

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: P141095

Luminaire Tested: **ECM-F04-LED-E1-SL3**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P141095
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33691)
Test Lab: INNOVATION CENTER-P3
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: ECM-F04-LED-E1-SL3
Description: EPIC CLASSICAL MEDIUM DECORATIVE LED LUMINAIRE
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 3 W/ SPILL LIGHT CONTROL
Light Source: (28) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9555.9 lumens
Efficiency: N/A
Efficacy: 93.5 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 1' x H: 0')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

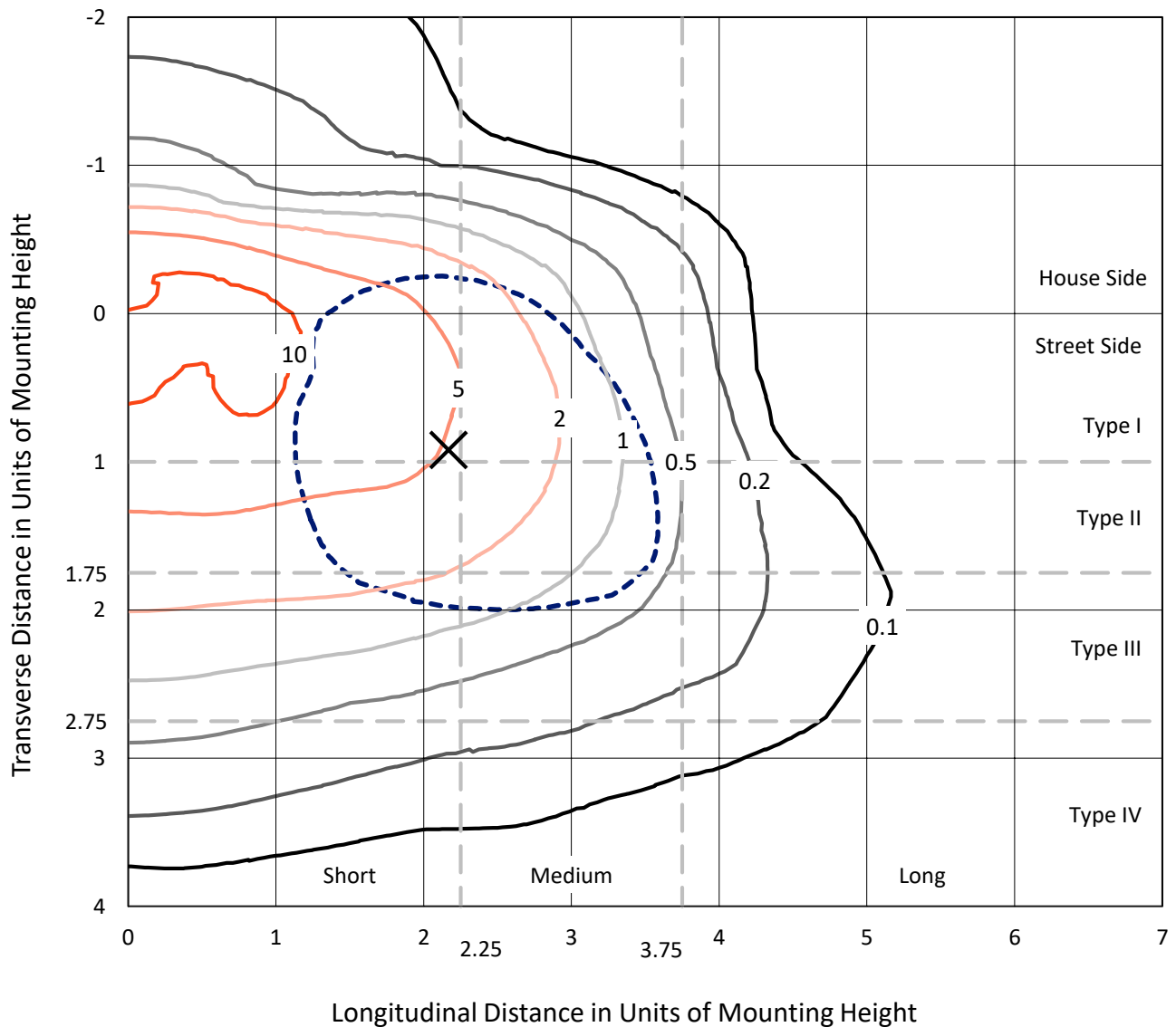
Input Watts (W): 102.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

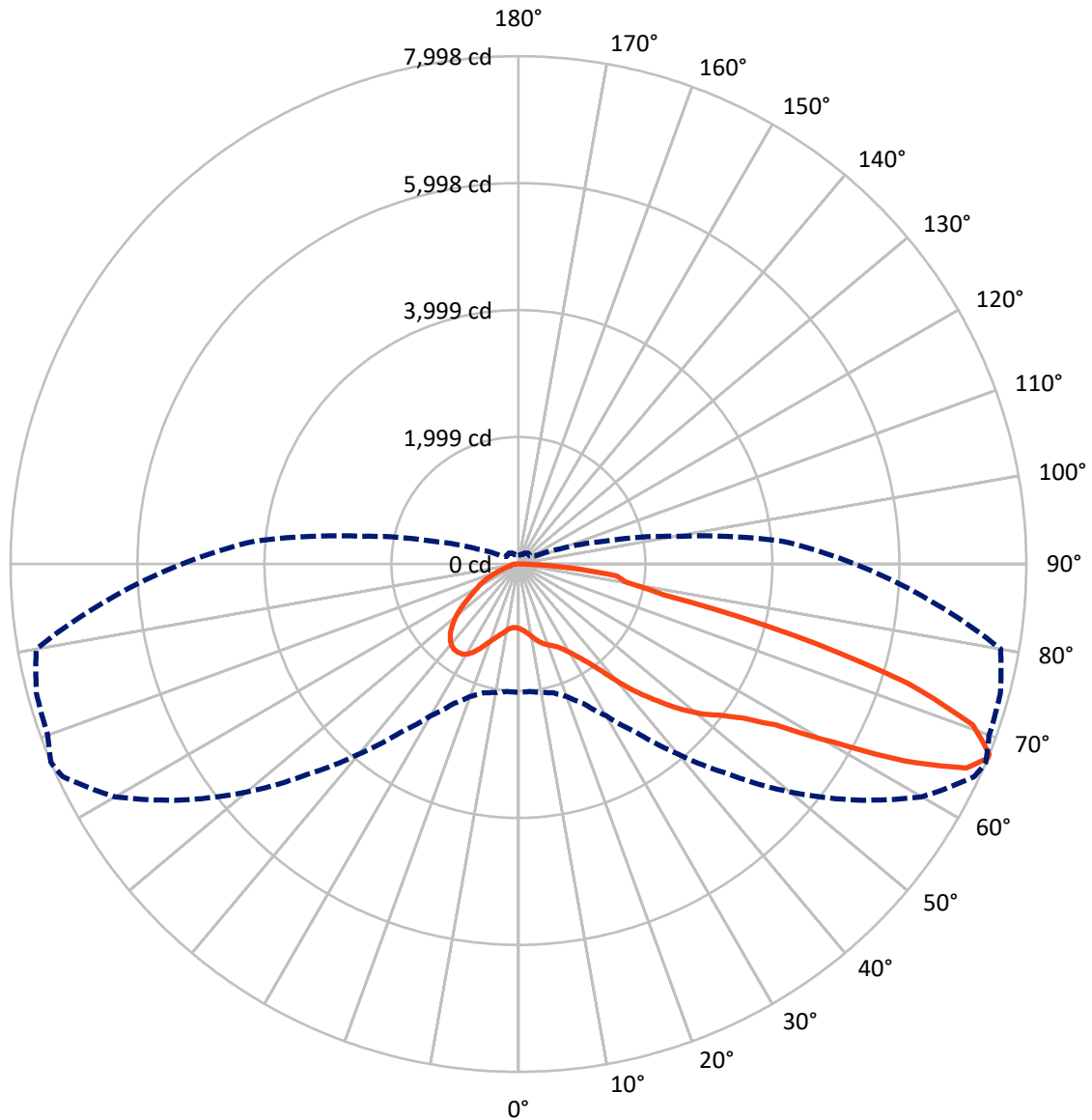
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 13.3 fc
 Type III - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 67-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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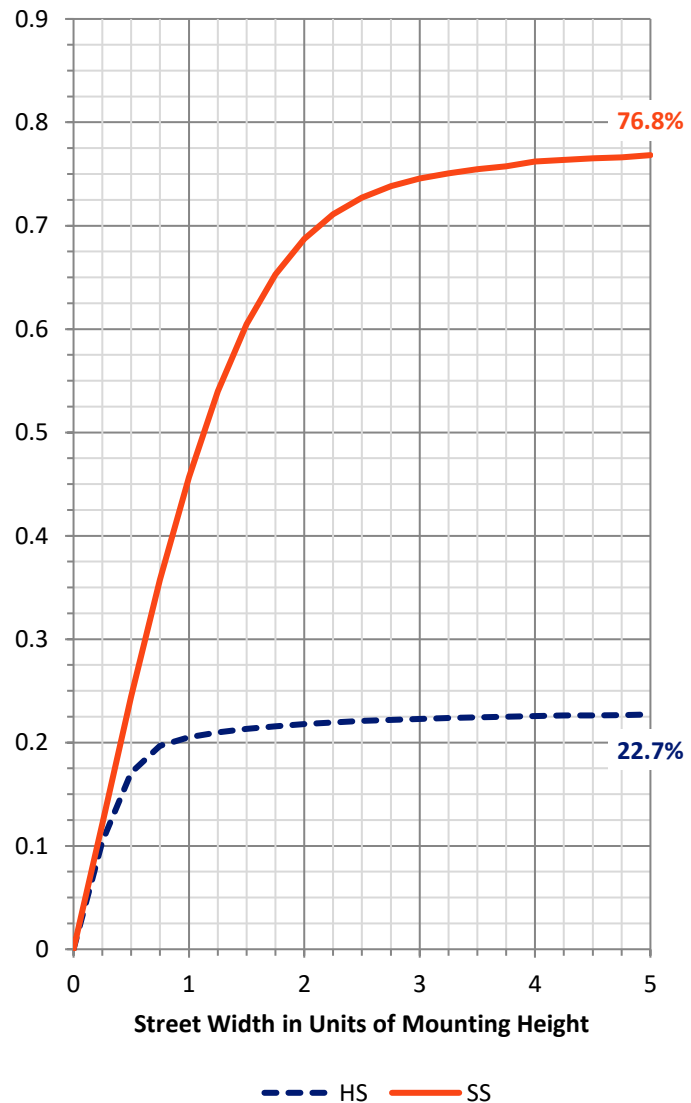
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2198.3	0.0	2198.3
	% Fixture	23.0	0.0	23.0
Street Side	Lumens	7357.5	0.0	7357.5
	% Fixture	77.0	0.0	77.0
Total	Lumens	9555.9	0.0	9555.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	101.6	1.1
10°-20°	351.4	3.7
20°-30°	625.5	6.5
30°-40°	899.2	9.4
40°-50°	1370.5	14.3
50°-60°	2001.9	20.9
60°-70°	2697.4	28.2
70°-80°	1324.3	13.9
80°-90°	184.2	1.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	9555.9	100.0
0°-180°	9555.9	100.0



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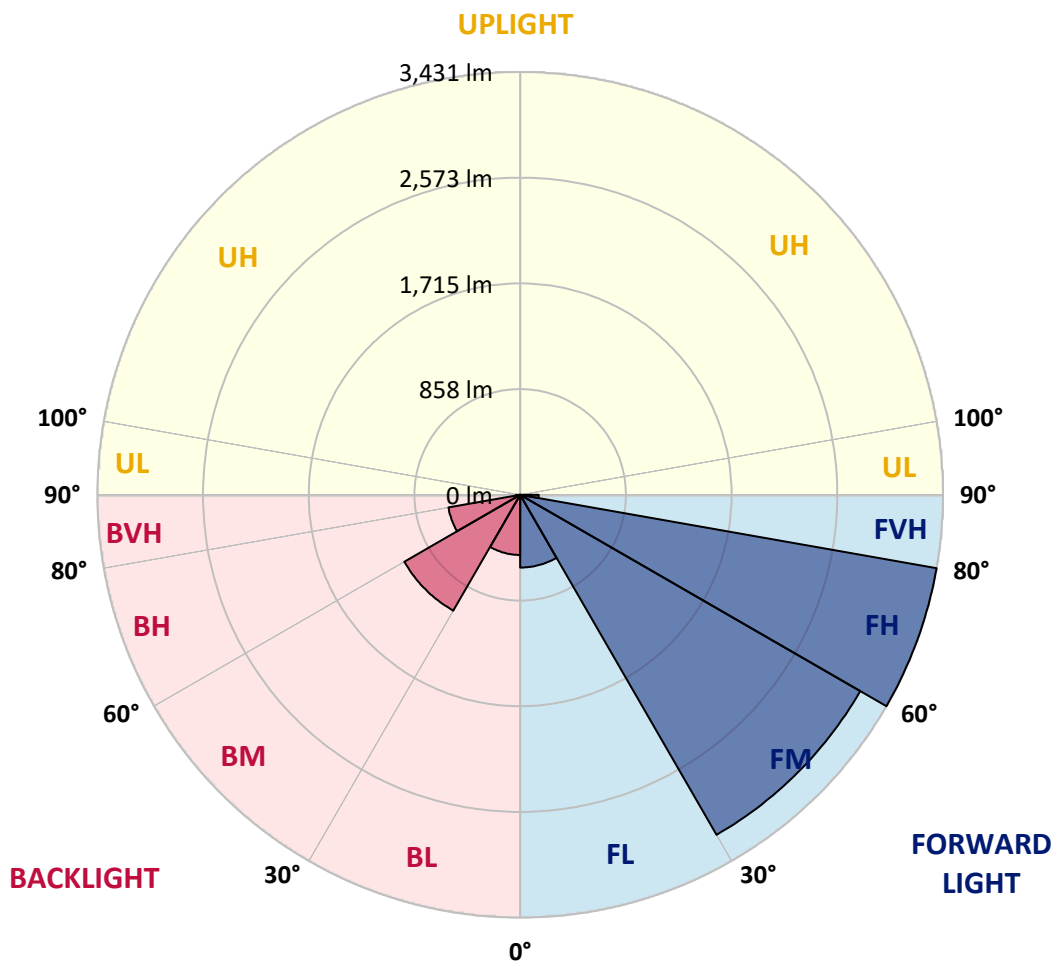
CATALOG NUMBER: ECM-F04-LED-E1-SL3

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	590.3	6.2			
FM	(30°-60°)	3185.7	33.3			
FH	(60°-80°)	3430.6	35.9			G2/5000
FVH	(80°-90°)	151.0	1.6			G2/225
BL	(0°-30°)	488.2	5.1	B1/500		
BM	(30°-60°)	1085.9	11.4	B2/2500		
BH	(60°-80°)	591.1	6.2	B2/1000		G2/1000
BVH	(80°-90°)	33.2	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7
2.5°	1066.6	1061.1	1065.5	1064.4	1061.1	1056.7	1058.9	1055.6	1053.4	1050.1	1046.8
5°	1135.9	1132.6	1130.4	1127.1	1124.9	1121.6	1119.4	1113.9	1106.2	1100.7	1096.3
7.5°	1204.2	1203.1	1199.8	1195.4	1186.6	1184.4	1176.6	1171.1	1164.5	1153.5	1144.7
10°	1284.5	1283.4	1277.9	1271.3	1261.4	1251.5	1242.7	1229.5	1216.3	1206.4	1198.7
12.5°	1381.4	1375.9	1364.9	1356.1	1345.1	1329.6	1315.3	1299.9	1281.2	1265.8	1257.0
15°	1478.2	1471.6	1462.8	1450.7	1434.2	1413.3	1392.4	1369.3	1340.7	1320.8	1308.7
17.5°	1557.5	1553.1	1543.2	1526.7	1510.2	1484.8	1457.3	1425.4	1390.2	1360.5	1341.8
20°	1614.7	1610.3	1594.9	1575.1	1553.1	1524.5	1494.8	1459.5	1417.7	1381.4	1360.5
22.5°	1638.9	1632.3	1614.7	1588.3	1558.6	1523.4	1491.4	1461.7	1423.2	1395.7	1373.7
25°	1646.6	1638.9	1615.8	1582.8	1544.3	1499.2	1462.8	1439.7	1416.6	1406.7	1399.0
27.5°	1642.2	1635.6	1610.3	1569.6	1517.9	1465.0	1426.5	1410.0	1411.1	1429.8	1438.6
30°	1626.8	1619.1	1596.0	1550.9	1495.9	1438.6	1404.5	1399.0	1424.3	1471.6	1506.9
32.5°	1601.5	1596.0	1577.3	1538.8	1489.2	1439.7	1415.5	1427.6	1471.6	1545.4	1605.9
35°	1594.9	1593.8	1585.0	1564.1	1527.8	1495.9	1485.9	1520.1	1592.7	1694.0	1771.0
37.5°	1593.8	1599.3	1603.7	1603.7	1596.0	1593.8	1623.5	1670.9	1778.7	1905.3	2030.8
40°	1615.8	1625.7	1647.7	1676.4	1703.9	1743.5	1804.0	1893.2	2005.5	2159.6	2315.9
42.5°	1684.1	1706.1	1743.5	1793.0	1864.6	1938.3	2036.3	2147.5	2291.7	2446.9	2602.1
45°	1817.3	1849.2	1876.7	1954.8	2049.5	2136.5	2264.1	2410.5	2569.0	2763.9	2931.2
47.5°	1993.4	2016.5	2073.7	2156.3	2271.8	2396.2	2519.5	2647.2	2837.6	3041.2	3243.8
50°	2169.5	2187.1	2247.6	2344.5	2496.4	2632.9	2773.8	2900.3	3064.3	3280.1	3478.2
52.5°	2300.5	2324.7	2377.5	2472.2	2642.8	2798.0	2958.7	3098.5	3283.4	3477.1	3684.0
55°	2390.7	2406.1	2454.6	2547.0	2707.7	2884.9	3066.5	3238.3	3458.4	3677.4	3883.3
57.5°	2405.0	2420.4	2464.5	2545.9	2702.2	2888.2	3096.3	3306.5	3572.9	3862.4	4132.0
60°	2388.5	2400.6	2439.2	2506.3	2653.8	2857.4	3105.1	3369.2	3697.3	4070.4	4455.6
62.5°	2314.8	2326.9	2362.1	2417.1	2548.1	2768.3	3078.7	3461.7	3874.5	4343.4	4908.0
65°	2176.1	2183.8	2216.8	2260.8	2392.9	2616.4	2958.7	3443.0	4014.3	4652.7	5383.5
67°	2018.7	2015.4	2052.8	2096.8	2217.9	2423.7	2758.4	3235.0	3903.1	4676.9	5582.7
67.5°	1970.3	1979.1	2015.4	2046.2	2164.0	2363.2	2683.5	3154.6	3808.4	4621.8	5579.4
70°	1626.8	1643.3	1663.2	1683.0	1786.4	1932.8	2168.4	2624.1	3152.4	3922.9	5065.4
72.5°	1116.1	1083.1	1097.4	1090.8	1122.7	1215.2	1379.2	1779.8	2199.2	2861.8	3760.0
75°	565.8	602.1	597.7	625.2	670.3	728.7	804.6	954.3	1283.4	1673.1	2326.9
77.5°	317.0	308.2	339.0	345.6	372.0	433.7	568.0	765.0	915.8	1075.4	1315.3
80°	144.2	159.6	169.5	154.1	159.6	172.8	224.5	352.2	592.2	901.5	1036.9
82.5°	80.4	85.9	100.2	101.3	105.7	109.0	117.8	136.5	183.8	372.0	732.0
85°	50.6	52.8	67.1	73.7	77.0	77.0	77.0	81.5	93.6	110.1	189.3
87.5°	18.7	19.8	30.8	40.7	41.8	39.6	37.4	42.9	39.6	40.7	61.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CATALOG NUMBER: ECM-F04-LED-E1-SL3

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	67°	70°	75°	80°	85°	90°	95°	100°
0°	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7
2.5°	1044.6	1040.2	1035.8	1034.7	1031.4	1029.2	1023.7	1019.2	1014.8	1011.5	1008.2
5°	1086.4	1077.6	1069.9	1066.6	1062.2	1056.7	1045.7	1038.0	1031.4	1024.8	1018.1
7.5°	1133.7	1122.7	1111.7	1107.3	1100.7	1090.8	1078.7	1069.9	1058.9	1049.0	1040.2
10°	1186.6	1174.4	1165.6	1161.2	1155.7	1141.4	1133.7	1118.3	1106.2	1093.0	1082.0
12.5°	1243.8	1238.3	1226.2	1221.8	1216.3	1206.4	1195.4	1182.2	1166.7	1152.4	1139.2
15°	1295.5	1286.7	1279.0	1277.9	1274.6	1269.1	1254.8	1240.5	1227.3	1208.6	1197.6
17.5°	1327.4	1324.1	1323.0	1321.9	1319.7	1316.4	1309.8	1294.4	1282.3	1266.9	1251.5
20°	1347.3	1350.6	1356.1	1360.5	1362.7	1364.9	1361.6	1346.2	1334.0	1320.8	1307.6
22.5°	1368.2	1377.0	1391.3	1397.9	1405.6	1416.6	1414.4	1404.5	1397.9	1382.5	1372.6
25°	1397.9	1415.5	1439.7	1448.5	1462.8	1477.1	1480.4	1474.9	1468.3	1457.3	1457.3
27.5°	1448.5	1473.8	1505.8	1524.5	1538.8	1558.6	1565.2	1561.9	1563.0	1556.4	1571.8
30°	1527.8	1563.0	1605.9	1625.7	1643.3	1666.5	1670.9	1677.5	1673.1	1685.2	1703.9
32.5°	1647.7	1691.8	1735.8	1754.5	1769.9	1794.1	1808.4	1804.0	1819.5	1827.2	1853.6
35°	1832.7	1876.7	1910.8	1914.1	1931.7	1944.9	1958.1	1953.7	1995.6	2012.1	2026.4
37.5°	2088.0	2125.5	2146.4	2138.7	2117.7	2143.1	2160.7	2187.1	2213.5	2243.2	2190.4
40°	2419.3	2478.8	2470.0	2459.0	2419.3	2424.8	2432.5	2446.9	2490.9	2481.0	2330.2
42.5°	2734.1	2794.7	2784.8	2772.7	2719.8	2692.3	2713.2	2738.5	2762.8	2669.2	2444.7
45°	3052.2	3107.3	3059.9	3076.5	3029.1	3017.0	3057.7	3072.1	3044.5	2872.8	2541.5
47.5°	3382.5	3441.9	3418.8	3402.3	3368.1	3364.8	3388.0	3410.0	3301.0	3020.3	2614.2
50°	3635.6	3723.7	3711.6	3701.7	3664.2	3659.8	3714.9	3730.3	3534.3	3176.6	2686.8
52.5°	3830.4	3944.9	3966.9	3953.7	3944.9	3947.1	4105.6	4082.5	3811.7	3365.9	2771.6
55°	4060.5	4179.4	4259.7	4276.2	4298.2	4330.2	4643.9	4609.7	4194.8	3638.9	2860.7
57.5°	4365.4	4585.5	4706.6	4781.4	4842.0	5048.9	5447.4	5316.4	4725.3	3991.1	2966.4
60°	4814.5	5251.4	5502.4	5692.8	5812.8	6173.8	6657.0	6174.9	5341.7	4413.8	3105.1
62.5°	5535.4	6248.7	6728.6	6836.4	6887.1	7230.5	7576.1	6832.0	5786.4	4693.4	3127.1
65°	6234.4	7125.9	7686.2	7748.9	7711.5	7804.0	7900.8	6851.9	5682.9	4561.3	2869.5
67°	6480.9	7332.9	7921.7	7997.7	7887.6	7857.9	7710.4	6490.8	5296.6	4156.2	2510.7
67.5°	6467.7	7308.6	7919.5	7996.6	7887.6	7840.3	7623.4	6345.5	5144.7	4057.2	2441.4
70°	5961.4	6769.3	7449.5	7593.7	7533.2	7407.7	6830.9	5374.7	4263.0	3328.5	1882.2
72.5°	4839.8	5712.6	6252.0	6411.6	6454.5	6132.0	5087.4	3762.2	3073.2	2378.6	1364.9
75°	3249.3	4116.6	4558.0	4477.6	4216.8	3667.5	2685.7	1984.6	1684.1	1383.6	844.2
77.5°	1842.6	2511.8	2477.7	2339.0	2118.8	1568.5	761.7	412.8	394.1	460.1	357.7
80°	1230.6	1548.7	1654.4	1708.3	1696.2	1160.1	314.8	159.6	137.6	137.6	135.4
82.5°	1027.0	1338.5	1515.7	1563.0	1456.2	881.7	188.2	104.6	83.7	93.6	104.6
85°	432.6	674.7	892.7	858.5	682.4	343.4	95.8	55.0	55.0	72.6	91.4
87.5°	104.6	155.2	219.0	212.4	170.6	79.3	48.4	34.1	34.1	56.1	79.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7	1013.7
2.5°	1007.1	1002.7	1002.7	998.3	996.1	993.9	992.8	993.9	990.6	987.3	988.4
5°	1012.6	1006.0	1002.7	995.0	990.6	986.2	982.9	981.8	976.3	973.0	973.0
7.5°	1031.4	1022.6	1015.9	1007.1	998.3	991.7	986.2	982.9	975.2	969.7	968.6
10°	1069.9	1057.8	1047.9	1034.7	1022.6	1013.7	1003.8	998.3	989.5	984.0	981.8
12.5°	1127.1	1109.5	1094.1	1074.3	1060.0	1046.8	1041.3	1032.5	1029.2	1025.9	1027.0
15°	1181.1	1160.1	1145.8	1130.4	1113.9	1106.2	1095.2	1094.1	1095.2	1089.7	1089.7
17.5°	1236.1	1219.6	1203.1	1197.6	1182.2	1176.6	1168.9	1164.5	1154.6	1144.7	1132.6
20°	1293.3	1284.5	1277.9	1271.3	1268.0	1254.8	1235.0	1211.9	1180.0	1151.3	1127.1
22.5°	1367.1	1361.6	1362.7	1357.2	1339.6	1306.5	1261.4	1213.0	1161.2	1115.0	1078.7
25°	1460.6	1466.1	1459.5	1432.0	1381.4	1314.2	1244.9	1176.6	1108.4	1053.4	1003.8
27.5°	1579.5	1575.1	1544.3	1473.8	1386.9	1291.1	1202.0	1120.5	1039.1	975.2	913.6
30°	1709.4	1677.5	1597.1	1487.0	1364.9	1249.3	1139.2	1044.6	949.9	875.1	805.7
32.5°	1840.4	1749.0	1619.1	1471.6	1326.3	1189.9	1066.6	955.4	846.4	762.8	682.4
35°	1939.4	1793.0	1615.8	1438.6	1268.0	1111.7	968.6	831.0	704.4	604.3	522.8
37.5°	2030.8	1817.3	1593.8	1388.0	1187.7	1008.2	829.9	681.3	553.7	453.5	383.0
40°	2086.9	1815.1	1550.9	1304.3	1076.5	856.3	662.6	509.6	397.4	323.6	285.1
42.5°	2119.9	1791.9	1477.1	1193.2	923.5	685.7	488.7	351.1	282.9	251.0	233.3
45°	2136.5	1742.4	1385.8	1044.6	738.6	489.8	336.8	253.2	225.6	216.8	212.4
47.5°	2126.6	1673.1	1254.8	877.3	550.3	335.7	241.1	213.5	204.7	200.3	199.2
50°	2103.4	1582.8	1117.2	695.6	390.7	241.1	202.5	194.8	191.5	190.4	188.2
52.5°	2070.4	1476.0	959.8	539.3	277.4	200.3	189.3	186.0	183.8	180.5	179.4
55°	2015.4	1344.0	799.1	397.4	222.3	189.3	183.8	182.7	178.3	175.0	172.8
57.5°	1949.3	1203.1	647.2	311.5	204.7	184.9	181.6	180.5	176.1	171.7	167.3
60°	1916.3	1104.0	532.7	269.7	201.4	187.1	184.9	182.7	177.2	170.6	165.1
62.5°	1834.9	997.2	459.0	256.5	205.8	194.8	193.7	189.3	181.6	175.0	166.2
65°	1624.6	846.4	390.7	243.3	212.4	206.9	209.1	203.6	194.8	183.8	169.5
67°	1372.6	687.9	330.2	233.3	220.1	223.4	226.7	223.4	209.1	192.6	173.9
67.5°	1304.3	640.6	313.7	230.0	222.3	226.7	232.2	228.9	213.5	194.8	176.1
70°	980.7	459.0	248.8	217.9	230.0	242.2	253.2	252.1	236.7	213.5	183.8
72.5°	678.0	313.7	201.4	203.6	223.4	245.5	259.8	266.4	251.0	223.4	188.2
75°	408.4	200.3	169.5	183.8	203.6	225.6	248.8	251.0	233.3	205.8	176.1
77.5°	200.3	144.2	139.8	145.3	164.0	182.7	192.6	180.5	169.5	150.8	139.8
80°	121.1	113.4	111.2	123.3	134.3	131.0	123.3	113.4	107.9	103.5	99.1
82.5°	101.3	102.4	104.6	106.8	104.6	92.5	79.3	72.6	68.2	68.2	69.3
85°	103.5	105.7	96.9	89.2	79.3	66.0	53.9	46.2	47.3	48.4	48.4
87.5°	80.4	77.0	68.2	56.1	45.1	33.0	26.4	22.0	24.2	23.1	25.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CATALOG NUMBER: ECM-F04-LED-E1-SL3

CANDELA DISTRIBUTION (continued):

	160°	165°	170°	175°	180°
0°	1013.7	1013.7	1013.7	1013.7	1013.7
2.5°	988.4	987.3	988.4	988.4	989.5
5°	970.8	968.6	968.6	969.7	969.7
7.5°	966.4	964.2	964.2	965.3	964.2
10°	981.8	980.7	982.9	981.8	981.8
12.5°	1028.1	1028.1	1032.5	1034.7	1032.5
15°	1090.8	1088.6	1091.9	1093.0	1094.1
17.5°	1126.0	1116.1	1112.8	1115.0	1110.6
20°	1106.2	1089.7	1083.1	1082.0	1074.3
22.5°	1050.1	1025.9	1015.9	1011.5	1002.7
25°	970.8	942.2	929.0	918.0	912.5
27.5°	876.2	840.9	822.2	813.4	810.1
30°	757.3	723.2	695.6	681.3	676.9
32.5°	625.2	575.7	547.0	529.4	517.3
35°	466.7	419.4	398.5	385.2	369.8
37.5°	339.0	310.4	292.8	284.0	280.7
40°	262.0	247.7	238.9	237.8	236.7
42.5°	226.7	220.1	219.0	216.8	214.6
45°	209.1	206.9	208.0	204.7	202.5
47.5°	197.0	195.9	195.9	193.7	192.6
50°	187.1	187.1	186.0	184.9	184.9
52.5°	178.3	179.4	179.4	177.2	177.2
55°	170.6	170.6	171.7	170.6	170.6
57.5°	165.1	164.0	165.1	165.1	165.1
60°	161.8	159.6	158.5	159.6	159.6
62.5°	158.5	155.2	154.1	154.1	155.2
65°	158.5	153.0	150.8	150.8	149.7
67°	159.6	150.8	146.4	144.2	143.1
67.5°	159.6	149.7	144.2	143.1	142.0
70°	159.6	145.3	137.6	132.1	132.1
72.5°	158.5	140.9	128.8	123.3	121.1
75°	150.8	133.2	122.2	115.6	113.4
77.5°	126.6	115.6	110.1	104.6	103.5
80°	95.8	90.3	85.9	73.7	68.2
82.5°	68.2	64.9	57.2	52.8	49.5
85°	48.4	45.1	41.8	37.4	37.4
87.5°	26.4	25.3	24.2	22.0	19.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)