

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: P227670

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P227670
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-ULG
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT
LIGHT SQUARE WITH ACCULED OPTICS-TYPE III, WITH UPLIGHT GLOW
Light Source: (16) 4000K CCT, 70 CRI LEDs and (1) UPLIGHT LED
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4521.6 lumens
Efficiency: N/A
Efficacy: 107.6 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

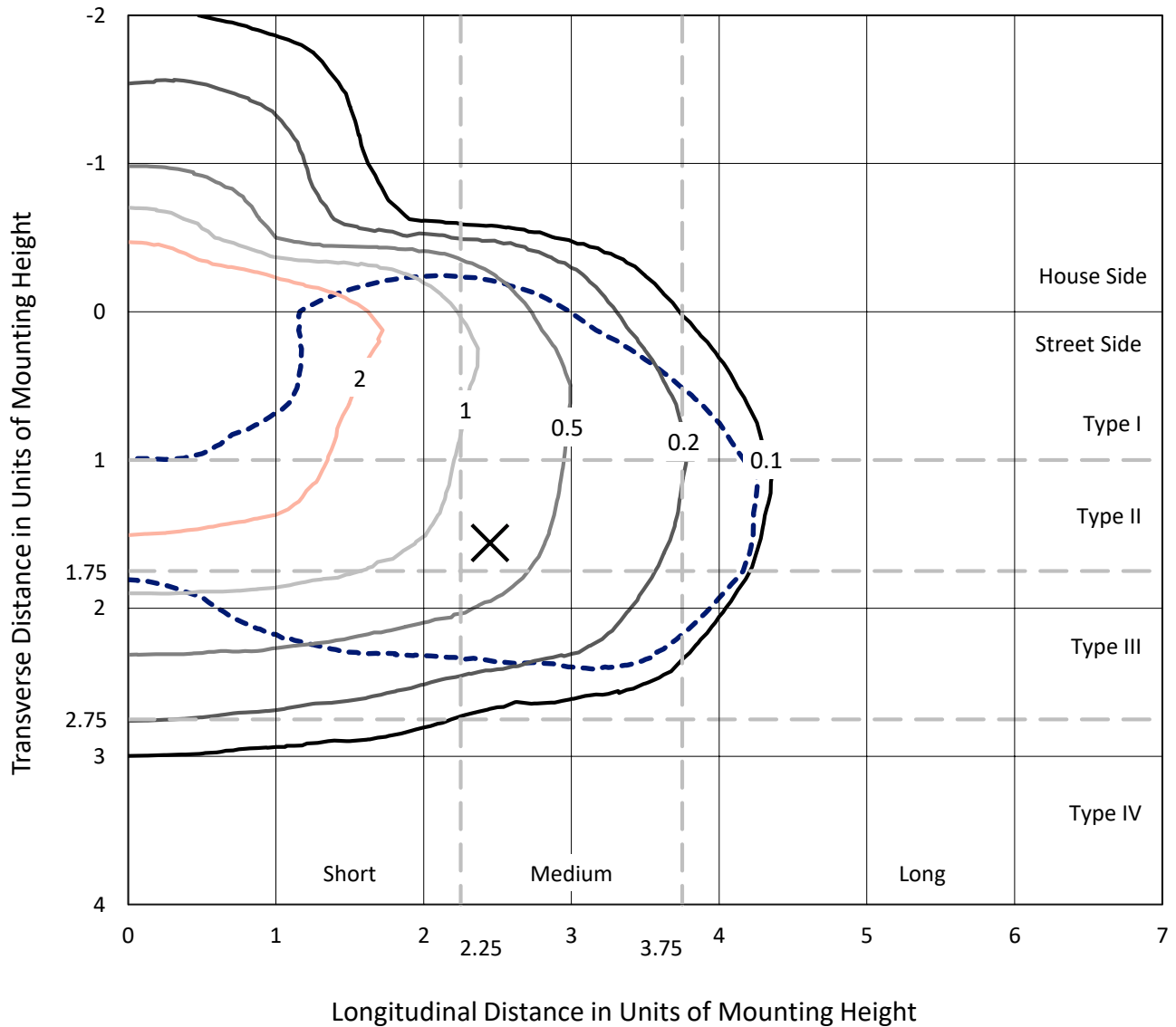


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Iso-Footcandle Lines of Horizontal Illumination

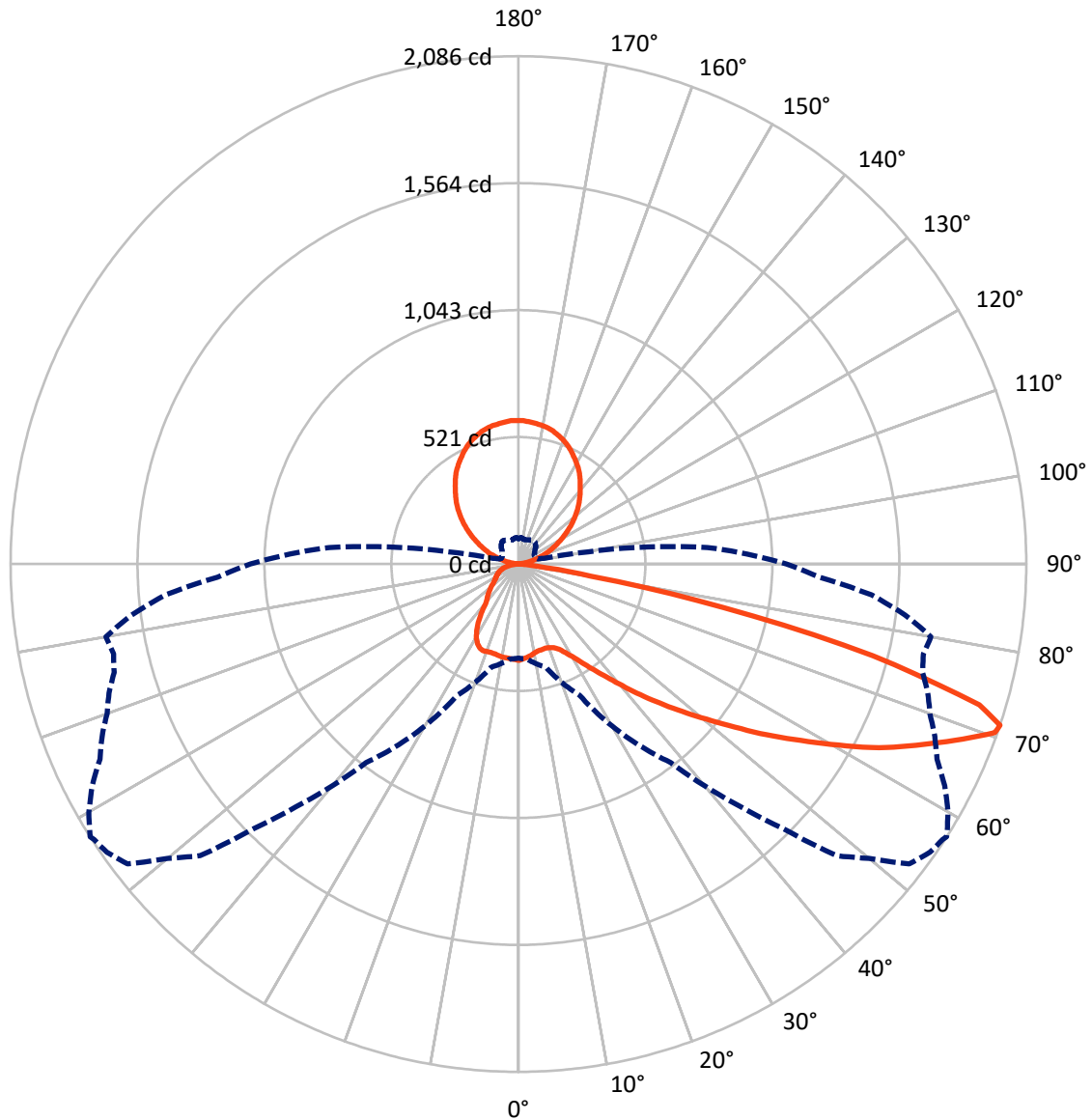
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4 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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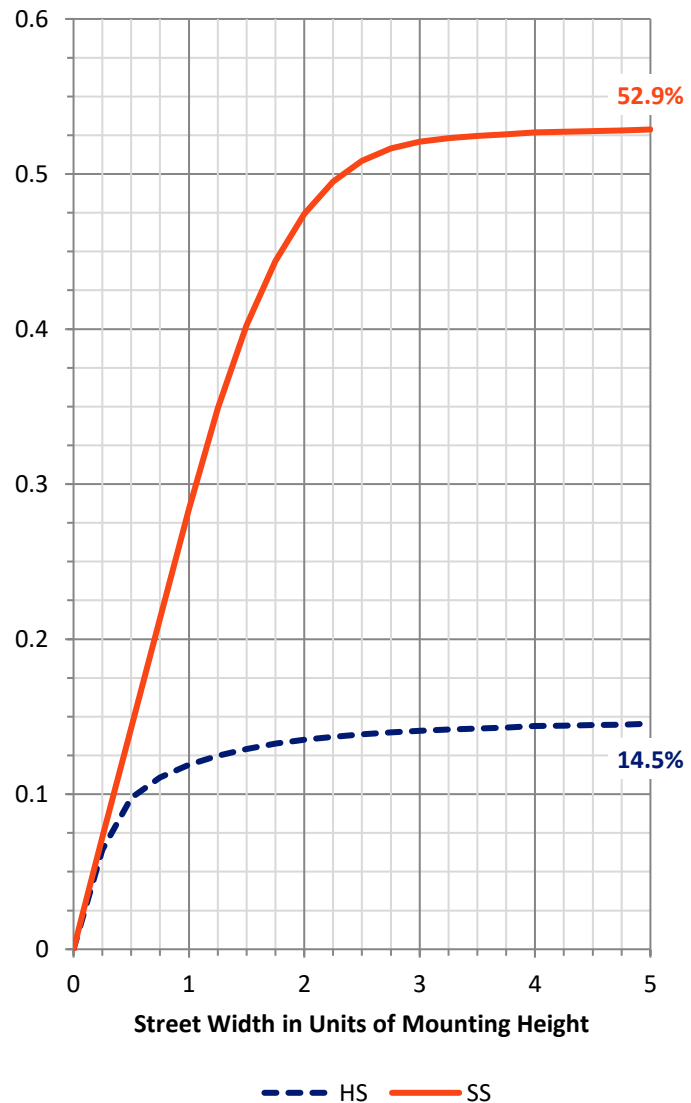
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	666.8	729.4	1396.2
	% Fixture	14.7	16.1	30.9
Street Side	Lumens	2396.0	729.4	3125.4
	% Fixture	53.0	16.1	69.1
Total	Lumens	3062.7	1458.9	4521.6
	% Fixture	67.7	32.3	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.2	0.8
10°-20°	107.3	2.4
20°-30°	178.1	3.9
30°-40°	283.6	6.3
40°-50°	460.7	10.2
50°-60°	690.7	15.3
60°-70°	824.0	18.2
70°-80°	445.0	9.8
80°-90°	36.2	0.8
90°-100°	4.8	0.1
100°-110°	70.6	1.6
110°-120°	156.6	3.5
120°-130°	229.0	5.1
130°-140°	271.7	6.0
140°-150°	275.5	6.1
150°-160°	236.4	5.2
160°-170°	158.7	3.5
170°-180°	55.6	1.2
0°-90°	3062.7	67.7
0°-180°	4521.6	100.0



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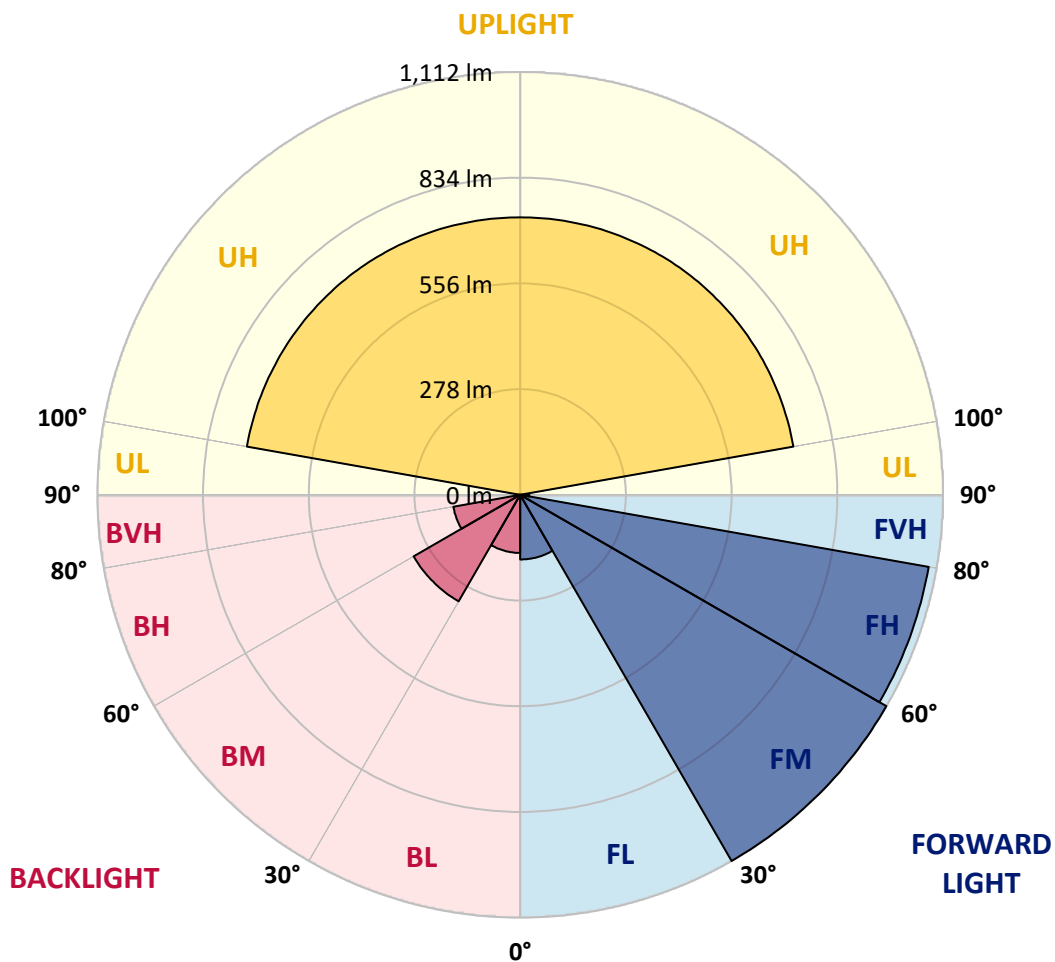
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	169.9	3.8			
FM (30°-60°)	1111.6	24.6			
FH (60°-80°)	1090.6	24.1			G1/1800
FVH (80°-90°)	23.9	0.5			G1/100
BL (0°-30°)	152.7	3.4	B1/500		
BM (30°-60°)	323.3	7.2	B1/1000		
BH (60°-80°)	178.4	3.9	B1/500		G1/500
BVH (80°-90°)	12.4	0.3			G1/100
UL (90°-100°)	4.8	0.1		U1/10	
UH (100°-180°)	729.4	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°	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7
2.5°	395.7	394.7	393.6	393.6	393.6	392.6	389.5	390.6	393.6	391.6	394.7
5°	394.7	392.6	391.6	391.6	391.6	388.6	387.6	386.6	392.6	387.6	391.6
7.5°	383.5	383.5	381.5	383.5	385.6	382.5	380.4	381.5	386.6	381.5	386.6
10°	375.4	373.4	372.4	372.4	374.4	370.3	368.4	370.3	376.4	370.3	377.5
12.5°	372.4	373.4	370.3	370.3	369.4	364.3	364.3	364.3	369.4	364.3	370.3
15°	377.5	376.4	373.4	371.3	368.4	364.3	363.2	364.3	368.4	362.2	369.4
17.5°	384.5	384.5	379.5	374.4	371.3	367.3	367.3	365.3	368.4	364.3	369.4
20°	402.7	399.7	392.6	384.5	376.4	374.4	370.3	370.3	372.4	368.4	371.3
22.5°	434.1	431.1	418.9	403.8	390.6	385.6	383.5	382.5	380.4	378.5	378.5
25°	475.6	470.6	456.3	438.1	415.9	411.8	407.7	404.8	397.7	397.7	392.6
27.5°	520.2	515.1	499.9	479.7	452.3	446.2	441.2	437.1	425.0	425.0	415.9
30°	570.7	564.7	546.5	524.2	492.8	490.8	483.7	477.6	461.5	460.4	448.3
32.5°	629.4	621.3	603.1	573.8	540.3	541.3	530.2	526.2	504.9	506.0	489.8
35°	696.2	687.1	668.9	630.4	596.0	599.0	588.9	581.9	555.6	555.6	538.4
37.5°	767.0	767.0	743.8	699.2	657.8	664.8	652.6	645.6	619.3	623.4	596.0
40°	846.0	851.0	825.7	775.1	732.6	735.7	726.5	718.4	687.1	694.2	664.8
42.5°	928.9	938.0	915.7	863.2	815.6	825.7	810.6	802.4	769.1	784.2	749.8
45°	1049.3	1051.4	1009.9	959.3	919.8	928.9	907.7	904.7	863.2	879.3	845.0
47.5°	1125.2	1120.2	1089.9	1059.5	1036.1	1054.5	1035.2	1030.1	982.5	993.7	945.1
50°	1176.8	1179.9	1156.7	1153.6	1157.7	1192.0	1189.0	1178.8	1122.2	1114.1	1053.4
52.5°	1223.3	1210.3	1206.2	1234.5	1278.1	1318.5	1334.7	1321.6	1259.9	1237.6	1178.8
55°	1215.3	1196.0	1217.3	1286.2	1372.2	1434.9	1436.9	1427.8	1372.2	1363.1	1299.2
57.5°	1160.6	1164.7	1208.2	1306.4	1452.1	1516.8	1528.0	1516.8	1471.3	1479.4	1426.8
60°	1084.7	1092.8	1161.7	1288.2	1515.8	1571.5	1576.6	1589.7	1559.4	1580.6	1544.1
62.5°	971.4	982.5	1070.6	1242.6	1471.3	1554.3	1600.8	1631.2	1625.2	1673.6	1654.5
65°	892.5	892.5	978.6	1190.0	1427.8	1537.1	1607.0	1663.6	1671.7	1748.5	1741.5
67.5°	745.7	750.8	824.7	1043.3	1375.2	1498.6	1603.9	1700.0	1748.5	1870.1	1876.1
70°	516.1	520.2	568.7	744.8	1111.0	1216.3	1371.2	1528.0	1673.6	1856.9	1952.0
71°	386.6	391.6	439.2	594.0	941.1	1028.1	1189.0	1351.9	1535.0	1772.9	1880.1
72.5°	189.2	192.2	238.9	381.5	654.7	766.0	859.1	1015.0	1209.2	1481.4	1633.2
75°	88.1	89.1	99.1	137.6	249.9	297.5	339.0	439.2	559.6	798.4	982.5
77.5°	64.8	64.8	70.8	90.0	129.5	131.6	129.5	132.6	159.9	228.7	344.0
80°	47.6	47.6	51.6	60.8	86.0	86.0	83.0	84.0	80.9	84.0	95.1
82.5°	31.4	31.4	33.3	36.4	52.6	52.6	50.6	50.6	48.6	47.6	51.6
85°	18.2	19.2	20.3	17.2	22.3	21.3	19.2	21.3	20.3	18.2	22.3
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	3.1	4.1	5.3	6.6	8.0	9.2	10.2	11.3
100°	8.2	8.2	10.2	14.3	22.5	24.6	26.6	28.6	30.7	31.2	31.7
102.5°	28.6	28.6	32.7	38.9	46.0	47.3	48.6	49.9	51.1	51.4	51.7
105°	55.2	55.2	57.3	62.4	67.5	68.5	69.6	70.6	71.6	71.8	72.1
107.5°	79.8	78.8	81.8	85.9	90.0	90.8	91.6	92.3	93.1	93.6	94.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
110°	103.3	104.3	105.4	108.4	112.5	113.0	113.5	114.1	114.6	115.1	115.6
112.5°	126.8	126.8	128.9	132.0	135.0	135.5	136.1	136.6	137.1	137.6	138.1
115°	149.4	150.4	152.4	154.5	157.5	158.0	158.6	159.1	159.6	160.1	160.6
117.5°	172.9	173.9	175.9	178.0	181.1	181.6	182.1	182.6	183.1	183.3	183.6
120°	197.4	199.5	200.5	202.5	205.6	205.8	206.1	206.4	206.6	207.1	207.7
122.5°	224.0	225.0	226.1	228.1	231.2	231.4	231.7	232.0	232.2	232.4	232.7
125°	249.6	251.6	252.7	253.7	256.8	257.0	257.3	257.6	257.8	258.0	258.3
127.5°	273.1	275.2	276.2	278.2	280.3	280.8	281.3	281.8	282.3	282.8	283.4
130°	296.7	298.7	299.7	300.7	304.8	305.0	305.4	305.7	305.9	306.4	306.9
132.5°	320.2	321.2	324.3	325.3	328.4	328.6	328.9	329.2	329.4	330.2	330.9
135°	343.7	344.7	346.8	348.8	352.9	352.9	352.9	352.9	352.9	353.7	354.5
137.5°	367.2	368.3	371.3	372.4	375.4	375.4	375.4	375.4	375.4	375.9	376.4
140°	390.8	391.8	393.8	394.9	396.9	397.1	397.4	397.7	397.9	398.1	398.4
142.5°	413.3	415.3	417.4	416.3	419.4	419.4	419.4	419.4	419.4	419.9	420.4
145°	434.8	435.8	437.8	437.8	440.9	441.1	441.4	441.7	441.9	442.4	442.9
147.5°	454.2	454.2	457.3	458.3	462.4	462.6	462.9	463.2	463.4	463.6	463.9
150°	471.6	472.6	474.6	475.7	479.8	480.0	480.3	480.6	480.8	481.0	481.3
152.5°	490.0	491.0	494.1	493.1	496.1	496.3	496.6	496.9	497.2	497.4	497.7
155°	510.5	511.5	513.5	512.5	514.5	514.5	514.5	514.5	514.5	514.7	515.1
157.5°	524.8	526.8	528.9	527.8	530.9	530.9	530.9	530.9	530.9	530.9	530.9
160°	537.0	539.1	541.1	541.1	544.2	544.2	544.2	544.2	544.2	544.2	544.2
162.5°	547.3	548.3	551.4	550.3	553.4	553.4	553.4	553.4	553.4	553.6	553.9
165°	558.5	559.6	561.6	560.6	564.7	564.7	564.7	564.7	564.7	564.9	565.2
167.5°	567.7	568.8	571.8	570.8	573.9	573.7	573.4	573.1	572.9	572.9	572.9
170°	574.9	575.9	579.0	578.0	580.0	579.8	579.5	579.2	579.0	578.8	578.5
172.5°	578.0	579.0	582.1	580.0	582.1	581.9	581.5	581.2	581.0	581.2	581.5
175°	580.0	582.1	583.1	582.1	585.1	585.1	585.1	585.1	585.1	585.3	585.6
177.5°	585.1	586.2	588.2	587.2	591.3	591.1	590.8	590.4	590.2	590.2	590.2
180°	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2



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CANDELA DISTRIBUTION (continued):

	52.5°	55°	57°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°
0°	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7
2.5°	390.6	393.6	393.6	389.5	392.6	389.5	391.6	388.6	391.6	386.6	392.6
5°	387.6	390.6	390.6	384.5	390.6	384.5	389.5	382.5	389.5	381.5	389.5
7.5°	379.5	386.6	386.6	378.5	385.6	379.5	385.6	378.5	384.5	375.4	385.6
10°	370.3	377.5	378.5	370.3	378.5	371.3	380.4	371.3	380.4	370.3	381.5
12.5°	364.3	372.4	374.4	365.3	375.4	366.3	377.5	367.3	377.5	366.3	379.5
15°	363.2	370.3	372.4	364.3	373.4	363.2	376.4	364.3	377.5	365.3	380.4
17.5°	364.3	370.3	372.4	363.2	372.4	364.3	375.4	365.3	377.5	366.3	380.4
20°	367.3	371.3	371.3	366.3	373.4	366.3	375.4	365.3	378.5	368.4	381.5
22.5°	376.4	377.5	377.5	373.4	377.5	372.4	379.5	372.4	381.5	373.4	385.6
25°	391.6	390.6	388.6	387.6	388.6	385.6	389.5	384.5	393.6	386.6	398.6
27.5°	417.9	413.9	411.8	411.8	410.8	411.8	411.8	409.8	413.9	411.8	419.9
30°	450.3	443.2	440.2	443.2	439.2	443.2	442.2	441.2	445.3	443.2	450.3
32.5°	492.8	480.7	478.6	484.7	476.6	483.7	477.6	480.7	483.7	485.7	489.8
35°	542.4	528.3	526.2	532.2	523.1	533.3	526.2	530.2	532.2	537.4	540.3
37.5°	601.1	583.9	580.8	588.9	576.7	587.9	577.8	589.9	586.9	594.0	597.0
40°	671.9	651.6	644.6	655.7	641.6	650.7	640.6	653.7	650.7	664.8	667.9
42.5°	758.9	729.6	722.5	733.7	712.4	715.5	707.4	722.5	720.5	739.7	742.8
45°	848.9	813.6	803.4	814.6	790.3	796.4	784.2	800.5	799.4	814.6	826.7
47.5°	949.2	905.6	892.5	904.7	875.3	882.4	870.2	887.4	888.4	905.6	917.8
50°	1053.4	1007.8	990.6	1001.8	974.5	979.6	967.4	988.7	987.7	1010.9	1020.0
52.5°	1166.8	1120.2	1107.0	1112.0	1079.7	1085.8	1075.6	1101.9	1095.9	1110.1	1128.3
55°	1292.2	1238.6	1223.3	1238.6	1200.1	1208.2	1195.1	1219.4	1209.2	1227.4	1232.6
57.5°	1420.7	1368.1	1355.9	1367.1	1330.7	1336.7	1319.5	1339.8	1331.7	1343.9	1351.9
60°	1557.3	1509.8	1497.6	1509.8	1474.4	1475.4	1446.0	1467.2	1455.1	1470.3	1467.2
62.5°	1687.9	1647.4	1644.4	1661.6	1617.1	1612.0	1576.6	1591.7	1574.5	1584.7	1572.5
65°	1799.2	1775.9	1779.9	1794.2	1754.7	1742.5	1702.0	1710.2	1684.8	1684.8	1669.7
67.5°	1944.9	1919.6	1919.6	1931.7	1882.1	1850.8	1795.2	1788.0	1746.6	1738.5	1703.0
70°	2066.4	2073.4	2065.3	2075.5	2016.7	1953.0	1879.2	1843.7	1789.0	1762.7	1721.2
71°	2022.8	2063.3	2077.4	2085.6	2037.0	1973.3	1896.3	1850.8	1798.1	1762.7	1718.3
72.5°	1825.5	1923.7	1979.3	1979.3	1985.3	1944.9	1871.0	1821.5	1761.7	1715.2	1673.6
75°	1279.1	1439.0	1510.8	1502.7	1555.3	1573.5	1579.6	1558.4	1524.9	1458.1	1428.9
77.5°	569.7	750.8	859.1	860.1	916.8	966.4	1005.9	1047.3	1032.2	999.7	997.8
80°	129.5	234.8	300.5	303.6	355.2	400.7	428.0	469.5	474.5	428.0	401.7
82.5°	55.6	65.8	74.9	73.9	91.0	109.3	129.5	140.7	135.6	112.3	106.3
85°	23.3	30.4	32.4	30.4	37.4	41.5	48.6	49.6	57.7	51.6	54.6
87.5°	0.0	1.0	1.0	0.0	2.0	0.0	2.0	1.0	5.0	2.0	6.0
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°	12.3	13.3	12.1	11.8	10.2	8.7	7.2	6.6	6.1	5.6	5.1
100°	32.2	32.7	32.3	32.2	31.7	31.2	30.7	29.9	29.2	28.4	27.6
102.5°	52.0	52.2	52.0	52.0	51.7	51.4	51.1	50.6	50.1	49.6	49.1
105°	72.4	72.6	72.6	72.6	72.6	72.6	72.6	72.1	71.6	71.1	70.6
107.5°	94.6	95.1	94.9	94.9	94.6	94.3	94.1	93.9	93.6	93.3	93.1



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CANDELA DISTRIBUTION (continued):

	52.5°	55°	57°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°
110°	116.1	116.6	116.6	116.6	116.6	116.6	116.6	116.4	116.1	115.8	115.6
112.5°	138.6	139.1	139.1	139.1	139.1	139.1	139.1	138.9	138.6	138.3	138.1
115°	161.1	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6
117.5°	183.9	184.1	184.3	184.3	184.6	184.9	185.2	184.9	184.6	184.3	184.1
120°	208.2	208.7	208.7	208.7	208.7	208.7	208.7	208.7	208.7	208.7	208.7
122.5°	233.0	233.2	233.2	233.2	233.2	233.2	233.2	233.4	233.7	234.1	234.3
125°	258.6	258.8	259.0	259.0	259.3	259.6	259.8	259.8	259.8	259.8	259.8
127.5°	283.9	284.4	284.2	284.2	283.9	283.6	283.4	283.6	283.9	284.2	284.4
130°	307.4	307.9	307.9	307.9	307.9	307.9	307.9	308.1	308.4	308.7	308.9
132.5°	331.6	332.5	332.5	332.5	332.5	332.5	332.5	332.7	333.0	333.3	333.5
135°	355.2	356.0	356.0	356.0	356.0	356.0	356.0	356.2	356.5	356.8	357.0
137.5°	377.0	377.5	377.5	377.5	377.5	377.5	377.5	377.7	378.0	378.3	378.5
140°	398.7	399.0	399.0	399.0	399.0	399.0	399.0	399.5	400.0	400.5	401.0
142.5°	420.9	421.5	421.5	421.5	421.5	421.5	421.5	421.7	422.0	422.3	422.5
145°	443.4	444.0	443.8	443.8	443.4	443.1	442.9	443.1	443.4	443.8	444.0
147.5°	464.2	464.4	464.0	463.9	463.4	462.9	462.4	462.6	462.9	463.2	463.4
150°	481.6	481.8	481.4	481.3	480.8	480.3	479.8	479.8	479.8	479.8	479.8
152.5°	498.0	498.2	498.0	498.0	497.7	497.4	497.2	497.2	497.2	497.2	497.2
155°	515.4	515.6	515.4	515.4	515.1	514.7	514.5	514.7	515.1	515.4	515.6
157.5°	530.9	530.9	530.5	530.4	529.9	529.4	528.9	529.1	529.4	529.7	529.9
160°	544.2	544.2	543.8	543.7	543.2	542.7	542.2	542.2	542.2	542.2	542.2
162.5°	554.2	554.4	554.0	553.9	553.4	552.9	552.4	551.9	551.4	550.9	550.3
165°	565.5	565.7	565.1	564.9	564.2	563.4	562.6	562.1	561.6	561.1	560.6
167.5°	572.9	572.9	572.4	572.3	571.8	571.3	570.8	571.0	571.3	571.6	571.8
170°	578.2	578.0	577.8	577.8	577.5	577.1	576.9	577.5	578.0	578.5	579.0
172.5°	581.9	582.1	581.6	581.5	581.0	580.5	580.0	580.2	580.5	580.8	581.0
175°	585.9	586.2	585.5	585.3	584.6	583.9	583.1	582.6	582.1	581.5	581.0
177.5°	590.2	590.2	589.6	589.4	588.7	588.0	587.2	587.2	587.2	587.2	587.2
180°	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2



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CANDELA DISTRIBUTION (continued):

	77.5°	80°	82.5°	85°	87.5°	90°	95°	100°	102.5°	105°	107.5°
0°	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7
2.5°	388.6	393.6	388.6	393.6	390.6	393.6	392.6	393.6	388.6	393.6	387.6
5°	381.5	389.5	382.5	388.6	382.5	389.5	389.5	389.5	382.5	390.6	383.5
7.5°	375.4	384.5	375.4	384.5	378.5	385.6	385.6	388.6	380.4	389.5	379.5
10°	369.4	380.4	369.4	382.5	372.4	383.5	384.5	386.6	375.4	387.6	377.5
12.5°	366.3	380.4	367.3	380.4	368.4	383.5	384.5	386.6	374.4	389.5	376.4
15°	366.3	381.5	367.3	381.5	368.4	383.5	385.6	387.6	374.4	390.6	376.4
17.5°	366.3	381.5	369.4	382.5	370.3	384.5	386.6	388.6	376.4	390.6	378.5
20°	369.4	383.5	371.3	385.6	373.4	387.6	388.6	391.6	378.5	391.6	380.4
22.5°	376.4	388.6	378.5	391.6	382.5	393.6	394.7	397.7	387.6	398.6	389.5
25°	388.6	401.7	393.6	403.8	398.6	407.7	409.8	409.8	405.8	412.9	409.8
27.5°	413.9	424.0	417.9	427.0	424.0	431.1	431.1	432.1	435.2	437.1	440.2
30°	446.2	453.4	451.3	456.3	457.4	461.5	461.5	467.5	479.7	467.5	466.5
32.5°	489.8	493.8	494.8	496.8	500.9	503.9	508.0	515.1	525.2	496.8	487.7
35°	543.4	544.4	547.5	550.4	557.6	559.6	572.8	567.6	567.6	523.1	503.9
37.5°	602.1	602.1	610.2	610.2	627.4	628.4	641.6	615.2	600.1	542.4	514.0
40°	676.0	674.9	684.0	686.1	709.3	710.3	708.3	650.7	618.3	547.5	509.0
42.5°	753.9	756.9	769.1	773.1	790.3	796.4	771.1	674.9	626.4	544.4	491.8
45°	838.9	845.0	860.1	871.2	889.5	882.4	821.6	686.1	617.2	526.2	458.4
47.5°	932.0	938.0	950.2	971.4	979.6	971.4	863.2	690.1	603.1	497.9	409.8
50°	1026.1	1036.1	1053.4	1083.7	1087.8	1067.6	913.8	705.3	592.0	468.5	354.1
52.5°	1132.3	1142.4	1162.7	1213.3	1203.2	1161.7	973.4	733.7	595.1	450.3	306.6
55°	1244.6	1258.8	1298.3	1347.8	1325.6	1260.9	1039.2	775.1	607.1	431.1	254.0
57.5°	1363.1	1378.2	1429.8	1488.5	1445.0	1358.0	1106.0	807.5	613.3	391.6	196.3
60°	1480.4	1501.7	1568.5	1617.1	1549.3	1440.9	1165.8	828.8	597.0	316.7	151.8
62.5°	1587.7	1622.1	1697.0	1723.3	1615.0	1493.6	1198.1	813.6	531.2	218.6	122.4
65°	1663.6	1708.1	1756.7	1753.6	1602.9	1476.4	1173.8	743.8	395.7	144.7	104.2
67.5°	1696.0	1737.5	1748.5	1697.0	1515.8	1400.5	1086.8	599.0	227.7	108.2	91.0
70°	1708.1	1743.5	1680.8	1556.3	1345.8	1214.2	888.4	381.5	124.5	88.1	79.0
71°	1703.0	1720.3	1600.8	1455.1	1237.6	1100.0	779.2	290.4	106.3	81.9	74.9
72.5°	1634.3	1609.9	1425.8	1263.9	1049.3	909.7	606.1	183.1	87.1	73.9	69.9
75°	1335.8	1226.4	1049.3	896.5	714.4	571.7	328.9	94.1	69.9	63.7	60.8
77.5°	873.3	778.2	632.5	514.0	390.6	296.5	134.6	64.8	55.6	53.6	52.6
80°	311.7	249.9	189.2	165.9	125.5	103.2	65.8	49.6	43.5	44.5	43.5
82.5°	88.1	80.9	69.9	64.8	56.7	55.6	42.5	37.4	34.4	36.4	35.4
85°	43.5	37.4	27.3	26.3	20.3	23.3	21.3	25.3	22.3	23.3	21.3
87.5°	3.1	4.1	1.0	3.1	0.0	3.1	4.1	5.0	1.0	4.1	3.1
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°	4.9	4.6	4.3	4.1	4.1	4.1	4.1	4.6	4.9	5.1	5.6
100°	27.4	27.1	26.8	26.6	26.1	25.6	26.6	27.1	27.4	27.6	28.4
102.5°	49.3	49.6	49.9	50.1	49.6	49.1	50.1	49.6	49.3	49.1	49.6
105°	71.1	71.6	72.1	72.6	71.6	70.6	72.6	71.6	71.1	70.6	71.1
107.5°	93.3	93.6	93.9	94.1	93.6	93.1	94.1	93.6	93.3	93.1	93.3



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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°	115.8	116.1	116.4	116.6	116.1	115.6	116.6	116.1	115.8	115.6	115.8	0°
112.5°	138.6	139.1	139.6	140.1	139.1	138.1	140.1	139.1	138.6	138.1	138.3	2.5°
115°	162.1	162.6	163.2	163.7	163.2	162.6	163.7	162.6	162.1	161.6	161.6	5°
117.5°	184.6	185.2	185.7	186.2	185.2	184.1	186.2	185.2	184.6	184.1	184.3	7.5°
120°	209.2	209.7	210.2	210.7	209.7	208.7	210.7	209.7	209.2	208.7	208.7	10°
122.5°	235.3	236.3	237.3	238.3	237.8	237.3	238.3	236.3	235.3	234.3	234.1	12.5°
125°	260.6	261.4	262.1	262.9	262.4	261.9	262.9	261.4	260.6	259.8	259.8	15°
127.5°	285.2	285.9	286.6	287.4	285.9	284.4	287.4	285.9	285.2	284.4	284.2	17.5°
130°	309.7	310.5	311.2	312.0	311.0	310.0	312.0	310.5	309.7	308.9	308.7	20°
132.5°	334.3	335.0	335.7	336.6	335.5	334.5	336.6	335.0	334.3	333.5	333.3	22.5°
135°	357.5	358.0	358.5	359.1	358.5	358.0	359.1	358.0	357.5	357.0	356.8	25°
137.5°	379.5	380.5	381.6	382.6	381.6	380.5	382.6	380.5	379.5	378.5	378.3	27.5°
140°	402.0	403.0	404.1	405.1	404.1	403.0	405.1	403.0	402.0	401.0	400.5	30°
142.5°	423.3	424.0	424.7	425.5	425.0	424.5	425.5	424.0	423.3	422.5	422.3	32.5°
145°	444.8	445.5	446.2	447.0	446.0	445.0	447.0	445.5	444.8	444.0	443.8	35°
147.5°	464.2	464.9	465.6	466.5	464.9	463.4	466.5	464.9	464.2	463.4	463.2	37.5°
150°	480.8	481.8	482.8	483.9	482.3	480.8	483.9	481.8	480.8	479.8	479.8	40°
152.5°	498.0	498.7	499.4	500.2	498.7	497.2	500.2	498.7	498.0	497.2	497.2	42.5°
155°	516.4	517.1	517.8	518.6	517.6	516.6	518.6	517.1	516.4	515.6	515.4	45°
157.5°	531.1	532.4	533.8	535.0	533.5	531.9	535.0	532.4	531.1	529.9	529.7	47.5°
160°	543.0	543.7	544.4	545.2	544.2	543.2	545.2	543.7	543.0	542.2	542.2	50°
162.5°	550.9	551.4	551.9	552.4	550.9	549.3	552.4	551.4	550.9	550.3	550.9	52.5°
165°	561.1	561.6	562.1	562.6	561.6	560.6	562.6	561.6	561.1	560.6	561.1	55°
167.5°	572.9	573.9	574.9	575.9	574.9	573.9	575.9	573.9	572.9	571.8	571.6	57.5°
170°	580.2	581.5	582.9	584.1	583.1	582.1	584.1	581.5	580.2	579.0	578.5	60°
172.5°	581.9	582.6	583.3	584.1	582.6	581.0	584.1	582.6	581.9	581.0	580.8	62.5°
175°	581.9	582.6	583.3	584.1	582.6	581.0	584.1	582.6	581.9	581.0	581.5	65°
177.5°	588.0	588.7	589.4	590.2	588.7	587.2	590.2	588.7	588.0	587.2	587.2	67.5°
180°	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	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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REPORT NUMBER: P
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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°
395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7	395.7	110°	116.1
394.7	390.6	395.7	390.6	395.7	392.6	395.7	392.6	395.7	397.7	397.7	112.5°	138.6
392.6	385.6	394.7	389.5	395.7	390.6	394.7	391.6	396.7	398.6	400.7	115°	161.6
391.6	384.5	393.6	386.6	395.7	388.6	394.7	390.6	396.7	398.6	402.7	117.5°	184.6
390.6	381.5	393.6	383.5	394.7	387.6	394.7	388.6	395.7	397.7	398.6	120°	208.7
390.6	380.4	393.6	382.5	394.7	384.5	393.6	384.5	394.7	393.6	390.6	122.5°	233.7
391.6	378.5	393.6	380.4	393.6	381.5	392.6	380.4	390.6	387.6	385.6	125°	259.8
391.6	378.5	392.6	379.5	391.6	380.4	389.5	378.5	387.6	386.6	383.5	127.5°	283.9
393.6	380.4	392.6	383.5	392.6	381.5	388.6	378.5	385.6	379.5	367.3	130°	308.4
399.7	390.6	399.7	390.6	394.7	384.5	387.6	375.4	374.4	364.3	345.0	132.5°	333.0
413.9	409.8	407.7	396.7	393.6	380.4	376.4	362.2	357.2	342.1	315.7	135°	356.5
432.1	423.0	410.8	397.7	384.5	368.4	357.2	346.1	334.9	315.7	282.3	137.5°	378.0
444.3	431.1	405.8	387.6	363.2	350.2	330.9	318.8	302.6	278.2	245.9	140°	400.0
452.3	432.1	393.6	372.4	340.0	322.8	297.5	284.4	261.1	237.8	214.5	142.5°	422.0
454.4	428.0	377.5	354.1	311.7	292.5	259.0	244.9	222.6	206.4	197.3	145°	443.4
446.2	413.9	352.1	321.8	275.3	253.0	221.6	211.4	198.4	192.2	188.2	147.5°	462.9
430.0	386.6	312.7	277.2	229.7	212.5	196.3	196.3	189.2	186.2	179.1	150°	479.8
400.7	346.1	262.1	227.7	195.3	192.2	183.1	187.2	182.2	180.1	170.0	152.5°	497.2
355.2	288.4	211.4	191.3	176.0	178.1	172.1	176.0	173.1	172.1	159.9	155°	515.1
296.5	229.7	178.1	171.0	160.9	164.0	158.9	164.0	160.9	161.9	152.8	157.5°	529.4
236.8	186.2	157.8	153.9	146.7	148.7	145.7	150.8	149.8	153.9	148.7	160°	542.2
189.2	158.9	140.7	137.6	133.6	134.6	133.6	138.6	139.6	147.7	147.7	162.5°	551.4
156.8	136.6	126.5	125.5	121.4	122.4	123.5	128.5	132.6	142.7	147.7	165°	561.6
134.6	122.4	115.4	114.4	112.3	113.3	115.4	121.4	125.5	138.6	149.8	167.5°	571.3
118.4	111.3	106.3	106.3	104.2	106.3	108.2	114.4	119.4	134.6	145.7	170°	578.0
106.3	101.2	98.2	99.1	98.2	100.1	102.2	108.2	114.4	128.5	139.6	172.5°	580.5
95.1	92.1	90.0	91.0	91.0	94.1	96.2	102.2	107.3	120.4	134.6	175°	582.1
86.0	84.0	83.0	84.0	85.0	88.1	91.0	95.1	99.1	111.3	127.5	177.5°	587.2
79.0	76.9	76.9	76.9	77.9	80.9	85.0	87.1	91.0	104.2	119.4	180°	589.2
74.9	73.9	73.9	73.9	74.9	77.9	81.9	84.0	88.1	101.2	115.4		
69.9	69.9	70.8	69.9	71.8	72.8	76.9	79.0	84.0	97.2	110.3		
61.7	61.7	62.7	62.7	64.8	64.8	67.8	69.9	75.9	87.1	99.1		
54.6	54.6	56.7	55.6	55.6	53.6	57.7	59.7	64.8	75.9	88.1		
46.5	45.5	47.6	44.5	43.5	41.5	44.5	47.6	55.6	62.7	64.8		
36.4	33.3	34.4	31.4	31.4	29.4	32.4	33.3	38.5	45.5	49.6		
22.3	18.2	20.3	17.2	19.2	17.2	18.2	19.2	23.3	28.3	27.3		
5.0	3.1	4.1	1.0	3.1	0.0	3.1	1.0	3.1	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		
6.1	6.6	7.2	8.7	10.2	11.8	13.3	12.3	11.3	9.2	4.1		
29.2	29.9	30.7	31.2	31.7	32.2	32.7	32.2	31.7	30.7	22.5		
50.1	50.6	51.1	51.4	51.7	52.0	52.2	52.0	51.7	51.1	46.0		
71.6	72.1	72.6	72.6	72.6	72.6	72.6	72.4	72.1	71.6	67.5		
93.6	93.9	94.1	94.3	94.6	94.9	95.1	94.6	94.1	93.1	90.0		

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

REPORT NUMBER: P227670
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TION (continued):

CANDELA DISTRIBUTION (con

112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°		155°	165°
116.4	116.6	116.6	116.6	116.6	116.6	116.1	115.6	114.6	112.5	0°	395.7	395.7
138.9	139.1	139.1	139.1	139.1	139.1	138.6	138.1	137.1	135.0	2.5°	399.7	398.6
161.6	161.6	161.6	161.6	161.6	161.6	161.1	160.6	159.6	157.5	5°	404.8	404.8
184.9	185.2	184.9	184.6	184.3	184.1	183.9	183.6	183.1	181.1	7.5°	405.8	407.7
208.7	208.7	208.7	208.7	208.7	208.7	208.2	207.7	206.6	205.6	10°	398.6	396.7
233.4	233.2	233.2	233.2	233.2	233.2	233.0	232.7	232.2	231.2	12.5°	387.6	385.6
259.8	259.8	259.6	259.3	259.0	258.8	258.6	258.3	257.8	256.8	15°	386.6	385.6
283.6	283.4	283.6	283.9	284.2	284.4	283.9	283.4	282.3	280.3	17.5°	379.5	374.4
308.1	307.9	307.9	307.9	307.9	307.9	307.4	306.9	305.9	304.8	20°	359.3	350.2
332.7	332.5	332.5	332.5	332.5	332.5	331.6	330.9	329.4	328.4	22.5°	330.9	317.7
356.2	356.0	356.0	356.0	356.0	356.0	355.2	354.5	352.9	352.9	25°	296.5	278.2
377.7	377.5	377.5	377.5	377.5	377.5	377.0	376.4	375.4	375.4	27.5°	259.0	240.8
399.5	399.0	399.0	399.0	399.0	399.0	398.7	398.4	397.9	396.9	30°	229.7	215.5
421.7	421.5	421.5	421.5	421.5	421.5	420.9	420.4	419.4	419.4	32.5°	208.5	200.4
443.1	442.9	443.1	443.4	443.8	444.0	443.4	442.9	441.9	440.9	35°	191.3	186.2
462.6	462.4	462.9	463.4	463.9	464.4	464.2	463.9	463.4	462.4	37.5°	180.1	172.1
479.8	479.8	480.3	480.8	481.3	481.8	481.6	481.3	480.8	479.8	40°	169.0	158.9
497.2	497.2	497.4	497.7	498.0	498.2	498.0	497.7	497.2	496.1	42.5°	158.9	148.7
514.7	514.5	514.7	515.1	515.4	515.6	515.4	515.1	514.5	514.5	45°	148.7	141.7
529.1	528.9	529.4	529.9	530.4	530.9	530.9	530.9	530.9	530.9	47.5°	143.7	137.6
542.2	542.2	542.7	543.2	543.7	544.2	544.2	544.2	544.2	544.2	50°	141.7	135.6
551.9	552.4	552.9	553.4	553.9	554.4	554.2	553.9	553.4	553.4	52.5°	143.7	138.6
562.1	562.6	563.4	564.2	564.9	565.7	565.5	565.2	564.7	564.7	55°	147.7	144.7
571.0	570.8	571.3	571.8	572.3	572.9	572.9	572.9	572.9	573.9	57.5°	143.7	138.6
577.5	576.9	577.1	577.5	577.8	578.0	578.2	578.5	579.0	580.0	60°	134.6	126.5
580.2	580.0	580.5	581.0	581.5	582.1	581.9	581.5	581.0	582.1	62.5°	128.5	120.4
582.6	583.1	583.9	584.6	585.3	586.2	585.9	585.6	585.1	585.1	65°	123.5	117.3
587.2	587.2	588.0	588.7	589.4	590.2	590.2	590.2	590.2	591.3	67.5°	118.4	112.3
589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	70°	112.3	106.3
										71°	109.3	102.2
										72.5°	104.2	96.2
										75°	94.1	86.0
										77.5°	77.9	68.8
										80°	59.7	53.6
										82.5°	44.5	39.5
										85°	23.3	18.2
										87.5°	0.0	0.0
										90°	0.0	0.0
										92.5°	0.0	0.0
										95°	1.0	1.0
										97.5°	3.1	2.0
										100°	14.3	10.2
										102.5°	38.9	32.7
										105°	62.4	57.3
										107.5°	85.9	81.8



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175°	180°
395.7	395.7
399.7	398.6
405.8	406.8
409.8	408.8
398.6	396.7
387.6	387.6
386.6	386.6
372.4	371.3
348.1	345.0
313.7	310.7
271.2	267.2
233.7	233.7
208.5	208.5
195.3	196.3
183.1	184.1
164.9	164.9
149.8	149.8
142.7	141.7
136.6	135.6
132.6	131.6
128.5	128.5
125.5	125.5
125.5	123.5
126.5	123.5
124.5	122.4
124.5	123.5
126.5	124.5
126.5	122.4
115.4	108.2
109.3	103.2
98.2	94.1
84.0	83.0
65.8	64.8
53.6	50.6
38.5	33.3
15.1	15.1
0.0	0.0
0.0	0.0
0.0	0.0
1.0	1.0
2.0	2.0
8.2	8.2
28.6	28.6
55.2	55.2
78.8	79.8

CANDELA DISTRIBUTION (continued):

	155°	165°	175°
110°	108.4	105.4	104.3
112.5°	132.0	128.9	126.8
115°	154.5	152.4	150.4
117.5°	178.0	175.9	173.9
120°	202.5	200.5	199.5
122.5°	228.1	226.1	225.0
125°	253.7	252.7	251.6
127.5°	278.2	276.2	275.2
130°	300.7	299.7	298.7
132.5°	325.3	324.3	321.2
135°	348.8	346.8	344.7
137.5°	372.4	371.3	368.3
140°	394.9	393.8	391.8
142.5°	416.3	417.4	415.3
145°	437.8	437.8	435.8
147.5°	458.3	457.3	454.2
150°	475.7	474.6	472.6
152.5°	493.1	494.1	491.0
155°	512.5	513.5	511.5
157.5°	527.8	528.9	526.8
160°	541.1	541.1	539.1
162.5°	550.3	551.4	548.3
165°	560.6	561.6	559.6
167.5°	570.8	571.8	568.8
170°	578.0	579.0	575.9
172.5°	580.0	582.1	579.0
175°	582.1	583.1	582.1
177.5°	587.2	588.2	586.2
180°	589.2	589.2	589.2



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180°
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103.3
126.8
149.4
172.9
197.4
224.0
249.6
273.1
296.7
320.2
343.7
367.2
390.8
413.3
434.8
454.2
471.6
490.0
510.5
524.8
537.0
547.3
558.5
567.7
574.9
578.0
580.0
585.1
589.2

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