

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: P241501

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

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P241501
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-LD4-30-2LO-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

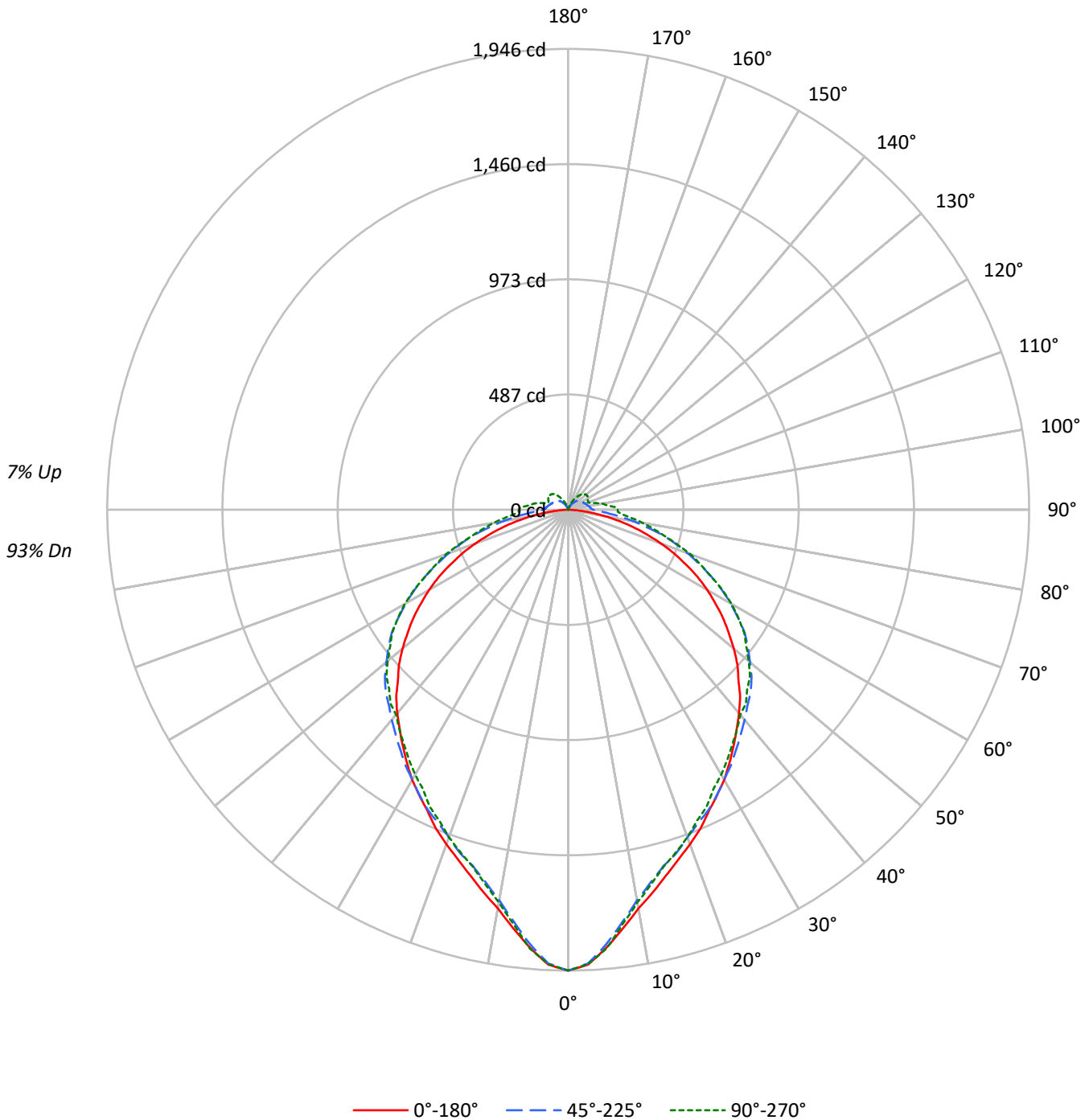
Lumens per Lamp: N/A
Luminaire Lumens: 5209.0 lumens
Efficiency: N/A
Efficacy: 114.5 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 0.99 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.65' x L: 3.73' x H: 0.15')
CIE Type: Direct

Input Watts (W): 45.5
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°	8698	8698	8698
5°	8299	8132	8181
10°	7704	7360	7347
15°	7319	6858	6801
20°	7049	6555	6468
25°	6802	6351	6171
30°	6648	6129	5898
35°	6465	5963	5694
40°	6338	5842	5543
45°	6179	5799	5513
50°	6063	5693	5449
55°	5891	5596	5339
60°	5674	5338	5115
65°	5354	5014	4731
70°	4903	4615	4425
75°	4255	4165	3894
80°	3301	3452	3594
85°	1729	2717	3288



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	171.4	3.3
10°-20°	444.3	8.5
20°-30°	645.2	12.4
30°-40°	770.3	14.8
40°-50°	825.0	15.8
50°-60°	784.0	15.1
60°-70°	630.8	12.1
70°-80°	403.9	7.8
80°-90°	177.6	3.4
90°-100°	99.2	1.9
100°-110°	74.8	1.4
110°-120°	59.8	1.1
120°-130°	52.9	1.0
130°-140°	38.8	0.7
140°-150°	21.4	0.4
150°-160°	8.1	0.2
160°-170°	1.6	0.0
170°-180°	0.0	0.0
0°-30°	1260.9	24.2
0°-40°	2031.3	39.0
0°-60°	3640.2	69.9
0°-90°	4852.4	93.2
90°-120°	233.8	4.5
90°-150°	346.8	6.7
90°-180°	357.0	6.9
0°-180°	5209.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1946	1946	1946	1946	1946	
5°	1856	1850	1842	1850	1860	173
15°	1598	1587	1556	1561	1559	451
25°	1404	1406	1400	1390	1383	649
35°	1217	1245	1236	1233	1209	763
45°	1016	1057	1089	1089	1069	787
55°	798	844	910	908	906	712
65°	549	602	665	673	664	543
75°	282	336	410	434	416	300
85°	49	98	166	208	230	64
90°	1	45	105	148	209	2
95°	1	41	94	140	179	0
105°	1	36	81	108	108	1
115°	1	32	71	90	92	1
125°	1	27	66	95	99	1
135°	1	20	53	83	94	1
145°	1	10	34	57	68	1
155°	1	3	16	30	35	1
165°	2	1	4	8	11	0
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°	1946.2	1946.2	1946.2	1946.2	1946.2	1946.2	1946.2	1946.2	1946.2	1946.2	1946.2
2.5°	1922.7	1927.8	1923.8	1922.7	1922.1	1925.5	1925.0	1926.1	1925.5	1919.8	1918.1
5°	1856.1	1859.0	1855.5	1856.1	1850.9	1849.8	1852.1	1856.1	1852.1	1852.7	1842.3
7.5°	1781.5	1782.6	1776.3	1770.0	1768.9	1774.0	1772.9	1768.9	1765.4	1757.4	1755.7
10°	1709.2	1713.2	1705.2	1698.3	1695.4	1696.0	1694.2	1686.2	1685.6	1680.5	1675.3
12.5°	1654.1	1657.5	1648.9	1641.4	1638.6	1636.3	1639.7	1628.2	1626.0	1620.8	1611.0
15°	1598.4	1596.1	1597.3	1587.5	1587.5	1586.9	1584.1	1577.7	1572.0	1565.1	1556.5
17.5°	1547.9	1550.8	1545.0	1537.6	1537.0	1538.1	1537.6	1536.4	1531.8	1523.2	1520.3
20°	1503.1	1500.8	1494.5	1496.8	1495.7	1495.1	1496.2	1489.9	1483.0	1480.2	1472.1
22.5°	1457.8	1453.8	1449.8	1452.0	1452.0	1446.3	1448.6	1446.3	1441.1	1440.0	1432.5
25°	1404.4	1411.3	1407.9	1402.7	1404.4	1406.1	1411.3	1410.7	1408.4	1407.9	1400.4
27.5°	1360.2	1363.1	1358.5	1358.5	1369.4	1372.3	1371.7	1366.0	1366.5	1355.1	1358.5
30°	1317.2	1314.3	1317.2	1322.9	1324.1	1324.6	1323.5	1326.4	1321.2	1320.6	1316.0
32.5°	1267.2	1267.8	1271.8	1269.5	1279.3	1282.2	1283.9	1291.9	1290.8	1284.5	1278.7
35°	1217.3	1224.2	1221.3	1221.9	1246.0	1245.4	1246.6	1247.2	1239.1	1230.5	1236.3
37.5°	1168.5	1173.7	1172.0	1185.2	1192.1	1191.5	1190.9	1196.1	1200.1	1196.1	1196.1
40°	1122.0	1116.9	1124.3	1135.8	1139.8	1147.9	1157.6	1164.5	1163.9	1159.3	1158.8
42.5°	1074.4	1072.1	1077.3	1083.0	1101.4	1110.6	1116.3	1117.4	1111.7	1118.0	1120.3
45°	1015.9	1023.3	1018.7	1039.4	1052.6	1057.2	1060.6	1069.8	1078.4	1081.9	1089.3
47.5°	968.8	970.5	971.7	989.5	998.1	1006.7	1013.0	1028.5	1041.1	1046.9	1049.7
50°	912.6	909.1	920.0	930.9	950.4	960.8	969.4	976.8	988.3	998.1	1001.5
52.5°	854.0	855.7	862.6	875.2	898.8	908.0	911.4	923.5	936.7	947.0	956.2
55°	798.3	800.6	804.7	824.7	837.4	844.3	855.7	874.1	889.0	896.5	910.3
57.5°	736.4	740.4	747.8	761.6	778.3	790.3	799.5	817.9	833.3	841.4	850.6
60°	677.8	674.4	691.6	700.8	721.4	734.6	739.2	754.1	770.8	783.4	790.9
62.5°	616.4	615.3	624.4	641.1	658.9	666.3	672.6	695.0	707.1	721.4	731.2
65°	548.7	554.4	560.2	578.5	593.4	602.1	612.4	631.3	647.4	660.0	664.6
67.5°	485.0	488.4	501.0	513.7	529.2	536.6	549.8	567.0	583.1	594.0	598.6
70°	415.5	420.7	434.5	448.8	466.0	472.3	481.5	500.5	515.4	529.7	534.9
72.5°	348.4	352.4	366.7	378.8	398.9	409.2	417.2	434.5	447.7	460.9	472.9
75°	282.4	289.8	301.3	312.8	332.9	336.3	344.9	364.4	380.5	395.4	409.8
77.5°	220.4	225.0	231.9	251.4	263.4	271.5	279.5	298.4	316.8	327.7	339.2
80°	156.7	163.0	170.5	182.5	200.3	208.3	215.2	233.0	250.2	263.4	276.6
82.5°	100.4	102.7	113.1	124.5	143.5	148.1	155.0	172.8	188.2	203.7	216.9
85°	48.8	54.5	63.1	76.3	90.7	97.6	104.5	122.2	138.3	153.2	166.4
87.5°	16.1	19.5	28.7	40.2	54.5	62.6	68.9	84.9	99.9	115.4	129.1
90°	0.6	4.6	13.2	24.7	38.5	45.3	52.8	67.2	81.5	94.7	105.0
92.5°	0.6	3.4	11.5	23.0	36.2	43.0	49.9	63.7	76.9	87.2	97.6
95°	0.6	2.9	10.9	22.4	34.4	41.3	48.2	60.8	72.3	83.8	94.1
97.5°	0.6	2.9	10.3	21.2	33.3	40.2	45.9	58.0	69.4	80.4	91.3
100°	0.6	2.9	9.8	20.7	32.1	38.5	44.2	55.7	67.2	77.5	87.8
102.5°	0.6	2.3	9.8	20.1	31.0	36.7	42.5	53.9	64.9	74.6	84.4
105°	0.6	2.3	9.2	18.9	30.4	36.2	41.3	52.2	62.6	72.3	80.9
107.5°	0.6	1.7	8.6	18.4	29.3	35.0	40.7	51.1	60.8	70.0	78.1
110°	0.6	1.7	8.6	17.8	28.7	34.4	39.6	49.9	59.7	68.3	75.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.6	1.7	8.0	17.2	27.5	33.3	38.5	48.8	58.0	66.0	72.9
115°	0.6	1.1	7.5	16.6	27.0	32.1	37.3	47.6	56.8	64.3	71.2
117.5°	0.6	1.1	6.9	16.1	25.8	31.0	36.2	45.9	55.1	63.1	70.0
120°	0.6	1.1	6.3	14.9	24.7	29.8	35.0	44.8	53.9	61.4	68.9
122.5°	0.6	1.1	5.7	13.8	23.5	28.7	33.9	43.0	52.2	60.3	67.7
125°	0.6	0.6	5.2	13.2	22.4	27.0	32.1	41.3	50.5	58.5	66.0
127.5°	0.6	0.6	4.6	12.1	20.7	25.8	30.4	39.6	48.2	56.2	63.7
130°	0.6	0.6	4.0	10.9	19.5	24.1	28.1	37.3	45.9	53.4	60.8
132.5°	0.6	0.6	3.4	9.2	17.2	21.2	25.8	34.4	43.0	49.9	56.8
135°	1.1	0.6	2.3	8.0	15.5	19.5	23.0	31.0	39.0	45.9	52.8
137.5°	1.1	0.6	1.7	6.9	13.2	16.6	20.1	27.5	35.0	41.9	48.8
140°	1.1	1.1	1.7	5.2	10.9	14.3	17.8	24.1	31.0	37.3	43.6
142.5°	1.1	1.1	1.1	4.0	9.2	12.1	14.3	20.7	27.0	32.7	38.5
145°	1.1	1.1	1.1	3.4	7.5	9.8	12.1	17.2	23.0	28.1	33.9
147.5°	1.1	1.1	1.1	2.3	5.7	8.0	9.8	14.3	18.9	24.1	28.7
150°	1.1	1.1	1.1	1.7	4.6	6.3	8.0	12.1	16.1	20.1	24.1
152.5°	1.1	1.1	1.1	1.1	3.4	4.6	6.3	9.2	12.6	16.6	20.1
155°	1.1	1.1	1.1	1.1	2.3	3.4	4.6	7.5	10.3	13.2	16.1
157.5°	1.7	1.1	1.1	1.1	1.7	2.3	3.4	5.2	7.5	10.3	12.6
160°	1.7	1.1	1.1	1.1	1.1	1.7	2.3	4.0	5.7	7.5	9.2
162.5°	1.7	1.7	1.1	1.1	1.1	1.1	1.1	2.3	3.4	5.2	6.3
165°	1.7	1.7	1.1	1.1	1.1	1.1	1.1	1.1	1.7	2.9	4.0
167.5°	1.7	1.7	1.1	1.1	0.6	0.6	0.6	0.6	1.1	1.1	1.7
170°	1.7	1.7	1.1	1.1	1.1	0.6	0.6	0.6	0.6	0.6	0.6
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°	1946.2	1946.2	1946.2	1946.2	1946.2	1946.2	1946.2	1946.2	1946.2	1946.2
2.5°	1916.4	1919.2	1921.5	1920.4	1921.0	1925.5	1918.1	1921.0	1922.1	1920.4
5°	1843.5	1845.2	1850.9	1852.7	1850.4	1852.1	1852.7	1855.5	1860.1	1859.5
7.5°	1753.9	1758.5	1757.4	1761.4	1763.1	1764.3	1764.8	1765.4	1764.8	1764.8
10°	1670.7	1675.9	1678.8	1683.9	1682.2	1683.3	1680.5	1684.5	1681.6	1683.3
12.5°	1616.2	1616.8	1607.0	1611.6	1610.5	1611.6	1616.8	1612.2	1616.8	1619.1
15°	1554.8	1555.9	1562.2	1564.0	1561.1	1559.4	1562.2	1564.5	1563.4	1558.8
17.5°	1519.2	1517.5	1519.2	1521.5	1521.5	1523.2	1520.9	1523.8	1516.9	1515.8
20°	1477.9	1479.6	1484.2	1482.5	1475.0	1471.0	1471.0	1468.7	1467.5	1471.6
22.5°	1437.7	1439.4	1434.8	1434.8	1438.3	1436.6	1434.3	1428.5	1420.5	1421.1
25°	1401.5	1399.2	1403.3	1399.2	1390.1	1390.6	1384.9	1386.6	1384.9	1383.2
27.5°	1351.0	1359.6	1356.8	1356.2	1355.6	1360.2	1349.9	1345.3	1338.4	1328.7
30°	1316.0	1310.9	1317.2	1313.2	1309.7	1301.1	1297.7	1289.6	1291.3	1291.9
32.5°	1281.0	1280.4	1276.4	1262.7	1263.2	1262.7	1262.7	1257.5	1250.6	1250.6
35°	1231.1	1235.1	1225.3	1234.5	1233.4	1223.1	1215.6	1212.1	1212.1	1208.7
37.5°	1197.8	1188.6	1190.3	1185.2	1182.9	1185.2	1185.7	1177.7	1177.7	1170.2
40°	1160.5	1161.6	1154.8	1157.6	1161.6	1152.5	1149.6	1134.1	1128.9	1130.1
42.5°	1122.6	1127.2	1134.7	1129.5	1121.5	1115.2	1110.0	1111.7	1108.3	1110.0
45°	1091.6	1093.3	1095.1	1083.0	1089.3	1091.0	1082.4	1075.0	1073.3	1069.2
47.5°	1056.6	1063.5	1049.7	1053.2	1048.0	1040.0	1039.4	1038.8	1043.4	1040.5
50°	1009.0	1012.4	1011.8	1002.7	1000.9	1002.7	1009.5	1002.1	996.3	994.6
52.5°	960.2	958.5	959.6	962.5	964.8	961.9	951.6	946.4	944.7	947.6
55°	916.6	914.3	909.7	913.1	908.5	907.4	908.0	909.1	908.5	906.2
57.5°	855.7	859.8	868.9	852.9	854.6	859.2	860.9	854.0	850.6	852.3
60°	793.7	798.3	797.2	802.9	801.8	795.5	794.9	794.9	796.6	796.0
62.5°	732.9	736.9	732.9	736.4	732.9	732.9	731.8	735.2	732.3	734.1
65°	671.5	672.1	678.4	674.4	672.6	676.1	666.3	661.2	661.7	664.0
67.5°	605.5	610.7	611.8	613.0	609.5	606.6	600.9	600.9	604.4	603.8
70°	540.6	548.1	549.8	547.5	544.1	542.9	545.8	552.1	556.1	548.7
72.5°	478.7	487.8	489.0	487.3	491.9	494.7	490.1	481.5	475.8	477.5
75°	415.5	422.4	428.2	432.2	433.9	429.9	422.4	417.2	413.2	415.5
77.5°	351.8	360.4	366.2	366.2	366.7	368.5	366.7	366.7	365.0	365.6
80°	288.7	300.2	300.2	309.3	312.2	310.5	316.2	316.8	318.0	318.5
82.5°	233.0	241.1	246.2	254.3	259.4	260.0	265.7	266.9	269.2	271.5
85°	179.6	188.2	198.0	204.9	208.3	212.4	219.2	221.0	228.4	229.6
87.5°	138.3	147.5	157.3	167.0	171.0	173.3	179.6	187.7	200.9	208.9
90°	114.8	125.7	136.0	144.1	148.1	152.1	161.8	174.5	195.1	208.9
92.5°	109.0	119.4	127.4	136.6	142.3	147.5	161.3	178.5	196.9	203.7
95°	105.0	114.8	124.0	134.3	139.5	145.2	157.3	168.2	176.8	179.1
97.5°	100.4	109.6	118.8	128.6	133.7	137.7	145.8	151.5	156.7	158.4
100°	96.4	105.0	114.2	122.2	125.7	129.1	135.4	142.3	146.4	147.5
102.5°	92.4	100.4	107.9	114.2	117.7	120.5	125.7	128.0	128.0	127.4
105°	89.0	95.8	101.6	106.8	108.5	110.8	112.5	110.8	109.0	108.5
107.5°	84.9	90.7	95.3	98.7	99.9	100.4	99.9	98.1	97.0	96.4
110°	81.5	86.7	90.1	92.4	93.0	93.0	92.4	91.3	90.1	89.5



TEST NUMBER: P241501

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

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	78.6	83.2	86.7	88.4	89.0	89.5	90.7	90.1	89.5	89.5
115°	76.9	81.5	85.5	88.4	89.5	90.7	92.4	92.4	92.4	91.8
117.5°	75.8	81.5	86.1	89.5	91.8	93.6	95.8	96.4	95.3	94.7
120°	75.8	81.5	86.7	91.8	93.6	95.8	98.1	98.7	97.6	97.0
122.5°	74.6	81.5	87.2	92.4	95.3	97.6	99.9	99.9	99.3	98.7
125°	73.5	80.4	86.1	91.8	94.7	97.0	99.9	100.4	99.9	99.3
127.5°	71.2	78.1	84.4	90.1	92.4	94.7	98.1	99.9	99.9	99.3
130°	68.3	75.8	81.5	87.2	90.1	92.4	96.4	98.1	98.1	98.1
132.5°	64.3	71.7	77.5	83.8	86.7	89.5	93.6	95.3	96.4	96.4
135°	60.3	66.6	73.5	79.2	82.6	85.5	90.1	91.8	93.0	93.6
137.5°	55.7	61.4	67.7	74.0	77.5	80.4	85.5	87.2	89.0	89.5
140°	50.5	56.2	62.6	68.3	71.2	74.0	78.6	80.9	83.2	83.2
142.5°	44.8	51.1	56.8	62.0	64.3	67.2	71.2	73.5	75.2	75.8
145°	39.6	45.3	49.9	55.1	56.8	59.1	62.6	64.9	67.2	67.7
147.5°	34.4	39.6	44.2	48.2	49.9	51.7	53.9	56.2	58.0	58.5
150°	28.7	32.7	37.3	41.3	43.0	44.2	46.5	47.6	49.4	49.9
152.5°	23.5	27.5	31.0	35.0	36.2	37.3	39.0	40.7	41.3	41.9
155°	18.9	21.8	25.3	28.7	29.8	31.0	32.7	33.9	34.4	35.0
157.5°	14.9	17.2	19.5	22.4	24.1	25.3	26.4	27.5	28.1	28.7
160°	10.9	13.2	14.9	16.6	18.4	18.9	21.2	21.8	21.8	22.4
162.5°	8.0	9.2	10.9	12.1	12.6	13.8	15.5	15.5	16.6	16.1
165°	4.6	5.7	6.9	7.5	8.0	8.6	10.3	10.9	10.9	10.9
167.5°	2.3	2.9	3.4	4.0	4.0	4.6	5.2	6.3	6.3	6.3
170°	0.6	0.6	1.1	1.1	1.1	1.1	1.7	2.3	2.3	2.3
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)