

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: P227595

Luminaire Tested: **ISC-AF-450-LED-E1-T2-8030-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P227595  
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: ISC-AF-450-LED-E1-T2-8030-ULG  
Description: IMPACT ELITE LED CYLINDER LUMINAIRE WITH UPLIGHT  
LIGHT SQUARE WITH ACCULED OPTICS-TYPE II, WITH UPLIGHT GLOW  
Light Source: (16) 3000K CCT, 80 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

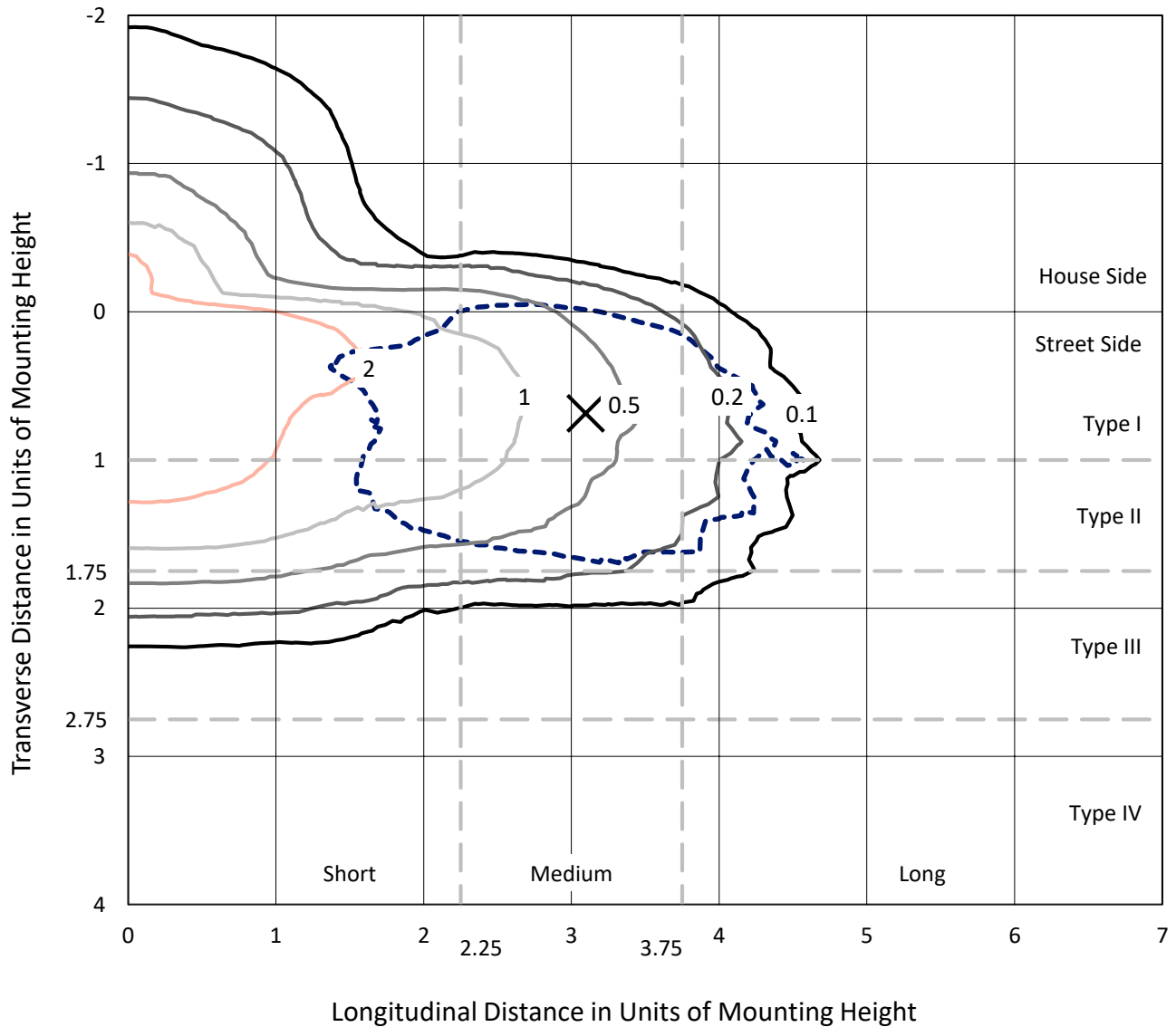
Lumens per Lamp: N/A  
Luminaire Lumens: 3820.2 lumens  
Efficiency: N/A  
Efficacy: 90.9 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')  
IES Classification: Type II - Medium - Non-Cutoff  
BUG Rating: B1 - U5 - G1  
  
Input Watts (W): 42.01  
Input Voltage (V): 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

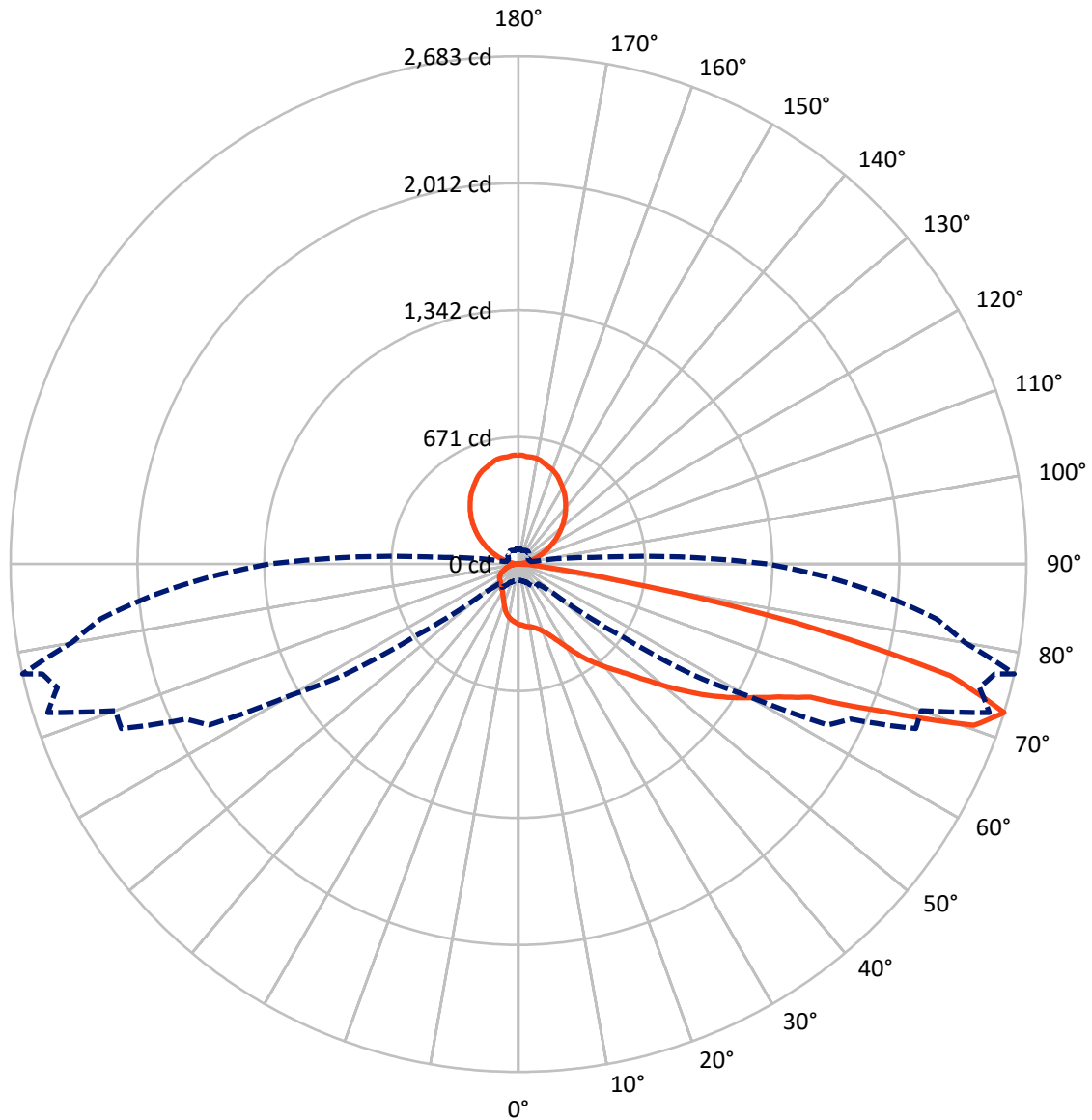
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.9 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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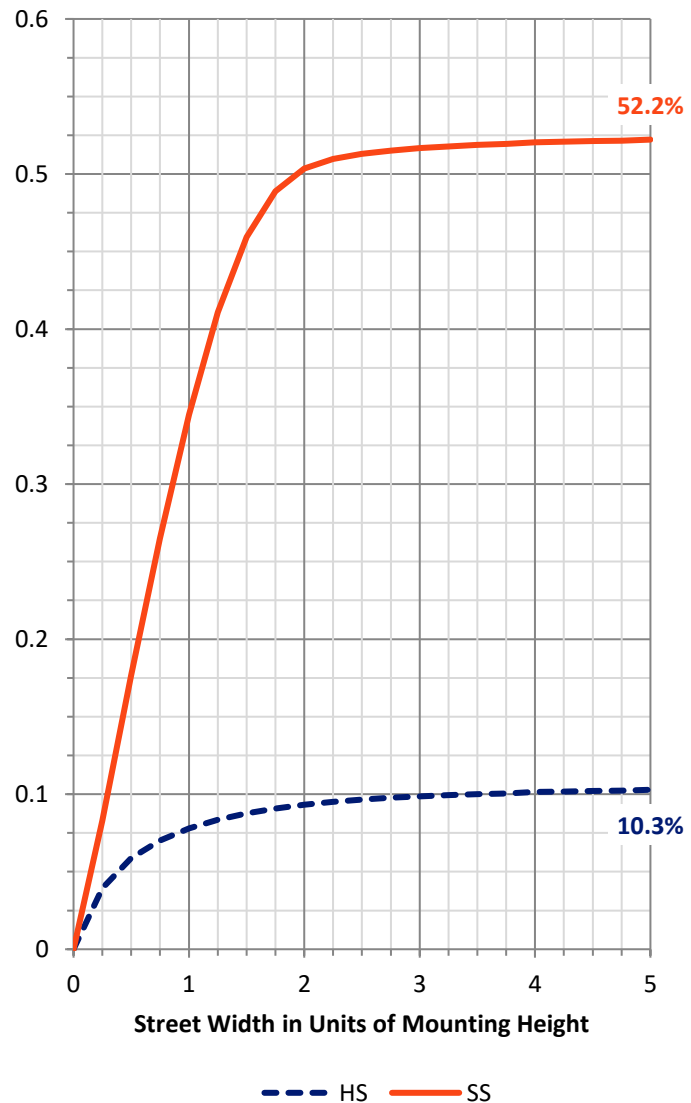
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	396.7	713.1	1109.8
	% Fixture	10.4	18.7	29.1
<b>Street Side</b>	Lumens	1997.3	713.1	2710.4
	% Fixture	52.3	18.7	70.9
<b>Total</b>	Lumens	2394.0	1426.2	3820.2
	% Fixture	62.7	37.3	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	29.7	0.8
10°-20°	91.0	2.4
20°-30°	161.6	4.2
30°-40°	256.1	6.7
40°-50°	384.1	10.1
50°-60°	497.8	13.0
60°-70°	565.6	14.8
70°-80°	375.3	9.8
80°-90°	32.8	0.9
90°-100°	4.7	0.1
100°-110°	69.0	1.8
110°-120°	153.0	4.0
120°-130°	223.9	5.9
130°-140°	265.6	7.0
140°-150°	269.3	7.0
150°-160°	231.1	6.0
160°-170°	155.1	4.1
170°-180°	54.3	1.4
0°-90°	2394.0	62.7
0°-180°	3820.2	100.0



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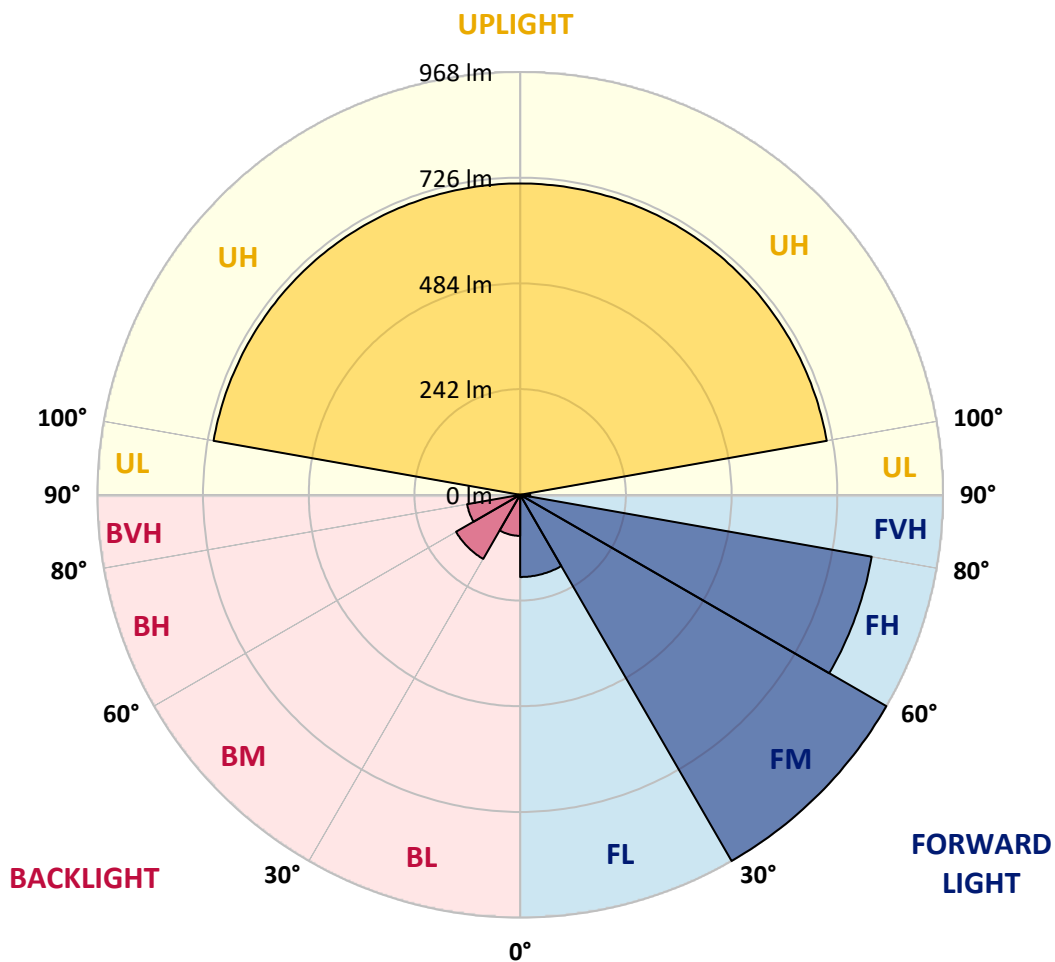
CATALOG NUMBER: ISC-AF-450-LED-E1-T2-8030-ULG

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

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	188.3	4.9			
FM	(30°-60°)	968.5	25.4			
FH	(60°-80°)	817.5	21.4			G1/1800
FVH	(80°-90°)	22.9	0.6			G1/100
BL	(0°-30°)	94.0	2.5	B0/110		
BM	(30°-60°)	169.5	4.4	B0/220		
BH	(60°-80°)	123.4	3.2	B1/500		G1/500
BVH	(80°-90°)	9.9	0.3			G0/10
UL	(90°-100°)	4.7	0.1		U1/10	
UH	(100°-180°)	713.1	18.7		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°	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6
2.5°	346.3	344.7	343.9	342.2	340.6	339.8	337.4	335.8	338.2	337.4	337.4
5°	372.1	370.5	368.1	365.7	362.4	360.0	357.6	355.2	356.8	355.2	353.5
7.5°	393.1	391.5	388.3	385.8	382.6	379.4	376.1	375.3	373.7	371.3	370.5
10°	405.2	403.6	402.0	400.4	395.5	393.1	389.1	386.6	387.4	384.2	384.2
12.5°	416.5	414.9	414.1	414.1	410.0	407.6	406.0	403.6	405.2	400.4	398.7
15°	427.0	425.4	423.0	425.4	424.6	423.8	423.0	422.2	424.6	419.7	420.5
17.5°	443.9	443.1	438.3	435.1	435.9	438.3	439.9	439.1	439.1	436.7	437.5
20°	470.6	470.6	464.1	458.5	449.6	449.6	450.4	449.6	451.2	452.8	455.2
22.5°	490.8	489.1	486.7	481.9	472.2	464.1	464.1	460.9	463.3	464.1	469.0
25°	516.6	515.0	509.3	509.3	499.6	489.1	487.5	482.7	488.3	477.8	485.9
27.5°	548.1	546.5	539.2	536.0	531.1	518.2	515.0	515.8	521.4	506.1	514.2
30°	587.6	586.0	577.1	568.3	560.2	546.5	544.8	544.0	557.0	539.2	549.7
32.5°	637.7	637.7	628.0	615.9	599.7	581.2	574.7	575.5	593.3	573.9	591.7
35°	713.5	703.9	686.1	667.5	650.6	628.8	619.9	618.3	634.4	615.1	635.2
37.5°	762.0	755.5	739.4	725.6	707.1	686.1	679.6	682.1	695.8	667.5	696.6
40°	805.6	804.8	794.3	785.4	766.8	745.8	753.9	786.2	822.5	767.6	768.4
42.5°	834.6	836.2	835.4	836.2	825.7	803.9	817.7	862.9	925.0	892.7	862.9
45°	839.5	845.1	847.5	863.7	874.2	861.3	868.5	916.1	1040.4	1090.5	955.7
47.5°	851.6	857.2	852.4	871.7	920.2	919.4	948.4	966.2	983.1	991.2	1092.9
50°	867.7	878.2	873.4	889.5	929.1	951.7	976.7	999.3	985.6	934.7	962.2
52.5°	868.5	880.6	907.3	923.4	962.2	957.3	974.3	962.2	983.1	930.7	957.3
55°	797.5	799.9	877.4	958.9	1026.7	1013.0	1002.5	975.1	1001.7	936.3	970.2
57.5°	685.3	693.4	774.1	911.3	1056.6	1068.7	1065.5	1063.0	1084.0	996.9	1034.0
60°	561.8	571.5	648.2	809.6	994.4	1025.9	1069.5	1096.1	1150.2	1115.5	1176.9
62.5°	350.3	357.6	442.3	644.1	877.4	939.6	1003.3	1034.8	1113.1	1129.2	1233.4
65°	167.1	169.5	202.6	350.3	637.7	754.7	849.1	916.1	1012.2	1084.8	1225.3
67.5°	130.0	130.8	142.9	186.5	326.9	405.2	512.6	601.3	703.9	902.4	1076.8
70°	104.1	104.1	113.8	137.2	202.6	213.1	240.5	270.4	314.0	473.8	615.1
72.5°	87.2	87.2	93.6	108.2	150.1	152.6	150.9	148.5	148.5	187.3	238.9
75°	73.5	72.6	76.7	86.4	111.4	114.6	113.0	107.4	100.9	100.9	113.8
77.5°	59.7	59.7	63.0	67.8	80.7	82.3	82.3	77.5	71.8	72.6	78.3
80°	46.8	46.8	49.2	52.5	56.5	55.7	55.7	50.9	46.8	46.0	49.2
82.5°	33.9	34.7	40.4	37.9	36.3	33.9	33.9	33.1	29.9	27.4	29.1
85°	10.5	11.3	19.4	22.6	18.6	15.3	14.5	12.1	12.9	10.5	12.1
87.5°	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.8	0.0	0.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	2.0	2.0	2.0	3.0	4.0	5.2	6.5	7.8	9.0	10.0	11.0
100°	8.0	8.0	10.0	14.0	22.0	24.0	26.0	28.0	30.0	30.5	31.0
102.5°	28.0	28.0	32.0	38.0	45.0	46.2	47.5	48.8	50.0	50.2	50.5
105°	54.0	54.0	56.0	61.0	66.0	67.0	68.0	69.0	70.0	70.2	70.5
107.5°	78.0	77.0	80.0	84.0	88.0	88.8	89.5	90.2	91.0	91.5	92.0
110°	101.0	102.0	103.0	106.0	110.0	110.5	111.0	111.5	112.0	112.5	113.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	37.5°	40°	42.5°	45°	47.5°	50°
112.5°	124.0	124.0	126.0	129.0	132.0	132.5	133.0	133.5	134.0	134.5	135.0
115°	146.0	147.0	149.0	151.0	154.0	154.5	155.0	155.5	156.0	156.5	157.0
117.5°	169.0	170.0	172.0	174.0	177.0	177.5	178.0	178.5	179.0	179.2	179.5
120°	193.0	195.0	196.0	198.0	201.0	201.2	201.5	201.8	202.0	202.5	203.0
122.5°	219.0	220.0	221.0	223.0	226.0	226.2	226.5	226.8	227.0	227.2	227.5
125°	244.0	246.0	247.0	248.0	251.0	251.2	251.5	251.8	252.0	252.2	252.5
127.5°	267.0	269.0	270.0	272.0	274.0	274.5	275.0	275.5	276.0	276.5	277.0
130°	290.0	292.0	293.0	294.0	298.0	298.2	298.5	298.8	299.0	299.5	300.0
132.5°	313.0	314.0	317.0	318.0	321.0	321.2	321.5	321.8	322.0	322.8	323.5
135°	336.0	337.0	339.0	341.0	345.0	345.0	345.0	345.0	345.0	345.8	346.5
137.5°	359.0	360.0	363.0	364.0	367.0	367.0	367.0	367.0	367.0	367.5	368.0
140°	382.0	383.0	385.0	386.0	388.0	388.2	388.5	388.8	389.0	389.2	389.5
142.5°	404.0	406.0	408.0	407.0	410.0	410.0	410.0	410.0	410.0	410.5	411.0
145°	425.0	426.0	428.0	428.0	431.0	431.2	431.5	431.8	432.0	432.5	433.0
147.5°	444.0	444.0	447.0	448.0	452.0	452.2	452.5	452.8	453.0	453.2	453.5
150°	461.0	462.0	464.0	465.0	469.0	469.2	469.5	469.8	470.0	470.2	470.5
152.5°	479.0	480.0	483.0	482.0	485.0	485.2	485.5	485.8	486.0	486.2	486.5
155°	499.0	500.0	502.0	501.0	503.0	503.0	503.0	503.0	503.0	503.2	503.5
157.5°	513.0	515.0	517.0	516.0	519.0	519.0	519.0	519.0	519.0	519.0	519.0
160°	525.0	527.0	529.0	529.0	532.0	532.0	532.0	532.0	532.0	532.0	532.0
162.5°	535.0	536.0	539.0	538.0	541.0	541.0	541.0	541.0	541.0	541.2	541.5
165°	546.0	547.0	549.0	548.0	552.0	552.0	552.0	552.0	552.0	552.2	552.5
167.5°	555.0	556.0	559.0	558.0	561.0	560.8	560.5	560.2	560.0	560.0	560.0
170°	562.0	563.0	566.0	565.0	567.0	566.8	566.5	566.2	566.0	565.8	565.5
172.5°	565.0	566.0	569.0	567.0	569.0	568.8	568.5	568.2	568.0	568.2	568.5
175°	567.0	569.0	570.0	569.0	572.0	572.0	572.0	572.0	572.0	572.2	572.5
177.5°	572.0	573.0	575.0	574.0	578.0	577.8	577.5	577.2	577.0	577.0	577.0
180°	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0





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**CANDELA DISTRIBUTION (continued):**

	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77°
0°	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6
2.5°	333.4	335.0	331.7	331.7	327.7	330.1	326.1	326.9	322.9	324.5	324.5
5°	349.5	350.3	346.3	344.7	340.6	340.6	336.6	336.6	330.9	332.6	330.9
7.5°	364.8	364.8	360.8	357.6	353.5	351.9	347.1	344.7	339.8	339.0	336.6
10°	377.8	377.8	372.1	368.9	364.0	361.6	355.2	352.7	347.1	343.0	340.6
12.5°	393.9	392.3	385.8	382.6	374.5	373.7	364.0	362.4	354.3	351.9	347.9
15°	413.3	414.9	404.4	403.6	392.3	391.5	378.6	377.8	365.7	364.8	359.2
17.5°	434.3	437.5	428.6	427.8	414.1	414.1	398.7	397.9	381.8	381.0	373.7
20°	452.8	456.9	451.2	452.8	440.7	441.5	424.6	424.6	402.0	400.4	393.9
22.5°	469.8	477.8	473.0	481.9	469.8	475.4	452.8	456.9	430.2	427.0	417.3
25°	486.7	497.2	495.6	510.1	501.3	510.9	487.5	495.6	460.9	463.3	450.4
27.5°	503.7	517.4	515.8	536.8	533.5	552.9	532.7	541.6	503.7	506.1	491.6
30°	531.9	547.3	541.6	563.4	563.4	594.9	579.6	593.3	551.3	556.1	539.2
32.5°	569.9	587.6	570.7	598.9	597.3	638.5	626.4	649.8	608.6	615.1	594.1
35°	611.0	639.3	611.8	643.3	638.5	681.3	673.2	711.1	667.5	674.8	653.8
37.5°	665.1	699.0	662.7	690.1	668.3	717.6	712.7	764.4	720.0	738.6	713.5
40°	728.9	755.5	710.3	733.7	697.4	748.3	740.2	811.2	770.0	799.9	777.3
42.5°	787.8	806.4	746.6	775.7	732.1	783.8	769.2	854.8	819.3	865.3	840.3
45°	841.1	862.1	783.0	815.2	766.8	823.3	798.3	896.8	872.6	942.0	917.0
47.5°	917.0	886.3	816.1	858.0	803.9	866.1	833.0	946.0	937.1	1035.6	1006.5
50°	891.9	912.1	843.5	887.1	837.8	913.7	877.4	1004.9	1007.4	1137.3	1120.4
52.5°	894.3	928.3	864.5	925.0	877.4	979.9	942.0	1076.0	1087.3	1235.8	1212.4
55°	908.9	958.9	896.0	977.5	933.1	1053.4	1026.7	1152.6	1172.0	1328.6	1314.9
57.5°	945.2	1014.6	950.0	1056.6	1010.6	1137.3	1113.1	1231.7	1258.4	1421.4	1417.4
60°	1084.8	1167.2	1054.2	1172.0	1110.7	1232.6	1200.3	1314.9	1341.5	1510.2	1520.7
62.5°	1240.6	1383.5	1316.5	1439.2	1277.0	1400.4	1305.2	1417.4	1419.0	1605.5	1638.6
65°	1281.0	1500.5	1557.8	1786.3	1701.5	1828.3	1574.0	1649.1	1552.2	1779.0	1826.6
67.5°	1265.6	1534.4	1693.5	1950.9	2047.0	2268.2	2225.4	2199.6	1975.2	2138.2	2195.5
70°	929.1	1214.0	1603.0	1864.6	2141.4	2286.7	2516.8	2540.2	2530.5	2507.9	2545.8
72.5°	423.0	663.5	1084.8	1383.5	1840.4	1938.0	2271.4	2264.9	2607.2	2522.4	2582.2
75°	166.3	255.9	516.6	772.5	1272.9	1393.2	1770.9	1677.3	2104.3	1980.0	2107.5
77.5°	91.2	114.6	193.7	331.7	695.0	758.7	1084.0	927.4	1305.2	1089.7	1132.5
80°	54.9	68.6	88.8	125.9	295.4	312.4	462.5	372.9	533.5	405.2	393.1
82.5°	29.9	37.1	44.4	62.2	109.8	121.9	159.8	143.7	171.1	146.1	142.9
85°	12.1	16.1	17.0	25.0	36.3	42.0	50.9	54.9	67.0	61.3	59.7
87.5°	0.0	0.8	0.0	1.6	0.0	1.6	0.0	2.4	2.4	4.0	4.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	12.0	13.0	11.5	10.0	8.5	7.0	6.5	6.0	5.5	5.0	4.8
100°	31.5	32.0	31.5	31.0	30.5	30.0	29.2	28.5	27.8	27.0	26.8
102.5°	50.8	51.0	50.8	50.5	50.2	50.0	49.5	49.0	48.5	48.0	48.2
105°	70.8	71.0	71.0	71.0	71.0	71.0	70.5	70.0	69.5	69.0	69.4
107.5°	92.5	93.0	92.8	92.5	92.2	92.0	91.8	91.5	91.2	91.0	91.2
110°	113.5	114.0	114.0	114.0	114.0	114.0	113.8	113.5	113.2	113.0	113.2



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CATALOG NUMBER: ISC-AF-450-LED-E1-T2-8030-ULG

**CANDELA DISTRIBUTION (continued):**

	52.5°	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77°
112.5°	135.5	136.0	136.0	136.0	136.0	136.0	135.8	135.5	135.2	135.0	135.4
115°	157.5	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.0	158.4
117.5°	179.8	180.0	180.2	180.5	180.8	181.0	180.8	180.5	180.2	180.0	180.4
120°	203.5	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.4
122.5°	227.8	228.0	228.0	228.0	228.0	228.0	228.2	228.5	228.8	229.0	229.8
125°	252.8	253.0	253.2	253.5	253.8	254.0	254.0	254.0	254.0	254.0	254.6
127.5°	277.5	278.0	277.8	277.5	277.2	277.0	277.2	277.5	277.8	278.0	278.6
130°	300.5	301.0	301.0	301.0	301.0	301.0	301.2	301.5	301.8	302.0	302.6
132.5°	324.2	325.0	325.0	325.0	325.0	325.0	325.2	325.5	325.8	326.0	326.6
135°	347.2	348.0	348.0	348.0	348.0	348.0	348.2	348.5	348.8	349.0	349.4
137.5°	368.5	369.0	369.0	369.0	369.0	369.0	369.2	369.5	369.8	370.0	370.8
140°	389.8	390.0	390.0	390.0	390.0	390.0	390.5	391.0	391.5	392.0	392.8
142.5°	411.5	412.0	412.0	412.0	412.0	412.0	412.2	412.5	412.8	413.0	413.6
145°	433.5	434.0	433.8	433.5	433.2	433.0	433.2	433.5	433.8	434.0	434.6
147.5°	453.8	454.0	453.5	453.0	452.5	452.0	452.2	452.5	452.8	453.0	453.6
150°	470.8	471.0	470.5	470.0	469.5	469.0	469.0	469.0	469.0	469.0	469.8
152.5°	486.8	487.0	486.8	486.5	486.2	486.0	486.0	486.0	486.0	486.0	486.6
155°	503.8	504.0	503.8	503.5	503.2	503.0	503.2	503.5	503.8	504.0	504.6
157.5°	519.0	519.0	518.5	518.0	517.5	517.0	517.2	517.5	517.8	518.0	519.0
160°	532.0	532.0	531.5	531.0	530.5	530.0	530.0	530.0	530.0	530.0	530.6
162.5°	541.8	542.0	541.5	541.0	540.5	540.0	539.5	539.0	538.5	538.0	538.4
165°	552.8	553.0	552.2	551.5	550.8	550.0	549.5	549.0	548.5	548.0	548.4
167.5°	560.0	560.0	559.5	559.0	558.5	558.0	558.2	558.5	558.8	559.0	559.8
170°	565.2	565.0	564.8	564.5	564.2	564.0	564.5	565.0	565.5	566.0	567.0
172.5°	568.8	569.0	568.5	568.0	567.5	567.0	567.2	567.5	567.8	568.0	568.6
175°	572.8	573.0	572.2	571.5	570.8	570.0	569.5	569.0	568.5	568.0	568.6
177.5°	577.0	577.0	576.2	575.5	574.8	574.0	574.0	574.0	574.0	574.0	574.6
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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 CATALOG NUMBER: ISC-AF-450-LED-E1-T2-8030-ULG

**CANDELA DISTRIBUTION (continued):**

	77.5°	80°	82.5°	85°	87.5°	90°	95°	100°	102.5°	105°	107.5°
0°	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6
2.5°	322.1	324.5	321.3	321.3	317.2	319.6	317.2	314.8	310.8	311.6	305.9
5°	327.7	329.3	325.3	323.7	321.3	320.4	315.6	310.8	305.1	305.1	298.7
7.5°	333.4	333.4	327.7	327.7	322.1	320.4	313.2	305.1	297.0	296.2	286.5
10°	336.6	335.8	328.5	328.5	320.4	319.6	310.8	298.7	287.4	284.1	270.4
12.5°	343.0	342.2	333.4	331.7	321.3	321.3	308.3	292.2	276.1	270.4	251.0
15°	351.1	351.9	341.4	339.0	326.9	326.1	308.3	284.1	262.3	253.5	230.0
17.5°	364.0	364.8	350.3	347.9	333.4	330.9	309.1	274.4	243.8	234.1	213.1
20°	381.0	378.6	359.2	358.4	339.0	336.6	308.3	259.9	225.2	215.5	197.0
22.5°	402.0	399.6	374.5	372.1	349.5	345.5	307.5	244.6	208.3	197.8	185.7
25°	431.0	427.8	397.1	393.9	365.7	359.2	306.7	228.4	193.7	185.7	178.4
27.5°	467.4	460.9	423.8	420.5	382.6	374.5	303.5	209.9	179.2	173.5	170.3
30°	510.9	505.3	457.7	452.8	405.2	394.7	300.3	192.9	168.7	166.3	163.9
32.5°	562.6	557.0	498.8	493.2	434.3	418.9	294.6	179.2	162.2	162.2	159.0
35°	616.7	611.8	543.2	539.2	466.5	446.4	287.4	167.1	156.6	156.6	153.4
37.5°	665.1	669.1	591.7	588.4	498.8	473.8	279.3	159.0	151.7	150.1	146.9
40°	717.6	727.3	636.9	639.3	532.7	502.9	269.6	152.6	146.1	144.5	143.7
42.5°	770.9	789.4	684.5	693.4	566.6	532.7	262.3	148.5	143.7	140.4	139.6
45°	837.0	863.7	743.4	760.4	606.2	569.1	259.9	143.7	136.4	132.4	130.0
47.5°	919.4	954.9	816.1	835.4	658.7	612.6	264.8	142.1	131.6	126.7	121.9
50°	1017.0	1050.9	902.4	910.5	717.6	660.3	275.2	144.5	130.0	122.7	115.4
52.5°	1120.4	1146.2	993.6	984.8	778.9	707.1	287.4	145.3	125.9	118.7	109.8
55°	1226.9	1241.4	1078.4	1055.0	834.6	753.9	303.5	144.5	122.7	114.6	103.3
57.5°	1331.0	1335.9	1153.5	1130.9	889.5	809.6	323.7	142.1	117.8	109.8	97.7
60°	1432.7	1440.8	1236.6	1215.6	949.2	881.4	352.7	138.0	111.4	105.7	92.8
62.5°	1544.1	1570.8	1335.9	1339.1	1031.6	993.6	407.6	133.2	104.9	98.5	85.6
65°	1695.9	1797.6	1499.7	1575.6	1189.8	1205.1	512.6	119.5	96.1	88.0	79.1
67.5°	2076.1	2187.4	1897.7	1928.3	1560.3	1469.1	578.7	101.7	84.8	79.1	73.5
70°	2552.3	2472.4	2266.5	2080.9	1776.6	1510.2	509.3	85.6	75.1	71.8	68.6
72.5°	2683.0	2396.5	2227.0	1948.5	1642.6	1317.3	389.9	73.5	67.0	65.4	63.0
75°	2357.8	1942.9	1952.6	1548.2	1361.7	1004.1	266.4	63.0	58.1	57.3	56.5
77.5°	1507.8	998.5	1215.6	765.2	786.2	464.9	130.0	52.5	50.0	50.0	48.4
80°	536.0	332.6	376.1	241.3	219.6	147.7	70.2	42.0	40.4	41.2	40.4
82.5°	160.6	127.5	125.1	97.7	75.9	62.2	38.7	32.3	30.7	31.5	29.9
85°	64.6	50.0	42.0	32.3	26.6	24.2	21.0	21.8	19.4	21.0	18.6
87.5°	4.0	3.2	2.4	3.2	0.0	1.6	4.0	3.2	0.8	3.2	2.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
97.5°	4.8	4.5	4.2	4.0	4.0	4.0	4.0	4.5	4.8	5.0	5.5
100°	26.8	26.5	26.2	26.0	25.5	25.0	26.0	26.5	26.8	27.0	27.8
102.5°	48.2	48.5	48.8	49.0	48.5	48.0	49.0	48.5	48.2	48.0	48.5
105°	69.5	70.0	70.5	71.0	70.0	69.0	71.0	70.0	69.5	69.0	69.5
107.5°	91.2	91.5	91.8	92.0	91.5	91.0	92.0	91.5	91.2	91.0	91.2
110°	113.2	113.5	113.8	114.0	113.5	113.0	114.0	113.5	113.2	113.0	113.2



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REPORT N  
 CATALOG

**CANDELA DISTRIBUTION (continued):**

**CANDELA**

	77.5°	80°	82.5°	85°	87.5°	90°	95°	100°	102.5°	105°	107.5°	
112.5°	135.5	136.0	136.5	137.0	136.0	135.0	137.0	136.0	135.5	135.0	135.2	0°
115°	158.5	159.0	159.5	160.0	159.5	159.0	160.0	159.0	158.5	158.0	158.0	2.5°
117.5°	180.5	181.0	181.5	182.0	181.0	180.0	182.0	181.0	180.5	180.0	180.2	5°
120°	204.5	205.0	205.5	206.0	205.0	204.0	206.0	205.0	204.5	204.0	204.0	7.5°
122.5°	230.0	231.0	232.0	233.0	232.5	232.0	233.0	231.0	230.0	229.0	228.8	10°
125°	254.8	255.5	256.2	257.0	256.5	256.0	257.0	255.5	254.8	254.0	254.0	12.5°
127.5°	278.8	279.5	280.2	281.0	279.5	278.0	281.0	279.5	278.8	278.0	277.8	15°
130°	302.8	303.5	304.2	305.0	304.0	303.0	305.0	303.5	302.8	302.0	301.8	17.5°
132.5°	326.8	327.5	328.2	329.0	328.0	327.0	329.0	327.5	326.8	326.0	325.8	20°
135°	349.5	350.0	350.5	351.0	350.5	350.0	351.0	350.0	349.5	349.0	348.8	22.5°
137.5°	371.0	372.0	373.0	374.0	373.0	372.0	374.0	372.0	371.0	370.0	369.8	25°
140°	393.0	394.0	395.0	396.0	395.0	394.0	396.0	394.0	393.0	392.0	391.5	27.5°
142.5°	413.8	414.5	415.2	416.0	415.5	415.0	416.0	414.5	413.8	413.0	412.8	30°
145°	434.8	435.5	436.2	437.0	436.0	435.0	437.0	435.5	434.8	434.0	433.8	32.5°
147.5°	453.8	454.5	455.2	456.0	454.5	453.0	456.0	454.5	453.8	453.0	452.8	35°
150°	470.0	471.0	472.0	473.0	471.5	470.0	473.0	471.0	470.0	469.0	469.0	37.5°
152.5°	486.8	487.5	488.2	489.0	487.5	486.0	489.0	487.5	486.8	486.0	486.0	40°
155°	504.8	505.5	506.2	507.0	506.0	505.0	507.0	505.5	504.8	504.0	503.8	42.5°
157.5°	519.2	520.5	521.8	523.0	521.5	520.0	523.0	520.5	519.2	518.0	517.8	45°
160°	530.8	531.5	532.2	533.0	532.0	531.0	533.0	531.5	530.8	530.0	530.0	47.5°
162.5°	538.5	539.0	539.5	540.0	538.5	537.0	540.0	539.0	538.5	538.0	538.5	50°
165°	548.5	549.0	549.5	550.0	549.0	548.0	550.0	549.0	548.5	548.0	548.5	52.5°
167.5°	560.0	561.0	562.0	563.0	562.0	561.0	563.0	561.0	560.0	559.0	558.8	55°
170°	567.2	568.5	569.8	571.0	570.0	569.0	571.0	568.5	567.2	566.0	565.5	57.5°
172.5°	568.8	569.5	570.2	571.0	569.5	568.0	571.0	569.5	568.8	568.0	567.8	60°
175°	568.8	569.5	570.2	571.0	569.5	568.0	571.0	569.5	568.8	568.0	568.5	62.5°
177.5°	574.8	575.5	576.2	577.0	575.5	574.0	577.0	575.5	574.8	574.0	574.0	65°
180°	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	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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REPORT NUMBER: P  
 CATALOG NUMBER:

**DISTRIBUTION (continued):**

**CANDELA DISTRIBUTION**

110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°	110°	
319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6	319.6	112.5°	135.5
310.0	304.3	306.7	304.3	305.9	301.1	302.7	298.7	298.7	297.8	293.8	115°	158.0
299.5	293.8	293.0	287.4	288.2	281.7	280.9	273.6	273.6	267.2	255.1	117.5°	180.5
284.9	276.1	275.2	263.9	263.1	254.3	251.0	243.0	242.2	234.9	227.6	120°	204.0
266.4	252.6	250.2	235.7	236.5	226.8	226.0	220.4	220.4	217.1	217.1	122.5°	228.5
245.4	230.0	228.4	217.1	217.9	211.5	212.3	209.1	210.7	212.3	217.9	125°	254.0
226.0	213.9	212.3	205.0	205.8	204.2	206.6	206.6	209.1	213.1	222.8	127.5°	277.5
209.9	199.4	200.2	197.0	200.2	199.4	204.2	203.4	208.3	213.1	225.2	130°	301.5
195.3	189.7	192.1	191.3	195.3	195.3	199.4	200.2	204.2	210.7	224.4	132.5°	325.5
185.7	184.0	186.5	186.5	189.7	190.5	194.5	197.0	199.4	205.8	217.9	135°	348.5
180.0	179.2	181.6	182.4	184.8	185.7	189.7	189.7	193.7	197.8	204.2	137.5°	369.5
171.9	170.3	173.5	173.5	176.8	176.0	180.8	179.2	183.2	184.8	186.5	140°	391.0
166.3	163.9	166.3	165.5	167.9	165.5	167.9	165.5	167.9	167.9	165.5	142.5°	412.5
160.6	158.2	159.0	155.8	158.2	155.0	155.8	152.6	154.2	152.6	153.4	145°	433.5
155.0	151.7	151.7	147.7	147.7	143.7	145.3	142.1	145.3	147.7	146.9	147.5°	452.5
146.9	144.5	144.5	141.3	142.9	141.3	144.5	142.9	143.7	140.4	134.8	150°	469.0
142.1	143.7	142.9	145.3	143.7	141.3	138.8	134.0	133.2	131.6	128.3	152.5°	486.0
134.8	136.4	132.4	135.6	133.2	134.0	132.4	130.0	128.3	126.7	123.5	155°	503.5
124.3	124.3	121.1	125.9	123.5	128.3	126.7	126.7	125.1	122.7	120.3	157.5°	517.5
115.4	116.2	113.0	117.0	115.4	121.9	121.1	123.5	123.5	121.9	115.4	160°	530.0
109.8	108.2	105.7	109.8	109.0	114.6	115.4	120.3	119.5	120.3	114.6	162.5°	539.0
104.9	101.7	99.3	101.7	101.7	106.5	108.2	113.8	114.6	116.2	113.0	165°	549.0
99.3	95.2	93.6	95.2	95.2	100.1	102.5	106.5	109.0	113.8	112.2	167.5°	558.5
94.4	88.8	87.2	88.8	89.6	94.4	96.9	100.9	104.1	110.6	109.8	170°	565.0
88.8	83.9	82.3	84.8	85.6	90.4	92.8	96.9	99.3	106.5	106.5	172.5°	567.5
82.3	78.3	78.3	79.1	80.7	85.6	87.2	92.8	93.6	102.5	103.3	175°	569.0
76.7	74.3	74.3	75.1	76.7	80.7	81.5	87.2	88.0	96.9	99.3	177.5°	574.0
71.8	70.2	70.2	71.0	71.8	75.1	75.9	81.5	83.1	91.2	95.2	180°	576.0
67.0	65.4	64.6	64.6	67.0	69.4	71.0	76.7	77.5	84.8	89.6		
61.3	59.7	59.7	58.9	61.3	63.0	66.2	69.4	71.0	78.3	81.5		
55.7	54.1	54.1	53.3	54.9	58.1	58.9	62.2	63.0	69.4	72.6		
48.4	46.8	46.8	46.8	48.4	49.2	50.0	53.3	54.9	60.5	63.8		
40.4	38.7	39.6	38.7	41.2	37.9	40.4	43.6	45.2	48.4	46.8		
30.7	28.3	29.1	29.1	29.9	27.4	29.1	30.7	32.3	34.7	33.9		
19.4	17.0	18.6	17.0	18.6	16.1	17.8	17.8	19.4	17.8	17.0		
4.0	1.6	4.0	1.6	4.8	0.0	2.4	0.0	1.6	0.8	0.0		
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
6.0	6.5	7.0	8.5	10.0	11.5	13.0	12.0	11.0	9.0	4.0		
28.5	29.2	30.0	30.5	31.0	31.5	32.0	31.5	31.0	30.0	22.0		
49.0	49.5	50.0	50.2	50.5	50.8	51.0	50.8	50.5	50.0	45.0		
70.0	70.5	71.0	71.0	71.0	71.0	71.0	70.8	70.5	70.0	66.0		
91.5	91.8	92.0	92.2	92.5	92.8	93.0	92.5	92.0	91.0	88.0		
113.5	113.8	114.0	114.0	114.0	114.0	114.0	113.5	113.0	112.0	110.0		

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 ISC-AF-450-LED-E1-T2-8030-ULG

REPORT NUMBER: P227595  
 CATALOG NUMBER: ISC-AF-45

**TION (continued):**

**CANDELA DISTRIBUTION (con**

112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°	135°	145°		155°	165°
135.8	136.0	136.0	136.0	136.0	136.0	135.5	135.0	134.0	132.0	0°	319.6	319.6
158.0	158.0	158.0	158.0	158.0	158.0	157.5	157.0	156.0	154.0	2.5°	289.8	286.5
180.8	181.0	180.8	180.5	180.2	180.0	179.8	179.5	179.0	177.0	5°	248.6	243.0
204.0	204.0	204.0	204.0	204.0	204.0	203.5	203.0	202.0	201.0	7.5°	223.6	222.0
228.2	228.0	228.0	228.0	228.0	228.0	227.8	227.5	227.0	226.0	10°	218.7	221.2
254.0	254.0	253.8	253.5	253.2	253.0	252.8	252.5	252.0	251.0	12.5°	224.4	228.4
277.2	277.0	277.2	277.5	277.8	278.0	277.5	277.0	276.0	274.0	15°	231.7	238.9
301.2	301.0	301.0	301.0	301.0	301.0	300.5	300.0	299.0	298.0	17.5°	237.3	247.0
325.2	325.0	325.0	325.0	325.0	325.0	324.2	323.5	322.0	321.0	20°	238.1	247.8
348.2	348.0	348.0	348.0	348.0	348.0	347.2	346.5	345.0	345.0	22.5°	230.9	237.3
369.2	369.0	369.0	369.0	369.0	369.0	368.5	368.0	367.0	367.0	25°	212.3	215.5
390.5	390.0	390.0	390.0	390.0	390.0	389.8	389.5	389.0	388.0	27.5°	188.9	188.1
412.2	412.0	412.0	412.0	412.0	412.0	411.5	411.0	410.0	410.0	30°	164.7	163.0
433.2	433.0	433.2	433.5	433.8	434.0	433.5	433.0	432.0	431.0	32.5°	155.8	150.1
452.2	452.0	452.5	453.0	453.5	454.0	453.8	453.5	453.0	452.0	35°	142.1	140.4
469.0	469.0	469.5	470.0	470.5	471.0	470.8	470.5	470.0	469.0	37.5°	137.2	150.9
486.0	486.0	486.2	486.5	486.8	487.0	486.8	486.5	486.0	485.0	40°	131.6	148.5
503.2	503.0	503.2	503.5	503.8	504.0	503.8	503.5	503.0	503.0	42.5°	126.7	136.4
517.2	517.0	517.5	518.0	518.5	519.0	519.0	519.0	519.0	519.0	45°	117.8	121.9
530.0	530.0	530.5	531.0	531.5	532.0	532.0	532.0	532.0	532.0	47.5°	113.8	112.2
539.5	540.0	540.5	541.0	541.5	542.0	541.8	541.5	541.0	541.0	50°	110.6	110.6
549.5	550.0	550.8	551.5	552.2	553.0	552.8	552.5	552.0	552.0	52.5°	108.2	106.5
558.2	558.0	558.5	559.0	559.5	560.0	560.0	560.0	560.0	561.0	55°	104.9	103.3
564.5	564.0	564.2	564.5	564.8	565.0	565.2	565.5	566.0	567.0	57.5°	102.5	98.5
567.2	567.0	567.5	568.0	568.5	569.0	568.8	568.5	568.0	569.0	60°	100.1	96.1
569.5	570.0	570.8	571.5	572.2	573.0	572.8	572.5	572.0	572.0	62.5°	98.5	93.6
574.0	574.0	574.8	575.5	576.2	577.0	577.0	577.0	577.0	578.0	65°	96.1	91.2
576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	67.5°	92.8	86.4
										70°	86.4	80.7
										72.5°	79.9	73.5
										75°	70.2	64.6
										77.5°	58.9	52.5
										80°	44.4	40.4
										82.5°	32.3	27.4
										85°	14.5	10.5
										87.5°	0.0	0.0
										90°	0.0	0.0
										92.5°	0.0	0.0
										95°	1.0	1.0
										97.5°	3.0	2.0
										100°	14.0	10.0
										102.5°	38.0	32.0
										105°	61.0	56.0
										107.5°	84.0	80.0
										110°	106.0	103.0



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

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**tinued):**

175°	180°
319.6	319.6
284.9	284.1
241.3	239.7
222.0	221.2
222.0	222.0
231.7	231.7
243.0	243.0
251.0	251.8
253.5	254.3
241.3	241.3
217.9	217.9
187.3	190.5
159.8	163.0
142.1	144.5
136.4	137.2
150.1	150.9
147.7	149.3
126.7	127.5
113.8	113.8
109.0	108.2
109.0	107.4
112.2	111.4
107.4	107.4
104.9	104.9
102.5	102.5
101.7	100.9
101.7	100.1
100.1	97.7
94.4	88.0
80.7	75.1
65.4	64.6
50.9	51.7
38.7	38.7
28.3	23.4
8.1	8.1
0.0	0.0
0.0	0.0
0.0	0.0
1.0	1.0
2.0	2.0
8.0	8.0
28.0	28.0
54.0	54.0
77.0	78.0
102.0	101.0

**CANDELA DISTRIBUTION (continued):**

	155°	165°	175°
112.5°	129.0	126.0	124.0
115°	151.0	149.0	147.0
117.5°	174.0	172.0	170.0
120°	198.0	196.0	195.0
122.5°	223.0	221.0	220.0
125°	248.0	247.0	246.0
127.5°	272.0	270.0	269.0
130°	294.0	293.0	292.0
132.5°	318.0	317.0	314.0
135°	341.0	339.0	337.0
137.5°	364.0	363.0	360.0
140°	386.0	385.0	383.0
142.5°	407.0	408.0	406.0
145°	428.0	428.0	426.0
147.5°	448.0	447.0	444.0
150°	465.0	464.0	462.0
152.5°	482.0	483.0	480.0
155°	501.0	502.0	500.0
157.5°	516.0	517.0	515.0
160°	529.0	529.0	527.0
162.5°	538.0	539.0	536.0
165°	548.0	549.0	547.0
167.5°	558.0	559.0	556.0
170°	565.0	566.0	563.0
172.5°	567.0	569.0	566.0
175°	569.0	570.0	569.0
177.5°	574.0	575.0	573.0
180°	576.0	576.0	576.0

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180°
124.0
146.0
169.0
193.0
219.0
244.0
267.0
290.0
313.0
336.0
359.0
382.0
404.0
425.0
444.0
461.0
479.0
499.0
513.0
525.0
535.0
546.0
555.0
562.0
565.0
567.0
572.0
576.0

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