

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: P227933

Luminaire Tested: **ISS-AF-450-LED-E1-T4W-7050-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P227933  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29757)-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-T4W-7050-ULG  
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT  
LIGHT SQUARE WITH ACCULED OPTICS-TYPE IV WIDE, WITH UPLIGHT GLOW  
Light Source: (16) 5000K CCT, 70 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4422.2 lumens  
Efficiency: N/A  
Efficacy: 105.3 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')  
IES Classification: Type IV - 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

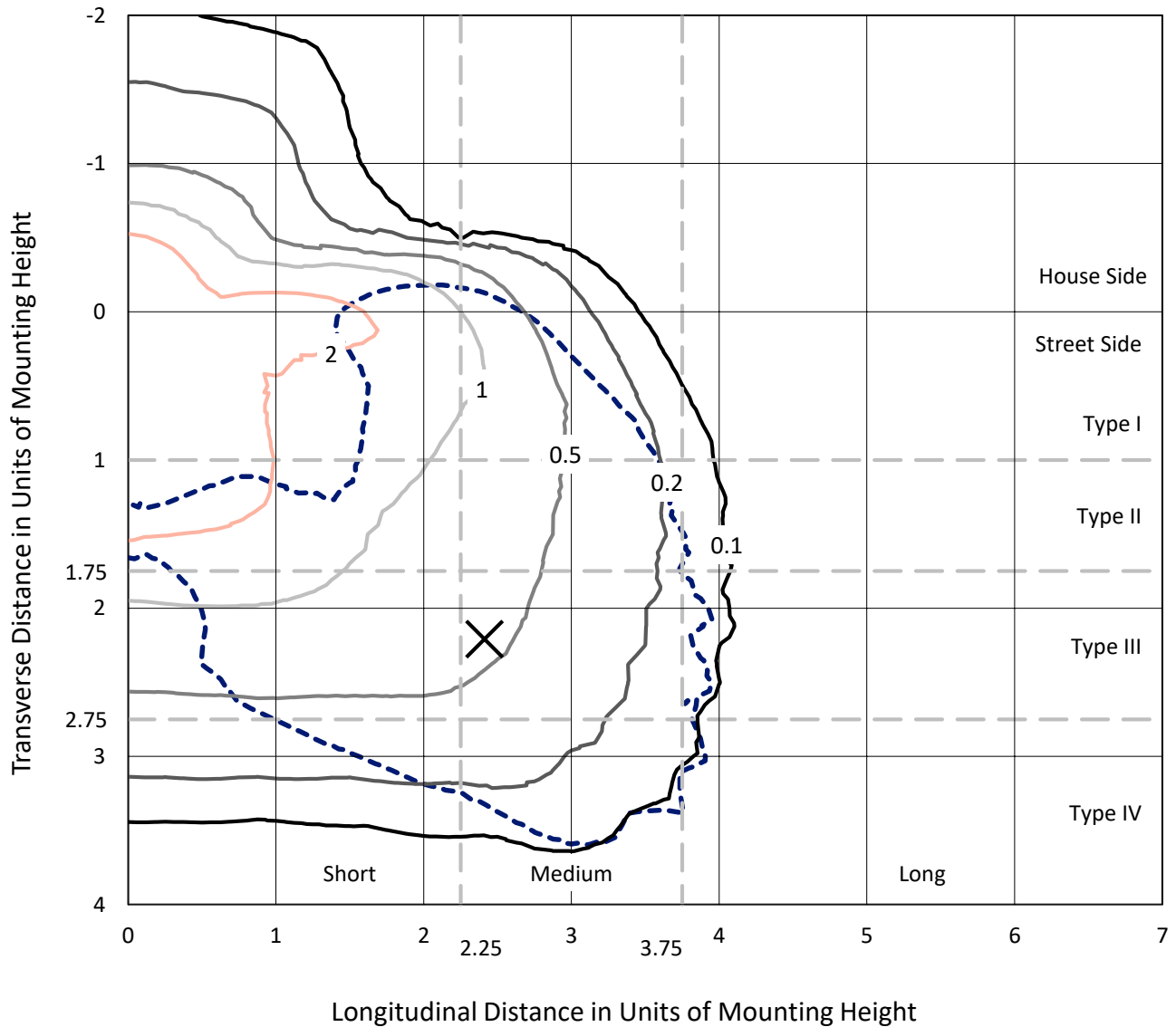


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### Iso-Footcandle Lines of Horizontal Illumination

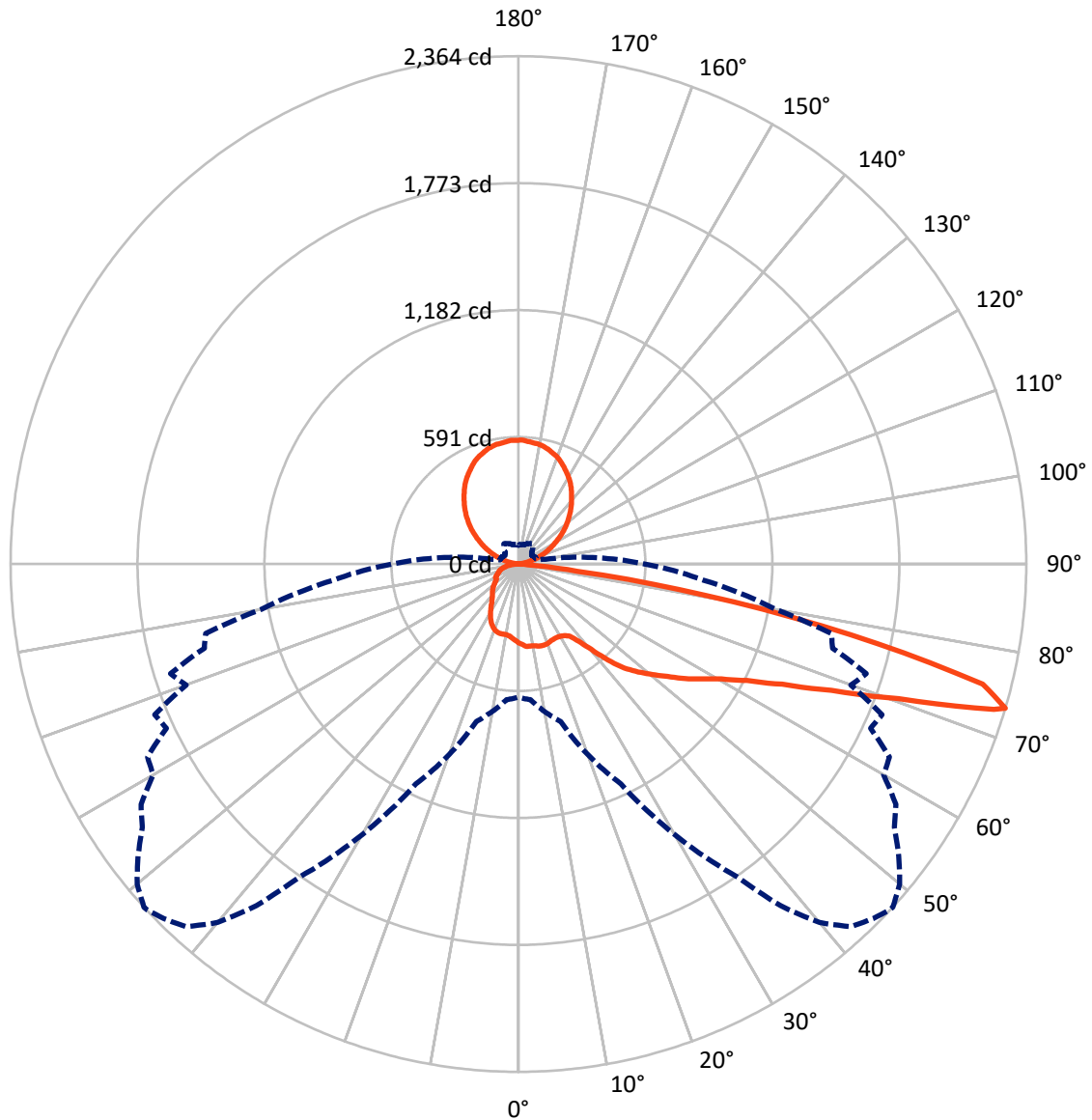
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4.3 fc  
 Type IV - Medium - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 47.5-Deg Lateral    - - - Horizontal Cone Through 73-Deg Vertical

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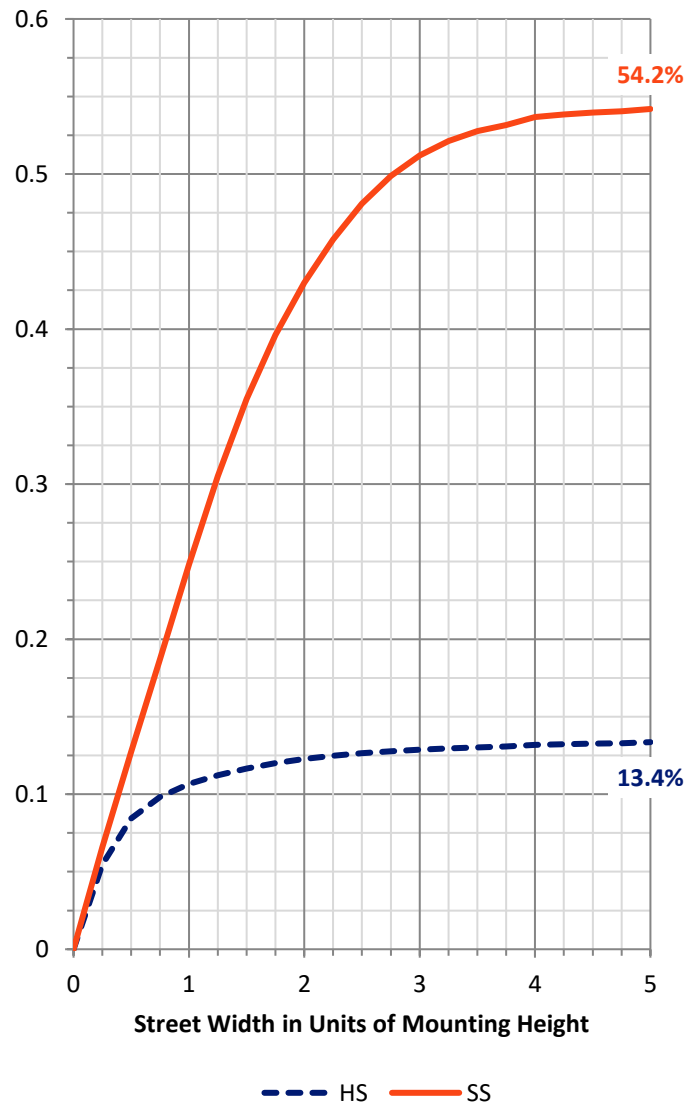
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	598.6	713.1	1311.7
	% Fixture	13.5	16.1	29.7
<b>Street Side</b>	Lumens	2397.4	713.1	3110.5
	% Fixture	54.2	16.1	70.3
<b>Total</b>	Lumens	2996.0	1426.2	4422.2
	% Fixture	67.7	32.3	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	35.0	0.8
10°-20°	104.2	2.4
20°-30°	160.2	3.6
30°-40°	233.8	5.3
40°-50°	385.4	8.7
50°-60°	603.5	13.6
60°-70°	818.6	18.5
70°-80°	606.2	13.7
80°-90°	49.0	1.1
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°	2996.0	67.7
0°-180°	4422.2	100.0



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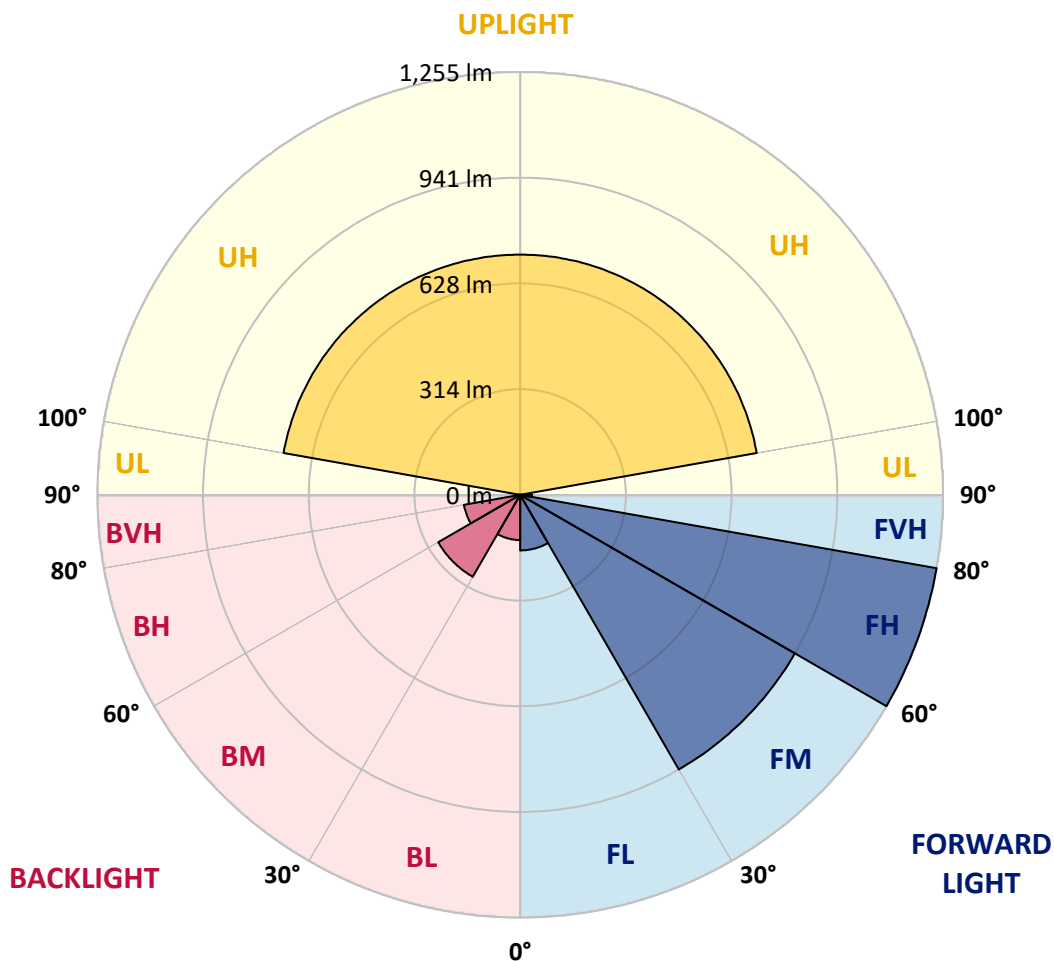
CATALOG NUMBER: ISS-AF-450-LED-E1-T4W-7050-ULG

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	165.1	3.7			
FM (30°-60°)	941.6	21.3			
FH (60°-80°)	1255.3	28.4			G1/1800
FVH (80°-90°)	35.3	0.8			G1/100
BL (0°-30°)	134.4	3.0	B1/500		
BM (30°-60°)	281.1	6.4	B1/1000		
BH (60°-80°)	169.5	3.8	B1/500		G1/500
BVH (80°-90°)	13.6	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 IV Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47°	47.5°
0°	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9
2.5°	389.7	388.7	385.7	384.7	381.8	379.8	378.8	377.8	380.8	378.8	375.8
5°	414.4	412.4	408.5	402.5	396.6	392.6	391.6	389.7	389.7	387.7	385.7
7.5°	432.2	431.2	425.3	416.4	406.5	399.6	395.6	392.6	393.6	391.6	385.7
10°	449.0	447.0	437.1	426.3	411.4	403.5	398.6	393.6	397.6	394.6	386.7
12.5°	461.9	459.9	446.0	432.2	415.4	406.5	401.5	398.6	402.5	400.5	391.6
15°	468.8	466.8	453.0	436.2	418.3	408.5	406.5	404.5	407.5	403.5	395.6
17.5°	464.8	464.8	452.0	434.2	419.3	409.4	406.5	404.5	408.5	404.5	395.6
20°	450.0	452.0	443.1	424.3	413.4	406.5	403.5	399.6	403.5	399.6	393.6
22.5°	431.2	433.2	428.2	411.4	403.5	398.6	397.6	393.6	396.6	393.6	387.7
25°	414.4	414.4	412.4	397.6	396.6	392.6	393.6	391.6	393.6	389.7	385.7
27.5°	415.4	415.4	407.5	392.6	391.6	391.6	391.6	391.6	392.6	389.7	385.7
30°	473.7	475.7	453.0	411.4	396.6	394.6	395.6	394.6	395.6	394.6	389.7
32.5°	561.8	561.8	540.0	475.7	423.3	410.4	405.5	404.5	401.5	400.5	396.6
35°	648.8	647.8	626.0	554.8	488.6	463.8	448.0	433.2	426.3	419.3	412.4
37.5°	722.0	719.0	716.0	634.9	565.7	537.0	518.2	496.5	482.6	470.8	454.9
40°	790.2	795.2	806.0	709.1	642.9	616.1	597.4	569.7	555.8	541.0	522.2
42.5°	884.2	891.1	892.1	789.2	713.1	695.3	680.4	659.7	644.8	627.0	610.2
45°	975.2	976.1	979.1	875.3	799.1	776.4	765.5	745.7	726.9	704.2	690.3
47.5°	1037.5	1034.5	1047.4	974.2	900.0	874.3	858.5	828.8	800.1	771.4	750.7
50°	1113.6	1110.7	1110.7	1086.9	1016.7	987.0	959.3	903.9	873.3	837.7	808.0
52.5°	1180.9	1170.0	1176.9	1190.8	1139.3	1101.7	1053.3	991.0	950.4	906.9	869.3
55°	1272.8	1216.5	1232.3	1280.8	1261.0	1202.6	1138.3	1072.1	1025.6	976.1	941.5
57.5°	1241.2	1202.6	1249.1	1334.2	1333.2	1278.8	1224.4	1143.3	1096.8	1050.3	1007.8
60°	1127.5	1147.2	1248.1	1370.8	1375.7	1333.2	1288.7	1213.5	1176.9	1128.5	1085.9
62.5°	1039.4	1068.1	1206.6	1367.8	1424.2	1384.6	1348.0	1303.5	1277.8	1237.2	1193.7
65°	1034.5	1051.3	1185.8	1364.8	1492.4	1471.6	1454.8	1434.1	1429.1	1399.4	1349.0
67.5°	1082.0	1097.8	1221.4	1441.0	1593.3	1584.4	1609.1	1605.2	1626.9	1612.1	1570.5
70°	989.0	997.9	1150.2	1467.7	1823.7	1863.3	1918.7	1915.7	1962.2	1926.6	1878.1
72.5°	694.3	712.1	846.6	1212.5	1828.7	2040.3	2168.9	2277.7	2328.1	2337.0	2314.3
73°	620.1	634.0	758.6	1129.4	1779.2	2004.7	2177.8	2289.5	2334.0	2361.7	2363.7
75°	215.6	222.5	331.3	684.4	1422.2	1749.5	1972.1	2073.0	2062.1	2143.2	2232.2
77.5°	69.2	70.2	86.0	177.0	686.4	1085.9	1334.2	1427.1	1373.7	1461.7	1580.4
80°	42.5	44.5	56.4	80.1	180.0	329.3	557.8	698.2	669.6	751.6	878.2
82.5°	25.7	26.7	34.6	49.5	72.2	80.1	104.8	142.4	175.1	210.7	275.9
85°	11.9	12.9	16.8	22.7	29.7	30.7	29.7	27.7	31.6	36.6	42.5
87.5°	0.0	0.0	1.0	2.0	1.0	0.0	0.0	0.0	0.0	1.0	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°	2.0	2.0	2.0	3.0	4.0	5.2	6.5	7.8	9.0	9.8	10.0
100°	8.0	8.0	10.0	14.0	22.0	24.0	26.0	28.0	30.0	30.4	30.5
102.5°	28.0	28.0	32.0	38.0	45.0	46.2	47.5	48.8	50.0	50.2	50.2
105°	54.0	54.0	56.0	61.0	66.0	67.0	68.0	69.0	70.0	70.2	70.2
107.5°	78.0	77.0	80.0	84.0	88.0	88.8	89.5	90.2	91.0	91.4	91.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47°	47.5°
110°	101.0	102.0	103.0	106.0	110.0	110.5	111.0	111.5	112.0	112.4	112.5
112.5°	124.0	124.0	126.0	129.0	132.0	132.5	133.0	133.5	134.0	134.4	134.5
115°	146.0	147.0	149.0	151.0	154.0	154.5	155.0	155.5	156.0	156.4	156.5
117.5°	169.0	170.0	172.0	174.0	177.0	177.5	178.0	178.5	179.0	179.2	179.2
120°	193.0	195.0	196.0	198.0	201.0	201.2	201.5	201.8	202.0	202.4	202.5
122.5°	219.0	220.0	221.0	223.0	226.0	226.2	226.5	226.8	227.0	227.2	227.2
125°	244.0	246.0	247.0	248.0	251.0	251.2	251.5	251.8	252.0	252.2	252.2
127.5°	267.0	269.0	270.0	272.0	274.0	274.5	275.0	275.5	276.0	276.4	276.5
130°	290.0	292.0	293.0	294.0	298.0	298.2	298.5	298.8	299.0	299.4	299.5
132.5°	313.0	314.0	317.0	318.0	321.0	321.2	321.5	321.8	322.0	322.6	322.8
135°	336.0	337.0	339.0	341.0	345.0	345.0	345.0	345.0	345.0	345.6	345.8
137.5°	359.0	360.0	363.0	364.0	367.0	367.0	367.0	367.0	367.0	367.4	367.5
140°	382.0	383.0	385.0	386.0	388.0	388.2	388.5	388.8	389.0	389.2	389.2
142.5°	404.0	406.0	408.0	407.0	410.0	410.0	410.0	410.0	410.0	410.4	410.5
145°	425.0	426.0	428.0	428.0	431.0	431.2	431.5	431.8	432.0	432.4	432.5
147.5°	444.0	444.0	447.0	448.0	452.0	452.2	452.5	452.8	453.0	453.2	453.2
150°	461.0	462.0	464.0	465.0	469.0	469.2	469.5	469.8	470.0	470.2	470.2
152.5°	479.0	480.0	483.0	482.0	485.0	485.2	485.5	485.8	486.0	486.2	486.2
155°	499.0	500.0	502.0	501.0	503.0	503.0	503.0	503.0	503.0	503.2	503.2
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	541.2
165°	546.0	547.0	549.0	548.0	552.0	552.0	552.0	552.0	552.0	552.2	552.2
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	565.8
172.5°	565.0	566.0	569.0	567.0	569.0	568.8	568.5	568.2	568.0	568.2	568.2
175°	567.0	569.0	570.0	569.0	572.0	572.0	572.0	572.0	572.0	572.2	572.2
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):**

	50°	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°
0°	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9
2.5°	378.8	375.8	375.8	371.9	373.8	369.9	371.9	367.9	369.9	364.9	367.9
5°	384.7	379.8	379.8	373.8	374.8	367.9	370.9	363.0	366.9	358.0	364.0
7.5°	387.7	378.8	382.7	371.9	376.8	364.9	370.9	358.0	365.9	352.1	362.0
10°	391.6	378.8	385.7	373.8	379.8	365.9	373.8	358.0	367.9	351.1	360.0
12.5°	397.6	383.7	389.7	375.8	383.7	367.9	375.8	360.0	369.9	351.1	362.0
15°	401.5	387.7	393.6	379.8	385.7	367.9	377.8	359.0	369.9	350.1	362.0
17.5°	400.5	387.7	393.6	377.8	384.7	366.9	376.8	358.0	367.9	347.1	360.0
20°	396.6	385.7	389.7	375.8	381.8	364.0	372.9	354.1	364.9	344.2	357.0
22.5°	391.6	380.8	385.7	372.9	378.8	361.0	368.9	352.1	363.0	342.2	354.1
25°	388.7	379.8	382.7	369.9	377.8	362.0	369.9	351.1	363.0	342.2	356.0
27.5°	387.7	379.8	385.7	373.8	380.8	366.9	374.8	358.0	367.9	346.2	360.0
30°	393.6	386.7	391.6	381.8	387.7	373.8	381.8	365.9	375.8	355.1	370.9
32.5°	400.5	393.6	398.6	389.7	398.6	384.7	394.6	378.8	390.7	369.9	384.7
35°	415.4	407.5	414.4	404.5	414.4	403.5	414.4	397.6	412.4	391.6	407.5
37.5°	454.0	432.2	439.1	428.2	438.1	424.3	443.1	426.3	443.1	423.3	445.1
40°	515.3	476.7	483.6	460.9	475.7	454.9	477.7	464.8	487.6	462.9	490.5
42.5°	595.4	558.8	551.9	517.2	530.1	505.4	528.1	505.4	536.0	512.3	546.9
45°	668.6	630.0	619.1	585.5	594.4	561.8	590.4	558.8	599.3	571.6	615.2
47.5°	728.9	683.4	674.5	635.9	651.8	621.1	656.7	623.1	672.5	644.8	695.3
50°	784.3	727.9	725.9	684.4	711.1	680.4	730.9	708.1	756.6	728.9	788.2
52.5°	847.6	776.4	786.3	748.7	791.2	765.5	823.8	791.2	854.5	824.8	890.1
55°	914.8	839.7	865.4	842.6	893.1	876.3	925.7	896.0	958.3	928.7	997.9
57.5°	989.0	924.7	970.2	959.3	1003.8	983.1	1038.5	1011.8	1074.1	1049.3	1118.6
60°	1085.9	1043.4	1087.9	1086.9	1125.5	1124.5	1160.1	1144.3	1203.6	1192.7	1256.0
62.5°	1211.5	1177.9	1225.4	1212.5	1259.0	1251.1	1294.6	1294.6	1337.1	1352.0	1415.3
65°	1380.6	1336.1	1392.5	1372.7	1419.2	1421.2	1448.9	1453.8	1505.3	1522.1	1576.5
67.5°	1610.1	1558.7	1603.2	1565.6	1619.0	1616.0	1639.8	1649.7	1656.6	1697.1	1703.1
70°	1940.4	1863.3	1903.8	1852.4	1862.3	1869.2	1824.7	1857.3	1778.2	1842.5	1755.5
72.5°	2297.5	2209.4	2139.2	2087.8	1985.9	1971.1	1841.5	1869.2	1701.1	1756.5	1580.4
73°	2316.2	2231.2	2136.2	2082.8	1962.2	1946.4	1807.9	1831.6	1645.7	1698.1	1513.2
75°	2105.6	2128.3	1899.9	1921.6	1712.0	1736.7	1520.1	1547.8	1319.3	1358.9	1120.5
77.5°	1419.2	1495.4	1239.2	1335.2	1075.0	1171.0	877.2	886.1	646.8	604.3	410.4
80°	703.2	768.5	544.9	595.4	399.6	392.6	239.3	198.8	169.1	173.1	178.0
82.5°	202.7	228.5	141.4	140.4	99.9	94.9	94.9	100.9	102.9	114.7	111.8
85°	38.6	46.5	40.5	54.4	48.5	53.4	49.5	57.4	53.4	66.3	57.4
87.5°	1.0	0.0	1.0	3.0	3.0	6.9	4.9	7.9	7.9	13.8	12.9
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°	11.0	12.0	13.0	11.5	10.0	8.5	7.0	6.5	6.0	5.5	5.0
100°	31.0	31.5	32.0	31.5	31.0	30.5	30.0	29.2	28.5	27.8	27.0
102.5°	50.5	50.8	51.0	50.8	50.5	50.2	50.0	49.5	49.0	48.5	48.0
105°	70.5	70.8	71.0	71.0	71.0	71.0	71.0	70.5	70.0	69.5	69.0
107.5°	92.0	92.5	93.0	92.8	92.5	92.2	92.0	91.8	91.5	91.2	91.0



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**CANDELA DISTRIBUTION (continued):**

	50°	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°
110°	113.0	113.5	114.0	114.0	114.0	114.0	114.0	113.8	113.5	113.2	113.0
112.5°	135.0	135.5	136.0	136.0	136.0	136.0	136.0	135.8	135.5	135.2	135.0
115°	157.0	157.5	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0
117.5°	179.5	179.8	180.0	180.2	180.5	180.8	181.0	180.8	180.5	180.2	180.0
120°	203.0	203.5	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0
122.5°	227.5	227.8	228.0	228.0	228.0	228.0	228.0	228.2	228.5	228.8	229.0
125°	252.5	252.8	253.0	253.2	253.5	253.8	254.0	254.0	254.0	254.0	254.0
127.5°	277.0	277.5	278.0	277.8	277.5	277.2	277.0	277.2	277.5	277.8	278.0
130°	300.0	300.5	301.0	301.0	301.0	301.0	301.0	301.2	301.5	301.8	302.0
132.5°	323.5	324.2	325.0	325.0	325.0	325.0	325.0	325.2	325.5	325.8	326.0
135°	346.5	347.2	348.0	348.0	348.0	348.0	348.0	348.2	348.5	348.8	349.0
137.5°	368.0	368.5	369.0	369.0	369.0	369.0	369.0	369.2	369.5	369.8	370.0
140°	389.5	389.8	390.0	390.0	390.0	390.0	390.0	390.5	391.0	391.5	392.0
142.5°	411.0	411.5	412.0	412.0	412.0	412.0	412.0	412.2	412.5	412.8	413.0
145°	433.0	433.5	434.0	433.8	433.5	433.2	433.0	433.2	433.5	433.8	434.0
147.5°	453.5	453.8	454.0	453.5	453.0	452.5	452.0	452.2	452.5	452.8	453.0
150°	470.5	470.8	471.0	470.5	470.0	469.5	469.0	469.0	469.0	469.0	469.0
152.5°	486.5	486.8	487.0	486.8	486.5	486.2	486.0	486.0	486.0	486.0	486.0
155°	503.5	503.8	504.0	503.8	503.5	503.2	503.0	503.2	503.5	503.8	504.0
157.5°	519.0	519.0	519.0	518.5	518.0	517.5	517.0	517.2	517.5	517.8	518.0
160°	532.0	532.0	532.0	531.5	531.0	530.5	530.0	530.0	530.0	530.0	530.0
162.5°	541.5	541.8	542.0	541.5	541.0	540.5	540.0	539.5	539.0	538.5	538.0
165°	552.5	552.8	553.0	552.2	551.5	550.8	550.0	549.5	549.0	548.5	548.0
167.5°	560.0	560.0	560.0	559.5	559.0	558.5	558.0	558.2	558.5	558.8	559.0
170°	565.5	565.2	565.0	564.8	564.5	564.2	564.0	564.5	565.0	565.5	566.0
172.5°	568.5	568.8	569.0	568.5	568.0	567.5	567.0	567.2	567.5	567.8	568.0
175°	572.5	572.8	573.0	572.2	571.5	570.8	570.0	569.5	569.0	568.5	568.0
177.5°	577.0	577.0	577.0	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°	85°	90°	95°	100°	102.5°	105°	107.5°	110°	112.5°
0°	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9
2.5°	364.0	368.9	366.9	364.9	363.0	362.0	358.0	360.0	355.1	359.0	355.1
5°	356.0	362.0	359.0	355.1	353.1	351.1	344.2	349.1	341.2	348.1	342.2
7.5°	347.1	357.0	354.1	350.1	346.2	344.2	330.3	341.2	329.3	339.2	329.3
10°	344.2	355.1	351.1	346.2	342.2	340.2	323.4	336.3	323.4	334.3	321.4
12.5°	342.2	355.1	349.1	344.2	340.2	337.3	318.5	334.3	317.5	333.3	318.5
15°	340.2	355.1	347.1	341.2	337.3	334.3	314.5	332.3	313.5	331.3	314.5
17.5°	338.2	352.1	345.2	338.2	334.3	332.3	310.5	329.3	309.6	329.3	312.5
20°	335.3	349.1	341.2	334.3	330.3	327.4	305.6	325.4	304.6	324.4	305.6
22.5°	331.3	346.2	339.2	332.3	328.3	323.4	299.7	320.4	298.7	318.5	300.7
25°	332.3	348.1	339.2	332.3	326.4	321.4	295.7	318.5	293.7	313.5	293.7
27.5°	337.3	351.1	342.2	336.3	328.3	322.4	295.7	316.5	291.8	308.6	287.8
30°	347.1	361.0	353.1	344.2	337.3	329.3	300.7	317.5	291.8	302.6	281.9
32.5°	364.0	376.8	368.9	362.0	354.1	342.2	310.5	322.4	293.7	298.7	276.9
35°	385.7	401.5	397.6	392.6	382.7	362.0	327.4	329.3	297.7	294.7	270.0
37.5°	421.3	443.1	442.1	441.1	430.2	392.6	346.2	343.2	301.6	291.8	261.1
40°	467.8	493.5	500.4	507.4	484.6	429.2	367.9	357.0	303.6	285.8	247.3
42.5°	522.2	556.8	577.6	590.4	548.9	469.8	392.6	372.9	303.6	276.9	231.4
45°	589.4	630.0	669.6	683.4	620.1	513.3	418.3	385.7	299.7	263.1	210.7
47.5°	671.5	719.0	773.4	780.3	697.2	559.8	436.2	394.6	286.8	244.3	191.9
50°	762.5	819.9	900.0	895.0	779.3	608.2	448.0	400.5	264.1	222.5	169.1
52.5°	864.4	936.6	1050.3	1027.6	879.2	668.6	458.9	408.5	236.4	196.8	146.4
55°	992.0	1078.0	1220.4	1172.0	990.0	734.8	474.7	409.4	199.8	166.2	129.6
57.5°	1129.4	1221.4	1403.4	1315.4	1093.8	786.3	467.8	377.8	163.2	140.4	116.7
60°	1294.6	1406.4	1586.4	1448.9	1180.9	804.1	419.3	311.5	139.4	126.6	110.8
62.5°	1479.5	1590.3	1736.7	1541.9	1230.3	774.4	311.5	215.6	119.7	112.7	101.9
65°	1676.4	1781.2	1808.9	1549.8	1197.7	643.8	192.9	141.4	103.8	100.9	94.0
67.5°	1857.3	1867.2	1740.6	1421.2	1039.4	449.0	131.5	112.7	95.9	94.9	91.0
70°	1903.8	1732.7	1446.9	1106.7	750.7	267.0	106.8	97.9	92.0	92.0	89.0
72.5°	1590.3	1319.3	967.2	670.5	409.4	142.4	91.0	89.0	87.0	87.0	85.1
73°	1491.4	1215.5	866.4	585.5	346.2	127.6	89.0	87.0	86.0	85.1	84.1
75°	991.0	763.5	491.5	296.7	161.2	92.0	79.1	79.1	78.1	79.1	78.1
77.5°	381.8	287.8	189.9	127.6	92.0	72.2	67.3	68.2	67.3	69.2	68.2
80°	168.1	166.2	125.6	90.0	67.3	54.4	54.4	54.4	55.4	56.4	56.4
82.5°	114.7	96.9	74.2	55.4	40.5	39.6	40.5	40.5	41.5	42.5	41.5
85°	63.3	53.4	39.6	24.7	21.8	26.7	26.7	26.7	25.7	25.7	24.7
87.5°	19.8	14.8	10.9	3.0	4.9	4.9	6.9	5.9	5.9	6.9	6.9
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°	4.8	4.5	4.0	4.0	4.0	4.5	4.8	5.0	5.5	6.0	6.5
100°	26.8	26.5	26.0	25.0	26.0	26.5	26.8	27.0	27.8	28.5	29.2
102.5°	48.2	48.5	49.0	48.0	49.0	48.5	48.2	48.0	48.5	49.0	49.5
105°	69.5	70.0	71.0	69.0	71.0	70.0	69.5	69.0	69.5	70.0	70.5
107.5°	91.2	91.5	92.0	91.0	92.0	91.5	91.2	91.0	91.2	91.5	91.8



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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°	113.2	113.5	114.0	113.0	114.0	113.5	113.2	113.0	113.2	113.5	113.8	0°
112.5°	135.5	136.0	137.0	135.0	137.0	136.0	135.5	135.0	135.2	135.5	135.8	2.5°
115°	158.5	159.0	160.0	159.0	160.0	159.0	158.5	158.0	158.0	158.0	158.0	5°
117.5°	180.5	181.0	182.0	180.0	182.0	181.0	180.5	180.0	180.2	180.5	180.8	7.5°
120°	204.5	205.0	206.0	204.0	206.0	205.0	204.5	204.0	204.0	204.0	204.0	10°
122.5°	230.0	231.0	233.0	232.0	233.0	231.0	230.0	229.0	228.8	228.5	228.2	12.5°
125°	254.8	255.5	257.0	256.0	257.0	255.5	254.8	254.0	254.0	254.0	254.0	15°
127.5°	278.8	279.5	281.0	278.0	281.0	279.5	278.8	278.0	277.8	277.5	277.2	17.5°
130°	302.8	303.5	305.0	303.0	305.0	303.5	302.8	302.0	301.8	301.5	301.2	20°
132.5°	326.8	327.5	329.0	327.0	329.0	327.5	326.8	326.0	325.8	325.5	325.2	22.5°
135°	349.5	350.0	351.0	350.0	351.0	350.0	349.5	349.0	348.8	348.5	348.2	25°
137.5°	371.0	372.0	374.0	372.0	374.0	372.0	371.0	370.0	369.8	369.5	369.2	27.5°
140°	393.0	394.0	396.0	394.0	396.0	394.0	393.0	392.0	391.5	391.0	390.5	30°
142.5°	413.8	414.5	416.0	415.0	416.0	414.5	413.8	413.0	412.8	412.5	412.2	32.5°
145°	434.8	435.5	437.0	435.0	437.0	435.5	434.8	434.0	433.8	433.5	433.2	35°
147.5°	453.8	454.5	456.0	453.0	456.0	454.5	453.8	453.0	452.8	452.5	452.2	37.5°
150°	470.0	471.0	473.0	470.0	473.0	471.0	470.0	469.0	469.0	469.0	469.0	40°
152.5°	486.8	487.5	489.0	486.0	489.0	487.5	486.8	486.0	486.0	486.0	486.0	42.5°
155°	504.8	505.5	507.0	505.0	507.0	505.5	504.8	504.0	503.8	503.5	503.2	45°
157.5°	519.2	520.5	523.0	520.0	523.0	520.5	519.2	518.0	517.8	517.5	517.2	47.5°
160°	530.8	531.5	533.0	531.0	533.0	531.5	530.8	530.0	530.0	530.0	530.0	50°
162.5°	538.5	539.0	540.0	537.0	540.0	539.0	538.5	538.0	538.5	539.0	539.5	52.5°
165°	548.5	549.0	550.0	548.0	550.0	549.0	548.5	548.0	548.5	549.0	549.5	55°
167.5°	560.0	561.0	563.0	561.0	563.0	561.0	560.0	559.0	558.8	558.5	558.2	57.5°
170°	567.2	568.5	571.0	569.0	571.0	568.5	567.2	566.0	565.5	565.0	564.5	60°
172.5°	568.8	569.5	571.0	568.0	571.0	569.5	568.8	568.0	567.8	567.5	567.2	62.5°
175°	568.8	569.5	571.0	568.0	571.0	569.5	568.8	568.0	568.5	569.0	569.5	65°
177.5°	574.8	575.5	577.0	574.0	577.0	575.5	574.8	574.0	574.0	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°
												72.5°
												73°
												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°
367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9	367.9	110°	114.0
359.0	356.0	359.0	354.1	358.0	354.1	357.0	357.0	356.0	356.0	356.0	112.5°	136.0
347.1	342.2	347.1	344.2	347.1	343.2	346.2	347.1	348.1	351.1	350.1	115°	158.0
338.2	328.3	339.2	329.3	338.2	329.3	337.3	338.2	341.2	345.2	348.1	117.5°	181.0
334.3	321.4	334.3	322.4	333.3	323.4	333.3	334.3	337.3	342.2	347.1	120°	204.0
332.3	318.5	332.3	320.4	332.3	322.4	332.3	335.3	337.3	341.2	347.1	122.5°	228.0
330.3	316.5	332.3	319.4	332.3	322.4	333.3	335.3	338.2	342.2	347.1	125°	254.0
329.3	313.5	330.3	318.5	330.3	320.4	332.3	332.3	336.3	341.2	344.2	127.5°	277.0
325.4	310.5	325.4	313.5	325.4	316.5	326.4	326.4	330.3	332.3	337.3	130°	301.0
319.4	303.6	317.5	306.6	317.5	308.6	316.5	316.5	319.4	322.4	325.4	132.5°	325.0
310.5	295.7	307.6	297.7	305.6	297.7	303.6	302.6	304.6	306.6	308.6	135°	348.0
300.7	285.8	295.7	284.8	289.8	281.9	285.8	283.8	284.8	285.8	286.8	137.5°	369.0
289.8	274.9	279.9	270.0	271.0	263.1	265.1	262.1	261.1	260.1	258.1	140°	390.0
277.9	262.1	262.1	252.2	250.2	243.3	243.3	239.3	236.4	232.4	228.5	142.5°	412.0
263.1	249.2	242.3	234.4	230.4	223.5	222.5	217.6	210.7	203.7	199.8	145°	433.0
248.2	232.4	222.5	214.6	210.7	205.7	204.7	200.8	192.9	184.9	179.0	147.5°	452.0
228.5	212.6	201.8	198.8	195.8	191.9	192.9	187.9	180.0	171.1	166.2	150°	469.0
208.7	194.8	185.9	184.9	183.0	182.0	183.0	179.0	170.1	162.2	156.3	152.5°	486.0
191.9	178.0	169.1	168.1	167.1	171.1	172.1	171.1	161.2	153.3	145.4	155°	503.0
175.1	158.2	152.3	150.3	151.3	157.3	159.2	162.2	153.3	144.4	133.5	157.5°	517.0
155.3	139.4	137.5	135.5	136.5	141.4	146.4	152.3	144.4	131.5	116.7	160°	530.0
137.5	123.6	124.6	122.6	124.6	128.6	132.5	142.4	132.5	119.7	112.7	162.5°	540.0
123.6	112.7	114.7	112.7	114.7	119.7	122.6	130.5	130.5	127.6	121.6	165°	550.0
113.7	105.8	107.8	105.8	108.8	112.7	115.7	132.5	142.4	134.5	122.6	167.5°	558.0
107.8	100.9	101.9	99.9	101.9	107.8	113.7	133.5	149.3	133.5	124.6	170°	564.0
98.9	93.0	92.0	92.0	94.0	103.8	106.8	124.6	147.4	132.5	125.6	172.5°	567.0
93.0	88.0	87.0	86.0	88.0	94.9	97.9	115.7	142.4	125.6	113.7	175°	570.0
90.0	86.0	84.1	82.1	84.1	90.0	93.0	108.8	134.5	119.7	106.8	177.5°	574.0
87.0	83.1	82.1	80.1	81.1	85.1	89.0	99.9	127.6	112.7	99.9	180°	576.0
83.1	79.1	78.1	75.2	76.2	80.1	82.1	94.0	118.7	105.8	93.0		
82.1	78.1	77.1	74.2	75.2	78.1	80.1	92.0	116.7	104.8	92.0		
77.1	73.2	72.2	70.2	71.2	71.2	73.2	84.1	110.8	98.9	86.0		
68.2	65.3	64.3	62.3	61.3	60.3	63.3	74.2	100.9	89.0	69.2		
56.4	53.4	52.4	48.5	48.5	48.5	52.4	63.3	75.2	64.3	53.4		
41.5	39.6	39.6	36.6	35.6	34.6	37.6	43.5	59.3	50.4	41.5		
24.7	23.7	24.7	21.8	22.7	21.8	24.7	30.7	32.6	25.7	19.8		
5.9	6.9	6.9	6.9	5.9	5.9	4.9	4.0	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		
7.0	8.5	10.0	11.5	13.0	12.0	11.0	9.0	4.0	3.0	2.0		
30.0	30.5	31.0	31.5	32.0	31.5	31.0	30.0	22.0	14.0	10.0		
50.0	50.2	50.5	50.8	51.0	50.8	50.5	50.0	45.0	38.0	32.0		
71.0	71.0	71.0	71.0	71.0	70.8	70.5	70.0	66.0	61.0	56.0		
92.0	92.2	92.5	92.8	93.0	92.5	92.0	91.0	88.0	84.0	80.0		

'227933  
 ISS-AF-450-LED-E1-T4W-7050-ULG

REPORT NUMBER: P227933  
 CATALOG NUMBER: ISS-AF-450

**TION (continued):**

**CANDELA DISTRIBUTION (con**

117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	155°	165°		175°	180°
114.0	114.0	114.0	114.0	113.5	113.0	112.0	110.0	106.0	103.0	0°	367.9	367.9
136.0	136.0	136.0	136.0	135.5	135.0	134.0	132.0	129.0	126.0	2.5°	355.1	354.1
158.0	158.0	158.0	158.0	157.5	157.0	156.0	154.0	151.0	149.0	5°	350.1	350.1
180.8	180.5	180.2	180.0	179.8	179.5	179.0	177.0	174.0	172.0	7.5°	348.1	348.1
204.0	204.0	204.0	204.0	203.5	203.0	202.0	201.0	198.0	196.0	10°	349.1	349.1
228.0	228.0	228.0	228.0	227.8	227.5	227.0	226.0	223.0	221.0	12.5°	349.1	351.1
253.8	253.5	253.2	253.0	252.8	252.5	252.0	251.0	248.0	247.0	15°	352.1	351.1
277.2	277.5	277.8	278.0	277.5	277.0	276.0	274.0	272.0	270.0	17.5°	349.1	349.1
301.0	301.0	301.0	301.0	300.5	300.0	299.0	298.0	294.0	293.0	20°	341.2	343.2
325.0	325.0	325.0	325.0	324.2	323.5	322.0	321.0	318.0	317.0	22.5°	330.3	330.3
348.0	348.0	348.0	348.0	347.2	346.5	345.0	345.0	341.0	339.0	25°	312.5	313.5
369.0	369.0	369.0	369.0	368.5	368.0	367.0	367.0	364.0	363.0	27.5°	288.8	290.8
390.0	390.0	390.0	390.0	389.8	389.5	389.0	388.0	386.0	385.0	30°	259.1	261.1
412.0	412.0	412.0	412.0	411.5	411.0	410.0	410.0	407.0	408.0	32.5°	225.5	227.5
433.2	433.5	433.8	434.0	433.5	433.0	432.0	431.0	428.0	428.0	35°	198.8	199.8
452.5	453.0	453.5	454.0	453.8	453.5	453.0	452.0	448.0	447.0	37.5°	181.0	181.0
469.5	470.0	470.5	471.0	470.8	470.5	470.0	469.0	465.0	464.0	40°	166.2	166.2
486.2	486.5	486.8	487.0	486.8	486.5	486.0	485.0	482.0	483.0	42.5°	152.3	151.3
503.2	503.5	503.8	504.0	503.8	503.5	503.0	503.0	501.0	502.0	45°	138.5	136.5
517.5	518.0	518.5	519.0	519.0	519.0	519.0	519.0	516.0	517.0	47.5°	124.6	123.6
530.5	531.0	531.5	532.0	532.0	532.0	532.0	532.0	529.0	529.0	50°	112.7	112.7
540.5	541.0	541.5	542.0	541.8	541.5	541.0	541.0	538.0	539.0	52.5°	114.7	114.7
550.8	551.5	552.2	553.0	552.8	552.5	552.0	552.0	548.0	549.0	55°	123.6	123.6
558.5	559.0	559.5	560.0	560.0	560.0	560.0	561.0	558.0	559.0	57.5°	124.6	123.6
564.2	564.5	564.8	565.0	565.2	565.5	566.0	567.0	565.0	566.0	60°	135.5	134.5
567.5	568.0	568.5	569.0	568.8	568.5	568.0	569.0	567.0	569.0	62.5°	141.4	144.4
570.8	571.5	572.2	573.0	572.8	572.5	572.0	572.0	569.0	570.0	65°	123.6	119.7
574.8	575.5	576.2	577.0	577.0	577.0	577.0	578.0	574.0	575.0	67.5°	117.7	111.8
576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	70°	105.8	96.9
										72.5°	94.0	89.0
										73°	91.0	87.0
										75°	81.1	79.1
										77.5°	61.3	60.3
										80°	51.4	50.4
										82.5°	34.6	32.6
										85°	14.8	13.8
										87.5°	0.0	0.0
										90°	0.0	0.0
										92.5°	0.0	0.0
										95°	1.0	1.0
										97.5°	2.0	2.0
										100°	8.0	8.0
										102.5°	28.0	28.0
										105°	54.0	54.0
										107.5°	77.0	78.0



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**CANDELA DISTRIBUTION (continued):**

	175°	180°
110°	102.0	101.0
112.5°	124.0	124.0
115°	147.0	146.0
117.5°	170.0	169.0
120°	195.0	193.0
122.5°	220.0	219.0
125°	246.0	244.0
127.5°	269.0	267.0
130°	292.0	290.0
132.5°	314.0	313.0
135°	337.0	336.0
137.5°	360.0	359.0
140°	383.0	382.0
142.5°	406.0	404.0
145°	426.0	425.0
147.5°	444.0	444.0
150°	462.0	461.0
152.5°	480.0	479.0
155°	500.0	499.0
157.5°	515.0	513.0
160°	527.0	525.0
162.5°	536.0	535.0
165°	547.0	546.0
167.5°	556.0	555.0
170°	563.0	562.0
172.5°	566.0	565.0
175°	569.0	567.0
177.5°	573.0	572.0
180°	576.0	576.0

(END OF REPORT)

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

Scaled Data Report

