

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: P241499

Luminaire Tested: **FVS8M-4-LD4-40-1HI-PA187-UNV-EDC1**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P241499  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1711-410-35)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FVS8M-4-LD4-40-1HI-PA187-UNV-EDC1  
Description: FAILSAFE FVS8M LED FIXTURE  
4FT LENGTH, 1-MODULE LED WITH PA187 LENS  
Light Source: (84) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

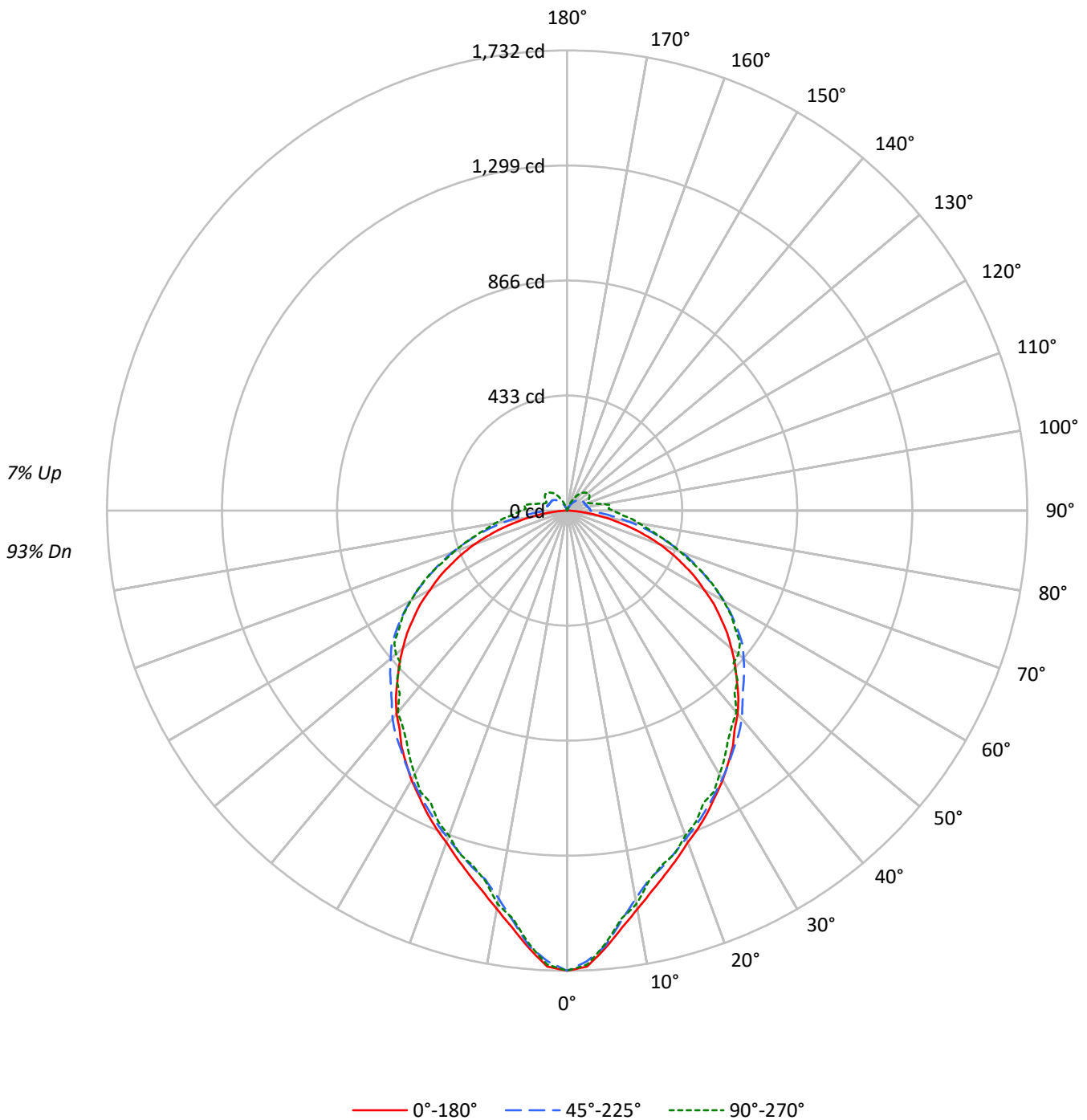
Lumens per Lamp: N/A  
Luminaire Lumens: 4575.1 lumens  
Efficiency: N/A  
Efficacy: 103.5 lumens/watt  
Spacing Criteria (0/90/45): 1.01 / 0.99 / 1.23  
Luminous Opening: Rectangular w/ Sides (W: 0.65' x L: 3.73' x H: 0.15')  
CIE Type: Direct

Input Watts (W): 44.2  
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-LD4-40-1HI-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	95	95	95	93
1	106	101	97	92	103	98	94	90	92	89	86	87	85	82	83	80	78	76
2	96	88	81	75	93	85	79	73	80	75	70	76	72	68	72	68	65	62
3	88	77	68	62	84	75	67	61	71	64	59	67	61	57	63	59	55	52
4	80	68	59	52	77	66	58	51	63	55	50	59	53	48	56	51	47	44
5	74	61	51	45	71	59	50	44	56	49	43	53	47	42	51	45	41	38
6	68	54	45	39	65	53	45	38	51	43	38	48	42	37	46	40	36	34
7	63	49	41	34	61	48	40	34	46	39	33	44	37	32	42	36	32	30
8	59	45	36	31	57	44	36	30	42	35	30	40	34	29	39	33	28	26
9	55	41	33	28	53	40	33	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	22

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	7740	7740	7740
5°	7390	7260	7205
10°	6863	6514	6563
15°	6502	6115	6025
20°	6232	5841	5717
25°	6063	5623	5416
30°	5909	5434	5236
35°	5767	5271	4970
40°	5643	5157	4860
45°	5492	4987	4676
50°	5361	4928	4607
55°	5202	4825	4548
60°	4980	4609	4369
65°	4722	4285	4082
70°	4378	3960	3653
75°	3737	3496	3280
80°	2907	2895	3092
85°	1524	2204	3022



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	152.1	3.3
10°-20°	394.3	8.6
20°-30°	572.9	12.5
30°-40°	681.3	14.9
40°-50°	713.7	15.6
50°-60°	680.8	14.9
60°-70°	543.1	11.9
70°-80°	343.8	7.5
80°-90°	152.7	3.3
90°-100°	87.2	1.9
100°-110°	70.2	1.5
110°-120°	58.2	1.3
120°-130°	52.9	1.2
130°-140°	39.6	0.9
140°-150°	22.8	0.5
150°-160°	8.1	0.2
160°-170°	1.3	0.0
170°-180°	0.0	0.0
0°-30°	1119.3	24.5
0°-40°	1800.6	39.4
0°-60°	3195.2	69.8
0°-90°	4234.8	92.6
90°-120°	215.7	4.7
90°-150°	330.9	7.2
90°-180°	340.0	7.4
0°-180°	4575.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1732	1732	1732	1732	1732	
5°	1653	1645	1645	1644	1638	154
15°	1420	1411	1388	1392	1381	400
25°	1252	1253	1240	1243	1214	577
35°	1086	1099	1093	1080	1055	679
45°	903	935	937	918	907	698
55°	705	744	785	791	772	631
65°	484	524	568	571	573	480
75°	248	295	344	359	350	264
85°	43	82	135	185	211	57
90°	1	36	87	136	173	2
95°	0	34	85	120	160	0
105°	0	33	75	103	101	0
115°	0	31	70	88	88	1
125°	1	27	67	93	102	1
135°	1	19	55	83	96	1
145°	1	9	36	63	73	1
155°	1	3	15	30	36	0
165°	2	1	3	6	8	1
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P241499

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1731.8	1731.8	1731.8	1731.8	1731.8	1731.8	1731.8	1731.8	1731.8	1731.8	1731.8
2.5°	1717.8	1714.8	1707.8	1709.8	1711.8	1709.8	1711.8	1711.8	1707.8	1703.8	1697.8
5°	1652.8	1646.8	1645.8	1646.8	1647.8	1644.8	1646.8	1648.8	1645.8	1649.8	1644.8
7.5°	1582.8	1577.8	1576.8	1575.8	1574.8	1572.8	1573.8	1576.8	1572.8	1563.8	1557.8
10°	1522.8	1515.8	1511.8	1508.8	1508.8	1507.8	1509.8	1504.8	1496.8	1490.8	1482.8
12.5°	1467.9	1463.9	1459.9	1461.9	1457.9	1456.9	1454.9	1446.9	1440.9	1433.9	1421.9
15°	1419.9	1418.9	1412.9	1414.9	1409.9	1410.9	1408.9	1405.9	1394.9	1387.9	1387.9
17.5°	1373.9	1374.9	1374.9	1375.9	1367.9	1367.9	1367.9	1363.9	1354.9	1351.9	1349.9
20°	1328.9	1330.9	1329.9	1327.9	1328.9	1327.9	1328.9	1324.9	1315.9	1316.9	1311.9
22.5°	1291.9	1290.9	1288.9	1290.9	1289.9	1287.9	1288.9	1284.9	1280.9	1279.9	1276.9
25°	1251.9	1251.9	1246.9	1251.9	1250.9	1252.9	1251.9	1254.9	1248.9	1246.9	1239.9
27.5°	1209.9	1206.9	1207.9	1212.9	1215.9	1215.9	1211.9	1213.9	1214.9	1203.9	1202.9
30°	1170.9	1169.9	1166.9	1172.9	1176.9	1173.9	1175.9	1179.9	1179.9	1168.9	1166.9
32.5°	1127.9	1125.9	1127.9	1133.9	1134.9	1140.9	1143.9	1141.9	1140.9	1130.9	1130.9
35°	1085.9	1084.9	1087.9	1091.9	1096.9	1098.9	1104.9	1108.9	1102.9	1093.9	1092.9
37.5°	1035.9	1041.9	1041.9	1048.9	1055.9	1060.9	1063.9	1068.9	1060.9	1054.9	1060.9
40°	998.9	995.9	994.9	1006.9	1012.9	1017.9	1022.9	1025.9	1018.9	1020.9	1022.9
42.5°	953.9	948.9	955.9	963.9	971.9	976.9	978.9	986.9	979.9	983.9	976.9
45°	902.9	904.9	908.9	912.9	929.9	934.9	936.9	937.9	943.9	942.9	936.9
47.5°	856.9	856.9	862.9	869.9	882.9	889.9	892.9	894.9	896.9	896.9	903.9
50°	806.9	807.9	813.9	823.9	833.9	839.9	844.9	852.9	858.9	861.9	866.9
52.5°	759.9	758.9	769.9	776.9	785.9	793.9	798.9	809.9	816.9	820.9	832.9
55°	704.9	707.9	714.9	724.9	737.9	743.9	748.9	760.9	767.9	777.9	784.9
57.5°	654.9	656.9	660.9	670.9	685.9	688.9	695.9	708.9	714.9	726.9	734.9
60°	594.9	602.9	607.9	619.9	626.9	631.9	642.9	659.9	666.9	676.9	682.9
62.5°	543.9	544.9	551.9	562.9	570.9	579.9	590.9	602.9	612.9	620.9	624.9
65°	484.0	488.0	498.9	504.9	517.9	523.9	532.9	543.9	553.9	562.9	567.9
67.5°	428.0	431.0	437.0	448.0	461.0	467.0	472.0	485.0	499.9	508.9	515.9
70°	371.0	375.0	378.0	392.0	400.0	408.0	415.0	432.0	446.0	451.0	459.0
72.5°	308.0	314.0	319.0	332.0	345.0	351.0	360.0	375.0	385.0	394.0	400.0
75°	248.0	254.0	263.0	273.0	284.0	295.0	302.0	313.0	325.0	335.0	344.0
77.5°	191.0	194.0	204.0	217.0	227.0	237.0	242.0	254.0	268.0	277.0	289.0
80°	138.0	140.0	151.0	159.0	173.0	178.0	184.0	198.0	211.0	222.0	232.0
82.5°	89.0	90.0	99.0	110.0	120.0	128.0	133.0	146.0	159.0	171.0	180.0
85°	43.0	47.0	55.0	65.0	78.0	82.0	88.0	102.0	113.0	124.0	135.0
87.5°	14.0	17.0	24.0	34.0	45.0	50.0	56.0	67.0	80.0	92.0	102.0
90°	1.0	4.0	11.0	20.0	31.0	36.0	41.0	53.0	65.0	76.0	87.0
92.5°	0.0	3.0	10.0	19.0	29.0	34.0	40.0	52.0	63.0	75.0	87.0
95°	0.0	3.0	9.0	18.0	29.0	34.0	40.0	52.0	63.0	75.0	85.0
97.5°	0.0	2.0	9.0	18.0	29.0	34.0	40.0	51.0	63.0	72.0	81.0
100°	0.0	2.0	9.0	18.0	28.0	34.0	39.0	51.0	60.0	70.0	79.0
102.5°	0.0	2.0	9.0	18.0	28.0	33.0	39.0	49.0	59.0	68.0	77.0
105°	0.0	2.0	8.0	18.0	28.0	33.0	38.0	48.0	57.0	66.0	75.0
107.5°	0.0	2.0	8.0	17.0	27.0	32.0	38.0	47.0	57.0	65.0	73.0
110°	0.0	2.0	8.0	17.0	27.0	32.0	37.0	47.0	56.0	64.0	72.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.0	1.0	7.0	16.0	27.0	32.0	37.0	46.0	55.0	64.0	71.0
115°	0.0	1.0	7.0	16.0	26.0	31.0	36.0	46.0	55.0	63.0	70.0
117.5°	1.0	1.0	7.0	15.0	25.0	30.0	35.0	45.0	54.0	62.0	69.0
120°	1.0	1.0	6.0	14.0	24.0	29.0	34.0	44.0	53.0	62.0	69.0
122.5°	1.0	1.0	5.0	13.0	23.0	28.0	33.0	43.0	52.0	61.0	69.0
125°	1.0	1.0	5.0	13.0	22.0	27.0	32.0	41.0	50.0	59.0	67.0
127.5°	1.0	1.0	4.0	12.0	21.0	25.0	30.0	40.0	48.0	57.0	65.0
130°	1.0	1.0	3.0	10.0	19.0	23.0	28.0	37.0	46.0	54.0	62.0
132.5°	1.0	1.0	3.0	9.0	17.0	21.0	25.0	35.0	43.0	51.0	59.0
135°	1.0	1.0	2.0	8.0	15.0	19.0	22.0	31.0	40.0	47.0	55.0
137.5°	1.0	1.0	2.0	6.0	13.0	16.0	20.0	27.0	36.0	43.0	51.0
140°	1.0	1.0	2.0	5.0	11.0	14.0	17.0	24.0	31.0	39.0	46.0
142.5°	1.0	1.0	1.0	4.0	9.0	11.0	14.0	20.0	27.0	34.0	41.0
145°	1.0	1.0	1.0	3.0	7.0	9.0	12.0	17.0	23.0	30.0	36.0
147.5°	1.0	1.0	1.0	2.0	5.0	7.0	9.0	14.0	19.0	25.0	30.0
150°	1.0	1.0	1.0	2.0	4.0	6.0	7.0	11.0	15.0	20.0	25.0
152.5°	1.0	1.0	1.0	1.0	3.0	4.0	6.0	9.0	12.0	16.0	20.0
155°	1.0	1.0	1.0	1.0	2.0	3.0	4.0	6.0	9.0	12.0	15.0
157.5°	1.0	1.0	1.0	1.0	2.0	2.0	3.0	4.0	6.0	9.0	11.0
160°	1.0	1.0	1.0	1.0	1.0	2.0	2.0	3.0	4.0	6.0	7.0
162.5°	2.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	3.0	4.0	5.0
165°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	3.0
167.5°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
170°	2.0	2.0	1.0	1.0	1.0	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°	1731.8	1731.8	1731.8	1731.8	1731.8	1731.8	1731.8	1731.8	1731.8	1731.8
2.5°	1696.8	1704.8	1706.8	1709.8	1708.8	1711.8	1712.8	1714.8	1712.8	1710.8
5°	1643.8	1648.8	1646.8	1643.8	1643.8	1642.8	1640.8	1640.8	1641.8	1637.8
7.5°	1551.8	1557.8	1559.8	1560.8	1561.8	1559.8	1559.8	1558.8	1552.8	1550.8
10°	1474.8	1473.8	1476.8	1482.8	1487.8	1488.8	1496.8	1500.8	1500.8	1503.8
12.5°	1424.9	1433.9	1432.9	1435.9	1428.9	1425.9	1433.9	1427.9	1426.9	1425.9
15°	1384.9	1384.9	1386.9	1389.9	1391.9	1392.9	1389.9	1382.9	1376.9	1380.9
17.5°	1345.9	1351.9	1346.9	1334.9	1333.9	1337.9	1342.9	1347.9	1349.9	1351.9
20°	1313.9	1305.9	1306.9	1319.9	1322.9	1321.9	1314.9	1309.9	1304.9	1300.9
22.5°	1267.9	1279.9	1284.9	1274.9	1269.9	1269.9	1273.9	1272.9	1275.9	1267.9
25°	1240.9	1241.9	1234.9	1242.9	1242.9	1243.9	1232.9	1224.9	1214.9	1213.9
27.5°	1201.9	1198.9	1207.9	1201.9	1190.9	1187.9	1186.9	1190.9	1192.9	1193.9
30°	1165.9	1168.9	1151.9	1159.9	1166.9	1168.9	1167.9	1151.9	1146.9	1146.9
32.5°	1137.9	1124.9	1131.9	1132.9	1123.9	1117.9	1106.9	1107.9	1106.9	1102.9
35°	1092.9	1091.9	1098.9	1083.9	1079.9	1078.9	1083.9	1077.9	1064.9	1054.9
37.5°	1050.9	1057.9	1046.9	1054.9	1050.9	1040.9	1025.9	1019.9	1018.9	1018.9
40°	1022.9	1011.9	1015.9	996.9	989.9	993.9	996.9	995.9	991.9	990.9
42.5°	979.9	979.9	967.9	960.9	962.9	963.9	953.9	943.9	937.9	932.9
45°	938.9	931.9	927.9	928.9	917.9	910.9	904.9	908.9	903.9	906.9
47.5°	902.9	891.9	891.9	872.9	873.9	878.9	875.9	859.9	854.9	849.9
50°	864.9	872.9	855.9	860.9	858.9	849.9	840.9	840.9	846.9	840.9
52.5°	829.9	834.9	835.9	829.9	822.9	823.9	831.9	826.9	820.9	819.9
55°	788.9	786.9	790.9	788.9	790.9	793.9	782.9	777.9	775.9	771.9
57.5°	736.9	742.9	735.9	747.9	742.9	734.9	735.9	735.9	735.9	730.9
60°	684.9	685.9	691.9	684.9	682.9	686.9	686.9	682.9	678.9	679.9
62.5°	631.9	632.9	631.9	627.9	632.9	628.9	622.9	622.9	628.9	626.9
65°	571.9	577.9	572.9	571.9	570.9	566.9	571.9	573.9	571.9	572.9
67.5°	520.9	521.9	520.9	515.9	513.9	515.9	512.9	506.9	507.9	504.9
70°	465.0	464.0	466.0	463.0	464.0	465.0	457.0	452.0	453.0	453.0
72.5°	407.0	410.0	410.0	413.0	412.0	409.0	406.0	404.0	403.0	403.0
75°	352.0	357.0	358.0	360.0	359.0	358.0	358.0	354.0	351.0	350.0
77.5°	296.0	301.0	309.0	307.0	309.0	309.0	311.0	306.0	309.0	309.0
80°	241.0	247.0	255.0	261.0	263.0	264.0	266.0	268.0	274.0	274.0
82.5°	191.0	198.0	208.0	216.0	222.0	224.0	232.0	240.0	244.0	246.0
85°	146.0	157.0	167.0	177.0	185.0	191.0	198.0	201.0	207.0	211.0
87.5°	114.0	126.0	139.0	152.0	157.0	160.0	166.0	173.0	183.0	189.0
90°	100.0	113.0	125.0	134.0	136.0	139.0	146.0	154.0	165.0	173.0
92.5°	99.0	109.0	117.0	123.0	126.0	130.0	136.0	140.0	149.0	156.0
95°	94.0	103.0	111.0	117.0	120.0	123.0	129.0	139.0	152.0	160.0
97.5°	91.0	100.0	106.0	113.0	117.0	121.0	134.0	149.0	160.0	163.0
100°	88.0	96.0	103.0	112.0	117.0	122.0	133.0	139.0	141.0	139.0
102.5°	85.0	93.0	101.0	109.0	112.0	116.0	121.0	120.0	119.0	117.0
105°	83.0	90.0	97.0	102.0	103.0	105.0	106.0	105.0	103.0	101.0
107.5°	81.0	87.0	92.0	94.0	95.0	96.0	96.0	94.0	92.0	90.0
110°	78.0	84.0	87.0	89.0	89.0	90.0	89.0	88.0	85.0	84.0





TEST NUMBER: P241499

CATALOG NUMBER: FVS8M-4-LD4-40-1HI-PA187-UNV-EDC1

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	77.0	81.0	84.0	86.0	87.0	88.0	88.0	87.0	85.0	84.0
115°	76.0	81.0	84.0	87.0	88.0	89.0	90.0	90.0	88.0	88.0
117.5°	76.0	82.0	86.0	89.0	91.0	92.0	93.0	94.0	93.0	92.0
120°	76.0	83.0	87.0	92.0	93.0	94.0	96.0	97.0	97.0	96.0
122.5°	76.0	83.0	88.0	92.0	94.0	95.0	98.0	99.0	99.0	99.0
125°	75.0	82.0	87.0	91.0	93.0	95.0	98.0	100.0	101.0	102.0
127.5°	73.0	80.0	85.0	90.0	92.0	94.0	97.0	99.0	101.0	103.0
130°	70.0	77.0	83.0	88.0	90.0	92.0	95.0	98.0	100.0	101.0
132.5°	67.0	73.0	80.0	85.0	87.0	89.0	93.0	96.0	98.0	99.0
135°	63.0	69.0	76.0	81.0	83.0	86.0	90.0	93.0	95.0	96.0
137.5°	58.0	65.0	71.0	77.0	79.0	81.0	86.0	89.0	91.0	91.0
140°	54.0	60.0	67.0	72.0	75.0	77.0	81.0	84.0	86.0	87.0
142.5°	49.0	56.0	62.0	67.0	69.0	71.0	75.0	78.0	80.0	81.0
145°	43.0	50.0	55.0	60.0	63.0	65.0	68.0	71.0	73.0	73.0
147.5°	37.0	43.0	48.0	52.0	55.0	57.0	60.0	63.0	65.0	65.0
150°	30.0	35.0	41.0	45.0	46.0	48.0	51.0	53.0	54.0	55.0
152.5°	24.0	28.0	33.0	36.0	38.0	40.0	42.0	44.0	45.0	45.0
155°	18.0	22.0	25.0	29.0	30.0	32.0	33.0	35.0	35.0	36.0
157.5°	13.0	16.0	18.0	21.0	22.0	24.0	25.0	26.0	27.0	27.0
160°	9.0	11.0	13.0	15.0	16.0	17.0	18.0	19.0	20.0	19.0
162.5°	6.0	7.0	8.0	10.0	10.0	11.0	12.0	13.0	13.0	13.0
165°	3.0	4.0	5.0	5.0	6.0	6.0	7.0	8.0	8.0	8.0
167.5°	2.0	2.0	2.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
170°	1.0	1.0	1.0	1.0	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
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)