

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: P241510

Luminaire Tested: **FVS8M-4-LD4-35-2HI-PA187-UNV-EDC1**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P241510  
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-LD4-35-2HI-PA187-UNV-EDC1  
Description: FAILSAFE FVS8M LED FIXTURE  
4FT LENGTH, 2-MODULE LED WITH PA187 LENS  
Light Source: (168) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

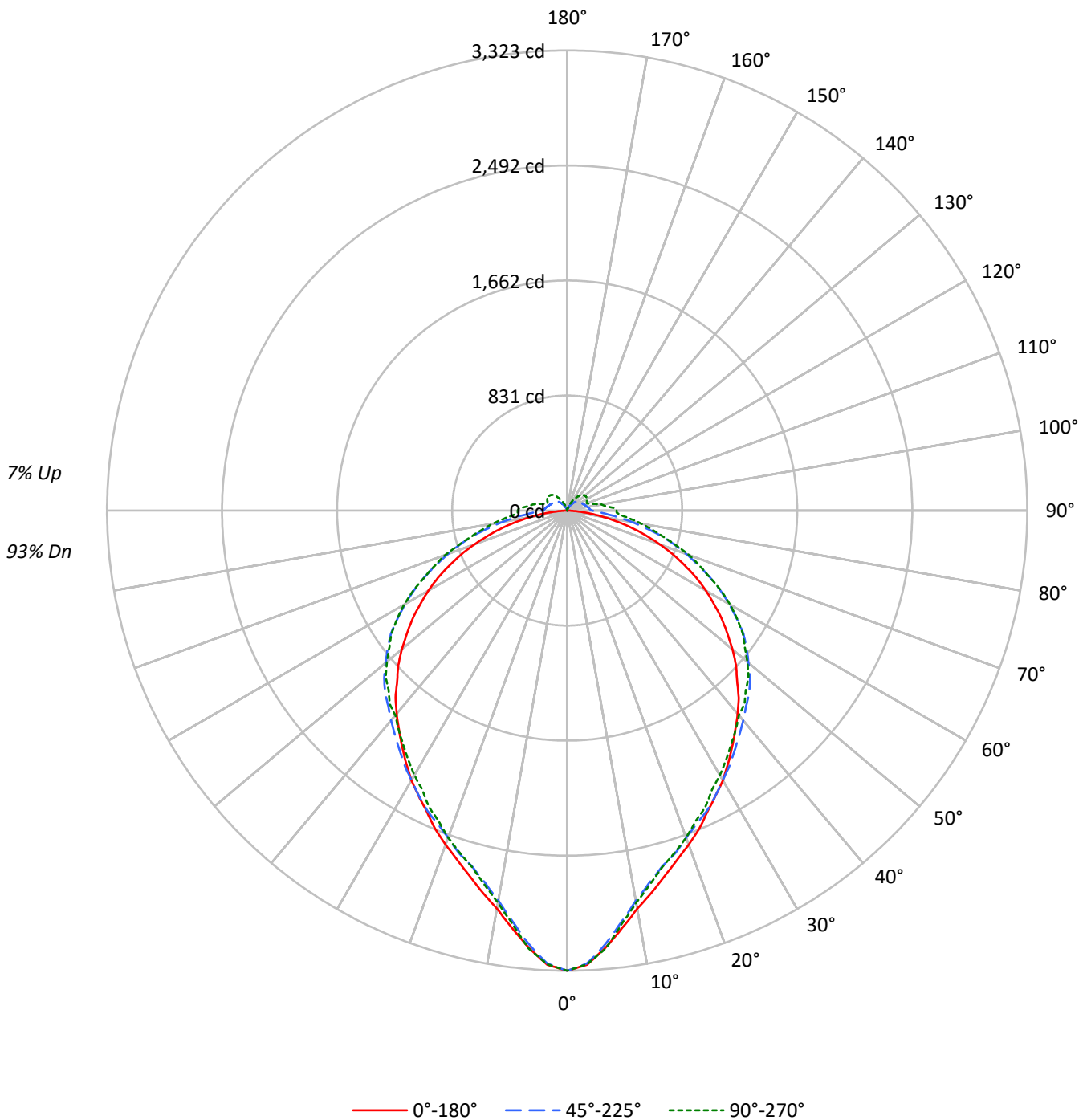
Lumens per Lamp: N/A  
Luminaire Lumens: 8894.0 lumens  
Efficiency: N/A  
Efficacy: 104.1 lumens/watt  
Spacing Criteria (0/90/45): 1.01 / 0.99 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.65' x L: 3.73' x H: 0.15')  
CIE Type: Direct

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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CATALOG NUMBER: FVS8M-4-LD4-35-2HI-PA187-UNV-EDC1

### 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°	14851	14851	14851
5°	14170	13885	13968
10°	13153	12567	12544
15°	12497	11709	11612
20°	12035	11192	11043
25°	11613	10844	10537
30°	11350	10464	10071
35°	11038	10181	9723
40°	10822	9975	9464
45°	10550	9901	9413
50°	10351	9720	9304
55°	10059	9554	9117
60°	9688	9114	8734
65°	9140	8562	8078
70°	8372	7879	7555
75°	7265	7111	6649
80°	5635	5894	6138
85°	2952	4640	5613



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	292.6	3.3
10°-20°	758.7	8.5
20°-30°	1101.7	12.4
30°-40°	1315.3	14.8
40°-50°	1408.6	15.8
50°-60°	1338.6	15.1
60°-70°	1077.0	12.1
70°-80°	689.6	7.8
80°-90°	303.2	3.4
90°-100°	169.3	1.9
100°-110°	127.7	1.4
110°-120°	102.1	1.1
120°-130°	90.3	1.0
130°-140°	66.3	0.7
140°-150°	36.5	0.4
150°-160°	13.8	0.2
160°-170°	2.7	0.0
170°-180°	0.0	0.0
0°-30°	2153.0	24.2
0°-40°	3468.3	39.0
0°-60°	6215.4	69.9
0°-90°	8285.2	93.2
90°-120°	399.2	4.5
90°-150°	592.3	6.7
90°-180°	609.0	6.8
0°-180°	8894.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3323	3323	3323	3323	3323	
5°	3169	3158	3146	3159	3175	295
15°	2729	2710	2658	2666	2662	770
25°	2398	2401	2391	2373	2362	1108
35°	2078	2126	2111	2106	2064	1303
45°	1734	1805	1860	1860	1826	1344
55°	1363	1442	1554	1551	1547	1216
65°	937	1028	1135	1148	1134	928
75°	482	574	700	741	710	512
85°	83	167	284	356	392	109
90°	1	77	179	253	357	4
95°	1	71	161	238	306	1
105°	1	62	138	185	185	1
115°	1	55	122	153	157	1
125°	1	46	113	162	170	1
135°	2	33	90	141	160	1
145°	2	17	58	97	116	1
155°	2	6	27	51	60	1
165°	3	2	7	14	19	1
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P241510

CATALOG NUMBER: FVS8M-4-LD4-35-2HI-PA187-UNV-EDC1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	3323.0	3323.0	3323.0	3323.0	3323.0	3323.0	3323.0	3323.0	3323.0	3323.0	3323.0
2.5°	3282.8	3291.6	3284.8	3282.8	3281.8	3287.7	3286.7	3288.7	3287.7	3277.9	3275.0
5°	3169.2	3174.1	3168.2	3169.2	3160.3	3158.4	3162.3	3169.2	3162.3	3163.3	3145.6
7.5°	3041.8	3043.7	3032.9	3022.2	3020.2	3029.0	3027.1	3020.2	3014.3	3000.6	2997.7
10°	2918.3	2925.1	2911.4	2899.7	2894.8	2895.7	2892.8	2879.1	2878.1	2869.3	2860.5
12.5°	2824.2	2830.1	2815.4	2802.7	2797.8	2793.8	2799.7	2780.1	2776.2	2767.4	2750.7
15°	2729.2	2725.2	2727.2	2710.5	2710.5	2709.6	2704.7	2693.9	2684.1	2672.3	2657.6
17.5°	2642.9	2647.8	2638.0	2625.3	2624.3	2626.3	2625.3	2623.3	2615.5	2600.8	2595.9
20°	2566.5	2562.6	2551.8	2555.7	2553.7	2552.8	2554.7	2543.9	2532.2	2527.3	2513.6
22.5°	2489.1	2482.2	2475.4	2479.3	2479.3	2469.5	2473.4	2469.5	2460.7	2458.7	2446.0
25°	2397.9	2409.7	2403.8	2395.0	2397.9	2400.9	2409.7	2408.7	2404.8	2403.8	2391.1
27.5°	2322.5	2327.4	2319.5	2319.5	2338.2	2343.1	2342.1	2332.3	2333.3	2313.7	2319.5
30°	2249.0	2244.1	2249.0	2258.8	2260.7	2261.7	2259.8	2264.7	2255.8	2254.9	2247.0
32.5°	2163.7	2164.7	2171.6	2167.6	2184.3	2189.2	2192.1	2205.9	2203.9	2193.1	2183.3
35°	2078.5	2090.2	2085.3	2086.3	2127.5	2126.5	2128.4	2129.4	2115.7	2101.0	2110.8
37.5°	1995.2	2004.0	2001.1	2023.6	2035.4	2034.4	2033.4	2042.2	2049.1	2042.2	2042.2
40°	1915.8	1907.0	1919.7	1939.3	1946.2	1959.9	1976.6	1988.3	1987.3	1979.5	1978.5
42.5°	1834.5	1830.5	1839.4	1849.2	1880.5	1896.2	1906.0	1908.0	1898.2	1908.9	1912.9
45°	1734.5	1747.2	1739.4	1774.7	1797.2	1805.1	1810.9	1826.6	1841.3	1847.2	1859.9
47.5°	1654.2	1657.1	1659.1	1689.4	1704.1	1718.8	1729.6	1756.1	1777.6	1787.4	1792.3
50°	1558.1	1552.2	1570.9	1589.5	1622.8	1640.4	1655.1	1667.9	1687.5	1704.1	1710.0
52.5°	1458.2	1461.1	1472.9	1494.4	1534.6	1550.3	1556.2	1576.7	1599.3	1616.9	1632.6
55°	1363.1	1367.0	1373.9	1408.2	1429.7	1441.5	1461.1	1492.5	1517.9	1530.7	1554.2
57.5°	1257.3	1264.1	1276.9	1300.4	1328.8	1349.4	1365.1	1396.4	1422.9	1436.6	1452.3
60°	1157.3	1151.4	1180.8	1196.5	1231.8	1254.3	1262.2	1287.7	1316.1	1337.6	1350.4
62.5°	1052.5	1050.5	1066.2	1094.6	1125.0	1137.7	1148.5	1186.7	1207.3	1231.8	1248.5
65°	936.8	946.6	956.4	987.8	1013.3	1028.0	1045.6	1077.9	1105.4	1126.9	1134.8
67.5°	828.1	833.9	855.5	877.1	903.5	916.3	938.8	968.2	995.6	1014.2	1022.1
70°	709.5	718.3	741.8	766.3	795.7	806.5	822.2	854.5	880.0	904.5	913.3
72.5°	594.8	601.7	626.2	646.8	681.1	698.7	712.4	741.8	764.4	786.9	807.5
75°	482.1	494.9	514.5	534.1	568.4	574.3	588.9	622.3	649.7	675.2	699.7
77.5°	376.3	384.1	395.9	429.2	449.8	463.5	477.2	509.6	540.9	559.6	579.1
80°	267.5	278.3	291.0	311.6	342.0	355.7	367.5	397.9	427.3	449.8	472.3
82.5°	171.5	175.4	193.0	212.6	245.0	252.8	264.6	295.0	321.4	347.9	370.4
85°	83.3	93.1	107.8	130.3	154.8	166.6	178.4	208.7	236.2	261.6	284.2
87.5°	27.4	33.3	49.0	68.6	93.1	106.8	117.6	145.0	170.5	197.0	220.5
90°	1.0	7.8	22.5	42.1	65.7	77.4	90.2	114.7	139.2	161.7	179.3
92.5°	1.0	5.9	19.6	39.2	61.7	73.5	85.3	108.8	131.3	149.0	166.6
95°	1.0	4.9	18.6	38.2	58.8	70.6	82.3	103.9	123.5	143.1	160.7
97.5°	1.0	4.9	17.6	36.3	56.8	68.6	78.4	99.0	118.6	137.2	155.8
100°	1.0	4.9	16.7	35.3	54.9	65.7	75.5	95.1	114.7	132.3	149.9
102.5°	1.0	3.9	16.7	34.3	52.9	62.7	72.5	92.1	110.7	127.4	144.1
105°	1.0	3.9	15.7	32.3	51.9	61.7	70.6	89.2	106.8	123.5	138.2
107.5°	1.0	2.9	14.7	31.4	50.0	59.8	69.6	87.2	103.9	119.6	133.3
110°	1.0	2.9	14.7	30.4	49.0	58.8	67.6	85.3	101.9	116.6	128.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	1.0	2.9	13.7	29.4	47.0	56.8	65.7	83.3	99.0	112.7	124.5
115°	1.0	2.0	12.7	28.4	46.1	54.9	63.7	81.3	97.0	109.8	121.5
117.5°	1.0	2.0	11.8	27.4	44.1	52.9	61.7	78.4	94.1	107.8	119.6
120°	1.0	2.0	10.8	25.5	42.1	51.0	59.8	76.4	92.1	104.9	117.6
122.5°	1.0	2.0	9.8	23.5	40.2	49.0	57.8	73.5	89.2	102.9	115.6
125°	1.0	1.0	8.8	22.5	38.2	46.1	54.9	70.6	86.2	100.0	112.7
127.5°	1.0	1.0	7.8	20.6	35.3	44.1	51.9	67.6	82.3	96.0	108.8
130°	1.0	1.0	6.9	18.6	33.3	41.2	48.0	63.7	78.4	91.1	103.9
132.5°	1.0	1.0	5.9	15.7	29.4	36.3	44.1	58.8	73.5	85.3	97.0
135°	2.0	1.0	3.9	13.7	26.5	33.3	39.2	52.9	66.6	78.4	90.2
137.5°	2.0	1.0	2.9	11.8	22.5	28.4	34.3	47.0	59.8	71.5	83.3
140°	2.0	2.0	2.9	8.8	18.6	24.5	30.4	41.2	52.9	63.7	74.5
142.5°	2.0	2.0	2.0	6.9	15.7	20.6	24.5	35.3	46.1	55.9	65.7
145°	2.0	2.0	2.0	5.9	12.7	16.7	20.6	29.4	39.2	48.0	57.8
147.5°	2.0	2.0	2.0	3.9	9.8	13.7	16.7	24.5	32.3	41.2	49.0
150°	2.0	2.0	2.0	2.9	7.8	10.8	13.7	20.6	27.4	34.3	41.2
152.5°	2.0	2.0	2.0	2.0	5.9	7.8	10.8	15.7	21.6	28.4	34.3
155°	2.0	2.0	2.0	2.0	3.9	5.9	7.8	12.7	17.6	22.5	27.4
157.5°	2.9	2.0	2.0	2.0	2.9	3.9	5.9	8.8	12.7	17.6	21.6
160°	2.9	2.0	2.0	2.0	2.0	2.9	3.9	6.9	9.8	12.7	15.7
162.5°	2.9	2.9	2.0	2.0	2.0	2.0	2.0	3.9	5.9	8.8	10.8
165°	2.9	2.9	2.0	2.0	2.0	2.0	2.0	2.0	2.9	4.9	6.9
167.5°	2.9	2.9	2.0	2.0	1.0	1.0	1.0	1.0	2.0	2.0	2.9
170°	2.9	2.9	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
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°	3323.0	3323.0	3323.0	3323.0	3323.0	3323.0	3323.0	3323.0	3323.0	3323.0
2.5°	3272.1	3277.0	3280.9	3278.9	3279.9	3287.7	3275.0	3279.9	3281.8	3278.9
5°	3147.6	3150.5	3160.3	3163.3	3159.4	3162.3	3163.3	3168.2	3176.0	3175.0
7.5°	2994.7	3002.6	3000.6	3007.5	3010.4	3012.4	3013.3	3014.3	3013.3	3013.3
10°	2852.6	2861.5	2866.4	2875.2	2872.2	2874.2	2869.3	2876.2	2871.3	2874.2
12.5°	2759.5	2760.5	2743.9	2751.7	2749.7	2751.7	2760.5	2752.7	2760.5	2764.4
15°	2654.7	2656.6	2667.4	2670.4	2665.5	2662.5	2667.4	2671.3	2669.4	2661.5
17.5°	2593.9	2591.0	2593.9	2597.8	2597.8	2600.8	2596.9	2601.8	2590.0	2588.0
20°	2523.4	2526.3	2534.1	2531.2	2518.5	2511.6	2511.6	2507.7	2505.7	2512.6
22.5°	2454.8	2457.7	2449.9	2449.9	2455.8	2452.8	2448.9	2439.1	2425.4	2426.4
25°	2393.0	2389.1	2396.0	2389.1	2373.4	2374.4	2364.6	2367.6	2364.6	2361.7
27.5°	2306.8	2321.5	2316.6	2315.6	2314.6	2322.5	2304.8	2297.0	2285.2	2268.6
30°	2247.0	2238.2	2249.0	2242.1	2236.2	2221.5	2215.7	2201.9	2204.9	2205.9
32.5°	2187.2	2186.3	2179.4	2155.9	2156.9	2155.9	2155.9	2147.1	2135.3	2135.3
35°	2102.0	2108.9	2092.2	2107.9	2105.9	2088.3	2075.5	2069.7	2069.7	2063.8
37.5°	2045.2	2029.5	2032.4	2023.6	2019.7	2023.6	2024.6	2010.9	2010.9	1998.1
40°	1981.5	1983.4	1971.7	1976.6	1983.4	1967.7	1962.8	1936.4	1927.6	1929.5
42.5°	1916.8	1924.6	1937.4	1928.5	1914.8	1904.0	1895.2	1898.2	1892.3	1895.2
45°	1863.9	1866.8	1869.7	1849.2	1859.9	1862.9	1848.2	1835.4	1832.5	1825.6
47.5°	1804.1	1815.8	1792.3	1798.2	1789.4	1775.7	1774.7	1773.7	1781.5	1776.6
50°	1722.8	1728.6	1727.7	1712.0	1709.0	1712.0	1723.7	1711.0	1701.2	1698.3
52.5°	1639.5	1636.5	1638.5	1643.4	1647.3	1642.4	1624.8	1615.9	1613.0	1617.9
55°	1565.0	1561.1	1553.2	1559.1	1551.3	1549.3	1550.3	1552.2	1551.3	1547.3
57.5°	1461.1	1468.0	1483.6	1456.2	1459.1	1467.0	1469.9	1458.2	1452.3	1455.2
60°	1355.3	1363.1	1361.1	1370.9	1369.0	1358.2	1357.2	1357.2	1360.2	1359.2
62.5°	1251.4	1258.3	1251.4	1257.3	1251.4	1251.4	1249.4	1255.3	1250.4	1253.4
65°	1146.5	1147.5	1158.3	1151.4	1148.5	1154.4	1137.7	1128.9	1129.9	1133.8
67.5°	1033.8	1042.7	1044.6	1046.6	1040.7	1035.8	1026.0	1026.0	1031.9	1030.9
70°	923.1	935.9	938.8	934.9	929.0	927.0	931.9	942.7	949.6	936.8
72.5°	817.3	833.0	834.9	832.0	839.8	844.7	836.9	822.2	812.4	815.3
75°	709.5	721.2	731.0	737.9	740.8	734.0	721.2	712.4	705.6	709.5
77.5°	600.7	615.4	625.2	625.2	626.2	629.1	626.2	626.2	623.2	624.2
80°	492.9	512.5	512.5	528.2	533.1	530.2	540.0	540.9	542.9	543.9
82.5°	397.9	411.6	420.4	434.1	442.9	443.9	453.7	455.7	459.6	463.5
85°	306.7	321.4	338.1	349.8	355.7	362.6	374.3	377.3	390.0	392.0
87.5°	236.2	251.8	268.5	285.2	292.0	295.9	306.7	320.4	343.0	356.7
90°	196.0	214.6	232.2	246.0	252.8	259.7	276.3	297.9	333.2	356.7
92.5°	186.2	203.8	217.5	233.2	243.0	251.8	275.4	304.8	336.1	347.9
95°	179.3	196.0	211.7	229.3	238.1	247.9	268.5	287.1	301.8	305.7
97.5°	171.5	187.2	202.8	219.5	228.3	235.2	248.9	258.7	267.5	270.5
100°	164.6	179.3	195.0	208.7	214.6	220.5	231.3	243.0	249.9	251.8
102.5°	157.8	171.5	184.2	195.0	200.9	205.8	214.6	218.5	218.5	217.5
105°	151.9	163.7	173.5	182.3	185.2	189.1	192.1	189.1	186.2	185.2
107.5°	145.0	154.8	162.7	168.6	170.5	171.5	170.5	167.6	165.6	164.6
110°	139.2	148.0	153.9	157.8	158.8	158.8	157.8	155.8	153.9	152.9





TEST NUMBER: P241510

CATALOG NUMBER: FVS8M-4-LD4-35-2HI-PA187-UNV-EDC1

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	134.3	142.1	148.0	150.9	151.9	152.9	154.8	153.9	152.9	152.9
115°	131.3	139.2	146.0	150.9	152.9	154.8	157.8	157.8	157.8	156.8
117.5°	129.4	139.2	147.0	152.9	156.8	159.7	163.7	164.6	162.7	161.7
120°	129.4	139.2	148.0	156.8	159.7	163.7	167.6	168.6	166.6	165.6
122.5°	127.4	139.2	149.0	157.8	162.7	166.6	170.5	170.5	169.5	168.6
125°	125.4	137.2	147.0	156.8	161.7	165.6	170.5	171.5	170.5	169.5
127.5°	121.5	133.3	144.1	153.9	157.8	161.7	167.6	170.5	170.5	169.5
130°	116.6	129.4	139.2	149.0	153.9	157.8	164.6	167.6	167.6	167.6
132.5°	109.8	122.5	132.3	143.1	148.0	152.9	159.7	162.7	164.6	164.6
135°	102.9	113.7	125.4	135.2	141.1	146.0	153.9	156.8	158.8	159.7
137.5°	95.1	104.9	115.6	126.4	132.3	137.2	146.0	149.0	151.9	152.9
140°	86.2	96.0	106.8	116.6	121.5	126.4	134.3	138.2	142.1	142.1
142.5°	76.4	87.2	97.0	105.8	109.8	114.7	121.5	125.4	128.4	129.4
145°	67.6	77.4	85.3	94.1	97.0	100.9	106.8	110.7	114.7	115.6
147.5°	58.8	67.6	75.5	82.3	85.3	88.2	92.1	96.0	99.0	100.0
150°	49.0	55.9	63.7	70.6	73.5	75.5	79.4	81.3	84.3	85.3
152.5°	40.2	47.0	52.9	59.8	61.7	63.7	66.6	69.6	70.6	71.5
155°	32.3	37.2	43.1	49.0	51.0	52.9	55.9	57.8	58.8	59.8
157.5°	25.5	29.4	33.3	38.2	41.2	43.1	45.1	47.0	48.0	49.0
160°	18.6	22.5	25.5	28.4	31.4	32.3	36.3	37.2	37.2	38.2
162.5°	13.7	15.7	18.6	20.6	21.6	23.5	26.5	26.5	28.4	27.4
165°	7.8	9.8	11.8	12.7	13.7	14.7	17.6	18.6	18.6	18.6
167.5°	3.9	4.9	5.9	6.9	6.9	7.8	8.8	10.8	10.8	10.8
170°	1.0	1.0	2.0	2.0	2.0	2.0	2.9	3.9	3.9	3.9
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)