

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: P392702

Luminaire Tested: **MWL-4-66-25-UNV-L840-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392702
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-1 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-4-66-25-UNV-L840-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9126.1 lumens
Efficiency: N/A
Efficacy: 84.4 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: Semi-Indirect

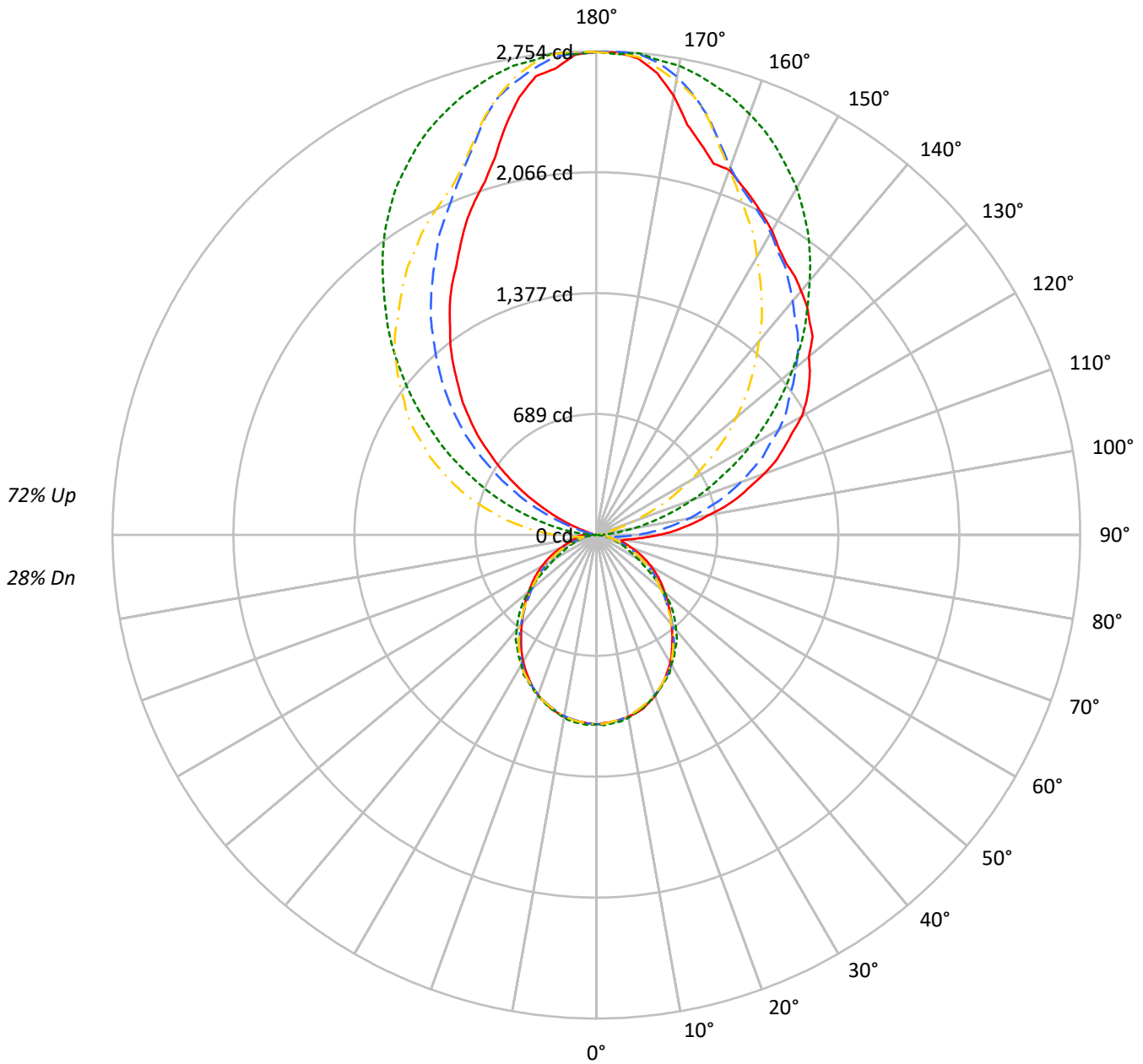
Input Watts (W): 108.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - - - 90°-270° - - - 135°-315°



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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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	28				
1	93	89	85	81	83	79	76	73	62	60	58	46	45	44	32	31	30	24				
2	85	77	72	67	75	70	65	60	55	51	48	41	39	37	28	27	26	20				
3	77	68	61	56	69	61	55	51	48	44	41	36	33	31	25	23	22	17				
4	71	60	53	47	63	54	48	43	43	38	35	32	29	27	22	21	19	15				
5	65	54	46	40	58	48	42	37	38	34	30	29	26	23	20	18	17	13				
6	60	48	40	35	53	43	37	32	34	30	26	26	23	20	18	16	15	11				
7	55	43	36	30	49	39	33	28	31	26	23	24	20	18	17	15	13	10				
8	51	39	32	27	46	35	29	25	28	24	20	22	18	16	15	13	12	9				
9	47	36	28	24	42	32	26	22	26	21	18	20	17	14	14	12	11	8				
10	44	33	26	21	40	30	24	19	24	19	16	18	15	13	13	11	10	8				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	6966	6966	6966	6966
5°	6860	6418	6860	6418
10°	6766	5896	6766	5896
15°	6664	5382	6626	5382
20°	6466	4902	6428	4902
25°	6201	4465	6162	4465
30°	5912	4037	5858	4037
35°	5530	3639	5488	3639
40°	5168	3235	5108	3235
45°	4828	2812	4779	2812
50°	4529	2300	4476	2300
55°	4261	1729	4223	1729
60°	3948	1285	3926	1285
65°	3583	952	3583	952
70°	3111	715	3139	715
75°	2747	522	2852	522
80°	3729	340	2864	340
85°	7929	154	3653	154



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	101.7	1.1
10°-20°	286.7	3.1
20°-30°	421.3	4.6
30°-40°	479.3	5.3
40°-50°	451.4	4.9
50°-60°	362.3	4.0
60°-70°	241.2	2.6
70°-80°	128.3	1.4
80°-90°	104.9	1.1
90°-100°	208.3	2.3
100°-110°	424.6	4.7
110°-120°	730.0	8.0
120°-130°	992.2	10.9
130°-140°	1131.9	12.4
140°-150°	1129.2	12.4
150°-160°	983.4	10.8
160°-170°	691.9	7.6
170°-180°	257.7	2.8
0°-30°	809.7	8.9
0°-40°	1289.0	14.1
0°-60°	2102.7	23.0
0°-90°	2577.0	28.2
90°-120°	1362.8	14.9
90°-150°	4616.1	50.6
90°-180°	6549.0	71.8
0°-180°	9126.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1079	1079	1079	1079	1079	
5°	1068	1076	1068	1076	1068	101
15°	1024	1021	1019	1021	1024	288
25°	912	919	907	919	912	420
35°	753	785	747	785	753	471
45°	584	616	578	616	584	452
55°	435	373	431	373	435	389
65°	287	196	287	196	287	284
75°	153	99	159	99	153	175
85°	234	26	108	26	234	177
90°	355	2	64	2	355	196
95°	498	79	38	79	498	440
105°	841	384	23	384	841	883
115°	1180	784	270	784	1180	1171
125°	1477	1230	671	1230	1477	1319
135°	1716	1679	1079	1679	1716	1325
145°	1885	2101	1452	2101	1885	1189
155°	2107	2429	1827	2429	2107	972
165°	2303	2643	2227	2643	2303	653
175°	2724	2753	2666	2753	2724	254
180°	2750	2750	2750	2750	2750	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1078.6	1078.6	1078.6	1078.6	1078.6	1078.6	1078.6	1078.6	1078.6	1078.6	1078.6
2.5°	1071.8	1073.7	1075.5	1088.5	1084.5	1086.5	1075.5	1073.7	1073.7	1073.7	1075.5
5°	1067.8	1069.7	1068.5	1077.5	1076.5	1077.5	1066.6	1069.7	1067.8	1069.7	1066.6
7.5°	1059.7	1061.6	1060.6	1068.5	1071.5	1066.6	1058.7	1059.7	1059.7	1059.7	1058.7
10°	1050.7	1051.6	1049.6	1055.6	1057.6	1053.7	1047.7	1047.7	1050.7	1047.7	1047.7
12.5°	1039.5	1040.6	1030.7	1036.7	1036.7	1036.7	1030.7	1036.7	1035.7	1036.7	1030.7
15°	1024.5	1016.6	1012.7	1021.7	1020.7	1019.7	1010.7	1012.7	1018.7	1012.7	1010.7
17.5°	999.5	998.6	993.7	997.7	997.7	997.7	991.7	996.7	993.7	996.7	991.7
20°	976.5	974.5	970.7	974.7	972.8	972.8	968.7	970.7	970.7	970.7	968.7
22.5°	945.5	948.5	943.7	946.7	947.8	944.8	941.7	944.7	941.7	944.7	941.7
25°	912.5	913.5	915.6	919.7	918.8	917.8	911.7	907.7	906.7	907.7	911.7
27.5°	876.5	880.5	888.6	895.7	896.8	893.7	884.7	874.7	870.7	874.7	884.7
30°	840.5	840.5	851.5	858.6	853.8	854.7	845.7	834.7	832.8	834.7	845.7
32.5°	798.5	798.5	813.5	826.6	822.7	822.7	807.7	790.8	790.8	790.8	807.7
35°	752.6	755.6	769.6	789.6	784.8	783.8	763.8	749.8	746.8	749.8	763.8
37.5°	709.6	707.6	723.6	746.6	753.7	740.8	717.8	701.8	703.8	701.8	717.8
40°	666.6	662.6	674.6	699.7	705.7	695.8	666.8	654.8	658.8	654.8	666.8
42.5°	625.6	618.6	623.7	650.7	660.7	646.8	617.8	610.8	617.8	610.8	617.8
45°	583.7	575.7	573.7	602.7	615.7	598.8	565.9	569.8	577.8	569.8	565.9
47.5°	547.7	536.7	528.7	545.7	563.7	543.8	520.9	530.8	541.8	530.8	520.9
50°	506.7	497.7	486.7	493.7	501.8	489.8	478.9	489.9	500.8	489.9	478.9
52.5°	472.7	461.7	444.7	445.7	436.8	441.8	438.9	453.9	466.8	453.9	438.9
55°	434.7	424.7	405.7	392.8	372.8	388.9	399.9	418.9	430.8	418.9	399.9
57.5°	398.7	391.7	366.7	341.8	316.8	337.9	360.9	385.9	394.8	385.9	360.9
60°	360.8	353.8	325.8	286.8	271.8	284.9	321.9	349.9	358.8	349.9	321.9
62.5°	324.8	319.8	286.8	242.8	227.9	240.9	282.9	315.9	322.8	315.9	282.9
65°	286.8	278.8	247.8	203.8	195.9	201.9	245.9	276.9	286.8	276.9	245.9
67.5°	248.8	240.8	209.8	170.9	169.9	170.9	207.9	238.9	248.8	238.9	207.9
70°	211.9	199.9	171.9	141.9	141.9	141.9	171.9	201.8	213.8	201.8	171.9
72.5°	179.9	164.9	140.9	117.9	119.9	115.9	140.9	166.8	183.8	166.8	140.9
75°	152.9	133.9	110.9	93.9	98.9	93.9	112.9	135.8	158.7	135.8	112.9
77.5°	145.4	117.7	86.9	73.9	79.9	73.9	88.9	111.8	137.7	111.8	88.9
80°	159.5	125.9	73.8	55.9	60.9	55.9	69.9	94.8	122.5	94.8	69.9
82.5°	190.1	153.6	85.1	39.9	42.9	39.9	61.8	83.7	116.3	83.7	61.8
85°	234.4	199.9	118.9	37.8	25.9	33.9	62.5	81.4	108.0	81.4	62.5
87.5°	290.3	262.8	167.2	59.9	8.0	32.7	56.4	76.3	90.2	76.3	56.4
90°	355.1	328.7	231.2	94.7	1.9	20.9	38.8	54.7	63.6	54.7	38.8
92.5°	430.6	404.3	297.1	148.0	32.1	13.9	30.8	44.8	49.7	44.8	30.8
95°	498.4	485.8	374.7	206.1	78.7	11.8	24.8	34.9	37.8	34.9	24.8
97.5°	577.0	568.2	454.2	273.1	139.0	24.3	24.7	33.8	32.8	33.8	24.7
100°	647.8	644.8	535.6	356.7	212.8	65.1	20.6	34.5	35.5	34.5	20.6
102.5°	752.5	727.2	610.3	436.3	292.5	121.5	31.2	27.5	29.5	27.5	31.2
105°	840.8	811.6	704.6	519.9	383.9	197.3	76.8	30.3	22.6	30.3	76.8
107.5°	919.4	898.0	790.1	605.4	481.0	284.8	142.9	73.9	48.7	73.9	142.9
110°	1014.6	991.3	873.6	690.9	582.1	378.0	218.7	136.1	105.0	136.1	218.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	1107.9	1090.4	951.4	780.4	687.1	479.1	312.0	213.8	184.7	213.8	312.0
115°	1179.8	1170.1	1041.8	863.9	784.2	593.8	416.0	305.2	270.2	305.2	416.0
117.5°	1255.6	1253.6	1107.9	950.4	900.8	697.8	511.2	396.5	359.6	396.5	511.2
120°	1350.8	1335.3	1199.2	1036.0	1012.6	806.6	616.2	501.5	464.6	501.5	616.2
122.5°	1416.9	1407.2	1276.9	1117.6	1117.6	917.4	717.2	602.5	563.7	602.5	717.2
125°	1477.1	1473.2	1335.3	1199.2	1230.3	1020.4	829.9	713.3	670.6	713.3	829.9
127.5°	1531.4	1537.3	1411.1	1288.6	1345.0	1125.4	940.7	812.4	767.7	812.4	940.7
130°	1578.1	1597.5	1483.0	1370.2	1453.8	1240.0	1039.8	911.6	882.4	911.6	1039.8
132.5°	1669.4	1657.8	1556.7	1453.8	1570.3	1345.0	1144.8	1010.7	977.6	1010.7	1144.8
135°	1716.1	1720.0	1620.9	1525.6	1679.2	1449.9	1243.9	1111.7	1078.7	1111.7	1243.9
137.5°	1772.4	1760.8	1671.4	1613.1	1780.2	1550.9	1341.1	1218.6	1166.2	1218.6	1341.1
140°	1813.3	1811.3	1737.5	1690.8	1889.1	1650.0	1440.2	1315.8	1267.2	1315.8	1440.2
142.5°	1856.0	1868.7	1803.5	1776.3	1997.9	1755.0	1547.0	1412.1	1364.4	1412.1	1547.0
145°	1885.2	1910.4	1869.6	1883.2	2100.9	1871.6	1640.3	1502.4	1451.9	1502.4	1640.3
147.5°	1933.8	1966.8	1918.2	1959.0	2190.3	1974.6	1733.6	1597.5	1552.8	1597.5	1733.6
150°	1999.8	2015.4	1986.2	2064.0	2281.6	2089.2	1828.8	1688.9	1644.2	1688.9	1828.8
152.5°	2052.3	2071.7	2038.7	2178.6	2353.6	2194.2	1933.8	1778.3	1725.8	1778.3	1933.8
155°	2106.7	2114.5	2091.2	2289.4	2429.4	2297.2	2017.3	1877.4	1826.9	1877.4	2017.3
157.5°	2157.3	2172.8	2145.6	2373.0	2495.4	2386.6	2112.6	1976.5	1931.8	1976.5	2112.6
160°	2211.7	2211.7	2227.2	2470.2	2549.9	2464.3	2213.6	2085.4	2023.2	2085.4	2213.6
162.5°	2217.5	2254.4	2338.0	2538.2	2602.3	2532.4	2322.5	2163.1	2108.7	2163.1	2322.5
165°	2303.0	2336.1	2462.4	2598.4	2643.1	2592.6	2456.6	2291.4	2227.2	2291.4	2456.6
167.5°	2392.4	2462.4	2563.5	2666.5	2682.0	2649.0	2559.6	2444.9	2386.6	2444.9	2559.6
170°	2538.2	2598.4	2649.0	2691.7	2713.1	2693.7	2623.7	2567.3	2530.4	2567.3	2623.7
172.5°	2651.9	2691.7	2711.2	2738.4	2725.8	2717.0	2682.0	2654.8	2634.4	2654.8	2682.0
175°	2723.8	2732.5	2750.0	2740.3	2753.0	2730.6	2732.5	2746.1	2665.5	2746.1	2732.5
177.5°	2749.0	2763.6	2753.9	2736.4	2739.4	2734.5	2742.3	2750.0	2737.4	2750.0	2742.3
180°	2750.0	2750.0	2750.0	2750.0	2750.0	2750.0	2750.0	2750.0	2750.0	2750.0	2750.0



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CATALOG NUMBER: MWL-4-66-25-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1078.6	1078.6	1078.6	1078.6	1078.6	1078.6
2.5°	1086.5	1084.5	1088.5	1075.5	1073.7	1071.8
5°	1077.5	1076.5	1077.5	1068.5	1069.7	1067.8
7.5°	1066.6	1071.5	1068.5	1060.6	1061.6	1059.7
10°	1053.7	1057.6	1055.6	1049.6	1051.6	1050.7
12.5°	1036.7	1036.7	1036.7	1030.7	1040.6	1039.5
15°	1019.7	1020.7	1021.7	1012.7	1016.6	1024.5
17.5°	997.7	997.7	997.7	993.7	998.6	999.5
20°	972.8	972.8	974.7	970.7	974.5	976.5
22.5°	944.8	947.8	946.7	943.7	948.5	945.5
25°	917.8	918.8	919.7	915.6	913.5	912.5
27.5°	893.7	896.8	895.7	888.6	880.5	876.5
30°	854.7	853.8	858.6	851.5	840.5	840.5
32.5°	822.7	822.7	826.6	813.5	798.5	798.5
35°	783.8	784.8	789.6	769.6	755.6	752.6
37.5°	740.8	753.7	746.6	723.6	707.6	709.6
40°	695.8	705.7	699.7	674.6	662.6	666.6
42.5°	646.8	660.7	650.7	623.7	618.6	625.6
45°	598.8	615.7	602.7	573.7	575.7	583.7
47.5°	543.8	563.7	545.7	528.7	536.7	547.7
50°	489.8	501.8	493.7	486.7	497.7	506.7
52.5°	441.8	436.8	445.7	444.7	461.7	472.7
55°	388.9	372.8	392.8	405.7	424.7	434.7
57.5°	337.9	316.8	341.8	366.7	391.7	398.7
60°	284.9	271.8	286.8	325.8	353.8	360.8
62.5°	240.9	227.9	242.8	286.8	319.8	324.8
65°	201.9	195.9	203.8	247.8	278.8	286.8
67.5°	170.9	169.9	170.9	209.8	240.8	248.8
70°	141.9	141.9	141.9	171.9	199.9	211.9
72.5°	115.9	119.9	117.9	140.9	164.9	179.9
75°	93.9	98.9	93.9	110.9	133.9	152.9
77.5°	73.9	79.9	73.9	86.9	117.7	145.4
80°	55.9	60.9	55.9	73.8	125.9	159.5
82.5°	39.9	42.9	39.9	85.1	153.6	190.1
85°	33.9	25.9	37.8	118.9	199.9	234.4
87.5°	32.7	8.0	59.9	167.2	262.8	290.3
90°	20.9	1.9	94.7	231.2	328.7	355.1
92.5°	13.9	32.1	148.0	297.1	404.3	430.6
95°	11.8	78.7	206.1	374.7	485.8	498.4
97.5°	24.3	139.0	273.1	454.2	568.2	577.0
100°	65.1	212.8	356.7	535.6	644.8	647.8
102.5°	121.5	292.5	436.3	610.3	727.2	752.5
105°	197.3	383.9	519.9	704.6	811.6	840.8
107.5°	284.8	481.0	605.4	790.1	898.0	919.4
110°	378.0	582.1	690.9	873.6	991.3	1014.6



TEST NUMBER: P392702

CATALOG NUMBER: MWL-4-66-25-UNV-L840-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	479.1	687.1	780.4	951.4	1090.4	1107.9
115°	593.8	784.2	863.9	1041.8	1170.1	1179.8
117.5°	697.8	900.8	950.4	1107.9	1253.6	1255.6
120°	806.6	1012.6	1036.0	1199.2	1335.3	1350.8
122.5°	917.4	1117.6	1117.6	1276.9	1407.2	1416.9
125°	1020.4	1230.3	1199.2	1335.3	1473.2	1477.1
127.5°	1125.4	1345.0	1288.6	1411.1	1537.3	1531.4
130°	1240.0	1453.8	1370.2	1483.0	1597.5	1578.1
132.5°	1345.0	1570.3	1453.8	1556.7	1657.8	1669.4
135°	1449.9	1679.2	1525.6	1620.9	1720.0	1716.1
137.5°	1550.9	1780.2	1613.1	1671.4	1760.8	1772.4
140°	1650.0	1889.1	1690.8	1737.5	1811.3	1813.3
142.5°	1755.0	1997.9	1776.3	1803.5	1868.7	1856.0
145°	1871.6	2100.9	1883.2	1869.6	1910.4	1885.2
147.5°	1974.6	2190.3	1959.0	1918.2	1966.8	1933.8
150°	2089.2	2281.6	2064.0	1986.2	2015.4	1999.8
152.5°	2194.2	2353.6	2178.6	2038.7	2071.7	2052.3
155°	2297.2	2429.4	2289.4	2091.2	2114.5	2106.7
157.5°	2386.6	2495.4	2373.0	2145.6	2172.8	2157.3
160°	2464.3	2549.9	2470.2	2227.2	2211.7	2211.7
162.5°	2532.4	2602.3	2538.2	2338.0	2254.4	2217.5
165°	2592.6	2643.1	2598.4	2462.4	2336.1	2303.0
167.5°	2649.0	2682.0	2666.5	2563.5	2462.4	2392.4
170°	2693.7	2713.1	2691.7	2649.0	2598.4	2538.2
172.5°	2717.0	2725.8	2738.4	2711.2	2691.7	2651.9
175°	2730.6	2753.0	2740.3	2750.0	2732.5	2723.8
177.5°	2734.5	2739.4	2736.4	2753.9	2763.6	2749.0
180°	2750.0	2750.0	2750.0	2750.0	2750.0	2750.0

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