

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: P227672

Luminaire Tested: **ISS-AF-450-LED-E1-T3-7060-ULG**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P227672
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29759)-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-T3-7060-ULG
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT
LIGHT SQUARE WITH ACCULED OPTICS-TYPE III, 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: 4420.2 lumens
Efficiency: N/A
Efficacy: 105.2 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B1 - U5 - G1

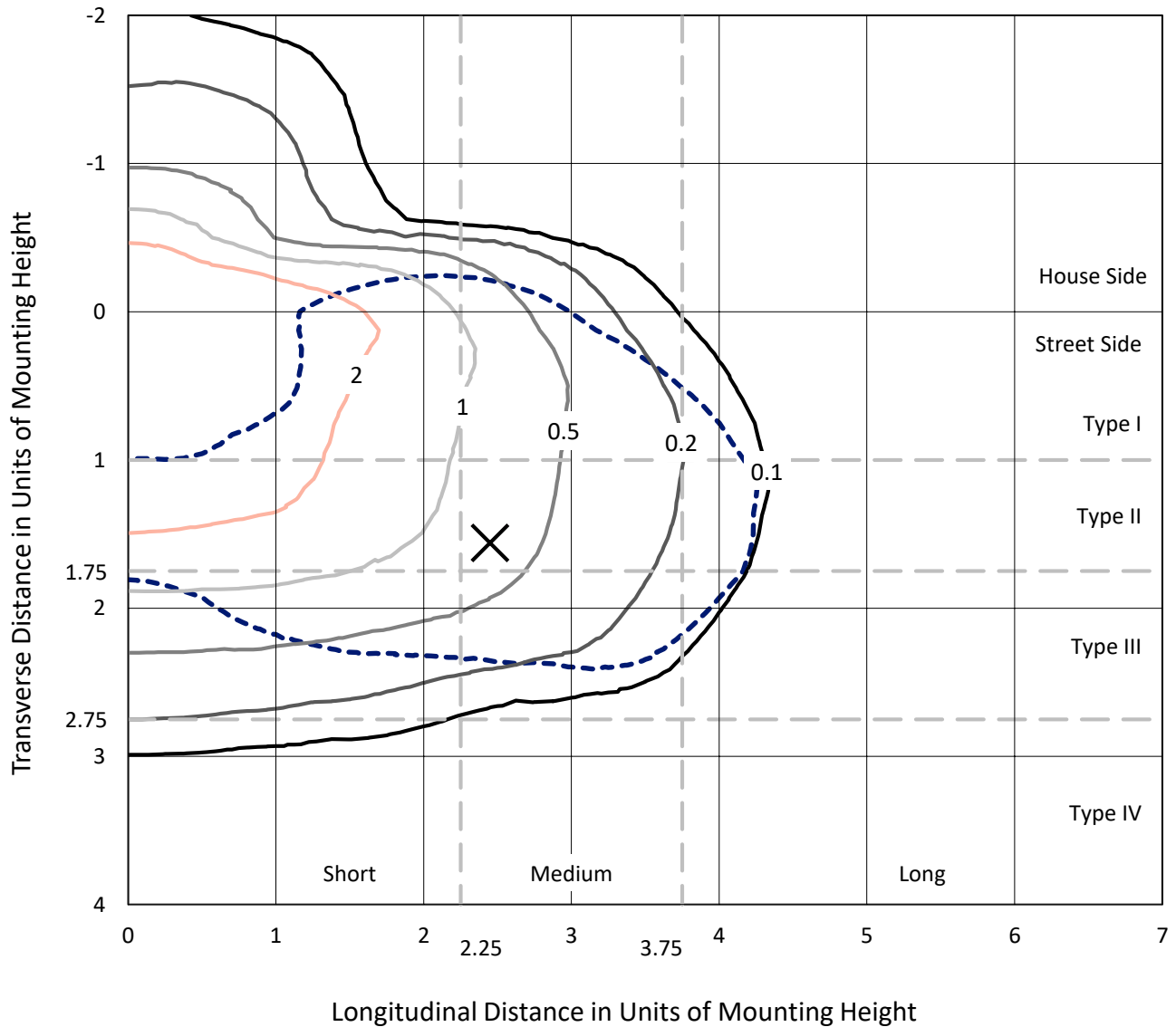
Input Watts (W): 42.01
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

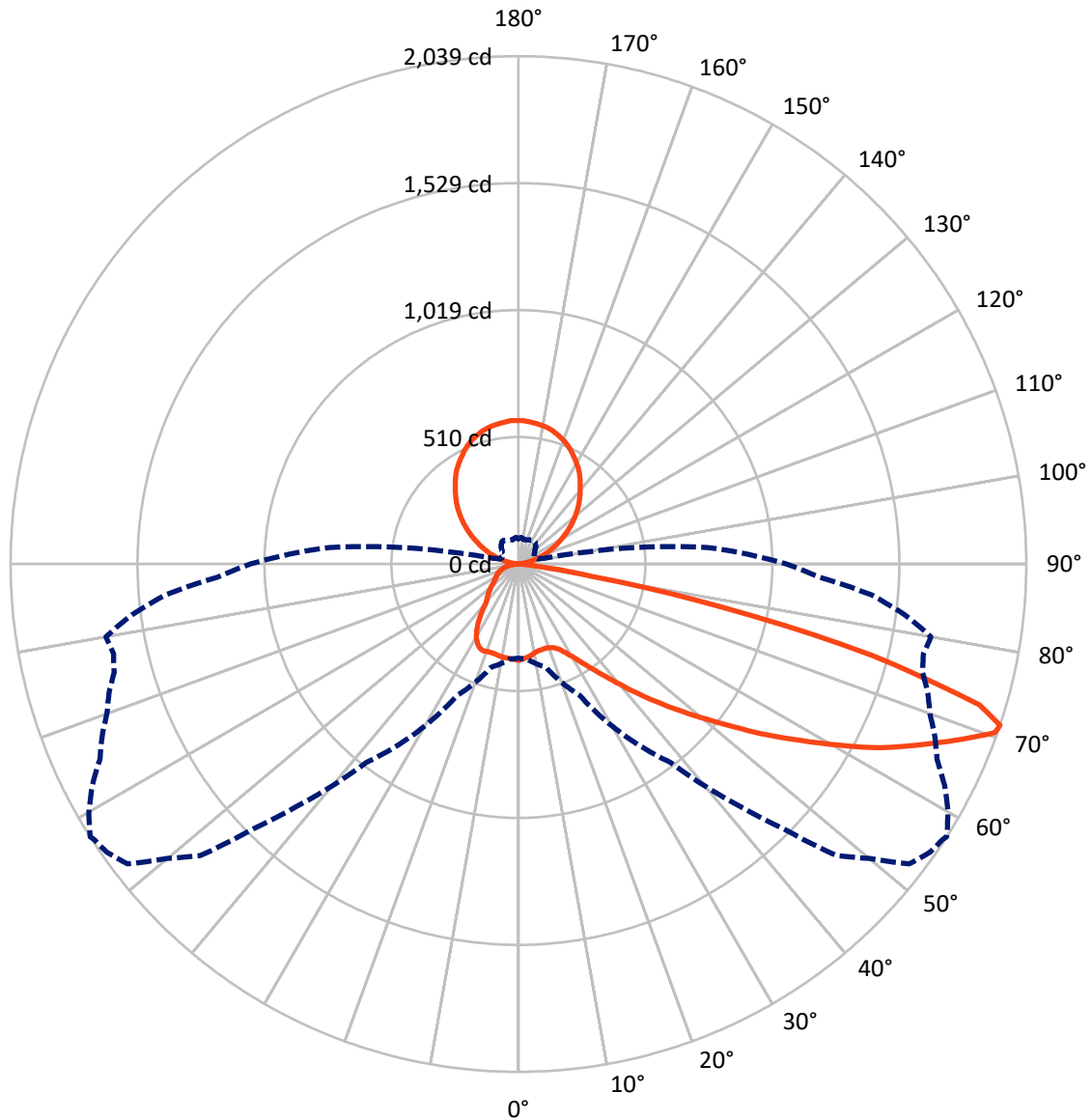
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.9 fc
 Type III - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 57.5-Deg Lateral - - - Horizontal Cone Through 71-Deg Vertical

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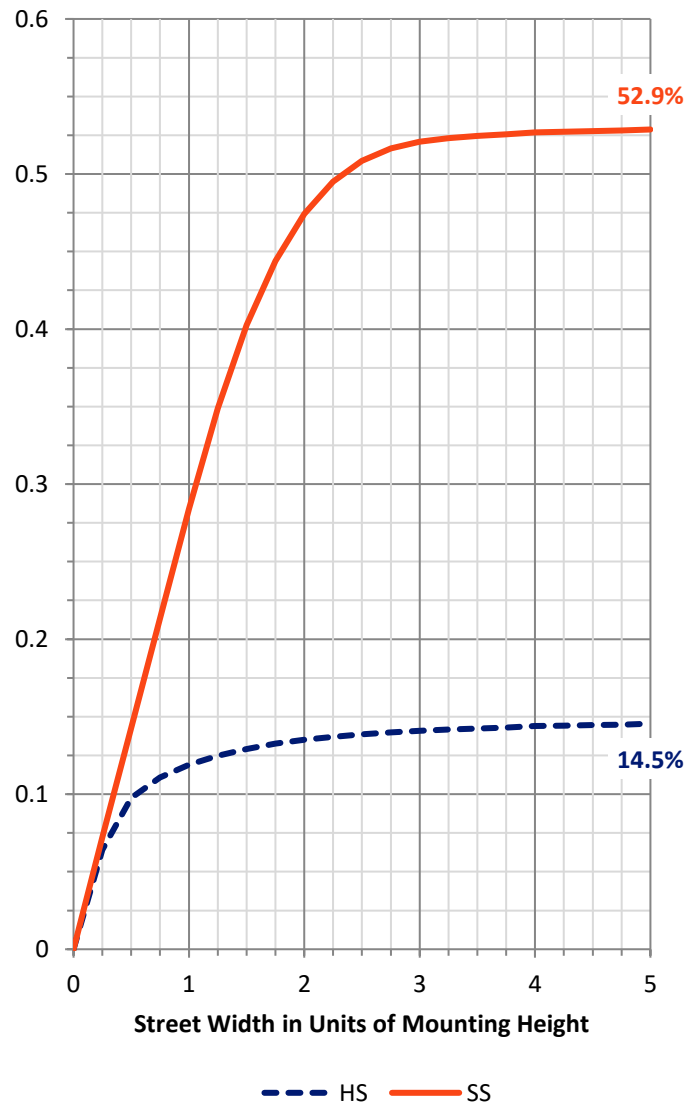
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	651.8	713.1	1364.9
	% Fixture	14.7	16.1	30.9
Street Side	Lumens	2342.2	713.1	3055.3
	% Fixture	53.0	16.1	69.1
Total	Lumens	2994.0	1426.2	4420.2
	% Fixture	67.7	32.3	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.4	0.8
10°-20°	104.9	2.4
20°-30°	174.1	3.9
30°-40°	277.2	6.3
40°-50°	450.3	10.2
50°-60°	675.2	15.3
60°-70°	805.5	18.2
70°-80°	435.0	9.8
80°-90°	35.4	0.8
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	6.0
140°-150°	269.3	6.1
150°-160°	231.1	5.2
160°-170°	155.1	3.5
170°-180°	54.3	1.2
0°-90°	2994.0	67.7
0°-180°	4420.2	100.0



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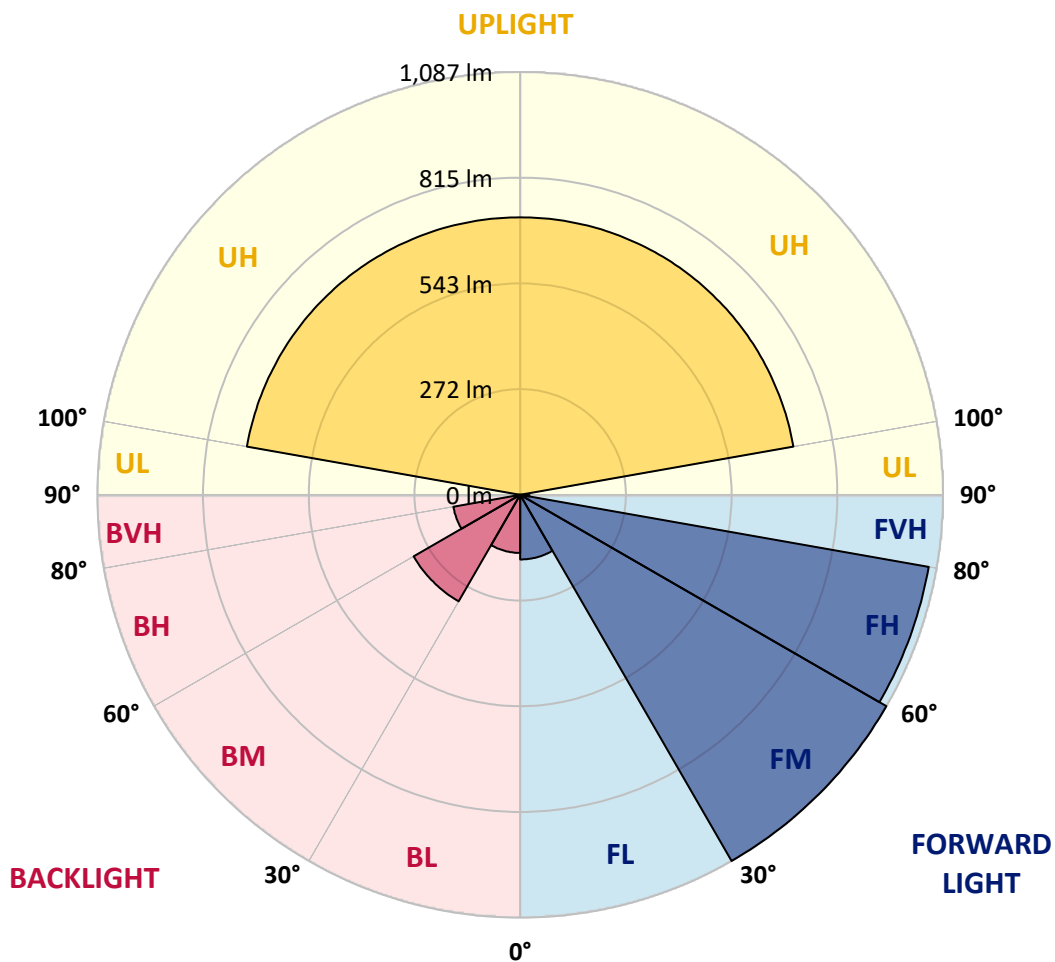
CATALOG NUMBER: ISS-AF-450-LED-E1-T3-7060-ULG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	166.1	3.8			
FM (30°-60°)	1086.6	24.6			
FH (60°-80°)	1066.1	24.1			G1/1800
FVH (80°-90°)	23.3	0.5			G1/100
BL (0°-30°)	149.3	3.4	B1/500		
BM (30°-60°)	316.1	7.2	B1/1000		
BH (60°-80°)	174.4	3.9	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	16.1		U4/1000	

BUG Rating: B1-U5-G1

Type III Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
0°	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8
2.5°	386.8	385.8	384.8	384.8	384.8	383.8	380.8	381.8	384.8	382.8	385.8
5°	385.8	383.8	382.8	382.8	382.8	379.9	378.9	377.9	383.8	378.9	382.8
7.5°	374.9	374.9	372.9	374.9	376.9	373.9	371.9	372.9	377.9	372.9	377.9
10°	367.0	365.0	364.0	364.0	366.0	362.0	360.1	362.0	368.0	362.0	369.0
12.5°	364.0	365.0	362.0	362.0	361.1	356.1	356.1	356.1	361.1	356.1	362.0
15°	369.0	368.0	365.0	363.0	360.1	356.1	355.1	356.1	360.1	354.1	361.1
17.5°	375.9	375.9	371.0	366.0	363.0	359.1	359.1	357.1	360.1	356.1	361.1
20°	393.7	390.7	383.8	375.9	368.0	366.0	362.0	362.0	364.0	360.1	363.0
22.5°	424.4	421.4	409.5	394.7	381.8	376.9	374.9	373.9	371.9	370.0	370.0
25°	464.9	460.0	446.1	428.3	406.6	402.6	398.6	395.7	388.8	388.8	383.8
27.5°	508.5	503.5	488.7	468.9	442.2	436.2	431.3	427.3	415.5	415.5	406.6
30°	557.9	552.0	534.2	512.4	481.7	479.8	472.8	466.9	451.1	450.1	438.2
32.5°	615.3	607.4	589.6	560.9	528.2	529.2	518.3	514.4	493.6	494.6	478.8
35°	680.6	671.7	653.9	616.3	582.6	585.6	575.7	568.8	543.1	543.1	526.3
37.5°	749.8	749.8	727.1	683.5	643.0	649.9	638.0	631.1	605.4	609.4	582.6
40°	827.0	831.9	807.2	757.7	716.2	719.2	710.2	702.3	671.7	678.6	649.9
42.5°	908.1	917.0	895.2	843.8	797.3	807.2	792.4	784.4	751.8	766.6	733.0
45°	1025.8	1027.8	987.2	937.8	899.2	908.1	887.3	884.4	843.8	859.6	826.0
47.5°	1100.0	1095.1	1065.4	1035.7	1012.9	1030.8	1012.0	1007.0	960.5	971.4	923.9
50°	1150.4	1153.4	1130.7	1127.7	1131.7	1165.3	1162.3	1152.4	1097.0	1089.1	1029.8
52.5°	1195.9	1183.1	1179.1	1206.8	1249.4	1288.9	1304.8	1291.9	1231.6	1209.8	1152.4
55°	1188.0	1169.2	1190.0	1257.3	1341.4	1402.7	1404.7	1395.8	1341.4	1332.5	1270.1
57.5°	1134.6	1138.6	1181.1	1277.1	1419.5	1482.8	1493.7	1482.8	1438.3	1446.2	1394.8
60°	1060.4	1068.3	1135.6	1259.3	1481.8	1536.2	1541.2	1554.0	1524.4	1545.1	1509.5
62.5°	949.6	960.5	1046.6	1214.7	1438.3	1519.4	1564.9	1594.6	1588.7	1636.1	1617.4
65°	872.5	872.5	956.6	1163.3	1395.8	1502.6	1570.9	1626.3	1634.2	1709.3	1702.4
67.5°	729.0	734.0	806.2	1019.9	1344.3	1465.0	1567.9	1661.9	1709.3	1828.1	1834.0
70°	504.5	508.5	555.9	728.1	1086.1	1189.0	1340.4	1493.7	1636.1	1815.2	1908.2
71°	377.9	382.8	429.3	580.7	920.0	1005.0	1162.3	1321.6	1500.6	1733.1	1837.9
72.5°	185.0	187.9	233.5	372.9	640.0	748.8	839.8	992.2	1182.1	1448.2	1596.6
75°	86.1	87.1	96.9	134.5	244.3	290.8	331.4	429.3	547.0	780.5	960.5
77.5°	63.3	63.3	69.2	88.0	126.6	128.6	126.6	129.6	156.3	223.6	336.3
80°	46.5	46.5	50.4	59.4	84.1	84.1	81.1	82.1	79.1	82.1	93.0
82.5°	30.7	30.7	32.6	35.6	51.4	51.4	49.5	49.5	47.5	46.5	50.4
85°	17.8	18.8	19.8	16.8	21.8	20.8	18.8	20.8	19.8	17.8	21.8
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



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
110°	101.0	102.0	103.0	106.0	110.0	110.5	111.0	111.5	112.0	112.5	113.0
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°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°
0°	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8
2.5°	381.8	384.8	384.8	380.8	383.8	380.8	382.8	379.9	382.8	377.9	383.8
5°	378.9	381.8	381.8	375.9	381.8	375.9	380.8	373.9	380.8	372.9	380.8
7.5°	371.0	377.9	377.9	370.0	376.9	371.0	376.9	370.0	375.9	367.0	376.9
10°	362.0	369.0	370.0	362.0	370.0	363.0	371.9	363.0	371.9	362.0	372.9
12.5°	356.1	364.0	366.0	357.1	367.0	358.1	369.0	359.1	369.0	358.1	371.0
15°	355.1	362.0	364.0	356.1	365.0	355.1	368.0	356.1	369.0	357.1	371.9
17.5°	356.1	362.0	364.0	355.1	364.0	356.1	367.0	357.1	369.0	358.1	371.9
20°	359.1	363.0	363.0	358.1	365.0	358.1	367.0	357.1	370.0	360.1	372.9
22.5°	368.0	369.0	369.0	365.0	369.0	364.0	371.0	364.0	372.9	365.0	376.9
25°	382.8	381.8	379.9	378.9	379.9	376.9	380.8	375.9	384.8	377.9	389.7
27.5°	408.5	404.6	402.6	402.6	401.6	402.6	402.6	400.6	404.6	402.6	410.5
30°	440.2	433.3	430.3	433.3	429.3	433.3	432.3	431.3	435.3	433.3	440.2
32.5°	481.7	469.9	467.9	473.8	465.9	472.8	466.9	469.9	472.8	474.8	478.8
35°	530.2	516.4	514.4	520.3	511.4	521.3	514.4	518.3	520.3	525.3	528.2
37.5°	587.6	570.8	567.8	575.7	563.8	574.7	564.8	576.7	573.7	580.7	583.6
40°	656.8	637.0	630.1	641.0	627.2	636.1	626.2	639.0	636.1	649.9	652.9
42.5°	741.9	713.2	706.3	717.2	696.4	699.4	691.5	706.3	704.3	723.1	726.1
45°	829.9	795.3	785.4	796.3	772.6	778.5	766.6	782.5	781.5	796.3	808.2
47.5°	927.9	885.3	872.5	884.4	855.7	862.6	850.7	867.5	868.5	885.3	897.2
50°	1029.8	985.2	968.4	979.3	952.6	957.6	945.7	966.5	965.5	988.2	997.1
52.5°	1140.6	1095.1	1082.2	1087.1	1055.5	1061.4	1051.5	1077.2	1071.3	1085.2	1103.0
55°	1263.2	1210.8	1195.9	1210.8	1173.2	1181.1	1168.3	1192.0	1182.1	1199.9	1204.9
57.5°	1388.8	1337.4	1325.5	1336.4	1300.8	1306.7	1289.9	1309.7	1301.8	1313.7	1321.6
60°	1522.4	1475.9	1464.0	1475.9	1441.3	1442.3	1413.6	1434.3	1422.5	1437.3	1434.3
62.5°	1650.0	1610.4	1607.5	1624.3	1580.8	1575.8	1541.2	1556.0	1539.2	1549.1	1537.2
65°	1758.8	1736.1	1740.0	1753.9	1715.3	1703.4	1663.8	1671.8	1647.0	1647.0	1632.2
67.5°	1901.3	1876.5	1876.5	1888.4	1839.9	1809.3	1754.9	1747.9	1707.4	1699.5	1664.8
70°	2020.0	2026.9	2019.0	2028.9	1971.5	1909.2	1837.0	1802.3	1748.9	1723.2	1682.6
71°	1977.4	2017.0	2030.8	2038.8	1991.3	1929.0	1853.8	1809.3	1757.8	1723.2	1679.7
72.5°	1784.5	1880.5	1934.9	1934.9	1940.8	1901.3	1829.0	1780.6	1722.2	1676.7	1636.1
75°	1250.4	1406.7	1476.9	1469.0	1520.4	1538.2	1544.2	1523.4	1490.7	1425.4	1396.8
77.5°	556.9	734.0	839.8	840.8	896.2	944.7	983.3	1023.8	1009.0	977.3	975.4
80°	126.6	229.5	293.8	296.8	347.2	391.7	418.4	459.0	463.9	418.4	392.7
82.5°	54.4	64.3	73.2	72.2	89.0	106.8	126.6	137.5	132.6	109.8	103.9
85°	22.8	29.7	31.7	29.7	36.6	40.6	47.5	48.5	56.4	50.4	53.4
87.5°	0.0	1.0	1.0	0.0	2.0	0.0	2.0	1.0	4.9	2.0	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	11.8	11.5	10.0	8.5	7.0	6.5	6.0	5.5	5.0
100°	31.5	32.0	31.6	31.5	31.0	30.5	30.0	29.2	28.5	27.8	27.0
102.5°	50.8	51.0	50.8	50.8	50.5	50.2	50.0	49.5	49.0	48.5	48.0
105°	70.8	71.0	71.0	71.0	71.0	71.0	71.0	70.5	70.0	69.5	69.0
107.5°	92.5	93.0	92.8	92.8	92.5	92.2	92.0	91.8	91.5	91.2	91.0



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CANDELA DISTRIBUTION (continued):

	52.5°	55°	57°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°
110°	113.5	114.0	114.0	114.0	114.0	114.0	114.0	113.8	113.5	113.2	113.0
112.5°	135.5	136.0	136.0	136.0	136.0	136.0	136.0	135.8	135.5	135.2	135.0
115°	157.5	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0
117.5°	179.8	180.0	180.2	180.2	180.5	180.8	181.0	180.8	180.5	180.2	180.0
120°	203.5	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0
122.5°	227.8	228.0	228.0	228.0	228.0	228.0	228.0	228.2	228.5	228.8	229.0
125°	252.8	253.0	253.2	253.2	253.5	253.8	254.0	254.0	254.0	254.0	254.0
127.5°	277.5	278.0	277.8	277.8	277.5	277.2	277.0	277.2	277.5	277.8	278.0
130°	300.5	301.0	301.0	301.0	301.0	301.0	301.0	301.2	301.5	301.8	302.0
132.5°	324.2	325.0	325.0	325.0	325.0	325.0	325.0	325.2	325.5	325.8	326.0
135°	347.2	348.0	348.0	348.0	348.0	348.0	348.0	348.2	348.5	348.8	349.0
137.5°	368.5	369.0	369.0	369.0	369.0	369.0	369.0	369.2	369.5	369.8	370.0
140°	389.8	390.0	390.0	390.0	390.0	390.0	390.0	390.5	391.0	391.5	392.0
142.5°	411.5	412.0	412.0	412.0	412.0	412.0	412.0	412.2	412.5	412.8	413.0
145°	433.5	434.0	433.8	433.8	433.5	433.2	433.0	433.2	433.5	433.8	434.0
147.5°	453.8	454.0	453.6	453.5	453.0	452.5	452.0	452.2	452.5	452.8	453.0
150°	470.8	471.0	470.6	470.5	470.0	469.5	469.0	469.0	469.0	469.0	469.0
152.5°	486.8	487.0	486.8	486.8	486.5	486.2	486.0	486.0	486.0	486.0	486.0
155°	503.8	504.0	503.8	503.8	503.5	503.2	503.0	503.2	503.5	503.8	504.0
157.5°	519.0	519.0	518.6	518.5	518.0	517.5	517.0	517.2	517.5	517.8	518.0
160°	532.0	532.0	531.6	531.5	531.0	530.5	530.0	530.0	530.0	530.0	530.0
162.5°	541.8	542.0	541.6	541.5	541.0	540.5	540.0	539.5	539.0	538.5	538.0
165°	552.8	553.0	552.4	552.2	551.5	550.8	550.0	549.5	549.0	548.5	548.0
167.5°	560.0	560.0	559.6	559.5	559.0	558.5	558.0	558.2	558.5	558.8	559.0
170°	565.2	565.0	564.8	564.8	564.5	564.2	564.0	564.5	565.0	565.5	566.0
172.5°	568.8	569.0	568.6	568.5	568.0	567.5	567.0	567.2	567.5	567.8	568.0
175°	572.8	573.0	572.4	572.2	571.5	570.8	570.0	569.5	569.0	568.5	568.0
177.5°	577.0	577.0	576.4	576.2	575.5	574.8	574.0	574.0	574.0	574.0	574.0
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):

	77.5°	80°	82.5°	85°	87.5°	90°	95°	100°	102.5°	105°	107.5°
0°	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8
2.5°	379.9	384.8	379.9	384.8	381.8	384.8	383.8	384.8	379.9	384.8	378.9
5°	372.9	380.8	373.9	379.9	373.9	380.8	380.8	380.8	373.9	381.8	374.9
7.5°	367.0	375.9	367.0	375.9	370.0	376.9	376.9	379.9	371.9	380.8	371.0
10°	361.1	371.9	361.1	373.9	364.0	374.9	375.9	377.9	367.0	378.9	369.0
12.5°	358.1	371.9	359.1	371.9	360.1	374.9	375.9	377.9	366.0	380.8	368.0
15°	358.1	372.9	359.1	372.9	360.1	374.9	376.9	378.9	366.0	381.8	368.0
17.5°	358.1	372.9	361.1	373.9	362.0	375.9	377.9	379.9	368.0	381.8	370.0
20°	361.1	374.9	363.0	376.9	365.0	378.9	379.9	382.8	370.0	382.8	371.9
22.5°	368.0	379.9	370.0	382.8	373.9	384.8	385.8	388.8	378.9	389.7	380.8
25°	379.9	392.7	384.8	394.7	389.7	398.6	400.6	400.6	396.7	403.6	400.6
27.5°	404.6	414.5	408.5	417.4	414.5	421.4	421.4	422.4	425.4	427.3	430.3
30°	436.2	443.2	441.2	446.1	447.1	451.1	451.1	457.0	468.9	457.0	456.0
32.5°	478.8	482.7	483.7	485.7	489.7	492.6	496.6	503.5	513.4	485.7	476.8
35°	531.2	532.2	535.2	538.1	545.1	547.0	559.9	554.9	554.9	511.4	492.6
37.5°	588.6	588.6	596.5	596.5	613.3	614.3	627.2	601.4	586.6	530.2	502.5
40°	660.8	659.8	668.7	670.7	693.4	694.4	692.4	636.1	604.4	535.2	497.6
42.5°	737.0	739.9	751.8	755.8	772.6	778.5	753.8	659.8	612.3	532.2	480.8
45°	820.1	826.0	840.8	851.7	869.5	862.6	803.2	670.7	603.4	514.4	448.1
47.5°	911.1	917.0	928.9	949.6	957.6	949.6	843.8	674.6	589.6	486.7	400.6
50°	1003.1	1012.9	1029.8	1059.4	1063.4	1043.6	893.3	689.5	578.7	458.0	346.2
52.5°	1106.9	1116.8	1136.6	1186.1	1176.2	1135.6	951.6	717.2	581.7	440.2	299.7
55°	1216.7	1230.6	1269.2	1317.6	1295.9	1232.6	1015.9	757.7	593.5	421.4	248.3
57.5°	1332.5	1347.3	1397.7	1455.1	1412.6	1327.5	1081.2	789.4	599.5	382.8	191.9
60°	1447.2	1468.0	1533.3	1580.8	1514.5	1408.6	1139.6	810.2	583.6	309.6	148.4
62.5°	1552.1	1585.7	1658.9	1684.6	1578.8	1460.1	1171.2	795.3	519.3	213.7	119.7
65°	1626.3	1669.8	1717.3	1714.3	1566.9	1443.3	1147.5	727.1	386.8	141.5	101.9
67.5°	1657.9	1698.5	1709.3	1658.9	1481.8	1369.1	1062.4	585.6	222.6	105.8	89.0
70°	1669.8	1704.4	1643.1	1521.4	1315.6	1187.0	868.5	372.9	121.7	86.1	77.2
71°	1664.8	1681.7	1564.9	1422.5	1209.8	1075.3	761.7	283.9	103.9	80.1	73.2
72.5°	1597.6	1573.8	1393.8	1235.5	1025.8	889.3	592.5	179.0	85.1	72.2	68.3
75°	1305.8	1198.9	1025.8	876.4	698.4	558.9	321.5	92.0	68.3	62.3	59.4
77.5°	853.7	760.7	618.3	502.5	381.8	289.8	131.6	63.3	54.4	52.4	51.4
80°	304.7	244.3	185.0	162.2	122.7	100.9	64.3	48.5	42.5	43.5	42.5
82.5°	86.1	79.1	68.3	63.3	55.4	54.4	41.5	36.6	33.6	35.6	34.6
85°	42.5	36.6	26.7	25.7	19.8	22.8	20.8	24.7	21.8	22.8	20.8
87.5°	3.0	4.0	1.0	3.0	0.0	3.0	4.0	4.9	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



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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°	
110°	113.2	113.5	113.8	114.0	113.5	113.0	114.0	113.5	113.2	113.0	113.2	0°
112.5°	135.5	136.0	136.5	137.0	136.0	135.0	137.0	136.0	135.5	135.0	135.2	2.5°
115°	158.5	159.0	159.5	160.0	159.5	159.0	160.0	159.0	158.5	158.0	158.0	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	7.5°
120°	204.5	205.0	205.5	206.0	205.0	204.0	206.0	205.0	204.5	204.0	204.0	10°
122.5°	230.0	231.0	232.0	233.0	232.5	232.0	233.0	231.0	230.0	229.0	228.8	12.5°
125°	254.8	255.5	256.2	257.0	256.5	256.0	257.0	255.5	254.8	254.0	254.0	15°
127.5°	278.8	279.5	280.2	281.0	279.5	278.0	281.0	279.5	278.8	278.0	277.8	17.5°
130°	302.8	303.5	304.2	305.0	304.0	303.0	305.0	303.5	302.8	302.0	301.8	20°
132.5°	326.8	327.5	328.2	329.0	328.0	327.0	329.0	327.5	326.8	326.0	325.8	22.5°
135°	349.5	350.0	350.5	351.0	350.5	350.0	351.0	350.0	349.5	349.0	348.8	25°
137.5°	371.0	372.0	373.0	374.0	373.0	372.0	374.0	372.0	371.0	370.0	369.8	27.5°
140°	393.0	394.0	395.0	396.0	395.0	394.0	396.0	394.0	393.0	392.0	391.5	30°
142.5°	413.8	414.5	415.2	416.0	415.5	415.0	416.0	414.5	413.8	413.0	412.8	32.5°
145°	434.8	435.5	436.2	437.0	436.0	435.0	437.0	435.5	434.8	434.0	433.8	35°
147.5°	453.8	454.5	455.2	456.0	454.5	453.0	456.0	454.5	453.8	453.0	452.8	37.5°
150°	470.0	471.0	472.0	473.0	471.5	470.0	473.0	471.0	470.0	469.0	469.0	40°
152.5°	486.8	487.5	488.2	489.0	487.5	486.0	489.0	487.5	486.8	486.0	486.0	42.5°
155°	504.8	505.5	506.2	507.0	506.0	505.0	507.0	505.5	504.8	504.0	503.8	45°
157.5°	519.2	520.5	521.8	523.0	521.5	520.0	523.0	520.5	519.2	518.0	517.8	47.5°
160°	530.8	531.5	532.2	533.0	532.0	531.0	533.0	531.5	530.8	530.0	530.0	50°
162.5°	538.5	539.0	539.5	540.0	538.5	537.0	540.0	539.0	538.5	538.0	538.5	52.5°
165°	548.5	549.0	549.5	550.0	549.0	548.0	550.0	549.0	548.5	548.0	548.5	55°
167.5°	560.0	561.0	562.0	563.0	562.0	561.0	563.0	561.0	560.0	559.0	558.8	57.5°
170°	567.2	568.5	569.8	571.0	570.0	569.0	571.0	568.5	567.2	566.0	565.5	60°
172.5°	568.8	569.5	570.2	571.0	569.5	568.0	571.0	569.5	568.8	568.0	567.8	62.5°
175°	568.8	569.5	570.2	571.0	569.5	568.0	571.0	569.5	568.8	568.0	568.5	65°
177.5°	574.8	575.5	576.2	577.0	575.5	574.0	577.0	575.5	574.8	574.0	574.0	67.5°
180°	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	70°
												71°
												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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DISTRIBUTION (continued):

CANDELA DISTRIBUTION

110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	110°	110°
386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8	386.8	110°	113.5
385.8	381.8	386.8	381.8	386.8	383.8	386.8	383.8	386.8	388.8	388.8	112.5°	135.5
383.8	376.9	385.8	380.8	386.8	381.8	385.8	382.8	387.8	389.7	391.7	115°	158.0
382.8	375.9	384.8	377.9	386.8	379.9	385.8	381.8	387.8	389.7	393.7	117.5°	180.5
381.8	372.9	384.8	374.9	385.8	378.9	385.8	379.9	386.8	388.8	389.7	120°	204.0
381.8	371.9	384.8	373.9	385.8	375.9	384.8	375.9	385.8	384.8	381.8	122.5°	228.5
382.8	370.0	384.8	371.9	384.8	372.9	383.8	371.9	381.8	378.9	376.9	125°	254.0
382.8	370.0	383.8	371.0	382.8	371.9	380.8	370.0	378.9	377.9	374.9	127.5°	277.5
384.8	371.9	383.8	374.9	383.8	372.9	379.9	370.0	376.9	371.0	359.1	130°	301.5
390.7	381.8	390.7	381.8	385.8	375.9	378.9	367.0	366.0	356.1	337.3	132.5°	325.5
404.6	400.6	398.6	387.8	384.8	371.9	368.0	354.1	349.2	334.4	308.6	135°	348.5
422.4	413.5	401.6	388.8	375.9	360.1	349.2	338.3	327.4	308.6	276.0	137.5°	369.5
434.3	421.4	396.7	378.9	355.1	342.3	323.5	311.6	295.8	272.0	240.4	140°	391.0
442.2	422.4	384.8	364.0	332.4	315.6	290.8	278.0	255.2	232.5	209.7	142.5°	412.5
444.2	418.4	369.0	346.2	304.7	285.9	253.2	239.4	217.6	201.8	192.9	145°	433.5
436.2	404.6	344.2	314.6	269.1	247.3	216.6	206.7	193.9	187.9	184.0	147.5°	452.5
420.4	377.9	305.7	271.0	224.5	207.7	191.9	191.9	185.0	182.0	175.1	150°	469.0
391.7	338.3	256.2	222.6	190.9	187.9	179.0	183.0	178.1	176.1	166.2	152.5°	486.0
347.2	281.9	206.7	187.0	172.1	174.1	168.2	172.1	169.2	168.2	156.3	155°	503.5
289.8	224.5	174.1	167.2	157.3	160.3	155.3	160.3	157.3	158.3	149.4	157.5°	517.5
231.5	182.0	154.3	150.4	143.4	145.4	142.4	147.4	146.4	150.4	145.4	160°	530.0
185.0	155.3	137.5	134.5	130.6	131.6	130.6	135.5	136.5	144.4	144.4	162.5°	539.0
153.3	133.5	123.7	122.7	118.7	119.7	120.7	125.6	129.6	139.5	144.4	165°	549.0
131.6	119.7	112.8	111.8	109.8	110.8	112.8	118.7	122.7	135.5	146.4	167.5°	558.5
115.7	108.8	103.9	103.9	101.9	103.9	105.8	111.8	116.7	131.6	142.4	170°	565.0
103.9	98.9	96.0	96.9	96.0	97.9	99.9	105.8	111.8	125.6	136.5	172.5°	567.5
93.0	90.0	88.0	89.0	89.0	92.0	94.0	99.9	104.9	117.7	131.6	175°	569.0
84.1	82.1	81.1	82.1	83.1	86.1	89.0	93.0	96.9	108.8	124.6	177.5°	574.0
77.2	75.2	75.2	75.2	76.2	79.1	83.1	85.1	89.0	101.9	116.7	180°	576.0
73.2	72.2	72.2	72.2	73.2	76.2	80.1	82.1	86.1	98.9	112.8		
68.3	68.3	69.2	68.3	70.2	71.2	75.2	77.2	82.1	95.0	107.8		
60.3	60.3	61.3	61.3	63.3	63.3	66.3	68.3	74.2	85.1	96.9		
53.4	53.4	55.4	54.4	54.4	52.4	56.4	58.4	63.3	74.2	86.1		
45.5	44.5	46.5	43.5	42.5	40.6	43.5	46.5	54.4	61.3	63.3		
35.6	32.6	33.6	30.7	30.7	28.7	31.7	32.6	37.6	44.5	48.5		
21.8	17.8	19.8	16.8	18.8	16.8	17.8	18.8	22.8	27.7	26.7		
4.9	3.0	4.0	1.0	3.0	0.0	3.0	1.0	3.0	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		

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 ISS-AF-450-LED-E1-T3-7060-ULG

REPORT NUMBER: P227672
 CATALOG NUMBER: ISS-AF-450

TION (continued):

CANDELA DISTRIBUTION (con

112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°		155°	165°
113.8	114.0	114.0	114.0	114.0	114.0	113.5	113.0	112.0	110.0	0°	386.8	386.8
135.8	136.0	136.0	136.0	136.0	136.0	135.5	135.0	134.0	132.0	2.5°	390.7	389.7
158.0	158.0	158.0	158.0	158.0	158.0	157.5	157.0	156.0	154.0	5°	395.7	395.7
180.8	181.0	180.8	180.5	180.2	180.0	179.8	179.5	179.0	177.0	7.5°	396.7	398.6
204.0	204.0	204.0	204.0	204.0	204.0	203.5	203.0	202.0	201.0	10°	389.7	387.8
228.2	228.0	228.0	228.0	228.0	228.0	227.8	227.5	227.0	226.0	12.5°	378.9	376.9
254.0	254.0	253.8	253.5	253.2	253.0	252.8	252.5	252.0	251.0	15°	377.9	376.9
277.2	277.0	277.2	277.5	277.8	278.0	277.5	277.0	276.0	274.0	17.5°	371.0	366.0
301.2	301.0	301.0	301.0	301.0	301.0	300.5	300.0	299.0	298.0	20°	351.2	342.3
325.2	325.0	325.0	325.0	325.0	325.0	324.2	323.5	322.0	321.0	22.5°	323.5	310.6
348.2	348.0	348.0	348.0	348.0	348.0	347.2	346.5	345.0	345.0	25°	289.8	272.0
369.2	369.0	369.0	369.0	369.0	369.0	368.5	368.0	367.0	367.0	27.5°	253.2	235.4
390.5	390.0	390.0	390.0	390.0	390.0	389.8	389.5	389.0	388.0	30°	224.5	210.7
412.2	412.0	412.0	412.0	412.0	412.0	411.5	411.0	410.0	410.0	32.5°	203.8	195.9
433.2	433.0	433.2	433.5	433.8	434.0	433.5	433.0	432.0	431.0	35°	187.0	182.0
452.2	452.0	452.5	453.0	453.5	454.0	453.8	453.5	453.0	452.0	37.5°	176.1	168.2
469.0	469.0	469.5	470.0	470.5	471.0	470.8	470.5	470.0	469.0	40°	165.2	155.3
486.0	486.0	486.2	486.5	486.8	487.0	486.8	486.5	486.0	485.0	42.5°	155.3	145.4
503.2	503.0	503.2	503.5	503.8	504.0	503.8	503.5	503.0	503.0	45°	145.4	138.5
517.2	517.0	517.5	518.0	518.5	519.0	519.0	519.0	519.0	519.0	47.5°	140.5	134.5
530.0	530.0	530.5	531.0	531.5	532.0	532.0	532.0	532.0	532.0	50°	138.5	132.6
539.5	540.0	540.5	541.0	541.5	542.0	541.8	541.5	541.0	541.0	52.5°	140.5	135.5
549.5	550.0	550.8	551.5	552.2	553.0	552.8	552.5	552.0	552.0	55°	144.4	141.5
558.2	558.0	558.5	559.0	559.5	560.0	560.0	560.0	560.0	561.0	57.5°	140.5	135.5
564.5	564.0	564.2	564.5	564.8	565.0	565.2	565.5	566.0	567.0	60°	131.6	123.7
567.2	567.0	567.5	568.0	568.5	569.0	568.8	568.5	568.0	569.0	62.5°	125.6	117.7
569.5	570.0	570.8	571.5	572.2	573.0	572.8	572.5	572.0	572.0	65°	120.7	114.7
574.0	574.0	574.8	575.5	576.2	577.0	577.0	577.0	577.0	578.0	67.5°	115.7	109.8
576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	70°	109.8	103.9
										71°	106.8	99.9
										72.5°	101.9	94.0
										75°	92.0	84.1
										77.5°	76.2	67.3
										80°	58.4	52.4
										82.5°	43.5	38.6
										85°	22.8	17.8
										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



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CATALOG NUMBER: ISS-AF-450-LED-E1-1

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tinued):

175°	180°
386.8	386.8
390.7	389.7
396.7	397.7
400.6	399.6
389.7	387.8
378.9	378.9
377.9	377.9
364.0	363.0
340.3	337.3
306.7	303.7
265.1	261.2
228.5	228.5
203.8	203.8
190.9	191.9
179.0	180.0
161.2	161.2
146.4	146.4
139.5	138.5
133.5	132.6
129.6	128.6
125.6	125.6
122.7	122.7
122.7	120.7
123.7	120.7
121.7	119.7
121.7	120.7
123.7	121.7
123.7	119.7
112.8	105.8
106.8	100.9
96.0	92.0
82.1	81.1
64.3	63.3
52.4	49.5
37.6	32.6
14.8	14.8
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

CANDELA DISTRIBUTION (continued):

	155°	165°	175°
110°	106.0	103.0	102.0
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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<u>180°</u>
101.0
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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