

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: FAIL-SAFE

Report Number: P241509

Luminaire Tested: **FVS8M-4-LD4-30-2HI-PA187-UNV-EDC1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P241509
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1711-410-40)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FVS8M-4-LD4-30-2HI-PA187-UNV-EDC1
Description: FAILSAFE FVS8M LED FIXTURE
4FT LENGTH, 2-MODULE LED WITH PA187 LENS
Light Source: (168) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

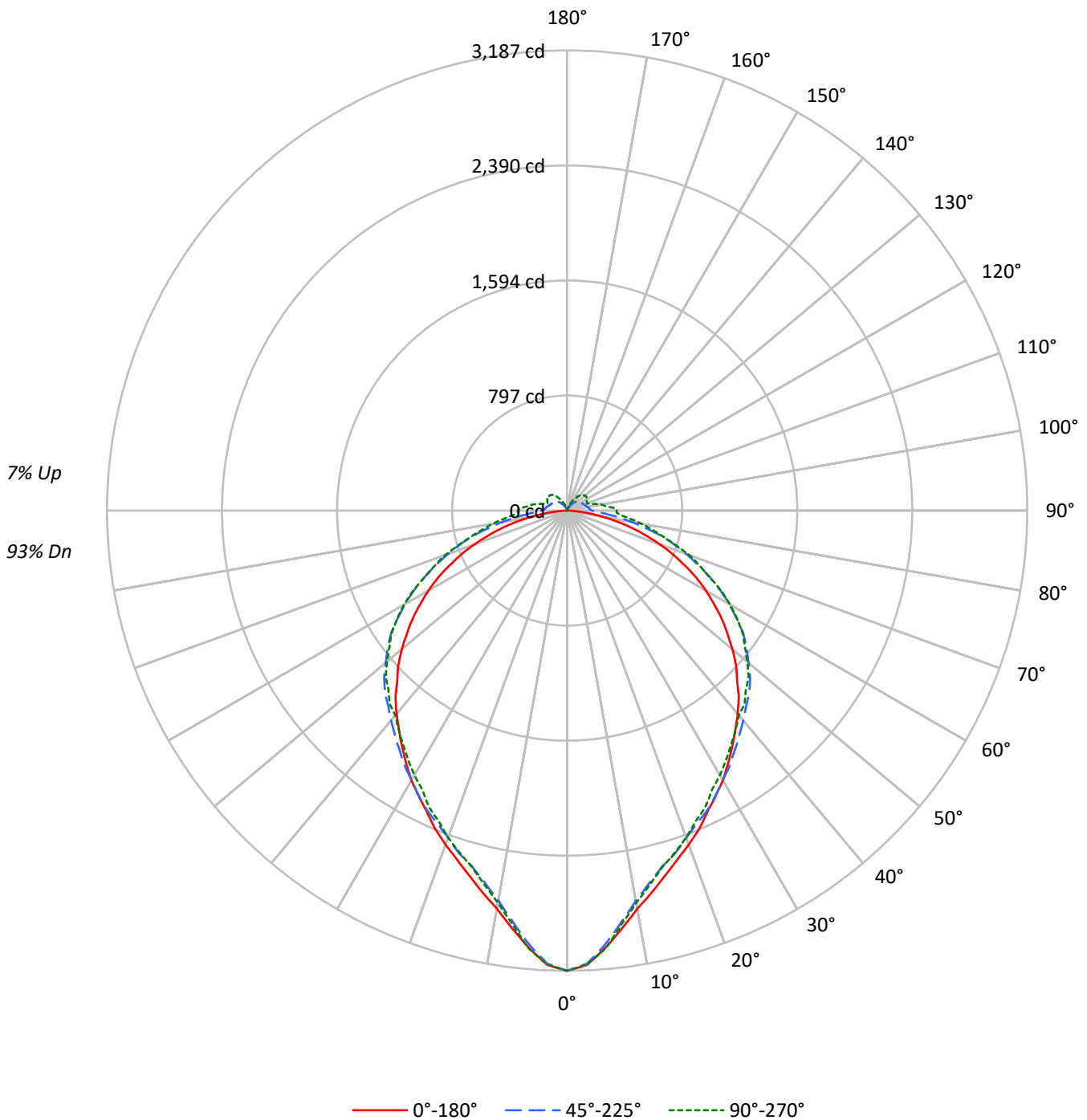
Lumens per Lamp: N/A
Luminaire Lumens: 8531.0 lumens
Efficiency: N/A
Efficacy: 99.9 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 0.99 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.65' x L: 3.73' x H: 0.15')
CIE Type: Direct

Input Watts (W): 85.4
Input Voltage (V): 120
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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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	117	117	117	117	114	114	114	114	107	107	107	101	101	101	96	96	96	93
1	106	101	97	92	103	98	94	90	93	89	86	88	85	82	83	81	79	76
2	96	88	80	74	93	85	79	73	80	75	70	76	72	68	72	68	65	63
3	88	77	68	61	84	74	67	60	70	64	58	67	61	57	63	59	55	52
4	80	68	59	52	77	66	58	51	62	55	50	59	53	48	56	51	47	44
5	73	60	51	44	71	59	50	44	56	48	43	53	47	42	51	45	41	38
6	68	54	45	39	65	53	44	38	50	43	37	48	42	36	46	40	36	33
7	63	49	40	34	61	48	40	34	46	38	33	44	37	32	42	36	32	29
8	58	45	36	30	56	44	36	30	42	35	29	40	34	29	38	33	28	26
9	55	41	33	27	53	40	32	27	39	32	27	37	31	26	36	30	26	24
10	51	38	30	25	50	37	30	25	36	29	24	34	28	24	33	27	23	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14245	14245	14245
5°	13591	13318	13398
10°	12616	12053	12032
15°	11987	11231	11138
20°	11544	10735	10592
25°	11139	10401	10107
30°	10887	10037	9660
35°	10587	9766	9326
40°	10380	9568	9078
45°	10120	9497	9029
50°	9929	9323	8924
55°	9649	9165	8745
60°	9293	8742	8377
65°	8768	8212	7748
70°	8030	7557	7247
75°	6969	6820	6377
80°	5405	5655	5888
85°	2832	4450	5384



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	280.7	3.3
10°-20°	727.7	8.5
20°-30°	1056.7	12.4
30°-40°	1261.6	14.8
40°-50°	1351.1	15.8
50°-60°	1284.0	15.1
60°-70°	1033.1	12.1
70°-80°	661.4	7.8
80°-90°	290.8	3.4
90°-100°	162.4	1.9
100°-110°	122.5	1.4
110°-120°	97.9	1.1
120°-130°	86.6	1.0
130°-140°	63.6	0.7
140°-150°	35.0	0.4
150°-160°	13.2	0.2
160°-170°	2.6	0.0
170°-180°	0.0	0.0
0°-30°	2065.1	24.2
0°-40°	3326.7	39.0
0°-60°	5961.8	69.9
0°-90°	7947.1	93.2
90°-120°	382.9	4.5
90°-150°	568.1	6.7
90°-180°	584.0	6.8
0°-180°	8531.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3187	3187	3187	3187	3187	
5°	3040	3030	3017	3030	3045	283
15°	2618	2599	2549	2557	2553	739
25°	2300	2303	2294	2277	2265	1063
35°	1994	2040	2025	2020	1980	1249
45°	1664	1731	1784	1784	1751	1289
55°	1308	1383	1491	1488	1484	1166
65°	899	986	1088	1102	1088	890
75°	462	551	671	711	680	491
85°	80	160	273	341	376	105
90°	1	74	172	242	342	4
95°	1	68	154	228	293	1
105°	1	59	132	178	178	1
115°	1	53	117	147	150	1
125°	1	44	108	155	163	1
135°	2	32	86	135	153	1
145°	2	16	56	93	111	1
155°	2	6	26	49	57	1
165°	3	2	7	13	18	1
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	3187.4	3187.4	3187.4	3187.4	3187.4	3187.4	3187.4	3187.4	3187.4	3187.4	3187.4
2.5°	3148.8	3157.3	3150.7	3148.8	3147.9	3153.5	3152.6	3154.5	3153.5	3144.1	3141.3
5°	3039.8	3044.5	3038.9	3039.8	3031.4	3029.5	3033.2	3039.8	3033.2	3034.2	3017.3
7.5°	2917.6	2919.5	2909.2	2898.8	2896.9	2905.4	2903.5	2896.9	2891.3	2878.1	2875.3
10°	2799.2	2805.8	2792.6	2781.3	2776.6	2777.6	2774.7	2761.6	2760.6	2752.2	2743.7
12.5°	2708.9	2714.6	2700.5	2688.3	2683.6	2679.8	2685.4	2666.6	2662.9	2654.4	2638.4
15°	2617.8	2614.0	2615.9	2599.9	2599.9	2599.0	2594.3	2583.9	2574.5	2563.3	2549.2
17.5°	2535.1	2539.8	2530.4	2518.1	2517.2	2519.1	2518.1	2516.3	2508.7	2494.6	2489.9
20°	2461.7	2458.0	2447.6	2451.4	2449.5	2448.6	2450.5	2440.1	2428.8	2424.1	2411.0
22.5°	2387.5	2380.9	2374.3	2378.1	2378.1	2368.7	2372.4	2368.7	2360.2	2358.3	2346.1
25°	2300.1	2311.3	2305.7	2297.2	2300.1	2302.9	2311.3	2310.4	2306.6	2305.7	2293.5
27.5°	2227.7	2232.4	2224.9	2224.9	2242.7	2247.4	2246.5	2237.1	2238.0	2219.2	2224.9
30°	2157.2	2152.5	2157.2	2166.6	2168.5	2169.4	2167.5	2172.2	2163.8	2162.8	2155.3
32.5°	2075.4	2076.4	2082.9	2079.2	2095.2	2099.9	2102.7	2115.8	2114.0	2103.6	2094.2
35°	1993.6	2004.9	2000.2	2001.2	2040.6	2039.7	2041.6	2042.5	2029.4	2015.3	2024.7
37.5°	1913.7	1922.2	1919.4	1941.0	1952.3	1951.3	1950.4	1958.9	1965.4	1958.9	1958.9
40°	1837.6	1829.1	1841.4	1860.2	1866.7	1879.9	1895.9	1907.2	1906.2	1898.7	1897.8
42.5°	1759.6	1755.8	1764.3	1773.7	1803.8	1818.8	1828.2	1830.1	1820.7	1831.0	1834.8
45°	1663.7	1675.9	1668.4	1702.3	1723.9	1731.4	1737.0	1752.1	1766.2	1771.8	1784.0
47.5°	1586.6	1589.5	1591.3	1620.5	1634.6	1648.7	1659.0	1684.4	1705.1	1714.5	1719.2
50°	1494.5	1488.9	1506.7	1524.6	1556.6	1573.5	1587.6	1599.8	1618.6	1634.6	1640.2
52.5°	1398.7	1401.5	1412.8	1433.4	1472.0	1487.0	1492.6	1512.4	1534.0	1550.9	1566.0
55°	1307.5	1311.2	1317.8	1350.7	1371.4	1382.7	1401.5	1431.5	1456.0	1468.2	1490.8
57.5°	1206.0	1212.5	1224.8	1247.3	1274.6	1294.3	1309.4	1339.4	1364.8	1378.0	1393.0
60°	1110.1	1104.4	1132.6	1147.7	1181.5	1203.1	1210.7	1235.1	1262.4	1283.0	1295.3
62.5°	1009.5	1007.6	1022.7	1049.9	1079.1	1091.3	1101.6	1138.3	1158.0	1181.5	1197.5
65°	898.6	908.0	917.4	947.5	971.9	986.0	1002.9	1033.9	1060.3	1080.9	1088.5
67.5°	794.3	799.9	820.6	841.3	866.6	878.9	900.5	928.7	955.0	972.9	980.4
70°	680.5	689.0	711.5	735.0	763.2	773.6	788.6	819.6	844.1	867.6	876.0
72.5°	570.6	577.1	600.6	620.4	653.3	670.2	683.3	711.5	733.2	754.8	774.5
75°	462.5	474.7	493.5	512.3	545.2	550.8	564.9	596.9	623.2	647.6	671.1
77.5°	360.9	368.5	379.7	411.7	431.4	444.6	457.8	488.8	518.9	536.7	555.5
80°	256.6	266.9	279.2	298.9	328.0	341.2	352.5	381.6	409.8	431.4	453.1
82.5°	164.5	168.3	185.2	204.0	235.0	242.5	253.8	282.9	308.3	333.7	355.3
85°	79.9	89.3	103.4	125.0	148.5	159.8	171.1	200.2	226.5	251.0	272.6
87.5°	26.3	32.0	47.0	65.8	89.3	102.5	112.8	139.1	163.6	188.9	211.5
90°	0.9	7.5	21.6	40.4	63.0	74.3	86.5	110.0	133.5	155.1	172.0
92.5°	0.9	5.6	18.8	37.6	59.2	70.5	81.8	104.3	126.0	142.9	159.8
95°	0.9	4.7	17.9	36.7	56.4	67.7	79.0	99.6	118.4	137.2	154.2
97.5°	0.9	4.7	16.9	34.8	54.5	65.8	75.2	94.9	113.7	131.6	149.5
100°	0.9	4.7	16.0	33.8	52.6	63.0	72.4	91.2	110.0	126.9	143.8
102.5°	0.9	3.8	16.0	32.9	50.8	60.2	69.6	88.4	106.2	122.2	138.2
105°	0.9	3.8	15.0	31.0	49.8	59.2	67.7	85.5	102.5	118.4	132.5
107.5°	0.9	2.8	14.1	30.1	47.9	57.3	66.7	83.7	99.6	114.7	127.8
110°	0.9	2.8	14.1	29.1	47.0	56.4	64.9	81.8	97.8	111.9	123.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.9	2.8	13.2	28.2	45.1	54.5	63.0	79.9	94.9	108.1	119.4
115°	0.9	1.9	12.2	27.3	44.2	52.6	61.1	78.0	93.1	105.3	116.6
117.5°	0.9	1.9	11.3	26.3	42.3	50.8	59.2	75.2	90.2	103.4	114.7
120°	0.9	1.9	10.3	24.4	40.4	48.9	57.3	73.3	88.4	100.6	112.8
122.5°	0.9	1.9	9.4	22.6	38.5	47.0	55.5	70.5	85.5	98.7	110.9
125°	0.9	0.9	8.5	21.6	36.7	44.2	52.6	67.7	82.7	95.9	108.1
127.5°	0.9	0.9	7.5	19.7	33.8	42.3	49.8	64.9	79.0	92.1	104.3
130°	0.9	0.9	6.6	17.9	32.0	39.5	46.1	61.1	75.2	87.4	99.6
132.5°	0.9	0.9	5.6	15.0	28.2	34.8	42.3	56.4	70.5	81.8	93.1
135°	1.9	0.9	3.8	13.2	25.4	32.0	37.6	50.8	63.9	75.2	86.5
137.5°	1.9	0.9	2.8	11.3	21.6	27.3	32.9	45.1	57.3	68.6	79.9
140°	1.9	1.9	2.8	8.5	17.9	23.5	29.1	39.5	50.8	61.1	71.4
142.5°	1.9	1.9	1.9	6.6	15.0	19.7	23.5	33.8	44.2	53.6	63.0
145°	1.9	1.9	1.9	5.6	12.2	16.0	19.7	28.2	37.6	46.1	55.5
147.5°	1.9	1.9	1.9	3.8	9.4	13.2	16.0	23.5	31.0	39.5	47.0
150°	1.9	1.9	1.9	2.8	7.5	10.3	13.2	19.7	26.3	32.9	39.5
152.5°	1.9	1.9	1.9	1.9	5.6	7.5	10.3	15.0	20.7	27.3	32.9
155°	1.9	1.9	1.9	1.9	3.8	5.6	7.5	12.2	16.9	21.6	26.3
157.5°	2.8	1.9	1.9	1.9	2.8	3.8	5.6	8.5	12.2	16.9	20.7
160°	2.8	1.9	1.9	1.9	1.9	2.8	3.8	6.6	9.4	12.2	15.0
162.5°	2.8	2.8	1.9	1.9	1.9	1.9	1.9	3.8	5.6	8.5	10.3
165°	2.8	2.8	1.9	1.9	1.9	1.9	1.9	1.9	2.8	4.7	6.6
167.5°	2.8	2.8	1.9	1.9	0.9	0.9	0.9	0.9	1.9	1.9	2.8
170°	2.8	2.8	1.9	1.9	1.9	0.9	0.9	0.9	0.9	0.9	0.9
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	3187.4	3187.4	3187.4	3187.4	3187.4	3187.4	3187.4	3187.4	3187.4	3187.4
2.5°	3138.5	3143.2	3147.0	3145.1	3146.0	3153.5	3141.3	3146.0	3147.9	3145.1
5°	3019.1	3022.0	3031.4	3034.2	3030.4	3033.2	3034.2	3038.9	3046.4	3045.4
7.5°	2872.5	2880.0	2878.1	2884.7	2887.5	2889.4	2890.4	2891.3	2890.4	2890.4
10°	2736.2	2744.7	2749.4	2757.8	2755.0	2756.9	2752.2	2758.8	2754.1	2756.9
12.5°	2646.9	2647.8	2631.9	2639.4	2637.5	2639.4	2647.8	2640.3	2647.8	2651.6
15°	2546.3	2548.2	2558.6	2561.4	2556.7	2553.9	2558.6	2562.3	2560.4	2552.9
17.5°	2488.1	2485.2	2488.1	2491.8	2491.8	2494.6	2490.9	2495.6	2484.3	2482.4
20°	2420.4	2423.2	2430.7	2427.9	2415.7	2409.1	2409.1	2405.3	2403.5	2410.0
22.5°	2354.6	2357.4	2349.9	2349.9	2355.5	2352.7	2348.9	2339.5	2326.4	2327.3
25°	2295.4	2291.6	2298.2	2291.6	2276.6	2277.5	2268.1	2270.9	2268.1	2265.3
27.5°	2212.7	2226.7	2222.1	2221.1	2220.2	2227.7	2210.8	2203.3	2192.0	2176.0
30°	2155.3	2146.9	2157.2	2150.6	2145.0	2130.9	2125.2	2112.1	2114.9	2115.8
32.5°	2098.0	2097.0	2090.5	2067.9	2068.8	2067.9	2067.9	2059.4	2048.2	2048.2
35°	2016.2	2022.8	2006.8	2021.8	2020.0	2003.0	1990.8	1985.2	1985.2	1979.5
37.5°	1961.7	1946.6	1949.5	1941.0	1937.2	1941.0	1941.9	1928.8	1928.8	1916.6
40°	1900.6	1902.5	1891.2	1895.9	1902.5	1887.4	1882.7	1857.3	1848.9	1850.8
42.5°	1838.5	1846.1	1858.3	1849.8	1836.7	1826.3	1817.9	1820.7	1815.1	1817.9
45°	1787.8	1790.6	1793.4	1773.7	1784.0	1786.9	1772.8	1760.5	1757.7	1751.1
47.5°	1730.5	1741.7	1719.2	1724.8	1716.4	1703.2	1702.3	1701.3	1708.8	1704.1
50°	1652.4	1658.1	1657.1	1642.1	1639.3	1642.1	1653.4	1641.2	1631.8	1628.9
52.5°	1572.5	1569.7	1571.6	1576.3	1580.1	1575.4	1558.4	1550.0	1547.2	1551.9
55°	1501.1	1497.3	1489.8	1495.5	1487.9	1486.1	1487.0	1488.9	1487.9	1484.2
57.5°	1401.5	1408.1	1423.1	1396.8	1399.6	1407.1	1409.9	1398.7	1393.0	1395.8
60°	1300.0	1307.5	1305.6	1315.0	1313.1	1302.8	1301.8	1301.8	1304.7	1303.7
62.5°	1200.3	1206.9	1200.3	1206.0	1200.3	1200.3	1198.4	1204.1	1199.4	1202.2
65°	1099.7	1100.7	1111.0	1104.4	1101.6	1107.3	1091.3	1082.8	1083.8	1087.5
67.5°	991.7	1000.1	1002.0	1003.9	998.2	993.5	984.1	984.1	989.8	988.8
70°	885.4	897.7	900.5	896.7	891.1	889.2	893.9	904.2	910.8	898.6
72.5°	783.9	799.0	800.8	798.0	805.5	810.2	802.7	788.6	779.2	782.0
75°	680.5	691.8	701.2	707.8	710.6	704.0	691.8	683.3	676.8	680.5
77.5°	576.2	590.3	599.7	599.7	600.6	603.5	600.6	600.6	597.8	598.8
80°	472.8	491.6	491.6	506.6	511.3	508.5	517.9	518.9	520.7	521.7
82.5°	381.6	394.8	403.2	416.4	424.9	425.8	435.2	437.1	440.8	444.6
85°	294.2	308.3	324.3	335.6	341.2	347.8	359.1	361.9	374.1	376.0
87.5°	226.5	241.6	257.5	273.5	280.1	283.9	294.2	307.4	329.0	342.1
90°	188.0	205.8	222.8	235.9	242.5	249.1	265.1	285.7	319.6	342.1
92.5°	178.6	195.5	208.7	223.7	233.1	241.6	264.1	292.3	322.4	333.7
95°	172.0	188.0	203.0	219.9	228.4	237.8	257.5	275.4	289.5	293.3
97.5°	164.5	179.5	194.6	210.5	219.0	225.6	238.7	248.1	256.6	259.4
100°	157.9	172.0	187.1	200.2	205.8	211.5	221.8	233.1	239.7	241.6
102.5°	151.3	164.5	176.7	187.1	192.7	197.4	205.8	209.6	209.6	208.7
105°	145.7	157.0	166.4	174.8	177.7	181.4	184.2	181.4	178.6	177.7
107.5°	139.1	148.5	156.0	161.7	163.6	164.5	163.6	160.7	158.9	157.9
110°	133.5	141.9	147.6	151.3	152.3	152.3	151.3	149.5	147.6	146.6



TEST NUMBER: P241509

CATALOG NUMBER: FVS8M-4-LD4-30-2HI-PA187-UNV-EDC1

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	128.8	136.3	141.9	144.8	145.7	146.6	148.5	147.6	146.6	146.6
115°	126.0	133.5	140.1	144.8	146.6	148.5	151.3	151.3	151.3	150.4
117.5°	124.1	133.5	141.0	146.6	150.4	153.2	157.0	157.9	156.0	155.1
120°	124.1	133.5	141.9	150.4	153.2	157.0	160.7	161.7	159.8	158.9
122.5°	122.2	133.5	142.9	151.3	156.0	159.8	163.6	163.6	162.6	161.7
125°	120.3	131.6	141.0	150.4	155.1	158.9	163.6	164.5	163.6	162.6
127.5°	116.6	127.8	138.2	147.6	151.3	155.1	160.7	163.6	163.6	162.6
130°	111.9	124.1	133.5	142.9	147.6	151.3	157.9	160.7	160.7	160.7
132.5°	105.3	117.5	126.9	137.2	141.9	146.6	153.2	156.0	157.9	157.9
135°	98.7	109.0	120.3	129.7	135.4	140.1	147.6	150.4	152.3	153.2
137.5°	91.2	100.6	110.9	121.3	126.9	131.6	140.1	142.9	145.7	146.6
140°	82.7	92.1	102.5	111.9	116.6	121.3	128.8	132.5	136.3	136.3
142.5°	73.3	83.7	93.1	101.5	105.3	110.0	116.6	120.3	123.1	124.1
145°	64.9	74.3	81.8	90.2	93.1	96.8	102.5	106.2	110.0	110.9
147.5°	56.4	64.9	72.4	79.0	81.8	84.6	88.4	92.1	94.9	95.9
150°	47.0	53.6	61.1	67.7	70.5	72.4	76.1	78.0	80.8	81.8
152.5°	38.5	45.1	50.8	57.3	59.2	61.1	63.9	66.7	67.7	68.6
155°	31.0	35.7	41.4	47.0	48.9	50.8	53.6	55.5	56.4	57.3
157.5°	24.4	28.2	32.0	36.7	39.5	41.4	43.2	45.1	46.1	47.0
160°	17.9	21.6	24.4	27.3	30.1	31.0	34.8	35.7	35.7	36.7
162.5°	13.2	15.0	17.9	19.7	20.7	22.6	25.4	25.4	27.3	26.3
165°	7.5	9.4	11.3	12.2	13.2	14.1	16.9	17.9	17.9	17.9
167.5°	3.8	4.7	5.6	6.6	6.6	7.5	8.5	10.3	10.3	10.3
170°	0.9	0.9	1.9	1.9	1.9	1.9	2.8	3.8	3.8	3.8
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)