

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: P227803

Luminaire Tested: **ISS-AF-450-LED-E1-T4FT-7050-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P227803  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29760)-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-T4FT-7050-ULG  
Description: IMPACT ELITE LED QUATER SPHERE LUMINAIRE WITH UPLIGHT  
LIGHT SQUARE WITH ACCULED OPTICS-TYPE IV FORWARD THROW, WITH UPLIGHT GLOW  
Light Source: (16) 5000K CCT, 70 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

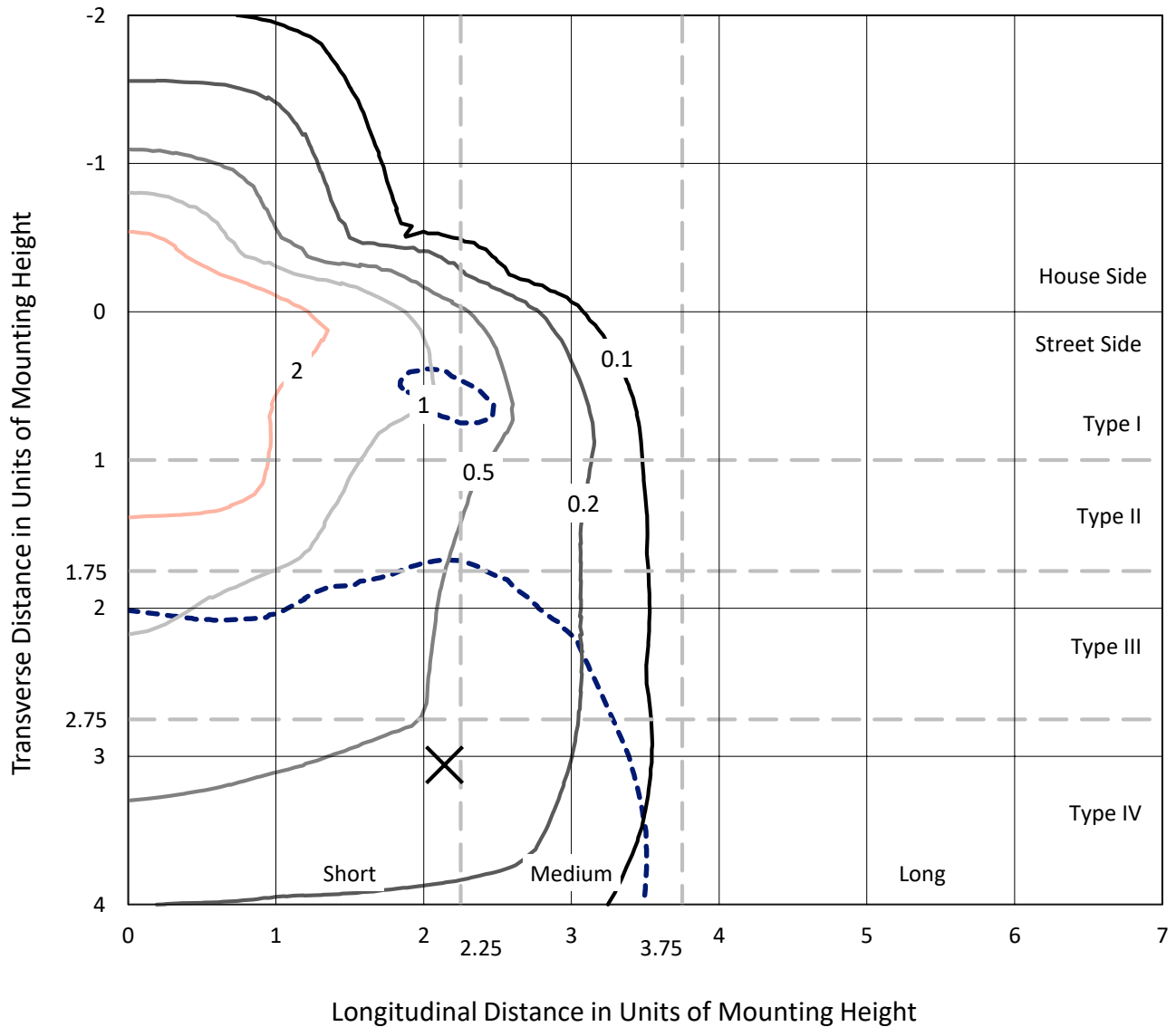
Lumens per Lamp: N/A  
Luminaire Lumens: 4389.2 lumens  
Efficiency: N/A  
Efficacy: 104.5 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B1 - U5 - G1  
  
Input Watts (W): 42.01  
Input Voltage (V): 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

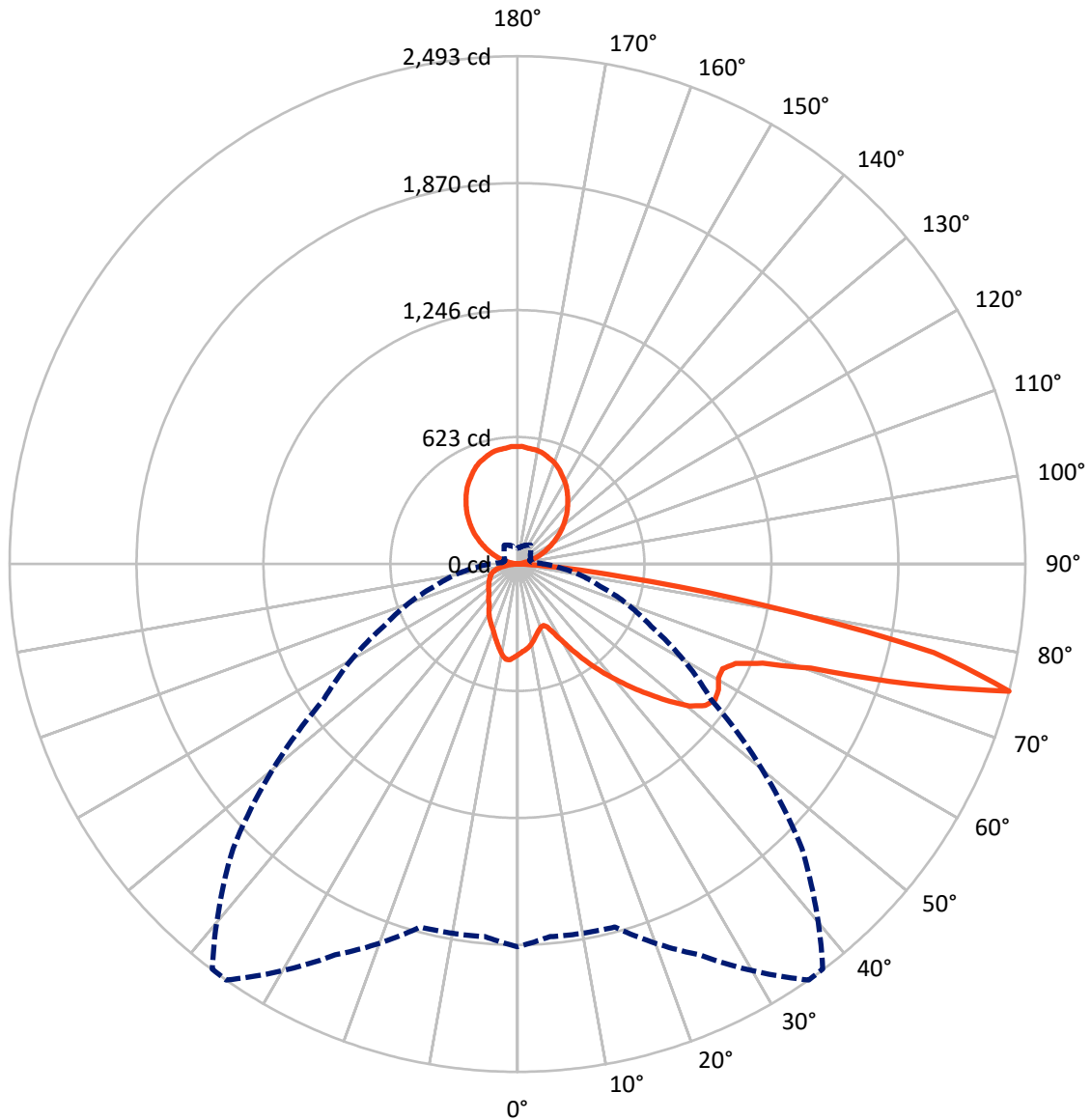
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4.5 fc  
 Type IV - Short - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 35-Deg Lateral    - - - Horizontal Cone Through 75-Deg Vertical

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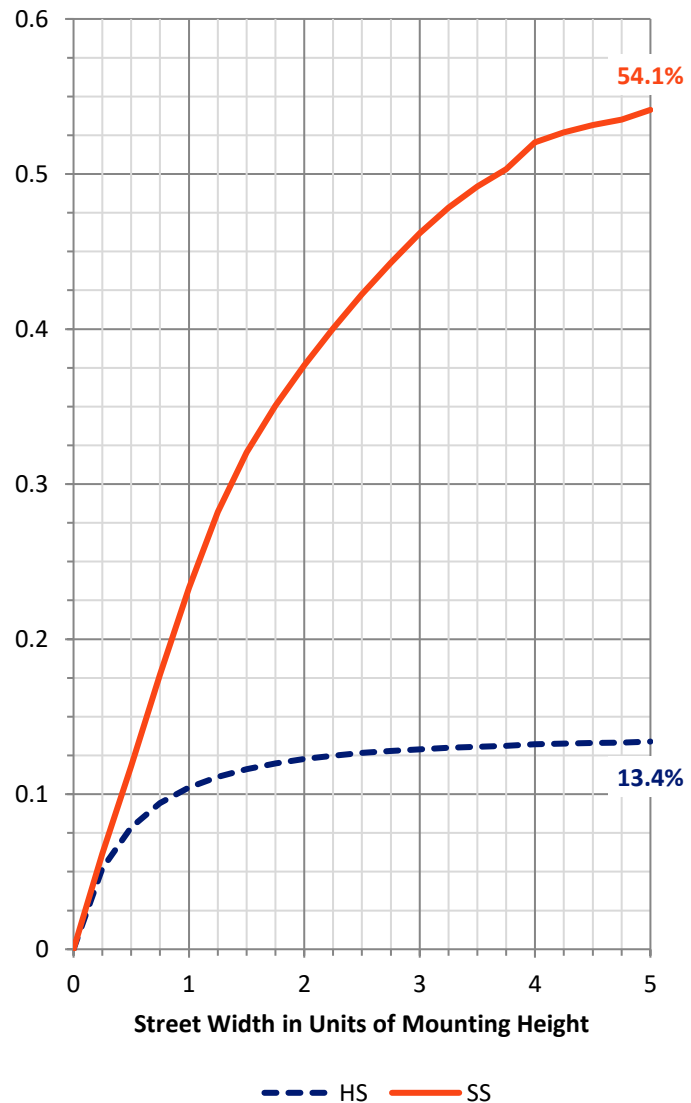
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	594.7	713.1	1307.8
	% Fixture	13.5	16.2	29.8
<b>Street Side</b>	Lumens	2368.3	713.1	3081.4
	% Fixture	54.0	16.2	70.2
<b>Total</b>	Lumens	2963.0	1426.2	4389.2
	% Fixture	67.5	32.5	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	41.8	1.0
10°-20°	110.3	2.5
20°-30°	174.4	4.0
30°-40°	281.5	6.4
40°-50°	416.6	9.5
50°-60°	535.6	12.2
60°-70°	663.2	15.1
70°-80°	668.3	15.2
80°-90°	71.4	1.6
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	6.1
140°-150°	269.3	6.1
150°-160°	231.1	5.3
160°-170°	155.1	3.5
170°-180°	54.3	1.2
0°-90°	2963.0	67.5
0°-180°	4389.2	100.0



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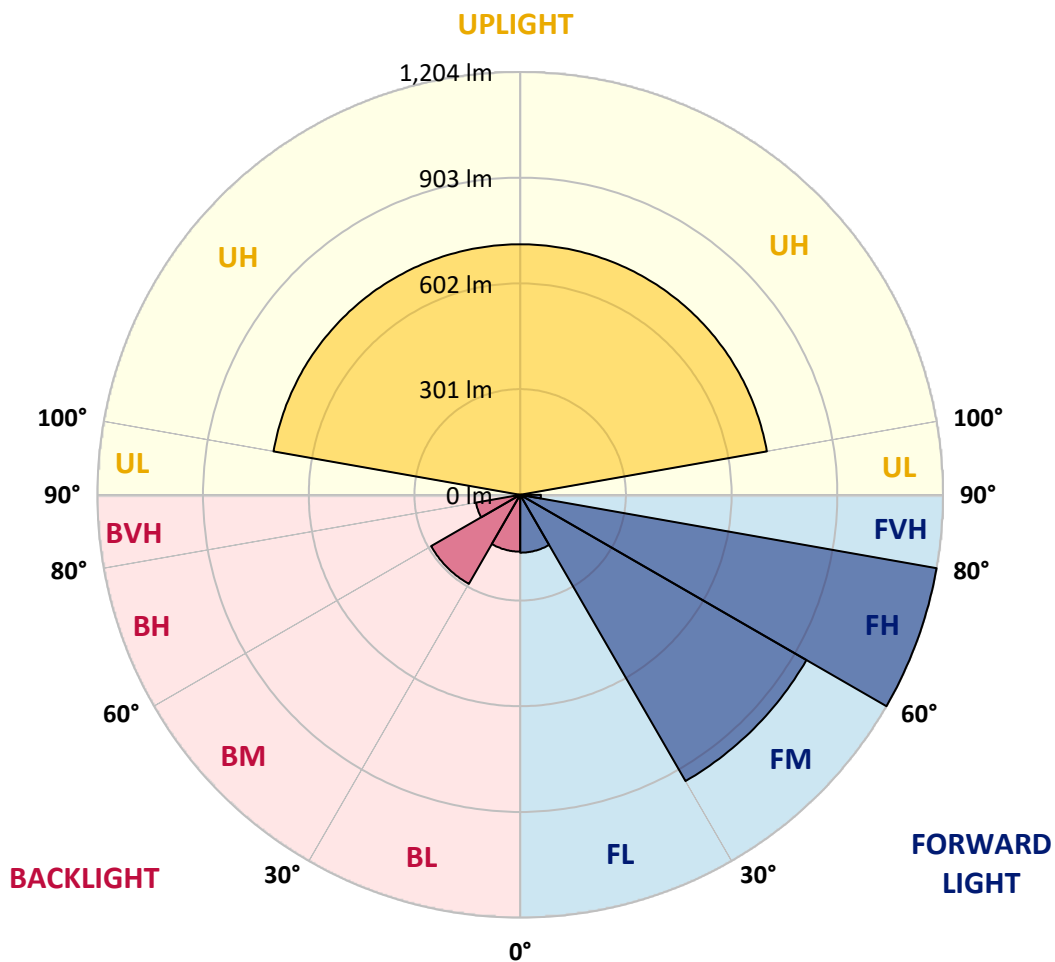
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	164.8	3.8			
FM (30°-60°)	940.9	21.4			
FH (60°-80°)	1203.7	27.4			G1/1800
FVH (80°-90°)	59.0	1.3			G1/100
BL (0°-30°)	161.7	3.7	B1/500		
BM (30°-60°)	292.8	6.7	B1/1000		
BH (60°-80°)	127.8	2.9	B1/500		G1/500
BVH (80°-90°)	12.3	0.3			G1/100
UL (90°-100°)	4.7	0.1		U1/10	
UH (100°-180°)	713.1	16.2		U4/1000	

**BUG Rating: B1-U5-G1**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	37°	45°	55°	65°	75°	85°
0°	445.1	445.1	445.1	445.1	445.1	445.1	445.1	445.1	445.1	445.1	445.1
2.5°	432.3	431.3	430.3	430.3	432.3	432.3	433.2	434.2	435.2	438.2	442.1
5°	420.4	419.4	418.4	419.4	422.4	422.4	425.3	427.3	429.3	434.2	439.2
7.5°	404.6	404.6	403.6	407.5	410.5	409.5	413.5	415.4	420.4	425.3	433.2
10°	383.8	383.8	383.8	388.7	393.7	393.7	396.6	401.6	405.6	412.5	422.4
12.5°	366.0	365.0	365.0	369.0	374.9	375.9	380.8	387.7	392.7	401.6	412.5
15°	360.1	358.1	353.1	353.1	356.1	356.1	364.0	373.9	381.8	390.7	403.6
17.5°	361.0	358.1	345.2	341.3	341.3	342.2	350.2	361.0	370.9	381.8	398.6
20°	369.9	365.0	341.3	332.4	330.4	331.4	338.3	349.2	361.0	375.9	394.7
22.5°	408.5	400.6	356.1	336.3	327.4	327.4	331.4	343.2	358.1	377.9	401.6
25°	497.5	484.7	405.6	369.9	343.2	340.3	333.3	345.2	363.0	386.8	421.4
27.5°	588.5	575.7	466.9	428.3	386.8	377.9	352.1	355.1	374.9	406.5	451.1
30°	664.7	653.8	544.0	499.5	444.1	434.2	394.7	375.9	395.7	434.2	495.6
32.5°	670.6	665.7	627.1	581.6	514.4	500.5	448.1	418.4	428.3	471.8	544.0
35°	726.0	722.1	701.3	657.8	590.5	574.7	519.3	473.8	470.8	513.4	599.4
37.5°	780.4	775.5	761.6	732.0	669.7	656.8	613.3	540.1	519.3	561.8	653.8
40°	831.9	825.0	807.1	790.3	744.8	744.8	698.3	603.4	565.8	604.4	699.3
42.5°	926.8	905.1	857.6	844.7	831.9	831.9	763.6	646.9	603.4	650.9	742.9
45°	1017.8	997.1	932.8	907.1	914.0	910.0	816.0	671.6	637.0	694.4	784.4
47.5°	1090.0	1071.2	1006.0	988.2	1007.9	992.1	859.6	691.4	679.5	740.9	819.0
50°	1154.3	1109.8	1046.5	1070.3	1095.0	1068.3	898.1	721.1	722.1	790.3	869.5
52.5°	1066.3	1061.4	1075.2	1130.6	1154.3	1124.7	932.8	758.7	767.6	853.6	926.8
55°	960.5	959.5	1040.6	1148.4	1177.1	1149.4	955.5	804.2	815.1	931.8	999.0
57.5°	939.7	929.8	985.2	1110.8	1163.2	1143.5	967.4	846.7	860.6	1030.7	1070.3
60°	1007.0	988.2	979.3	1070.3	1133.6	1123.7	982.2	897.2	916.0	1143.5	1136.5
62.5°	1153.3	1127.6	1064.3	1073.2	1130.6	1122.7	1017.8	956.5	978.3	1256.2	1174.1
65°	1347.2	1328.4	1227.5	1155.3	1177.1	1166.2	1082.1	1031.7	1043.6	1337.3	1131.6
67.5°	1559.9	1534.2	1424.4	1325.5	1297.8	1277.0	1184.0	1120.7	1078.2	1325.5	1017.8
70°	1800.3	1772.6	1677.6	1575.7	1528.2	1505.5	1362.1	1197.9	1065.3	1194.9	803.2
72.5°	2096.0	2058.4	2006.0	2016.9	2009.0	1945.7	1645.9	1223.6	971.3	889.2	479.7
75°	1878.4	1835.9	1844.8	2116.8	2492.7	2489.7	1974.3	1160.3	724.1	419.4	207.7
77.5°	673.6	744.8	1098.9	1585.6	2090.1	2087.1	1528.2	726.0	310.6	179.0	125.6
80°	169.1	172.1	273.0	650.9	1220.6	1210.7	866.5	274.0	129.6	108.8	86.1
82.5°	54.4	58.4	99.9	224.5	522.3	510.4	269.0	90.0	81.1	70.2	52.4
85°	17.8	17.8	35.6	77.2	172.1	165.2	54.4	32.6	44.5	36.6	23.7
87.5°	0.0	0.0	1.0	2.0	4.0	2.0	0.0	2.0	5.9	6.9	4.9
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°	2.0	2.0	2.0	3.0	4.0	5.0	9.0	13.0	7.0	5.0	4.0
100°	8.0	8.0	10.0	14.0	22.0	23.6	30.0	32.0	30.0	27.0	26.0
102.5°	28.0	28.0	32.0	38.0	45.0	46.0	50.0	51.0	50.0	48.0	49.0
105°	54.0	54.0	56.0	61.0	66.0	66.8	70.0	71.0	71.0	69.0	71.0
107.5°	78.0	77.0	80.0	84.0	88.0	88.6	91.0	93.0	92.0	91.0	92.0
110°	101.0	102.0	103.0	106.0	110.0	110.4	112.0	114.0	114.0	113.0	114.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	37°	45°	55°	65°	75°	85°
112.5°	124.0	124.0	126.0	129.0	132.0	132.4	134.0	136.0	136.0	135.0	137.0
115°	146.0	147.0	149.0	151.0	154.0	154.4	156.0	158.0	158.0	158.0	160.0
117.5°	169.0	170.0	172.0	174.0	177.0	177.4	179.0	180.0	181.0	180.0	182.0
120°	193.0	195.0	196.0	198.0	201.0	201.2	202.0	204.0	204.0	204.0	206.0
122.5°	219.0	220.0	221.0	223.0	226.0	226.2	227.0	228.0	228.0	229.0	233.0
125°	244.0	246.0	247.0	248.0	251.0	251.2	252.0	253.0	254.0	254.0	257.0
127.5°	267.0	269.0	270.0	272.0	274.0	274.4	276.0	278.0	277.0	278.0	281.0
130°	290.0	292.0	293.0	294.0	298.0	298.2	299.0	301.0	301.0	302.0	305.0
132.5°	313.0	314.0	317.0	318.0	321.0	321.2	322.0	325.0	325.0	326.0	329.0
135°	336.0	337.0	339.0	341.0	345.0	345.0	345.0	348.0	348.0	349.0	351.0
137.5°	359.0	360.0	363.0	364.0	367.0	367.0	367.0	369.0	369.0	370.0	374.0
140°	382.0	383.0	385.0	386.0	388.0	388.2	389.0	390.0	390.0	392.0	396.0
142.5°	404.0	406.0	408.0	407.0	410.0	410.0	410.0	412.0	412.0	413.0	416.0
145°	425.0	426.0	428.0	428.0	431.0	431.2	432.0	434.0	433.0	434.0	437.0
147.5°	444.0	444.0	447.0	448.0	452.0	452.2	453.0	454.0	452.0	453.0	456.0
150°	461.0	462.0	464.0	465.0	469.0	469.2	470.0	471.0	469.0	469.0	473.0
152.5°	479.0	480.0	483.0	482.0	485.0	485.2	486.0	487.0	486.0	486.0	489.0
155°	499.0	500.0	502.0	501.0	503.0	503.0	503.0	504.0	503.0	504.0	507.0
157.5°	513.0	515.0	517.0	516.0	519.0	519.0	519.0	519.0	517.0	518.0	523.0
160°	525.0	527.0	529.0	529.0	532.0	532.0	532.0	532.0	530.0	530.0	533.0
162.5°	535.0	536.0	539.0	538.0	541.0	541.0	541.0	542.0	540.0	538.0	540.0
165°	546.0	547.0	549.0	548.0	552.0	552.0	552.0	553.0	550.0	548.0	550.0
167.5°	555.0	556.0	559.0	558.0	561.0	560.8	560.0	560.0	558.0	559.0	563.0
170°	562.0	563.0	566.0	565.0	567.0	566.8	566.0	565.0	564.0	566.0	571.0
172.5°	565.0	566.0	569.0	567.0	569.0	568.8	568.0	569.0	567.0	568.0	571.0
175°	567.0	569.0	570.0	569.0	572.0	572.0	572.0	573.0	570.0	568.0	571.0
177.5°	572.0	573.0	575.0	574.0	578.0	577.8	577.0	577.0	574.0	574.0	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):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	445.1	445.1	445.1	445.1	445.1	445.1	445.1	445.1	445.1	445.1	445.1
2.5°	445.1	444.1	448.1	451.1	452.0	455.0	458.0	460.0	459.0	458.0	458.0
5°	444.1	445.1	452.0	458.0	462.9	467.9	471.8	473.8	472.8	472.8	472.8
7.5°	438.2	442.1	450.1	460.0	466.9	469.8	470.8	467.9	465.9	462.9	462.9
10°	428.3	434.2	447.1	458.0	460.9	457.0	451.1	445.1	437.2	432.3	432.3
12.5°	420.4	427.3	443.1	452.0	448.1	438.2	425.3	415.4	407.5	401.6	400.6
15°	413.5	422.4	439.2	441.2	432.3	415.4	398.6	387.7	378.8	374.9	374.9
17.5°	408.5	420.4	435.2	429.3	411.5	389.7	373.9	365.0	358.1	354.1	353.1
20°	409.5	424.3	431.3	414.5	388.7	366.0	351.1	346.2	341.3	339.3	339.3
22.5°	420.4	434.2	430.3	401.6	368.0	342.2	332.4	331.4	329.4	327.4	326.4
25°	444.1	454.0	433.2	388.7	346.2	320.5	315.5	318.5	317.5	315.5	315.5
27.5°	476.8	478.7	438.2	375.9	322.5	299.7	299.7	304.7	302.7	299.7	301.7
30°	516.3	505.5	440.2	355.1	294.8	279.9	282.9	285.9	283.9	279.9	279.9
32.5°	558.9	533.2	440.2	328.4	268.1	262.1	263.1	264.1	260.1	255.2	255.2
35°	600.4	559.9	435.2	296.7	247.3	244.3	243.3	247.3	244.3	237.4	237.4
37.5°	640.0	580.6	422.4	264.1	231.5	230.5	233.4	231.5	227.5	217.6	215.6
40°	667.7	594.5	396.6	237.4	218.6	224.5	222.6	211.7	205.7	198.8	198.8
42.5°	692.4	601.4	365.0	216.6	209.7	217.6	209.7	195.9	187.9	186.9	187.9
45°	715.2	607.3	334.3	199.8	198.8	209.7	199.8	185.0	176.1	176.1	177.1
47.5°	736.9	613.3	303.7	184.0	186.0	197.8	191.9	177.1	168.2	162.2	162.2
50°	771.5	627.1	259.2	167.2	171.1	187.9	186.0	169.1	159.3	150.4	148.4
52.5°	813.1	650.9	210.7	149.4	160.2	179.0	179.0	162.2	151.3	139.5	137.5
55°	868.5	676.6	169.1	136.5	149.4	169.1	172.1	159.3	143.4	132.5	130.6
57.5°	923.9	685.5	136.5	123.6	135.5	159.3	167.2	153.3	134.5	126.6	125.6
60°	962.4	656.8	114.7	112.8	125.6	147.4	160.2	146.4	128.6	120.7	120.7
62.5°	956.5	569.8	102.9	105.8	117.7	138.5	154.3	140.5	124.6	119.7	118.7
65°	872.4	430.3	93.0	99.9	110.8	129.6	148.4	137.5	122.7	117.7	115.7
67.5°	734.9	285.9	86.1	94.0	103.9	122.7	143.4	133.5	116.7	113.8	111.8
70°	532.2	167.2	79.1	88.0	96.9	114.7	136.5	125.6	109.8	107.8	102.9
72.5°	287.8	104.8	71.2	80.1	88.0	104.8	125.6	115.7	100.9	93.0	90.0
75°	131.6	76.2	63.3	71.2	77.2	92.0	112.8	101.9	90.0	80.1	78.1
77.5°	88.0	57.4	53.4	61.3	64.3	77.2	99.9	81.1	70.2	63.3	61.3
80°	60.3	42.5	43.5	50.4	49.5	61.3	75.2	65.3	55.4	57.4	52.4
82.5°	38.6	29.7	33.6	35.6	34.6	46.5	58.4	49.5	41.5	34.6	29.7
85°	16.8	15.8	19.8	20.8	20.8	25.7	30.7	24.7	18.8	13.8	13.8
87.5°	1.0	2.0	2.0	3.0	2.0	1.0	0.0	0.0	0.0	0.0	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°	4.0	4.0	5.0	7.0	13.0	9.0	4.0	3.0	2.0	2.0	2.0
100°	25.0	26.0	27.0	30.0	32.0	30.0	22.0	14.0	10.0	8.0	8.0
102.5°	48.0	49.0	48.0	50.0	51.0	50.0	45.0	38.0	32.0	28.0	28.0
105°	69.0	71.0	69.0	71.0	71.0	70.0	66.0	61.0	56.0	54.0	54.0
107.5°	91.0	92.0	91.0	92.0	93.0	91.0	88.0	84.0	80.0	77.0	78.0
110°	113.0	114.0	113.0	114.0	114.0	112.0	110.0	106.0	103.0	102.0	101.0



REPORT NUMBER: P227803

CATALOG NUMBER: ISS-AF-450-LED-E1-T4FT-7050-ULG

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	135.0	137.0	135.0	136.0	136.0	134.0	132.0	129.0	126.0	124.0	124.0
115°	159.0	160.0	158.0	158.0	158.0	156.0	154.0	151.0	149.0	147.0	146.0
117.5°	180.0	182.0	180.0	181.0	180.0	179.0	177.0	174.0	172.0	170.0	169.0
120°	204.0	206.0	204.0	204.0	204.0	202.0	201.0	198.0	196.0	195.0	193.0
122.5°	232.0	233.0	229.0	228.0	228.0	227.0	226.0	223.0	221.0	220.0	219.0
125°	256.0	257.0	254.0	254.0	253.0	252.0	251.0	248.0	247.0	246.0	244.0
127.5°	278.0	281.0	278.0	277.0	278.0	276.0	274.0	272.0	270.0	269.0	267.0
130°	303.0	305.0	302.0	301.0	301.0	299.0	298.0	294.0	293.0	292.0	290.0
132.5°	327.0	329.0	326.0	325.0	325.0	322.0	321.0	318.0	317.0	314.0	313.0
135°	350.0	351.0	349.0	348.0	348.0	345.0	345.0	341.0	339.0	337.0	336.0
137.5°	372.0	374.0	370.0	369.0	369.0	367.0	367.0	364.0	363.0	360.0	359.0
140°	394.0	396.0	392.0	390.0	390.0	389.0	388.0	386.0	385.0	383.0	382.0
142.5°	415.0	416.0	413.0	412.0	412.0	410.0	410.0	407.0	408.0	406.0	404.0
145°	435.0	437.0	434.0	433.0	434.0	432.0	431.0	428.0	428.0	426.0	425.0
147.5°	453.0	456.0	453.0	452.0	454.0	453.0	452.0	448.0	447.0	444.0	444.0
150°	470.0	473.0	469.0	469.0	471.0	470.0	469.0	465.0	464.0	462.0	461.0
152.5°	486.0	489.0	486.0	486.0	487.0	486.0	485.0	482.0	483.0	480.0	479.0
155°	505.0	507.0	504.0	503.0	504.0	503.0	503.0	501.0	502.0	500.0	499.0
157.5°	520.0	523.0	518.0	517.0	519.0	519.0	519.0	516.0	517.0	515.0	513.0
160°	531.0	533.0	530.0	530.0	532.0	532.0	532.0	529.0	529.0	527.0	525.0
162.5°	537.0	540.0	538.0	540.0	542.0	541.0	541.0	538.0	539.0	536.0	535.0
165°	548.0	550.0	548.0	550.0	553.0	552.0	552.0	548.0	549.0	547.0	546.0
167.5°	561.0	563.0	559.0	558.0	560.0	560.0	561.0	558.0	559.0	556.0	555.0
170°	569.0	571.0	566.0	564.0	565.0	566.0	567.0	565.0	566.0	563.0	562.0
172.5°	568.0	571.0	568.0	567.0	569.0	568.0	569.0	567.0	569.0	566.0	565.0
175°	568.0	571.0	568.0	570.0	573.0	572.0	572.0	569.0	570.0	569.0	567.0
177.5°	574.0	577.0	574.0	574.0	577.0	577.0	578.0	574.0	575.0	573.0	572.0
180°	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0	576.0

(END OF REPORT)