

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: P227544

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P227544
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-ULG
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT
LIGHT SQUARE WITH ACCULED OPTICS-TYPE II, 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: 4460.2 lumens
Efficiency: N/A
Efficacy: 106.2 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

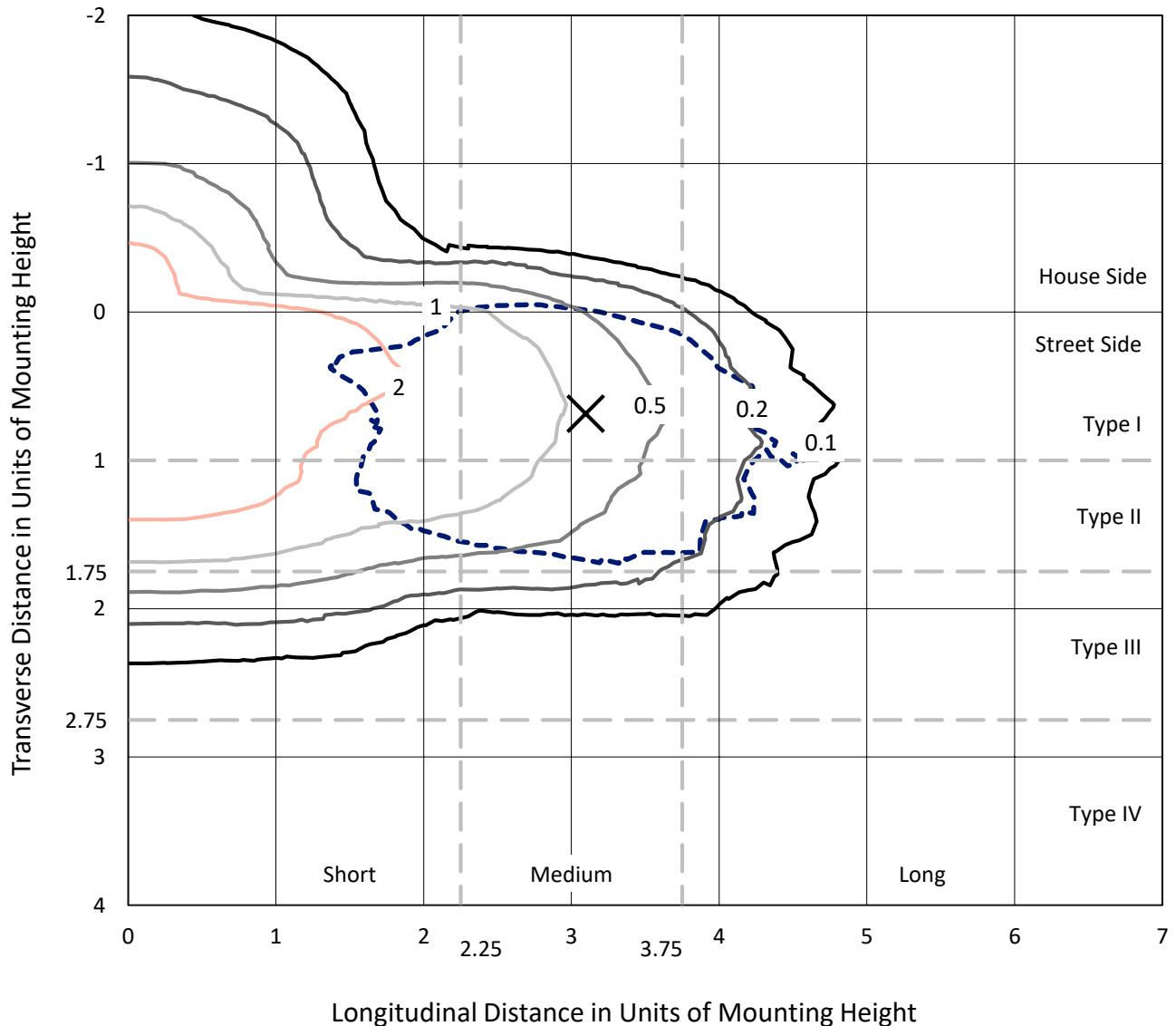


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Iso-Footcandle Lines of Horizontal Illumination

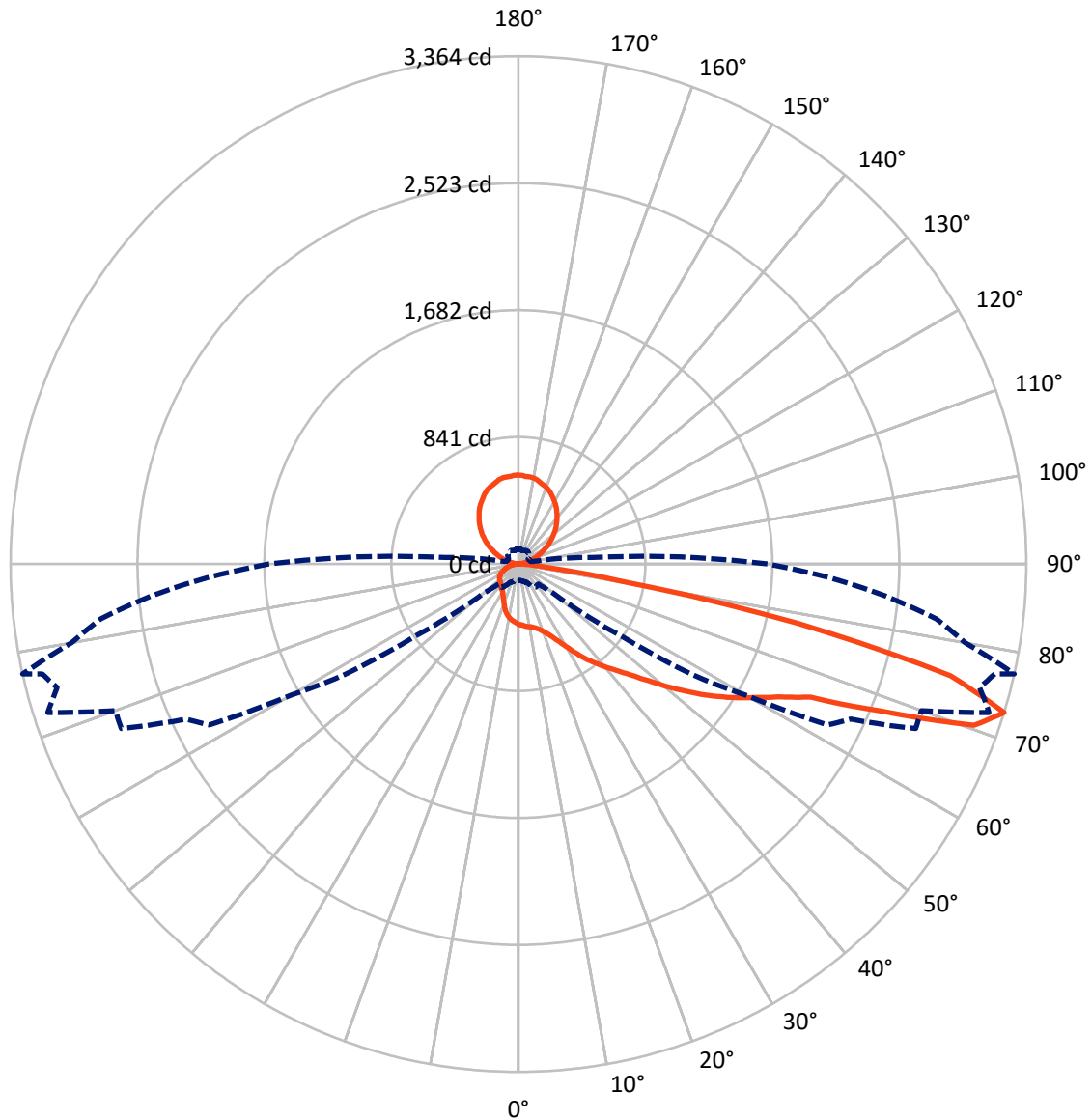
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4.9 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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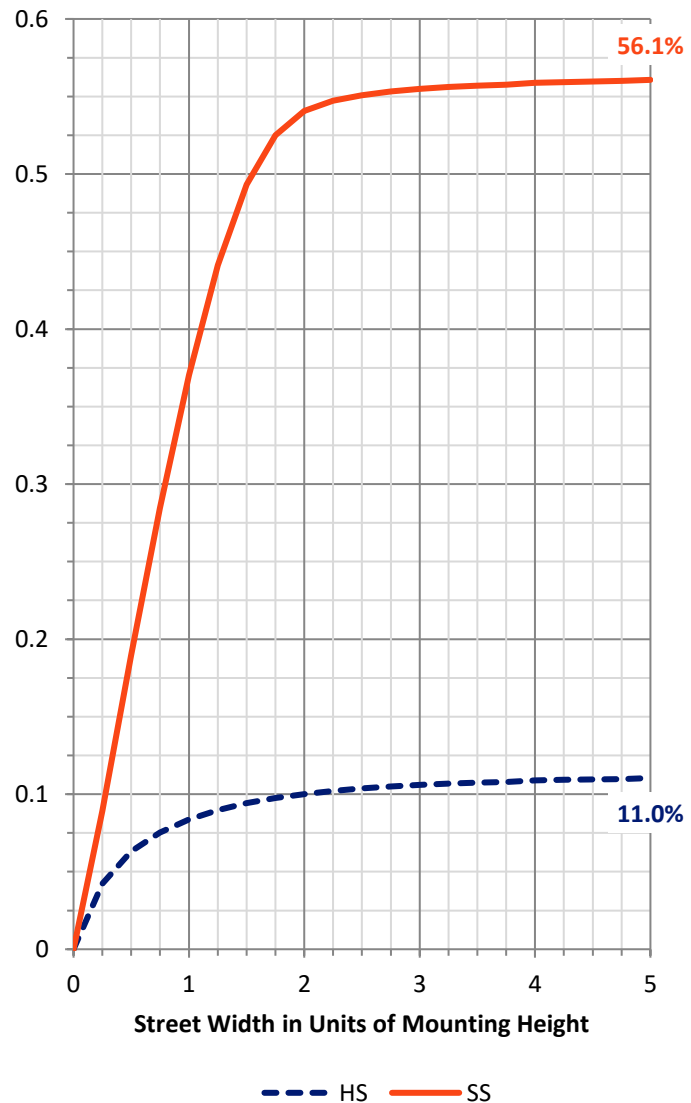
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	497.3	729.4	1226.8
	% Fixture	11.2	16.4	27.5
Street Side	Lumens	2504.0	729.4	3233.5
	% Fixture	56.1	16.4	72.5
Total	Lumens	3001.3	1458.9	4460.2
	% Fixture	67.3	32.7	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.2	0.8
10°-20°	114.1	2.6
20°-30°	202.6	4.5
30°-40°	321.0	7.2
40°-50°	481.6	10.8
50°-60°	624.0	14.0
60°-70°	709.1	15.9
70°-80°	470.5	10.5
80°-90°	41.2	0.9
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	6.1
140°-150°	275.5	6.2
150°-160°	236.4	5.3
160°-170°	158.7	3.6
170°-180°	55.6	1.2
0°-90°	3001.3	67.3
0°-180°	4460.2	100.0



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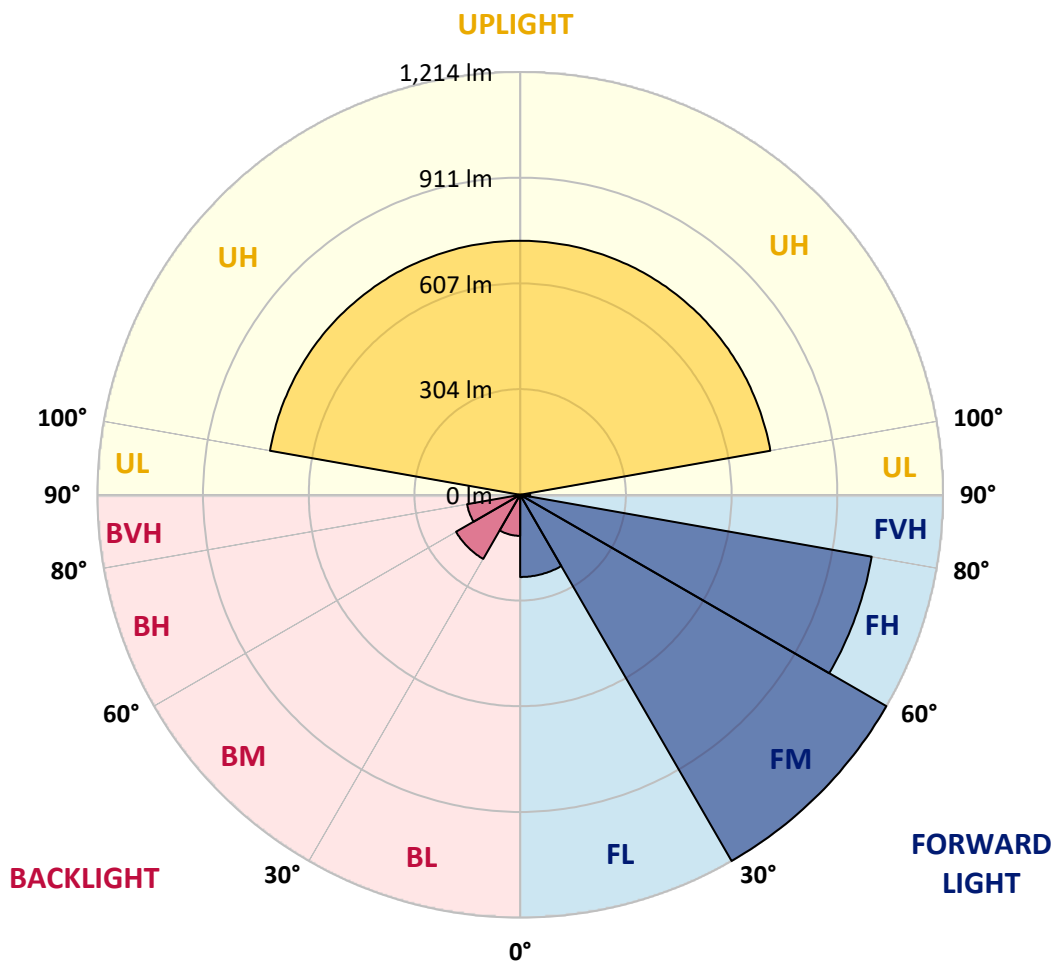
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	236.1	5.3			
FM (30°-60°)	1214.2	27.2			
FH (60°-80°)	1025.0	23.0			G1/1800
FVH (80°-90°)	28.8	0.6			G1/100
BL (0°-30°)	117.8	2.6	B1/500		
BM (30°-60°)	212.4	4.8	B0/220		
BH (60°-80°)	154.7	3.5	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	16.4		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°	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7
2.5°	434.1	432.1	431.1	429.0	427.1	426.1	423.0	420.9	424.0	423.0	423.0
5°	466.5	464.5	461.5	458.4	454.4	451.3	448.3	445.3	447.2	445.3	443.2
7.5°	492.9	490.8	486.7	483.8	479.7	475.6	471.6	470.6	468.5	465.5	464.5
10°	508.0	506.0	503.9	502.0	495.8	492.9	487.7	484.7	485.7	481.7	481.7
12.5°	522.1	520.2	519.1	519.1	514.0	511.1	509.0	506.0	508.0	502.0	499.9
15°	535.3	533.3	530.3	533.3	532.2	531.3	530.3	529.3	532.2	526.2	527.2
17.5°	556.6	555.6	549.5	545.4	546.5	549.5	551.5	550.4	550.4	547.5	548.5
20°	589.9	589.9	581.9	574.8	563.6	563.6	564.7	563.6	565.7	567.7	570.7
22.5°	615.3	613.3	610.2	604.2	592.0	581.9	581.9	577.9	580.8	581.9	588.0
25°	647.6	645.6	638.5	638.5	626.4	613.3	611.2	605.2	612.2	599.0	609.2
27.5°	687.1	685.1	676.0	672.0	665.8	649.7	645.6	646.6	653.8	634.5	644.6
30°	736.7	734.7	723.5	712.4	702.3	685.1	683.0	682.1	698.3	676.0	689.2
32.5°	799.4	799.4	787.3	772.1	751.9	728.6	720.5	721.5	743.8	719.5	741.7
35°	894.6	882.4	860.2	836.9	815.6	788.3	777.1	775.2	795.3	771.1	796.4
37.5°	955.2	947.2	926.9	909.7	886.5	860.2	852.0	855.1	872.3	836.9	873.3
40°	1010.0	1008.9	995.7	984.6	961.4	935.1	945.2	985.6	1031.1	962.4	963.4
42.5°	1046.4	1048.4	1047.4	1048.4	1035.2	1007.9	1025.1	1081.8	1159.7	1119.2	1081.8
45°	1052.4	1059.5	1062.5	1082.8	1096.0	1079.7	1088.8	1148.6	1304.4	1367.2	1198.2
47.5°	1067.7	1074.7	1068.6	1092.9	1153.6	1152.6	1189.1	1211.3	1232.6	1242.7	1370.1
50°	1087.8	1101.0	1095.0	1115.1	1164.7	1193.1	1224.5	1252.8	1235.6	1171.8	1206.3
52.5°	1088.8	1104.1	1137.4	1157.7	1206.3	1200.1	1221.4	1206.3	1232.6	1166.8	1200.1
55°	999.8	1002.8	1100.0	1202.2	1287.2	1270.0	1256.8	1222.4	1255.9	1173.8	1216.4
57.5°	859.2	869.3	970.5	1142.5	1324.6	1339.9	1335.8	1332.7	1359.1	1249.7	1296.3
60°	704.3	716.5	812.6	1015.0	1246.7	1286.2	1340.8	1374.2	1442.1	1398.5	1475.4
62.5°	439.2	448.3	554.5	807.5	1100.0	1177.9	1257.8	1297.3	1395.5	1415.8	1546.3
65°	209.5	212.5	254.0	439.2	799.4	946.1	1064.6	1148.6	1269.0	1360.0	1536.2
67.5°	163.0	164.0	179.1	233.7	409.8	508.0	642.6	753.9	882.4	1131.4	1350.0
70°	130.5	130.5	142.7	172.1	254.0	267.2	301.6	339.0	393.6	594.0	771.1
72.5°	109.3	109.3	117.4	135.6	188.2	191.3	189.2	186.2	186.2	234.8	299.5
75°	92.1	91.0	96.2	108.2	139.6	143.7	141.7	134.6	126.5	126.5	142.7
77.5°	74.9	74.9	79.0	85.0	101.2	103.2	103.2	97.2	90.0	91.0	98.2
80°	58.7	58.7	61.7	65.8	70.8	69.9	69.9	63.7	58.7	57.7	61.7
82.5°	42.5	43.5	50.6	47.6	45.5	42.5	42.5	41.5	37.4	34.4	36.4
85°	13.2	14.1	24.2	28.3	23.3	19.2	18.2	15.1	16.2	13.2	15.1
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
110°	103.3	104.3	105.4	108.4	112.5	113.0	113.5	114.1	114.6	115.1	115.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
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°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77°
0°	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7
2.5°	418.0	419.9	415.9	415.9	410.8	413.9	408.9	409.8	404.8	406.8	406.8
5°	438.1	439.2	434.1	432.1	427.1	427.1	422.0	422.0	414.9	417.0	414.9
7.5°	457.4	457.4	452.3	448.3	443.2	441.2	435.2	432.1	426.1	425.0	422.0
10°	473.6	473.6	466.5	462.5	456.3	453.4	445.3	442.2	435.2	430.0	427.1
12.5°	493.9	491.8	483.8	479.7	469.5	468.5	456.3	454.4	444.3	441.2	436.2
15°	518.1	520.2	507.0	506.0	491.8	490.8	474.6	473.6	458.4	457.4	450.3
17.5°	544.4	548.5	537.4	536.3	519.1	519.1	499.9	498.9	478.6	477.6	468.5
20°	567.7	572.8	565.7	567.7	552.5	553.5	532.2	532.2	503.9	502.0	493.9
22.5°	588.9	599.0	593.0	604.2	588.9	596.1	567.7	572.8	539.4	535.3	523.1
25°	610.2	623.4	621.3	639.5	628.4	640.6	611.2	621.3	577.9	580.8	564.7
27.5°	631.5	648.7	646.6	672.9	668.9	693.2	667.9	679.0	631.5	634.5	616.2
30°	666.9	686.1	679.0	706.3	706.3	745.8	726.6	743.8	691.2	697.2	676.0
32.5°	714.4	736.7	715.5	750.8	748.8	800.5	785.3	814.6	763.0	771.1	744.8
35°	766.1	801.5	767.0	806.5	800.5	854.1	843.9	891.5	836.9	846.0	819.7
37.5°	833.8	876.4	830.8	865.2	837.9	899.6	893.5	958.3	902.7	926.0	894.6
40°	913.8	947.2	890.5	919.8	874.3	938.0	927.9	1017.0	965.4	1002.8	974.5
42.5°	987.7	1011.0	936.1	972.5	917.8	982.6	964.3	1071.6	1027.1	1084.8	1053.4
45°	1054.5	1080.7	981.6	1022.0	961.4	1032.2	1000.9	1124.3	1093.9	1180.9	1149.6
47.5°	1149.6	1111.1	1023.1	1075.7	1007.9	1085.9	1044.3	1186.0	1174.9	1298.3	1261.9
50°	1118.2	1143.5	1057.5	1112.2	1050.4	1145.5	1100.0	1259.9	1262.9	1425.8	1404.6
52.5°	1121.3	1163.7	1083.8	1159.7	1100.0	1228.5	1180.9	1349.0	1363.1	1549.3	1519.9
55°	1139.5	1202.2	1123.3	1225.5	1169.8	1320.6	1287.2	1445.0	1469.4	1665.7	1648.5
57.5°	1185.0	1272.0	1191.0	1324.6	1266.9	1425.8	1395.5	1544.2	1577.6	1782.1	1777.0
60°	1360.0	1463.2	1321.7	1469.4	1392.4	1545.3	1504.8	1648.5	1681.8	1893.4	1906.5
62.5°	1555.4	1734.5	1650.5	1804.3	1600.9	1755.7	1636.3	1777.0	1779.0	2012.8	2054.3
65°	1605.9	1881.2	1953.0	2239.4	2133.2	2292.0	1973.3	2067.4	1946.0	2230.3	2290.1
67.5°	1586.7	1923.8	2123.0	2445.9	2566.3	2843.6	2789.9	2757.6	2476.3	2680.6	2752.5
70°	1164.7	1521.9	2009.7	2337.6	2684.7	2866.8	3155.3	3184.7	3172.5	3144.1	3191.7
72.5°	530.3	831.9	1360.0	1734.5	2307.3	2429.7	2847.6	2839.5	3268.6	3162.4	3237.2
75°	208.5	320.8	647.6	968.4	1595.8	1746.6	2220.2	2102.8	2638.2	2482.3	2642.2
77.5°	114.4	143.7	242.8	415.9	871.2	951.2	1359.1	1162.7	1636.3	1366.2	1419.8
80°	68.8	86.0	111.3	157.8	370.4	391.6	579.8	467.5	668.9	508.0	492.9
82.5°	37.4	46.5	55.6	77.9	137.6	152.8	200.4	180.1	214.5	183.2	179.1
85°	15.1	20.3	21.3	31.4	45.5	52.6	63.7	68.8	84.0	76.9	74.9
87.5°	0.0	1.0	0.0	2.0	0.0	2.0	0.0	3.1	3.1	5.0	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	11.8	10.2	8.7	7.2	6.6	6.1	5.6	5.1	4.9
100°	32.2	32.7	32.2	31.7	31.2	30.7	29.9	29.2	28.4	27.6	27.4
102.5°	52.0	52.2	52.0	51.7	51.4	51.1	50.6	50.1	49.6	49.1	49.3
105°	72.4	72.6	72.6	72.6	72.6	72.6	72.1	71.6	71.1	70.6	71.0
107.5°	94.6	95.1	94.9	94.6	94.3	94.1	93.9	93.6	93.3	93.1	93.3
110°	116.1	116.6	116.6	116.6	116.6	116.6	116.4	116.1	115.8	115.6	115.8



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

CANDELA DISTRIBUTION (continued):

	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77°
112.5°	138.6	139.1	139.1	139.1	139.1	139.1	138.9	138.6	138.3	138.1	138.5
115°	161.1	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6	161.6	162.0
117.5°	183.9	184.1	184.3	184.6	184.9	185.2	184.9	184.6	184.3	184.1	184.5
120°	208.2	208.7	208.7	208.7	208.7	208.7	208.7	208.7	208.7	208.7	209.1
122.5°	233.0	233.2	233.2	233.2	233.2	233.2	233.4	233.7	234.1	234.3	235.1
125°	258.6	258.8	259.0	259.3	259.6	259.8	259.8	259.8	259.8	259.8	260.4
127.5°	283.9	284.4	284.2	283.9	283.6	283.4	283.6	283.9	284.2	284.4	285.0
130°	307.4	307.9	307.9	307.9	307.9	307.9	308.1	308.4	308.7	308.9	309.5
132.5°	331.6	332.5	332.5	332.5	332.5	332.5	332.7	333.0	333.3	333.5	334.1
135°	355.2	356.0	356.0	356.0	356.0	356.0	356.2	356.5	356.8	357.0	357.4
137.5°	377.0	377.5	377.5	377.5	377.5	377.5	377.7	378.0	378.3	378.5	379.3
140°	398.7	399.0	399.0	399.0	399.0	399.0	399.5	400.0	400.5	401.0	401.8
142.5°	420.9	421.5	421.5	421.5	421.5	421.5	421.7	422.0	422.3	422.5	423.1
145°	443.4	444.0	443.8	443.4	443.1	442.9	443.1	443.4	443.8	444.0	444.6
147.5°	464.2	464.4	463.9	463.4	462.9	462.4	462.6	462.9	463.2	463.4	464.0
150°	481.6	481.8	481.3	480.8	480.3	479.8	479.8	479.8	479.8	479.8	480.6
152.5°	498.0	498.2	498.0	497.7	497.4	497.2	497.2	497.2	497.2	497.2	497.8
155°	515.4	515.6	515.4	515.1	514.7	514.5	514.7	515.1	515.4	515.6	516.2
157.5°	530.9	530.9	530.4	529.9	529.4	528.9	529.1	529.4	529.7	529.9	530.9
160°	544.2	544.2	543.7	543.2	542.7	542.2	542.2	542.2	542.2	542.2	542.8
162.5°	554.2	554.4	553.9	553.4	552.9	552.4	551.9	551.4	550.9	550.3	550.8
165°	565.5	565.7	564.9	564.2	563.4	562.6	562.1	561.6	561.1	560.6	561.0
167.5°	572.9	572.9	572.3	571.8	571.3	570.8	571.0	571.3	571.6	571.8	572.6
170°	578.2	578.0	577.8	577.5	577.1	576.9	577.5	578.0	578.5	579.0	580.0
172.5°	581.9	582.1	581.5	581.0	580.5	580.0	580.2	580.5	580.8	581.0	581.6
175°	585.9	586.2	585.3	584.6	583.9	583.1	582.6	582.1	581.5	581.0	581.6
177.5°	590.2	590.2	589.4	588.7	588.0	587.2	587.2	587.2	587.2	587.2	587.8
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°	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7
2.5°	403.8	406.8	402.7	402.7	397.7	400.7	397.7	394.7	389.6	390.6	383.5
5°	410.8	412.9	407.9	405.8	402.7	401.7	395.7	389.6	382.5	382.5	374.4
7.5°	418.0	418.0	410.8	410.8	403.8	401.7	392.6	382.5	372.4	371.4	359.3
10°	422.0	420.9	411.8	411.8	401.7	400.7	389.6	374.4	360.3	356.2	339.0
12.5°	430.0	429.0	418.0	415.9	402.7	402.7	386.6	366.3	346.1	339.0	314.8
15°	440.2	441.2	428.1	425.0	409.8	408.9	386.6	356.2	328.9	317.7	288.4
17.5°	456.3	457.4	439.2	436.2	418.0	414.9	387.6	344.0	305.7	293.5	267.2
20°	477.6	474.6	450.3	449.3	425.0	422.0	386.6	325.8	282.3	270.2	246.9
22.5°	503.9	500.9	469.5	466.5	438.1	433.1	385.6	306.6	261.1	248.0	232.7
25°	540.4	536.3	497.9	493.9	458.4	450.3	384.5	286.4	242.8	232.7	223.6
27.5°	585.9	577.9	531.3	527.2	479.7	469.5	380.5	263.1	224.6	217.6	213.5
30°	640.6	633.5	573.8	567.7	508.0	494.8	376.4	241.8	211.5	208.5	205.4
32.5°	705.3	698.3	625.4	618.3	544.4	525.2	369.4	224.6	203.4	203.4	199.4
35°	773.1	767.0	681.1	676.0	584.9	559.7	360.3	209.5	196.3	196.3	192.3
37.5°	833.8	838.9	741.7	737.8	625.4	594.0	350.2	199.4	190.3	188.2	184.1
40°	899.6	911.8	798.4	801.5	667.9	630.4	338.0	191.3	183.2	181.2	180.1
42.5°	966.4	989.7	858.2	869.3	710.3	667.9	328.9	186.2	180.1	176.0	175.0
45°	1049.3	1082.8	932.0	953.3	760.0	713.4	325.8	180.1	171.0	165.9	163.0
47.5°	1152.6	1197.2	1023.1	1047.4	825.7	768.0	331.9	178.1	164.9	158.9	152.8
50°	1275.0	1317.6	1131.4	1141.5	899.6	827.8	345.0	181.2	163.0	153.9	144.7
52.5°	1404.6	1436.9	1245.7	1234.6	976.5	886.5	360.3	182.2	157.8	148.7	137.6
55°	1538.2	1556.4	1351.9	1322.6	1046.4	945.2	380.5	181.2	153.9	143.7	129.5
57.5°	1668.7	1674.8	1446.0	1417.7	1115.1	1015.0	405.8	178.1	147.7	137.6	122.4
60°	1796.2	1806.3	1550.3	1524.0	1190.1	1105.1	442.2	173.1	139.6	132.6	116.4
62.5°	1935.8	1969.3	1674.8	1678.9	1293.3	1245.7	511.1	166.9	131.6	123.5	107.3
65°	2126.1	2253.6	1880.2	1975.3	1491.6	1510.8	642.6	149.8	120.4	110.3	99.1
67.5°	2602.7	2742.4	2379.1	2417.5	1956.1	1841.7	725.6	127.5	106.3	99.1	92.1
70°	3199.8	3099.6	2841.6	2608.8	2227.3	1893.4	638.5	107.3	94.1	90.0	86.0
72.5°	3363.7	3004.5	2791.9	2442.8	2059.3	1651.5	488.8	92.1	84.0	81.9	79.0
75°	2955.9	2435.7	2447.9	1940.9	1707.2	1258.8	334.0	79.0	72.8	71.8	70.8
77.5°	1890.3	1251.8	1524.0	959.3	985.6	582.9	163.0	65.8	62.7	62.7	60.8
80°	672.0	417.0	471.6	302.6	275.3	185.2	88.1	52.6	50.6	51.7	50.6
82.5°	201.4	159.9	156.8	122.4	95.1	77.9	48.6	40.5	38.5	39.5	37.4
85°	80.9	62.7	52.6	40.5	33.3	30.4	26.3	27.3	24.2	26.3	23.3
87.5°	5.0	4.1	3.1	4.1	0.0	2.0	5.0	4.1	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
110°	115.8	116.1	116.4	116.6	116.1	115.6	116.6	116.1	115.8	115.6	115.8



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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°	138.6	139.1	139.6	140.1	139.1	138.1	140.1	139.1	138.6	138.1	138.3	0°
115°	162.1	162.6	163.2	163.7	163.2	162.6	163.7	162.6	162.1	161.6	161.6	2.5°
117.5°	184.6	185.2	185.7	186.2	185.2	184.1	186.2	185.2	184.6	184.1	184.3	5°
120°	209.2	209.7	210.2	210.7	209.7	208.7	210.7	209.7	209.2	208.7	208.7	7.5°
122.5°	235.3	236.3	237.3	238.3	237.8	237.3	238.3	236.3	235.3	234.3	234.1	10°
125°	260.6	261.4	262.1	262.9	262.4	261.9	262.9	261.4	260.6	259.8	259.8	12.5°
127.5°	285.2	285.9	286.6	287.4	285.9	284.4	287.4	285.9	285.2	284.4	284.2	15°
130°	309.7	310.5	311.2	312.0	311.0	310.0	312.0	310.5	309.7	308.9	308.7	17.5°
132.5°	334.3	335.0	335.7	336.6	335.5	334.5	336.6	335.0	334.3	333.5	333.3	20°
135°	357.5	358.0	358.5	359.1	358.5	358.0	359.1	358.0	357.5	357.0	356.8	22.5°
137.5°	379.5	380.5	381.6	382.6	381.6	380.5	382.6	380.5	379.5	378.5	378.3	25°
140°	402.0	403.0	404.1	405.1	404.1	403.0	405.1	403.0	402.0	401.0	400.5	27.5°
142.5°	423.3	424.0	424.7	425.5	425.0	424.5	425.5	424.0	423.3	422.5	422.3	30°
145°	444.8	445.5	446.2	447.0	446.0	445.0	447.0	445.5	444.8	444.0	443.8	32.5°
147.5°	464.2	464.9	465.6	466.5	464.9	463.4	466.5	464.9	464.2	463.4	463.2	35°
150°	480.8	481.8	482.8	483.9	482.3	480.8	483.9	481.8	480.8	479.8	479.8	37.5°
152.5°	498.0	498.7	499.4	500.2	498.7	497.2	500.2	498.7	498.0	497.2	497.2	40°
155°	516.4	517.1	517.8	518.6	517.6	516.6	518.6	517.1	516.4	515.6	515.4	42.5°
157.5°	531.1	532.4	533.8	535.0	533.5	531.9	535.0	532.4	531.1	529.9	529.7	45°
160°	543.0	543.7	544.4	545.2	544.2	543.2	545.2	543.7	543.0	542.2	542.2	47.5°
162.5°	550.9	551.4	551.9	552.4	550.9	549.3	552.4	551.4	550.9	550.3	550.9	50°
165°	561.1	561.6	562.1	562.6	561.6	560.6	562.6	561.6	561.1	560.6	561.1	52.5°
167.5°	572.9	573.9	574.9	575.9	574.9	573.9	575.9	573.9	572.9	571.8	571.6	55°
170°	580.2	581.5	582.9	584.1	583.1	582.1	584.1	581.5	580.2	579.0	578.5	57.5°
172.5°	581.9	582.6	583.3	584.1	582.6	581.0	584.1	582.6	581.9	581.0	580.8	60°
175°	581.9	582.6	583.3	584.1	582.6	581.0	584.1	582.6	581.9	581.0	581.5	62.5°
177.5°	588.0	588.7	589.4	590.2	588.7	587.2	590.2	588.7	588.0	587.2	587.2	65°
180°	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	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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DISTRIBUTION (continued):

CANDELA DISTRIBUTION

110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	110°	
400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	112.5°	138.6
388.6	381.5	384.5	381.5	383.5	377.5	379.5	374.4	374.4	373.4	368.4	115°	161.6
375.4	368.4	367.3	360.3	361.3	353.1	352.2	343.1	343.1	334.9	319.8	117.5°	184.6
357.2	346.1	345.0	330.9	329.9	318.8	314.8	304.6	303.6	294.5	285.4	120°	208.7
334.0	316.7	313.7	295.5	296.5	284.4	283.4	276.3	276.3	272.2	272.2	122.5°	233.7
307.6	288.4	286.4	272.2	273.2	265.1	266.2	262.1	264.1	266.2	273.2	125°	259.8
283.4	268.1	266.2	257.1	258.1	256.0	259.0	259.0	262.1	267.2	279.3	127.5°	283.9
263.1	249.9	250.9	246.9	250.9	249.9	256.0	255.0	261.1	267.2	282.3	130°	308.4
244.9	237.8	240.8	239.9	244.9	244.9	249.9	250.9	256.0	264.1	281.3	132.5°	333.0
232.7	230.7	233.7	233.7	237.8	238.9	243.9	246.9	249.9	258.1	273.2	135°	356.5
225.7	224.6	227.7	228.7	231.7	232.7	237.8	237.8	242.8	248.0	256.0	137.5°	378.0
215.5	213.5	217.6	217.6	221.6	220.7	226.7	224.6	229.8	231.7	233.7	140°	400.0
208.5	205.4	208.5	207.5	210.5	207.5	210.5	207.5	210.5	210.5	207.5	142.5°	422.0
201.4	198.4	199.4	195.3	198.4	194.3	195.3	191.3	193.2	191.3	192.3	145°	443.4
194.3	190.3	190.3	185.2	185.2	180.1	182.2	178.1	182.2	185.2	184.1	147.5°	462.9
184.1	181.2	181.2	177.1	179.1	177.1	181.2	179.1	180.1	176.0	169.0	150°	479.8
178.1	180.1	179.1	182.2	180.1	177.1	174.0	168.0	166.9	164.9	160.9	152.5°	497.2
169.0	171.0	165.9	170.0	166.9	168.0	165.9	163.0	160.9	158.9	154.9	155°	515.1
155.8	155.8	151.8	157.8	154.9	160.9	158.9	158.9	156.8	153.9	150.8	157.5°	529.4
144.7	145.8	141.7	146.7	144.7	152.8	151.8	154.9	154.9	152.8	144.7	160°	542.2
137.6	135.6	132.6	137.6	136.6	143.7	144.7	150.8	149.8	150.8	143.7	162.5°	551.4
131.6	127.5	124.5	127.5	127.5	133.6	135.6	142.7	143.7	145.8	141.7	165°	561.6
124.5	119.4	117.4	119.4	119.4	125.5	128.5	133.6	136.6	142.7	140.7	167.5°	571.3
118.4	111.3	109.3	111.3	112.3	118.4	121.4	126.5	130.5	138.6	137.6	170°	578.0
111.3	105.3	103.2	106.3	107.3	113.3	116.4	121.4	124.5	133.6	133.6	172.5°	580.5
103.2	98.2	98.2	99.1	101.2	107.3	109.3	116.4	117.4	128.5	129.5	175°	582.1
96.2	93.1	93.1	94.1	96.2	101.2	102.2	109.3	110.3	121.4	124.5	177.5°	587.2
90.0	88.1	88.1	89.1	90.0	94.1	95.1	102.2	104.2	114.4	119.4	180°	589.2
84.0	81.9	80.9	80.9	84.0	87.1	89.1	96.2	97.2	106.3	112.3		
76.9	74.9	74.9	73.9	76.9	79.0	83.0	87.1	89.1	98.2	102.2		
69.9	67.8	67.8	66.8	68.8	72.8	73.9	77.9	79.0	87.1	91.0		
60.8	58.7	58.7	58.7	60.8	61.7	62.7	66.8	68.8	75.9	80.0		
50.6	48.6	49.6	48.6	51.7	47.6	50.6	54.6	56.7	60.8	58.7		
38.5	35.4	36.4	36.4	37.4	34.4	36.4	38.5	40.5	43.5	42.5		
24.2	21.3	23.3	21.3	23.3	20.3	22.3	22.3	24.2	22.3	21.3		
5.0	2.0	5.0	2.0	6.0	0.0	3.1	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		
6.1	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		
116.1	116.4	116.6	116.6	116.6	116.6	116.6	116.1	115.6	114.6	112.5		

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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°
138.9	139.1	139.1	139.1	139.1	139.1	138.6	138.1	137.1	135.0	0°	400.7	400.7
161.6	161.6	161.6	161.6	161.6	161.6	161.1	160.6	159.6	157.5	2.5°	363.2	359.3
184.9	185.2	184.9	184.6	184.3	184.1	183.9	183.6	183.1	181.1	5°	311.7	304.6
208.7	208.7	208.7	208.7	208.7	208.7	208.2	207.7	206.6	205.6	7.5°	280.3	278.2
233.4	233.2	233.2	233.2	233.2	233.2	233.0	232.7	232.2	231.2	10°	274.3	277.3
259.8	259.8	259.6	259.3	259.0	258.8	258.6	258.3	257.8	256.8	12.5°	281.3	286.4
283.6	283.4	283.6	283.9	284.2	284.4	283.9	283.4	282.3	280.3	15°	290.4	299.5
308.1	307.9	307.9	307.9	307.9	307.9	307.4	306.9	305.9	304.8	17.5°	297.5	309.6
332.7	332.5	332.5	332.5	332.5	332.5	331.6	330.9	329.4	328.4	20°	298.5	310.7
356.2	356.0	356.0	356.0	356.0	356.0	355.2	354.5	352.9	352.9	22.5°	289.4	297.5
377.7	377.5	377.5	377.5	377.5	377.5	377.0	376.4	375.4	375.4	25°	266.2	270.2
399.5	399.0	399.0	399.0	399.0	399.0	398.7	398.4	397.9	396.9	27.5°	236.8	235.8
421.7	421.5	421.5	421.5	421.5	421.5	420.9	420.4	419.4	419.4	30°	206.4	204.4
443.1	442.9	443.1	443.4	443.8	444.0	443.4	442.9	441.9	440.9	32.5°	195.3	188.2
462.6	462.4	462.9	463.4	463.9	464.4	464.2	463.9	463.4	462.4	35°	178.1	176.0
479.8	479.8	480.3	480.8	481.3	481.8	481.6	481.3	480.8	479.8	37.5°	172.1	189.2
497.2	497.2	497.4	497.7	498.0	498.2	498.0	497.7	497.2	496.1	40°	164.9	186.2
514.7	514.5	514.7	515.1	515.4	515.6	515.4	515.1	514.5	514.5	42.5°	158.9	171.0
529.1	528.9	529.4	529.9	530.4	530.9	530.9	530.9	530.9	530.9	45°	147.7	152.8
542.2	542.2	542.7	543.2	543.7	544.2	544.2	544.2	544.2	544.2	47.5°	142.7	140.7
551.9	552.4	552.9	553.4	553.9	554.4	554.2	553.9	553.4	553.4	50°	138.6	138.6
562.1	562.6	563.4	564.2	564.9	565.7	565.5	565.2	564.7	564.7	52.5°	135.6	133.6
571.0	570.8	571.3	571.8	572.3	572.9	572.9	572.9	572.9	573.9	55°	131.6	129.5
577.5	576.9	577.1	577.5	577.8	578.0	578.2	578.5	579.0	580.0	57.5°	128.5	123.5
580.2	580.0	580.5	581.0	581.5	582.1	581.9	581.5	581.0	582.1	60°	125.5	120.4
582.6	583.1	583.9	584.6	585.3	586.2	585.9	585.6	585.1	585.1	62.5°	123.5	117.4
587.2	587.2	588.0	588.7	589.4	590.2	590.2	590.2	590.2	591.3	65°	120.4	114.4
589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	67.5°	116.4	108.2
										70°	108.2	101.2
										72.5°	100.1	92.1
										75°	88.1	80.9
										77.5°	73.9	65.8
										80°	55.6	50.6
										82.5°	40.5	34.4
										85°	18.2	13.2
										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
										110°	108.4	105.4



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0-LED-E1-T2-ULG

tinued):

175°	180°
400.7	400.7
357.2	356.2
302.6	300.5
278.2	277.3
278.2	278.2
290.4	290.4
304.6	304.6
314.8	315.7
317.7	318.8
302.6	302.6
273.2	273.2
234.8	238.9
200.4	204.4
178.1	181.2
171.0	172.1
188.2	189.2
185.2	187.2
158.9	159.9
142.7	142.7
136.6	135.6
136.6	134.6
140.7	139.6
134.6	134.6
131.6	131.6
128.5	128.5
127.5	126.5
127.5	125.5
125.5	122.4
118.4	110.3
101.2	94.1
81.9	80.9
63.7	64.8
48.6	48.6
35.4	29.4
10.1	10.1
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
104.3	103.3

CANDELA DISTRIBUTION (continued):

	155°	165°	175°
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



12-ULG

<u>180°</u>
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

(END OF REPORT)