

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: P392570

Luminaire Tested: **MWL-3-27-33-UNV-L940-EDD**

Issue Date: 3/12/2020

Test Information

Test Method: LM-79-08
Report Number: P392570
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &
Test Lab: INNOVATION CENTER
Issue Date: 3/12/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-3-27-33-UNV-L940-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

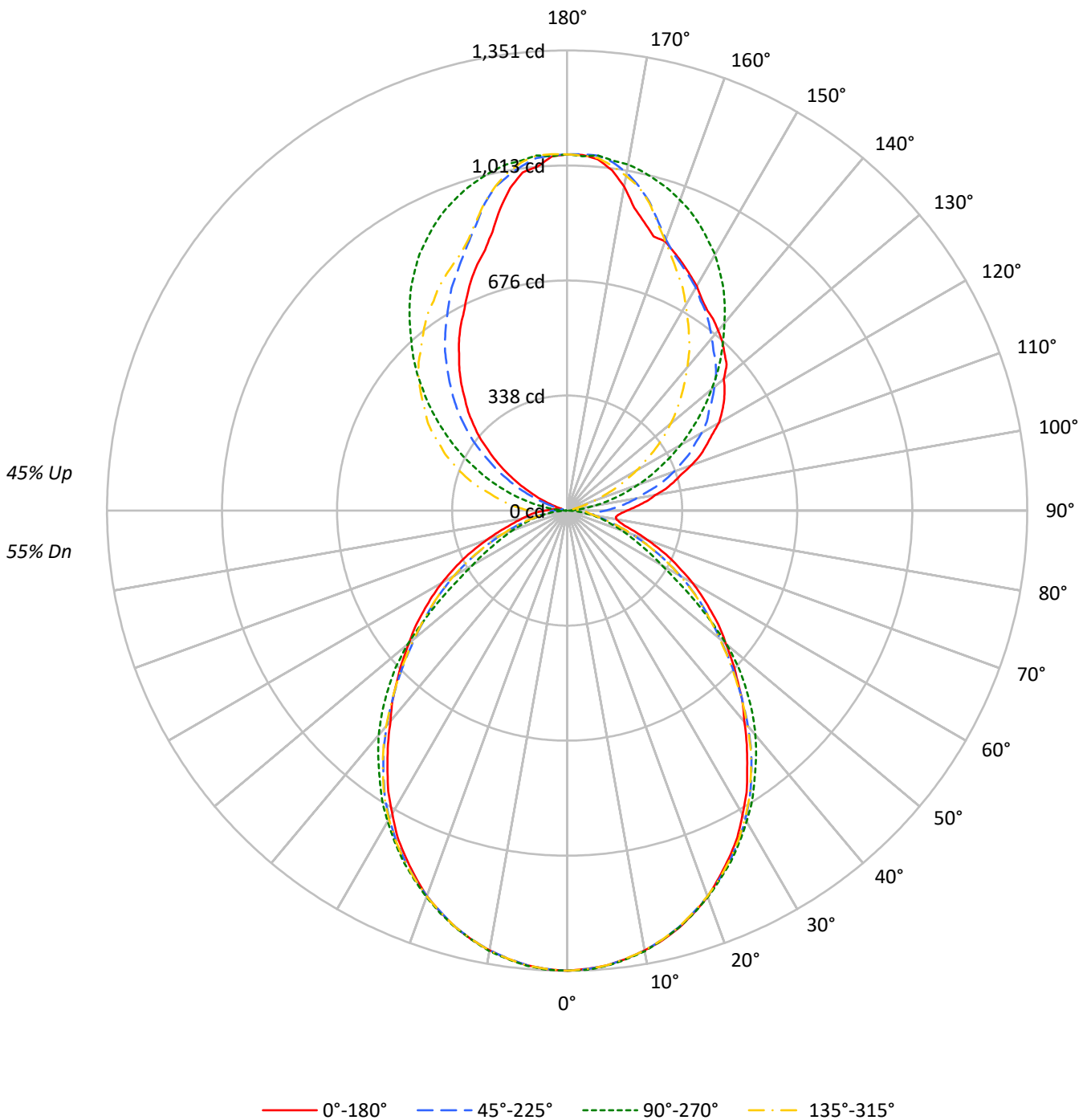
Lumens per Lamp: N/A
Luminaire Lumens: 5600.6 lumens
Efficiency: N/A
Efficacy: 91.8 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 61.004
Input Voltage (V): NR
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



TEST NUMBER: P392570
CATALOG NUMBER: MWL-3-27-33-UNV-L940-EDD

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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	99	95	91	87	92	88	85	82	76	73	71	65	63	61	54	53	52	47
2	91	83	77	72	84	78	72	68	67	63	60	57	54	52	48	46	44	40
3	83	74	66	61	77	69	62	57	59	55	51	51	47	44	43	40	38	34
4	76	65	58	52	70	61	54	49	53	48	43	46	42	38	39	36	33	30
5	70	58	50	44	65	55	48	42	48	42	38	41	37	33	35	32	29	26
6	65	53	45	39	60	49	42	37	43	37	33	37	33	29	32	28	26	23
7	60	48	40	34	56	45	38	33	39	34	29	34	30	26	29	26	23	21
8	56	43	36	30	52	41	34	29	36	30	26	31	27	23	27	23	21	19
9	52	40	32	27	48	37	31	26	33	27	24	29	24	21	25	21	19	17
10	48	36	29	25	45	34	28	23	30	25	21	27	22	19	23	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	11633	11633	11633	11633
5°	11447	10664	11447	10664
10°	11189	9764	11189	9764
15°	10903	8911	10884	8911
20°	10525	8112	10506	8112
25°	10037	7369	10017	7369
30°	9481	6646	9454	6646
35°	8831	5933	8809	5933
40°	8152	5258	8122	5258
45°	7568	4533	7545	4533
50°	6994	3732	6968	3732
55°	6462	2791	6442	2791
60°	5910	2024	5899	2024
65°	5269	1521	5269	1521
70°	4543	1148	4556	1148
75°	3885	832	3936	832
80°	4067	534	3678	534
85°	5720	231	3891	231



TEST NUMBER: P392570

CATALOG NUMBER: MWL-3-27-33-UNV-L940-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.1	2.3
10°-20°	356.7	6.4
20°-30°	520.5	9.3
30°-40°	588.2	10.5
40°-50°	550.0	9.8
50°-60°	434.1	7.8
60°-70°	283.8	5.1
70°-80°	147.8	2.6
80°-90°	81.8	1.5
90°-100°	95.0	1.7
100°-110°	164.0	2.9
110°-120°	278.2	5.0
120°-130°	377.8	6.7
130°-140°	430.8	7.7
140°-150°	429.6	7.7
150°-160°	374.1	6.7
160°-170°	263.1	4.7
170°-180°	98.0	1.7
0°-30°	1004.2	17.9
0°-40°	1592.4	28.4
0°-60°	2576.5	46.0
0°-90°	3089.9	55.2
90°-120°	537.2	9.6
90°-150°	1775.5	31.7
90°-180°	2511.0	44.8
0°-180°	5600.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1351	1351	1351	1351	1351	
5°	1340	1342	1340	1342	1340	127
15°	1268	1267	1266	1267	1268	357
25°	1125	1137	1123	1137	1125	517
35°	922	960	920	960	922	577
45°	708	744	706	744	708	547
55°	516	451	514	451	516	463
65°	336	235	336	235	336	332
75°	177	118	180	118	177	197
85°	150	29	102	29	150	122
90°	175	2	64	2	175	97
95°	217	30	42	30	217	188
105°	324	146	13	146	324	343
115°	450	298	105	298	450	446
125°	562	468	256	468	562	502
135°	653	639	411	639	653	504
145°	717	799	553	799	717	452
155°	801	924	695	924	801	370
165°	876	1005	847	1005	876	249
175°	1035	1046	1013	1046	1035	97
180°	1046	1046	1046	1046	1046	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1350.9	1350.9	1350.9	1350.9	1350.9	1350.9	1350.9	1350.9	1350.9	1350.9	1350.9
2.5°	1346.8	1349.2	1347.1	1347.8	1349.6	1347.1	1347.1	1349.2	1347.6	1349.2	1347.1
5°	1340.4	1342.0	1340.7	1340.7	1341.6	1340.7	1340.0	1342.0	1340.4	1342.0	1340.0
7.5°	1327.6	1329.9	1327.2	1328.8	1328.8	1328.1	1326.5	1329.2	1327.6	1329.2	1326.5
10°	1311.0	1313.5	1311.7	1311.7	1313.5	1311.0	1311.0	1312.1	1311.0	1312.1	1311.0
12.5°	1292.4	1292.6	1290.0	1291.8	1291.1	1291.8	1290.0	1291.1	1290.9	1291.1	1290.0
15°	1268.5	1267.1	1266.3	1267.2	1267.4	1266.5	1265.6	1265.6	1266.3	1265.6	1265.6
17.5°	1238.5	1239.7	1236.3	1239.2	1239.2	1239.2	1235.5	1239.0	1236.3	1239.0	1235.5
20°	1206.6	1205.8	1205.3	1207.3	1207.4	1206.5	1204.6	1204.4	1204.4	1204.4	1204.6
22.5°	1165.8	1168.5	1169.8	1173.6	1172.8	1172.8	1169.0	1167.0	1164.3	1167.0	1169.0
25°	1124.8	1129.3	1132.2	1138.1	1137.2	1137.2	1130.8	1127.1	1122.6	1127.1	1130.8
27.5°	1081.9	1082.8	1091.2	1099.6	1096.2	1098.9	1089.8	1080.7	1079.7	1080.7	1089.8
30°	1030.0	1034.6	1046.4	1055.7	1054.3	1054.2	1044.2	1032.4	1027.0	1032.4	1044.2
32.5°	980.8	982.6	998.1	1009.2	1010.5	1007.8	995.9	979.6	977.8	979.6	995.9
35°	921.8	926.3	942.7	961.8	959.6	959.6	940.4	924.0	919.5	924.0	940.4
37.5°	866.2	868.9	887.1	910.8	911.2	908.5	884.9	866.6	863.9	866.6	884.9
40°	809.7	808.8	826.1	852.7	860.2	851.1	823.1	805.8	806.7	805.8	823.1
42.5°	762.3	751.4	763.4	792.6	804.6	791.0	761.1	748.4	759.3	748.4	761.1
45°	707.8	696.9	703.3	730.6	744.5	729.1	700.3	694.6	705.6	694.6	700.3
47.5°	658.6	645.0	644.1	664.3	683.4	663.5	641.0	642.7	656.4	642.7	641.0
50°	608.5	595.8	586.7	600.5	610.6	599.0	583.7	592.8	606.2	592.8	583.7
52.5°	565.7	548.4	533.1	536.7	529.5	535.2	530.8	545.4	563.4	545.4	530.8
55°	515.8	504.8	483.0	471.2	451.4	469.8	480.7	502.6	514.2	502.6	480.7
57.5°	471.1	461.1	434.7	406.5	378.5	405.1	432.4	458.8	469.6	458.8	432.4
60°	425.7	415.6	383.8	342.9	321.1	342.2	382.3	414.2	424.9	414.2	382.3
62.5°	378.3	371.9	335.5	289.2	276.6	288.5	334.0	370.5	377.6	370.5	334.0
65°	335.6	324.7	287.4	242.7	234.7	242.0	286.6	324.0	335.6	324.0	286.6
67.5°	291.9	278.2	242.7	201.9	201.0	201.9	242.0	277.5	291.9	277.5	242.0
70°	249.3	233.8	201.0	167.3	170.9	167.3	201.0	234.5	250.0	234.5	201.0
72.5°	211.9	191.0	164.5	137.2	141.0	136.5	164.5	191.7	213.4	191.7	164.5
75°	177.3	153.6	131.0	110.1	118.3	110.1	131.7	154.3	179.6	154.3	131.7
77.5°	157.7	128.4	100.9	86.4	94.6	86.4	101.7	126.1	154.8	126.1	101.7
80°	146.6	116.8	81.3	66.3	71.8	66.3	79.8	105.0	132.6	105.0	79.8
82.5°	144.2	115.7	75.6	47.2	50.8	47.2	66.7	89.2	116.2	89.2	66.7
85°	149.8	125.1	80.9	37.5	29.0	36.1	59.5	80.1	101.9	80.1	59.5
87.5°	160.0	141.5	94.1	40.5	8.2	30.2	52.0	70.6	84.0	70.6	52.0
90°	175.1	160.4	112.5	48.7	1.6	20.6	39.4	56.4	64.4	56.4	39.4
92.5°	195.8	183.3	133.4	63.3	12.8	12.4	32.3	46.6	51.1	46.6	32.3
95°	217.3	211.0	157.9	79.5	30.4	5.6	25.0	39.7	42.3	39.7	25.0
97.5°	242.4	236.1	181.2	104.2	53.3	9.7	18.1	33.0	35.7	33.0	18.1
100°	263.0	258.7	207.2	136.0	81.4	25.2	11.6	26.9	30.5	26.9	11.6
102.5°	296.9	284.4	232.9	166.3	111.7	46.6	12.9	18.7	22.3	18.7	12.9
105°	324.2	309.3	269.0	198.1	146.3	75.4	30.6	12.5	13.4	12.5	30.6
107.5°	350.5	342.2	301.6	230.5	183.3	108.7	55.8	29.2	19.7	29.2	55.8
110°	387.4	377.7	333.3	263.0	221.7	144.1	84.6	52.8	41.8	52.8	84.6



TEST NUMBER: P392570

CATALOG NUMBER: MWL-3-27-33-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	422.8	415.3	362.9	296.9	261.5	182.5	120.0	82.3	72.2	82.3	120.0
115°	450.2	445.5	396.8	328.7	298.5	226.1	159.1	117.0	104.6	117.0	159.1
117.5°	478.1	477.3	421.9	361.2	342.8	265.2	195.2	151.7	137.7	151.7	195.2
120°	514.2	508.3	456.6	393.7	384.8	306.6	235.2	191.6	177.6	191.6	235.2
122.5°	539.3	535.6	486.2	425.6	425.6	349.6	273.5	230.0	215.2	230.0	273.5
125°	562.1	560.7	508.3	456.6	468.4	388.7	316.3	272.1	255.8	272.1	316.3
127.5°	582.8	585.1	537.1	490.5	511.9	428.6	358.4	309.7	292.7	309.7	358.4
130°	600.6	608.0	564.4	521.6	553.3	472.1	396.1	347.3	336.3	347.3	396.1
132.5°	635.3	630.8	592.5	553.3	597.6	511.9	436.0	385.0	372.5	385.0	436.0
135°	653.0	654.4	616.8	580.6	639.0	551.9	473.6	423.4	410.8	423.4	473.6
137.5°	674.4	670.0	636.0	613.9	677.4	590.2	510.5	464.0	444.1	464.0	510.5
140°	689.9	689.2	661.1	643.4	718.7	627.9	548.2	500.9	482.4	500.9	548.2
142.5°	706.2	710.6	686.2	675.9	760.0	667.7	588.8	537.1	519.3	537.1	588.8
145°	717.2	726.9	711.3	716.5	799.2	712.0	624.2	571.8	552.6	571.8	624.2
147.5°	735.7	748.3	729.8	745.3	833.1	751.2	659.6	608.0	590.9	608.0	659.6
150°	760.8	766.7	755.7	785.2	867.8	794.8	695.8	642.7	625.7	642.7	695.8
152.5°	780.7	788.1	775.5	828.7	895.2	834.7	735.7	676.6	656.7	676.6	735.7
155°	801.4	804.3	795.5	870.8	923.9	873.7	767.4	714.3	695.1	714.3	767.4
157.5°	820.6	826.5	816.2	902.5	949.1	907.7	803.6	751.9	735.0	751.9	803.6
160°	841.3	841.3	847.1	939.4	969.8	937.2	842.0	793.3	769.7	793.3	842.0
162.5°	843.5	857.5	889.2	965.3	989.6	963.1	883.3	822.8	802.1	822.8	883.3
165°	875.9	888.5	936.5	988.2	1005.1	986.0	934.3	871.6	847.1	871.6	934.3
167.5°	909.9	936.5	974.9	1014.1	1020.0	1007.4	973.4	929.9	907.7	929.9	973.4
170°	965.3	988.2	1007.4	1023.6	1031.7	1024.3	997.7	976.3	962.3	976.3	997.7
172.5°	1007.9	1023.6	1031.0	1041.4	1036.2	1033.2	1020.0	1009.6	1001.3	1009.6	1020.0
175°	1035.3	1039.1	1045.8	1042.1	1046.5	1038.4	1039.1	1044.3	1013.1	1044.3	1039.1
177.5°	1044.8	1051.0	1047.2	1040.6	1041.4	1039.8	1042.8	1045.8	1040.5	1045.8	1042.8
180°	1045.8	1045.8	1045.8	1045.8	1045.8	1045.8	1045.8	1045.8	1045.8	1045.8	1045.8



TEST NUMBER: P392570

CATALOG NUMBER: MWL-3-27-33-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1350.9	1350.9	1350.9	1350.9	1350.9	1350.9
2.5°	1347.1	1349.6	1347.8	1347.1	1349.2	1346.8
5°	1340.7	1341.6	1340.7	1340.7	1342.0	1340.4
7.5°	1328.1	1328.8	1328.8	1327.2	1329.9	1327.6
10°	1311.0	1313.5	1311.7	1311.7	1313.5	1311.0
12.5°	1291.8	1291.1	1291.8	1290.0	1292.6	1292.4
15°	1266.5	1267.4	1267.2	1266.3	1267.1	1268.5
17.5°	1239.2	1239.2	1239.2	1236.3	1239.7	1238.5
20°	1206.5	1207.4	1207.3	1205.3	1205.8	1206.6
22.5°	1172.8	1172.8	1173.6	1169.8	1168.5	1165.8
25°	1137.2	1137.2	1138.1	1132.2	1129.3	1124.8
27.5°	1098.9	1096.2	1099.6	1091.2	1082.8	1081.9
30°	1054.2	1054.3	1055.7	1046.4	1034.6	1030.0
32.5°	1007.8	1010.5	1009.2	998.1	982.6	980.8
35°	959.6	959.6	961.8	942.7	926.3	921.8
37.5°	908.5	911.2	910.8	887.1	868.9	866.2
40°	851.1	860.2	852.7	826.1	808.8	809.7
42.5°	791.0	804.6	792.6	763.4	751.4	762.3
45°	729.1	744.5	730.6	703.3	696.9	707.8
47.5°	663.5	683.4	664.3	644.1	645.0	658.6
50°	599.0	610.6	600.5	586.7	595.8	608.5
52.5°	535.2	529.5	536.7	533.1	548.4	565.7
55°	469.8	451.4	471.2	483.0	504.8	515.8
57.5°	405.1	378.5	406.5	434.7	461.1	471.1
60°	342.2	321.1	342.9	383.8	415.6	425.7
62.5°	288.5	276.6	289.2	335.5	371.9	378.3
65°	242.0	234.7	242.7	287.4	324.7	335.6
67.5°	201.9	201.0	201.9	242.7	278.2	291.9
70°	167.3	170.9	167.3	201.0	233.8	249.3
72.5°	136.5	141.0	137.2	164.5	191.0	211.9
75°	110.1	118.3	110.1	131.0	153.6	177.3
77.5°	86.4	94.6	86.4	100.9	128.4	157.7
80°	66.3	71.8	66.3	81.3	116.8	146.6
82.5°	47.2	50.8	47.2	75.6	115.7	144.2
85°	36.1	29.0	37.5	80.9	125.1	149.8
87.5°	30.2	8.2	40.5	94.1	141.5	160.0
90°	20.6	1.6	48.7	112.5	160.4	175.1
92.5°	12.4	12.8	63.3	133.4	183.3	195.8
95°	5.6	30.4	79.5	157.9	211.0	217.3
97.5°	9.7	53.3	104.2	181.2	236.1	242.4
100°	25.2	81.4	136.0	207.2	258.7	263.0
102.5°	46.6	111.7	166.3	232.9	284.4	296.9
105°	75.4	146.3	198.1	269.0	309.3	324.2
107.5°	108.7	183.3	230.5	301.6	342.2	350.5
110°	144.1	221.7	263.0	333.3	377.7	387.4



TEST NUMBER: P392570

CATALOG NUMBER: MWL-3-27-33-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	182.5	261.5	296.9	362.9	415.3	422.8
115°	226.1	298.5	328.7	396.8	445.5	450.2
117.5°	265.2	342.8	361.2	421.9	477.3	478.1
120°	306.6	384.8	393.7	456.6	508.3	514.2
122.5°	349.6	425.6	425.6	486.2	535.6	539.3
125°	388.7	468.4	456.6	508.3	560.7	562.1
127.5°	428.6	511.9	490.5	537.1	585.1	582.8
130°	472.1	553.3	521.6	564.4	608.0	600.6
132.5°	511.9	597.6	553.3	592.5	630.8	635.3
135°	551.9	639.0	580.6	616.8	654.4	653.0
137.5°	590.2	677.4	613.9	636.0	670.0	674.4
140°	627.9	718.7	643.4	661.1	689.2	689.9
142.5°	667.7	760.0	675.9	686.2	710.6	706.2
145°	712.0	799.2	716.5	711.3	726.9	717.2
147.5°	751.2	833.1	745.3	729.8	748.3	735.7
150°	794.8	867.8	785.2	755.7	766.7	760.8
152.5°	834.7	895.2	828.7	775.5	788.1	780.7
155°	873.7	923.9	870.8	795.5	804.3	801.4
157.5°	907.7	949.1	902.5	816.2	826.5	820.6
160°	937.2	969.8	939.4	847.1	841.3	841.3
162.5°	963.1	989.6	965.3	889.2	857.5	843.5
165°	986.0	1005.1	988.2	936.5	888.5	875.9
167.5°	1007.4	1020.0	1014.1	974.9	936.5	909.9
170°	1024.3	1031.7	1023.6	1007.4	988.2	965.3
172.5°	1033.2	1036.2	1041.4	1031.0	1023.6	1007.9
175°	1038.4	1046.5	1042.1	1045.8	1039.1	1035.3
177.5°	1039.8	1041.4	1040.6	1047.2	1051.0	1044.8
180°	1045.8	1045.8	1045.8	1045.8	1045.8	1045.8

(END OF REPORT)