

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: P227541

Luminaire Tested: **ISS-AF-450-LED-E1-T2-7050-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P227541  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29758)-DOWNLIGHT AND  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: ISS-AF-450-LED-E1-T2-7050-ULG  
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT  
LIGHT SQUARE WITH ACCULED OPTICS-TYPE II, WITH UPLIGHT GLOW  
Light Source: (16) 5000K CCT, 70 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

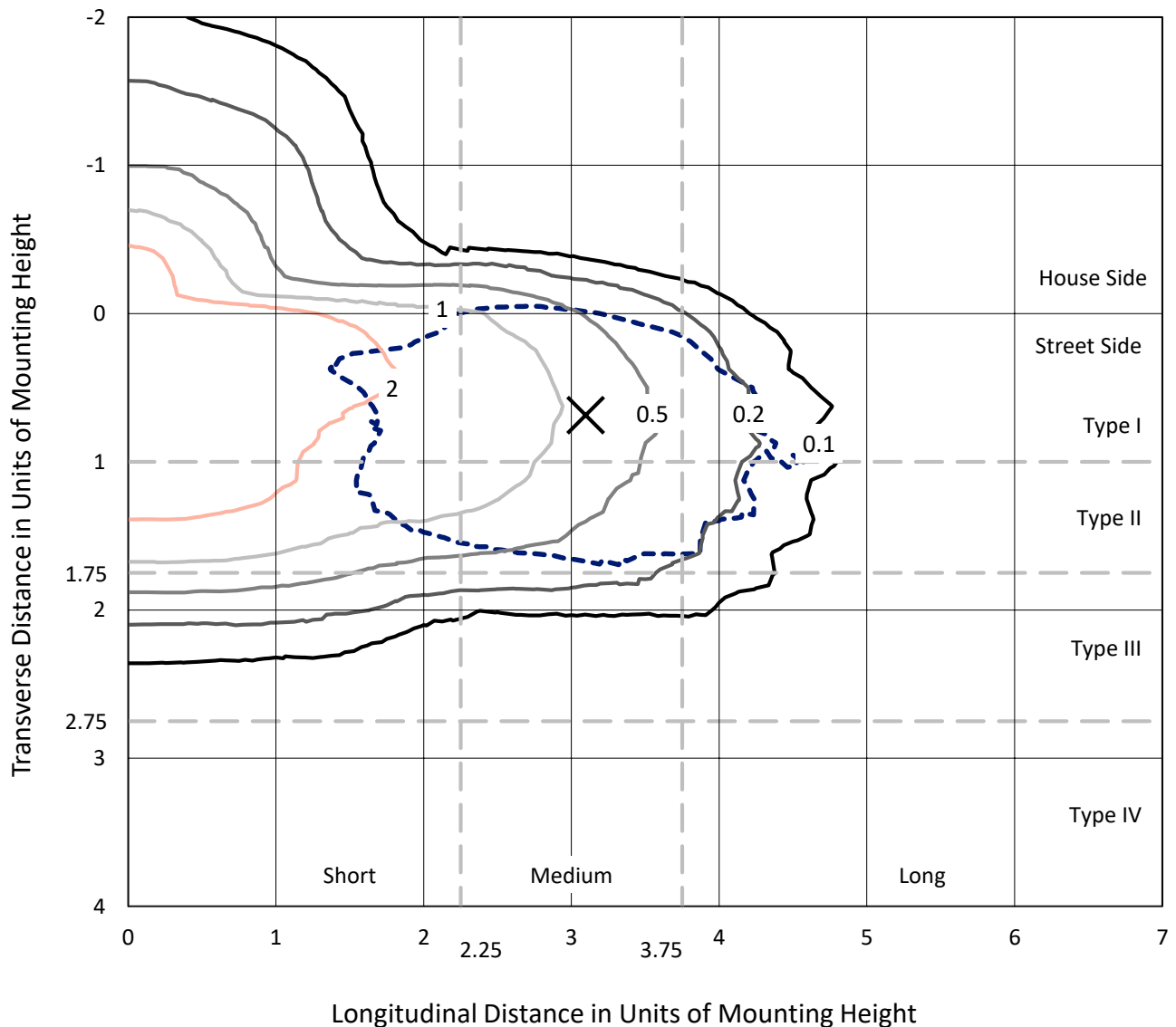
Lumens per Lamp: N/A  
Luminaire Lumens: 4360.2 lumens  
Efficiency: N/A  
Efficacy: 103.8 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')  
IES Classification: Type II - Medium - Non-Cutoff  
BUG Rating: B1 - U5 - G1  
  
Input Watts (W): 42.01  
Input Voltage (V): 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

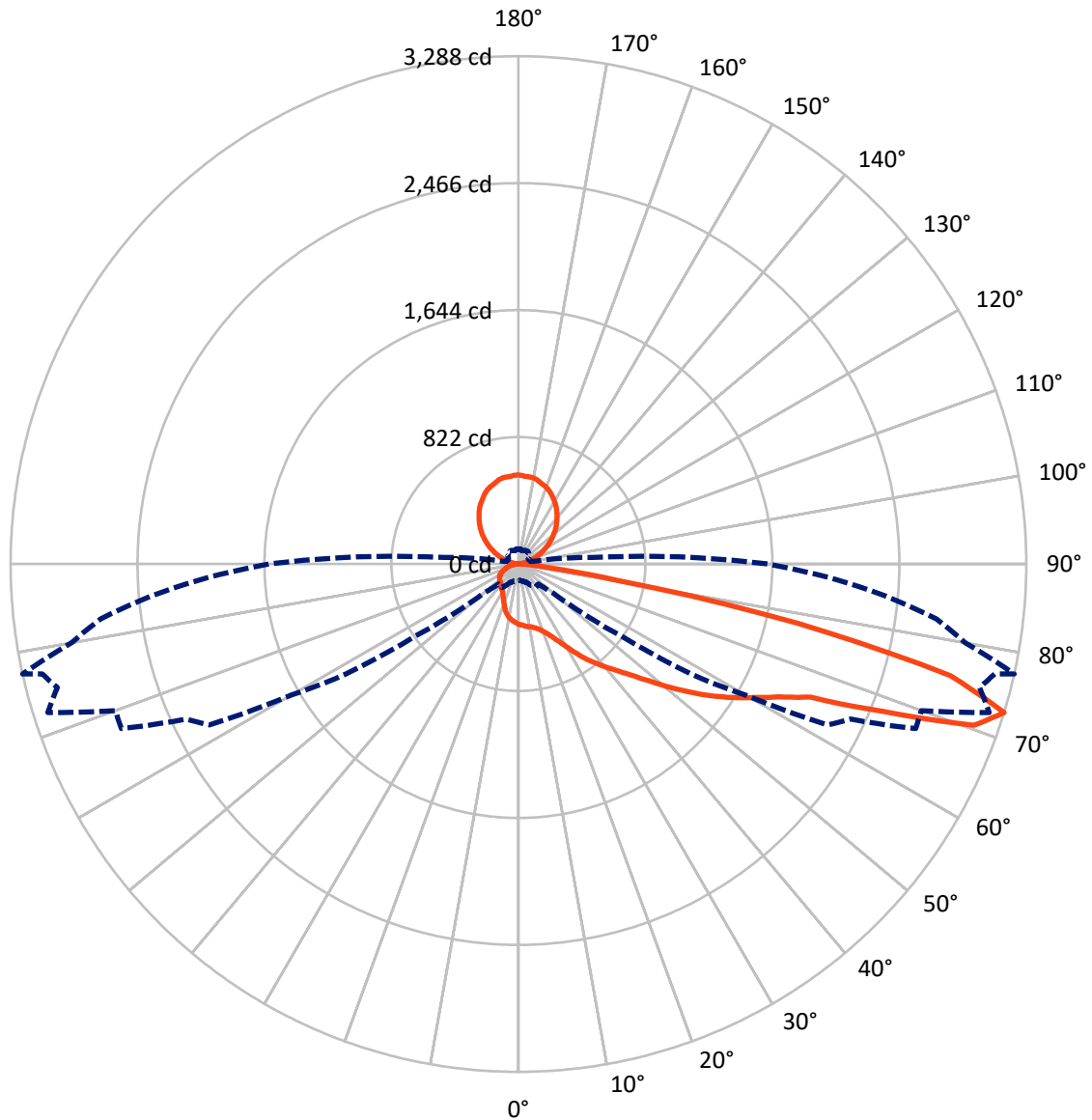
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4.8 fc  
 Type II - Medium - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral    - - - Horizontal Cone Through 72.5-Deg Vertical

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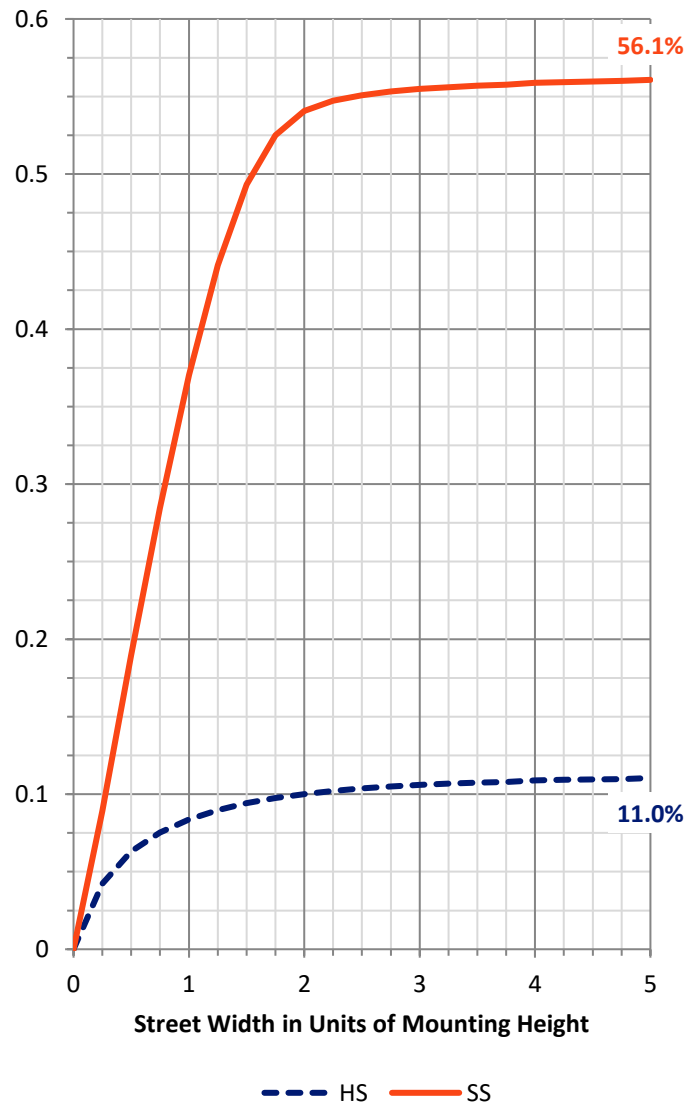
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	486.2	713.1	1199.3
	% Fixture	11.2	16.4	27.5
<b>Street Side</b>	Lumens	2447.8	713.1	3160.9
	% Fixture	56.1	16.4	72.5
<b>Total</b>	Lumens	2934.0	1426.2	4360.2
	% Fixture	67.3	32.7	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	36.4	0.8
10°-20°	111.6	2.6
20°-30°	198.1	4.5
30°-40°	313.8	7.2
40°-50°	470.8	10.8
50°-60°	610.0	14.0
60°-70°	693.2	15.9
70°-80°	460.0	10.5
80°-90°	40.2	0.9
90°-100°	4.7	0.1
100°-110°	69.0	1.6
110°-120°	153.0	3.5
120°-130°	223.9	5.1
130°-140°	265.6	6.1
140°-150°	269.3	6.2
150°-160°	231.1	5.3
160°-170°	155.1	3.6
170°-180°	54.3	1.2
0°-90°	2934.0	67.3
0°-180°	4360.2	100.0



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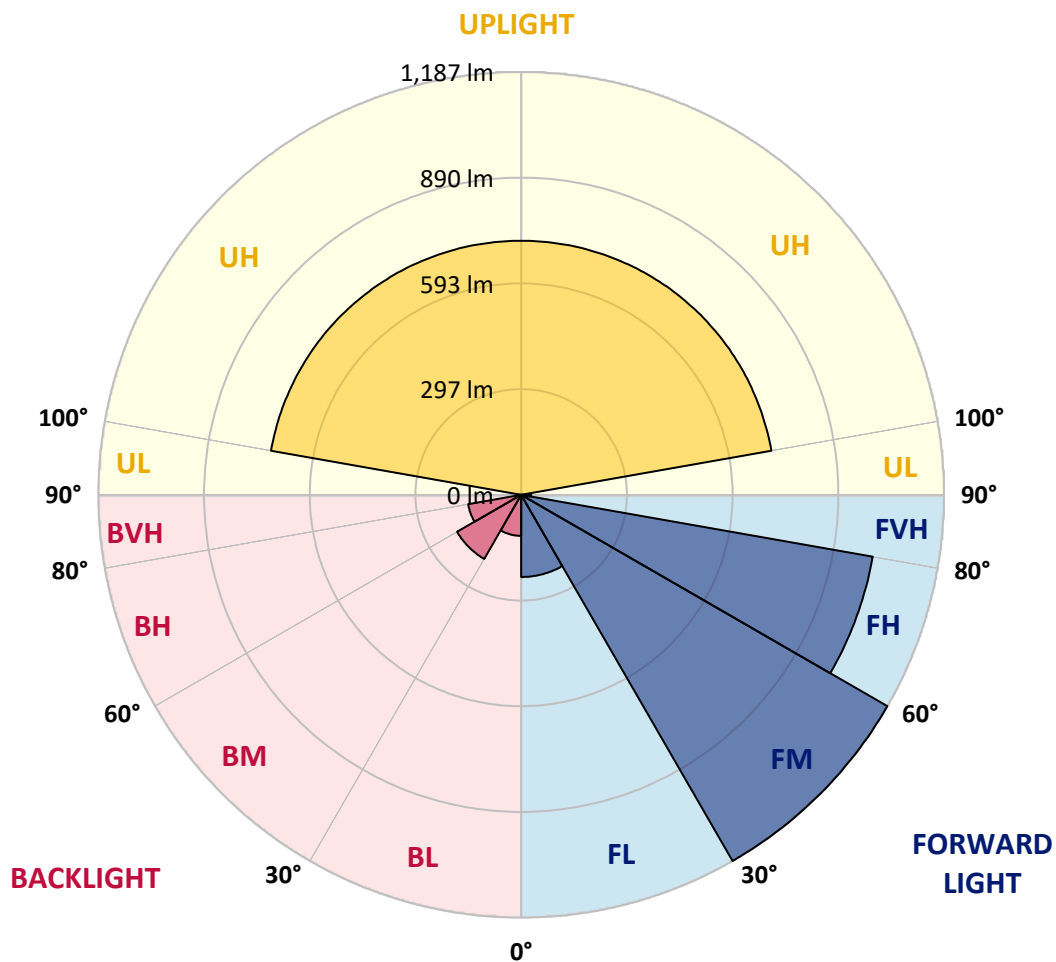
CATALOG NUMBER: ISS-AF-450-LED-E1-T2-7050-ULG

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

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	230.8	5.3			
FM	(30°-60°)	1186.9	27.2			
FH	(60°-80°)	1002.0	23.0			G1/1800
FVH	(80°-90°)	28.1	0.6			G1/100
BL	(0°-30°)	115.2	2.6	B1/500		
BM	(30°-60°)	207.7	4.8	B0/220		
BH	(60°-80°)	151.2	3.5	B1/500		G1/500
BVH	(80°-90°)	12.1	0.3			G1/100
UL	(90°-100°)	4.7	0.1		U1/10	
UH	(100°-180°)	713.1	16.4		U4/1000	

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

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
0°	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7
2.5°	424.4	422.4	421.4	419.4	417.5	416.5	413.5	411.5	414.5	413.5	413.5
5°	456.0	454.1	451.1	448.1	444.2	441.2	438.2	435.3	437.2	435.3	433.3
7.5°	481.8	479.8	475.8	472.9	468.9	464.9	461.0	460.0	458.0	455.1	454.1
10°	496.6	494.6	492.6	490.7	484.7	481.8	476.8	473.8	474.8	470.9	470.9
12.5°	510.4	508.5	507.5	507.5	502.5	499.6	497.6	494.6	496.6	490.7	488.7
15°	523.3	521.3	518.4	521.3	520.3	519.4	518.4	517.4	520.3	514.4	515.4
17.5°	544.1	543.1	537.2	533.2	534.2	537.2	539.1	538.1	538.1	535.2	536.2
20°	576.7	576.7	568.8	561.9	551.0	551.0	552.0	551.0	553.0	555.0	557.9
22.5°	601.5	599.5	596.5	590.6	578.7	568.8	568.8	564.9	567.8	568.8	574.8
25°	633.1	631.1	624.2	624.2	612.3	599.5	597.5	591.6	598.5	585.6	595.5
27.5°	671.7	669.7	660.8	656.9	650.9	635.1	631.1	632.1	639.1	620.3	630.1
30°	720.2	718.2	707.3	696.4	686.5	669.7	667.7	666.8	682.6	660.8	673.7
32.5°	781.5	781.5	769.6	754.8	735.0	712.3	704.3	705.3	727.1	703.4	725.1
35°	874.5	862.6	840.9	818.1	797.3	770.6	759.7	757.8	777.5	753.8	778.5
37.5°	933.8	925.9	906.1	889.3	866.6	840.9	832.9	835.9	852.7	818.1	853.7
40°	987.3	986.3	973.4	962.5	939.8	914.1	924.0	963.5	1008.0	940.8	941.8
42.5°	1022.9	1024.9	1023.9	1024.9	1012.0	985.3	1002.1	1057.5	1133.7	1094.1	1057.5
45°	1028.8	1035.7	1038.7	1058.5	1071.4	1055.5	1064.4	1122.8	1275.1	1336.5	1171.3
47.5°	1043.7	1050.6	1044.6	1068.4	1127.7	1126.7	1162.4	1184.1	1204.9	1214.8	1339.4
50°	1063.4	1076.3	1070.4	1090.1	1138.6	1166.3	1197.0	1224.7	1207.9	1145.5	1179.2
52.5°	1064.4	1079.3	1111.9	1131.7	1179.2	1173.2	1194.0	1179.2	1204.9	1140.6	1173.2
55°	977.4	980.3	1075.3	1175.2	1258.3	1241.5	1228.6	1195.0	1227.7	1147.5	1189.1
57.5°	839.9	849.8	948.7	1116.9	1294.9	1309.8	1305.8	1302.8	1328.6	1221.7	1267.2
60°	688.5	700.4	794.4	992.2	1218.7	1257.3	1310.7	1343.4	1409.7	1367.1	1442.3
62.5°	429.3	438.2	542.1	789.4	1075.3	1151.5	1229.6	1268.2	1364.2	1384.0	1511.6
65°	204.8	207.7	248.3	429.3	781.5	924.9	1040.7	1122.8	1240.5	1329.5	1501.7
67.5°	159.3	160.3	175.1	228.5	400.6	496.6	628.2	737.0	862.6	1106.0	1319.7
70°	127.6	127.6	139.5	168.2	248.3	261.2	294.8	331.4	384.8	580.7	753.8
72.5°	106.8	106.8	114.8	132.6	184.0	187.0	185.0	182.0	182.0	229.5	292.8
75°	90.0	89.0	94.0	105.8	136.5	140.5	138.5	131.6	123.7	123.7	139.5
77.5°	73.2	73.2	77.2	83.1	98.9	100.9	100.9	95.0	88.0	89.0	96.0
80°	57.4	57.4	60.3	64.3	69.2	68.3	68.3	62.3	57.4	56.4	60.3
82.5°	41.5	42.5	49.5	46.5	44.5	41.5	41.5	40.6	36.6	33.6	35.6
85°	12.9	13.8	23.7	27.7	22.8	18.8	17.8	14.8	15.8	12.9	14.8
87.5°	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0	1.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	2.0	2.0	2.0	3.0	4.0	5.2	6.5	7.8	9.0	10.0	11.0
100°	8.0	8.0	10.0	14.0	22.0	24.0	26.0	28.0	30.0	30.5	31.0
102.5°	28.0	28.0	32.0	38.0	45.0	46.2	47.5	48.8	50.0	50.2	50.5
105°	54.0	54.0	56.0	61.0	66.0	67.0	68.0	69.0	70.0	70.2	70.5
107.5°	78.0	77.0	80.0	84.0	88.0	88.8	89.5	90.2	91.0	91.5	92.0
110°	101.0	102.0	103.0	106.0	110.0	110.5	111.0	111.5	112.0	112.5	113.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
112.5°	124.0	124.0	126.0	129.0	132.0	132.5	133.0	133.5	134.0	134.5	135.0
115°	146.0	147.0	149.0	151.0	154.0	154.5	155.0	155.5	156.0	156.5	157.0
117.5°	169.0	170.0	172.0	174.0	177.0	177.5	178.0	178.5	179.0	179.2	179.5
120°	193.0	195.0	196.0	198.0	201.0	201.2	201.5	201.8	202.0	202.5	203.0
122.5°	219.0	220.0	221.0	223.0	226.0	226.2	226.5	226.8	227.0	227.2	227.5
125°	244.0	246.0	247.0	248.0	251.0	251.2	251.5	251.8	252.0	252.2	252.5
127.5°	267.0	269.0	270.0	272.0	274.0	274.5	275.0	275.5	276.0	276.5	277.0
130°	290.0	292.0	293.0	294.0	298.0	298.2	298.5	298.8	299.0	299.5	300.0
132.5°	313.0	314.0	317.0	318.0	321.0	321.2	321.5	321.8	322.0	322.8	323.5
135°	336.0	337.0	339.0	341.0	345.0	345.0	345.0	345.0	345.0	345.8	346.5
137.5°	359.0	360.0	363.0	364.0	367.0	367.0	367.0	367.0	367.0	367.5	368.0
140°	382.0	383.0	385.0	386.0	388.0	388.2	388.5	388.8	389.0	389.2	389.5
142.5°	404.0	406.0	408.0	407.0	410.0	410.0	410.0	410.0	410.0	410.5	411.0
145°	425.0	426.0	428.0	428.0	431.0	431.2	431.5	431.8	432.0	432.5	433.0
147.5°	444.0	444.0	447.0	448.0	452.0	452.2	452.5	452.8	453.0	453.2	453.5
150°	461.0	462.0	464.0	465.0	469.0	469.2	469.5	469.8	470.0	470.2	470.5
152.5°	479.0	480.0	483.0	482.0	485.0	485.2	485.5	485.8	486.0	486.2	486.5
155°	499.0	500.0	502.0	501.0	503.0	503.0	503.0	503.0	503.0	503.2	503.5
157.5°	513.0	515.0	517.0	516.0	519.0	519.0	519.0	519.0	519.0	519.0	519.0
160°	525.0	527.0	529.0	529.0	532.0	532.0	532.0	532.0	532.0	532.0	532.0
162.5°	535.0	536.0	539.0	538.0	541.0	541.0	541.0	541.0	541.0	541.2	541.5
165°	546.0	547.0	549.0	548.0	552.0	552.0	552.0	552.0	552.0	552.2	552.5
167.5°	555.0	556.0	559.0	558.0	561.0	560.8	560.5	560.2	560.0	560.0	560.0
170°	562.0	563.0	566.0	565.0	567.0	566.8	566.5	566.2	566.0	565.8	565.5
172.5°	565.0	566.0	569.0	567.0	569.0	568.8	568.5	568.2	568.0	568.2	568.5
175°	567.0	569.0	570.0	569.0	572.0	572.0	572.0	572.0	572.0	572.2	572.5
177.5°	572.0	573.0	575.0	574.0	578.0	577.8	577.5	577.2	577.0	577.0	577.0
180°	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0





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**CANDELA DISTRIBUTION (continued):**

	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77°
0°	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7
2.5°	408.6	410.5	406.6	406.6	401.6	404.6	399.7	400.6	395.7	397.7	397.7
5°	428.3	429.3	424.4	422.4	417.5	417.5	412.5	412.5	405.6	407.6	405.6
7.5°	447.1	447.1	442.2	438.2	433.3	431.3	425.4	422.4	416.5	415.5	412.5
10°	463.0	463.0	456.0	452.1	446.1	443.2	435.3	432.3	425.4	420.4	417.5
12.5°	482.8	480.8	472.9	468.9	459.0	458.0	446.1	444.2	434.3	431.3	426.4
15°	506.5	508.5	495.6	494.6	480.8	479.8	464.0	463.0	448.1	447.1	440.2
17.5°	532.2	536.2	525.3	524.3	507.5	507.5	488.7	487.7	467.9	466.9	458.0
20°	555.0	559.9	553.0	555.0	540.1	541.1	520.3	520.3	492.6	490.7	482.8
22.5°	575.7	585.6	579.7	590.6	575.7	582.7	555.0	559.9	527.3	523.3	511.4
25°	596.5	609.4	607.4	625.2	614.3	626.2	597.5	607.4	564.9	567.8	552.0
27.5°	617.3	634.1	632.1	657.8	653.9	677.6	652.9	663.8	617.3	620.3	602.4
30°	651.9	670.7	663.8	690.5	690.5	729.1	710.3	727.1	675.7	681.6	660.8
32.5°	698.4	720.2	699.4	734.0	732.0	782.5	767.7	796.3	745.9	753.8	728.1
35°	748.9	783.5	749.8	788.4	782.5	834.9	825.0	871.5	818.1	827.0	801.3
37.5°	815.1	856.7	812.2	845.8	819.1	879.4	873.5	936.8	882.4	905.2	874.5
40°	893.3	925.9	870.5	899.2	854.7	917.0	907.1	994.2	943.7	980.3	952.6
42.5°	965.5	988.3	915.1	950.7	897.2	960.6	942.7	1047.6	1004.1	1060.5	1029.8
45°	1030.8	1056.5	959.6	999.1	939.8	1009.0	978.4	1099.1	1069.4	1154.4	1123.8
47.5°	1123.8	1086.2	1000.1	1051.6	985.3	1061.5	1020.9	1159.4	1148.5	1269.2	1233.6
50°	1093.1	1117.8	1033.8	1087.2	1026.8	1119.8	1075.3	1231.6	1234.6	1393.8	1373.1
52.5°	1096.1	1137.6	1059.5	1133.7	1075.3	1200.9	1154.4	1318.7	1332.5	1514.5	1485.8
55°	1113.9	1175.2	1098.1	1198.0	1143.6	1291.0	1258.3	1412.6	1436.4	1628.3	1611.5
57.5°	1158.4	1243.5	1164.3	1294.9	1238.5	1393.8	1364.2	1509.6	1542.2	1742.1	1737.1
60°	1329.5	1430.4	1292.0	1436.4	1361.2	1510.6	1471.0	1611.5	1644.1	1850.9	1863.7
62.5°	1520.5	1695.6	1613.5	1763.8	1565.0	1716.3	1599.6	1737.1	1739.1	1967.6	2008.2
65°	1569.9	1839.0	1909.2	2189.2	2085.3	2240.6	1929.0	2021.0	1902.3	2180.3	2238.7
67.5°	1551.1	1880.6	2075.4	2391.0	2508.7	2779.8	2727.3	2695.7	2420.7	2620.5	2690.7
70°	1138.6	1487.8	1964.6	2285.2	2624.5	2802.5	3084.5	3113.2	3101.3	3073.6	3120.1
72.5°	518.4	813.2	1329.5	1695.6	2255.5	2375.2	2783.7	2775.8	3195.3	3091.4	3164.6
75°	203.8	313.6	633.1	946.7	1560.0	1707.4	2170.4	2055.6	2579.0	2426.6	2582.9
77.5°	111.8	140.5	237.4	406.6	851.7	929.9	1328.6	1136.6	1599.6	1335.5	1387.9
80°	67.3	84.1	108.8	154.3	362.1	382.8	566.8	457.0	653.9	496.6	481.8
82.5°	36.6	45.5	54.4	76.2	134.5	149.4	195.9	176.1	209.7	179.1	175.1
85°	14.8	19.8	20.8	30.7	44.5	51.4	62.3	67.3	82.1	75.2	73.2
87.5°	0.0	1.0	0.0	2.0	0.0	2.0	0.0	3.0	3.0	4.9	5.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	12.0	13.0	11.5	10.0	8.5	7.0	6.5	6.0	5.5	5.0	4.8
100°	31.5	32.0	31.5	31.0	30.5	30.0	29.2	28.5	27.8	27.0	26.8
102.5°	50.8	51.0	50.8	50.5	50.2	50.0	49.5	49.0	48.5	48.0	48.2
105°	70.8	71.0	71.0	71.0	71.0	71.0	70.5	70.0	69.5	69.0	69.4
107.5°	92.5	93.0	92.8	92.5	92.2	92.0	91.8	91.5	91.2	91.0	91.2
110°	113.5	114.0	114.0	114.0	114.0	114.0	113.8	113.5	113.2	113.0	113.2



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**CANDELA DISTRIBUTION (continued):**

	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77°
112.5°	135.5	136.0	136.0	136.0	136.0	136.0	135.8	135.5	135.2	135.0	135.4
115°	157.5	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.4
117.5°	179.8	180.0	180.2	180.5	180.8	181.0	180.8	180.5	180.2	180.0	180.4
120°	203.5	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.4
122.5°	227.8	228.0	228.0	228.0	228.0	228.0	228.2	228.5	228.8	229.0	229.8
125°	252.8	253.0	253.2	253.5	253.8	254.0	254.0	254.0	254.0	254.0	254.6
127.5°	277.5	278.0	277.8	277.5	277.2	277.0	277.2	277.5	277.8	278.0	278.6
130°	300.5	301.0	301.0	301.0	301.0	301.0	301.2	301.5	301.8	302.0	302.6
132.5°	324.2	325.0	325.0	325.0	325.0	325.0	325.2	325.5	325.8	326.0	326.6
135°	347.2	348.0	348.0	348.0	348.0	348.0	348.2	348.5	348.8	349.0	349.4
137.5°	368.5	369.0	369.0	369.0	369.0	369.0	369.2	369.5	369.8	370.0	370.8
140°	389.8	390.0	390.0	390.0	390.0	390.0	390.5	391.0	391.5	392.0	392.8
142.5°	411.5	412.0	412.0	412.0	412.0	412.0	412.2	412.5	412.8	413.0	413.6
145°	433.5	434.0	433.8	433.5	433.2	433.0	433.2	433.5	433.8	434.0	434.6
147.5°	453.8	454.0	453.5	453.0	452.5	452.0	452.2	452.5	452.8	453.0	453.6
150°	470.8	471.0	470.5	470.0	469.5	469.0	469.0	469.0	469.0	469.0	469.8
152.5°	486.8	487.0	486.8	486.5	486.2	486.0	486.0	486.0	486.0	486.0	486.6
155°	503.8	504.0	503.8	503.5	503.2	503.0	503.2	503.5	503.8	504.0	504.6
157.5°	519.0	519.0	518.5	518.0	517.5	517.0	517.2	517.5	517.8	518.0	519.0
160°	532.0	532.0	531.5	531.0	530.5	530.0	530.0	530.0	530.0	530.0	530.6
162.5°	541.8	542.0	541.5	541.0	540.5	540.0	539.5	539.0	538.5	538.0	538.4
165°	552.8	553.0	552.2	551.5	550.8	550.0	549.5	549.0	548.5	548.0	548.4
167.5°	560.0	560.0	559.5	559.0	558.5	558.0	558.2	558.5	558.8	559.0	559.8
170°	565.2	565.0	564.8	564.5	564.2	564.0	564.5	565.0	565.5	566.0	567.0
172.5°	568.8	569.0	568.5	568.0	567.5	567.0	567.2	567.5	567.8	568.0	568.6
175°	572.8	573.0	572.2	571.5	570.8	570.0	569.5	569.0	568.5	568.0	568.6
177.5°	577.0	577.0	576.2	575.5	574.8	574.0	574.0	574.0	574.0	574.0	574.6
180°	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0



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**CANDELA DISTRIBUTION (continued):**

	77.5°	80°	82.5°	85°	87.5°	90°	95°	100°	102.5°	105°	107.5°
0°	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7
2.5°	394.7	397.7	393.7	393.7	388.8	391.7	388.8	385.8	380.9	381.8	374.9
5°	401.6	403.6	398.7	396.7	393.7	392.7	386.8	380.9	373.9	373.9	366.0
7.5°	408.6	408.6	401.6	401.6	394.7	392.7	383.8	373.9	364.0	363.1	351.2
10°	412.5	411.5	402.6	402.6	392.7	391.7	380.9	366.0	352.2	348.2	331.4
12.5°	420.4	419.4	408.6	406.6	393.7	393.7	377.9	358.1	338.3	331.4	307.7
15°	430.3	431.3	418.5	415.5	400.6	399.7	377.9	348.2	321.5	310.6	281.9
17.5°	446.1	447.1	429.3	426.4	408.6	405.6	378.9	336.3	298.8	286.9	261.2
20°	466.9	464.0	440.2	439.2	415.5	412.5	377.9	318.5	276.0	264.1	241.4
22.5°	492.6	489.7	459.0	456.0	428.3	423.4	376.9	299.7	255.2	242.4	227.5
25°	528.3	524.3	486.7	482.8	448.1	440.2	375.9	280.0	237.4	227.5	218.6
27.5°	572.8	564.9	519.4	515.4	468.9	459.0	372.0	257.2	219.6	212.7	208.7
30°	626.2	619.3	560.9	555.0	496.6	483.7	368.0	236.4	206.8	203.8	200.8
32.5°	689.5	682.6	611.4	604.4	532.2	513.4	361.1	219.6	198.8	198.8	194.9
35°	755.8	749.8	665.8	660.8	571.8	547.1	352.2	204.8	191.9	191.9	188.0
37.5°	815.1	820.1	725.1	721.2	611.4	580.7	342.3	194.9	186.0	184.0	180.0
40°	879.4	891.3	780.5	783.5	652.9	616.3	330.4	187.0	179.1	177.1	176.1
42.5°	944.7	967.5	838.9	849.8	694.4	652.9	321.5	182.0	176.1	172.1	171.1
45°	1025.8	1058.5	911.1	931.9	742.9	697.4	318.5	176.1	167.2	162.2	159.3
47.5°	1126.7	1170.3	1000.1	1023.9	807.2	750.8	324.5	174.1	161.2	155.3	149.4
50°	1246.4	1288.0	1106.0	1115.9	879.4	809.2	337.3	177.1	159.3	150.4	141.5
52.5°	1373.1	1404.7	1217.8	1206.9	954.6	866.6	352.2	178.1	154.3	145.4	134.5
55°	1503.7	1521.5	1321.6	1292.9	1022.9	924.0	372.0	177.1	150.4	140.5	126.6
57.5°	1631.3	1637.2	1413.6	1385.9	1090.1	992.2	396.7	174.1	144.4	134.5	119.7
60°	1755.9	1765.8	1515.5	1489.8	1163.4	1080.3	432.3	169.2	136.5	129.6	113.8
62.5°	1892.4	1925.1	1637.2	1641.2	1264.3	1217.8	499.6	163.2	128.6	120.7	104.9
65°	2078.4	2203.0	1838.0	1931.0	1458.1	1476.9	628.2	146.4	117.7	107.8	96.9
67.5°	2544.3	2680.9	2325.7	2363.3	1912.2	1800.4	709.3	124.6	103.9	96.9	90.0
70°	3128.0	3030.1	2777.8	2550.3	2177.3	1850.9	624.2	104.9	92.0	88.0	84.1
72.5°	3288.2	2937.1	2729.3	2388.0	2013.1	1614.4	477.8	90.0	82.1	80.1	77.2
75°	2889.6	2381.1	2393.0	1897.4	1668.9	1230.6	326.5	77.2	71.2	70.2	69.2
77.5°	1847.9	1223.7	1489.8	937.8	963.5	569.8	159.3	64.3	61.3	61.3	59.4
80°	656.9	407.6	461.0	295.8	269.1	181.0	86.1	51.4	49.5	50.5	49.5
82.5°	196.9	156.3	153.3	119.7	93.0	76.2	47.5	39.6	37.6	38.6	36.6
85°	79.1	61.3	51.4	39.6	32.6	29.7	25.7	26.7	23.7	25.7	22.8
87.5°	4.9	4.0	3.0	4.0	0.0	2.0	4.9	4.0	1.0	4.0	3.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	4.8	4.5	4.2	4.0	4.0	4.0	4.0	4.5	4.8	5.0	5.5
100°	26.8	26.5	26.2	26.0	25.5	25.0	26.0	26.5	26.8	27.0	27.8
102.5°	48.2	48.5	48.8	49.0	48.5	48.0	49.0	48.5	48.2	48.0	48.5
105°	69.5	70.0	70.5	71.0	70.0	69.0	71.0	70.0	69.5	69.0	69.5
107.5°	91.2	91.5	91.8	92.0	91.5	91.0	92.0	91.5	91.2	91.0	91.2
110°	113.2	113.5	113.8	114.0	113.5	113.0	114.0	113.5	113.2	113.0	113.2



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REPORT N  
 CATALOG

**CANDELA DISTRIBUTION (continued):**

**CANDELA**

	77.5°	80°	82.5°	85°	87.5°	90°	95°	100°	102.5°	105°	107.5°	
112.5°	135.5	136.0	136.5	137.0	136.0	135.0	137.0	136.0	135.5	135.0	135.2	0°
115°	158.5	159.0	159.5	160.0	159.5	159.0	160.0	159.0	158.5	158.0	158.0	2.5°
117.5°	180.5	181.0	181.5	182.0	181.0	180.0	182.0	181.0	180.5	180.0	180.2	5°
120°	204.5	205.0	205.5	206.0	205.0	204.0	206.0	205.0	204.5	204.0	204.0	7.5°
122.5°	230.0	231.0	232.0	233.0	232.5	232.0	233.0	231.0	230.0	229.0	228.8	10°
125°	254.8	255.5	256.2	257.0	256.5	256.0	257.0	255.5	254.8	254.0	254.0	12.5°
127.5°	278.8	279.5	280.2	281.0	279.5	278.0	281.0	279.5	278.8	278.0	277.8	15°
130°	302.8	303.5	304.2	305.0	304.0	303.0	305.0	303.5	302.8	302.0	301.8	17.5°
132.5°	326.8	327.5	328.2	329.0	328.0	327.0	329.0	327.5	326.8	326.0	325.8	20°
135°	349.5	350.0	350.5	351.0	350.5	350.0	351.0	350.0	349.5	349.0	348.8	22.5°
137.5°	371.0	372.0	373.0	374.0	373.0	372.0	374.0	372.0	371.0	370.0	369.8	25°
140°	393.0	394.0	395.0	396.0	395.0	394.0	396.0	394.0	393.0	392.0	391.5	27.5°
142.5°	413.8	414.5	415.2	416.0	415.5	415.0	416.0	414.5	413.8	413.0	412.8	30°
145°	434.8	435.5	436.2	437.0	436.0	435.0	437.0	435.5	434.8	434.0	433.8	32.5°
147.5°	453.8	454.5	455.2	456.0	454.5	453.0	456.0	454.5	453.8	453.0	452.8	35°
150°	470.0	471.0	472.0	473.0	471.5	470.0	473.0	471.0	470.0	469.0	469.0	37.5°
152.5°	486.8	487.5	488.2	489.0	487.5	486.0	489.0	487.5	486.8	486.0	486.0	40°
155°	504.8	505.5	506.2	507.0	506.0	505.0	507.0	505.5	504.8	504.0	503.8	42.5°
157.5°	519.2	520.5	521.8	523.0	521.5	520.0	523.0	520.5	519.2	518.0	517.8	45°
160°	530.8	531.5	532.2	533.0	532.0	531.0	533.0	531.5	530.8	530.0	530.0	47.5°
162.5°	538.5	539.0	539.5	540.0	538.5	537.0	540.0	539.0	538.5	538.0	538.5	50°
165°	548.5	549.0	549.5	550.0	549.0	548.0	550.0	549.0	548.5	548.0	548.5	52.5°
167.5°	560.0	561.0	562.0	563.0	562.0	561.0	563.0	561.0	560.0	559.0	558.8	55°
170°	567.2	568.5	569.8	571.0	570.0	569.0	571.0	568.5	567.2	566.0	565.5	57.5°
172.5°	568.8	569.5	570.2	571.0	569.5	568.0	571.0	569.5	568.8	568.0	567.8	60°
175°	568.8	569.5	570.2	571.0	569.5	568.0	571.0	569.5	568.8	568.0	568.5	62.5°
177.5°	574.8	575.5	576.2	577.0	575.5	574.0	577.0	575.5	574.8	574.0	574.0	65°
180°	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	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°
												110°

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REPORT NUMBER: P  
 CATALOG NUMBER:

**DISTRIBUTION (continued):**

**CANDELA DISTRIBUTION**

110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	110°	
391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7	391.7	112.5°	135.5
379.9	372.9	375.9	372.9	374.9	369.0	371.0	366.0	366.0	365.0	360.1	115°	158.0
367.0	360.1	359.1	352.2	353.2	345.2	344.3	335.4	335.4	327.4	312.6	117.5°	180.5
349.2	338.3	337.3	323.5	322.5	311.6	307.7	297.8	296.8	287.9	279.0	120°	204.0
326.5	309.6	306.7	288.9	289.8	278.0	277.0	270.1	270.1	266.1	266.1	122.5°	228.5
300.7	281.9	280.0	266.1	267.1	259.2	260.2	256.2	258.2	260.2	267.1	125°	254.0
277.0	262.1	260.2	251.3	252.3	250.3	253.2	253.2	256.2	261.2	273.0	127.5°	277.5
257.2	244.3	245.3	241.4	245.3	244.3	250.3	249.3	255.2	261.2	276.0	130°	301.5
239.4	232.5	235.4	234.5	239.4	239.4	244.3	245.3	250.3	258.2	275.0	132.5°	325.5
227.5	225.5	228.5	228.5	232.5	233.5	238.4	241.4	244.3	252.3	267.1	135°	348.5
220.6	219.6	222.6	223.6	226.5	227.5	232.5	232.5	237.4	242.4	250.3	137.5°	369.5
210.7	208.7	212.7	212.7	216.6	215.7	221.6	219.6	224.6	226.5	228.5	140°	391.0
203.8	200.8	203.8	202.8	205.8	202.8	205.8	202.8	205.8	205.8	202.8	142.5°	412.5
196.9	193.9	194.9	190.9	193.9	189.9	190.9	187.0	188.9	187.0	188.0	145°	433.5
189.9	186.0	186.0	181.0	181.0	176.1	178.1	174.1	178.1	181.0	180.0	147.5°	452.5
180.0	177.1	177.1	173.1	175.1	173.1	177.1	175.1	176.1	172.1	165.2	150°	469.0
174.1	176.1	175.1	178.1	176.1	173.1	170.1	164.2	163.2	161.2	157.3	152.5°	486.0
165.2	167.2	162.2	166.2	163.2	164.2	162.2	159.3	157.3	155.3	151.4	155°	503.5
152.3	152.3	148.4	154.3	151.4	157.3	155.3	155.3	153.3	150.4	147.4	157.5°	517.5
141.5	142.5	138.5	143.4	141.5	149.4	148.4	151.4	151.4	149.4	141.5	160°	530.0
134.5	132.6	129.6	134.5	133.5	140.5	141.5	147.4	146.4	147.4	140.5	162.5°	539.0
128.6	124.6	121.7	124.6	124.6	130.6	132.6	139.5	140.5	142.5	138.5	165°	549.0
121.7	116.7	114.8	116.7	116.7	122.7	125.6	130.6	133.5	139.5	137.5	167.5°	558.5
115.7	108.8	106.8	108.8	109.8	115.7	118.7	123.7	127.6	135.5	134.5	170°	565.0
108.8	102.9	100.9	103.9	104.9	110.8	113.8	118.7	121.7	130.6	130.6	172.5°	567.5
100.9	96.0	96.0	96.9	98.9	104.9	106.8	113.8	114.8	125.6	126.6	175°	569.0
94.0	91.0	91.0	92.0	94.0	98.9	99.9	106.8	107.8	118.7	121.7	177.5°	574.0
88.0	86.1	86.1	87.1	88.0	92.0	93.0	99.9	101.9	111.8	116.7	180°	576.0
82.1	80.1	79.1	79.1	82.1	85.1	87.1	94.0	95.0	103.9	109.8		
75.2	73.2	73.2	72.2	75.2	77.2	81.1	85.1	87.1	96.0	99.9		
68.3	66.3	66.3	65.3	67.3	71.2	72.2	76.2	77.2	85.1	89.0		
59.4	57.4	57.4	57.4	59.4	60.3	61.3	65.3	67.3	74.2	78.2		
49.5	47.5	48.5	47.5	50.5	46.5	49.5	53.4	55.4	59.4	57.4		
37.6	34.6	35.6	35.6	36.6	33.6	35.6	37.6	39.6	42.5	41.5		
23.7	20.8	22.8	20.8	22.8	19.8	21.8	21.8	23.7	21.8	20.8		
4.9	2.0	4.9	2.0	5.9	0.0	3.0	0.0	2.0	1.0	0.0		
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
6.0	6.5	7.0	8.5	10.0	11.5	13.0	12.0	11.0	9.0	4.0		
28.5	29.2	30.0	30.5	31.0	31.5	32.0	31.5	31.0	30.0	22.0		
49.0	49.5	50.0	50.2	50.5	50.8	51.0	50.8	50.5	50.0	45.0		
70.0	70.5	71.0	71.0	71.0	71.0	71.0	70.8	70.5	70.0	66.0		
91.5	91.8	92.0	92.2	92.5	92.8	93.0	92.5	92.0	91.0	88.0		
113.5	113.8	114.0	114.0	114.0	114.0	114.0	113.5	113.0	112.0	110.0		

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 ISS-AF-450-LED-E1-T2-7050-ULG

REPORT NUMBER: P227541  
 CATALOG NUMBER: ISS-AF-451

**TION (continued):**

**CANDELA DISTRIBUTION (con**

112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°		155°	165°
135.8	136.0	136.0	136.0	136.0	136.0	135.5	135.0	134.0	132.0	0°	391.7	391.7
158.0	158.0	158.0	158.0	158.0	158.0	157.5	157.0	156.0	154.0	2.5°	355.1	351.2
180.8	181.0	180.8	180.5	180.2	180.0	179.8	179.5	179.0	177.0	5°	304.7	297.8
204.0	204.0	204.0	204.0	204.0	204.0	203.5	203.0	202.0	201.0	7.5°	274.0	272.0
228.2	228.0	228.0	228.0	228.0	228.0	227.8	227.5	227.0	226.0	10°	268.1	271.1
254.0	254.0	253.8	253.5	253.2	253.0	252.8	252.5	252.0	251.0	12.5°	275.0	280.0
277.2	277.0	277.2	277.5	277.8	278.0	277.5	277.0	276.0	274.0	15°	283.9	292.8
301.2	301.0	301.0	301.0	301.0	301.0	300.5	300.0	299.0	298.0	17.5°	290.8	302.7
325.2	325.0	325.0	325.0	325.0	325.0	324.2	323.5	322.0	321.0	20°	291.8	303.7
348.2	348.0	348.0	348.0	348.0	348.0	347.2	346.5	345.0	345.0	22.5°	282.9	290.8
369.2	369.0	369.0	369.0	369.0	369.0	368.5	368.0	367.0	367.0	25°	260.2	264.1
390.5	390.0	390.0	390.0	390.0	390.0	389.8	389.5	389.0	388.0	27.5°	231.5	230.5
412.2	412.0	412.0	412.0	412.0	412.0	411.5	411.0	410.0	410.0	30°	201.8	199.8
433.2	433.0	433.2	433.5	433.8	434.0	433.5	433.0	432.0	431.0	32.5°	190.9	184.0
452.2	452.0	452.5	453.0	453.5	454.0	453.8	453.5	453.0	452.0	35°	174.1	172.1
469.0	469.0	469.5	470.0	470.5	471.0	470.8	470.5	470.0	469.0	37.5°	168.2	185.0
486.0	486.0	486.2	486.5	486.8	487.0	486.8	486.5	486.0	485.0	40°	161.2	182.0
503.2	503.0	503.2	503.5	503.8	504.0	503.8	503.5	503.0	503.0	42.5°	155.3	167.2
517.2	517.0	517.5	518.0	518.5	519.0	519.0	519.0	519.0	519.0	45°	144.4	149.4
530.0	530.0	530.5	531.0	531.5	532.0	532.0	532.0	532.0	532.0	47.5°	139.5	137.5
539.5	540.0	540.5	541.0	541.5	542.0	541.8	541.5	541.0	541.0	50°	135.5	135.5
549.5	550.0	550.8	551.5	552.2	553.0	552.8	552.5	552.0	552.0	52.5°	132.6	130.6
558.2	558.0	558.5	559.0	559.5	560.0	560.0	560.0	560.0	561.0	55°	128.6	126.6
564.5	564.0	564.2	564.5	564.8	565.0	565.2	565.5	566.0	567.0	57.5°	125.6	120.7
567.2	567.0	567.5	568.0	568.5	569.0	568.8	568.5	568.0	569.0	60°	122.7	117.7
569.5	570.0	570.8	571.5	572.2	573.0	572.8	572.5	572.0	572.0	62.5°	120.7	114.8
574.0	574.0	574.8	575.5	576.2	577.0	577.0	577.0	577.0	578.0	65°	117.7	111.8
576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	67.5°	113.8	105.8
										70°	105.8	98.9
										72.5°	97.9	90.0
										75°	86.1	79.1
										77.5°	72.2	64.3
										80°	54.4	49.5
										82.5°	39.6	33.6
										85°	17.8	12.9
										87.5°	0.0	0.0
										90°	0.0	0.0
										92.5°	0.0	0.0
										95°	1.0	1.0
										97.5°	3.0	2.0
										100°	14.0	10.0
										102.5°	38.0	32.0
										105°	61.0	56.0
										107.5°	84.0	80.0
										110°	106.0	103.0



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**tinued):**

175°	180°
391.7	391.7
349.2	348.2
295.8	293.8
272.0	271.1
272.0	272.0
283.9	283.9
297.8	297.8
307.7	308.6
310.6	311.6
295.8	295.8
267.1	267.1
229.5	233.5
195.9	199.8
174.1	177.1
167.2	168.2
184.0	185.0
181.0	183.0
155.3	156.3
139.5	139.5
133.5	132.6
133.5	131.6
137.5	136.5
131.6	131.6
128.6	128.6
125.6	125.6
124.6	123.7
124.6	122.7
122.7	119.7
115.7	107.8
98.9	92.0
80.1	79.1
62.3	63.3
47.5	47.5
34.6	28.7
9.9	9.9
0.0	0.0
0.0	0.0
0.0	0.0
1.0	1.0
2.0	2.0
8.0	8.0
28.0	28.0
54.0	54.0
77.0	78.0
102.0	101.0

**CANDELA DISTRIBUTION (continued):**

	155°	165°	175°
112.5°	129.0	126.0	124.0
115°	151.0	149.0	147.0
117.5°	174.0	172.0	170.0
120°	198.0	196.0	195.0
122.5°	223.0	221.0	220.0
125°	248.0	247.0	246.0
127.5°	272.0	270.0	269.0
130°	294.0	293.0	292.0
132.5°	318.0	317.0	314.0
135°	341.0	339.0	337.0
137.5°	364.0	363.0	360.0
140°	386.0	385.0	383.0
142.5°	407.0	408.0	406.0
145°	428.0	428.0	426.0
147.5°	448.0	447.0	444.0
150°	465.0	464.0	462.0
152.5°	482.0	483.0	480.0
155°	501.0	502.0	500.0
157.5°	516.0	517.0	515.0
160°	529.0	529.0	527.0
162.5°	538.0	539.0	536.0
165°	548.0	549.0	547.0
167.5°	558.0	559.0	556.0
170°	565.0	566.0	563.0
172.5°	567.0	569.0	566.0
175°	569.0	570.0	569.0
177.5°	574.0	575.0	573.0
180°	576.0	576.0	576.0

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180°
124.0
146.0
169.0
193.0
219.0
244.0
267.0
290.0
313.0
336.0
359.0
382.0
404.0
425.0
444.0
461.0
479.0
499.0
513.0
525.0
535.0
546.0
555.0
562.0
565.0
567.0
572.0
576.0

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