

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: P241498

Luminaire Tested: **FVS8M-4-LD4-35-1HI-PA187-UNV-EDC1**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P241498
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-LD4-35-1HI-PA187-UNV-EDC1
Description: FAILSAFE FVS8M LED FIXTURE
4FT LENGTH, 1-MODULE LED WITH PA187 LENS
Light Source: (84) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

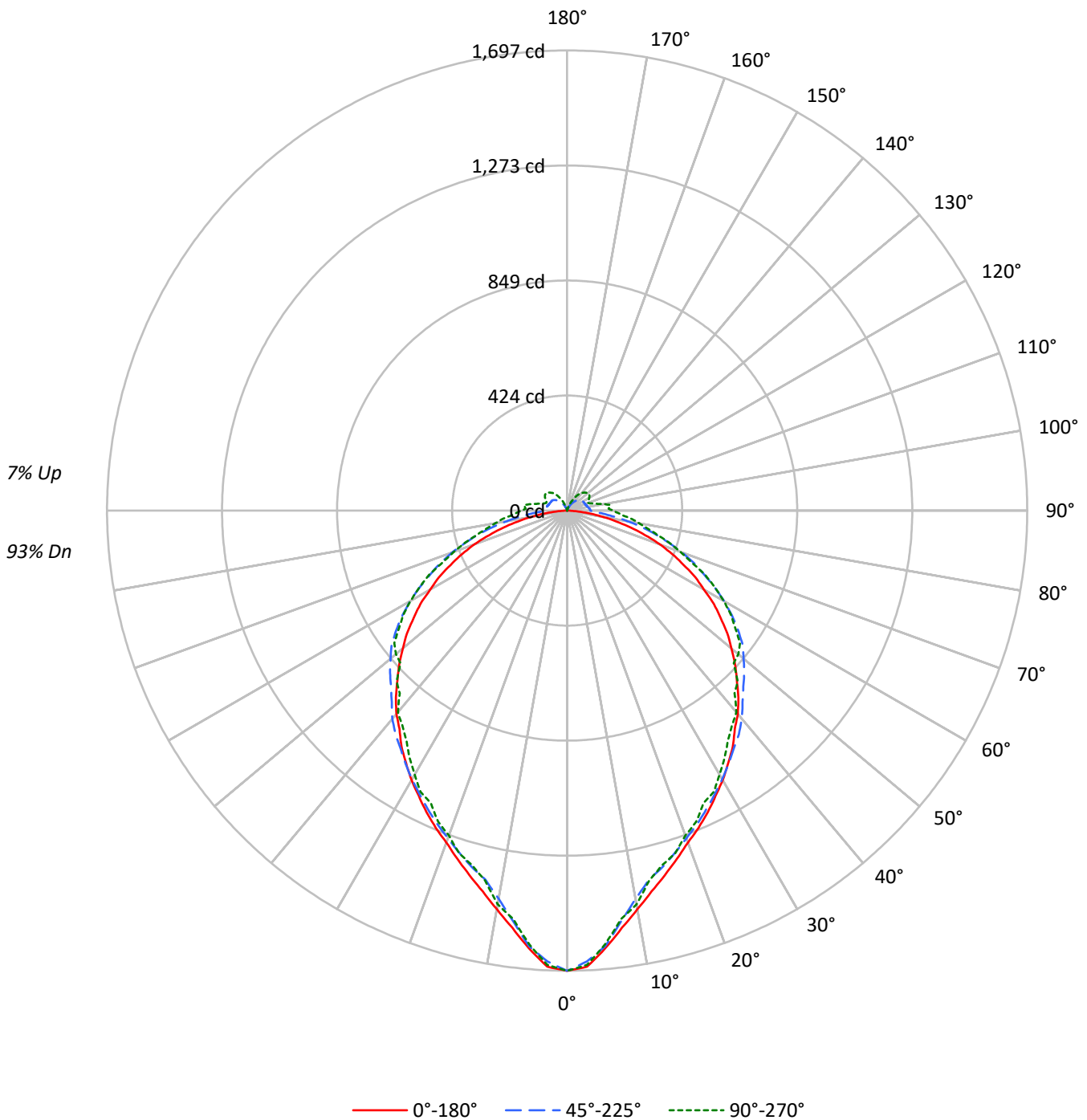
Lumens per Lamp: N/A
Luminaire Lumens: 4484.0 lumens
Efficiency: N/A
Efficacy: 101.4 lumens/watt
Spacing Criteria (0/90/45): 1.01 / 0.99 / 1.23
Luminous Opening: Rectangular w/ Sides (W: 0.65' x L: 3.73' x H: 0.15')
CIE Type: Direct

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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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°	7586	7586	7586
5°	7243	7116	7062
10°	6727	6385	6433
15°	6372	5993	5905
20°	6107	5725	5604
25°	5942	5511	5308
30°	5792	5326	5132
35°	5652	5167	4871
40°	5530	5054	4764
45°	5383	4888	4583
50°	5254	4830	4515
55°	5099	4729	4458
60°	4881	4517	4282
65°	4628	4199	4001
70°	4290	3881	3580
75°	3662	3426	3214
80°	2848	2838	3030
85°	1492	2160	2961



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.1	3.3
10°-20°	386.5	8.6
20°-30°	561.4	12.5
30°-40°	667.8	14.9
40°-50°	699.5	15.6
50°-60°	667.3	14.9
60°-70°	532.3	11.9
70°-80°	336.9	7.5
80°-90°	149.7	3.3
90°-100°	85.5	1.9
100°-110°	68.8	1.5
110°-120°	57.1	1.3
120°-130°	51.9	1.2
130°-140°	38.8	0.9
140°-150°	22.3	0.5
150°-160°	7.9	0.2
160°-170°	1.3	0.0
170°-180°	0.0	0.0
0°-30°	1097.0	24.5
0°-40°	1764.8	39.4
0°-60°	3131.6	69.8
0°-90°	4150.5	92.6
90°-120°	211.4	4.7
90°-150°	324.3	7.2
90°-180°	334.0	7.4
0°-180°	4484.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1697	1697	1697	1697	1697	
5°	1620	1612	1612	1611	1605	151
15°	1392	1383	1360	1364	1353	392
25°	1227	1228	1215	1218	1190	565
35°	1064	1077	1071	1058	1034	665
45°	885	916	918	900	889	684
55°	691	729	769	775	757	618
65°	474	514	557	560	562	470
75°	243	289	337	352	343	259
85°	42	80	132	181	207	55
90°	1	35	85	133	170	2
95°	0	33	83	118	157	0
105°	0	32	74	101	99	0
115°	0	30	69	86	86	1
125°	1	26	66	91	100	1
135°	1	19	54	81	94	1
145°	1	9	35	62	72	1
155°	1	3	15	29	35	0
165°	2	1	3	6	8	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°	1697.4	1697.4	1697.4	1697.4	1697.4	1697.4	1697.4	1697.4	1697.4	1697.4	1697.4
2.5°	1683.7	1680.7	1673.9	1675.8	1677.8	1675.8	1677.8	1677.8	1673.9	1669.9	1664.1
5°	1620.0	1614.1	1613.1	1614.1	1615.1	1612.1	1614.1	1616.0	1613.1	1617.0	1612.1
7.5°	1551.4	1546.5	1545.5	1544.5	1543.5	1541.6	1542.5	1545.5	1541.6	1532.7	1526.9
10°	1492.6	1485.7	1481.8	1478.8	1478.8	1477.9	1479.8	1474.9	1467.1	1461.2	1453.4
12.5°	1438.7	1434.7	1430.8	1432.8	1428.9	1427.9	1425.9	1418.1	1412.2	1405.3	1393.6
15°	1391.6	1390.6	1384.8	1386.7	1381.8	1382.8	1380.8	1377.9	1367.1	1360.3	1360.3
17.5°	1346.5	1347.5	1347.5	1348.5	1340.7	1340.7	1340.7	1336.7	1327.9	1325.0	1323.0
20°	1302.4	1304.4	1303.4	1301.5	1302.4	1301.5	1302.4	1298.5	1289.7	1290.7	1285.8
22.5°	1266.2	1265.2	1263.2	1265.2	1264.2	1262.3	1263.2	1259.3	1255.4	1254.4	1251.5
25°	1227.0	1227.0	1222.1	1227.0	1226.0	1228.0	1227.0	1229.9	1224.0	1222.1	1215.2
27.5°	1185.8	1182.9	1183.9	1188.8	1191.7	1191.7	1187.8	1189.7	1190.7	1179.9	1179.0
30°	1147.6	1146.6	1143.7	1149.6	1153.5	1150.5	1152.5	1156.4	1156.4	1145.6	1143.7
32.5°	1105.5	1103.5	1105.5	1111.3	1112.3	1118.2	1121.1	1119.2	1118.2	1108.4	1108.4
35°	1064.3	1063.3	1066.2	1070.2	1075.1	1077.0	1082.9	1086.8	1081.0	1072.1	1071.2
37.5°	1015.3	1021.2	1021.2	1028.0	1034.9	1039.8	1042.7	1047.6	1039.8	1033.9	1039.8
40°	979.0	976.1	975.1	986.9	992.7	997.6	1002.5	1005.5	998.6	1000.6	1002.5
42.5°	934.9	930.0	936.9	944.7	952.6	957.5	959.4	967.3	960.4	964.3	957.5
45°	884.9	886.9	890.8	894.7	911.4	916.3	918.3	919.2	925.1	924.1	918.3
47.5°	839.9	839.9	845.7	852.6	865.3	872.2	875.1	877.1	879.1	879.1	885.9
50°	790.9	791.8	797.7	807.5	817.3	823.2	828.1	835.9	841.8	844.8	849.7
52.5°	744.8	743.8	754.6	761.5	770.3	778.1	783.0	793.8	800.7	804.6	816.3
55°	690.9	693.8	700.7	710.5	723.2	729.1	734.0	745.8	752.6	762.4	769.3
57.5°	641.9	643.9	647.8	657.6	672.3	675.2	682.1	694.8	700.7	712.5	720.3
60°	583.1	590.9	595.8	607.6	614.5	619.4	630.1	646.8	653.7	663.5	669.3
62.5°	533.1	534.1	541.0	551.7	559.6	568.4	579.2	590.9	600.7	608.6	612.5
65°	474.3	478.2	489.0	494.9	507.6	513.5	522.3	533.1	542.9	551.7	556.6
67.5°	419.4	422.4	428.3	439.0	451.8	457.7	462.6	475.3	490.0	498.8	505.7
70°	363.6	367.5	370.4	384.2	392.0	399.8	406.7	423.4	437.1	442.0	449.8
72.5°	301.8	307.7	312.6	325.4	338.1	344.0	352.8	367.5	377.3	386.1	392.0
75°	243.0	248.9	257.7	267.5	278.3	289.1	296.0	306.7	318.5	328.3	337.1
77.5°	187.2	190.1	199.9	212.7	222.5	232.3	237.2	248.9	262.6	271.5	283.2
80°	135.2	137.2	148.0	155.8	169.5	174.4	180.3	194.0	206.8	217.6	227.4
82.5°	87.2	88.2	97.0	107.8	117.6	125.4	130.3	143.1	155.8	167.6	176.4
85°	42.1	46.1	53.9	63.7	76.4	80.4	86.2	100.0	110.7	121.5	132.3
87.5°	13.7	16.7	23.5	33.3	44.1	49.0	54.9	65.7	78.4	90.2	100.0
90°	1.0	3.9	10.8	19.6	30.4	35.3	40.2	51.9	63.7	74.5	85.3
92.5°	0.0	2.9	9.8	18.6	28.4	33.3	39.2	51.0	61.7	73.5	85.3
95°	0.0	2.9	8.8	17.6	28.4	33.3	39.2	51.0	61.7	73.5	83.3
97.5°	0.0	2.0	8.8	17.6	28.4	33.3	39.2	50.0	61.7	70.6	79.4
100°	0.0	2.0	8.8	17.6	27.4	33.3	38.2	50.0	58.8	68.6	77.4
102.5°	0.0	2.0	8.8	17.6	27.4	32.3	38.2	48.0	57.8	66.6	75.5
105°	0.0	2.0	7.8	17.6	27.4	32.3	37.2	47.0	55.9	64.7	73.5
107.5°	0.0	2.0	7.8	16.7	26.5	31.4	37.2	46.1	55.9	63.7	71.5
110°	0.0	2.0	7.8	16.7	26.5	31.4	36.3	46.1	54.9	62.7	70.6



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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	6.9	15.7	26.5	31.4	36.3	45.1	53.9	62.7	69.6
115°	0.0	1.0	6.9	15.7	25.5	30.4	35.3	45.1	53.9	61.7	68.6
117.5°	1.0	1.0	6.9	14.7	24.5	29.4	34.3	44.1	52.9	60.8	67.6
120°	1.0	1.0	5.9	13.7	23.5	28.4	33.3	43.1	51.9	60.8	67.6
122.5°	1.0	1.0	4.9	12.7	22.5	27.4	32.3	42.1	51.0	59.8	67.6
125°	1.0	1.0	4.9	12.7	21.6	26.5	31.4	40.2	49.0	57.8	65.7
127.5°	1.0	1.0	3.9	11.8	20.6	24.5	29.4	39.2	47.0	55.9	63.7
130°	1.0	1.0	2.9	9.8	18.6	22.5	27.4	36.3	45.1	52.9	60.8
132.5°	1.0	1.0	2.9	8.8	16.7	20.6	24.5	34.3	42.1	50.0	57.8
135°	1.0	1.0	2.0	7.8	14.7	18.6	21.6	30.4	39.2	46.1	53.9
137.5°	1.0	1.0	2.0	5.9	12.7	15.7	19.6	26.5	35.3	42.1	50.0
140°	1.0	1.0	2.0	4.9	10.8	13.7	16.7	23.5	30.4	38.2	45.1
142.5°	1.0	1.0	1.0	3.9	8.8	10.8	13.7	19.6	26.5	33.3	40.2
145°	1.0	1.0	1.0	2.9	6.9	8.8	11.8	16.7	22.5	29.4	35.3
147.5°	1.0	1.0	1.0	2.0	4.9	6.9	8.8	13.7	18.6	24.5	29.4
150°	1.0	1.0	1.0	2.0	3.9	5.9	6.9	10.8	14.7	19.6	24.5
152.5°	1.0	1.0	1.0	1.0	2.9	3.9	5.9	8.8	11.8	15.7	19.6
155°	1.0	1.0	1.0	1.0	2.0	2.9	3.9	5.9	8.8	11.8	14.7
157.5°	1.0	1.0	1.0	1.0	2.0	2.0	2.9	3.9	5.9	8.8	10.8
160°	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.9	3.9	5.9	6.9
162.5°	2.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.9	3.9	4.9
165°	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.9
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°	1697.4	1697.4	1697.4	1697.4	1697.4	1697.4	1697.4	1697.4	1697.4	1697.4
2.5°	1663.1	1670.9	1672.9	1675.8	1674.8	1677.8	1678.8	1680.7	1678.8	1676.8
5°	1611.1	1616.0	1614.1	1611.1	1611.1	1610.2	1608.2	1608.2	1609.2	1605.3
7.5°	1521.0	1526.9	1528.8	1529.8	1530.8	1528.8	1528.8	1527.8	1522.0	1520.0
10°	1445.5	1444.5	1447.5	1453.4	1458.3	1459.2	1467.1	1471.0	1471.0	1473.9
12.5°	1396.5	1405.3	1404.4	1407.3	1400.4	1397.5	1405.3	1399.5	1398.5	1397.5
15°	1357.3	1357.3	1359.3	1362.2	1364.2	1365.2	1362.2	1355.4	1349.5	1353.4
17.5°	1319.1	1325.0	1320.1	1308.3	1307.3	1311.3	1316.2	1321.1	1323.0	1325.0
20°	1287.7	1279.9	1280.9	1293.6	1296.6	1295.6	1288.7	1283.8	1278.9	1275.0
22.5°	1242.7	1254.4	1259.3	1249.5	1244.6	1244.6	1248.5	1247.6	1250.5	1242.7
25°	1216.2	1217.2	1210.3	1218.2	1218.2	1219.1	1208.4	1200.5	1190.7	1189.7
27.5°	1178.0	1175.0	1183.9	1178.0	1167.2	1164.3	1163.3	1167.2	1169.2	1170.1
30°	1142.7	1145.6	1129.0	1136.8	1143.7	1145.6	1144.7	1129.0	1124.1	1124.1
32.5°	1115.3	1102.5	1109.4	1110.4	1101.5	1095.7	1084.9	1085.9	1084.9	1081.0
35°	1071.2	1070.2	1077.0	1062.3	1058.4	1057.4	1062.3	1056.4	1043.7	1033.9
37.5°	1030.0	1036.8	1026.1	1033.9	1030.0	1020.2	1005.5	999.6	998.6	998.6
40°	1002.5	991.8	995.7	977.1	970.2	974.1	977.1	976.1	972.2	971.2
42.5°	960.4	960.4	948.6	941.8	943.7	944.7	934.9	925.1	919.2	914.3
45°	920.2	913.4	909.4	910.4	899.6	892.8	886.9	890.8	885.9	888.9
47.5°	884.9	874.2	874.2	855.5	856.5	861.4	858.5	842.8	837.9	833.0
50°	847.7	855.5	838.9	843.8	841.8	833.0	824.2	824.2	830.1	824.2
52.5°	813.4	818.3	819.3	813.4	806.5	807.5	815.4	810.5	804.6	803.6
55°	773.2	771.3	775.2	773.2	775.2	778.1	767.3	762.4	760.5	756.6
57.5°	722.3	728.1	721.3	733.0	728.1	720.3	721.3	721.3	721.3	716.4
60°	671.3	672.3	678.2	671.3	669.3	673.3	673.3	669.3	665.4	666.4
62.5°	619.4	620.3	619.4	615.4	620.3	616.4	610.5	610.5	616.4	614.5
65°	560.6	566.4	561.5	560.6	559.6	555.7	560.6	562.5	560.6	561.5
67.5°	510.6	511.6	510.6	505.7	503.7	505.7	502.7	496.9	497.8	494.9
70°	455.7	454.7	456.7	453.7	454.7	455.7	447.9	443.0	443.9	443.9
72.5°	398.9	401.8	401.8	404.7	403.8	400.8	397.9	395.9	394.9	394.9
75°	345.0	349.9	350.8	352.8	351.8	350.8	350.8	346.9	344.0	343.0
77.5°	290.1	295.0	302.8	300.9	302.8	302.8	304.8	299.9	302.8	302.8
80°	236.2	242.1	249.9	255.8	257.7	258.7	260.7	262.6	268.5	268.5
82.5°	187.2	194.0	203.8	211.7	217.6	219.5	227.4	235.2	239.1	241.1
85°	143.1	153.9	163.7	173.5	181.3	187.2	194.0	197.0	202.9	206.8
87.5°	111.7	123.5	136.2	149.0	153.9	156.8	162.7	169.5	179.3	185.2
90°	98.0	110.7	122.5	131.3	133.3	136.2	143.1	150.9	161.7	169.5
92.5°	97.0	106.8	114.7	120.5	123.5	127.4	133.3	137.2	146.0	152.9
95°	92.1	100.9	108.8	114.7	117.6	120.5	126.4	136.2	149.0	156.8
97.5°	89.2	98.0	103.9	110.7	114.7	118.6	131.3	146.0	156.8	159.7
100°	86.2	94.1	100.9	109.8	114.7	119.6	130.3	136.2	138.2	136.2
102.5°	83.3	91.1	99.0	106.8	109.8	113.7	118.6	117.6	116.6	114.7
105°	81.3	88.2	95.1	100.0	100.9	102.9	103.9	102.9	100.9	99.0
107.5°	79.4	85.3	90.2	92.1	93.1	94.1	94.1	92.1	90.2	88.2
110°	76.4	82.3	85.3	87.2	87.2	88.2	87.2	86.2	83.3	82.3



TEST NUMBER: P241498

CATALOG NUMBER: FVS8M-4-LD4-35-1HI-PA187-UNV-EDC1

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
112.5°	75.5	79.4	82.3	84.3	85.3	86.2	86.2	85.3	83.3	82.3
115°	74.5	79.4	82.3	85.3	86.2	87.2	88.2	88.2	86.2	86.2
117.5°	74.5	80.4	84.3	87.2	89.2	90.2	91.1	92.1	91.1	90.2
120°	74.5	81.3	85.3	90.2	91.1	92.1	94.1	95.1	95.1	94.1
122.5°	74.5	81.3	86.2	90.2	92.1	93.1	96.0	97.0	97.0	97.0
125°	73.5	80.4	85.3	89.2	91.1	93.1	96.0	98.0	99.0	100.0
127.5°	71.5	78.4	83.3	88.2	90.2	92.1	95.1	97.0	99.0	100.9
130°	68.6	75.5	81.3	86.2	88.2	90.2	93.1	96.0	98.0	99.0
132.5°	65.7	71.5	78.4	83.3	85.3	87.2	91.1	94.1	96.0	97.0
135°	61.7	67.6	74.5	79.4	81.3	84.3	88.2	91.1	93.1	94.1
137.5°	56.8	63.7	69.6	75.5	77.4	79.4	84.3	87.2	89.2	89.2
140°	52.9	58.8	65.7	70.6	73.5	75.5	79.4	82.3	84.3	85.3
142.5°	48.0	54.9	60.8	65.7	67.6	69.6	73.5	76.4	78.4	79.4
145°	42.1	49.0	53.9	58.8	61.7	63.7	66.6	69.6	71.5	71.5
147.5°	36.3	42.1	47.0	51.0	53.9	55.9	58.8	61.7	63.7	63.7
150°	29.4	34.3	40.2	44.1	45.1	47.0	50.0	51.9	52.9	53.9
152.5°	23.5	27.4	32.3	35.3	37.2	39.2	41.2	43.1	44.1	44.1
155°	17.6	21.6	24.5	28.4	29.4	31.4	32.3	34.3	34.3	35.3
157.5°	12.7	15.7	17.6	20.6	21.6	23.5	24.5	25.5	26.5	26.5
160°	8.8	10.8	12.7	14.7	15.7	16.7	17.6	18.6	19.6	18.6
162.5°	5.9	6.9	7.8	9.8	9.8	10.8	11.8	12.7	12.7	12.7
165°	2.9	3.9	4.9	4.9	5.9	5.9	6.9	7.8	7.8	7.8
167.5°	2.0	2.0	2.0	2.9	2.9	2.9	2.9	3.9	3.9	3.9
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)