

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: P392567

Luminaire Tested: **MWL-3-27-28-UNV-L940-EDD**

Issue Date: 3/12/2020

Test Information

Test Method: LM-79-08
Report Number: P392567
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-3-27-28-UNV-L940-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

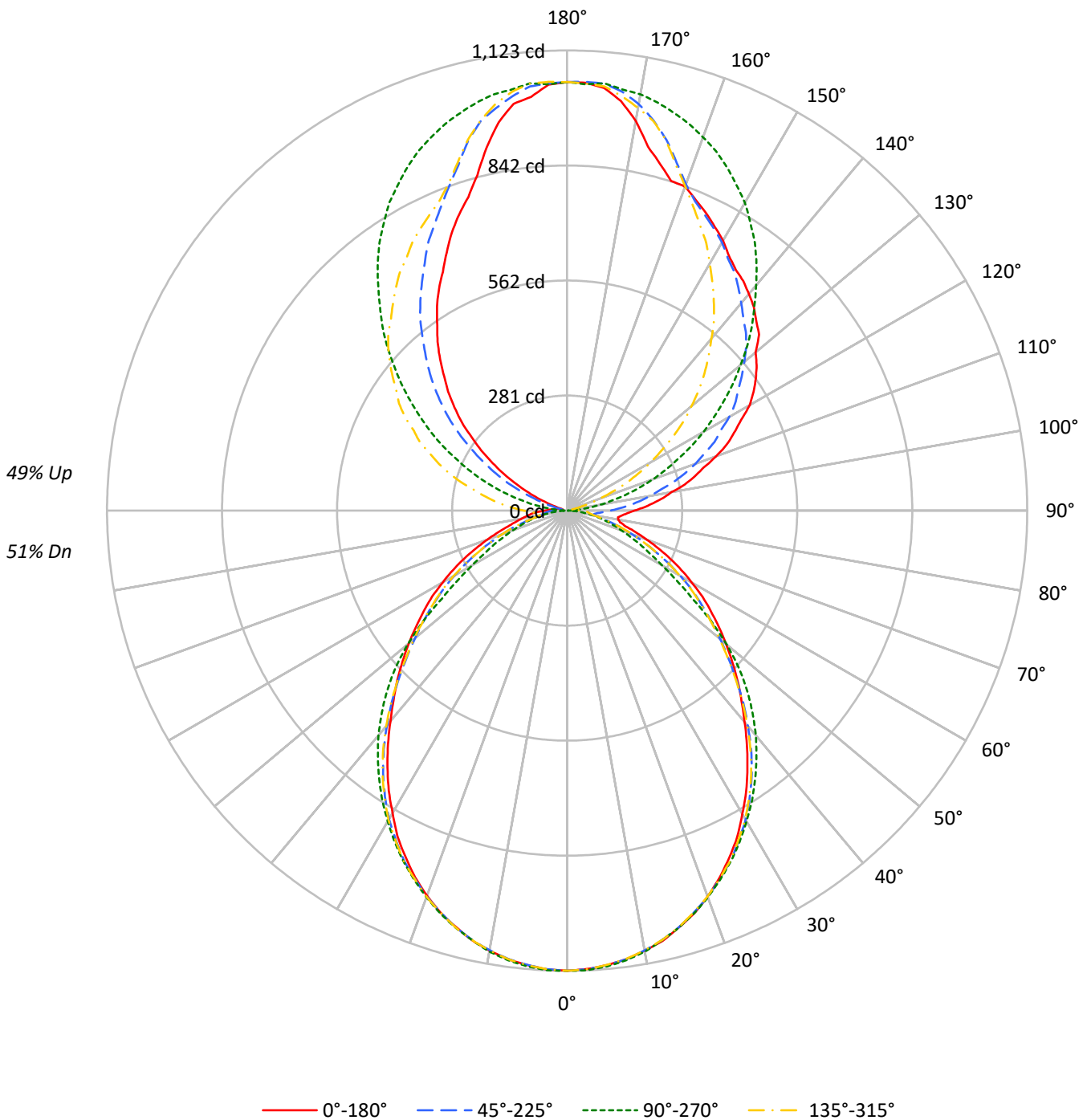
Lumens per Lamp: N/A
Luminaire Lumens: 5076.6 lumens
Efficiency: N/A
Efficacy: 95.0 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 53.429
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



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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	50	30	10	0	
RCR																						
0	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51				51
1	98	94	90	86	90	87	83	80	74	71	69	61	60	58	50	49	48	43				43
2	90	82	76	71	82	76	71	67	65	61	58	54	52	49	45	43	41	37				37
3	82	73	65	60	75	67	61	56	58	53	49	48	45	42	40	38	35	31				31
4	75	65	57	51	69	60	53	48	51	46	42	43	39	36	36	33	31	27				27
5	69	58	50	44	64	54	47	41	46	41	36	39	35	32	33	30	27	24				24
6	64	52	44	38	59	48	41	36	42	36	32	35	31	28	30	26	24	21				21
7	59	47	39	34	54	44	37	32	38	32	28	32	28	25	27	24	21	19				19
8	55	43	35	30	51	40	33	28	35	29	25	30	25	22	25	22	19	17				17
9	51	39	32	27	47	37	30	25	32	26	23	27	23	20	23	20	18	15				15
10	48	36	29	24	44	34	27	23	29	24	20	25	21	18	22	18	16	14				14

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	9671	9671	9671	9671
5°	9510	8875	9510	8875
10°	9307	8125	9307	8125
15°	9055	7406	9036	7406
20°	8745	6747	8725	6747
25°	8345	6123	8326	6123
30°	7871	5520	7844	5520
35°	7347	4947	7325	4947
40°	6785	4378	6754	4378
45°	6293	3784	6268	3784
50°	5822	3103	5795	3103
55°	5366	2295	5347	2295
60°	4873	1691	4862	1691
65°	4353	1278	4353	1278
70°	3763	947	3776	947
75°	3226	684	3276	684
80°	3512	453	3121	453
85°	5128	187	3299	187



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	105.7	2.1
10°-20°	296.6	5.8
20°-30°	432.8	8.5
30°-40°	488.9	9.6
40°-50°	457.0	9.0
50°-60°	360.5	7.1
60°-70°	235.8	4.6
70°-80°	122.9	2.4
80°-90°	71.3	1.4
90°-100°	91.0	1.8
100°-110°	163.1	3.2
110°-120°	278.1	5.5
120°-130°	377.6	7.4
130°-140°	430.6	8.5
140°-150°	429.5	8.5
150°-160°	374.1	7.4
160°-170°	263.1	5.2
170°-180°	98.0	1.9
0°-30°	835.1	16.4
0°-40°	1324.0	26.1
0°-60°	2141.5	42.2
0°-90°	2571.5	50.7
90°-120°	532.1	10.5
90°-150°	1769.9	34.9
90°-180°	2505.0	49.3
0°-180°	5076.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1123	1123	1123	1123	1123	
5°	1114	1117	1114	1117	1114	106
15°	1054	1053	1051	1053	1054	297
25°	935	945	933	945	935	430
35°	767	800	765	800	767	479
45°	588	622	586	622	588	454
55°	428	371	427	371	428	383
65°	277	197	277	197	277	275
75°	147	97	150	97	147	164
85°	134	24	86	24	134	108
90°	164	2	54	2	164	91
95°	211	30	36	30	211	183
105°	322	146	12	146	322	340
115°	449	298	104	298	449	446
125°	562	468	256	468	562	502
135°	653	638	411	638	653	504
145°	717	798	553	798	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°	1123.1	1123.1	1123.1	1123.1	1123.1	1123.1	1123.1	1123.1	1123.1	1123.1	1123.1
2.5°	1119.9	1121.5	1120.2	1121.8	1122.7	1121.1	1120.2	1121.5	1120.7	1121.5	1120.2
5°	1113.5	1115.1	1113.8	1114.7	1116.6	1114.7	1113.1	1115.1	1113.5	1115.1	1113.1
7.5°	1104.3	1105.8	1104.0	1105.6	1106.5	1104.9	1103.3	1105.1	1104.3	1105.1	1103.3
10°	1090.5	1091.2	1090.3	1091.2	1093.0	1090.5	1089.6	1089.8	1090.5	1089.8	1089.6
12.5°	1075.6	1074.8	1073.2	1074.1	1073.4	1074.1	1073.2	1073.4	1074.1	1073.4	1073.2
15°	1053.5	1053.9	1053.1	1055.0	1053.3	1054.2	1052.4	1052.4	1051.3	1052.4	1052.4
17.5°	1030.7	1030.2	1028.5	1030.5	1030.5	1030.5	1027.8	1029.5	1028.5	1029.5	1027.8
20°	1002.5	1003.6	1003.0	1005.0	1004.2	1004.2	1002.3	1002.1	1000.3	1002.1	1002.3
22.5°	970.8	972.6	973.0	976.8	975.1	976.0	972.2	971.1	969.3	971.1	972.2
25°	935.2	938.0	943.6	945.8	945.0	945.0	942.2	935.8	933.1	935.8	942.2
27.5°	898.8	901.5	907.2	911.9	911.3	911.2	905.7	899.3	896.6	899.3	905.7
30°	855.1	860.5	871.5	877.1	875.7	875.7	869.3	858.3	852.1	858.3	869.3
32.5°	813.2	817.7	829.6	839.8	839.2	838.3	827.4	814.7	810.2	814.7	827.4
35°	766.9	769.6	785.1	798.8	800.1	796.5	782.8	767.3	764.6	767.3	782.8
37.5°	720.4	721.3	737.7	756.9	759.0	754.6	735.4	719.0	718.1	719.0	735.4
40°	673.9	672.1	686.7	709.7	716.2	708.1	683.7	669.1	670.9	669.1	683.7
42.5°	630.2	623.8	635.9	661.4	669.7	659.8	633.6	620.8	627.2	620.8	633.6
45°	588.5	577.5	583.9	606.7	621.5	605.2	580.9	575.3	586.2	575.3	580.9
47.5°	546.6	536.5	533.8	552.2	568.6	551.4	530.8	534.3	544.3	534.3	530.8
50°	506.5	495.5	487.3	498.5	507.7	496.9	484.3	492.5	504.2	492.5	484.3
52.5°	466.4	456.4	442.9	444.7	441.2	443.2	440.6	453.4	464.1	453.4	440.6
55°	428.3	419.2	401.0	392.0	371.2	390.5	398.7	416.9	426.8	416.9	398.7
57.5°	391.9	383.7	360.9	338.2	315.6	336.7	358.6	381.4	390.3	381.4	358.6
60°	351.0	346.4	320.0	285.5	268.2	284.8	318.5	344.9	350.2	344.9	318.5
62.5°	314.5	309.0	279.0	240.9	227.4	240.2	277.5	307.6	313.8	307.6	277.5
65°	277.3	269.1	238.2	200.8	197.3	200.1	237.4	268.4	277.3	268.4	237.4
67.5°	240.0	231.8	202.6	169.1	166.4	169.1	201.9	231.1	240.0	231.1	201.9
70°	206.5	193.7	168.2	139.0	140.9	139.0	168.2	194.4	207.2	194.4	168.2
72.5°	175.5	157.3	138.1	114.4	118.3	113.7	138.1	158.0	176.9	158.0	138.1
75°	147.2	127.2	107.3	91.8	97.3	91.8	108.1	127.9	149.5	127.9	108.1
77.5°	132.2	106.5	83.6	72.7	80.0	72.7	84.4	104.2	129.3	104.2	84.4
80°	126.6	98.6	67.6	55.4	60.9	55.4	66.1	86.7	112.5	86.7	66.1
82.5°	125.1	101.1	65.6	39.0	41.7	39.0	56.7	74.6	97.0	74.6	56.7
85°	134.3	112.3	72.7	32.1	23.5	30.6	51.3	67.3	86.4	67.3	51.3
87.5°	147.2	131.5	86.8	35.9	6.4	25.6	44.7	60.6	71.2	60.6	44.7
90°	164.2	152.2	106.1	45.0	1.6	16.9	33.0	48.2	53.5	48.2	33.0
92.5°	188.5	176.0	127.9	61.5	12.8	10.6	26.8	39.4	43.8	39.4	26.8
95°	210.9	204.6	153.3	79.5	30.4	5.6	20.4	33.3	35.9	33.3	20.4
97.5°	236.1	230.6	179.4	104.2	53.3	9.7	16.3	27.5	29.3	27.5	16.3
100°	258.5	255.0	205.4	136.0	81.4	25.2	9.7	23.2	26.0	23.2	9.7
102.5°	294.2	281.7	232.0	166.3	111.7	46.6	12.0	15.9	19.6	15.9	12.0
105°	322.3	308.4	268.1	198.1	146.3	75.4	29.7	11.6	11.6	11.6	29.7
107.5°	349.6	342.2	300.7	230.5	183.3	108.7	54.8	29.2	18.8	29.2	54.8
110°	386.5	377.7	332.4	263.0	221.7	144.1	83.6	52.8	40.9	52.8	83.6



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CATALOG NUMBER: MWL-3-27-28-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	421.9	415.3	362.0	296.9	261.5	182.5	119.1	82.3	71.2	82.3	119.1
115°	449.3	445.5	396.8	328.7	298.5	226.1	159.1	117.0	103.7	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	424.7	424.7	348.7	273.5	230.0	215.2	230.0	273.5
125°	562.1	560.7	508.3	455.7	467.5	387.8	316.3	272.1	255.8	272.1	316.3
127.5°	582.8	585.1	537.1	489.6	511.0	427.7	358.4	309.7	292.7	309.7	358.4
130°	600.6	608.0	564.4	520.7	552.4	471.2	396.1	347.3	336.3	347.3	396.1
132.5°	635.3	630.8	592.5	552.4	596.7	511.0	436.0	385.0	372.5	385.0	436.0
135°	653.0	654.4	616.8	580.6	638.0	551.9	473.6	423.4	410.8	423.4	473.6
137.5°	674.4	670.0	636.0	613.9	676.5	590.2	510.5	464.0	444.1	464.0	510.5
140°	689.9	689.2	661.1	643.4	717.8	627.9	548.2	500.9	482.4	500.9	548.2
142.5°	706.2	710.6	686.2	675.9	759.1	667.7	588.8	537.1	519.3	537.1	588.8
145°	717.2	726.9	711.3	716.5	798.3	712.0	624.2	571.8	552.6	571.8	624.2
147.5°	735.7	748.3	729.8	745.3	832.2	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



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CATALOG NUMBER: MWL-3-27-28-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1123.1	1123.1	1123.1	1123.1	1123.1	1123.1
2.5°	1121.1	1122.7	1121.8	1120.2	1121.5	1119.9
5°	1114.7	1116.6	1114.7	1113.8	1115.1	1113.5
7.5°	1104.9	1106.5	1105.6	1104.0	1105.8	1104.3
10°	1090.5	1093.0	1091.2	1090.3	1091.2	1090.5
12.5°	1074.1	1073.4	1074.1	1073.2	1074.8	1075.6
15°	1054.2	1053.3	1055.0	1053.1	1053.9	1053.5
17.5°	1030.5	1030.5	1030.5	1028.5	1030.2	1030.7
20°	1004.2	1004.2	1005.0	1003.0	1003.6	1002.5
22.5°	976.0	975.1	976.8	973.0	972.6	970.8
25°	945.0	945.0	945.8	943.6	938.0	935.2
27.5°	911.2	911.3	911.9	907.2	901.5	898.8
30°	875.7	875.7	877.1	871.5	860.5	855.1
32.5°	838.3	839.2	839.8	829.6	817.7	813.2
35°	796.5	800.1	798.8	785.1	769.6	766.9
37.5°	754.6	759.0	756.9	737.7	721.3	720.4
40°	708.1	716.2	709.7	686.7	672.1	673.9
42.5°	659.8	669.7	661.4	635.9	623.8	630.2
45°	605.2	621.5	606.7	583.9	577.5	588.5
47.5°	551.4	568.6	552.2	533.8	536.5	546.6
50°	496.9	507.7	498.5	487.3	495.5	506.5
52.5°	443.2	441.2	444.7	442.9	456.4	466.4
55°	390.5	371.2	392.0	401.0	419.2	428.3
57.5°	336.7	315.6	338.2	360.9	383.7	391.9
60°	284.8	268.2	285.5	320.0	346.4	351.0
62.5°	240.2	227.4	240.9	279.0	309.0	314.5
65°	200.1	197.3	200.8	238.2	269.1	277.3
67.5°	169.1	166.4	169.1	202.6	231.8	240.0
70°	139.0	140.9	139.0	168.2	193.7	206.5
72.5°	113.7	118.3	114.4	138.1	157.3	175.5
75°	91.8	97.3	91.8	107.3	127.2	147.2
77.5°	72.7	80.0	72.7	83.6	106.5	132.2
80°	55.4	60.9	55.4	67.6	98.6	126.6
82.5°	39.0	41.7	39.0	65.6	101.1	125.1
85°	30.6	23.5	32.1	72.7	112.3	134.3
87.5°	25.6	6.4	35.9	86.8	131.5	147.2
90°	16.9	1.6	45.0	106.1	152.2	164.2
92.5°	10.6	12.8	61.5	127.9	176.0	188.5
95°	5.6	30.4	79.5	153.3	204.6	210.9
97.5°	9.7	53.3	104.2	179.4	230.6	236.1
100°	25.2	81.4	136.0	205.4	255.0	258.5
102.5°	46.6	111.7	166.3	232.0	281.7	294.2
105°	75.4	146.3	198.1	268.1	308.4	322.3
107.5°	108.7	183.3	230.5	300.7	342.2	349.6
110°	144.1	221.7	263.0	332.4	377.7	386.5



TEST NUMBER: P392567

CATALOG NUMBER: MWL-3-27-28-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	182.5	261.5	296.9	362.0	415.3	421.9
115°	226.1	298.5	328.7	396.8	445.5	449.3
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°	348.7	424.7	424.7	486.2	535.6	539.3
125°	387.8	467.5	455.7	508.3	560.7	562.1
127.5°	427.7	511.0	489.6	537.1	585.1	582.8
130°	471.2	552.4	520.7	564.4	608.0	600.6
132.5°	511.0	596.7	552.4	592.5	630.8	635.3
135°	551.9	638.0	580.6	616.8	654.4	653.0
137.5°	590.2	676.5	613.9	636.0	670.0	674.4
140°	627.9	717.8	643.4	661.1	689.2	689.9
142.5°	667.7	759.1	675.9	686.2	710.6	706.2
145°	712.0	798.3	716.5	711.3	726.9	717.2
147.5°	751.2	832.2	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)