

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: P227804

Luminaire Tested: **ISS-AF-450-LED-E1-T4FT-7030-ULG**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P227804  
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-7030-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) 3000K CCT, 70 CRI LEDs and (1) UPLIGHT LED  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

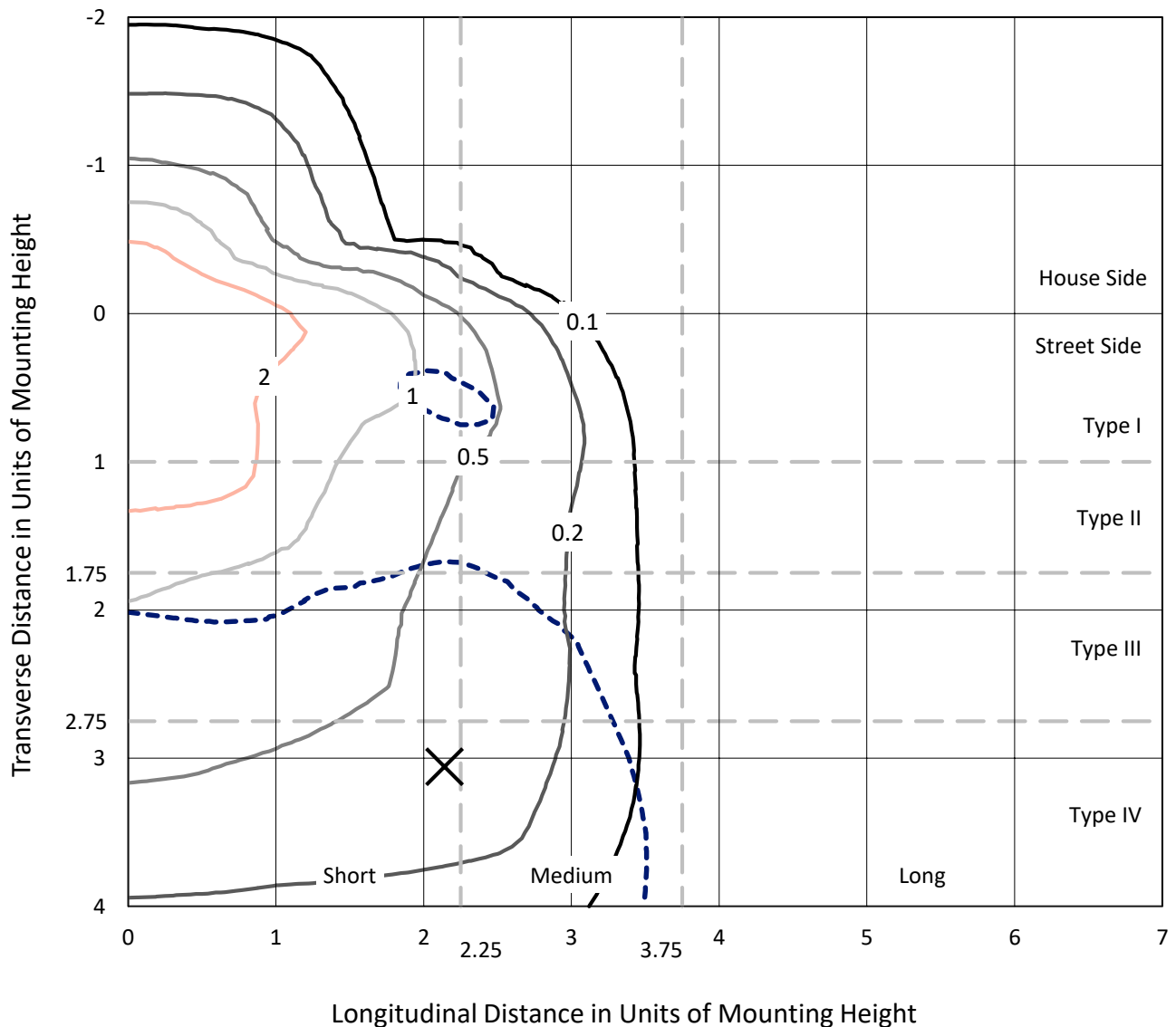
Lumens per Lamp: N/A  
Luminaire Lumens: 4049.2 lumens  
Efficiency: N/A  
Efficacy: 96.4 lumens/watt  
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B1 - U5 - G1  
  
Input Watts (W): 42.01  
Input Voltage (V): 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

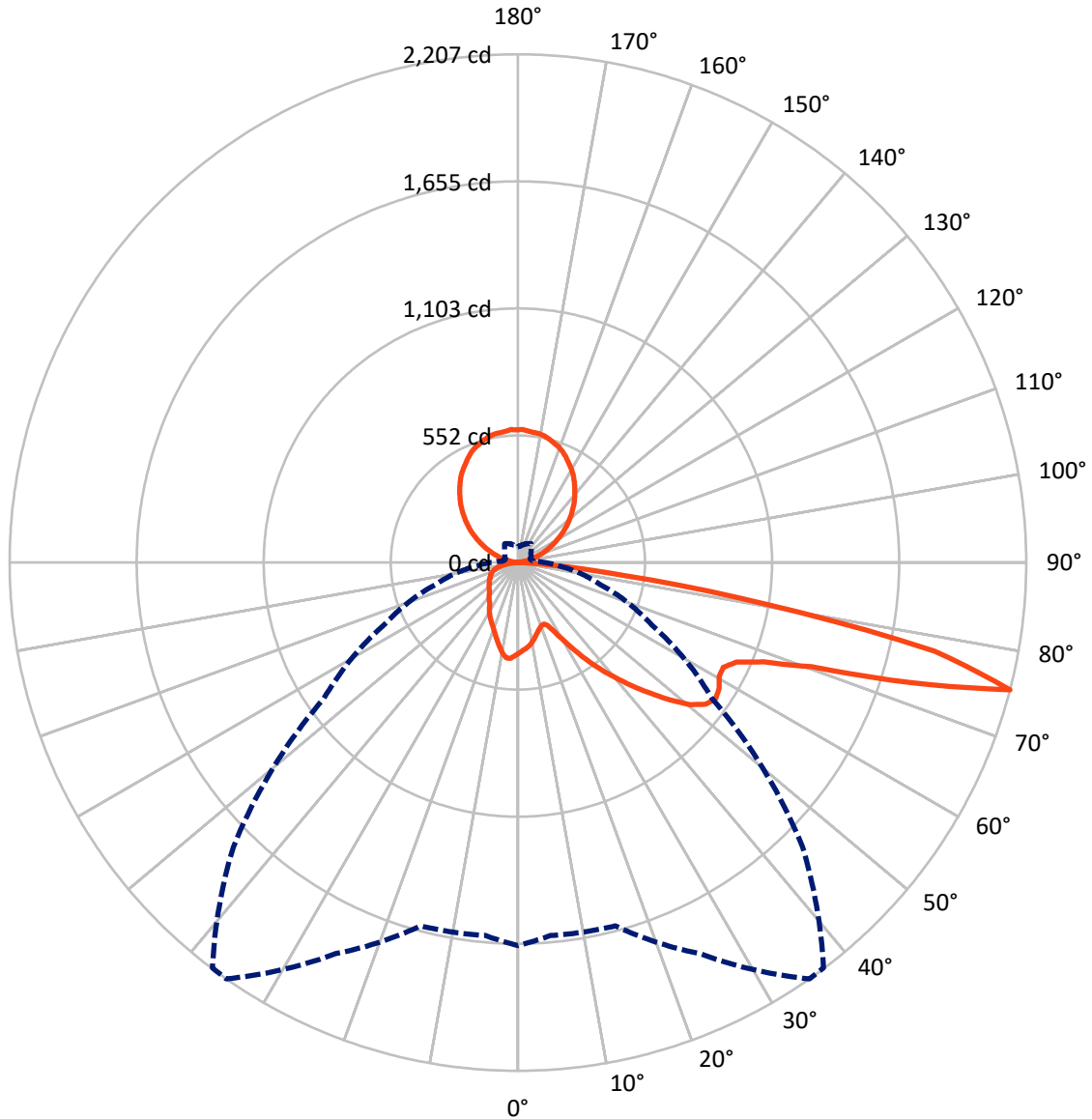
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4 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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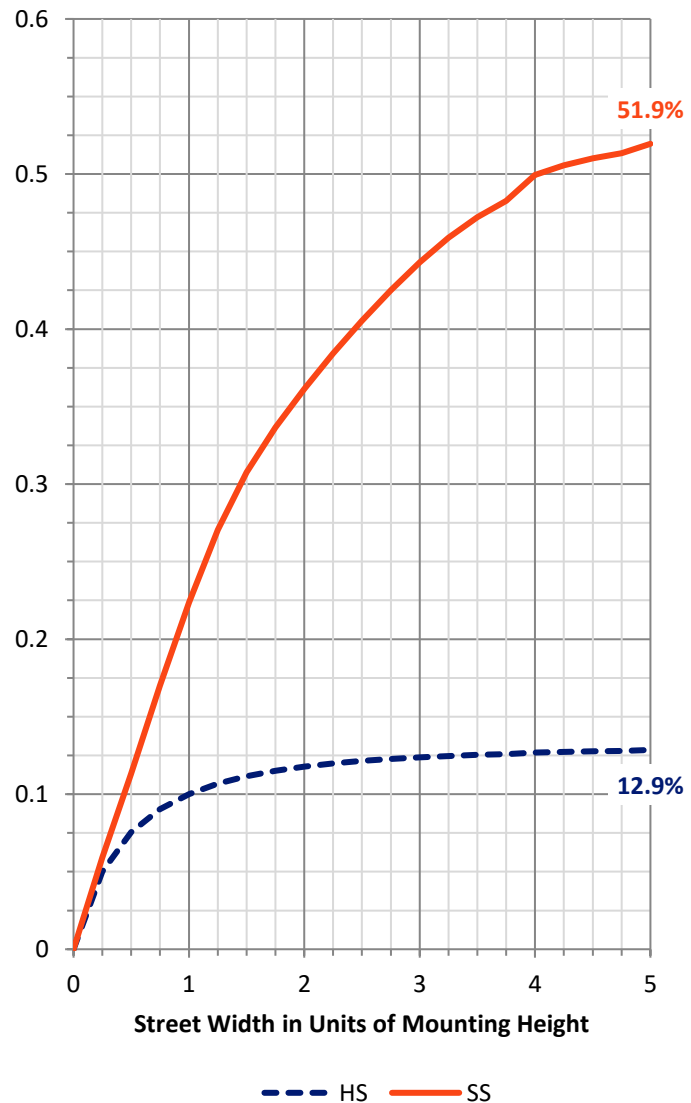
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	526.4	713.1	1239.5
	% Fixture	13.0	17.6	30.6
<b>Street Side</b>	Lumens	2096.6	713.1	2809.6
	% Fixture	51.8	17.6	69.4
<b>Total</b>	Lumens	2623.0	1426.2	4049.2
	% Fixture	64.8	35.2	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	37.0	0.9
10°-20°	97.6	2.4
20°-30°	154.4	3.8
30°-40°	249.2	6.2
40°-50°	368.8	9.1
50°-60°	474.1	11.7
60°-70°	587.1	14.5
70°-80°	591.6	14.6
80°-90°	63.2	1.6
90°-100°	4.7	0.1
100°-110°	69.0	1.7
110°-120°	153.0	3.8
120°-130°	223.9	5.5
130°-140°	265.6	6.6
140°-150°	269.3	6.7
150°-160°	231.1	5.7
160°-170°	155.1	3.8
170°-180°	54.3	1.3
0°-90°	2623.0	64.8
0°-180°	4049.2	100.0



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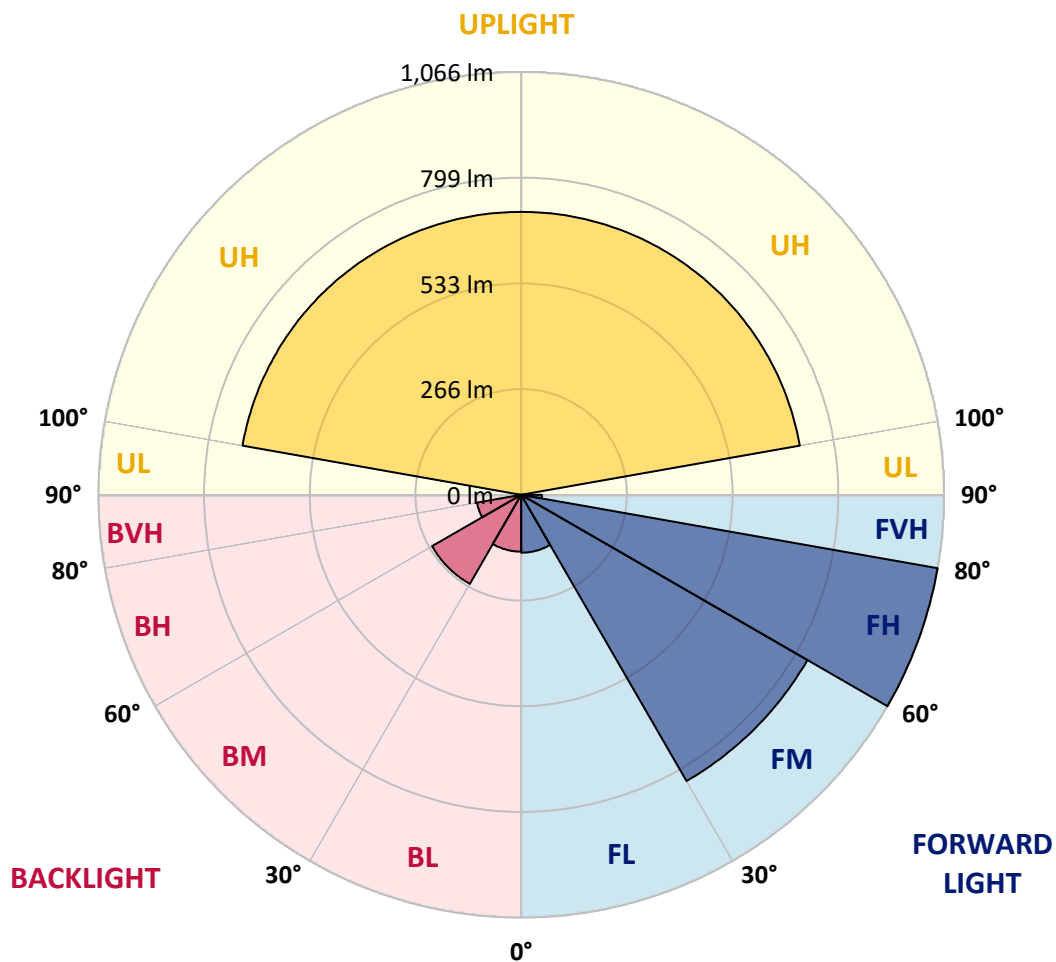
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	145.8	3.6			
FM (30°-60°)	832.9	20.6			
FH (60°-80°)	1065.6	26.3			G1/1800
FVH (80°-90°)	52.2	1.3			G1/100
BL (0°-30°)	143.2	3.5	B1/500		
BM (30°-60°)	259.2	6.4	B1/1000		
BH (60°-80°)	113.1	2.8	B1/500		G1/500
BVH (80°-90°)	10.9	0.3			G1/100
UL (90°-100°)	4.7	0.1		U1/10	
UH (100°-180°)	713.1	17.6		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°	394.0	394.0	394.0	394.0	394.0	394.0	394.0	394.0	394.0	394.0	394.0
2.5°	382.7	381.8	380.9	380.9	382.7	382.7	383.5	384.4	385.3	387.9	391.4
5°	372.1	371.3	370.4	371.3	373.9	373.9	376.5	378.3	380.0	384.4	388.8
7.5°	358.1	358.1	357.3	360.8	363.4	362.5	366.0	367.8	372.1	376.5	383.5
10°	339.8	339.8	339.8	344.1	348.5	348.5	351.1	355.5	359.0	365.1	373.9
12.5°	324.0	323.1	323.1	326.6	331.9	332.7	337.1	343.3	347.6	355.5	365.1
15°	318.7	317.0	312.6	312.6	315.2	315.2	322.2	331.0	338.0	345.9	357.3
17.5°	319.6	317.0	305.6	302.1	302.1	303.0	310.0	319.6	328.4	338.0	352.9
20°	327.5	323.1	302.1	294.2	292.5	293.3	299.5	309.1	319.6	332.7	349.4
22.5°	361.6	354.6	315.2	297.7	289.8	289.8	293.3	303.8	317.0	334.5	355.5
25°	440.5	429.1	359.0	327.5	303.8	301.2	295.1	305.6	321.4	342.4	373.0
27.5°	521.0	509.6	413.3	379.2	342.4	334.5	311.7	314.4	331.9	359.9	399.3
30°	588.4	578.8	481.6	442.2	393.2	384.4	349.4	332.7	350.3	384.4	438.7
32.5°	593.7	589.3	555.2	514.9	455.3	443.1	396.7	370.4	379.2	417.7	481.6
35°	642.7	639.2	620.8	582.3	522.8	508.8	459.7	419.4	416.8	454.5	530.6
37.5°	690.9	686.5	674.2	648.0	592.8	581.4	542.9	478.1	459.7	497.4	578.8
40°	736.4	730.3	714.5	699.6	659.4	659.4	618.2	534.1	500.9	535.0	619.1
42.5°	820.5	801.2	759.2	747.8	736.4	736.4	676.0	572.7	534.1	576.2	657.6
45°	901.0	882.7	825.7	803.0	809.1	805.6	722.4	594.6	563.9	614.7	694.4
47.5°	965.0	948.3	890.5	874.8	892.3	878.3	760.9	612.1	601.6	655.9	725.0
50°	1021.9	982.5	926.4	947.4	969.3	945.7	795.1	638.3	639.2	699.6	769.7
52.5°	943.9	939.6	951.8	1000.9	1021.9	995.6	825.7	671.6	679.5	755.7	820.5
55°	850.3	849.4	921.2	1016.6	1042.0	1017.5	845.9	711.9	721.5	824.9	884.4
57.5°	831.9	823.1	872.1	983.4	1029.8	1012.2	856.4	749.6	761.8	912.4	947.4
60°	891.4	874.8	866.9	947.4	1003.5	994.7	869.5	794.2	810.8	1012.2	1006.1
62.5°	1021.0	998.2	942.2	950.1	1000.9	993.9	901.0	846.7	866.0	1112.1	1039.4
65°	1192.6	1176.0	1086.7	1022.8	1042.0	1032.4	958.0	913.3	923.8	1183.9	1001.7
67.5°	1380.9	1358.1	1260.9	1173.4	1148.8	1130.5	1048.1	992.1	954.5	1173.4	901.0
70°	1593.7	1569.2	1485.1	1394.9	1352.9	1332.7	1205.8	1060.4	943.1	1057.8	711.0
72.5°	1855.5	1822.2	1775.8	1785.4	1778.4	1722.4	1457.1	1083.2	859.9	787.2	424.7
75°	1662.9	1625.2	1633.1	1873.9	2206.6	2204.0	1747.8	1027.1	641.0	371.3	183.9
77.5°	596.3	659.4	972.8	1403.7	1850.2	1847.6	1352.9	642.7	275.0	158.5	111.2
80°	149.7	152.4	241.7	576.2	1080.5	1071.8	767.1	242.6	114.7	96.3	76.2
82.5°	48.2	51.7	88.4	198.8	462.3	451.8	238.2	79.7	71.8	62.2	46.4
85°	15.8	15.8	31.5	68.3	152.4	146.2	48.2	28.9	39.4	32.4	21.0
87.5°	0.0	0.0	0.9	1.8	3.5	1.8	0.0	1.8	5.3	6.1	4.4
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°	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°	394.0	394.0	394.0	394.0	394.0	394.0	394.0	394.0	394.0	394.0	394.0
2.5°	394.0	393.2	396.7	399.3	400.2	402.8	405.4	407.2	406.3	405.4	405.4
5°	393.2	394.0	400.2	405.4	409.8	414.2	417.7	419.4	418.6	418.6	418.6
7.5°	387.9	391.4	398.4	407.2	413.3	415.9	416.8	414.2	412.4	409.8	409.8
10°	379.2	384.4	395.8	405.4	408.1	404.5	399.3	394.0	387.0	382.7	382.7
12.5°	372.1	378.3	392.3	400.2	396.7	387.9	376.5	367.8	360.8	355.5	354.6
15°	366.0	373.9	388.8	390.5	382.7	367.8	352.9	343.3	335.4	331.9	331.9
17.5°	361.6	372.1	385.3	380.0	364.3	345.0	331.0	323.1	317.0	313.5	312.6
20°	362.5	375.7	381.8	366.9	344.1	324.0	310.9	306.5	302.1	300.3	300.3
22.5°	372.1	384.4	380.9	355.5	325.7	303.0	294.2	293.3	291.6	289.8	289.0
25°	393.2	401.9	383.5	344.1	306.5	283.7	279.3	282.0	281.1	279.3	279.3
27.5°	422.1	423.8	387.9	332.7	285.5	265.3	265.3	269.7	267.9	265.3	267.1
30°	457.1	447.5	389.7	314.4	260.9	247.8	250.4	253.1	251.3	247.8	247.8
32.5°	494.7	472.0	389.7	290.7	237.3	232.0	232.9	233.8	230.3	225.9	225.9
35°	531.5	495.6	385.3	262.7	218.9	216.3	215.4	218.9	216.3	210.2	210.2
37.5°	566.5	514.0	373.9	233.8	204.9	204.0	206.7	204.9	201.4	192.6	190.9
40°	591.1	526.3	351.1	210.2	193.5	198.8	197.0	187.4	182.1	176.0	176.0
42.5°	613.0	532.4	323.1	191.8	185.6	192.6	185.6	173.4	166.4	165.5	166.4
45°	633.1	537.6	296.0	176.9	176.0	185.6	176.9	163.7	155.9	155.9	156.7
47.5°	652.4	542.9	268.8	162.9	164.6	175.1	169.9	156.7	148.9	143.6	143.6
50°	683.0	555.2	229.4	148.0	151.5	166.4	164.6	149.7	141.0	133.1	131.3
52.5°	719.8	576.2	186.5	132.2	141.9	158.5	158.5	143.6	134.0	123.5	121.7
55°	768.8	598.9	149.7	120.8	132.2	149.7	152.4	141.0	127.0	117.3	115.6
57.5°	817.9	606.8	120.8	109.5	120.0	141.0	148.0	135.7	119.1	112.1	111.2
60°	852.0	581.4	101.6	99.8	111.2	130.5	141.9	129.6	113.8	106.8	106.8
62.5°	846.7	504.4	91.1	93.7	104.2	122.6	136.6	124.3	110.3	106.0	105.1
65°	772.3	380.9	82.3	88.4	98.1	114.7	131.3	121.7	108.6	104.2	102.5
67.5°	650.6	253.1	76.2	83.2	91.9	108.6	127.0	118.2	103.3	100.7	98.9
70°	471.1	148.0	70.1	77.9	85.8	101.6	120.8	111.2	97.2	95.4	91.1
72.5°	254.8	92.8	63.0	70.9	77.9	92.8	111.2	102.5	89.3	82.3	79.7
75°	116.5	67.4	56.0	63.0	68.3	81.4	99.8	90.2	79.7	70.9	69.2
77.5°	77.9	50.8	47.3	54.3	56.9	68.3	88.4	71.8	62.2	56.0	54.3
80°	53.4	37.7	38.5	44.7	43.8	54.3	66.5	57.8	49.0	50.8	46.4
82.5°	34.2	26.3	29.8	31.5	30.6	41.2	51.7	43.8	36.8	30.6	26.3
85°	14.9	14.0	17.5	18.4	18.4	22.8	27.1	21.9	16.6	12.3	12.3
87.5°	0.9	1.8	1.8	2.6	1.8	0.9	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



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CATALOG NUMBER: ISS-AF-450-LED-E1-T4FT-7030-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)