

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: P160189

Luminaire Tested: **ENV-F02-LED-E1-BL4-7050-ULG**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P160189
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-BL4-7050-ULG
Description: ENTRI LED LUMINAIRE WITH UPLIGHT
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (14) 5000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4741.5 lumens
Efficiency: N/A
Efficacy: 82.7 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

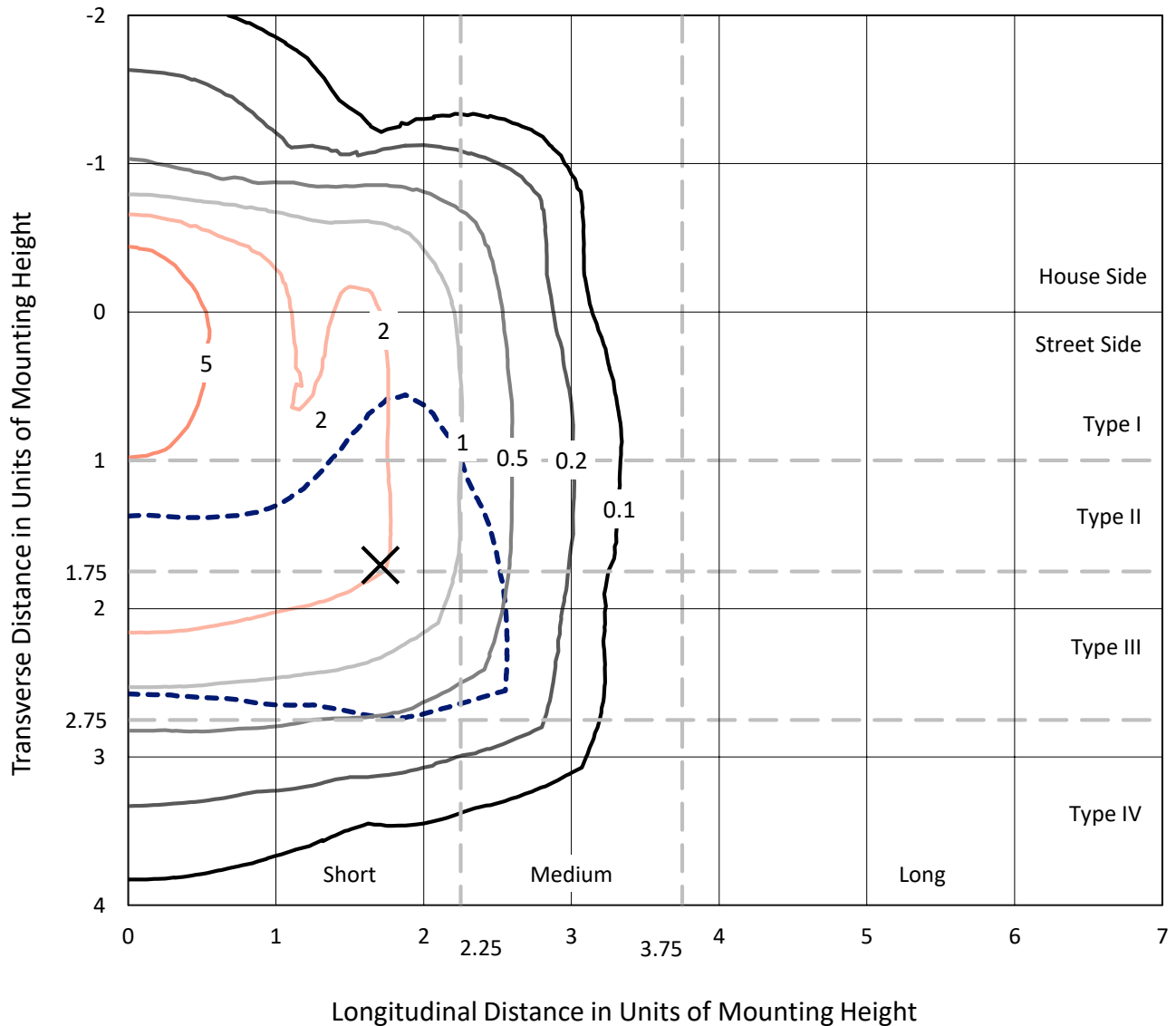
Input Watts (W): 57.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

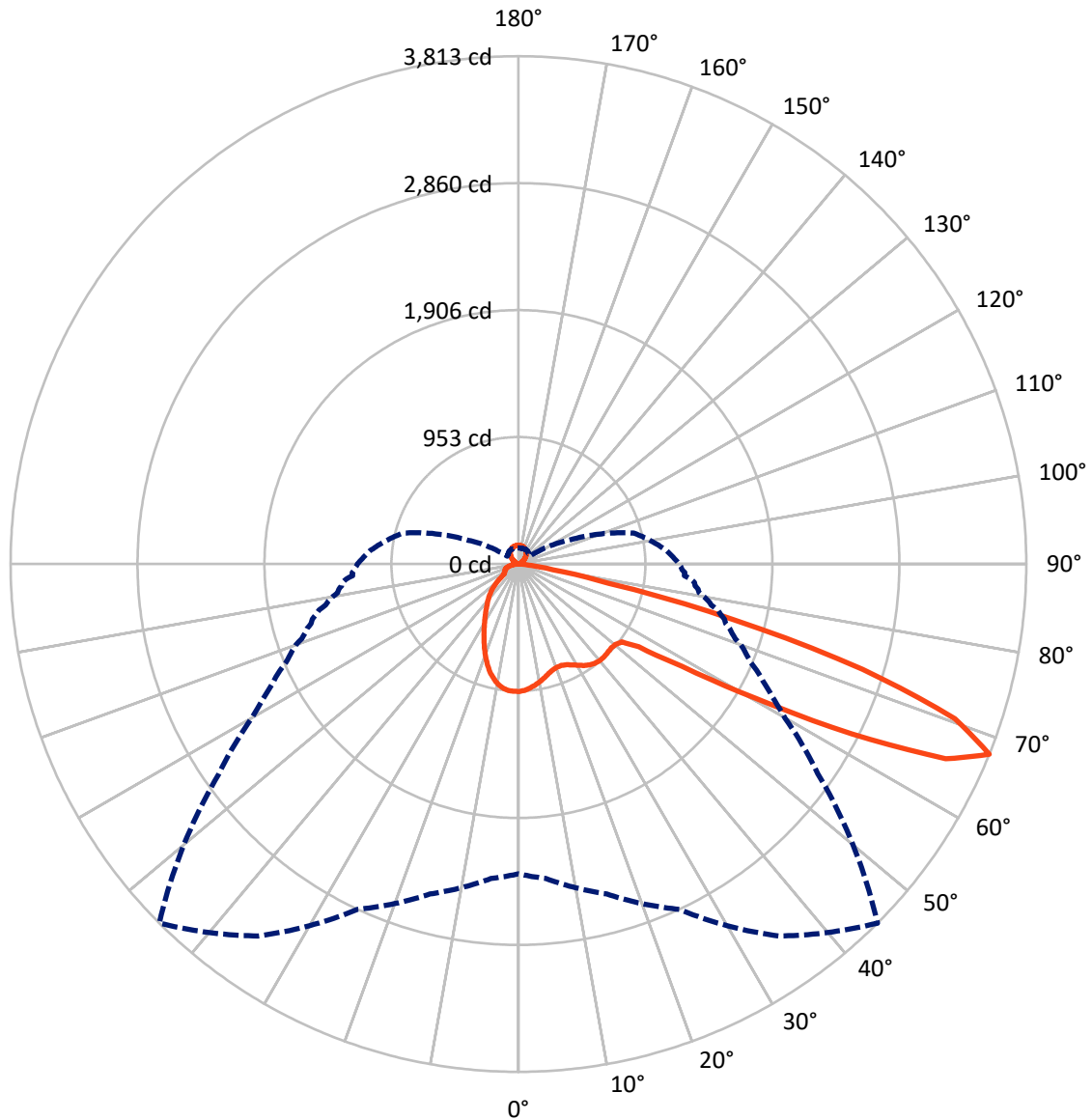
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 9.6 fc
 Type III - Short - Semi-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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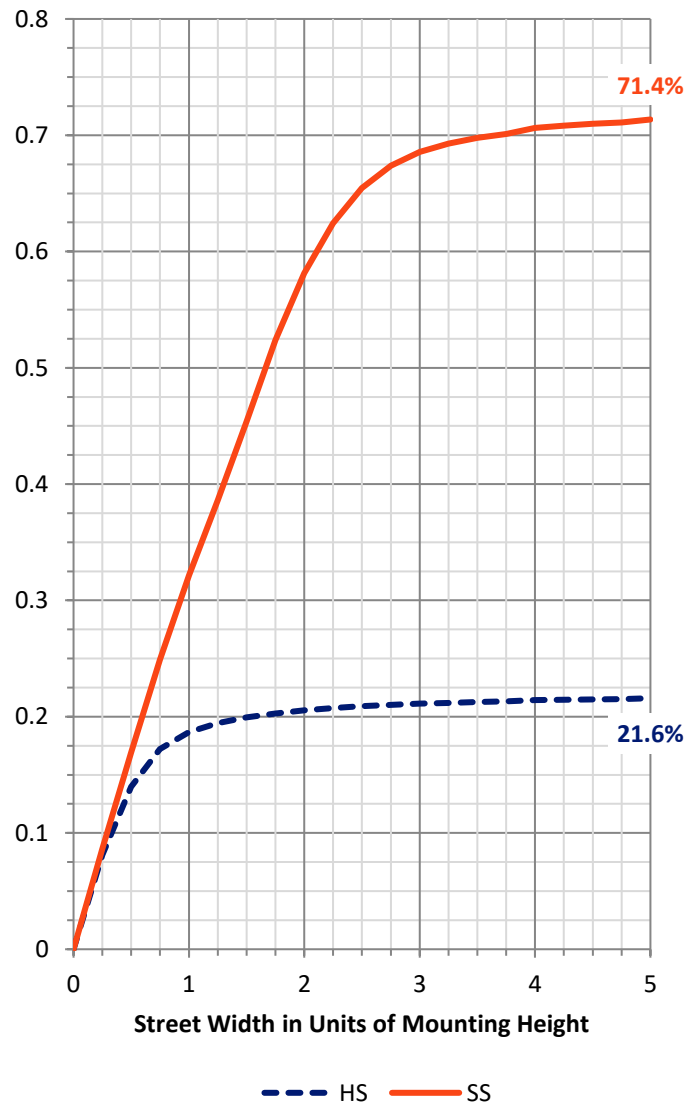
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1037.2	157.7	1194.9
	% Fixture	21.9	3.3	25.2
Street Side	Lumens	3388.9	157.7	3546.6
	% Fixture	71.5	3.3	74.8
Total	Lumens	4426.0	315.5	4741.5
	% Fixture	93.3	6.7	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	88.8	1.9
10°-20°	239.2	5.0
20°-30°	344.7	7.3
30°-40°	439.8	9.3
40°-50°	519.1	10.9
50°-60°	832.5	17.6
60°-70°	1401.1	29.6
70°-80°	521.1	11.0
80°-90°	39.6	0.8
90°-100°	1.3	0.0
100°-110°	12.3	0.3
110°-120°	25.2	0.5
120°-130°	43.0	0.9
130°-140°	60.0	1.3
140°-150°	65.4	1.4
150°-160°	56.9	1.2
160°-170°	38.2	0.8
170°-180°	13.3	0.3
0°-90°	4426.0	93.3
0°-180°	4741.5	100.0



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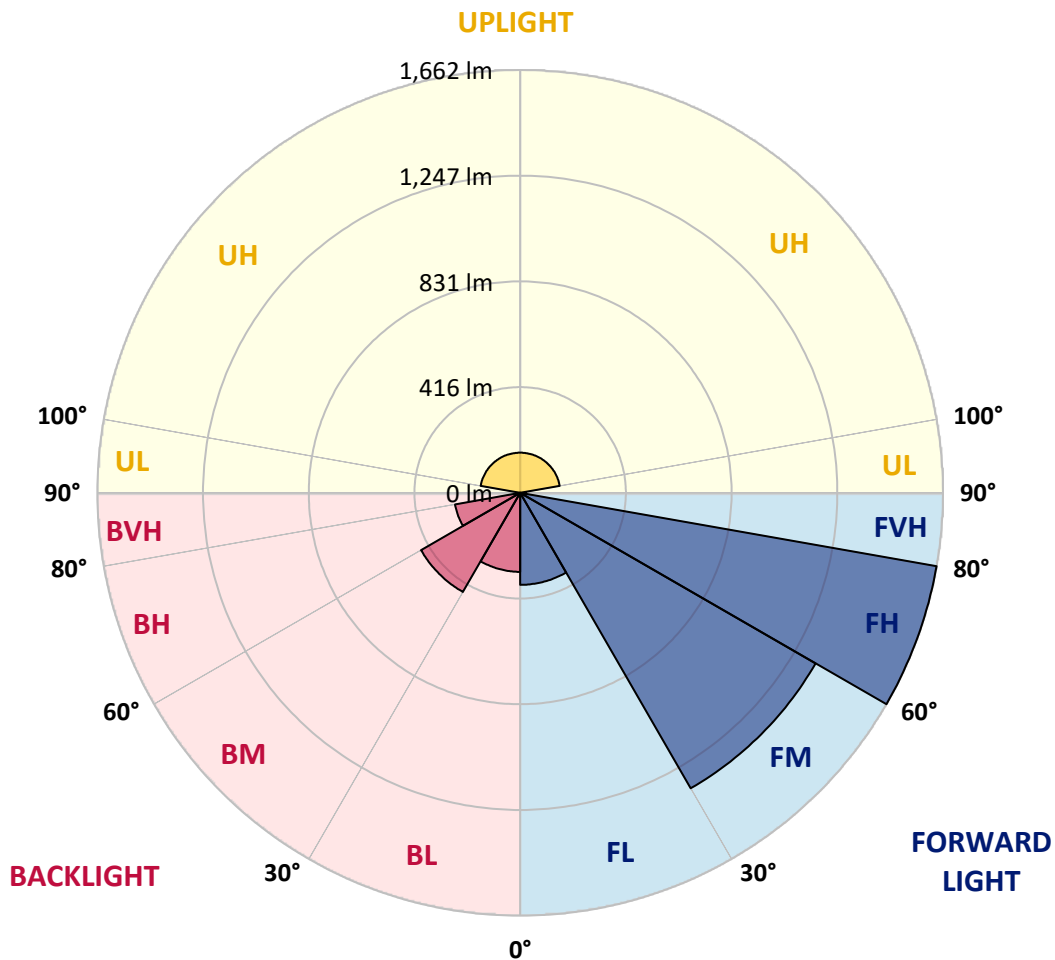
CATALOG NUMBER: ENV-F02-LED-E1-BL4-7050-ULG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	361.8	7.6			
FM	(30°-60°)	1341.2	28.3			
FH	(60°-80°)	1662.4	35.1			G1/1800
FVH	(80°-90°)	23.5	0.5			G1/100
BL	(0°-30°)	310.9	6.6	B1/500		
BM	(30°-60°)	450.2	9.5	B1/1000		
BH	(60°-80°)	259.9	5.5	B1/500		G1/500
BVH	(80°-90°)	16.1	0.3			G1/100
UL	(90°-100°)	1.3	0.0		U1/10	
UH	(100°-180°)	157.7	3.3		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°	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3
2.5°	942.8	942.8	944.5	944.5	947.0	948.7	947.0	950.4	950.4	949.6	951.3
5°	929.2	929.2	930.1	930.1	931.8	934.3	932.6	936.0	935.2	936.0	936.0
7.5°	913.1	913.1	914.8	914.0	914.8	916.5	912.3	914.8	914.8	915.7	914.8
10°	892.8	894.5	896.2	895.4	895.4	896.2	889.4	892.0	891.1	891.1	890.3
12.5°	874.2	872.5	874.2	875.9	875.0	875.0	868.3	866.6	866.6	866.6	867.4
15°	854.7	856.4	858.9	856.4	854.7	851.3	844.5	842.8	842.8	842.8	843.7
17.5°	850.5	850.5	852.2	849.6	842.8	836.1	822.5	820.0	820.0	819.1	819.1
20°	862.3	861.5	864.0	858.9	843.7	825.9	804.7	800.5	800.5	800.5	799.6
22.5°	886.9	886.9	891.1	885.2	860.6	826.7	795.4	788.6	787.8	786.9	785.2
25°	934.3	933.5	936.0	920.8	885.2	837.8	792.9	782.7	781.9	780.2	778.5
27.5°	989.4	991.1	996.2	973.3	920.8	857.2	803.9	786.9	785.2	782.7	779.3
30°	1043.6	1048.7	1058.0	1033.4	961.4	881.8	820.8	801.3	797.9	794.6	788.6
32.5°	1112.2	1110.5	1125.8	1088.5	997.0	908.1	838.6	814.9	810.7	805.6	797.9
35°	1185.1	1188.4	1191.8	1131.7	1026.7	929.2	849.6	822.5	817.4	812.3	801.3
37.5°	1257.9	1258.8	1251.1	1166.4	1044.4	941.9	855.5	824.2	817.4	809.8	797.1
40°	1324.8	1322.3	1299.4	1192.7	1054.6	948.7	858.1	820.8	812.3	804.7	790.3
42.5°	1362.9	1360.4	1331.6	1204.5	1055.5	947.9	858.1	817.4	808.1	798.8	782.7
45°	1379.0	1377.3	1344.3	1206.2	1049.5	942.8	853.0	814.0	804.7	796.3	779.3
47.5°	1380.7	1380.7	1346.9	1203.7	1044.4	939.4	853.0	818.3	810.7	803.9	791.2
50°	1373.1	1374.0	1347.7	1210.5	1048.7	947.0	861.5	828.4	820.8	814.0	799.6
52.5°	1462.9	1454.4	1396.0	1241.0	1076.6	971.6	890.3	860.6	858.1	853.9	842.8
55°	2149.0	2155.8	1836.5	1431.6	1194.4	1097.8	1063.9	1058.0	1076.6	1083.4	1083.4
57.5°	2728.4	2706.4	2586.1	2088.9	1562.0	1446.0	1459.5	1473.9	1501.0	1512.9	1521.3
60°	2869.9	2871.6	2868.2	2726.7	2305.7	2041.5	1975.4	1912.7	1910.2	1888.1	1871.2
62.5°	2853.0	2866.5	2930.0	2962.2	3003.7	2809.7	2406.5	2232.9	2199.0	2157.5	2098.2
65°	2730.1	2750.5	2852.1	3008.8	3366.3	3525.5	2697.1	2386.2	2333.7	2283.7	2183.8
67.5°	2326.1	2370.1	2564.9	2860.6	3409.5	3812.7	2744.5	2311.7	2242.2	2177.0	2058.4
70°	1435.8	1458.7	1759.4	2308.3	3089.3	3476.4	2492.1	1961.8	1873.7	1790.7	1628.9
72.5°	926.7	919.1	969.9	1300.3	2270.2	2701.3	1713.6	1304.5	1232.5	1166.4	1062.2
75°	648.9	649.7	626.8	620.1	1052.9	1673.0	775.9	557.4	525.2	511.6	489.6
77.5°	422.7	427.8	421.8	437.9	421.8	695.4	356.6	261.7	249.0	240.6	227.0
80°	255.0	271.9	277.0	280.4	284.6	262.6	211.8	154.2	138.9	124.5	102.5
82.5°	44.9	44.0	61.0	82.2	107.6	122.8	88.9	55.9	52.5	50.8	46.6
85°	0.0	0.0	0.8	0.8	1.7	5.9	9.3	11.0	10.2	11.0	11.9
87.5°	0.0	0.0	0.0	0.8	0.8	1.7	1.7	1.7	1.7	1.7	1.7
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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CATALOG NUMBER: ENV-F02-LED-E1-BL4-7050-ULG

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°	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3
2.5°	951.3	950.4	949.6	949.6	951.3	951.3	950.4	950.4	951.3	950.4	952.1
5°	936.9	936.0	936.0	935.2	936.0	936.9	936.0	936.0	936.9	936.0	937.7
7.5°	914.0	914.8	914.0	914.0	914.8	915.7	914.8	914.8	914.8	914.8	914.0
10°	890.3	890.3	889.4	889.4	891.1	890.3	889.4	889.4	890.3	891.1	889.4
12.5°	866.6	868.3	868.3	864.9	865.7	866.6	866.6	865.7	865.7	868.3	865.7
15°	842.8	843.7	842.8	843.7	842.0	841.1	842.0	842.0	840.3	839.5	839.5
17.5°	819.1	818.3	818.3	816.6	815.7	815.7	814.9	815.7	814.0	814.9	812.3
20°	797.9	797.1	796.3	796.3	793.7	793.7	793.7	792.9	791.2	791.2	790.3
22.5°	785.2	784.4	783.5	781.9	781.0	780.2	780.2	779.3	777.6	776.8	775.9
25°	778.5	777.6	775.9	774.2	773.4	772.5	772.5	771.7	770.0	768.3	767.5
27.5°	779.3	777.6	775.9	774.2	773.4	771.7	770.8	770.0	768.3	766.6	764.9
30°	786.9	783.5	780.2	777.6	775.1	772.5	770.8	770.0	767.5	764.9	762.4
32.5°	794.6	790.3	785.2	780.2	775.9	771.7	769.1	766.6	763.2	759.0	756.4
35°	797.1	792.0	784.4	780.2	774.2	769.1	764.9	761.5	755.6	750.5	746.3
37.5°	791.2	785.2	777.6	771.7	765.8	759.0	753.9	748.8	744.6	738.6	734.4
40°	781.9	775.1	767.5	759.0	753.1	746.3	741.2	737.0	731.0	725.9	722.6
42.5°	774.2	766.6	758.1	751.4	744.6	737.8	731.9	727.6	721.7	715.8	711.5
45°	771.7	764.1	757.3	748.8	742.0	737.0	731.9	725.9	720.9	715.8	710.7
47.5°	785.2	778.5	771.7	764.9	759.0	753.1	748.0	742.0	736.1	729.3	724.2
50°	792.9	785.2	779.3	771.7	764.9	759.0	753.9	748.0	743.7	737.0	731.9
52.5°	847.9	837.8	839.5	832.7	832.7	825.9	831.0	823.4	827.6	822.5	830.1
55°	1080.9	1084.3	1105.4	1108.8	1117.3	1116.4	1121.5	1143.6	1135.1	1124.1	1127.5
57.5°	1498.5	1506.1	1517.1	1506.9	1514.6	1516.3	1530.7	1524.7	1519.7	1516.3	1505.3
60°	1861.0	1850.9	1834.8	1815.3	1807.7	1799.2	1784.8	1784.8	1766.2	1760.2	1745.8
62.5°	2073.6	2044.0	2023.7	1992.3	1970.3	1955.1	1929.6	1910.2	1884.7	1865.3	1842.4
65°	2143.1	2093.1	2057.5	2018.6	1983.9	1950.8	1914.4	1886.4	1855.1	1833.9	1797.5
67.5°	2008.4	1957.6	1897.4	1855.9	1819.5	1778.0	1721.3	1686.5	1659.4	1618.8	1601.0
70°	1563.7	1510.3	1434.9	1414.6	1358.7	1294.3	1236.7	1202.0	1162.2	1134.2	1104.6
72.5°	991.9	931.8	898.7	874.2	837.8	784.4	734.4	714.1	679.4	671.7	652.2
75°	465.9	425.2	416.8	410.8	371.0	363.4	348.1	341.4	325.3	316.8	313.4
77.5°	208.4	199.1	183.8	179.6	166.9	154.2	138.9	132.1	123.7	118.6	111.8
80°	94.9	85.6	79.6	75.4	73.7	69.5	66.1	63.5	61.0	61.0	56.8
82.5°	45.7	44.0	42.4	42.4	39.8	39.8	37.3	36.4	35.6	34.7	34.7
85°	12.7	12.7	12.7	13.6	13.6	13.6	13.6	13.6	13.6	14.4	14.4
87.5°	1.7	1.7	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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: P160189

CATALOG NUMBER: ENV-F02-LED-E1-BL4-7050-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: P160189

CATALOG NUMBER: ENV-F02-LED-E1-BL4-7050-ULG

CANDELA DISTRIBUTION (continued):

	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°	86°
0°	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3
2.5°	951.3	951.3	951.3	953.0	952.1	954.7	954.7	954.7	956.3	957.2	956.3
5°	937.7	937.7	937.7	938.6	938.6	940.3	940.3	941.9	941.9	942.8	942.8
7.5°	915.7	916.5	916.5	918.2	917.4	918.2	918.2	920.8	920.8	921.6	921.6
10°	890.3	891.1	891.1	891.1	892.0	892.8	892.8	894.5	895.4	895.4	897.1
12.5°	866.6	865.7	866.6	865.7	868.3	868.3	869.1	868.3	869.1	869.9	870.8
15°	840.3	840.3	839.5	840.3	840.3	839.5	838.6	839.5	841.1	841.1	841.1
17.5°	814.0	811.5	811.5	811.5	810.7	809.0	810.7	809.8	809.8	810.7	809.8
20°	789.5	788.6	787.8	786.9	786.1	783.5	783.5	783.5	782.7	782.7	782.7
22.5°	774.2	773.4	772.5	771.7	768.3	766.6	765.8	764.9	763.2	762.4	761.5
25°	765.8	764.1	762.4	760.7	758.1	755.6	753.1	752.2	750.5	748.8	746.3
27.5°	763.2	761.5	758.1	756.4	753.1	750.5	748.0	745.4	742.9	740.3	737.8
30°	759.0	756.4	753.1	750.5	748.0	743.7	740.3	737.8	733.6	731.0	727.6
32.5°	753.1	749.7	746.3	742.9	739.5	735.3	731.0	727.6	724.2	720.9	716.6
35°	742.9	738.6	733.6	730.2	725.9	721.7	718.3	712.4	709.8	705.6	701.4
37.5°	729.3	725.1	720.9	716.6	711.5	708.2	703.1	698.0	695.4	692.9	687.0
40°	717.5	712.4	708.2	704.8	698.8	696.3	691.2	686.1	682.7	680.2	675.1
42.5°	706.5	701.4	697.1	692.1	687.8	684.4	680.2	675.1	671.7	670.0	665.8
45°	706.5	700.5	695.4	691.2	687.0	682.7	679.4	674.3	671.7	668.3	665.8
47.5°	718.3	711.5	705.6	699.7	693.8	689.5	684.4	679.4	675.1	672.6	669.2
50°	726.8	720.0	716.6	709.8	706.5	700.5	694.6	692.1	687.8	685.3	684.4
52.5°	830.1	825.9	826.7	809.8	806.4	814.9	801.3	813.2	809.8	799.6	799.6
55°	1146.9	1145.2	1152.9	1131.7	1122.4	1139.3	1146.1	1121.5	1127.5	1127.5	1125.8
57.5°	1516.3	1505.3	1494.2	1496.8	1483.2	1493.4	1480.7	1465.4	1471.4	1466.3	1448.5
60°	1736.5	1729.7	1713.6	1698.4	1684.0	1670.4	1658.6	1645.0	1638.2	1626.4	1613.7
62.5°	1825.4	1807.7	1788.2	1767.8	1745.0	1723.0	1709.4	1691.6	1673.0	1661.1	1647.6
65°	1778.0	1751.8	1730.6	1700.9	1676.4	1649.3	1631.5	1611.1	1594.2	1573.9	1556.9
67.5°	1566.2	1535.7	1479.8	1452.7	1416.3	1374.0	1362.1	1337.5	1328.2	1297.7	1247.7
70°	1066.5	1036.0	1002.1	947.0	911.5	875.0	835.2	806.4	802.2	777.6	741.2
72.5°	626.8	605.7	583.6	552.3	526.0	511.6	483.7	454.9	454.0	426.1	411.7
75°	296.5	285.5	263.4	255.8	232.1	230.4	212.6	209.2	212.6	204.1	202.5
77.5°	100.8	98.3	93.2	86.4	81.3	79.6	75.4	72.8	71.2	69.5	67.8
80°	55.1	53.4	52.5	50.0	48.3	47.4	44.9	44.0	43.2	42.4	41.5
82.5°	33.0	33.9	32.2	30.5	30.5	28.8	28.0	27.1	26.3	26.3	26.3
85°	13.6	14.4	13.6	12.7	11.9	12.7	12.7	11.9	11.0	11.9	11.9
87.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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
 CATALOG NUMBER:

DISTRIBUTION (continued):

CANDELA DISTRIBUTION

87°	88°	89°	90°	95°	105°	115°	125°	135°	145°	155°	87°	
956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3	956.3	112.5°	21.2
954.7	953.8	953.8	953.0	952.1	953.8	955.5	958.0	956.3	958.0	958.9	115°	25.0
941.1	941.1	941.1	941.9	941.1	943.6	947.0	952.1	953.0	956.3	958.9	117.5°	29.5
919.1	919.1	919.9	920.8	919.9	923.3	929.2	935.2	939.4	945.3	950.4	120°	34.8
893.7	893.7	893.7	893.7	894.5	898.7	903.0	909.8	916.5	925.9	933.5	122.5°	40.9
870.8	868.3	869.1	870.8	869.1	869.1	873.3	878.4	882.7	894.5	908.1	125°	47.8
840.3	840.3	838.6	839.5	835.2	834.4	836.1	839.5	842.8	853.0	867.4	127.5°	55.3
808.1	808.1	808.1	805.6	802.2	793.7	792.9	792.9	792.9	800.5	817.4	130°	63.0
779.3	779.3	777.6	775.9	768.3	753.9	742.0	737.0	735.3	748.0	755.6	132.5°	70.5
759.0	758.1	754.7	753.1	741.2	718.3	699.7	685.3	681.0	685.3	687.8	135°	77.9
742.9	741.2	737.8	734.4	718.3	687.0	657.3	632.8	620.9	617.5	609.0	137.5°	85.3
733.6	731.0	725.9	722.6	701.4	661.6	622.6	590.4	568.4	552.3	537.0	140°	92.5
723.4	719.2	714.1	709.0	685.3	641.2	596.3	556.5	517.6	489.6	467.6	142.5°	99.2
711.5	707.3	702.2	697.1	670.9	622.6	575.2	526.0	471.8	433.7	400.7	145°	104.9
697.1	692.9	687.8	681.9	655.6	607.4	560.8	496.4	431.2	382.0	338.8	147.5°	110.1
682.7	678.5	673.4	667.5	641.2	599.7	552.3	468.4	393.9	333.7	277.0	150°	115.1
671.7	667.5	662.4	657.3	633.6	596.3	548.1	444.7	360.9	286.3	221.1	152.5°	119.7
662.4	658.2	653.9	648.9	628.5	598.0	538.7	424.4	328.7	238.9	173.7	155°	123.7
661.6	659.0	653.9	649.7	630.2	605.7	531.1	406.6	295.6	193.1	146.5	157.5°	127.0
667.5	664.1	660.7	657.3	642.1	625.1	526.0	388.0	258.4	155.9	139.8	160°	130.3
681.9	678.5	676.8	675.1	665.8	651.4	526.0	368.5	215.2	137.2	138.9	162.5°	133.5
797.9	788.6	786.1	792.9	767.5	695.4	529.4	344.8	168.6	131.3	139.8	165°	136.0
1122.4	1131.7	1108.0	1096.1	1052.1	804.7	532.0	309.2	137.2	130.4	138.1	167.5°	137.1
1450.2	1450.2	1441.7	1423.1	1368.9	991.1	543.8	252.4	125.4	128.8	136.4	170°	137.4
1610.3	1600.1	1591.7	1580.6	1498.5	1120.7	561.6	186.4	120.3	127.9	134.7	172.5°	138.6
1639.1	1623.0	1612.0	1597.6	1488.3	1127.5	569.2	139.8	115.2	127.9	130.4	175°	140.5
1544.2	1527.3	1512.9	1489.2	1356.2	1020.7	531.1	114.4	111.8	124.5	126.2	177.5°	141.1
1251.1	1230.8	1219.8	1207.9	1119.8	896.2	429.5	102.5	107.6	118.6	122.0	180°	140.8
715.8	693.8	681.0	683.6	630.2	709.0	343.1	94.0	101.6	111.8	116.9		
385.4	361.7	354.1	329.5	281.2	357.5	264.3	86.4	94.0	101.6	106.7		
190.6	182.1	184.7	172.8	146.5	110.1	170.3	77.1	83.9	91.5	94.9		
66.1	64.4	63.5	62.7	61.0	58.4	77.9	66.1	72.0	77.9	81.3		
40.7	39.8	40.7	39.8	39.0	44.9	50.0	52.5	57.6	65.2	66.1		
24.6	24.6	24.6	24.6	24.6	31.3	35.6	40.7	44.9	50.0	54.2		
11.9	11.9	11.9	11.9	12.7	21.2	23.7	29.6	31.3	35.6	39.0		
2.5	2.5	2.5	2.5	3.4	11.0	14.4	17.8	18.6	18.6	21.2		
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		

'160189
 ENV-F02-LED-E1-BL4-7050-ULG

REPORT NUMBER: P160189
 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°	956.3	956.3
25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	2.5°	958.0	956.3
29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	5°	960.6	958.9
34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	7.5°	953.8	954.7
40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	10°	939.4	941.9
47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	12.5°	916.5	921.6
55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	15°	878.4	886.0
63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	17.5°	827.6	836.9
70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	20°	764.1	768.3
77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	22.5°	686.1	687.8
85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	25°	604.0	604.0
92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	27.5°	527.7	523.5
99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	30°	454.9	443.9
104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	32.5°	377.8	359.2
110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	35°	299.9	284.6
115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	37.5°	232.9	216.0
119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	40°	178.7	166.0
123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	42.5°	150.8	148.2
127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	45°	144.0	147.4
130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	47.5°	144.8	149.1
133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	50°	145.7	149.9
136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	52.5°	145.7	148.2
137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	55°	144.0	144.0
137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	57.5°	140.6	139.8
138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	60°	138.1	138.1
140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	62.5°	133.8	133.8
141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	65°	127.1	127.9
140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	67.5°	120.3	120.3
										70°	111.8	111.8
										72.5°	103.3	106.7
										75°	97.4	103.3
										77.5°	85.6	91.5
										80°	70.3	71.2
										82.5°	55.9	54.2
										85°	39.8	37.3
										87.5°	21.2	20.3
										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: P160189

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

LED-E1-BL4-7050-ULG

tinued):

180°
956.3
955.5
958.0
953.8
942.8
925.0
884.3
836.9
765.8
685.3
600.6
521.0
440.5
359.2
280.4
210.9
165.2
149.1
147.4
149.9
150.8
148.2
144.0
141.5
138.1
133.8
127.9
120.3
113.5
108.4
105.9
94.9
71.2
51.7
37.3
21.2
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

