

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: P141255

Luminaire Tested: **ECM-F04-LED-E1-SL4**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P141255
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33692)
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-SL4
Description: EPIC CLASSICAL MEDIUM DECORATIVE LED LUMINAIRE
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (28) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9323.4 lumens
Efficiency: N/A
Efficacy: 91.2 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

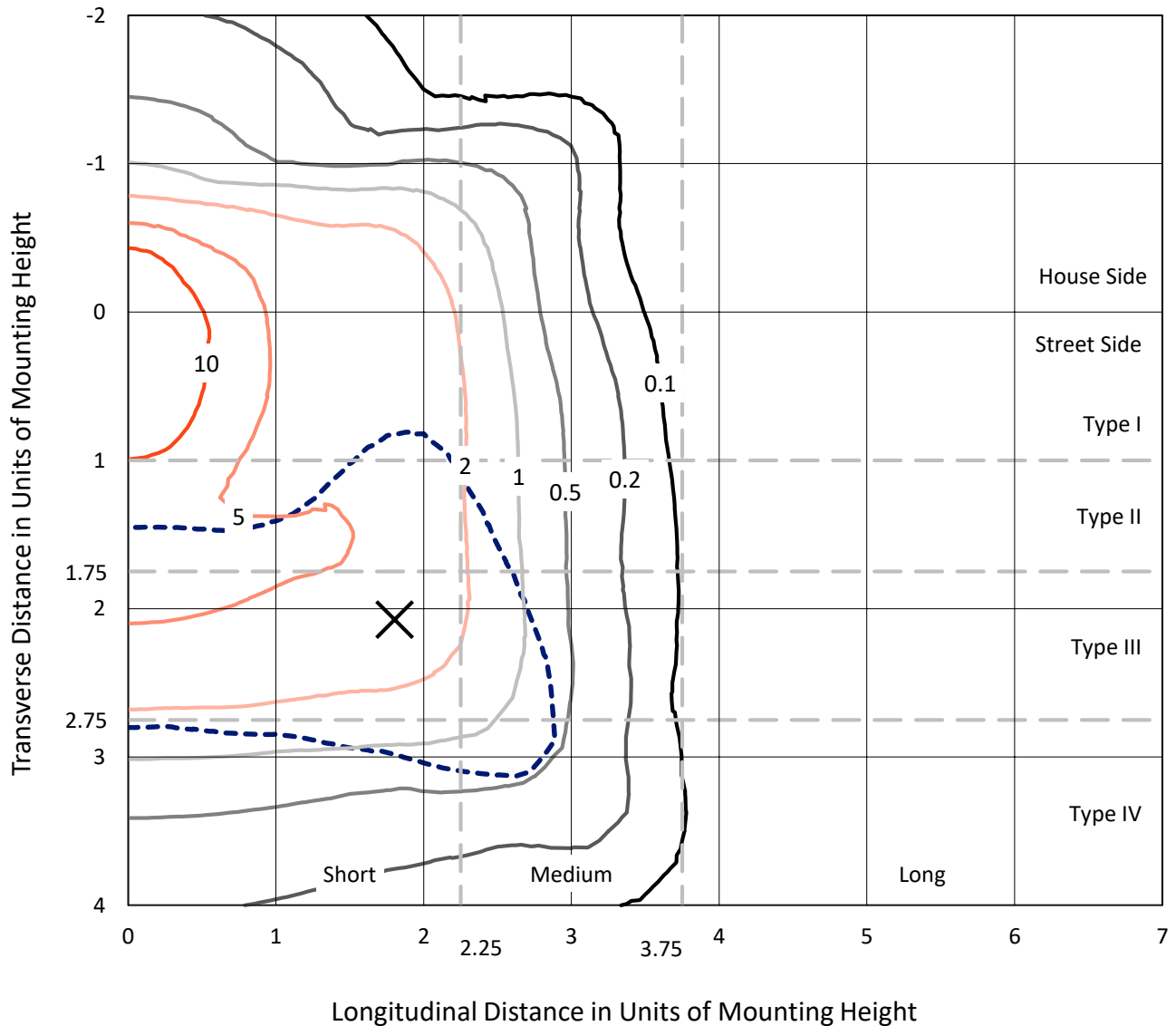
Input Watts (W): 102.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

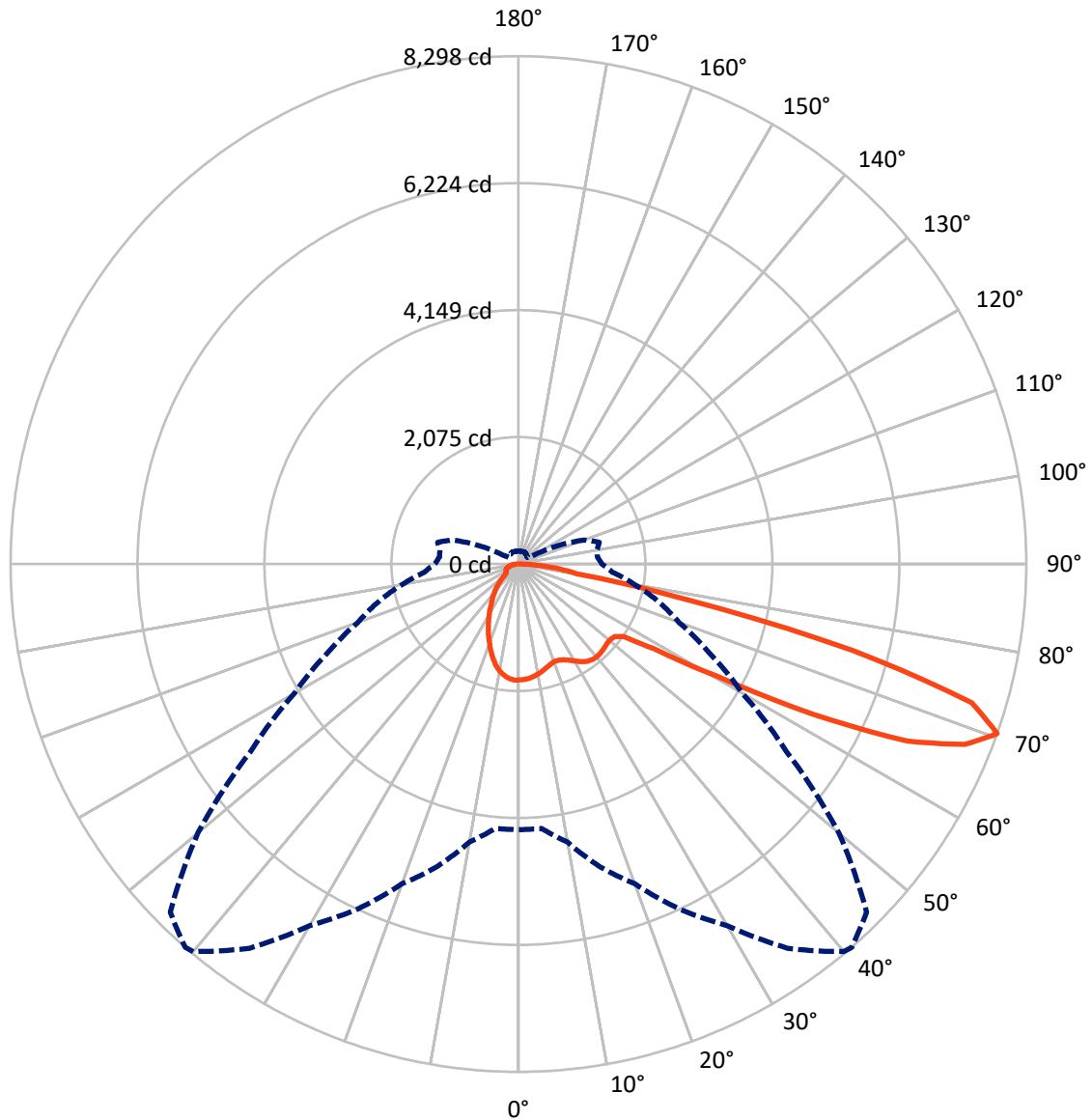
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 18.9 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 41-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2000.4	0.0	2000.4
	% Fixture	21.5	0.0	21.5
Street Side	Lumens	7323.0	0.0	7323.0
	% Fixture	78.5	0.0	78.5
Total	Lumens	9323.4	0.0	9323.4
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	176.3	1.9
10°-20°	472.5	5.1
20°-30°	683.1	7.3
30°-40°	869.4	9.3
40°-50°	1024.5	11.0
50°-60°	1567.6	16.8
60°-70°	2913.7	31.3
70°-80°	1406.3	15.1
80°-90°	210.0	2.3
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°	9323.4	100.0
0°-180°	9323.4	100.0



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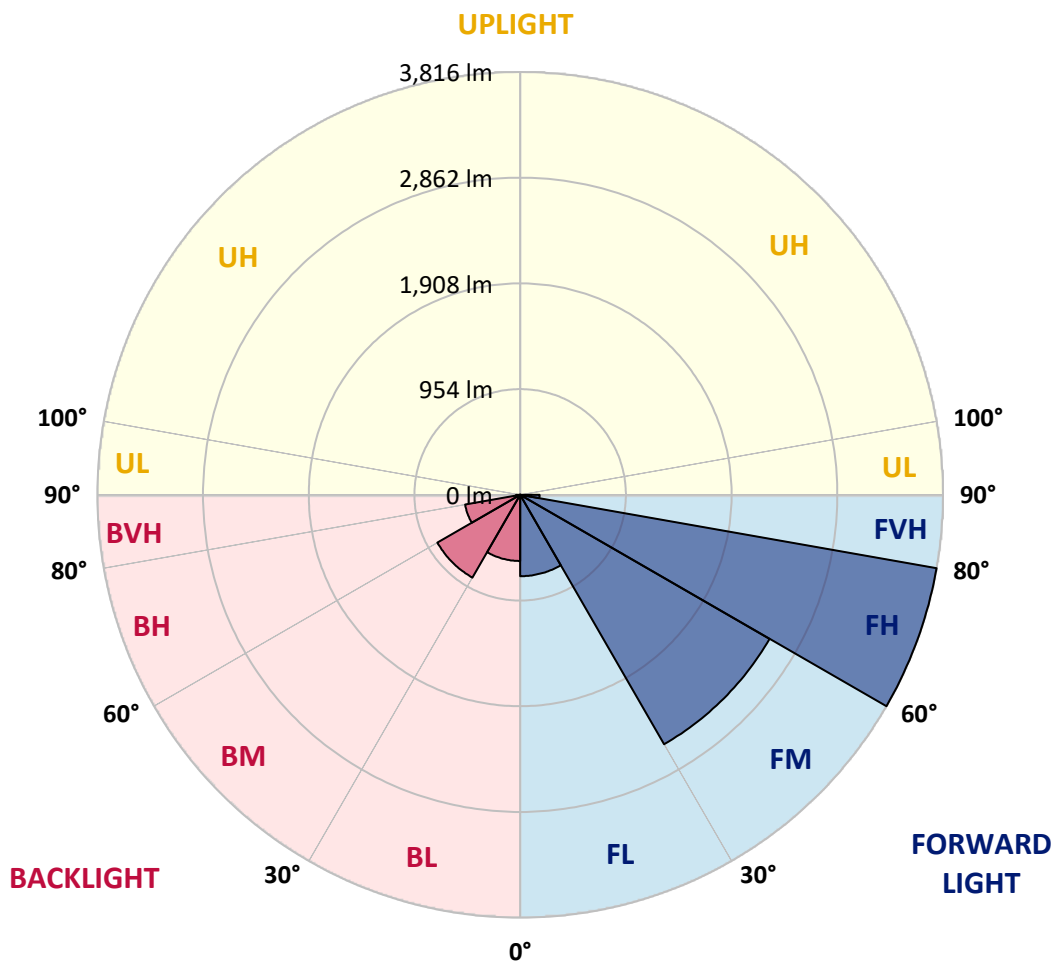
CATALOG NUMBER: ECM-F04-LED-E1-SL4

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	734.3	7.9			
FM (30°-60°)	2598.6	27.9			
FH (60°-80°)	3815.5	40.9			G2/5000
FVH (80°-90°)	174.6	1.9			G2/225
BL (0°-30°)	597.5	6.4	B2/1000		
BM (30°-60°)	863.0	9.3	B1/1000		
BH (60°-80°)	504.4	5.4	B2/1000		G2/1000
BVH (80°-90°)	35.4	0.4			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 IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	41°	45°
0°	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3
2.5°	1894.3	1896.5	1895.4	1893.2	1891.0	1892.1	1891.0	1889.9	1889.9	1888.8	1887.7
5°	1885.5	1889.9	1886.6	1884.4	1881.1	1881.1	1880.0	1877.8	1875.6	1874.5	1872.3
7.5°	1866.8	1871.2	1869.0	1866.8	1863.5	1861.3	1856.9	1854.7	1852.5	1851.4	1848.1
10°	1841.5	1843.7	1841.5	1837.1	1834.9	1833.8	1831.6	1827.2	1822.8	1820.6	1817.3
12.5°	1808.4	1809.6	1807.3	1805.1	1801.8	1801.8	1798.5	1795.2	1788.6	1786.4	1778.7
15°	1779.8	1776.5	1774.3	1773.2	1772.1	1766.6	1767.7	1762.2	1751.2	1747.9	1739.1
17.5°	1772.1	1768.8	1767.7	1764.4	1762.2	1755.6	1749.0	1738.0	1719.3	1716.0	1702.8
20°	1794.1	1794.1	1790.8	1788.6	1785.3	1773.2	1758.9	1738.0	1703.9	1696.2	1679.7
22.5°	1847.0	1841.5	1839.3	1839.3	1838.2	1820.6	1794.1	1761.1	1716.0	1706.1	1677.5
25°	1929.5	1919.6	1922.9	1921.8	1919.6	1894.3	1855.8	1808.4	1746.8	1733.6	1696.2
27.5°	2027.5	2029.7	2028.6	2024.2	2017.6	1990.1	1935.0	1871.2	1794.1	1780.9	1732.5
30°	2129.9	2132.1	2138.7	2135.4	2131.0	2089.1	2020.9	1951.5	1858.0	1840.4	1780.9
32.5°	2248.7	2256.4	2261.9	2263.0	2245.4	2188.2	2107.8	2019.8	1920.7	1903.1	1829.4
35°	2386.3	2381.9	2391.8	2387.4	2356.6	2278.4	2179.4	2074.8	1973.6	1950.4	1871.2
37.5°	2525.0	2530.5	2520.6	2501.9	2453.5	2351.1	2228.9	2111.1	1998.9	1976.9	1894.3
40°	2659.3	2656.0	2632.9	2601.0	2528.3	2397.3	2256.4	2127.7	2007.7	1984.6	1899.8
42.5°	2759.5	2750.6	2715.4	2663.7	2570.1	2419.3	2264.1	2127.7	2002.2	1978.0	1892.1
45°	2803.5	2794.7	2760.6	2694.5	2583.3	2414.9	2250.9	2108.9	1983.5	1962.5	1876.7
47.5°	2803.5	2800.2	2762.8	2698.9	2580.0	2402.8	2231.1	2085.8	1964.7	1943.8	1863.5
50°	2781.5	2779.3	2746.2	2683.5	2569.0	2396.2	2225.6	2081.4	1963.6	1942.7	1869.0
52.5°	2855.2	2840.9	2806.8	2734.1	2609.8	2423.7	2253.1	2103.4	1990.1	1969.2	1893.2
55°	3752.3	3740.2	3567.4	3263.6	2945.5	2654.9	2406.1	2234.4	2119.9	2088.0	2033.0
57.5°	5203.0	5185.4	5008.2	4731.9	4184.9	3563.0	3075.4	2789.2	2628.5	2605.4	2572.3
60°	5791.9	5785.3	5710.4	5598.2	5391.2	5069.8	4616.3	4140.8	3771.0	3711.6	3716.0
62.5°	6129.8	6113.3	6077.0	6049.4	5979.0	5848.0	5763.3	5630.1	5450.7	5409.9	5152.4
65°	6319.1	6316.9	6336.7	6359.8	6355.4	6395.1	6438.0	6692.3	6990.5	6977.3	6705.5
67.5°	6037.3	6056.1	6159.5	6318.0	6484.2	6660.3	6988.3	7498.0	7866.7	7866.7	7627.9
70°	4340.1	4336.8	4611.9	5113.9	5560.7	6219.0	6823.2	7663.1	8266.3	8298.2	8045.0
72.5°	2601.0	2661.5	2831.0	3058.8	3438.6	4235.5	5359.3	6868.4	7710.4	7744.5	7441.8
75°	1827.2	1782.0	1775.4	1788.6	1853.6	2049.5	2668.1	4215.7	5589.4	5642.2	5349.4
77.5°	1168.9	1159.0	1163.4	1177.7	1181.1	1199.8	1229.5	1445.2	2591.0	2844.2	2831.0
80°	1008.2	1004.9	1006.0	989.5	957.6	945.5	982.9	953.2	925.7	964.2	911.4
82.5°	675.8	687.9	707.8	734.2	798.0	820.0	807.9	802.4	715.5	695.6	617.5
85°	500.8	494.2	501.9	501.9	485.4	468.9	481.0	468.9	415.0	388.5	343.4
87.5°	270.8	271.9	293.9	302.7	301.6	257.6	212.4	183.8	166.2	154.1	129.9
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-SL4

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3
2.5°	1888.8	1885.5	1886.6	1886.6	1885.5	1887.7	1884.4	1883.3	1884.4	1884.4	1884.4
5°	1870.1	1865.7	1865.7	1864.6	1862.4	1862.4	1858.0	1856.9	1854.7	1858.0	1855.8
7.5°	1843.7	1837.1	1831.6	1827.2	1825.0	1821.7	1816.2	1814.0	1811.8	1810.7	1808.4
10°	1811.8	1804.0	1793.0	1784.2	1779.8	1771.0	1764.4	1755.6	1755.6	1751.2	1746.8
12.5°	1773.2	1762.2	1751.2	1739.1	1731.4	1719.3	1708.3	1698.4	1690.7	1680.8	1674.2
15°	1734.7	1718.2	1706.1	1694.0	1679.7	1663.2	1649.9	1634.5	1620.2	1604.8	1600.4
17.5°	1692.9	1679.7	1668.7	1654.4	1638.9	1619.1	1601.5	1576.2	1558.6	1539.9	1525.6
20°	1665.4	1649.9	1637.8	1624.6	1608.1	1585.0	1561.9	1533.3	1506.9	1479.3	1458.4
22.5°	1651.0	1625.7	1614.7	1602.6	1586.1	1560.8	1534.4	1499.2	1466.1	1429.8	1396.8
25°	1656.6	1622.4	1600.4	1587.2	1572.9	1547.6	1513.5	1473.8	1436.4	1390.2	1352.8
27.5°	1680.8	1634.5	1600.4	1578.4	1563.0	1536.6	1501.4	1456.2	1411.1	1362.7	1317.5
30°	1712.7	1654.4	1610.3	1578.4	1555.3	1526.7	1488.1	1439.7	1390.2	1336.2	1284.5
32.5°	1749.0	1677.5	1624.6	1580.6	1543.2	1506.9	1467.2	1416.6	1364.9	1307.6	1257.0
35°	1777.6	1695.1	1634.5	1576.2	1526.7	1481.5	1435.3	1388.0	1336.2	1282.3	1228.4
37.5°	1794.1	1706.1	1634.5	1560.8	1500.3	1452.9	1404.5	1358.3	1308.7	1255.9	1208.6
40°	1800.7	1710.5	1627.9	1543.2	1472.7	1418.8	1373.7	1326.3	1282.3	1236.1	1194.3
42.5°	1797.4	1707.2	1619.1	1526.7	1450.7	1392.4	1342.9	1298.8	1262.5	1224.0	1188.8
45°	1784.2	1696.2	1610.3	1519.0	1443.0	1383.6	1332.9	1291.1	1257.0	1221.8	1194.3
47.5°	1773.2	1691.8	1615.8	1537.7	1465.0	1404.5	1349.5	1303.2	1274.6	1247.1	1229.5
50°	1782.0	1703.9	1627.9	1554.2	1483.7	1422.1	1366.0	1323.0	1306.5	1302.1	1296.6
52.5°	1806.2	1729.2	1665.4	1613.6	1581.7	1558.6	1501.4	1491.4	1477.1	1469.4	1450.7
55°	1963.6	1931.7	1989.0	2051.7	2062.7	2132.1	2159.6	2161.8	2137.6	2051.7	1851.4
57.5°	2604.3	2683.5	2707.7	2853.0	2892.6	2861.8	2820.0	2817.8	2742.9	2629.6	2337.9
60°	3749.0	3707.2	3655.4	3560.8	3471.6	3375.8	3243.8	3142.5	3046.7	2872.8	2565.7
62.5°	4946.5	4582.2	4316.9	4045.1	3824.9	3632.3	3440.8	3277.9	3122.7	2881.6	2552.5
65°	5985.6	5243.7	4705.5	4297.1	3955.9	3674.1	3419.9	3197.5	3001.6	2700.0	2366.5
67.5°	6661.4	5594.9	4790.2	4180.5	3698.4	3339.5	2965.3	2614.2	2421.5	2178.3	2008.8
70°	6834.2	5347.2	4224.5	3443.0	2793.6	2365.4	1924.0	1541.0	1363.8	1295.5	1301.0
72.5°	6165.0	4226.7	2995.0	2190.4	1714.9	1359.4	1105.1	849.7	663.7	557.0	543.7
75°	4027.5	2352.2	1422.1	990.6	788.1	627.4	494.2	416.1	358.8	289.5	242.2
77.5°	1522.3	896.0	638.4	520.6	385.2	268.6	209.1	176.1	161.8	157.4	142.0
80°	780.4	621.9	444.7	292.8	204.7	164.0	137.6	116.7	107.9	103.5	105.7
82.5°	526.1	391.8	245.5	176.1	142.0	122.2	96.9	81.5	72.6	71.5	77.0
85°	292.8	195.9	143.1	118.9	104.6	91.4	73.7	60.5	56.1	59.4	69.3
87.5°	91.4	90.3	64.9	52.8	55.0	47.3	35.2	26.4	26.4	34.1	48.4
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°	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3	1894.3
2.5°	1884.4	1886.6	1891.0	1887.7	1888.8	1889.9	1893.2	1897.6	1894.3	1892.1	1898.7
5°	1858.0	1858.0	1863.5	1861.3	1865.7	1870.1	1872.3	1880.0	1877.8	1875.6	1884.4
7.5°	1809.6	1810.7	1818.4	1816.2	1825.0	1826.1	1834.9	1841.5	1841.5	1845.9	1853.6
10°	1747.9	1747.9	1754.5	1755.6	1761.1	1765.5	1775.4	1787.5	1789.7	1797.4	1808.4
12.5°	1678.6	1676.4	1681.9	1681.9	1686.3	1691.8	1702.8	1717.1	1719.3	1731.4	1745.7
15°	1592.7	1589.4	1587.2	1589.4	1591.6	1592.7	1609.2	1623.5	1632.3	1645.5	1659.9
17.5°	1510.2	1498.1	1492.5	1492.5	1493.6	1493.6	1500.3	1516.8	1528.9	1549.8	1570.7
20°	1436.4	1415.5	1407.8	1390.2	1386.9	1379.2	1384.7	1403.4	1425.4	1441.9	1458.4
22.5°	1367.1	1345.1	1323.0	1302.1	1285.6	1275.7	1285.6	1297.7	1305.4	1318.6	1323.0
25°	1314.2	1277.9	1247.1	1214.1	1196.5	1187.7	1186.6	1185.5	1178.8	1176.6	1176.6
27.5°	1272.4	1229.5	1183.3	1146.9	1122.7	1106.2	1087.5	1074.3	1057.8	1035.8	1024.8
30°	1237.2	1191.0	1140.3	1097.4	1066.6	1034.7	996.1	966.4	936.7	910.3	887.2
32.5°	1205.3	1157.9	1108.4	1063.3	1010.4	955.4	907.0	871.8	820.0	784.8	755.1
35°	1181.1	1133.7	1087.5	1028.1	955.4	885.0	822.2	770.5	717.7	671.4	631.8
37.5°	1163.4	1123.8	1074.3	993.9	902.6	817.8	751.8	690.1	627.4	564.7	515.1
40°	1157.9	1123.8	1061.1	956.5	851.9	760.6	684.6	608.7	539.3	472.2	421.6
42.5°	1161.2	1124.9	1040.2	923.5	810.1	711.1	625.2	537.1	454.6	383.0	332.4
45°	1173.3	1124.9	1018.1	887.2	771.6	665.9	563.6	459.0	363.2	306.0	284.0
47.5°	1209.7	1132.6	1000.5	860.7	737.5	616.4	494.2	375.3	293.9	269.7	269.7
50°	1265.8	1155.7	998.3	840.9	698.9	559.2	408.4	296.1	259.8	258.7	265.3
52.5°	1361.6	1196.5	1009.3	827.7	658.2	482.1	318.1	255.4	247.7	254.3	264.2
55°	1547.6	1268.0	1024.8	803.5	590.0	377.5	260.9	242.2	245.5	253.2	262.0
57.5°	1887.7	1412.2	1041.3	751.8	477.7	286.2	236.7	237.8	243.3	251.0	258.7
60°	2122.1	1590.5	1074.3	664.8	355.5	236.7	226.7	235.5	242.2	247.7	254.3
62.5°	2142.0	1655.5	1098.5	566.9	264.2	215.7	217.9	231.1	240.0	242.2	245.5
65°	2023.1	1571.8	1029.2	467.8	219.0	204.7	212.4	224.5	233.3	234.4	237.8
67.5°	1763.3	1396.8	878.4	355.5	200.3	197.0	205.8	213.5	220.1	225.6	230.0
70°	1366.0	1140.3	706.6	276.3	186.0	184.9	192.6	201.4	208.0	213.5	220.1
72.5°	719.9	810.1	526.1	221.2	170.6	171.7	179.4	187.1	191.5	197.0	203.6
75°	223.4	343.4	324.7	177.2	151.9	156.3	160.7	167.3	175.0	178.3	181.6
77.5°	132.1	139.8	169.5	138.7	132.1	135.4	140.9	146.4	151.9	156.3	159.6
80°	106.8	109.0	110.1	110.1	110.1	114.5	118.9	126.6	131.0	133.2	134.3
82.5°	83.7	89.2	90.3	88.1	91.4	95.8	98.0	102.4	103.5	105.7	107.9
85°	69.3	68.2	70.4	71.5	67.1	67.1	64.9	64.9	69.3	77.0	78.1
87.5°	53.9	47.3	38.5	36.3	34.1	31.9	29.7	29.7	30.8	35.2	38.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P141255

CATALOG NUMBER: ECM-F04-LED-E1-SL4

CANDELA DISTRIBUTION (continued):

	160°	165°	170°	175°	180°
0°	1894.3	1894.3	1894.3	1894.3	1894.3
2.5°	1898.7	1897.6	1899.8	1903.1	1900.9
5°	1885.5	1885.5	1889.9	1893.2	1891.0
7.5°	1859.1	1860.2	1866.8	1871.2	1869.0
10°	1817.3	1819.5	1827.2	1833.8	1837.1
12.5°	1754.5	1762.2	1772.1	1778.7	1778.7
15°	1675.3	1687.4	1698.4	1708.3	1702.8
17.5°	1585.0	1599.3	1613.6	1619.1	1613.6
20°	1476.0	1477.1	1485.9	1491.4	1489.2
22.5°	1327.4	1323.0	1327.4	1329.6	1332.9
25°	1175.5	1167.8	1163.4	1170.0	1173.3
27.5°	1020.3	1009.3	1012.6	1004.9	996.1
30°	869.6	859.6	847.5	844.2	849.7
32.5°	736.4	711.1	701.1	682.4	690.1
35°	595.5	570.2	545.9	539.3	534.9
37.5°	479.9	449.1	419.4	409.5	407.3
40°	375.3	350.0	330.2	324.7	322.5
42.5°	304.9	293.9	290.6	290.6	291.7
45°	278.5	279.6	282.9	285.1	286.2
47.5°	273.0	277.4	281.8	286.2	287.3
50°	273.0	276.3	279.6	284.0	285.1
52.5°	270.8	274.1	275.2	277.4	279.6
55°	268.6	269.7	269.7	270.8	273.0
57.5°	263.1	264.2	262.0	263.1	267.5
60°	257.6	258.7	256.5	258.7	259.8
62.5°	249.9	249.9	248.8	249.9	251.0
65°	241.1	237.8	240.0	238.9	240.0
67.5°	230.0	225.6	224.5	224.5	225.6
70°	214.6	211.3	210.2	212.4	214.6
72.5°	195.9	198.1	201.4	204.7	210.2
75°	182.7	186.0	190.4	201.4	209.1
77.5°	164.0	162.9	167.3	179.4	190.4
80°	136.5	137.6	136.5	139.8	142.0
82.5°	104.6	103.5	100.2	100.2	98.0
85°	73.7	70.4	66.0	64.9	63.8
87.5°	37.4	39.6	36.3	33.0	33.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)