86°	87°	88°	89°	90°	95°	105°		115°	125°
114.4	114.2	113.8	114.1	114.3	114.4	114.6	114.8	113.8	116.8	0°	701.3	701.3
144.6	144.4	144.3	144.3	144.3	144.3	144.3	144.3	144.3	146.2	2.5°	678.3	671.9
174.1	173.9	173.7	173.9	174.1	174.3	174.5	174.7	173.7	175.7	5°	642.3	628.1
204.5	204.4	204.2	204.4	204.5	204.7	204.9	205.2	204.2	206.1	7.5°	593.6	565.9
238.9	238.7	238.5	238.5	238.5	238.5	238.5	238.5	238.5	240.5	10°	537.7	497.8
271.3	271.1	270.9	271.1	271.3	271.5	271.6	271.8	270.9	272.8	12.5°	480.1	429.0
304.3	304.3	304.3	304.3	304.3	304.3	304.3	304.3	304.3	304.3	15°	426.2	358.5
338.8	338.8	338.6	339.0	339.4	339.8	340.2	340.5	338.6	339.6	17.5°	369.7	286.1
372.3	372.2	372.0	372.2	372.3	372.5	372.8	373.0	372.0	374.0	20°	315.3	216.0
406.3	406.3	406.3	406.6	406.8	406.9	407.1	407.3	406.3	406.3	22.5°	254.0	151.5
441.1	441.3	441.7	441.9	442.1	442.2	442.4	442.7	441.7	438.7	25°	186.4	110.0
471.1	471.6	472.1	472.3	472.5	472.7	472.9	473.0	472.1	467.2	27.5°	132.9	87.9
498.6	499.1	499.5	500.0	500.4	500.7	501.2	501.5	499.5	494.7	30°	99.4	74.0
523.9	524.0	524.1	524.5	524.9	525.3	525.7	526.0	524.1	523.2	32.5°	79.5	64.0
548.2	548.0	547.7	548.1	548.4	548.9	549.2	549.7	547.7	550.6	35°	67.6	58.2
572.8	572.5	572.2	572.6	573.0	573.4	573.7	574.2	572.2	575.2	37.5°	60.5	54.2
594.2	594.5	594.8	595.6	596.4	597.1	597.9	598.7	594.8	591.8	40°	56.6	52.2
610.5	610.9	611.5	612.5	613.5	614.4	615.4	616.3	611.5	606.5	42.5°	54.2	50.2
625.8	626.0	626.2	626.7	627.4	627.9	628.5	629.2	626.2	624.2	45°	53.0	49.0
638.0	638.0	638.0	639.0	640.0	640.9	641.9	642.8	638.0	638.0	47.5°	52.2	47.5
647.9	647.9	647.8	648.9	650.1	651.3	652.5	653.7	647.8	648.8	50°	51.5	47.5
656.0	655.9	655.7	656.8	658.0	659.2	660.3	661.5	655.7	657.6	52.5°	51.8	48.3
665.8	665.6	665.5	666.3	667.0	667.8	668.6	669.3	665.5	667.4	55°	53.8	48.3
675.3	675.3	675.3	676.4	677.6	678.8	679.9	681.2	675.3	675.3	57.5°	57.0	48.3
682.7	682.9	683.1	684.1	685.0	686.0	687.0	688.0	683.1	681.2	60°	59.4	49.0
682.7	682.9	683.1	684.1	685.0	686.0	687.0	688.0	683.1	681.2	62.5°	60.2	50.7
681.5	681.4	681.2	682.2	683.1	684.1	685.0	686.0	681.2	683.1	65°	59.4	51.5
685.7	685.4	685.0	685.9	686.7	687.5	688.2	689.0	685.0	688.0	66°	58.6	51.5
687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	687.0	67.5°	57.4	50.7
										70°	54.5	47.5
										72.5°	49.0	42.7
										75°	42.0	34.5
										77.5°	34.0	27.7
										80°	25.3	21.0
										82.5°	18.5	16.2
										85°	13.0	11.5
										87.5°	7.9	7.2
										90°	10.8	8.8
										92.5°	6.8	6.8
										95°	7.8	6.8
										97.5°	9.8	11.8
										100°	25.5	28.5
										102.5°	46.2	49.0
										105°	68.7	70.7
										107.5°	92.3	93.2



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**tinued):**

135°	145°	155°	165°	175°	180°
701.3	701.3	701.3	701.3	701.3	701.3
667.6	667.2	657.3	655.3	648.6	652.2
610.9	604.3	586.4	582.9	575.4	573.4
543.4	524.7	510.5	494.7	479.6	487.2
464.2	432.9	401.6	381.2	372.8	370.0
389.0	332.8	293.7	253.2	238.9	244.2
298.0	233.9	181.6	158.3	144.9	142.4
210.1	149.9	125.9	119.9	117.0	117.0
142.4	114.4	105.2	102.5	102.5	102.9
108.4	96.2	92.2	92.5	94.2	94.6
89.8	85.1	83.1	85.9	89.0	89.4
77.5	76.4	76.7	80.3	83.5	83.9
68.0	69.3	70.9	74.0	76.7	77.5
61.4	63.3	64.5	66.5	68.0	68.5
56.6	59.0	58.6	59.7	60.9	61.4
53.8	55.0	53.8	54.5	54.5	55.3
51.5	51.8	49.9	50.2	51.0	51.0
49.0	48.7	46.7	47.5	48.7	49.0
46.7	45.9	44.4	45.9	47.9	48.3
44.7	43.9	43.1	45.2	47.5	47.9
43.9	43.1	42.3	45.2	47.5	47.9
43.9	43.1	42.3	44.4	46.7	47.1
44.4	43.6	42.0	43.9	45.5	45.9
44.7	43.9	41.1	42.3	43.1	43.6
44.7	43.1	40.3	40.7	40.7	41.1
43.9	42.0	38.8	38.8	38.4	38.4
43.9	40.3	37.2	36.4	35.7	35.7
43.6	40.0	36.8	35.7	34.5	34.5
42.7	39.2	36.0	34.5	33.2	33.2
40.0	37.5	34.0	32.5	31.4	30.8
35.7	34.5	31.7	30.5	29.3	28.8
30.0	30.5	28.8	28.0	26.9	26.5
25.3	26.1	25.3	25.0	24.2	23.7
20.2	21.8	21.0	21.0	21.4	20.6
15.5	17.3	16.6	17.3	18.1	17.0
10.7	12.7	12.7	13.0	13.5	12.7
6.7	8.4	7.9	8.4	8.4	7.9
8.4	10.6	9.4	9.3	6.8	6.5
5.9	5.9	5.9	4.9	4.0	4.0
6.8	6.8	6.8	5.9	4.9	4.9
8.8	8.8	7.8	7.8	6.8	6.8
20.6	11.8	9.8	8.8	7.8	7.8
39.3	26.5	17.7	12.8	10.8	10.8
61.8	47.1	35.3	26.5	21.6	20.6
86.3	71.7	57.0	48.1	41.2	40.2

**CANDELA DISTRIBUTION (continued):**

	115°	125°	135°
110°	118.8	117.8	111.9
112.5°	147.2	145.3	140.3
115°	178.7	175.7	170.8
117.5°	211.0	207.1	201.2
120°	245.3	241.5	238.5
122.5°	277.8	273.8	271.8
125°	309.2	307.2	304.3
127.5°	339.6	338.6	333.7
130°	374.0	370.0	365.1
132.5°	408.3	403.4	397.5
135°	439.7	434.8	428.9
137.5°	466.2	464.2	459.3
140°	492.7	490.7	487.8
142.5°	523.2	517.2	515.3
145°	551.6	545.7	540.8
147.5°	574.2	569.3	564.3
150°	588.9	586.0	582.0
152.5°	602.7	599.7	598.7
155°	619.3	614.4	616.3
157.5°	636.0	632.0	633.0
160°	651.7	645.8	642.8
162.5°	658.5	654.7	650.7
165°	664.5	659.5	660.5
167.5°	671.3	665.5	672.3
170°	676.2	673.3	678.2
172.5°	679.2	676.2	677.2
175°	682.2	677.2	677.2
177.5°	686.0	681.2	682.2
180°	687.0	687.0	687.0



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145°	155°	165°	175°	180°
100.1	85.4	72.7	66.7	64.8
131.5	118.8	104.0	97.2	97.2
164.9	156.0	144.3	136.5	137.4
198.3	193.3	185.5	180.6	180.6
232.6	228.7	221.8	218.8	220.8
266.0	262.0	256.2	255.2	258.2
299.3	293.5	290.5	288.5	292.5
332.7	326.8	322.9	322.9	323.9
363.2	359.2	355.3	354.3	356.3
396.5	393.5	385.7	386.7	388.7
427.0	424.0	418.1	418.1	421.0
455.4	451.5	450.5	448.5	451.5
481.9	480.0	478.0	476.0	479.0
511.3	508.4	507.5	505.5	508.4
539.8	536.8	534.0	535.9	539.8
563.3	563.3	560.5	561.4	564.3
582.0	582.0	582.0	581.0	584.0
598.7	597.7	596.7	596.7	599.7
618.3	615.4	613.5	613.5	617.3
634.0	632.0	631.1	631.1	634.0
642.8	643.8	646.8	647.8	650.7
648.8	652.7	656.6	656.6	660.5
660.5	663.5	663.5	665.5	668.4
675.3	673.3	671.3	674.3	677.2
680.2	679.2	679.2	682.2	685.0
677.2	680.2	682.2	684.1	686.0
678.2	682.2	684.1	685.0	687.0
684.1	686.0	687.0	692.0	693.9
687.0	687.0	687.0	687.0	687.0

(END OF REPORT)