

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: P160072

Luminaire Tested: **ENT-F02-LED-E1-BL4-ULG**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P160072
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: ENT-F02-LED-E1-BL4-ULG
Description: ENTRI LED LUMINAIRE WITH UPLIGHT
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (14) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4628.9 lumens
Efficiency: N/A
Efficacy: 80.8 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

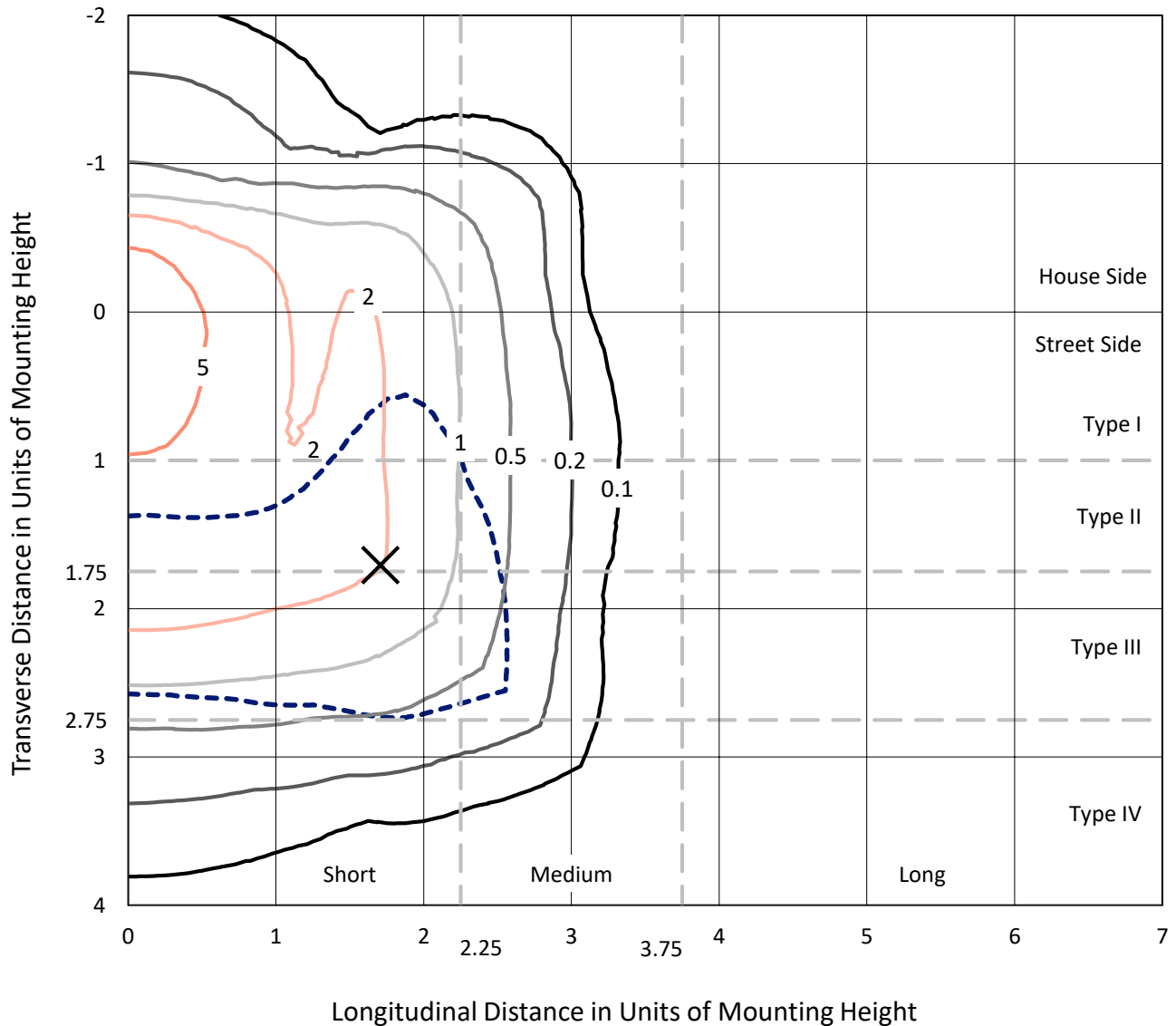
Input Watts (W): 57.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

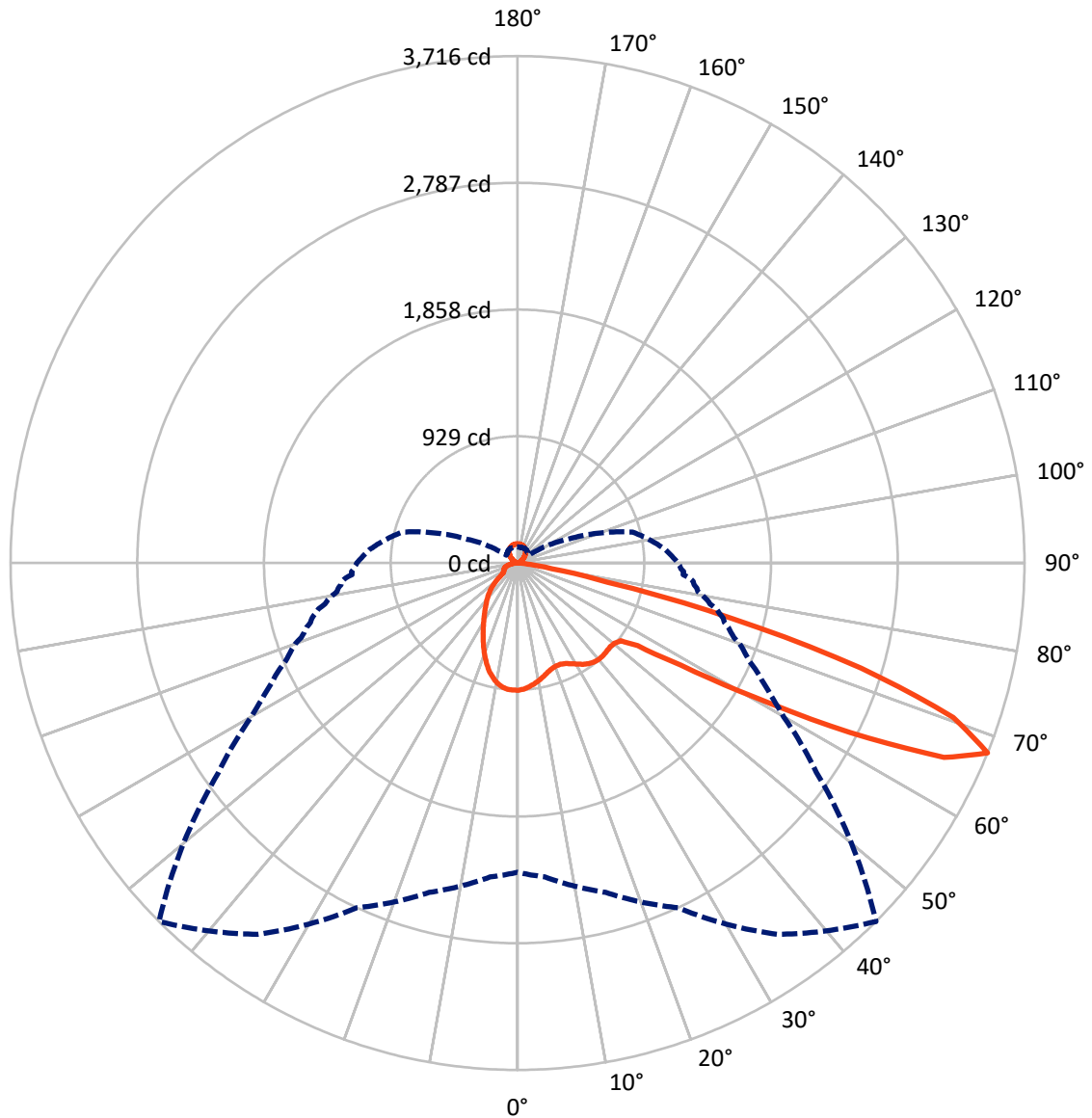
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 9.3 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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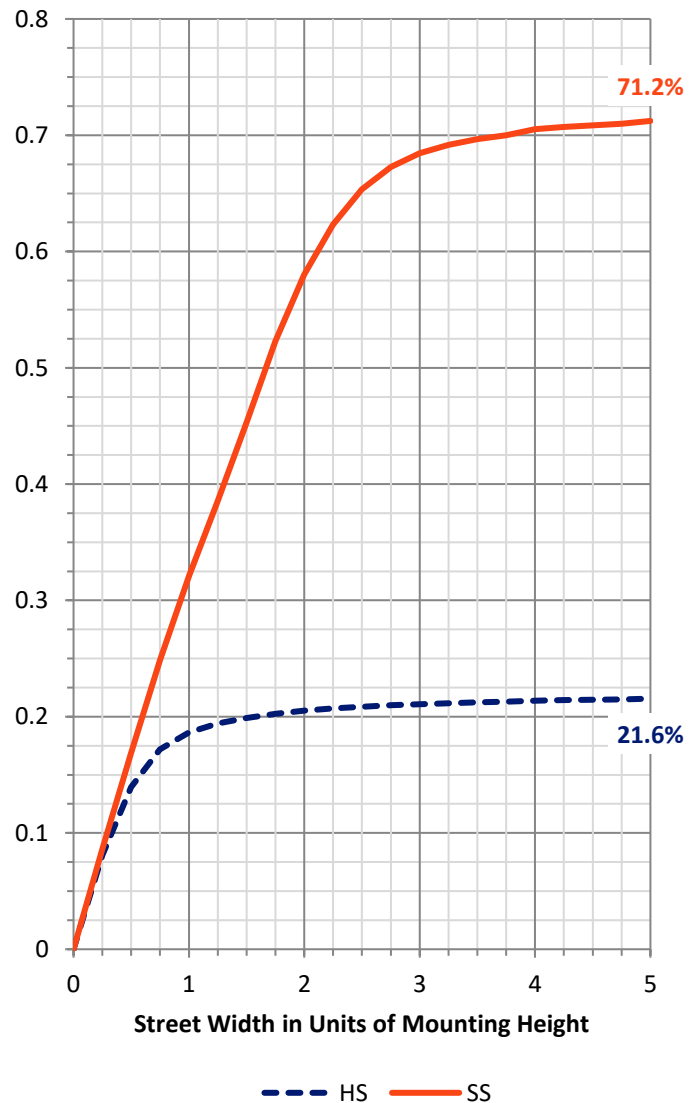
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1010.8	157.7	1168.5
	% Fixture	21.8	3.4	25.2
Street Side	Lumens	3302.7	157.7	3460.4
	% Fixture	71.3	3.4	74.8
Total	Lumens	4313.4	315.5	4628.9
	% Fixture	93.2	6.8	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	86.6	1.9
10°-20°	233.1	5.0
20°-30°	335.9	7.3
30°-40°	428.6	9.3
40°-50°	505.9	10.9
50°-60°	811.3	17.5
60°-70°	1365.5	29.5
70°-80°	507.9	11.0
80°-90°	38.6	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°	4313.4	93.2
0°-180°	4628.9	100.0



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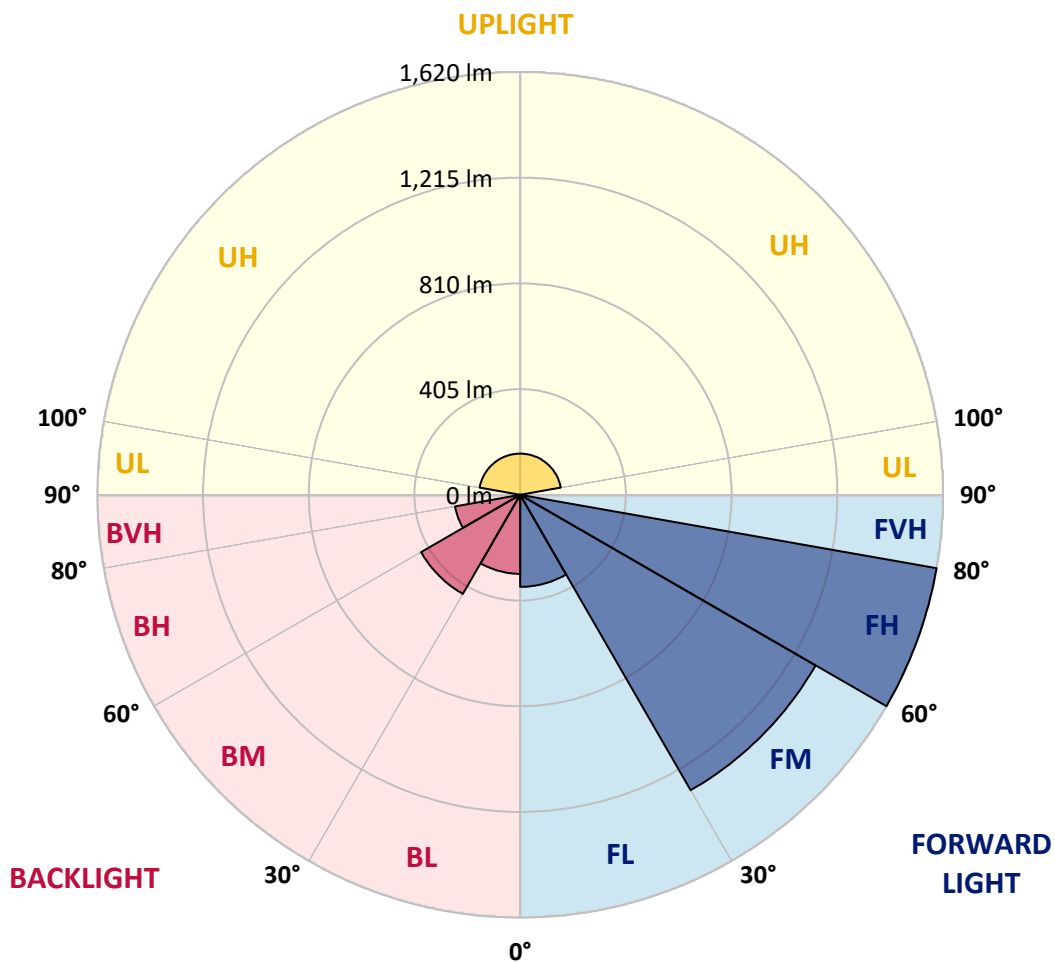
CATALOG NUMBER: ENT-F02-LED-E1-BL4-ULG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	352.6	7.6			
FM (30°-60°)	1307.1	28.2			
FH (60°-80°)	1620.1	35.0			G1/1800
FVH (80°-90°)	22.9	0.5			G1/100
BL (0°-30°)	303.0	6.5	B1/500		
BM (30°-60°)	438.8	9.5	B1/1000		
BH (60°-80°)	253.3	5.5	B1/500		G1/500
BVH (80°-90°)	15.7	0.3			G1/100
UL (90°-100°)	1.3	0.0		U1/10	
UH (100°-180°)	157.7	3.4		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°	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0
2.5°	918.8	918.8	920.5	920.5	922.9	924.6	922.9	926.2	926.2	925.4	927.1
5°	905.6	905.6	906.4	906.4	908.1	910.6	908.9	912.2	911.4	912.2	912.2
7.5°	889.9	889.9	891.6	890.7	891.6	893.2	889.1	891.6	891.6	892.4	891.6
10°	870.1	871.8	873.4	872.6	872.6	873.4	866.8	869.3	868.5	868.5	867.6
12.5°	851.9	850.3	851.9	853.6	852.8	852.8	846.2	844.5	844.5	844.5	845.3
15°	833.0	834.6	837.1	834.6	833.0	829.7	823.0	821.4	821.4	821.4	822.2
17.5°	828.8	828.8	830.5	828.0	821.4	814.8	801.6	799.1	799.1	798.3	798.3
20°	840.4	839.6	842.0	837.1	822.2	804.9	784.2	780.1	780.1	780.1	779.3
22.5°	864.3	864.3	868.5	862.7	838.7	805.7	775.2	768.6	767.7	766.9	765.3
25°	910.6	909.7	912.2	897.3	862.7	816.4	772.7	762.8	762.0	760.3	758.7
27.5°	964.2	965.9	970.8	948.5	897.3	835.4	783.4	766.9	765.3	762.8	759.5
30°	1017.0	1022.0	1031.1	1007.1	937.0	859.4	799.9	780.9	777.6	774.3	768.6
32.5°	1083.9	1082.3	1097.1	1060.8	971.6	885.0	817.3	794.2	790.0	785.1	777.6
35°	1154.9	1158.2	1161.5	1102.9	1000.5	905.6	828.0	801.6	796.6	791.7	780.9
37.5°	1225.9	1226.7	1219.3	1136.7	1017.9	918.0	833.8	803.2	796.6	789.2	776.8
40°	1291.1	1288.6	1266.4	1162.3	1027.8	924.6	836.3	799.9	791.7	784.2	770.2
42.5°	1328.3	1325.8	1297.7	1173.9	1028.6	923.8	836.3	796.6	787.6	778.5	762.8
45°	1344.0	1342.3	1310.1	1175.5	1022.8	918.8	831.3	793.3	784.2	776.0	759.5
47.5°	1345.6	1345.6	1312.6	1173.1	1017.9	915.5	831.3	797.5	790.0	783.4	771.0
50°	1338.2	1339.0	1313.4	1179.7	1022.0	922.9	839.6	807.4	799.9	793.3	779.3
52.5°	1425.7	1417.4	1360.5	1209.4	1049.2	946.9	867.6	838.7	836.3	832.1	821.4
55°	2094.4	2101.0	1789.7	1395.1	1164.0	1069.9	1036.9	1031.1	1049.2	1055.8	1055.8
57.5°	2659.0	2637.6	2520.3	2035.7	1522.3	1409.2	1422.4	1436.4	1462.8	1474.4	1482.6
60°	2796.9	2798.5	2795.2	2657.4	2247.1	1989.5	1925.1	1864.0	1861.6	1840.1	1823.6
62.5°	2780.4	2793.6	2855.5	2886.9	2927.3	2738.3	2345.3	2176.1	2143.1	2102.6	2044.8
65°	2660.7	2680.5	2779.5	2932.3	3280.6	3435.8	2628.5	2325.5	2274.3	2225.6	2128.2
67.5°	2266.9	2309.8	2499.7	2787.8	3322.7	3715.7	2674.7	2252.9	2185.2	2121.6	2006.0
70°	1399.3	1421.6	1714.6	2249.6	3010.7	3388.0	2428.7	1911.9	1826.1	1745.2	1587.5
72.5°	903.1	895.7	945.2	1267.2	2212.4	2632.6	1670.0	1271.3	1201.1	1136.7	1035.2
75°	632.4	633.2	610.9	604.3	1026.1	1630.4	756.2	543.2	511.8	498.6	477.2
77.5°	411.9	416.9	411.1	426.8	411.1	677.8	347.5	255.1	242.7	234.4	221.2
80°	248.5	265.0	269.9	273.2	277.4	255.9	206.4	150.2	135.4	121.4	99.9
82.5°	43.8	42.9	59.4	80.1	104.8	119.7	86.7	54.5	51.2	49.5	45.4
85°	0.0	0.0	0.8	0.8	1.7	5.8	9.1	10.7	9.9	10.7	11.6
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: ENT-F02-LED-E1-BL4-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°	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0
2.5°	927.1	926.2	925.4	925.4	927.1	927.1	926.2	926.2	927.1	926.2	927.9
5°	913.0	912.2	912.2	911.4	912.2	913.0	912.2	912.2	913.0	912.2	913.9
7.5°	890.7	891.6	890.7	890.7	891.6	892.4	891.6	891.6	891.6	891.6	890.7
10°	867.6	867.6	866.8	866.8	868.5	867.6	866.8	866.8	867.6	868.5	866.8
12.5°	844.5	846.2	846.2	842.9	843.7	844.5	844.5	843.7	843.7	846.2	843.7
15°	821.4	822.2	821.4	822.2	820.6	819.7	820.6	820.6	818.9	818.1	818.1
17.5°	798.3	797.5	797.5	795.8	795.0	795.0	794.2	795.0	793.3	794.2	791.7
20°	777.6	776.8	776.0	776.0	773.5	773.5	773.5	772.7	771.0	771.0	770.2
22.5°	765.3	764.4	763.6	762.0	761.1	760.3	760.3	759.5	757.8	757.0	756.2
25°	758.7	757.8	756.2	754.5	753.7	752.9	752.9	752.1	750.4	748.8	747.9
27.5°	759.5	757.8	756.2	754.5	753.7	752.1	751.2	750.4	748.8	747.1	745.4
30°	766.9	763.6	760.3	757.8	755.4	752.9	751.2	750.4	747.9	745.4	743.0
32.5°	774.3	770.2	765.3	760.3	756.2	752.1	749.6	747.1	743.8	739.7	737.2
35°	776.8	771.9	764.4	760.3	754.5	749.6	745.4	742.1	736.4	731.4	727.3
37.5°	771.0	765.3	757.8	752.1	746.3	739.7	734.7	729.8	725.6	719.9	715.7
40°	762.0	755.4	747.9	739.7	733.9	727.3	722.3	718.2	712.4	707.5	704.2
42.5°	754.5	747.1	738.8	732.2	725.6	719.0	713.3	709.1	703.3	697.6	693.4
45°	752.1	744.6	738.0	729.8	723.2	718.2	713.3	707.5	702.5	697.6	692.6
47.5°	765.3	758.7	752.1	745.4	739.7	733.9	728.9	723.2	717.4	710.8	705.8
50°	772.7	765.3	759.5	752.1	745.4	739.7	734.7	728.9	724.8	718.2	713.3
52.5°	826.4	816.4	818.1	811.5	811.5	804.9	809.8	802.4	806.5	801.6	809.0
55°	1053.4	1056.7	1077.3	1080.6	1088.9	1088.0	1093.0	1114.5	1106.2	1095.5	1098.8
57.5°	1460.4	1467.8	1478.5	1468.6	1476.0	1477.7	1491.7	1485.9	1481.0	1477.7	1467.0
60°	1813.7	1803.8	1788.1	1769.1	1761.7	1753.4	1739.4	1739.4	1721.2	1715.4	1701.4
62.5°	2020.9	1992.0	1972.2	1941.6	1920.2	1905.3	1880.5	1861.6	1836.8	1817.8	1795.5
65°	2088.6	2039.9	2005.2	1967.2	1933.4	1901.2	1865.7	1838.4	1807.9	1787.3	1751.8
67.5°	1957.3	1907.8	1849.2	1808.7	1773.2	1732.8	1677.5	1643.6	1617.2	1577.6	1560.2
70°	1523.9	1471.9	1398.4	1378.6	1324.1	1261.4	1205.3	1171.4	1132.6	1105.4	1076.5
72.5°	966.7	908.1	875.9	851.9	816.4	764.4	715.7	695.9	662.1	654.6	635.7
75°	454.0	414.4	406.2	400.4	361.6	354.2	339.3	332.7	317.0	308.7	305.4
77.5°	203.1	194.0	179.1	175.0	162.6	150.2	135.4	128.8	120.5	115.6	109.0
80°	92.5	83.4	77.6	73.5	71.8	67.7	64.4	61.9	59.4	59.4	55.3
82.5°	44.6	42.9	41.3	41.3	38.8	38.8	36.3	35.5	34.7	33.8	33.8
85°	12.4	12.4	12.4	13.2	13.2	13.2	13.2	13.2	13.2	14.0	14.0
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: P160072

CATALOG NUMBER: ENT-F02-LED-E1-BL4-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: P160072

CATALOG NUMBER: ENT-F02-LED-E1-BL4-ULG

CANDELA DISTRIBUTION (continued):

	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°	86°
0°	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0
2.5°	927.1	927.1	927.1	928.7	927.9	930.4	930.4	930.4	932.0	932.8	932.0
5°	913.9	913.9	913.9	914.7	914.7	916.3	916.3	918.0	918.0	918.8	918.8
7.5°	892.4	893.2	893.2	894.9	894.0	894.9	894.9	897.3	897.3	898.2	898.2
10°	867.6	868.5	868.5	868.5	869.3	870.1	870.1	871.8	872.6	872.6	874.2
12.5°	844.5	843.7	844.5	843.7	846.2	846.2	847.0	846.2	847.0	847.8	848.6
15°	818.9	818.9	818.1	818.9	818.9	818.1	817.3	818.1	819.7	819.7	819.7
17.5°	793.3	790.9	790.9	790.9	790.0	788.4	790.0	789.2	789.2	790.0	789.2
20°	769.4	768.6	767.7	766.9	766.1	763.6	763.6	763.6	762.8	762.8	762.8
22.5°	754.5	753.7	752.9	752.1	748.8	747.1	746.3	745.4	743.8	743.0	742.1
25°	746.3	744.6	743.0	741.3	738.8	736.4	733.9	733.1	731.4	729.8	727.3
27.5°	743.8	742.1	738.8	737.2	733.9	731.4	728.9	726.5	724.0	721.5	719.0
30°	739.7	737.2	733.9	731.4	728.9	724.8	721.5	719.0	714.9	712.4	709.1
32.5°	733.9	730.6	727.3	724.0	720.7	716.6	712.4	709.1	705.8	702.5	698.4
35°	724.0	719.9	714.9	711.6	707.5	703.3	700.0	694.3	691.8	687.7	683.5
37.5°	710.8	706.6	702.5	698.4	693.4	690.1	685.2	680.2	677.8	675.3	669.5
40°	699.2	694.3	690.1	686.8	681.1	678.6	673.6	668.7	665.4	662.9	657.9
42.5°	688.5	683.5	679.4	674.5	670.3	667.0	662.9	657.9	654.6	653.0	648.9
45°	688.5	682.7	677.8	673.6	669.5	665.4	662.1	657.1	654.6	651.3	648.9
47.5°	700.0	693.4	687.7	681.9	676.1	672.0	667.0	662.1	657.9	655.5	652.2
50°	708.3	701.7	698.4	691.8	688.5	682.7	676.9	674.5	670.3	667.8	667.0
52.5°	809.0	804.9	805.7	789.2	785.9	794.2	780.9	792.5	789.2	779.3	779.3
55°	1117.8	1116.1	1123.5	1102.9	1093.8	1110.3	1116.9	1093.0	1098.8	1098.8	1097.1
57.5°	1477.7	1467.0	1456.2	1458.7	1445.5	1455.4	1443.0	1428.2	1433.9	1429.0	1411.6
60°	1692.3	1685.7	1670.0	1655.2	1641.1	1627.9	1616.4	1603.2	1596.6	1585.0	1572.6
62.5°	1779.0	1761.7	1742.7	1722.9	1700.6	1679.1	1665.9	1648.6	1630.4	1618.9	1605.6
65°	1732.8	1707.2	1686.5	1657.7	1633.7	1607.3	1590.0	1570.1	1553.6	1533.8	1517.3
67.5°	1526.4	1496.7	1442.2	1415.8	1380.3	1339.0	1327.4	1303.5	1294.4	1264.7	1216.0
70°	1039.3	1009.6	976.6	922.9	888.3	852.8	814.0	785.9	781.8	757.8	722.3
72.5°	610.9	590.3	568.8	538.2	512.7	498.6	471.4	443.3	442.5	415.2	401.2
75°	288.9	278.2	256.7	249.3	226.2	224.5	207.2	203.9	207.2	199.0	197.3
77.5°	98.2	95.8	90.8	84.2	79.3	77.6	73.5	71.0	69.3	67.7	66.0
80°	53.7	52.0	51.2	48.7	47.1	46.2	43.8	42.9	42.1	41.3	40.5
82.5°	32.2	33.0	31.4	29.7	29.7	28.1	27.2	26.4	25.6	25.6	25.6
85°	13.2	14.0	13.2	12.4	11.6	12.4	12.4	11.6	10.7	11.6	11.6
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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 CATALOG NUMBER: ENT-F02-LED-E1-BL4-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°

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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°	
932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0	932.0	112.5°	21.2
930.4	929.5	929.5	928.7	927.9	929.5	931.2	933.7	932.0	933.7	934.5	115°	25.0
917.2	917.2	917.2	918.0	917.2	919.6	922.9	927.9	928.7	932.0	934.5	117.5°	29.5
895.7	895.7	896.5	897.3	896.5	899.8	905.6	911.4	915.5	921.3	926.2	120°	34.8
870.9	870.9	870.9	870.9	871.8	875.9	880.0	886.6	893.2	902.3	909.7	122.5°	40.9
848.6	846.2	847.0	848.6	847.0	847.0	851.1	856.1	860.2	871.8	885.0	125°	47.8
818.9	818.9	817.3	818.1	814.0	813.1	814.8	818.1	821.4	831.3	845.3	127.5°	55.3
787.6	787.6	787.6	785.1	781.8	773.5	772.7	772.7	772.7	780.1	796.6	130°	63.0
759.5	759.5	757.8	756.2	748.8	734.7	723.2	718.2	716.6	728.9	736.4	132.5°	70.5
739.7	738.8	735.5	733.9	722.3	700.0	681.9	667.8	663.7	667.8	670.3	135°	77.9
724.0	722.3	719.0	715.7	700.0	669.5	640.6	616.7	605.1	601.8	593.6	137.5°	85.3
714.9	712.4	707.5	704.2	683.5	644.7	606.8	575.4	553.9	538.2	523.4	140°	92.5
705.0	700.9	695.9	691.0	667.8	624.9	581.2	542.4	504.4	477.2	455.7	142.5°	99.2
693.4	689.3	684.4	679.4	653.8	606.8	560.5	512.7	459.8	422.7	390.5	145°	104.9
679.4	675.3	670.3	664.5	639.0	591.9	546.5	483.8	420.2	372.3	330.2	147.5°	110.1
665.4	661.2	656.3	650.5	624.9	584.5	538.2	456.5	383.9	325.3	269.9	150°	115.1
654.6	650.5	645.6	640.6	617.5	581.2	534.1	433.4	351.7	279.0	215.5	152.5°	119.7
645.6	641.4	637.3	632.4	612.5	582.8	525.0	413.6	320.3	232.8	169.2	155°	123.7
644.7	642.3	637.3	633.2	614.2	590.3	517.6	396.3	288.1	188.2	142.8	157.5°	127.0
650.5	647.2	643.9	640.6	625.7	609.2	512.7	378.1	251.8	151.9	136.2	160°	130.3
664.5	661.2	659.6	657.9	648.9	634.8	512.7	359.1	209.7	133.7	135.4	162.5°	133.5
777.6	768.6	766.1	772.7	747.9	677.8	516.0	336.0	164.3	128.0	136.2	165°	136.0
1093.8	1102.9	1079.8	1068.2	1025.3	784.2	518.4	301.3	133.7	127.1	134.6	167.5°	137.1
1413.3	1413.3	1405.0	1386.9	1334.0	965.9	530.0	246.0	122.2	125.5	132.9	170°	137.4
1569.3	1559.4	1551.2	1540.4	1460.4	1092.2	547.3	181.6	117.2	124.7	131.3	172.5°	138.6
1597.4	1581.7	1571.0	1556.9	1450.4	1098.8	554.8	136.2	112.3	124.7	127.1	175°	140.5
1504.9	1488.4	1474.4	1451.3	1321.7	994.8	517.6	111.4	109.0	121.4	123.0	177.5°	141.1
1219.3	1199.5	1188.8	1177.2	1091.3	873.4	418.5	99.9	104.8	115.6	118.9	180°	140.8
697.6	676.1	663.7	666.2	614.2	691.0	334.3	91.6	99.1	109.0	113.9		
375.6	352.5	345.1	321.1	274.1	348.4	257.6	84.2	91.6	99.1	104.0		
185.7	177.5	180.0	168.4	142.8	107.3	165.9	75.1	81.7	89.2	92.5		
64.4	62.7	61.9	61.1	59.4	57.0	75.9	64.4	70.2	75.9	79.3		
39.6	38.8	39.6	38.8	38.0	43.8	48.7	51.2	56.1	63.6	64.4		
23.9	23.9	23.9	23.9	23.9	30.5	34.7	39.6	43.8	48.7	52.8		
11.6	11.6	11.6	11.6	12.4	20.6	23.1	28.9	30.5	34.7	38.0		
2.5	2.5	2.5	2.5	3.3	10.7	14.0	17.3	18.2	18.2	20.6		
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		

'160072
 ENT-F02-LED-E1-BL4-ULG

REPORT NUMBER: P160072
 CATALOG NUMBER: ENT-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°	932.0	932.0
25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	2.5°	933.7	932.0
29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	5°	936.1	934.5
34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	7.5°	929.5	930.4
40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	40.9	10°	915.5	918.0
47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	47.8	12.5°	893.2	898.2
55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	55.3	15°	856.1	863.5
63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	63.0	17.5°	806.5	815.6
70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	70.5	20°	744.6	748.8
77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	77.9	22.5°	668.7	670.3
85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3	25°	588.6	588.6
92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5	27.5°	514.3	510.2
99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	30°	443.3	432.6
104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	104.9	32.5°	368.2	350.0
110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	110.1	35°	292.2	277.4
115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	115.1	37.5°	227.0	210.5
119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	119.7	40°	174.2	161.8
123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	123.7	42.5°	146.9	144.5
127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	45°	140.3	143.6
130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	130.3	47.5°	141.2	145.3
133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	133.5	50°	142.0	146.1
136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	136.0	52.5°	142.0	144.5
137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	137.1	55°	140.3	140.3
137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4	57.5°	137.0	136.2
138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	60°	134.6	134.6
140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	140.5	62.5°	130.4	130.4
141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	141.1	65°	123.8	124.7
140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	140.8	67.5°	117.2	117.2
										70°	109.0	109.0
										72.5°	100.7	104.0
										75°	94.9	100.7
										77.5°	83.4	89.2
										80°	68.5	69.3
										82.5°	54.5	52.8
										85°	38.8	36.3
										87.5°	20.6	19.8
										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: P160072

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

.ED-E1-BL4-ULG

tinued):

180°
932.0
931.2
933.7
929.5
918.8
901.5
861.8
815.6
746.3
667.8
585.3
507.7
429.3
350.0
273.2
205.6
161.0
145.3
143.6
146.1
146.9
144.5
140.3
137.9
134.6
130.4
124.7
117.2
110.6
105.7
103.2
92.5
69.3
50.4
36.3
20.6
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

