

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: P228060

Luminaire Tested: **ISS-AF-450-LED-E1-SL2-ULG**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P228060
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29761)-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-SL2-ULG
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT
LIGHT SQUARE WITH ACCUED OPTICS-TYPE II W/SPILL CONTROL, 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: 4357.9 lumens
Efficiency: N/A
Efficacy: 103.7 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

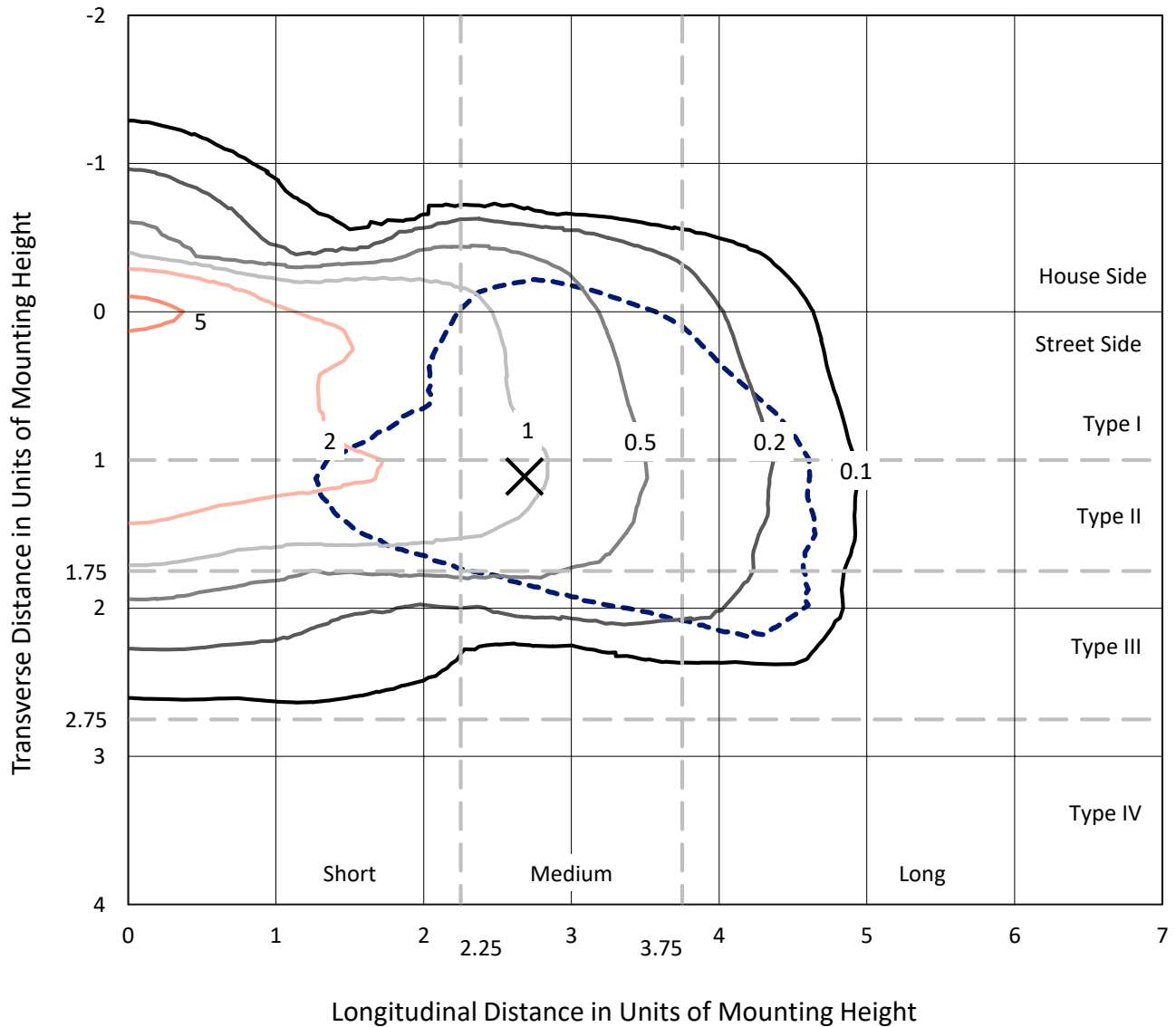
Input Watts (W): 42.01
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

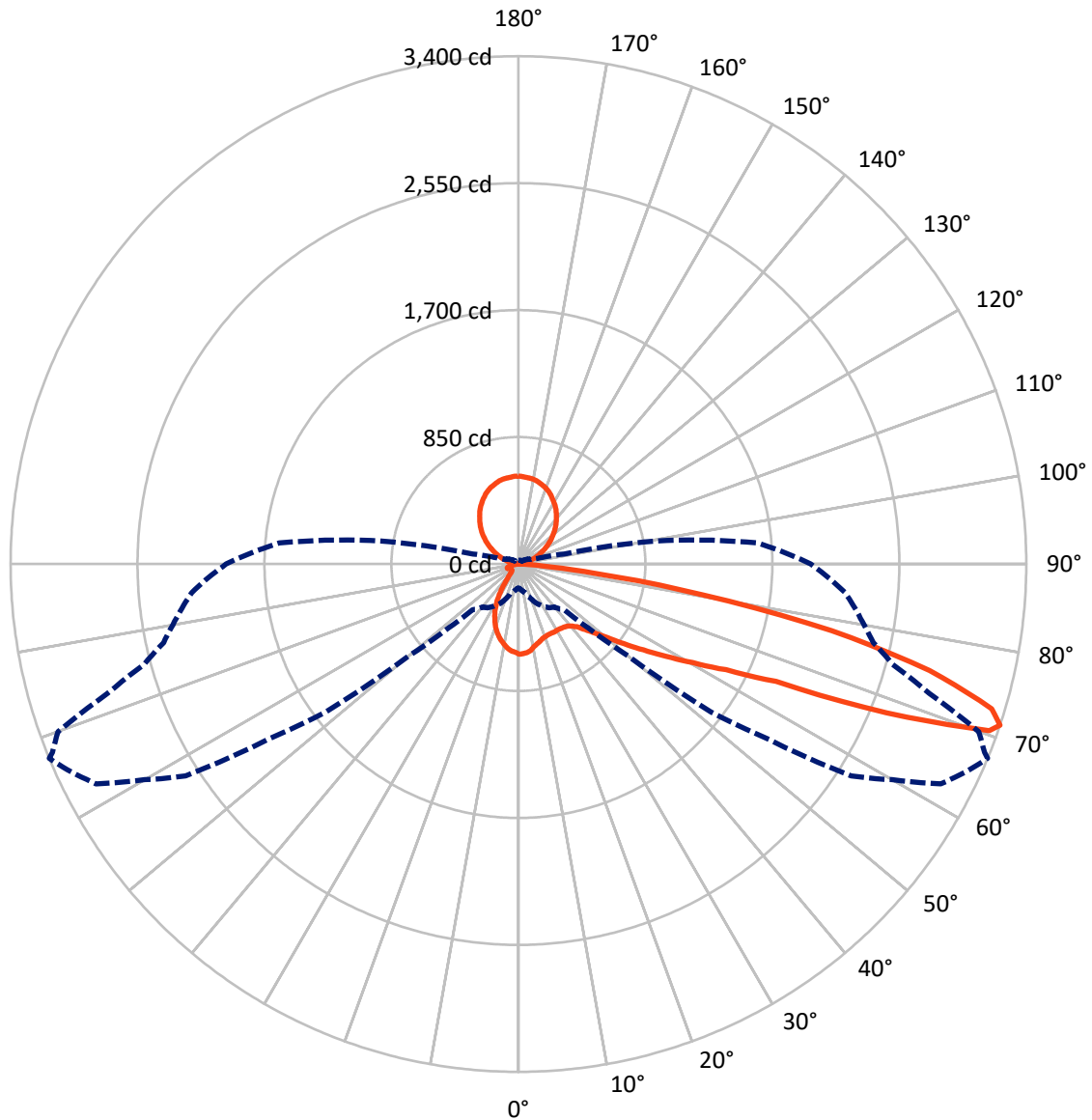
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 6 fc
 Type III - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 67.5-Deg Lateral - - - Horizontal Cone Through 71-Deg Vertical

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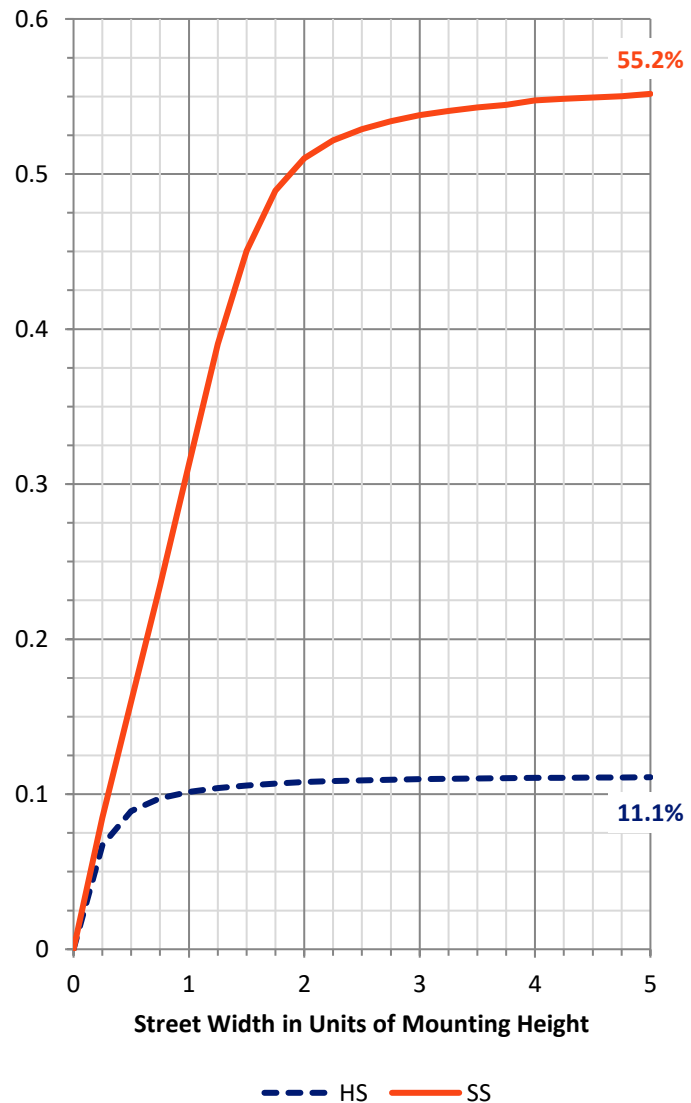
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	488.5	729.4	1218.0
	% Fixture	11.2	16.7	27.9
Street Side	Lumens	2410.5	729.4	3140.0
	% Fixture	55.3	16.7	72.1
Total	Lumens	2899.0	1458.9	4357.9
	% Fixture	66.5	33.5	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.7	1.2
10°-20°	126.1	2.9
20°-30°	171.5	3.9
30°-40°	234.4	5.4
40°-50°	353.2	8.1
50°-60°	559.8	12.8
60°-70°	741.0	17.0
70°-80°	590.3	13.5
80°-90°	70.0	1.6
90°-100°	4.8	0.1
100°-110°	70.6	1.6
110°-120°	156.6	3.6
120°-130°	229.0	5.3
130°-140°	271.7	6.2
140°-150°	275.5	6.3
150°-160°	236.4	5.4
160°-170°	158.7	3.6
170°-180°	55.6	1.3
0°-90°	2899.0	66.5
0°-180°	4357.9	100.0



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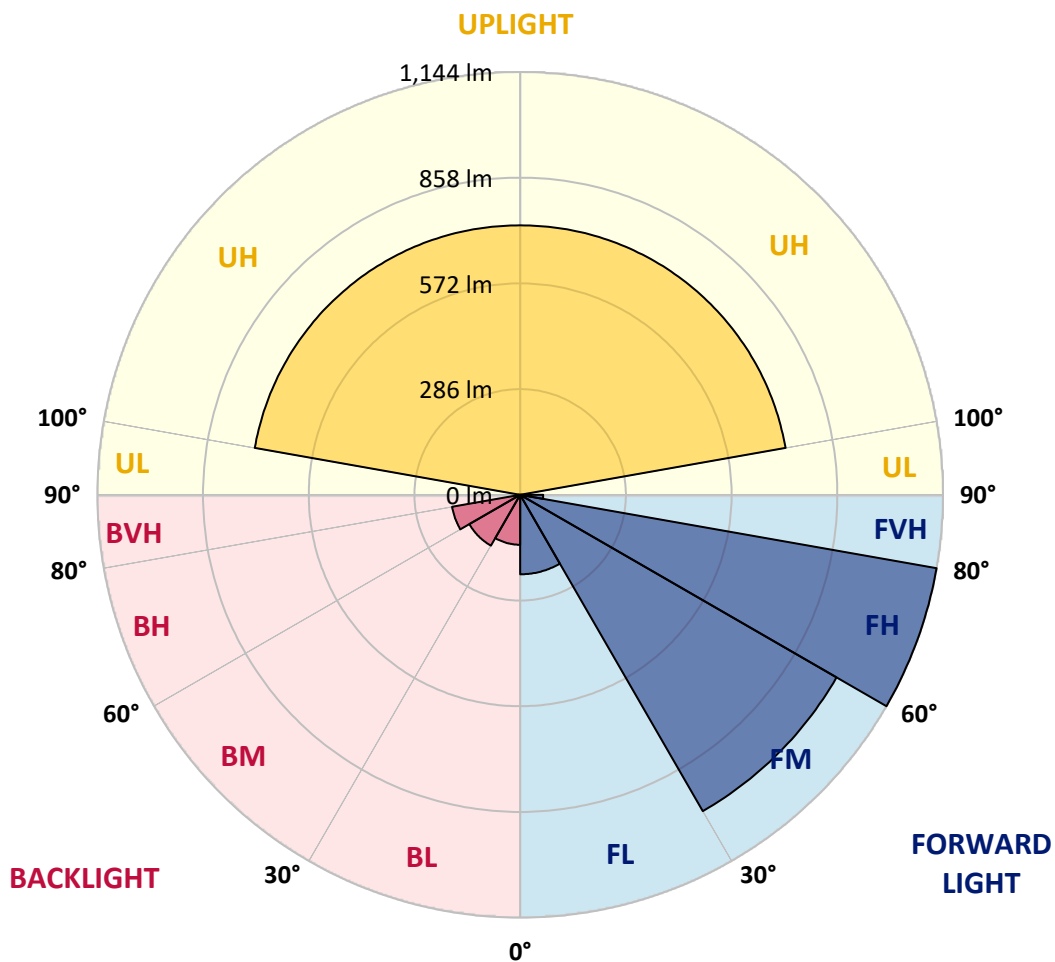
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	215.1	4.9			
FM (30°-60°)	988.6	22.7			
FH (60°-80°)	1144.4	26.3			G1/1800
FVH (80°-90°)	62.4	1.4			G1/100
BL (0°-30°)	135.2	3.1	B1/500		
BM (30°-60°)	158.7	3.6	B0/220		
BH (60°-80°)	187.0	4.3	B1/500		G1/500
BVH (80°-90°)	7.6	0.2			G0/10
UL (90°-100°)	4.8	0.1		U1/10	
UH (100°-180°)	729.4	16.7		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°	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2
2.5°	593.0	591.0	591.0	594.0	599.0	595.1	598.0	598.0	599.0	602.1	603.1
5°	549.5	545.4	549.5	553.5	564.7	562.6	565.7	568.7	574.8	575.8	583.9
7.5°	510.0	508.0	511.1	519.1	533.3	529.3	533.3	537.4	544.4	547.5	555.6
10°	479.7	476.6	480.7	486.7	500.9	499.9	502.0	507.0	515.1	517.1	527.2
12.5°	457.4	457.4	459.4	467.5	479.7	478.6	484.7	487.7	494.8	496.8	508.0
15°	446.3	443.2	447.2	454.4	466.5	466.5	470.6	473.6	483.8	484.7	494.8
17.5°	436.2	437.1	438.1	446.3	457.4	455.4	460.4	462.5	473.6	471.6	483.8
20°	436.2	438.1	437.1	442.2	450.3	446.3	452.3	453.4	465.4	462.5	475.6
22.5°	448.3	450.3	447.2	446.3	449.3	446.3	449.3	451.3	460.4	458.4	470.6
25°	469.5	473.6	469.5	462.5	459.4	451.3	453.4	456.3	463.5	458.4	469.5
27.5°	502.9	506.0	498.9	491.8	477.6	468.5	465.4	464.5	472.6	464.5	473.6
30°	541.3	545.4	539.4	526.2	506.0	490.8	484.7	481.7	486.7	474.6	483.8
32.5°	582.9	587.0	582.9	572.8	545.4	523.1	515.1	508.0	512.1	495.8	499.9
35°	625.3	629.4	633.5	627.4	592.0	566.7	553.5	547.5	546.5	526.2	527.2
37.5°	662.8	666.9	680.1	686.1	653.7	619.3	607.1	594.0	595.1	566.7	566.7
40°	708.4	713.4	730.6	744.8	723.5	682.0	667.9	653.7	653.7	616.2	617.2
42.5°	770.1	776.1	787.3	806.5	799.4	756.9	741.7	722.5	724.6	680.1	679.0
45°	857.1	861.1	861.1	873.3	874.3	833.8	823.7	804.4	808.5	751.9	754.9
47.5°	970.5	965.4	945.1	952.3	960.3	917.8	908.7	896.6	901.6	841.0	847.0
50°	1075.7	1071.6	1030.1	1032.2	1061.5	1018.0	1015.0	999.8	1006.9	946.1	955.2
52.5°	1115.1	1108.1	1066.6	1088.8	1170.8	1146.5	1151.5	1144.5	1148.6	1083.8	1081.8
55°	1070.6	1070.6	1045.4	1085.8	1252.8	1265.9	1307.4	1323.6	1340.8	1276.0	1261.9
57.5°	947.2	955.2	959.3	1031.1	1239.6	1296.3	1375.3	1444.0	1532.1	1528.0	1549.3
60°	742.8	756.9	780.2	897.6	1182.9	1276.0	1378.2	1481.4	1602.9	1680.8	1796.2
62.5°	521.2	533.3	552.5	633.5	1018.0	1177.9	1325.6	1484.5	1639.4	1761.8	1913.5
65°	354.1	366.3	406.8	451.3	614.3	847.0	1072.7	1335.8	1571.6	1799.3	2003.7
67.5°	255.0	262.1	293.5	368.4	408.9	451.3	535.3	845.0	1135.4	1593.8	1892.4
70°	191.3	198.4	226.7	309.6	359.3	370.4	390.6	445.3	519.1	895.6	1287.2
71°	159.9	170.0	204.4	291.4	357.2	366.3	375.4	407.9	432.1	633.5	955.2
72.5°	112.3	119.4	151.8	269.1	343.1	364.3	385.6	384.5	382.5	432.1	577.9
75°	71.8	71.8	71.8	151.8	366.3	353.1	361.3	404.8	382.5	363.2	380.5
77.5°	56.7	55.6	52.6	75.9	286.4	358.2	379.5	390.6	411.8	379.5	362.2
80°	42.5	41.5	41.5	47.6	132.6	231.7	320.8	356.2	371.3	403.8	368.4
82.5°	22.3	22.3	24.2	28.3	49.6	80.9	165.9	273.2	305.6	307.6	310.7
85°	7.1	6.0	8.1	13.2	21.3	26.3	46.5	110.3	164.0	198.4	209.5
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	4.1	7.1	9.1
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°	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°	57.5°	60°	62.5°	65°	67.5°	68°	70°	72.5°	75°
0°	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2
2.5°	600.1	604.2	601.1	605.2	600.1	606.2	601.1	604.2	605.2	601.1	606.2
5°	578.8	591.0	587.0	596.1	592.0	600.1	596.1	604.2	604.2	601.1	608.1
7.5°	552.5	564.7	565.7	574.8	574.8	584.9	584.9	593.0	597.0	597.0	607.1
10°	526.2	537.4	539.4	549.5	551.5	563.6	563.6	574.8	582.9	585.9	598.0
12.5°	506.0	520.2	520.2	531.2	529.3	547.5	549.5	559.6	567.7	574.8	591.0
15°	493.8	507.0	507.0	518.1	516.1	534.3	537.4	547.5	559.6	563.6	585.9
17.5°	481.7	494.8	491.8	507.0	506.0	526.2	524.2	539.4	549.5	555.6	580.8
20°	471.6	486.7	484.7	499.9	495.8	518.1	518.1	533.3	543.4	548.5	577.9
22.5°	466.5	482.7	478.6	493.8	490.8	513.0	513.0	528.3	539.4	547.5	576.8
25°	466.5	480.7	476.6	493.8	488.8	513.0	512.1	527.2	538.4	545.4	577.9
27.5°	468.5	482.7	479.7	495.8	491.8	513.0	515.1	528.3	539.4	547.5	579.8
30°	475.6	488.8	481.7	496.8	493.8	514.0	513.0	527.2	538.4	548.5	579.8
32.5°	490.8	497.9	488.8	502.0	495.8	516.1	516.1	526.2	539.4	551.5	579.8
35°	512.1	517.1	502.9	512.1	500.9	521.2	520.2	531.2	541.3	551.5	581.9
37.5°	542.4	548.5	526.2	534.3	516.1	532.2	528.3	541.3	551.5	557.6	592.0
40°	587.9	589.9	560.6	566.7	541.3	555.6	545.4	563.6	568.7	572.8	607.1
42.5°	643.6	645.6	608.1	612.2	579.8	592.0	574.8	594.0	601.1	600.1	637.5
45°	712.4	713.4	671.0	673.9	636.5	646.6	625.3	641.6	646.6	643.6	682.0
47.5°	787.3	795.3	747.8	751.9	712.4	717.5	691.1	709.4	709.4	706.3	745.8
50°	886.5	898.6	842.9	849.0	803.5	807.5	777.1	796.4	794.3	786.2	830.8
52.5°	1010.0	1021.0	962.4	970.5	921.9	923.9	886.5	908.7	902.7	889.5	941.1
55°	1160.7	1161.7	1107.0	1114.1	1065.6	1062.5	1016.0	1043.3	1034.2	1016.0	1063.6
57.5°	1402.6	1373.2	1283.1	1281.1	1228.5	1224.5	1164.7	1198.2	1182.9	1144.5	1207.3
60°	1792.1	1801.2	1571.6	1536.2	1438.0	1419.8	1340.8	1379.2	1361.0	1298.3	1360.0
62.5°	2011.7	2156.5	2142.3	2014.8	1761.8	1693.0	1559.4	1604.9	1557.3	1465.3	1523.0
65°	2174.7	2371.0	2484.3	2606.8	2493.4	2212.1	1896.3	1960.1	1843.8	1668.6	1724.4
67.5°	2235.4	2472.2	2711.0	2885.0	3003.4	3024.7	2659.4	2676.6	2390.2	2040.1	2047.1
70°	1917.6	2266.8	2734.2	2954.9	3189.7	3304.9	3343.4	3325.2	3140.0	2644.2	2455.0
71°	1625.2	2048.2	2641.2	2887.1	3187.6	3298.9	3400.1	3365.7	3279.7	2884.0	2593.6
72.5°	1101.0	1632.2	2368.9	2680.6	3081.3	3162.4	3314.1	3253.4	3235.2	3063.1	2723.1
75°	518.1	813.6	1541.2	2012.8	2607.8	2685.7	2844.5	2769.6	2722.1	2780.8	2590.5
77.5°	381.5	444.3	846.0	1250.8	1896.3	2006.7	2143.3	2051.2	1990.5	2049.2	1916.6
80°	347.1	349.1	438.1	659.8	1131.4	1197.2	1248.7	1173.8	1081.8	1077.7	955.2
82.5°	319.8	302.6	284.4	349.1	579.8	551.5	510.0	472.6	367.3	294.5	212.5
85°	203.4	222.6	202.3	191.3	230.7	190.3	150.8	144.7	102.2	68.8	63.7
87.5°	14.1	16.2	19.2	22.3	27.3	22.3	14.1	17.2	10.1	0.0	5.0
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	6.5	6.1	5.6	5.1
100°	32.2	32.7	32.2	31.7	31.2	30.7	29.9	29.8	29.2	28.4	27.6
102.5°	52.0	52.2	52.0	51.7	51.4	51.1	50.6	50.5	50.1	49.6	49.1
105°	72.4	72.6	72.6	72.6	72.6	72.6	72.1	72.0	71.6	71.1	70.6
107.5°	94.6	95.1	94.9	94.6	94.3	94.1	93.9	93.8	93.6	93.3	93.1



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CANDELA DISTRIBUTION (continued):

	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	68°	70°	72.5°	75°
110°	116.1	116.6	116.6	116.6	116.6	116.6	116.4	116.3	116.1	115.8	115.6
112.5°	138.6	139.1	139.1	139.1	139.1	139.1	138.9	138.8	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	184.6	184.9	185.2	184.9	184.8	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	233.4	233.5	233.7	234.1	234.3
125°	258.6	258.8	259.0	259.3	259.6	259.8	259.8	259.8	259.8	259.8	259.8
127.5°	283.9	284.4	284.2	283.9	283.6	283.4	283.6	283.7	283.9	284.2	284.4
130°	307.4	307.9	307.9	307.9	307.9	307.9	308.1	308.2	308.4	308.7	308.9
132.5°	331.6	332.5	332.5	332.5	332.5	332.5	332.7	332.8	333.0	333.3	333.5
135°	355.2	356.0	356.0	356.0	356.0	356.0	356.2	356.3	356.5	356.8	357.0
137.5°	377.0	377.5	377.5	377.5	377.5	377.5	377.7	377.8	378.0	378.3	378.5
140°	398.7	399.0	399.0	399.0	399.0	399.0	399.5	399.6	400.0	400.5	401.0
142.5°	420.9	421.5	421.5	421.5	421.5	421.5	421.7	421.8	422.0	422.3	422.5
145°	443.4	444.0	443.8	443.4	443.1	442.9	443.1	443.2	443.4	443.8	444.0
147.5°	464.2	464.4	463.9	463.4	462.9	462.4	462.6	462.7	462.9	463.2	463.4
150°	481.6	481.8	481.3	480.8	480.3	479.8	479.8	479.8	479.8	479.8	479.8
152.5°	498.0	498.2	498.0	497.7	497.4	497.2	497.2	497.2	497.2	497.2	497.2
155°	515.4	515.6	515.4	515.1	514.7	514.5	514.7	514.9	515.1	515.4	515.6
157.5°	530.9	530.9	530.4	529.9	529.4	528.9	529.1	529.2	529.4	529.7	529.9
160°	544.2	544.2	543.7	543.2	542.7	542.2	542.2	542.2	542.2	542.2	542.2
162.5°	554.2	554.4	553.9	553.4	552.9	552.4	551.9	551.8	551.4	550.9	550.3
165°	565.5	565.7	564.9	564.2	563.4	562.6	562.1	562.0	561.6	561.1	560.6
167.5°	572.9	572.9	572.3	571.8	571.3	570.8	571.0	571.1	571.3	571.6	571.8
170°	578.2	578.0	577.8	577.5	577.1	576.9	577.5	577.6	578.0	578.5	579.0
172.5°	581.9	582.1	581.5	581.0	580.5	580.0	580.2	580.3	580.5	580.8	581.0
175°	585.9	586.2	585.3	584.6	583.9	583.1	582.6	582.5	582.1	581.5	581.0
177.5°	590.2	590.2	589.4	588.7	588.0	587.2	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°	85°	90°	95°	100°	102.5°	105°	107.5°	110°	112.5°
0°	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2
2.5°	599.0	604.2	606.2	605.2	603.1	601.1	594.0	599.0	592.0	597.0	591.0
5°	602.1	609.2	610.2	608.1	606.2	602.1	589.9	597.0	588.9	593.0	583.9
7.5°	601.1	612.2	613.3	611.2	607.1	600.1	587.9	593.0	579.8	582.9	570.7
10°	596.1	612.2	613.3	608.1	602.1	591.0	576.8	578.8	565.7	565.7	549.5
12.5°	591.0	610.2	615.3	608.1	598.0	582.9	566.7	564.7	549.5	548.5	530.3
15°	591.0	612.2	619.3	610.2	595.1	573.8	554.5	550.4	533.3	528.3	508.0
17.5°	589.9	612.2	622.4	610.2	592.0	564.7	540.4	536.3	514.0	506.0	482.7
20°	588.9	614.3	624.4	608.1	582.9	553.5	526.2	518.1	493.8	480.7	453.4
22.5°	587.9	618.3	626.4	606.2	576.8	539.4	511.1	496.8	468.5	451.3	418.9
25°	593.0	623.4	627.4	604.2	567.7	524.2	493.8	474.6	443.2	420.9	382.5
27.5°	595.1	628.4	629.4	600.1	556.6	508.0	475.6	449.3	413.9	386.6	343.1
30°	601.1	629.4	626.4	592.0	543.4	487.7	454.4	422.0	382.5	347.1	295.5
32.5°	603.1	632.5	624.4	582.9	530.3	467.5	430.0	392.6	345.0	303.6	240.8
35°	607.1	634.4	622.4	577.9	516.1	446.3	404.8	362.2	307.6	255.0	183.2
37.5°	613.3	643.6	627.4	575.8	509.0	428.0	376.4	330.9	263.1	201.4	121.4
40°	628.4	661.8	636.5	578.8	503.9	412.9	349.1	298.5	212.5	148.7	84.0
42.5°	658.8	693.2	659.8	594.0	507.0	399.7	320.8	264.1	160.9	106.3	69.9
45°	704.3	733.7	698.3	619.3	519.1	392.6	294.5	228.7	115.4	85.0	63.7
47.5°	771.1	799.4	754.9	659.8	540.4	389.6	267.2	191.3	89.1	76.9	61.7
50°	859.2	892.5	836.9	723.5	579.8	392.6	237.8	155.8	77.9	74.9	60.8
52.5°	967.4	999.8	944.2	817.6	644.6	409.8	206.4	135.6	73.9	73.9	59.7
55°	1089.9	1135.4	1080.7	948.2	744.8	447.2	187.2	128.5	73.9	74.9	58.7
57.5°	1234.6	1273.1	1224.5	1073.7	865.2	509.0	189.2	135.6	73.9	74.9	57.7
60°	1376.3	1423.8	1368.1	1233.6	1002.8	602.1	230.7	172.1	76.9	77.9	57.7
62.5°	1524.0	1560.4	1514.9	1373.2	1158.7	717.5	313.7	249.0	89.1	92.1	61.7
65°	1685.9	1745.6	1698.0	1581.7	1379.2	901.6	471.6	373.4	131.6	107.3	67.8
67.5°	1966.2	1990.5	1967.2	1861.0	1637.3	1053.4	561.6	379.5	131.6	104.2	75.9
70°	2345.6	2291.0	2186.8	1988.4	1664.6	945.1	402.7	231.7	112.3	99.1	79.9
71°	2433.7	2349.7	2195.9	1957.1	1608.0	853.0	312.7	183.2	105.3	97.2	79.9
72.5°	2487.3	2361.9	2129.1	1865.0	1496.7	672.0	206.4	143.7	96.2	92.1	76.9
75°	2417.5	2185.7	1880.2	1614.0	1225.5	349.1	129.5	109.3	81.9	79.9	66.8
77.5°	1919.7	1716.2	1387.3	1172.8	788.3	154.9	93.1	83.0	64.8	62.7	51.7
80°	895.6	718.5	420.9	361.3	248.0	91.0	63.7	56.7	46.5	44.5	36.4
82.5°	163.0	122.4	95.1	92.1	83.0	53.6	37.4	34.4	29.4	28.3	23.3
85°	55.6	53.6	40.5	40.5	41.5	28.3	21.3	20.3	15.1	15.1	10.1
87.5°	1.0	5.0	5.0	7.1	6.0	5.0	2.0	3.1	1.0	3.1	0.0
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°	4.9	4.6	4.1	4.1	4.1	4.6	4.9	5.1	5.6	6.1	6.6
100°	27.4	27.1	26.6	25.6	26.6	27.1	27.4	27.6	28.4	29.2	29.9
102.5°	49.3	49.6	50.1	49.1	50.1	49.6	49.3	49.1	49.6	50.1	50.6
105°	71.1	71.6	72.6	70.6	72.6	71.6	71.1	70.6	71.1	71.6	72.1
107.5°	93.3	93.6	94.1	93.1	94.1	93.6	93.3	93.1	93.3	93.6	93.9



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REPORT N
 CATALOG

CANDELA DISTRIBUTION (continued):

CANDELA

	77.5°	80°	85°	90°	95°	100°	102.5°	105°	107.5°	110°	112.5°	
110°	115.8	116.1	116.6	115.6	116.6	116.1	115.8	115.6	115.8	116.1	116.4	0°
112.5°	138.6	139.1	140.1	138.1	140.1	139.1	138.6	138.1	138.3	138.6	138.9	2.5°
115°	162.1	162.6	163.7	162.6	163.7	162.6	162.1	161.6	161.6	161.6	161.6	5°
117.5°	184.6	185.2	186.2	184.1	186.2	185.2	184.6	184.1	184.3	184.6	184.9	7.5°
120°	209.2	209.7	210.7	208.7	210.7	209.7	209.2	208.7	208.7	208.7	208.7	10°
122.5°	235.3	236.3	238.3	237.3	238.3	236.3	235.3	234.3	234.1	233.7	233.4	12.5°
125°	260.6	261.4	262.9	261.9	262.9	261.4	260.6	259.8	259.8	259.8	259.8	15°
127.5°	285.2	285.9	287.4	284.4	287.4	285.9	285.2	284.4	284.2	283.9	283.6	17.5°
130°	309.7	310.5	312.0	310.0	312.0	310.5	309.7	308.9	308.7	308.4	308.1	20°
132.5°	334.3	335.0	336.6	334.5	336.6	335.0	334.3	333.5	333.3	333.0	332.7	22.5°
135°	357.5	358.0	359.1	358.0	359.1	358.0	357.5	357.0	356.8	356.5	356.2	25°
137.5°	379.5	380.5	382.6	380.5	382.6	380.5	379.5	378.5	378.3	378.0	377.7	27.5°
140°	402.0	403.0	405.1	403.0	405.1	403.0	402.0	401.0	400.5	400.0	399.5	30°
142.5°	423.3	424.0	425.5	424.5	425.5	424.0	423.3	422.5	422.3	422.0	421.7	32.5°
145°	444.8	445.5	447.0	445.0	447.0	445.5	444.8	444.0	443.8	443.4	443.1	35°
147.5°	464.2	464.9	466.5	463.4	466.5	464.9	464.2	463.4	463.2	462.9	462.6	37.5°
150°	480.8	481.8	483.9	480.8	483.9	481.8	480.8	479.8	479.8	479.8	479.8	40°
152.5°	498.0	498.7	500.2	497.2	500.2	498.7	498.0	497.2	497.2	497.2	497.2	42.5°
155°	516.4	517.1	518.6	516.6	518.6	517.1	516.4	515.6	515.4	515.1	514.7	45°
157.5°	531.1	532.4	535.0	531.9	535.0	532.4	531.1	529.9	529.7	529.4	529.1	47.5°
160°	543.0	543.7	545.2	543.2	545.2	543.7	543.0	542.2	542.2	542.2	542.2	50°
162.5°	550.9	551.4	552.4	549.3	552.4	551.4	550.9	550.3	550.9	551.4	551.9	52.5°
165°	561.1	561.6	562.6	560.6	562.6	561.6	561.1	560.6	561.1	561.6	562.1	55°
167.5°	572.9	573.9	575.9	573.9	575.9	573.9	572.9	571.8	571.6	571.3	571.0	57.5°
170°	580.2	581.5	584.1	582.1	584.1	581.5	580.2	579.0	578.5	578.0	577.5	60°
172.5°	581.9	582.6	584.1	581.0	584.1	582.6	581.9	581.0	580.8	580.5	580.2	62.5°
175°	581.9	582.6	584.1	581.0	584.1	582.6	581.9	581.0	581.5	582.1	582.6	65°
177.5°	588.0	588.7	590.2	587.2	590.2	588.7	588.0	587.2	587.2	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
 CATALOG NUMBER:

DISTRIBUTION (continued):

CANDELA DISTRIBUTION

115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	155°	165°	110°	115°
604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	604.2	110°	116.6
596.1	587.9	595.1	587.9	592.0	583.9	588.9	585.9	585.9	582.9	580.8	112.5°	139.1
587.0	576.8	581.9	573.8	577.9	565.7	568.7	563.6	553.5	547.5	539.4	115°	161.6
573.8	558.6	562.6	550.4	553.5	537.4	540.4	531.2	512.1	499.9	487.7	117.5°	185.2
550.4	536.3	537.4	522.1	521.2	504.9	502.0	489.8	461.5	441.2	425.0	120°	208.7
527.2	511.1	509.0	490.8	487.7	468.5	464.5	445.3	403.8	364.3	339.0	122.5°	233.2
502.9	482.7	476.6	457.4	446.3	430.0	418.9	390.6	330.9	279.3	245.9	125°	259.8
475.6	449.3	440.2	418.0	401.7	377.5	361.3	322.8	245.9	190.3	166.9	127.5°	283.4
440.2	411.8	395.7	367.3	346.1	316.7	296.5	246.9	164.0	135.6	132.6	130°	307.9
400.7	367.3	347.1	311.7	285.4	254.0	221.6	166.9	116.4	110.3	114.4	132.5°	332.5
359.3	317.7	291.4	248.0	212.5	176.0	145.7	111.3	95.1	94.1	100.1	135°	356.0
309.6	262.1	224.6	173.1	140.7	112.3	99.1	88.1	80.9	81.9	88.1	137.5°	377.5
255.0	193.2	153.9	108.2	94.1	81.9	79.9	75.9	72.8	74.9	79.0	140°	399.0
190.3	123.5	99.1	77.9	76.9	69.9	71.8	69.9	68.8	69.9	72.8	142.5°	421.5
128.5	81.9	77.9	66.8	68.8	63.7	66.8	65.8	64.8	64.8	66.8	145°	442.9
89.1	67.8	69.9	61.7	64.8	60.8	63.7	62.7	61.7	60.8	61.7	147.5°	462.4
73.9	61.7	64.8	58.7	61.7	57.7	60.8	59.7	58.7	56.7	56.7	150°	479.8
67.8	58.7	61.7	55.6	59.7	54.6	58.7	56.7	54.6	52.6	53.6	152.5°	497.2
65.8	56.7	59.7	53.6	57.7	52.6	55.6	54.6	50.6	49.6	50.6	155°	514.5
63.7	55.6	58.7	52.6	55.6	50.6	53.6	51.7	47.6	46.5	47.6	157.5°	528.9
62.7	53.6	56.7	50.6	53.6	49.6	51.7	49.6	45.5	44.5	44.5	160°	542.2
61.7	52.6	55.6	48.6	51.7	45.5	48.6	46.5	42.5	41.5	41.5	162.5°	552.4
61.7	51.7	53.6	46.5	49.6	43.5	45.5	43.5	41.5	39.5	39.5	165°	562.6
60.8	49.6	52.6	44.5	46.5	41.5	43.5	41.5	38.5	37.4	37.4	167.5°	570.8
60.8	48.6	51.7	43.5	45.5	39.5	41.5	39.5	36.4	35.4	35.4	170°	576.9
63.7	50.6	52.6	44.5	45.5	39.5	40.5	37.4	34.4	34.4	33.3	172.5°	580.0
69.9	56.7	56.7	46.5	46.5	39.5	40.5	36.4	32.4	32.4	32.4	175°	583.1
75.9	62.7	61.7	49.6	48.6	39.5	39.5	34.4	30.4	30.4	30.4	177.5°	587.2
79.9	65.8	63.7	50.6	48.6	38.5	37.4	32.4	28.3	28.3	28.3	180°	589.2
79.0	65.8	62.7	49.6	46.5	36.4	36.4	31.4	27.3	27.3	26.3		
74.9	61.7	58.7	46.5	44.5	34.4	34.4	29.4	25.3	25.3	24.2		
63.7	52.6	49.6	39.5	37.4	30.4	29.4	24.2	22.3	21.3	21.3		
49.6	41.5	38.5	31.4	30.4	24.2	23.3	20.3	18.2	18.2	17.2		
35.4	29.4	27.3	21.3	19.2	16.2	17.2	15.1	14.1	14.1	13.2		
21.3	15.1	15.1	12.2	13.2	10.1	11.2	11.2	10.1	8.1	8.1		
11.2	7.1	9.1	5.0	7.1	3.1	5.0	4.1	4.1	3.1	3.1		
2.0	0.0	1.0	0.0	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	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		
7.2	8.7	10.2	11.8	13.3	12.3	11.3	9.2	4.1	3.1	2.0		
30.7	31.2	31.7	32.2	32.7	32.2	31.7	30.7	22.5	14.3	10.2		
51.1	51.4	51.7	52.0	52.2	52.0	51.7	51.1	46.0	38.9	32.7		
72.6	72.6	72.6	72.6	72.6	72.4	72.1	71.6	67.5	62.4	57.3		
94.1	94.3	94.6	94.9	95.1	94.6	94.1	93.1	90.0	85.9	81.8		

'228060
 ISS-AF-450-LED-E1-SL2-ULG

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TION (continued):

CANDELA DISTRIBUTION (con

117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	155°	165°		175°	180°
116.6	116.6	116.6	116.6	116.1	115.6	114.6	112.5	108.4	105.4	0°	604.2	604.2
139.1	139.1	139.1	139.1	138.6	138.1	137.1	135.0	132.0	128.9	2.5°	574.8	575.8
161.6	161.6	161.6	161.6	161.1	160.6	159.6	157.5	154.5	152.4	5°	535.3	537.4
184.9	184.6	184.3	184.1	183.9	183.6	183.1	181.1	178.0	175.9	7.5°	478.6	481.7
208.7	208.7	208.7	208.7	208.2	207.7	206.6	205.6	202.5	200.5	10°	410.8	412.9
233.2	233.2	233.2	233.2	233.0	232.7	232.2	231.2	228.1	226.1	12.5°	323.9	323.9
259.6	259.3	259.0	258.8	258.6	258.3	257.8	256.8	253.7	252.7	15°	226.7	228.7
283.6	283.9	284.2	284.4	283.9	283.4	282.3	280.3	278.2	276.2	17.5°	158.9	159.9
307.9	307.9	307.9	307.9	307.4	306.9	305.9	304.8	300.7	299.7	20°	133.6	134.6
332.5	332.5	332.5	332.5	331.6	330.9	329.4	328.4	325.3	324.3	22.5°	119.4	120.4
356.0	356.0	356.0	356.0	355.2	354.5	352.9	352.9	348.8	346.8	25°	106.3	107.3
377.5	377.5	377.5	377.5	377.0	376.4	375.4	375.4	372.4	371.3	27.5°	92.1	93.1
399.0	399.0	399.0	399.0	398.7	398.4	397.9	396.9	394.9	393.8	30°	83.0	84.0
421.5	421.5	421.5	421.5	420.9	420.4	419.4	419.4	416.3	417.4	32.5°	74.9	75.9
443.1	443.4	443.8	444.0	443.4	442.9	441.9	440.9	437.8	437.8	35°	67.8	67.8
462.9	463.4	463.9	464.4	464.2	463.9	463.4	462.4	458.3	457.3	37.5°	62.7	62.7
480.3	480.8	481.3	481.8	481.6	481.3	480.8	479.8	475.7	474.6	40°	57.7	57.7
497.4	497.7	498.0	498.2	498.0	497.7	497.2	496.1	493.1	494.1	42.5°	54.6	54.6
514.7	515.1	515.4	515.6	515.4	515.1	514.5	514.5	512.5	513.5	45°	51.7	51.7
529.4	529.9	530.4	530.9	530.9	530.9	530.9	530.9	527.8	528.9	47.5°	48.6	48.6
542.7	543.2	543.7	544.2	544.2	544.2	544.2	544.2	541.1	541.1	50°	45.5	46.5
552.9	553.4	553.9	554.4	554.2	553.9	553.4	553.4	550.3	551.4	52.5°	42.5	42.5
563.4	564.2	564.9	565.7	565.5	565.2	564.7	564.7	560.6	561.6	55°	39.5	39.5
571.3	571.8	572.3	572.9	572.9	572.9	572.9	573.9	570.8	571.8	57.5°	36.4	37.4
577.1	577.5	577.8	578.0	578.2	578.5	579.0	580.0	578.0	579.0	60°	34.4	34.4
580.5	581.0	581.5	582.1	581.9	581.5	581.0	582.1	580.0	582.1	62.5°	32.4	32.4
583.9	584.6	585.3	586.2	585.9	585.6	585.1	585.1	582.1	583.1	65°	31.4	31.4
588.0	588.7	589.4	590.2	590.2	590.2	590.2	591.3	587.2	588.2	67.5°	29.4	29.4
589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	70°	27.3	27.3
										71°	26.3	26.3
										72.5°	24.2	24.2
										75°	21.3	20.3
										77.5°	17.2	17.2
										80°	13.2	12.2
										82.5°	8.1	7.1
										85°	3.1	2.0
										87.5°	0.0	0.0
										90°	0.0	0.0
										92.5°	0.0	0.0
										95°	1.0	1.0
										97.5°	2.0	2.0
										100°	8.2	8.2
										102.5°	28.6	28.6
										105°	55.2	55.2
										107.5°	78.8	79.8



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CANDELA DISTRIBUTION (continued):

	175°	180°
110°	104.3	103.3
112.5°	126.8	126.8
115°	150.4	149.4
117.5°	173.9	172.9
120°	199.5	197.4
122.5°	225.0	224.0
125°	251.6	249.6
127.5°	275.2	273.1
130°	298.7	296.7
132.5°	321.2	320.2
135°	344.7	343.7
137.5°	368.3	367.2
140°	391.8	390.8
142.5°	415.3	413.3
145°	435.8	434.8
147.5°	454.2	454.2
150°	472.6	471.6
152.5°	491.0	490.0
155°	511.5	510.5
157.5°	526.8	524.8
160°	539.1	537.0
162.5°	548.3	547.3
165°	559.6	558.5
167.5°	568.8	567.7
170°	575.9	574.9
172.5°	579.0	578.0
175°	582.1	580.0
177.5°	586.2	585.1
180°	589.2	589.2

(END OF REPORT)

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

