

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: INVUE

Report Number: P160161

Luminaire Tested: **ENV-F01-LED-E1-BL4-8030-ULG**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P160161  
REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (P20107) AND SCALED  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 03/03/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: ENV-F01-LED-E1-BL4-8030-ULG  
Description: ENTRI LED LUMINAIRE WITH UPLIGHT  
(1) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL  
Light Source: (7) 3000K CCT, 80 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2135.7 lumens  
Efficiency: N/A  
Efficacy: 63.0 lumens/watt  
Luminous Opening: Rectangular (W 0.17' x L: 1' x H: 0')  
IES Classification: Type III - Short - Non-Cutoff  
BUG Rating: B1 - U3 - G1

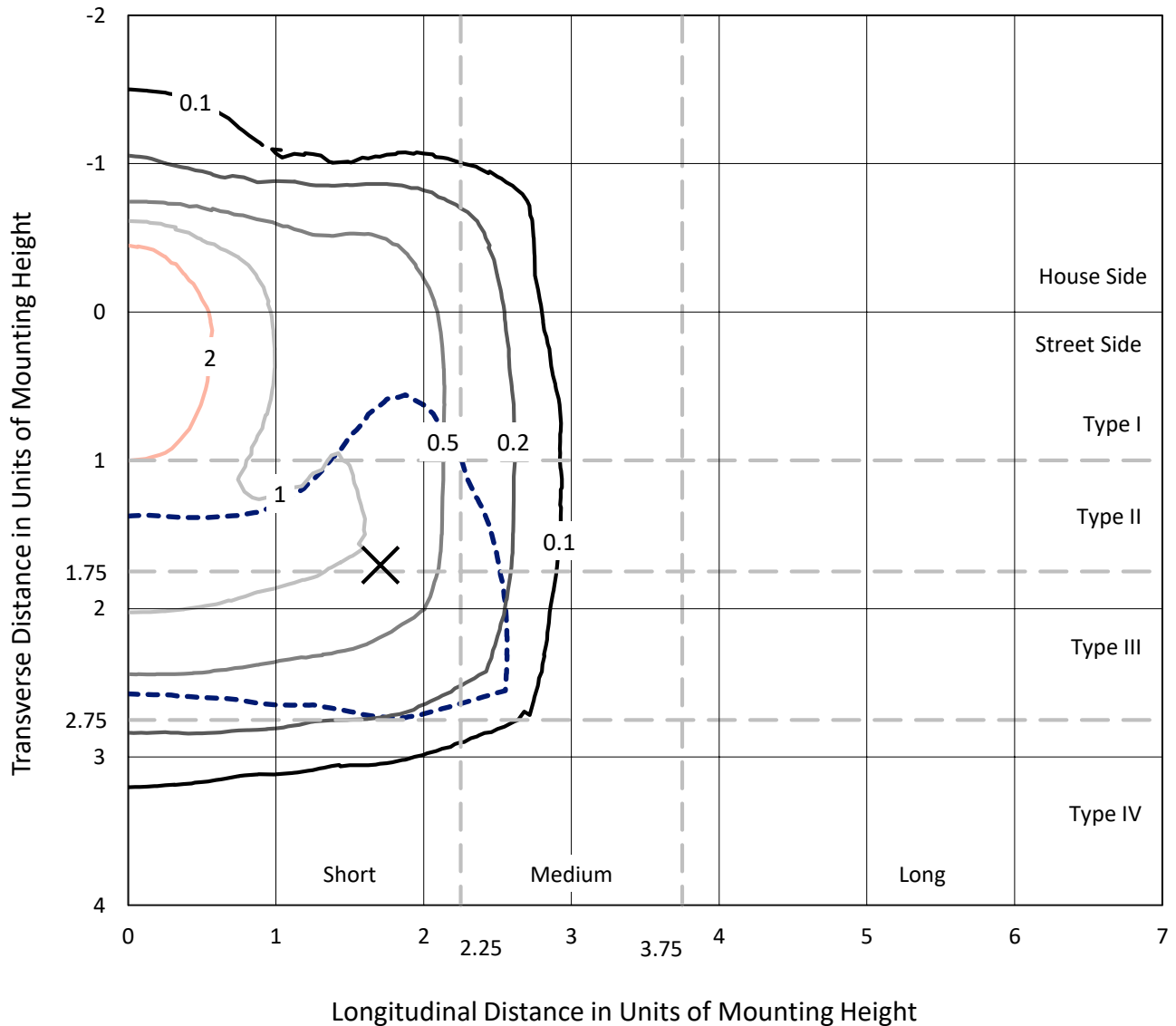
Input Watts (W): 33.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

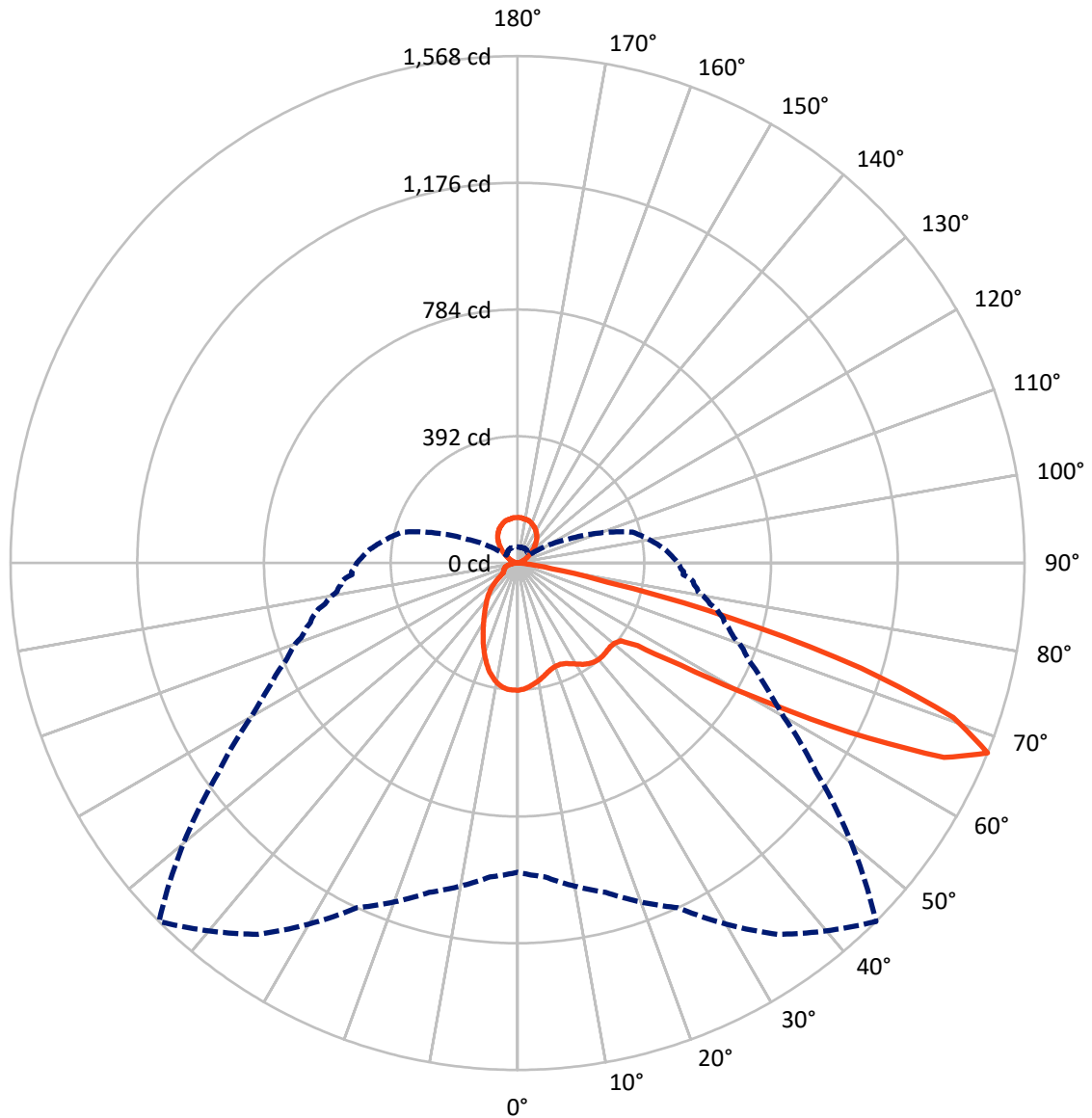
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.9 fc  
 Type III - Short - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral    - - - Horizontal Cone Through 67.5-Deg Vertical

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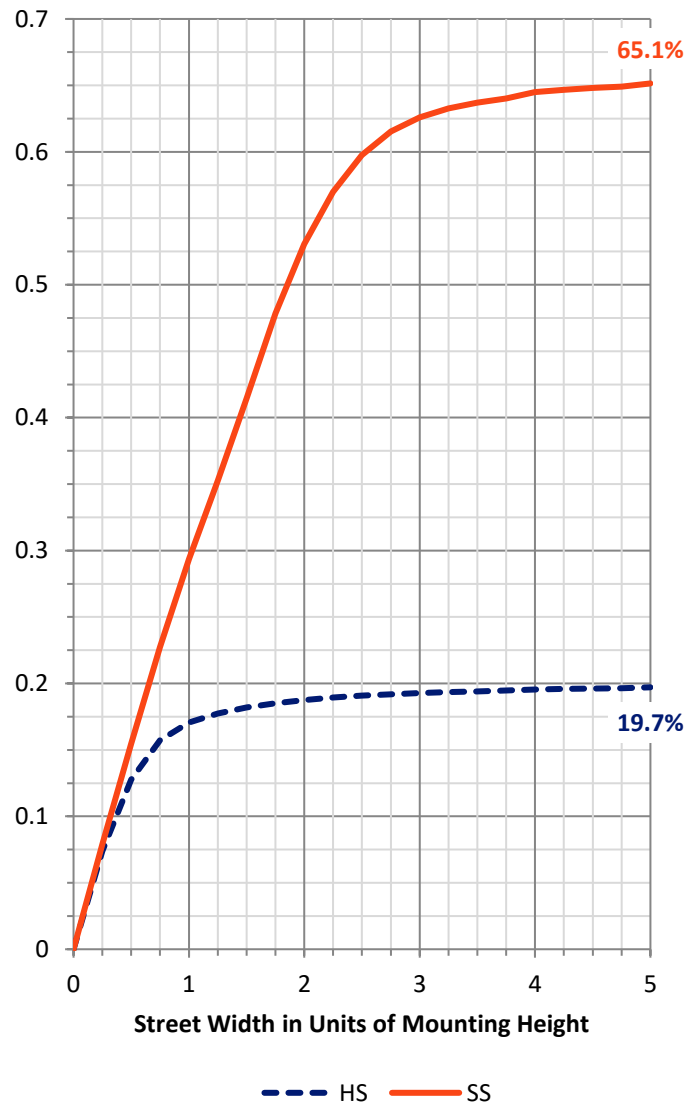
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	426.5	157.7	584.3
	% Fixture	20.0	7.4	27.4
<b>Street Side</b>	Lumens	1393.7	157.7	1551.4
	% Fixture	65.3	7.4	72.6
<b>Total</b>	Lumens	1820.2	315.5	2135.7
	% Fixture	85.2	14.8	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	36.5	1.7
10°-20°	98.4	4.6
20°-30°	141.8	6.6
30°-40°	180.9	8.5
40°-50°	213.5	10.0
50°-60°	342.4	16.0
60°-70°	576.2	27.0
70°-80°	214.3	10.0
80°-90°	16.3	0.8
90°-100°	1.3	0.1
100°-110°	12.3	0.6
110°-120°	25.2	1.2
120°-130°	43.0	2.0
130°-140°	60.0	2.8
140°-150°	65.4	3.1
150°-160°	56.9	2.7
160°-170°	38.2	1.8
170°-180°	13.3	0.6
0°-90°	1820.2	85.2
0°-180°	2135.7	100.0



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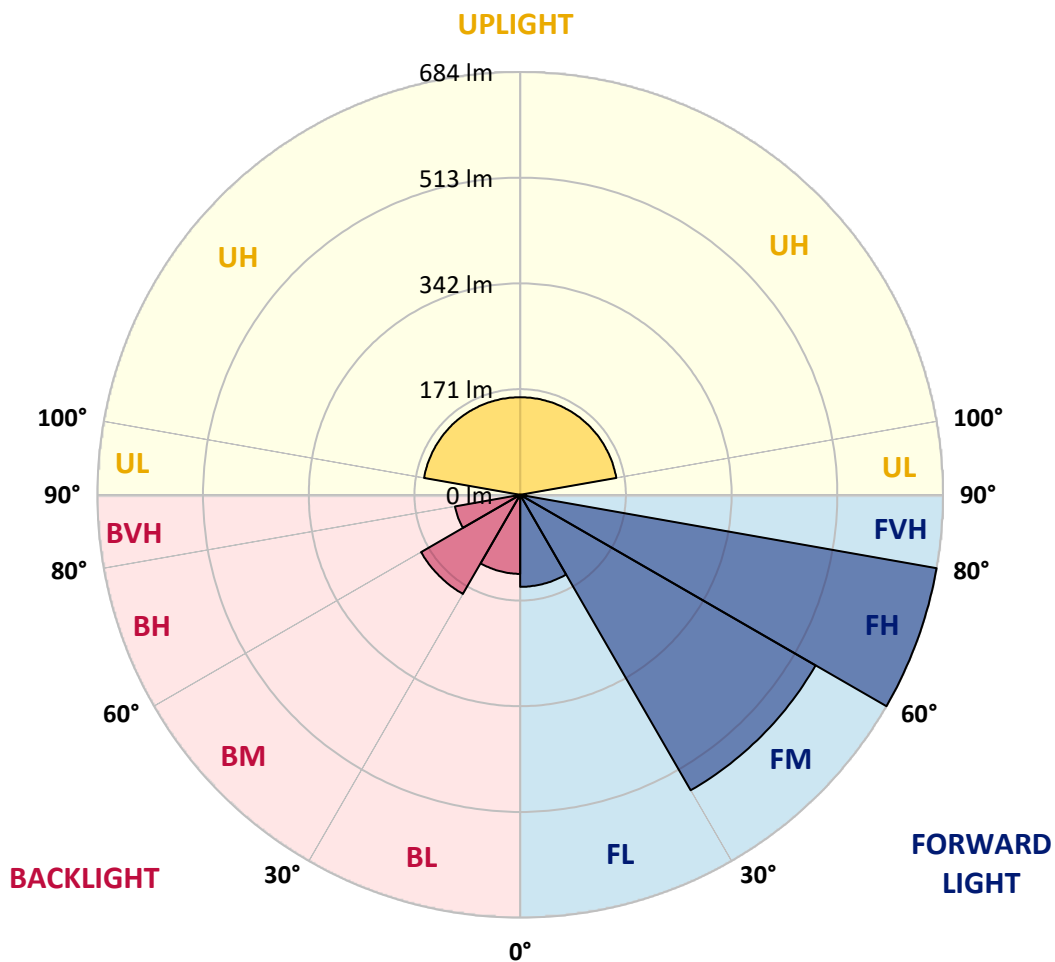
CATALOG NUMBER: ENV-F01-LED-E1-BL4-8030-ULG

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

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	148.8	7.0			
FM	(30°-60°)	551.6	25.8			
FH	(60°-80°)	683.7	32.0			G1/1800
FVH	(80°-90°)	9.7	0.5			G0/10
BL	(0°-30°)	127.9	6.0	B1/500		
BM	(30°-60°)	185.2	8.7	B0/220		
BH	(60°-80°)	106.9	5.0	B0/110		G0/110
BVH	(80°-90°)	6.6	0.3			G0/10
UL	(90°-100°)	1.3	0.1		U1/10	
UH	(100°-180°)	157.7	7.4		U3/500	

**BUG Rating: B1-U3-G1**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	60°	61°	62°	64°
0°	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3
2.5°	387.7	387.7	388.4	388.4	389.5	390.2	389.5	390.9	390.9	390.5	391.2
5°	382.2	382.2	382.5	382.5	383.2	384.2	383.6	384.9	384.6	384.9	384.9
7.5°	375.5	375.5	376.2	375.9	376.2	376.9	375.2	376.2	376.2	376.6	376.2
10°	367.2	367.9	368.6	368.2	368.2	368.6	365.8	366.8	366.5	366.5	366.1
12.5°	359.5	358.8	359.5	360.2	359.9	359.9	357.1	356.4	356.4	356.4	356.7
15°	351.5	352.2	353.2	352.2	351.5	350.1	347.3	346.6	346.6	346.6	347.0
17.5°	349.8	349.8	350.5	349.4	346.6	343.8	338.3	337.2	337.2	336.9	336.9
20°	354.6	354.3	355.3	353.2	347.0	339.7	330.9	329.2	329.2	329.2	328.9
22.5°	364.7	364.7	366.5	364.0	353.9	340.0	327.1	324.3	324.0	323.6	322.9
25°	384.2	383.9	384.9	378.7	364.0	344.5	326.1	321.9	321.5	320.8	320.1
27.5°	406.9	407.6	409.7	400.3	378.7	352.5	330.6	323.6	322.9	321.9	320.5
30°	429.2	431.3	435.1	425.0	395.4	362.7	337.6	329.6	328.2	326.8	324.3
32.5°	457.4	456.7	463.0	447.7	410.0	373.5	344.9	335.1	333.4	331.3	328.2
35°	487.4	488.8	490.2	465.4	422.2	382.2	349.4	338.3	336.2	334.1	329.6
37.5°	517.3	517.7	514.5	479.7	429.5	387.4	351.9	339.0	336.2	333.0	327.8
40°	544.8	543.8	534.4	490.5	433.7	390.2	352.9	337.6	334.1	330.9	325.0
42.5°	560.5	559.5	547.6	495.4	434.1	389.8	352.9	336.2	332.3	328.5	321.9
45°	567.1	566.4	552.9	496.1	431.6	387.7	350.8	334.8	330.9	327.5	320.5
47.5°	567.8	567.8	553.9	495.0	429.5	386.3	350.8	336.5	333.4	330.6	325.4
50°	564.7	565.1	554.3	497.8	431.3	389.5	354.3	340.7	337.6	334.8	328.9
52.5°	601.6	598.1	574.1	510.4	442.8	399.6	366.1	353.9	352.9	351.2	346.6
55°	883.8	886.6	755.3	588.7	491.2	451.5	437.5	435.1	442.8	445.6	445.6
57.5°	1122.1	1113.0	1063.6	859.1	642.4	594.7	600.2	606.2	617.3	622.2	625.7
60°	1180.3	1181.0	1179.6	1121.4	948.3	839.6	812.4	786.6	785.6	776.5	769.5
62.5°	1173.3	1178.9	1205.0	1218.2	1235.3	1155.5	989.7	918.3	904.4	887.3	862.9
65°	1122.8	1131.2	1173.0	1237.4	1384.4	1449.9	1109.2	981.4	959.8	939.2	898.1
67.5°	956.6	974.7	1054.9	1176.4	1402.2	1568.0	1128.7	950.7	922.1	895.3	846.5
70°	590.5	599.9	723.6	949.3	1270.5	1429.7	1024.9	806.8	770.6	736.4	669.9
72.5°	381.1	378.0	398.9	534.7	933.6	1110.9	704.7	536.5	506.9	479.7	436.9
75°	266.8	267.2	257.8	255.0	433.0	688.0	319.1	229.2	216.0	210.4	201.4
77.5°	173.8	175.9	173.5	180.1	173.5	286.0	146.7	107.6	102.4	98.9	93.4
80°	104.9	111.8	113.9	115.3	117.1	108.0	87.1	63.4	57.1	51.2	42.2
82.5°	18.5	18.1	25.1	33.8	44.2	50.5	36.6	23.0	21.6	20.9	19.2
85°	0.0	0.0	0.3	0.3	0.7	2.4	3.8	4.5	4.2	4.5	4.9
87.5°	0.0	0.0	0.0	0.3	0.3	0.7	0.7	0.7	0.7	0.7	0.7
90°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
92.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
95°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
97.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
100°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
102.5°	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
105°	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
107.5°	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
110°	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	60°	61°	62°	64°
112.5°	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2
115°	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
117.5°	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5
120°	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8
122.5°	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9
125°	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8
127.5°	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3
130°	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0
132.5°	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5
135°	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9
137.5°	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3
140°	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5
142.5°	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2
145°	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9
147.5°	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1
150°	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1
152.5°	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7
155°	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7
157.5°	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0
160°	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3
162.5°	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5
165°	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0
167.5°	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1
170°	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4
172.5°	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6
175°	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5
177.5°	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1
180°	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8





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**CANDELA DISTRIBUTION (continued):**

	65°	66°	67°	68°	69°	70°	71°	72°	73°	74°	75°
0°	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3
2.5°	391.2	390.9	390.5	390.5	391.2	391.2	390.9	390.9	391.2	390.9	391.6
5°	385.3	384.9	384.9	384.6	384.9	385.3	384.9	384.9	385.3	384.9	385.6
7.5°	375.9	376.2	375.9	375.9	376.2	376.6	376.2	376.2	376.2	376.2	375.9
10°	366.1	366.1	365.8	365.8	366.5	366.1	365.8	365.8	366.1	366.5	365.8
12.5°	356.4	357.1	357.1	355.7	356.0	356.4	356.4	356.0	356.0	357.1	356.0
15°	346.6	347.0	346.6	347.0	346.3	345.9	346.3	346.3	345.6	345.2	345.2
17.5°	336.9	336.5	336.5	335.8	335.5	335.5	335.1	335.5	334.8	335.1	334.1
20°	328.2	327.8	327.5	327.5	326.4	326.4	326.4	326.1	325.4	325.4	325.0
22.5°	322.9	322.6	322.2	321.5	321.2	320.8	320.8	320.5	319.8	319.5	319.1
25°	320.1	319.8	319.1	318.4	318.1	317.7	317.7	317.4	316.7	316.0	315.6
27.5°	320.5	319.8	319.1	318.4	318.1	317.4	317.0	316.7	316.0	315.3	314.6
30°	323.6	322.2	320.8	319.8	318.8	317.7	317.0	316.7	315.6	314.6	313.5
32.5°	326.8	325.0	322.9	320.8	319.1	317.4	316.3	315.3	313.9	312.1	311.1
35°	327.8	325.7	322.6	320.8	318.4	316.3	314.6	313.2	310.7	308.7	306.9
37.5°	325.4	322.9	319.8	317.4	314.9	312.1	310.0	308.0	306.2	303.8	302.0
40°	321.5	318.8	315.6	312.1	309.7	306.9	304.8	303.1	300.6	298.6	297.2
42.5°	318.4	315.3	311.8	309.0	306.2	303.4	301.0	299.2	296.8	294.4	292.6
45°	317.4	314.2	311.4	308.0	305.2	303.1	301.0	298.6	296.5	294.4	292.3
47.5°	322.9	320.1	317.4	314.6	312.1	309.7	307.6	305.2	302.7	299.9	297.9
50°	326.1	322.9	320.5	317.4	314.6	312.1	310.0	307.6	305.9	303.1	301.0
52.5°	348.7	344.5	345.2	342.4	342.4	339.7	341.7	338.6	340.4	338.3	341.4
55°	444.5	445.9	454.6	456.0	459.5	459.1	461.2	470.3	466.8	462.3	463.7
57.5°	616.3	619.4	623.9	619.7	622.9	623.6	629.5	627.1	625.0	623.6	619.0
60°	765.4	761.2	754.6	746.6	743.4	739.9	734.0	734.0	726.3	723.9	718.0
62.5°	852.8	840.6	832.3	819.4	810.3	804.0	793.6	785.6	775.1	767.1	757.7
65°	881.4	860.8	846.2	830.2	815.9	802.3	787.3	775.8	762.9	754.2	739.2
67.5°	826.0	805.1	780.3	763.3	748.3	731.2	707.9	693.6	682.5	665.7	658.4
70°	643.1	621.1	590.1	581.8	558.8	532.3	508.6	494.3	478.0	466.5	454.3
72.5°	407.9	383.2	369.6	359.5	344.5	322.6	302.0	293.7	279.4	276.3	268.2
75°	191.6	174.9	171.4	169.0	152.6	149.4	143.2	140.4	133.8	130.3	128.9
77.5°	85.7	81.9	75.6	73.9	68.6	63.4	57.1	54.3	50.9	48.8	46.0
80°	39.0	35.2	32.7	31.0	30.3	28.6	27.2	26.1	25.1	25.1	23.3
82.5°	18.8	18.1	17.4	17.4	16.4	16.4	15.3	15.0	14.6	14.3	14.3
85°	5.2	5.2	5.2	5.6	5.6	5.6	5.6	5.6	5.6	5.9	5.9
87.5°	0.7	0.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
90°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
92.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
95°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
97.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
100°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
102.5°	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
105°	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
107.5°	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
110°	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8



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CATALOG NUMBER: ENV-F01-LED-E1-BL4-8030-ULG

**CANDELA DISTRIBUTION (continued):**

	65°	66°	67°	68°	69°	70°	71°	72°	73°	74°	75°
112.5°	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2
115°	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
117.5°	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5
120°	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8
122.5°	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9
125°	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8
127.5°	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3
130°	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0
132.5°	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5
135°	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9
137.5°	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3
140°	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5
142.5°	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2
145°	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9
147.5°	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1
150°	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1
152.5°	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7
155°	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7
157.5°	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0
160°	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3
162.5°	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5
165°	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0
167.5°	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1
170°	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4
172.5°	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6
175°	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5
177.5°	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1
180°	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8



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**CANDELA DISTRIBUTION (continued):**

	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°	86°
0°	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3
2.5°	391.2	391.2	391.2	391.9	391.6	392.6	392.6	392.6	393.3	393.7	393.3
5°	385.6	385.6	385.6	386.0	386.0	386.7	386.7	387.4	387.4	387.7	387.7
7.5°	376.6	376.9	376.9	377.6	377.3	377.6	377.6	378.7	378.7	379.0	379.0
10°	366.1	366.5	366.5	366.5	366.8	367.2	367.2	367.9	368.2	368.2	368.9
12.5°	356.4	356.0	356.4	356.0	357.1	357.1	357.4	357.1	357.4	357.8	358.1
15°	345.6	345.6	345.2	345.6	345.6	345.2	344.9	345.2	345.9	345.9	345.9
17.5°	334.8	333.7	333.7	333.7	333.4	332.7	333.4	333.0	333.0	333.4	333.0
20°	324.7	324.3	324.0	323.6	323.3	322.2	322.2	322.2	321.9	321.9	321.9
22.5°	318.4	318.1	317.7	317.4	316.0	315.3	314.9	314.6	313.9	313.5	313.2
25°	314.9	314.2	313.5	312.8	311.8	310.7	309.7	309.4	308.7	308.0	306.9
27.5°	313.9	313.2	311.8	311.1	309.7	308.7	307.6	306.6	305.5	304.5	303.4
30°	312.1	311.1	309.7	308.7	307.6	305.9	304.5	303.4	301.7	300.6	299.2
32.5°	309.7	308.3	306.9	305.5	304.1	302.4	300.6	299.2	297.9	296.5	294.7
35°	305.5	303.8	301.7	300.3	298.6	296.8	295.4	293.0	291.9	290.2	288.4
37.5°	299.9	298.2	296.5	294.7	292.6	291.2	289.1	287.1	286.0	285.0	282.5
40°	295.1	293.0	291.2	289.8	287.4	286.4	284.3	282.2	280.8	279.7	277.6
42.5°	290.5	288.4	286.7	284.6	282.9	281.5	279.7	277.6	276.3	275.6	273.8
45°	290.5	288.1	286.0	284.3	282.5	280.8	279.4	277.3	276.3	274.9	273.8
47.5°	295.4	292.6	290.2	287.8	285.3	283.6	281.5	279.4	277.6	276.6	275.2
50°	298.9	296.1	294.7	291.9	290.5	288.1	285.7	284.6	282.9	281.8	281.5
52.5°	341.4	339.7	340.0	333.0	331.6	335.1	329.6	334.4	333.0	328.9	328.9
55°	471.7	471.0	474.1	465.4	461.6	468.6	471.3	461.2	463.7	463.7	463.0
57.5°	623.6	619.0	614.5	615.6	610.0	614.2	608.9	602.7	605.1	603.0	595.7
60°	714.2	711.4	704.7	698.5	692.6	687.0	682.1	676.5	673.7	668.9	663.6
62.5°	750.7	743.4	735.4	727.0	717.6	708.6	703.0	695.7	688.0	683.1	677.6
65°	731.2	720.4	711.7	699.5	689.4	678.3	671.0	662.6	655.6	647.3	640.3
67.5°	644.1	631.6	608.6	597.5	582.5	565.1	560.2	550.1	546.2	533.7	513.1
70°	438.6	426.1	412.1	389.5	374.8	359.9	343.5	331.6	329.9	319.8	304.8
72.5°	257.8	249.1	240.0	227.1	216.3	210.4	198.9	187.1	186.7	175.2	169.3
75°	121.9	117.4	108.3	105.2	95.5	94.8	87.4	86.0	87.4	84.0	83.3
77.5°	41.5	40.4	38.3	35.5	33.4	32.7	31.0	30.0	29.3	28.6	27.9
80°	22.6	21.9	21.6	20.6	19.9	19.5	18.5	18.1	17.8	17.4	17.1
82.5°	13.6	13.9	13.2	12.5	12.5	11.8	11.5	11.1	10.8	10.8	10.8
85°	5.6	5.9	5.6	5.2	4.9	5.2	5.2	4.9	4.5	4.9	4.9
87.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
90°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
92.5°	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
95°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
97.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
100°	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
102.5°	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
105°	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
107.5°	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
110°	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8



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REPORT N  
 CATALOG

**CANDELA DISTRIBUTION (continued):**

**CANDELA**

	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°	86°	
112.5°	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	0°
115°	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	2.5°
117.5°	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	5°
120°	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	7.5°
122.5°	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	10°
125°	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	12.5°
127.5°	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	15°
130°	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	17.5°
132.5°	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	20°
135°	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	22.5°
137.5°	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	25°
140°	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	27.5°
142.5°	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	30°
145°	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	32.5°
147.5°	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	35°
150°	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	37.5°
152.5°	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	40°
155°	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	42.5°
157.5°	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	45°
160°	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	47.5°
162.5°	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	50°
165°	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	52.5°
167.5°	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	55°
170°	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	57.5°
172.5°	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	60°
175°	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	62.5°
177.5°	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	65°
180°	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	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  
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**DISTRIBUTION (continued):**

**CANDELA DISTRIBUTION:**

87°	88°	89°	90°	95°	105°	115°	125°	135°	145°	155°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°	132.5°	135°	137.5°	140°	142.5°	145°	147.5°	150°	152.5°	155°	180°		
393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°	132.5°	135°	137.5°	140°	142.5°	145°	147.5°	150°	152.5°	155°	180°		
392.6	392.3	392.3	391.9	391.6	392.3	393.0	394.0	393.3	394.0	394.4	115°	117.5°	120°	122.5°	125°	127.5°	130°	132.5°	135°	137.5°	140°	142.5°	145°	147.5°	150°	152.5°	155°	180°			
387.0	387.0	387.0	387.4	387.0	388.1	389.5	391.6	391.9	393.3	394.4	117.5°	120°	122.5°	125°	127.5°	130°	132.5°	135°	137.5°	140°	142.5°	145°	147.5°	150°	152.5°	155°	180°				
378.0	378.0	378.3	378.7	378.3	379.7	382.2	384.6	386.3	388.8	390.9	120°	122.5°	125°	127.5°	130°	132.5°	135°	137.5°	140°	142.5°	145°	147.5°	150°	152.5°	155°	180°					
367.5	367.5	367.5	367.5	367.9	369.6	371.4	374.1	376.9	380.8	383.9	122.5°	125°	127.5°	130°	132.5°	135°	137.5°	140°	142.5°	145°	147.5°	150°	152.5°	155°	180°						
358.1	357.1	357.4	358.1	357.4	357.4	359.2	361.3	363.0	367.9	373.5	125°	127.5°	130°	132.5°	135°	137.5°	140°	142.5°	145°	147.5°	150°	152.5°	155°	180°							
345.6	345.6	344.9	345.2	343.5	343.1	343.8	345.2	346.6	350.8	356.7	127.5°	130°	132.5°	135°	137.5°	140°	142.5°	145°	147.5°	150°	152.5°	155°	180°								
332.3	332.3	332.3	331.3	329.9	326.4	326.1	326.1	326.1	329.2	336.2	130°	132.5°	135°	137.5°	140°	142.5°	145°	147.5°	150°	152.5°	155°	180°									
320.5	320.5	319.8	319.1	316.0	310.0	305.2	303.1	302.4	307.6	310.7	132.5°	135°	137.5°	140°	142.5°	145°	147.5°	150°	152.5°	155°	180°										
312.1	311.8	310.4	309.7	304.8	295.4	287.8	281.8	280.1	281.8	282.9	135°	137.5°	140°	142.5°	145°	147.5°	150°	152.5°	155°	180°											
305.5	304.8	303.4	302.0	295.4	282.5	270.3	260.2	255.4	254.0	250.5	137.5°	140°	142.5°	145°	147.5°	150°	152.5°	155°	180°												
301.7	300.6	298.6	297.2	288.4	272.1	256.1	242.8	233.8	227.1	220.9	140°	142.5°	145°	147.5°	150°	152.5°	155°	180°													
297.5	295.8	293.7	291.6	281.8	263.7	245.3	228.9	212.9	201.4	192.3	142.5°	145°	147.5°	150°	152.5°	155°	180°														
292.6	290.9	288.8	286.7	275.9	256.1	236.5	216.3	194.0	178.4	164.8	145°	147.5°	150°	152.5°	155°	180°															
286.7	285.0	282.9	280.4	269.6	249.8	230.6	204.1	177.3	157.1	139.3	147.5°	150°	152.5°	155°	180°																
280.8	279.0	277.0	274.5	263.7	246.6	227.1	192.6	162.0	137.3	113.9	150°	152.5°	155°	180°																	
276.3	274.5	272.4	270.3	260.6	245.3	225.4	182.9	148.4	117.7	90.9	152.5°	155°	180°																		
272.4	270.7	268.9	266.8	258.5	245.9	221.6	174.5	135.2	98.2	71.4	155°	180°																			
272.1	271.0	268.9	267.2	259.2	249.1	218.4	167.2	121.6	79.4	60.3	157.5°	180°																			
274.5	273.1	271.7	270.3	264.1	257.1	216.3	159.6	106.3	64.1	57.5	160°	180°																			
280.4	279.0	278.3	277.6	273.8	267.9	216.3	151.5	88.5	56.4	57.1	162.5°	180°																			
328.2	324.3	323.3	326.1	315.6	286.0	217.7	141.8	69.3	54.0	57.5	165°	180°																			
461.6	465.4	455.7	450.8	432.7	330.9	218.8	127.2	56.4	53.6	56.8	167.5°	180°																			
596.4	596.4	592.9	585.3	563.0	407.6	223.7	103.8	51.6	53.0	56.1	170°	180°																			
662.2	658.1	654.6	650.1	616.3	460.9	231.0	76.6	49.5	52.6	55.4	172.5°	180°																			
674.1	667.5	662.9	657.0	612.1	463.7	234.1	57.5	47.4	52.6	53.6	175°	180°																			
635.1	628.1	622.2	612.4	557.7	419.8	218.4	47.0	46.0	51.2	51.9	177.5°	180°																			
514.5	506.2	501.6	496.8	460.5	368.6	176.6	42.2	44.2	48.8	50.2	180°																				
294.4	285.3	280.1	281.1	259.2	291.6	141.1	38.7	41.8	46.0	48.1																					
158.5	148.8	145.6	135.5	115.7	147.0	108.7	35.5	38.7	41.8	43.9																					
78.4	74.9	75.9	71.1	60.3	45.3	70.0	31.7	34.5	37.6	39.0																					
27.2	26.5	26.1	25.8	25.1	24.0	32.0	27.2	29.6	32.0	33.4																					
16.7	16.4	16.7	16.4	16.0	18.5	20.6	21.6	23.7	26.8	27.2																					
10.1	10.1	10.1	10.1	10.1	12.9	14.6	16.7	18.5	20.6	22.3																					
4.9	4.9	4.9	4.9	5.2	8.7	9.8	12.2	12.9	14.6	16.0																					
1.0	1.0	1.0	1.0	1.4	4.5	5.9	7.3	7.7	7.7	8.7																					
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																					
0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1																					
0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5																					
1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5																					
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0																					
8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8																					
11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8																					
14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7																					
17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8																					

'160161  
 ENV-F01-LED-E1-BL4-8030-ULG

REPORT NUMBER: P160161  
 CATALOG NUMBER: ENV-F01-I

**TION (continued):**

**CANDELA DISTRIBUTION (con**

88°	89°	90°	95°	105°	115°	125°	135°	145°	155°		165°	175°
21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	21.2	0°	393.3	393.3
25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	2.5°	394.0	393.3
29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	5°	395.0	394.4
34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	7.5°	392.3	392.6
40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	10°	386.3	387.4
47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	12.5°	376.9	379.0
55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	15°	361.3	364.4
63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	17.5°	340.4	344.2
70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	20°	314.2	316.0
77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	22.5°	282.2	282.9
85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	25°	248.4	248.4
92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	27.5°	217.0	215.3
99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	30°	187.1	182.5
104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	32.5°	155.4	147.7
110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	35°	123.3	117.1
115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	37.5°	95.8	88.8
119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	40°	73.5	68.3
123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	42.5°	62.0	61.0
127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	45°	59.2	60.6
130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	47.5°	59.6	61.3
133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	50°	59.9	61.7
136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	52.5°	59.9	61.0
137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	55°	59.2	59.2
137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	57.5°	57.8	57.5
138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	60°	56.8	56.8
140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	62.5°	55.0	55.0
141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	65°	52.3	52.6
140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	67.5°	49.5	49.5
										70°	46.0	46.0
										72.5°	42.5	43.9
										75°	40.1	42.5
										77.5°	35.2	37.6
										80°	28.9	29.3
										82.5°	23.0	22.3
										85°	16.4	15.3
										87.5°	8.7	8.4
										90°	0.1	0.1
										92.5°	0.1	0.1
										95°	0.5	0.5
										97.5°	1.5	1.5
										100°	5.0	5.0
										102.5°	8.8	8.8
										105°	11.8	11.8
										107.5°	14.7	14.7
										110°	17.8	17.8

LED-E1-BL4-8030-ULG

REPORT NUMBER: P160161

CATALOG NUMBER: ENV-F01-LED-E1-BL4

**tinued):**

180°
393.3
393.0
394.0
392.3
387.7
380.4
363.7
344.2
314.9
281.8
247.0
214.2
181.2
147.7
115.3
86.7
67.9
61.3
60.6
61.7
62.0
61.0
59.2
58.2
56.8
55.0
52.6
49.5
46.7
44.6
43.5
39.0
29.3
21.3
15.3
8.7
0.1
0.1
0.5
1.5
5.0
8.8
11.8
14.7
17.8

**CANDELA DISTRIBUTION (continued):**

	165°	175°	180°
112.5°	21.2	21.2	21.2
115°	25.0	25.0	25.0
117.5°	29.5	29.5	29.5
120°	34.8	34.8	34.8
122.5°	40.9	40.9	40.9
125°	47.8	47.8	47.8
127.5°	55.3	55.3	55.3
130°	63.0	63.0	63.0
132.5°	70.5	70.5	70.5
135°	77.9	77.9	77.9
137.5°	85.3	85.3	85.3
140°	92.5	92.5	92.5
142.5°	99.2	99.2	99.2
145°	104.9	104.9	104.9
147.5°	110.1	110.1	110.1
150°	115.1	115.1	115.1
152.5°	119.7	119.7	119.7
155°	123.7	123.7	123.7
157.5°	127.0	127.0	127.0
160°	130.3	130.3	130.3
162.5°	133.5	133.5	133.5
165°	136.0	136.0	136.0
167.5°	137.1	137.1	137.1
170°	137.4	137.4	137.4
172.5°	138.6	138.6	138.6
175°	140.5	140.5	140.5
177.5°	141.1	141.1	141.1
180°	140.8	140.8	140.8

(END OF F

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

Scaled Data Report

