

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: P160129

Luminaire Tested: **ENV-E02-LED-E1-BL4-7050-ULG**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P160129
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-E02-LED-E1-BL4-7050-ULG
Description: ENTRI LED LUMINAIRE WITH UPLIGHT
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (42) 5000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5676.9 lumens
Efficiency: N/A
Efficacy: 103.4 lumens/watt
Luminous Opening: Rectangular (W 0.33' x L: 1' x H: 0')
IES Classification: Type III - Short - Cutoff
BUG Rating: B1 - U3 - G2

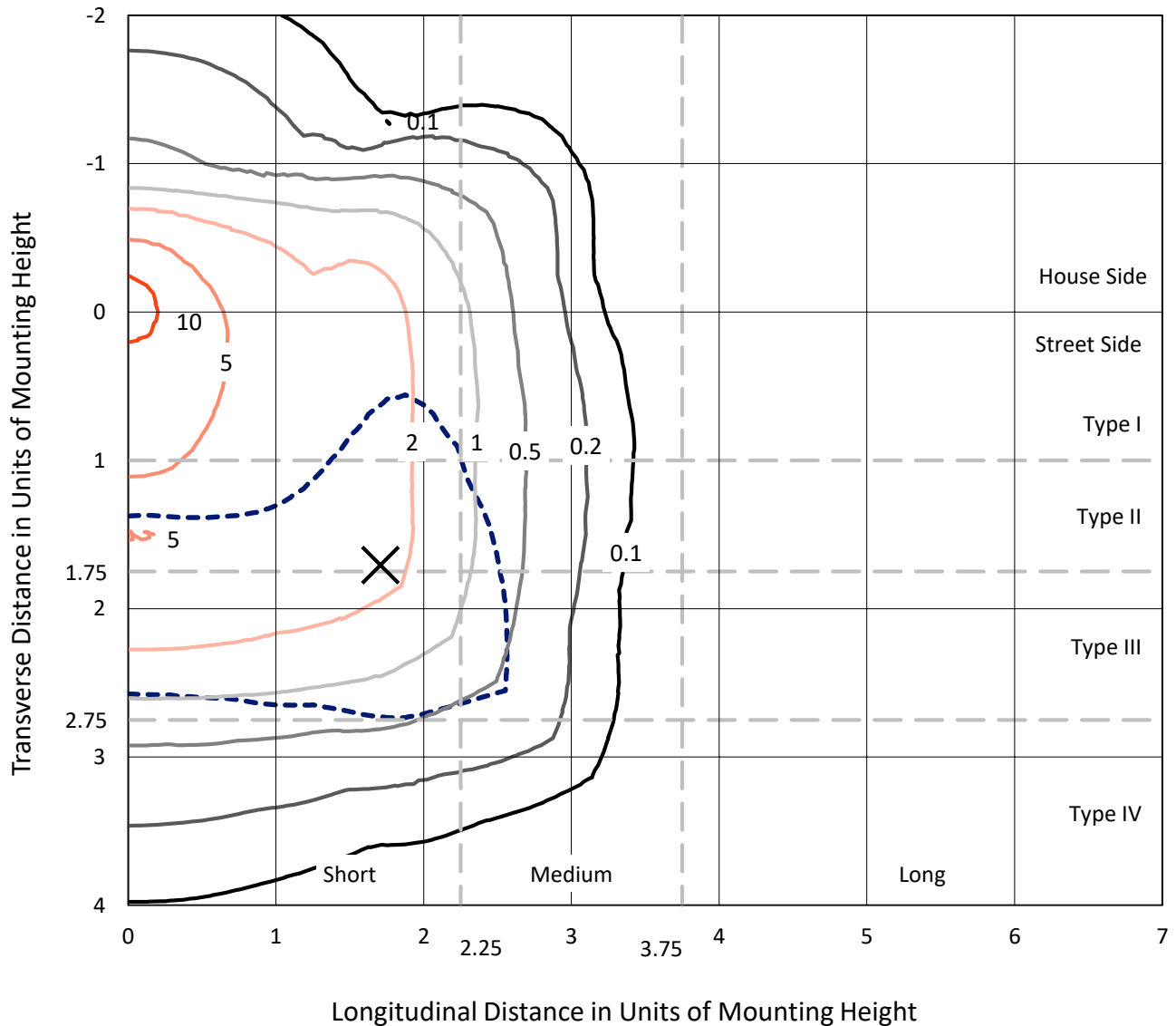
Input Watts (W): 54.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

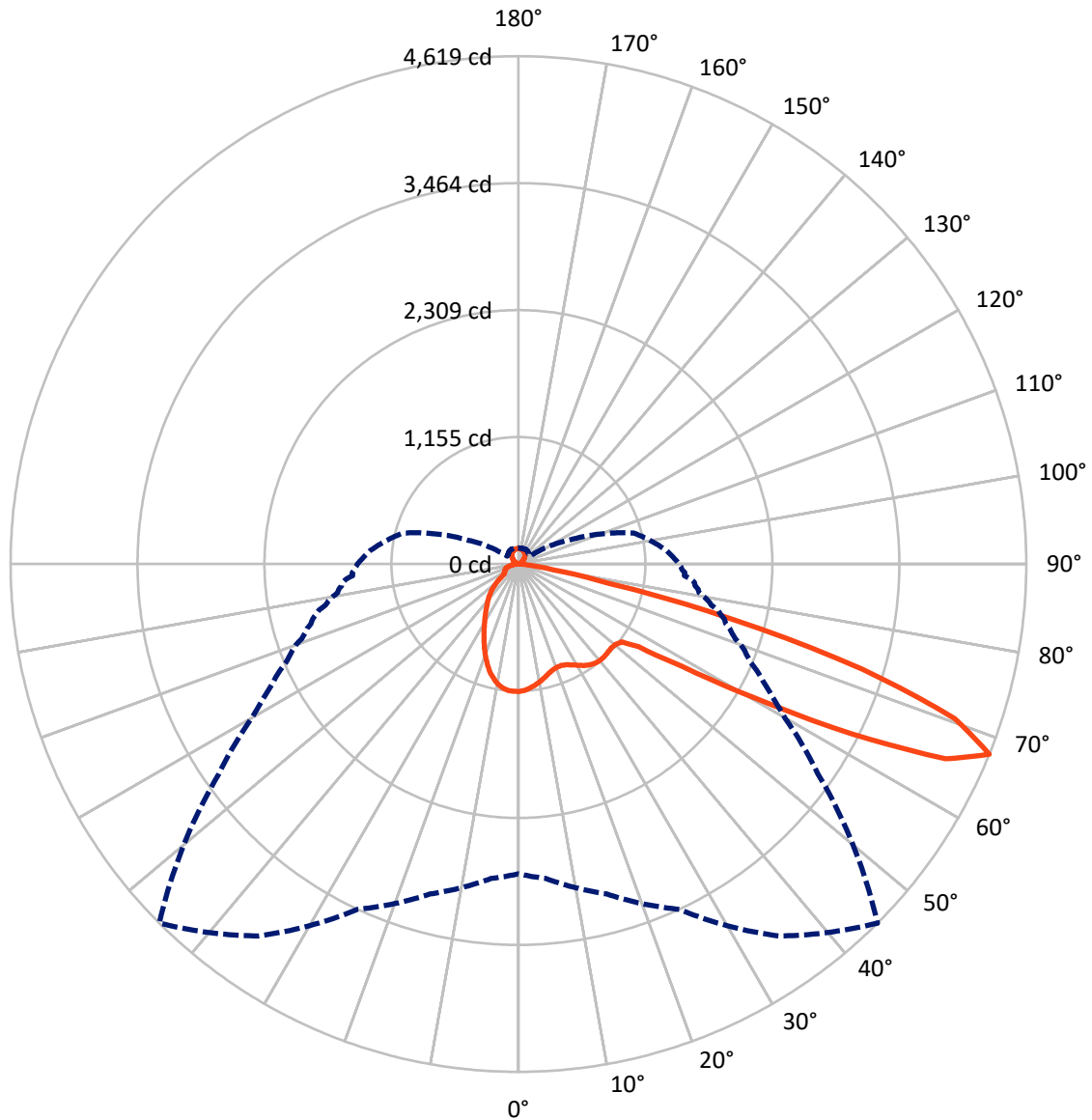
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 11.6 fc
 Type III - Short - 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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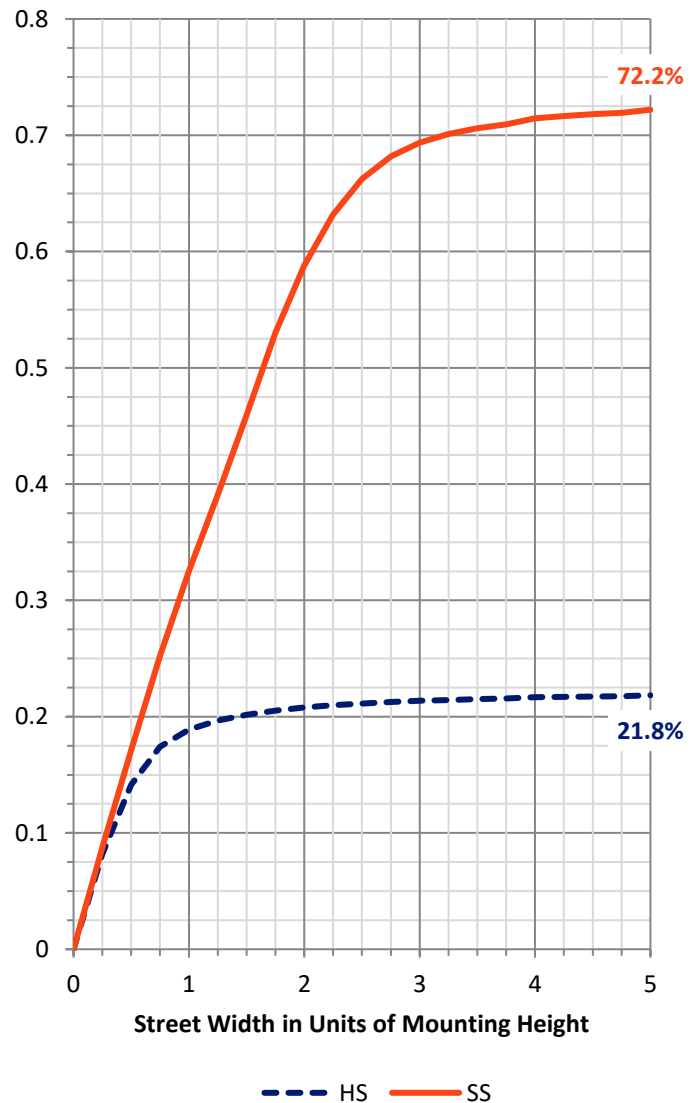
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1256.4	157.7	1414.1
	% Fixture	22.1	2.8	24.9
Street Side	Lumens	4105.1	157.7	4262.8
	% Fixture	72.3	2.8	75.1
Total	Lumens	5361.5	315.5	5676.9
	% Fixture	94.4	5.6	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	107.6	1.9
10°-20°	289.7	5.1
20°-30°	417.6	7.4
30°-40°	532.8	9.4
40°-50°	628.8	11.1
50°-60°	1008.5	17.8
60°-70°	1697.3	29.9
70°-80°	631.3	11.1
80°-90°	48.0	0.8
90°-100°	1.3	0.0
100°-110°	12.3	0.2
110°-120°	25.2	0.4
120°-130°	43.0	0.8
130°-140°	60.0	1.1
140°-150°	65.4	1.2
150°-160°	56.9	1.0
160°-170°	38.2	0.7
170°-180°	13.3	0.2
0°-90°	5361.5	94.4
0°-180°	5676.9	100.0



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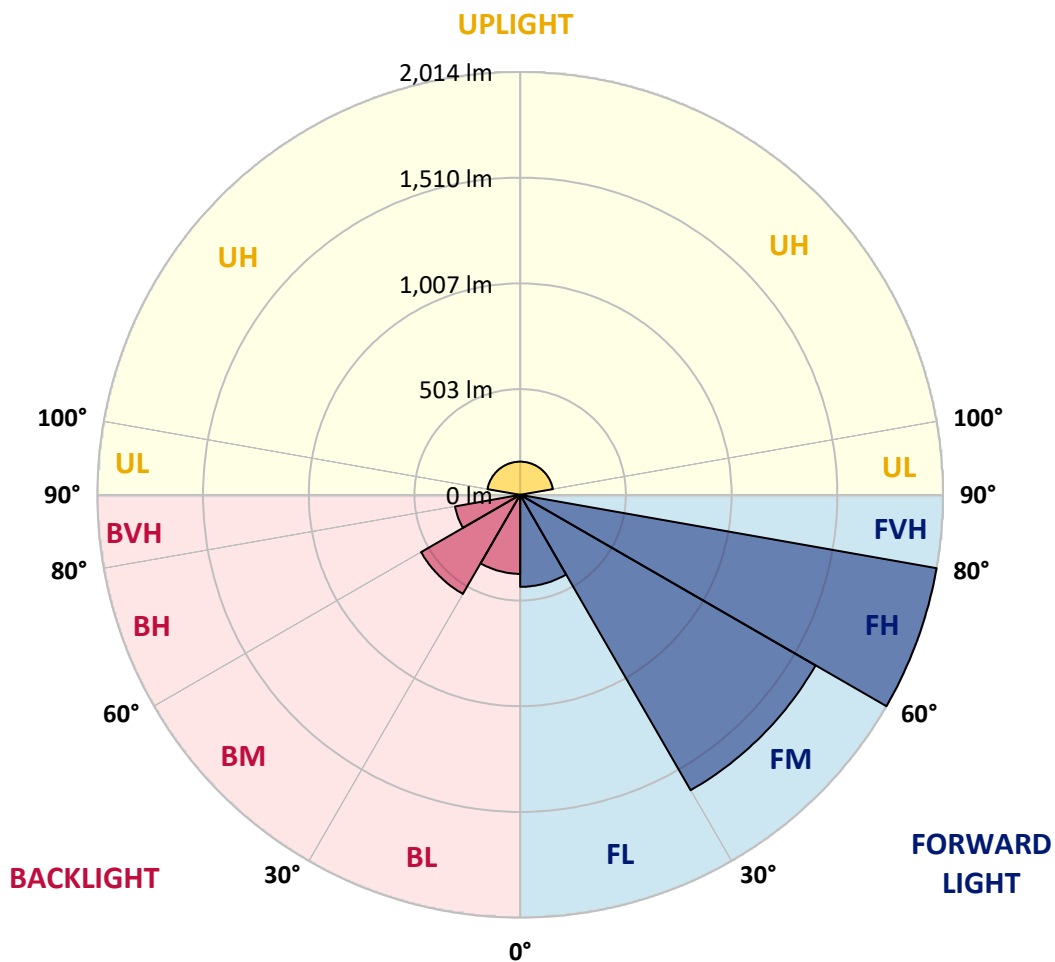
CATALOG NUMBER: ENV-E02-LED-E1-BL4-7050-ULG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	438.3	7.7			
FM	(30°-60°)	1624.7	28.6			
FH	(60°-80°)	2013.7	35.5			G2/5000
FVH	(80°-90°)	28.5	0.5			G1/100
BL	(0°-30°)	376.6	6.6	B1/500		
BM	(30°-60°)	545.4	9.6	B1/1000		
BH	(60°-80°)	314.8	5.5	B1/500		G1/500
BVH	(80°-90°)	19.5	0.3			G1/100
UL	(90°-100°)	1.3	0.0		U1/10	
UH	(100°-180°)	157.7	2.8		U3/500	

BUG Rating: B1-U3-G2

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	61°	62°	64°
0°	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5
2.5°	1142.1	1142.1	1144.1	1144.1	1147.2	1149.2	1147.2	1151.3	1151.3	1150.3	1152.3
5°	1125.6	1125.6	1126.7	1126.7	1128.7	1131.8	1129.7	1133.8	1132.8	1133.8	1133.8
7.5°	1106.1	1106.1	1108.2	1107.2	1108.2	1110.2	1105.1	1108.2	1108.2	1109.2	1108.2
10°	1081.5	1083.6	1085.6	1084.6	1084.6	1085.6	1077.4	1080.5	1079.5	1079.5	1078.4
12.5°	1058.9	1056.9	1058.9	1061.0	1060.0	1060.0	1051.8	1049.7	1049.7	1049.7	1050.7
15°	1035.3	1037.4	1040.5	1037.4	1035.3	1031.2	1023.0	1021.0	1021.0	1021.0	1022.0
17.5°	1030.2	1030.2	1032.3	1029.2	1021.0	1012.8	996.3	993.3	993.3	992.2	992.2
20°	1044.6	1043.5	1046.6	1040.5	1022.0	1000.5	974.8	969.7	969.7	969.7	968.6
22.5°	1074.3	1074.3	1079.5	1072.3	1042.5	1001.5	963.5	955.3	954.3	953.3	951.2
25°	1131.8	1130.8	1133.8	1115.4	1072.3	1014.8	960.4	948.1	947.1	945.0	943.0
27.5°	1198.5	1200.5	1206.7	1179.0	1115.4	1038.4	973.8	953.3	951.2	948.1	944.0
30°	1264.2	1270.3	1281.6	1251.8	1164.6	1068.2	994.3	970.7	966.6	962.5	955.3
32.5°	1347.3	1345.2	1363.7	1318.5	1207.7	1100.0	1015.8	987.1	982.0	975.8	966.6
35°	1435.5	1439.6	1443.7	1370.9	1243.6	1125.6	1029.2	996.3	990.2	984.0	970.7
37.5°	1523.8	1524.8	1515.6	1412.9	1265.2	1141.0	1036.4	998.4	990.2	981.0	965.6
40°	1604.8	1601.8	1574.0	1444.8	1277.5	1149.2	1039.4	994.3	984.0	974.8	957.4
42.5°	1651.0	1647.9	1613.0	1459.1	1278.5	1148.2	1039.4	990.2	978.9	967.6	948.1
45°	1670.5	1668.4	1628.4	1461.2	1271.3	1142.1	1033.3	986.1	974.8	964.5	944.0
47.5°	1672.6	1672.6	1631.5	1458.1	1265.2	1138.0	1033.3	991.2	982.0	973.8	958.4
50°	1663.3	1664.3	1632.5	1466.3	1270.3	1147.2	1043.5	1003.5	994.3	986.1	968.6
52.5°	1772.1	1761.8	1691.0	1503.2	1304.2	1176.9	1078.4	1042.5	1039.4	1034.3	1021.0
55°	2603.2	2611.4	2224.6	1734.1	1446.8	1329.8	1288.8	1281.6	1304.2	1312.4	1312.4
57.5°	3305.1	3278.4	3132.7	2530.4	1892.1	1751.6	1768.0	1785.4	1818.3	1832.6	1842.9
60°	3476.4	3478.5	3474.4	3303.0	2793.1	2472.9	2392.9	2316.9	2313.9	2287.2	2266.7
62.5°	3455.9	3472.3	3549.3	3588.3	3638.6	3403.6	2915.2	2704.8	2663.8	2613.5	2541.7
65°	3307.1	3331.8	3454.9	3644.7	4077.7	4270.7	3267.1	2890.5	2826.9	2766.4	2645.3
67.5°	2817.7	2871.0	3107.0	3465.2	4130.1	4618.5	3324.6	2800.2	2716.1	2637.1	2493.4
70°	1739.2	1767.0	2131.2	2796.1	3742.2	4211.1	3018.8	2376.5	2269.7	2169.2	1973.2
72.5°	1122.6	1113.3	1174.9	1575.1	2750.0	3272.3	2075.8	1580.2	1493.0	1412.9	1286.7
75°	786.0	787.0	759.3	751.1	1275.4	2026.6	939.9	675.2	636.2	619.8	593.1
77.5°	512.0	518.2	511.0	530.5	511.0	842.4	432.0	317.1	301.7	291.4	275.0
80°	308.9	329.4	335.5	339.6	344.8	318.1	256.5	186.8	168.3	150.8	124.2
82.5°	54.4	53.4	73.9	99.5	130.3	148.8	107.7	67.7	63.6	61.6	56.4
85°	0.0	0.0	1.0	1.0	2.1	7.2	11.3	13.3	12.3	13.3	14.4
87.5°	0.0	0.0	0.0	1.0	1.0	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



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CATALOG NUMBER: ENV-E02-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°	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5
2.5°	1152.3	1151.3	1150.3	1150.3	1152.3	1152.3	1151.3	1151.3	1152.3	1151.3	1153.3
5°	1134.9	1133.8	1133.8	1132.8	1133.8	1134.9	1133.8	1133.8	1134.9	1133.8	1135.9
7.5°	1107.2	1108.2	1107.2	1107.2	1108.2	1109.2	1108.2	1108.2	1108.2	1108.2	1107.2
10°	1078.4	1078.4	1077.4	1077.4	1079.5	1078.4	1077.4	1077.4	1078.4	1079.5	1077.4
12.5°	1049.7	1051.8	1051.8	1047.7	1048.7	1049.7	1049.7	1048.7	1048.7	1051.8	1048.7
15°	1021.0	1022.0	1021.0	1022.0	1019.9	1018.9	1019.9	1019.9	1017.9	1016.9	1016.9
17.5°	992.2	991.2	991.2	989.2	988.1	988.1	987.1	988.1	986.1	987.1	984.0
20°	966.6	965.6	964.5	964.5	961.5	961.5	961.5	960.4	958.4	958.4	957.4
22.5°	951.2	950.2	949.1	947.1	946.1	945.0	945.0	944.0	942.0	940.9	939.9
25°	943.0	942.0	939.9	937.9	936.8	935.8	935.8	934.8	932.7	930.7	929.7
27.5°	944.0	942.0	939.9	937.9	936.8	934.8	933.8	932.7	930.7	928.6	926.6
30°	953.3	949.1	945.0	942.0	938.9	935.8	933.8	932.7	929.7	926.6	923.5
32.5°	962.5	957.4	951.2	945.0	939.9	934.8	931.7	928.6	924.5	919.4	916.3
35°	965.6	959.4	950.2	945.0	937.9	931.7	926.6	922.5	915.3	909.1	904.0
37.5°	958.4	951.2	942.0	934.8	927.6	919.4	913.2	907.1	901.9	894.8	889.6
40°	947.1	938.9	929.7	919.4	912.2	904.0	897.8	892.7	885.5	879.4	875.3
42.5°	937.9	928.6	918.4	910.2	901.9	893.7	886.6	881.4	874.2	867.1	861.9
45°	934.8	925.5	917.3	907.1	898.9	892.7	886.6	879.4	873.2	867.1	860.9
47.5°	951.2	943.0	934.8	926.6	919.4	912.2	906.1	898.9	891.7	883.5	877.3
50°	960.4	951.2	944.0	934.8	926.6	919.4	913.2	906.1	900.9	892.7	886.6
52.5°	1027.1	1014.8	1016.9	1008.7	1008.7	1000.5	1006.6	997.4	1002.5	996.3	1005.6
55°	1309.3	1313.4	1339.1	1343.2	1353.4	1352.4	1358.6	1385.2	1375.0	1361.6	1365.7
57.5°	1815.2	1824.4	1837.8	1825.4	1834.7	1836.7	1854.2	1847.0	1840.8	1836.7	1823.4
60°	2254.4	2242.0	2222.5	2198.9	2189.7	2179.4	2162.0	2162.0	2139.4	2132.2	2114.8
62.5°	2511.9	2476.0	2451.4	2413.4	2386.7	2368.3	2337.5	2313.9	2283.1	2259.5	2231.8
65°	2596.0	2535.5	2492.4	2445.2	2403.1	2363.1	2319.0	2285.1	2247.2	2221.5	2177.4
67.5°	2432.9	2371.3	2298.5	2248.2	2204.1	2153.8	2085.0	2043.0	2010.1	1960.9	1939.3
70°	1894.2	1829.5	1738.2	1713.6	1645.9	1567.9	1498.1	1456.0	1407.8	1374.0	1338.0
72.5°	1201.6	1128.7	1088.7	1058.9	1014.8	950.2	889.6	865.0	822.9	813.7	790.1
75°	564.4	515.1	504.8	497.7	449.4	440.2	421.7	413.5	394.0	383.8	379.7
77.5°	252.4	241.1	222.7	217.5	202.1	186.8	168.3	160.1	149.8	143.7	135.4
80°	114.9	103.6	96.5	91.3	89.3	84.1	80.0	77.0	73.9	73.9	68.7
82.5°	55.4	53.4	51.3	51.3	48.2	48.2	45.1	44.1	43.1	42.1	42.1
85°	15.4	15.4	15.4	16.4	16.4	16.4	16.4	16.4	16.4	17.4	17.4
87.5°	2.1	2.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
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: P160129

CATALOG NUMBER: ENV-E02-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: P160129
 CATALOG NUMBER: ENV-E02-LED-E1-BL4-7050-ULG

CANDELA DISTRIBUTION (continued):

	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°	86°
0°	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5
2.5°	1152.3	1152.3	1152.3	1154.4	1153.3	1156.4	1156.4	1156.4	1158.5	1159.5	1158.5
5°	1135.9	1135.9	1135.9	1136.9	1136.9	1139.0	1139.0	1141.0	1141.0	1142.1	1142.1
7.5°	1109.2	1110.2	1110.2	1112.3	1111.3	1112.3	1112.3	1115.4	1115.4	1116.4	1116.4
10°	1078.4	1079.5	1079.5	1079.5	1080.5	1081.5	1081.5	1083.6	1084.6	1084.6	1086.6
12.5°	1049.7	1048.7	1049.7	1048.7	1051.8	1051.8	1052.8	1051.8	1052.8	1053.8	1054.8
15°	1017.9	1017.9	1016.9	1017.9	1017.9	1016.9	1015.8	1016.9	1018.9	1018.9	1018.9
17.5°	986.1	983.0	983.0	983.0	982.0	979.9	982.0	981.0	981.0	982.0	981.0
20°	956.3	955.3	954.3	953.3	952.2	949.1	949.1	949.1	948.1	948.1	948.1
22.5°	937.9	936.8	935.8	934.8	930.7	928.6	927.6	926.6	924.5	923.5	922.5
25°	927.6	925.5	923.5	921.4	918.4	915.3	912.2	911.2	909.1	907.1	904.0
27.5°	924.5	922.5	918.4	916.3	912.2	909.1	906.1	903.0	899.9	896.8	893.7
30°	919.4	916.3	912.2	909.1	906.1	900.9	896.8	893.7	888.6	885.5	881.4
32.5°	912.2	908.1	904.0	899.9	895.8	890.7	885.5	881.4	877.3	873.2	868.1
35°	899.9	894.8	888.6	884.5	879.4	874.2	870.1	863.0	859.9	854.7	849.6
37.5°	883.5	878.3	873.2	868.1	861.9	857.8	851.7	845.5	842.4	839.4	832.2
40°	869.1	863.0	857.8	853.7	846.5	843.5	837.3	831.1	827.0	824.0	817.8
42.5°	855.8	849.6	844.5	838.3	833.2	829.1	824.0	817.8	813.7	811.6	806.5
45°	855.8	848.6	842.4	837.3	832.2	827.0	822.9	816.8	813.7	809.6	806.5
47.5°	870.1	861.9	854.7	847.6	840.4	835.2	829.1	822.9	817.8	814.7	810.6
50°	880.4	872.2	868.1	859.9	855.8	848.6	841.4	838.3	833.2	830.1	829.1
52.5°	1005.6	1000.5	1001.5	981.0	976.9	987.1	970.7	985.1	981.0	968.6	968.6
55°	1389.3	1387.3	1396.5	1370.9	1359.6	1380.1	1388.3	1358.6	1365.7	1365.7	1363.7
57.5°	1836.7	1823.4	1810.0	1813.1	1796.7	1809.0	1793.6	1775.2	1782.3	1776.2	1754.6
60°	2103.5	2095.3	2075.8	2057.3	2039.9	2023.5	2009.1	1992.7	1984.5	1970.1	1954.7
62.5°	2211.3	2189.7	2166.1	2141.5	2113.8	2087.1	2070.7	2049.1	2026.6	2012.2	1995.8
65°	2153.8	2122.0	2096.3	2060.4	2030.7	1997.8	1976.3	1951.7	1931.1	1906.5	1886.0
67.5°	1897.3	1860.3	1792.6	1759.8	1715.6	1664.3	1650.0	1620.2	1608.9	1572.0	1511.5
70°	1291.9	1254.9	1213.9	1147.2	1104.1	1060.0	1011.7	976.9	971.7	942.0	897.8
72.5°	759.3	733.7	707.0	669.0	637.2	619.8	585.9	551.0	550.0	516.1	498.7
75°	359.1	345.8	319.1	309.9	281.2	279.1	257.6	253.4	257.6	247.3	245.2
77.5°	122.1	119.0	112.9	104.7	98.5	96.5	91.3	88.2	86.2	84.1	82.1
80°	66.7	64.6	63.6	60.5	58.5	57.5	54.4	53.4	52.3	51.3	50.3
82.5°	40.0	41.0	39.0	36.9	36.9	34.9	33.9	32.8	31.8	31.8	31.8
85°	16.4	17.4	16.4	15.4	14.4	15.4	15.4	14.4	13.3	14.4	14.4
87.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
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: P160129
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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

NUMBER: ENV-E02-LED-E1-BL4-7050-ULG

CATALOG NUMBER:

DISTRIBUTION (continued):											CANDELA DISTRIBUTION:	
87°	88°	89°	90°	95°	105°	115°	125°	135°	145°	155°	112.5°	117.5°
1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	1158.5	112.5°	21.2
1156.4	1155.4	1155.4	1154.4	1153.3	1155.4	1157.4	1160.5	1158.5	1160.5	1161.6	115°	25.0
1140.0	1140.0	1140.0	1141.0	1140.0	1143.1	1147.2	1153.3	1154.4	1158.5	1161.6	117.5°	29.5
1113.3	1113.3	1114.4	1115.4	1114.4	1118.5	1125.6	1132.8	1138.0	1145.1	1151.3	120°	34.8
1082.5	1082.5	1082.5	1082.5	1083.6	1088.7	1093.8	1102.0	1110.2	1121.5	1130.8	122.5°	40.9
1054.8	1051.8	1052.8	1054.8	1052.8	1052.8	1057.9	1064.1	1069.2	1083.6	1100.0	125°	47.8
1017.9	1017.9	1015.8	1016.9	1011.7	1010.7	1012.8	1016.9	1021.0	1033.3	1050.7	127.5°	55.3
978.9	978.9	978.9	975.8	971.7	961.5	960.4	960.4	960.4	969.7	990.2	130°	63.0
944.0	944.0	942.0	939.9	930.7	913.2	898.9	892.7	890.7	906.1	915.3	132.5°	70.5
919.4	918.4	914.3	912.2	897.8	870.1	847.6	830.1	825.0	830.1	833.2	135°	77.9
899.9	897.8	893.7	889.6	870.1	832.2	796.3	766.5	752.1	748.0	737.8	137.5°	85.3
888.6	885.5	879.4	875.3	849.6	801.4	754.2	715.2	688.5	669.0	650.6	140°	92.5
876.3	871.2	865.0	858.9	830.1	776.8	722.4	674.2	627.0	593.1	566.4	142.5°	99.2
861.9	856.8	850.6	844.5	812.7	754.2	696.7	637.2	571.5	525.4	485.3	145°	104.9
844.5	839.4	833.2	826.0	794.2	735.7	679.3	601.3	522.3	462.8	410.4	147.5°	110.1
827.0	821.9	815.8	808.6	776.8	726.5	669.0	567.4	477.1	404.3	335.5	150°	115.1
813.7	808.6	802.4	796.3	767.5	722.4	663.9	538.7	437.1	346.8	267.8	152.5°	119.7
802.4	797.3	792.2	786.0	761.4	724.4	652.6	514.1	398.1	289.4	210.4	155°	123.7
801.4	798.3	792.2	787.0	763.4	733.7	643.4	492.5	358.1	234.0	177.5	157.5°	127.0
808.6	804.5	800.4	796.3	777.8	757.3	637.2	470.0	313.0	188.8	169.3	160°	130.3
826.0	821.9	819.9	817.8	806.5	789.1	637.2	446.4	260.6	166.2	168.3	162.5°	133.5
966.6	955.3	952.2	960.4	929.7	842.4	641.3	417.6	204.2	159.0	169.3	165°	136.0
1359.6	1370.9	1342.1	1327.8	1274.4	974.8	644.4	374.5	166.2	158.0	167.3	167.5°	137.1
1756.7	1756.7	1746.4	1723.9	1658.2	1200.5	658.8	305.8	151.9	156.0	165.2	170°	137.4
1950.6	1938.3	1928.1	1914.7	1815.2	1357.5	680.3	225.7	145.7	154.9	163.2	172.5°	138.6
1985.5	1966.0	1952.7	1935.2	1802.9	1365.7	689.5	169.3	139.6	154.9	158.0	175°	140.5
1870.6	1850.1	1832.6	1803.9	1642.8	1236.5	643.4	138.5	135.4	150.8	152.9	177.5°	141.1
1515.6	1490.9	1477.6	1463.2	1356.5	1085.6	520.2	124.2	130.3	143.7	147.8	180°	140.8
867.1	840.4	825.0	828.1	763.4	858.9	415.6	113.9	123.1	135.4	141.6		
466.9	438.1	428.9	399.2	340.7	433.0	320.1	104.7	113.9	123.1	129.3		
230.9	220.6	223.7	209.3	177.5	133.4	206.2	93.4	101.6	110.8	114.9		
80.0	78.0	77.0	75.9	73.9	70.8	94.4	80.0	87.2	94.4	98.5		
49.3	48.2	49.3	48.2	47.2	54.4	60.5	63.6	69.8	79.0	80.0		
29.8	29.8	29.8	29.8	29.8	38.0	43.1	49.3	54.4	60.5	65.7		
14.4	14.4	14.4	14.4	15.4	25.7	28.7	35.9	38.0	43.1	47.2		
3.1	3.1	3.1	3.1	4.1	13.3	17.4	21.5	22.6	22.6	25.7		
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		

'160129
 ENV-E02-LED-E1-BL4-7050-ULG

REPORT NUMBER: P160129
 CATALOG NUMBER: ENV-E02-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°	1158.5	1158.5
25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	2.5°	1160.5	1158.5
29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	5°	1163.6	1161.6
34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	7.5°	1155.4	1156.4
40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	10°	1138.0	1141.0
47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	12.5°	1110.2	1116.4
55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	15°	1064.1	1073.3
63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	17.5°	1002.5	1013.8
70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	20°	925.5	930.7
77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	22.5°	831.1	833.2
85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	25°	731.6	731.6
92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	27.5°	639.3	634.1
99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	30°	551.0	537.7
104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	32.5°	457.6	435.1
110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	35°	363.2	344.8
115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	37.5°	282.2	261.7
119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	40°	216.5	201.1
123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	42.5°	182.6	179.6
127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	45°	174.4	178.5
130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	47.5°	175.5	180.6
133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	50°	176.5	181.6
136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	52.5°	176.5	179.6
137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	55°	174.4	174.4
137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	57.5°	170.3	169.3
138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	60°	167.3	167.3
140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	62.5°	162.1	162.1
141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	65°	153.9	154.9
140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	67.5°	145.7	145.7
										70°	135.4	135.4
										72.5°	125.2	129.3
										75°	118.0	125.2
										77.5°	103.6	110.8
										80°	85.2	86.2
										82.5°	67.7	65.7
										85°	48.2	45.1
										87.5°	25.7	24.6
										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: P160129

CATALOG NUMBER: ENV-E02-LED-E1-BL

LED-E1-BL4-7050-ULG

tinued):

180°
1158.5
1157.4
1160.5
1155.4
1142.1
1120.5
1071.3
1013.8
927.6
830.1
727.5
631.1
533.6
435.1
339.6
255.5
200.1
180.6
178.5
181.6
182.6
179.6
174.4
171.4
167.3
162.1
154.9
145.7
137.5
131.3
128.3
114.9
86.2
62.6
45.1
25.7
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

