

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: P160191

Luminaire Tested: **ENV-F02-LED-E1-BL4-8030-ULG**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P160191
REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (P20107) AND DOWNLIGHT
Test Lab: INNOVATION CENTER-P3
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: ENV-F02-LED-E1-BL4-8030-ULG
Description: ENTRI LED LUMINAIRE WITH UPLIGHT
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (14) 3000K CCT, 80 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3956 lumens
Efficiency: N/A
Efficacy: 69.0 lumens/watt
Luminous Opening: Rectangular (W 0.33' x L: 1' x H: 0')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B1 - U3 - G1

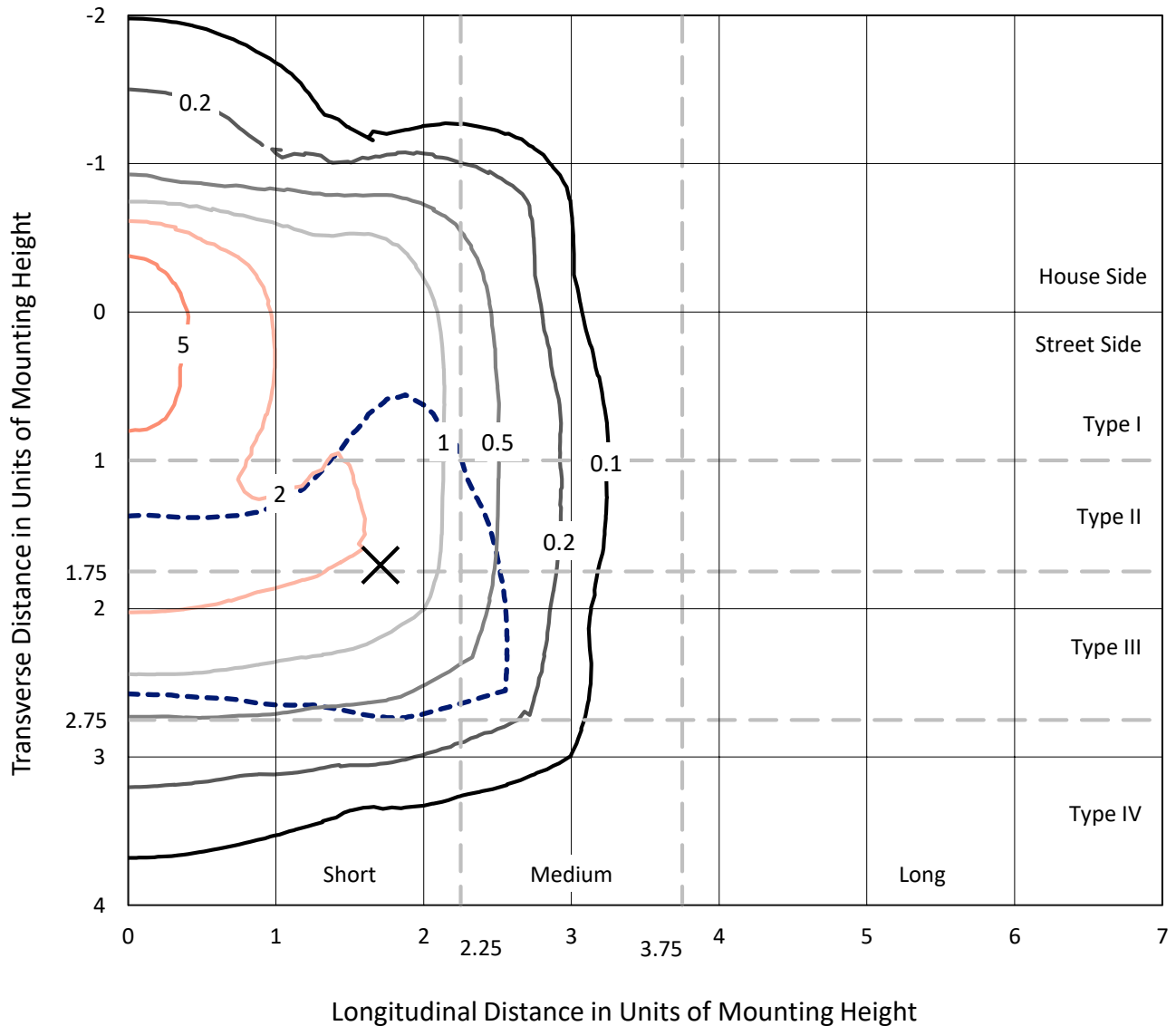
Input Watts (W): 57.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P160191
 CATALOG NUMBER: ENV-F02-LED-E1-BL4-8030-ULG

Iso-Footcandle Lines of Horizontal Illumination

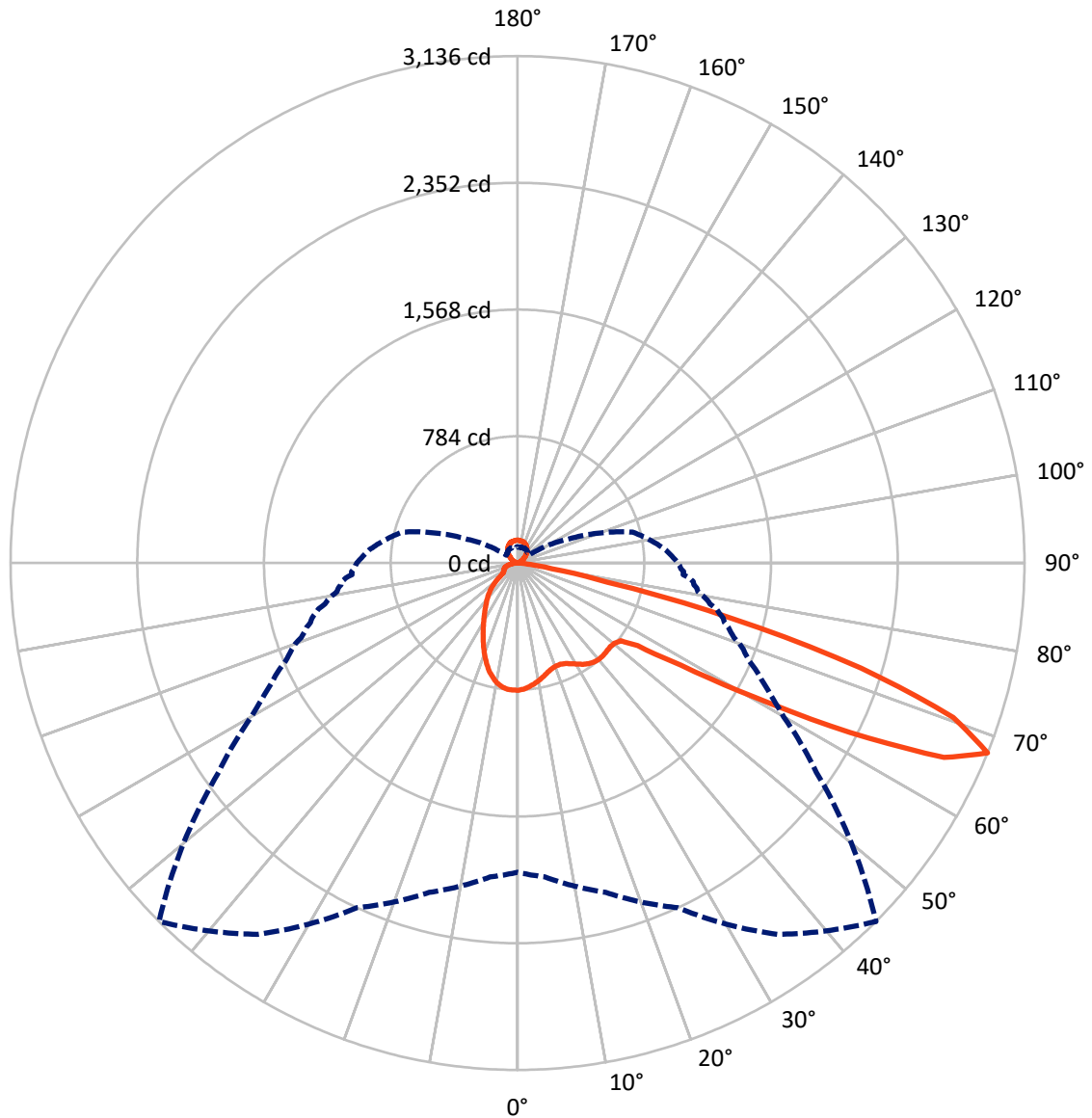
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 7.9 fc
 Type III - Short - Semi-Cutoff

REPORT NUMBER: P160191
CATALOG NUMBER: ENV-F02-LED-E1-BL4-8030-ULG

Luminous Intensity Polar Plot



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

REPORT NUMBER: P160191

CATALOG NUMBER: ENV-F02-LED-E1-BL4-8030-ULG

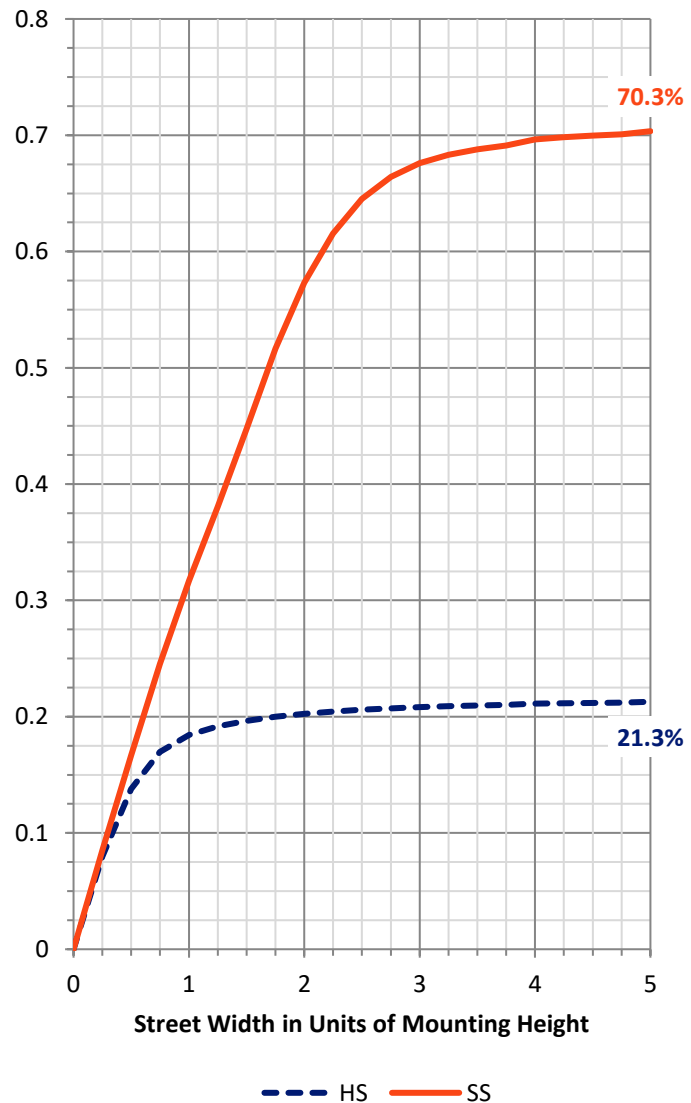
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	853.1	157.7	1010.8
	% Fixture	21.6	4.0	25.6
Street Side	Lumens	2787.4	157.7	2945.2
	% Fixture	70.5	4.0	74.4
Total	Lumens	3640.5	315.5	3956.0
	% Fixture	92.0	8.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.1	1.8
10°-20°	196.7	5.0
20°-30°	283.5	7.2
30°-40°	361.7	9.1
40°-50°	427.0	10.8
50°-60°	684.8	17.3
60°-70°	1152.5	29.1
70°-80°	428.6	10.8
80°-90°	32.6	0.8
90°-100°	1.3	0.0
100°-110°	12.3	0.3
110°-120°	25.2	0.6
120°-130°	43.0	1.1
130°-140°	60.0	1.5
140°-150°	65.4	1.7
150°-160°	56.9	1.4
160°-170°	38.2	1.0
170°-180°	13.3	0.3
0°-90°	3640.5	92.0
0°-180°	3956.0	100.0



REPORT NUMBER: P160191

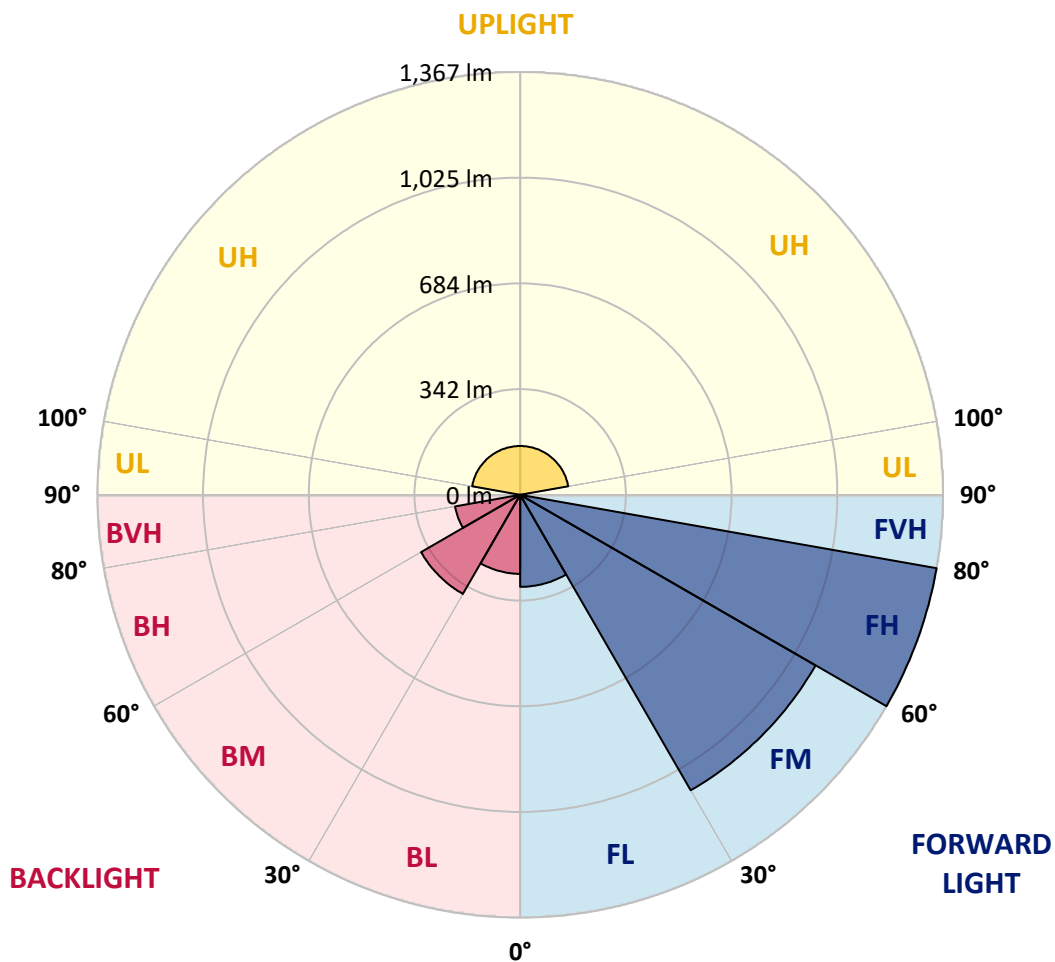
CATALOG NUMBER: ENV-F02-LED-E1-BL4-8030-ULG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	297.6	7.5			
FM	(30°-60°)	1103.2	27.9			
FH	(60°-80°)	1367.3	34.6			G1/1800
FVH	(80°-90°)	19.3	0.5			G1/100
BL	(0°-30°)	255.7	6.5	B1/500		
BM	(30°-60°)	370.3	9.4	B1/1000		
BH	(60°-80°)	213.8	5.4	B1/500		G1/500
BVH	(80°-90°)	13.3	0.3			G1/100
UL	(90°-100°)	1.3	0.0		U1/10	
UH	(100°-180°)	157.7	4.0		U3/500	

BUG Rating: B1-U3-G1

Type III Short





REPORT NUMBER: P160191
 CATALOG NUMBER: ENV-F02-LED-E1-BL4-8030-ULG

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	61°	62°	64°
0°	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6
2.5°	775.5	775.5	776.9	776.9	779.0	780.3	779.0	781.7	781.7	781.0	782.4
5°	764.3	764.3	765.0	765.0	766.4	768.5	767.1	769.9	769.2	769.9	769.9
7.5°	751.1	751.1	752.5	751.8	752.5	753.9	750.4	752.5	752.5	753.2	752.5
10°	734.4	735.8	737.1	736.4	736.4	737.1	731.6	733.7	733.0	733.0	732.3
12.5°	719.0	717.6	719.0	720.4	719.7	719.7	714.2	712.8	712.8	712.8	713.5
15°	703.0	704.4	706.5	704.4	703.0	700.2	694.6	693.3	693.3	693.3	693.9
17.5°	699.5	699.5	700.9	698.8	693.3	687.7	676.5	674.4	674.4	673.7	673.7
20°	709.3	708.6	710.7	706.5	693.9	679.3	661.9	658.4	658.4	658.4	657.7
22.5°	729.5	729.5	733.0	728.1	707.9	680.0	654.2	648.7	648.0	647.3	645.9
25°	768.5	767.8	769.9	757.4	728.1	689.1	652.1	643.8	643.1	641.7	640.3
27.5°	813.8	815.2	819.4	800.5	757.4	705.1	661.2	647.3	645.9	643.8	641.0
30°	858.4	862.6	870.2	850.0	790.8	725.3	675.1	659.1	656.3	653.5	648.7
32.5°	914.8	913.4	926.0	895.3	820.1	746.9	689.8	670.3	666.8	662.6	656.3
35°	974.7	977.5	980.3	930.8	844.4	764.3	698.8	676.5	672.3	668.2	659.1
37.5°	1034.7	1035.3	1029.1	959.4	859.1	774.8	703.7	677.9	672.3	666.1	655.6
40°	1089.7	1087.6	1068.8	981.0	867.4	780.3	705.8	675.1	668.2	661.9	650.1
42.5°	1121.0	1119.0	1095.3	990.8	868.1	779.6	705.8	672.3	664.7	657.0	643.8
45°	1134.3	1132.9	1105.7	992.2	863.3	775.5	701.6	669.6	661.9	654.9	641.0
47.5°	1135.7	1135.7	1107.8	990.1	859.1	772.7	701.6	673.0	666.8	661.2	650.8
50°	1129.4	1130.1	1108.5	995.6	862.6	779.0	708.6	681.4	675.1	669.6	657.7
52.5°	1203.3	1196.3	1148.2	1020.7	885.6	799.2	732.3	707.9	705.8	702.3	693.3
55°	1767.6	1773.2	1510.5	1177.5	982.4	903.0	875.1	870.2	885.6	891.1	891.1
57.5°	2244.2	2226.1	2127.1	1718.1	1284.8	1189.3	1200.5	1212.3	1234.6	1244.4	1251.3
60°	2360.5	2361.9	2359.1	2242.8	1896.5	1679.1	1624.8	1573.2	1571.1	1553.0	1539.1
62.5°	2346.6	2357.8	2410.0	2436.5	2470.6	2311.1	1979.4	1836.6	1808.7	1774.6	1725.8
65°	2245.6	2262.3	2345.9	2474.8	2768.8	2899.8	2218.4	1962.7	1919.5	1878.4	1796.2
67.5°	1913.2	1949.5	2109.7	2352.9	2804.4	3136.0	2257.4	1901.4	1844.3	1790.6	1693.1
70°	1181.0	1199.8	1447.1	1898.6	2541.0	2859.4	2049.8	1613.6	1541.2	1472.9	1339.8
72.5°	762.2	756.0	797.8	1069.5	1867.3	2221.9	1409.5	1073.0	1013.8	959.4	873.7
75°	533.7	534.4	515.6	510.0	866.0	1376.1	638.2	458.5	432.0	420.8	402.7
77.5°	347.7	351.9	347.0	360.2	347.0	572.0	293.3	215.3	204.8	197.9	186.7
80°	209.7	223.7	227.8	230.6	234.1	216.0	174.2	126.8	114.3	102.4	84.3
82.5°	36.9	36.2	50.2	67.6	88.5	101.0	73.2	46.0	43.2	41.8	38.3
85°	0.0	0.0	0.7	0.7	1.4	4.9	7.7	9.1	8.4	9.1	9.8
87.5°	0.0	0.0	0.0	0.7	0.7	1.4	1.4	1.4	1.4	1.4	1.4
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



REPORT NUMBER: P160191

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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



REPORT NUMBER: P160191
 CATALOG NUMBER: ENV-F02-LED-E1-BL4-8030-ULG

CANDELA DISTRIBUTION (continued):

	65°	66°	67°	68°	69°	70°	71°	72°	73°	74°	75°
0°	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6
2.5°	782.4	781.7	781.0	781.0	782.4	782.4	781.7	781.7	782.4	781.7	783.1
5°	770.6	769.9	769.9	769.2	769.9	770.6	769.9	769.9	770.6	769.9	771.3
7.5°	751.8	752.5	751.8	751.8	752.5	753.2	752.5	752.5	752.5	752.5	751.8
10°	732.3	732.3	731.6	731.6	733.0	732.3	731.6	731.6	732.3	733.0	731.6
12.5°	712.8	714.2	714.2	711.4	712.1	712.8	712.8	712.1	712.1	714.2	712.1
15°	693.3	693.9	693.3	693.9	692.6	691.9	692.6	692.6	691.2	690.5	690.5
17.5°	673.7	673.0	673.0	671.7	671.0	671.0	670.3	671.0	669.6	670.3	668.2
20°	656.3	655.6	654.9	654.9	652.8	652.8	652.8	652.1	650.8	650.8	650.1
22.5°	645.9	645.2	644.5	643.1	642.4	641.7	641.7	641.0	639.6	638.9	638.2
25°	640.3	639.6	638.2	636.8	636.1	635.4	635.4	634.7	633.3	631.9	631.2
27.5°	641.0	639.6	638.2	636.8	636.1	634.7	634.0	633.3	631.9	630.5	629.2
30°	647.3	644.5	641.7	639.6	637.5	635.4	634.0	633.3	631.2	629.2	627.1
32.5°	653.5	650.1	645.9	641.7	638.2	634.7	632.6	630.5	627.8	624.3	622.2
35°	655.6	651.4	645.2	641.7	636.8	632.6	629.2	626.4	621.5	617.3	613.8
37.5°	650.8	645.9	639.6	634.7	629.8	624.3	620.1	615.9	612.4	607.6	604.1
40°	643.1	637.5	631.2	624.3	619.4	613.8	609.6	606.2	601.3	597.1	594.3
42.5°	636.8	630.5	623.6	618.0	612.4	606.9	602.0	598.5	593.6	588.7	585.3
45°	634.7	628.5	622.9	615.9	610.3	606.2	602.0	597.1	592.9	588.7	584.6
47.5°	645.9	640.3	634.7	629.2	624.3	619.4	615.2	610.3	605.5	599.9	595.7
50°	652.1	645.9	641.0	634.7	629.2	624.3	620.1	615.2	611.7	606.2	602.0
52.5°	697.4	689.1	690.5	684.9	684.9	679.3	683.5	677.2	680.7	676.5	682.8
55°	889.0	891.8	909.2	912.0	919.0	918.3	922.5	940.6	933.6	924.6	927.4
57.5°	1232.5	1238.8	1247.9	1239.5	1245.8	1247.2	1259.0	1254.1	1249.9	1247.2	1238.1
60°	1530.7	1522.4	1509.1	1493.1	1486.8	1479.9	1468.0	1468.0	1452.7	1447.8	1436.0
62.5°	1705.6	1681.2	1664.5	1638.7	1620.6	1608.1	1587.2	1571.1	1550.2	1534.2	1515.4
65°	1762.7	1721.6	1692.4	1660.3	1631.8	1604.6	1574.6	1551.6	1525.9	1508.4	1478.5
67.5°	1652.0	1610.2	1560.7	1526.5	1496.6	1462.4	1415.8	1387.2	1364.9	1331.5	1316.8
70°	1286.2	1242.3	1180.3	1163.5	1117.6	1064.6	1017.2	988.7	955.9	932.9	908.5
72.5°	815.9	766.4	739.2	719.0	689.1	645.2	604.1	587.3	558.8	552.5	536.5
75°	383.2	349.8	342.8	337.9	305.2	298.9	286.4	280.8	267.5	260.6	257.8
77.5°	171.4	163.7	151.2	147.7	137.3	126.8	114.3	108.7	101.7	97.5	92.0
80°	78.0	70.4	65.5	62.0	60.6	57.1	54.3	52.3	50.2	50.2	46.7
82.5°	37.6	36.2	34.8	34.8	32.7	32.7	30.7	30.0	29.3	28.6	28.6
85°	10.5	10.5	10.5	11.1	11.1	11.1	11.1	11.1	11.1	11.8	11.8
87.5°	1.4	1.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
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



REPORT NUMBER: P160191

CATALOG NUMBER: ENV-F02-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



REPORT NUMBER: P160191
 CATALOG NUMBER: ENV-F02-LED-E1-BL4-8030-ULG

CANDELA DISTRIBUTION (continued):

	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°	86°
0°	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6
2.5°	782.4	782.4	782.4	783.8	783.1	785.2	785.2	785.2	786.6	787.3	786.6
5°	771.3	771.3	771.3	772.0	772.0	773.4	773.4	774.8	774.8	775.5	775.5
7.5°	753.2	753.9	753.9	755.3	754.6	755.3	755.3	757.4	757.4	758.0	758.0
10°	732.3	733.0	733.0	733.0	733.7	734.4	734.4	735.8	736.4	736.4	737.8
12.5°	712.8	712.1	712.8	712.1	714.2	714.2	714.9	714.2	714.9	715.5	716.2
15°	691.2	691.2	690.5	691.2	691.2	690.5	689.8	690.5	691.9	691.9	691.9
17.5°	669.6	667.5	667.5	667.5	666.8	665.4	666.8	666.1	666.1	666.8	666.1
20°	649.4	648.7	648.0	647.3	646.6	644.5	644.5	644.5	643.8	643.8	643.8
22.5°	636.8	636.1	635.4	634.7	631.9	630.5	629.8	629.2	627.8	627.1	626.4
25°	629.8	628.5	627.1	625.7	623.6	621.5	619.4	618.7	617.3	615.9	613.8
27.5°	627.8	626.4	623.6	622.2	619.4	617.3	615.2	613.1	611.0	608.9	606.9
30°	624.3	622.2	619.4	617.3	615.2	611.7	608.9	606.9	603.4	601.3	598.5
32.5°	619.4	616.6	613.8	611.0	608.3	604.8	601.3	598.5	595.7	592.9	589.4
35°	611.0	607.6	603.4	600.6	597.1	593.6	590.8	586.0	583.9	580.4	576.9
37.5°	599.9	596.4	592.9	589.4	585.3	582.5	578.3	574.1	572.0	569.9	565.1
40°	590.1	586.0	582.5	579.7	574.8	572.7	568.5	564.4	561.6	559.5	555.3
42.5°	581.1	576.9	573.4	569.2	565.7	563.0	559.5	555.3	552.5	551.1	547.6
45°	581.1	576.2	572.0	568.5	565.1	561.6	558.8	554.6	552.5	549.7	547.6
47.5°	590.8	585.3	580.4	575.5	570.6	567.1	563.0	558.8	555.3	553.2	550.4
50°	597.8	592.2	589.4	583.9	581.1	576.2	571.3	569.2	565.7	563.7	563.0
52.5°	682.8	679.3	680.0	666.1	663.3	670.3	659.1	668.9	666.1	657.7	657.7
55°	943.4	942.0	948.3	930.8	923.2	937.1	942.7	922.5	927.4	927.4	926.0
57.5°	1247.2	1238.1	1229.0	1231.1	1220.0	1228.3	1217.9	1205.4	1210.2	1206.0	1191.4
60°	1428.3	1422.7	1409.5	1397.0	1385.1	1374.0	1364.2	1353.1	1347.5	1337.7	1327.3
62.5°	1501.5	1486.8	1470.8	1454.1	1435.3	1417.2	1406.0	1391.4	1376.1	1366.3	1355.2
65°	1462.4	1440.8	1423.4	1399.0	1378.8	1356.5	1341.9	1325.2	1311.3	1294.5	1280.6
67.5°	1288.3	1263.2	1217.2	1194.9	1164.9	1130.1	1120.4	1100.1	1092.5	1067.4	1026.3
70°	877.2	852.1	824.2	779.0	749.7	719.7	687.0	663.3	659.8	639.6	609.6
72.5°	515.6	498.2	480.1	454.3	432.7	420.8	397.8	374.1	373.5	350.5	338.6
75°	243.9	234.8	216.7	210.4	190.9	189.5	174.9	172.1	174.9	167.9	166.5
77.5°	82.9	80.8	76.6	71.1	66.9	65.5	62.0	59.9	58.5	57.1	55.7
80°	45.3	43.9	43.2	41.1	39.7	39.0	36.9	36.2	35.5	34.8	34.1
82.5°	27.2	27.9	26.5	25.1	25.1	23.7	23.0	22.3	21.6	21.6	21.6
85°	11.1	11.8	11.1	10.5	9.8	10.5	10.5	9.8	9.1	9.8	9.8
87.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
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



REPORT NUMBER: P160191
 CATALOG NUMBER: ENV-F02-LED-E1-BL4-8030-ULG

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°



NUMBER: P160191
 NUMBER: ENV-F02-LED-E1-BL4-8030-ULG

REPORT NUMBER: P
 CATALOG NUMBER:

DISTRIBUTION (continued):

CANDELA DISTRIBUTION

87°	88°	89°	90°	95°	105°	115°	125°	135°	145°	155°	87°	87°
786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6	786.6	112.5°	21.2
785.2	784.5	784.5	783.8	783.1	784.5	785.9	788.0	786.6	788.0	788.7	115°	25.0
774.1	774.1	774.1	774.8	774.1	776.2	779.0	783.1	783.8	786.6	788.7	117.5°	29.5
756.0	756.0	756.7	757.4	756.7	759.4	764.3	769.2	772.7	777.6	781.7	120°	34.8
735.1	735.1	735.1	735.1	735.8	739.2	742.7	748.3	753.9	761.5	767.8	122.5°	40.9
716.2	714.2	714.9	716.2	714.9	714.9	718.3	722.5	726.0	735.8	746.9	125°	47.8
691.2	691.2	689.8	690.5	687.0	686.3	687.7	690.5	693.3	701.6	713.5	127.5°	55.3
664.7	664.7	664.7	662.6	659.8	652.8	652.1	652.1	652.1	658.4	672.3	130°	63.0
641.0	641.0	639.6	638.2	631.9	620.1	610.3	606.2	604.8	615.2	621.5	132.5°	70.5
624.3	623.6	620.8	619.4	609.6	590.8	575.5	563.7	560.2	563.7	565.7	135°	77.9
611.0	609.6	606.9	604.1	590.8	565.1	540.7	520.5	510.7	507.9	501.0	137.5°	85.3
603.4	601.3	597.1	594.3	576.9	544.2	512.1	485.6	467.5	454.3	441.7	140°	92.5
595.0	591.5	587.3	583.2	563.7	527.4	490.5	457.8	425.7	402.7	384.6	142.5°	99.2
585.3	581.8	577.6	573.4	551.8	512.1	473.1	432.7	388.1	356.7	329.6	145°	104.9
573.4	569.9	565.7	560.9	539.3	499.6	461.2	408.3	354.6	314.2	278.7	147.5°	110.1
561.6	558.1	553.9	549.0	527.4	493.3	454.3	385.3	324.0	274.5	227.8	150°	115.1
552.5	549.0	544.8	540.7	521.2	490.5	450.8	365.8	296.8	235.5	181.8	152.5°	119.7
544.8	541.4	537.9	533.7	517.0	491.9	443.1	349.1	270.3	196.5	142.8	155°	123.7
544.2	542.1	537.9	534.4	518.4	498.2	436.9	334.4	243.2	158.9	120.5	157.5°	127.0
549.0	546.2	543.5	540.7	528.1	514.2	432.7	319.1	212.5	128.2	115.0	160°	130.3
560.9	558.1	556.7	555.3	547.6	535.8	432.7	303.1	177.0	112.9	114.3	162.5°	133.5
656.3	648.7	646.6	652.1	631.2	572.0	435.5	283.6	138.7	108.0	115.0	165°	136.0
923.2	930.8	911.3	901.6	865.3	661.9	437.5	254.3	112.9	107.3	113.6	167.5°	137.1
1192.8	1192.8	1185.8	1170.5	1125.9	815.2	447.3	207.6	103.1	105.9	112.2	170°	137.4
1324.5	1316.1	1309.2	1300.1	1232.5	921.8	461.9	153.3	98.9	105.2	110.8	172.5°	138.6
1348.2	1334.9	1325.9	1314.0	1224.2	927.4	468.2	115.0	94.8	105.2	107.3	175°	140.5
1270.1	1256.2	1244.4	1224.9	1115.5	839.6	436.9	94.1	92.0	102.4	103.8	177.5°	141.1
1029.1	1012.4	1003.3	993.5	921.1	737.1	353.2	84.3	88.5	97.5	100.3	180°	140.8
588.7	570.6	560.2	562.3	518.4	583.2	282.2	77.3	83.6	92.0	96.1		
317.0	297.5	291.2	271.0	231.3	294.0	217.4	71.1	77.3	83.6	87.8		
156.8	149.8	151.9	142.1	120.5	90.6	140.0	63.4	69.0	75.2	78.0		
54.3	53.0	52.3	51.6	50.2	48.1	64.1	54.3	59.2	64.1	66.9		
33.4	32.7	33.4	32.7	32.0	36.9	41.1	43.2	47.4	53.6	54.3		
20.2	20.2	20.2	20.2	20.2	25.8	29.3	33.4	36.9	41.1	44.6		
9.8	9.8	9.8	9.8	10.5	17.4	19.5	24.4	25.8	29.3	32.0		
2.1	2.1	2.1	2.1	2.8	9.1	11.8	14.6	15.3	15.3	17.4		
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		

'160191
 ENV-F02-LED-E1-BL4-8030-ULG

REPORT NUMBER: P160191
 CATALOG NUMBER: ENV-F02-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°	786.6	786.6
25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	2.5°	788.0	786.6
29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	5°	790.1	788.7
34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	7.5°	784.5	785.2
40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	10°	772.7	774.8
47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	12.5°	753.9	758.0
55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	15°	722.5	728.8
63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	17.5°	680.7	688.4
70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	20°	628.5	631.9
77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	22.5°	564.4	565.7
85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	25°	496.8	496.8
92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	27.5°	434.1	430.6
99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	30°	374.1	365.1
104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	32.5°	310.7	295.4
110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	35°	246.6	234.1
115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	37.5°	191.6	177.7
119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	40°	147.0	136.6
123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	42.5°	124.0	121.9
127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	45°	118.4	121.2
130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	47.5°	119.1	122.6
133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	50°	119.8	123.3
136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	52.5°	119.8	121.9
137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	55°	118.4	118.4
137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	57.5°	115.7	115.0
138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	60°	113.6	113.6
140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	62.5°	110.1	110.1
141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	65°	104.5	105.2
140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	67.5°	98.9	98.9
										70°	92.0	92.0
										72.5°	85.0	87.8
										75°	80.1	85.0
										77.5°	70.4	75.2
										80°	57.8	58.5
										82.5°	46.0	44.6
										85°	32.7	30.7
										87.5°	17.4	16.7
										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



REPORT NUMBER: P160191

CATALOG NUMBER: ENV-F02-LED-E1-BL

LED-E1-BL4-8030-ULG

tinued):

180°
786.6
785.9
788.0
784.5
775.5
760.8
727.4
688.4
629.8
563.7
494.0
428.5
362.3
295.4
230.6
173.5
135.9
122.6
121.2
123.3
124.0
121.9
118.4
116.4
113.6
110.1
105.2
98.9
93.4
89.2
87.1
78.0
58.5
42.5
30.7
17.4
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

