

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: P392614

Luminaire Tested: **MWL-3-44-33-UNV-L935-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392614
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-13 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-3-44-33-UNV-L935-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6622.8 lumens
Efficiency: N/A
Efficacy: 72.8 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

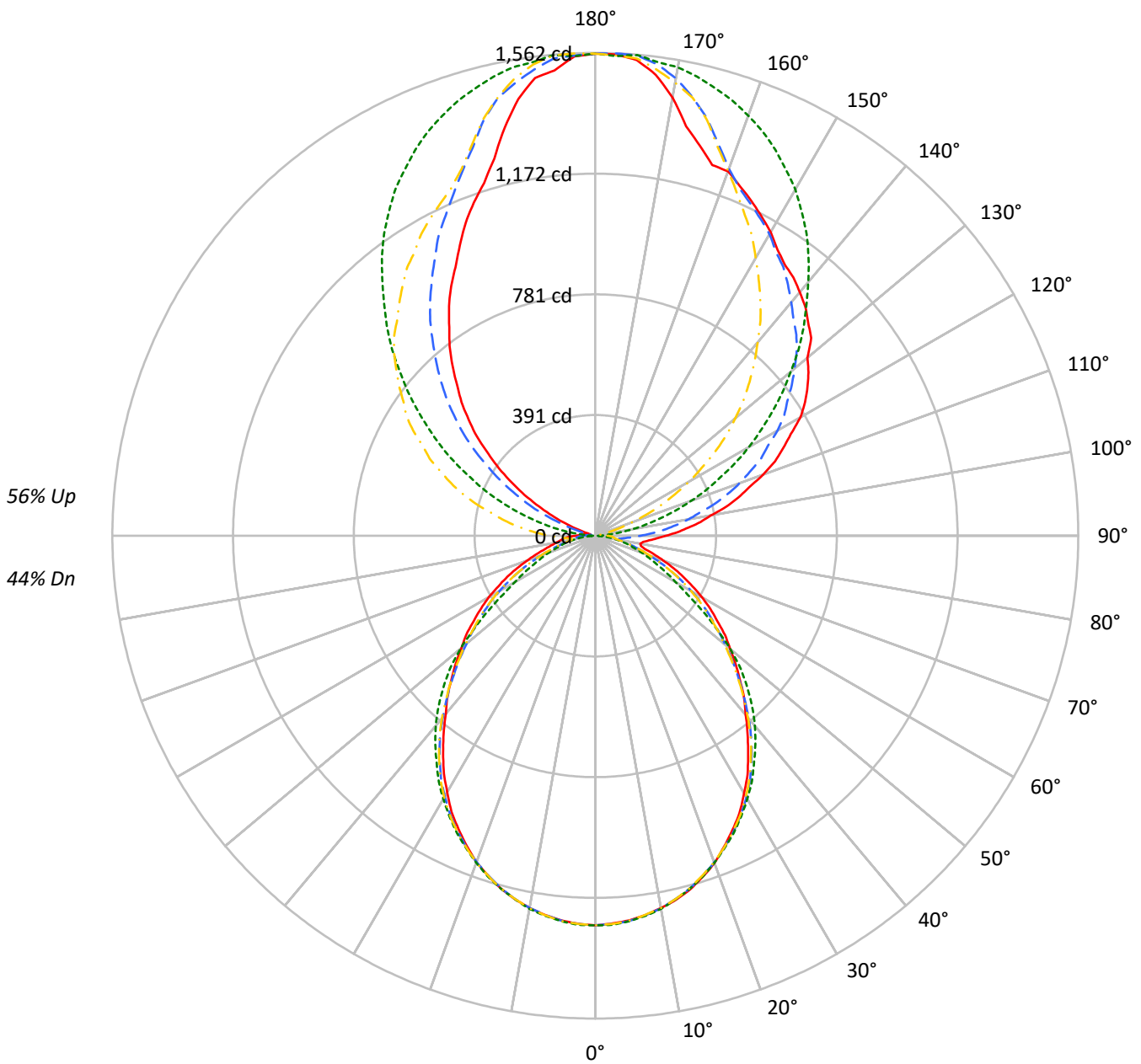
Input Watts (W): 91.001
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	44
1	96	92	88	85	88	84	81	78	70	68	66	57	55	54	45	44	43	37
2	88	81	75	70	80	74	69	65	62	58	55	50	48	45	40	38	36	31
3	81	71	64	58	73	66	59	54	55	50	46	45	41	39	35	33	31	27
4	74	63	56	50	67	58	52	46	49	44	40	40	36	33	32	29	27	23
5	68	56	49	43	62	52	45	40	44	39	34	36	32	29	29	26	24	21
6	63	51	43	37	57	47	40	35	40	34	30	33	29	26	26	23	21	18
7	58	46	38	33	53	42	36	31	36	31	27	30	26	23	24	21	19	16
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	22	19	17	15
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	18	15	13
10	47	35	28	23	43	32	26	22	28	23	19	23	19	17	19	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	10853	10853	10853	10853
5°	10670	9952	10670	9952
10°	10436	9110	10436	9110
15°	10181	8309	10152	8309
20°	9830	7562	9801	7562
25°	9371	6870	9343	6870
30°	8855	6197	8815	6197
35°	8248	5533	8216	5533
40°	7617	4906	7573	4906
45°	7071	4232	7036	4232
50°	6539	3485	6500	3485
55°	6040	2605	6012	2605
60°	5524	1892	5509	1892
65°	4925	1421	4925	1421
70°	4244	1075	4264	1075
75°	3633	777	3708	777
80°	4094	500	3515	500
85°	6621	218	3887	218



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.5	1.8
10°-20°	332.7	5.0
20°-30°	485.6	7.3
30°-40°	548.9	8.3
40°-50°	513.4	7.8
50°-60°	405.4	6.1
60°-70°	265.3	4.0
70°-80°	138.8	2.1
80°-90°	87.4	1.3
90°-100°	128.6	1.9
100°-110°	242.3	3.7
110°-120°	414.3	6.3
120°-130°	562.9	8.5
130°-140°	642.1	9.7
140°-150°	640.4	9.7
150°-160°	557.7	8.4
160°-170°	392.4	5.9
170°-180°	146.1	2.2
0°-30°	936.8	14.1
0°-40°	1485.7	22.4
0°-60°	2404.6	36.3
0°-90°	2896.0	43.7
90°-120°	785.1	11.9
90°-150°	2630.5	39.7
90°-180°	3727.0	56.3
0°-180°	6622.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1260	1260	1260	1260	1260	
5°	1249	1252	1249	1252	1249	118
15°	1184	1182	1181	1182	1184	333
25°	1050	1060	1047	1060	1050	483
35°	861	895	858	895	861	539
45°	661	695	658	695	661	511
55°	482	421	480	421	482	433
65°	314	219	314	219	314	311
75°	166	110	169	110	166	186
85°	173	27	102	27	173	137
90°	228	2	63	2	228	126
95°	302	45	41	45	302	263
105°	479	218	15	218	479	505
115°	670	445	155	445	670	665
125°	838	698	381	698	838	748
135°	973	952	612	952	973	751
145°	1069	1192	824	1192	1069	674
155°	1195	1378	1036	1378	1195	551
165°	1306	1499	1263	1499	1306	371
175°	1544	1561	1511	1561	1544	144
180°	1559	1559	1559	1559	1559	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1260.4	1260.4	1260.4	1260.4	1260.4	1260.4	1260.4	1260.4	1260.4	1260.4	1260.4
2.5°	1255.3	1258.4	1257.2	1258.3	1260.0	1257.2	1257.2	1258.4	1256.5	1258.4	1257.2
5°	1249.4	1251.6	1251.3	1251.3	1252.1	1251.3	1250.2	1251.6	1249.4	1251.6	1250.2
7.5°	1237.7	1240.9	1238.3	1240.2	1240.2	1239.1	1237.2	1239.7	1237.7	1239.7	1237.2
10°	1222.7	1225.6	1223.9	1223.9	1225.6	1222.7	1222.7	1223.3	1222.7	1223.3	1222.7
12.5°	1206.3	1206.1	1203.2	1205.0	1203.8	1205.0	1203.2	1203.8	1204.1	1203.8	1203.2
15°	1184.5	1182.3	1181.2	1182.1	1181.8	1181.0	1180.1	1180.1	1181.2	1180.1	1180.1
17.5°	1156.5	1156.9	1153.3	1155.5	1155.5	1155.5	1152.1	1155.8	1153.3	1155.8	1152.1
20°	1126.9	1125.7	1124.4	1125.8	1125.6	1124.7	1123.3	1123.6	1123.6	1123.6	1123.3
22.5°	1088.5	1091.0	1091.3	1094.4	1093.4	1093.4	1090.2	1088.8	1086.2	1088.8	1090.2
25°	1050.2	1054.5	1056.8	1061.4	1060.2	1060.2	1054.6	1051.2	1047.0	1051.2	1054.6
27.5°	1010.4	1011.2	1018.7	1026.0	1022.1	1024.9	1016.4	1008.0	1007.1	1008.0	1016.4
30°	962.0	966.3	977.3	985.5	983.1	983.4	974.0	963.0	957.6	963.0	974.0
32.5°	916.2	918.0	932.4	942.3	942.6	940.1	929.1	913.6	911.8	913.6	929.1
35°	860.9	865.1	880.4	898.2	894.9	894.9	877.1	861.9	857.6	861.9	877.1
37.5°	809.1	811.7	828.6	850.7	850.2	847.4	825.4	808.4	805.9	808.4	825.4
40°	756.6	755.7	771.9	796.2	802.7	794.0	767.5	751.3	752.2	751.3	767.5
42.5°	712.5	702.3	713.1	740.2	751.0	738.0	709.7	697.9	708.1	697.9	709.7
45°	661.3	651.1	657.1	682.6	695.0	680.3	652.7	647.9	658.0	647.9	652.7
47.5°	615.5	602.8	602.0	620.3	638.2	619.3	597.6	599.5	612.2	599.5	597.6
50°	568.9	557.0	548.5	561.0	570.1	558.8	544.1	552.6	565.5	552.6	544.1
52.5°	529.0	512.9	498.2	501.6	494.6	499.4	495.0	508.5	525.8	508.5	495.0
55°	482.1	471.9	451.6	440.3	421.4	438.1	448.3	468.6	479.9	468.6	448.3
57.5°	440.6	431.3	406.7	380.1	353.5	377.9	403.3	427.9	438.4	427.9	403.3
60°	397.9	388.6	358.9	320.5	300.1	319.4	356.7	386.4	396.8	386.4	356.7
62.5°	353.8	347.9	313.9	270.4	258.4	269.3	311.8	345.7	352.8	345.7	311.8
65°	313.7	303.6	268.8	227.2	219.3	226.1	267.7	302.4	313.7	302.4	267.7
67.5°	273.0	260.3	227.2	188.8	187.9	188.8	226.1	259.2	273.0	259.2	226.1
70°	232.9	218.5	187.9	156.5	160.0	156.5	187.9	219.6	234.0	219.6	187.9
72.5°	198.1	178.6	154.0	128.6	131.7	127.5	154.0	179.7	200.3	179.7	154.0
75°	165.8	143.8	122.4	102.9	110.5	102.9	123.5	145.0	169.2	145.0	123.5
77.5°	150.9	121.9	94.4	80.9	88.4	80.9	95.5	118.6	146.5	118.6	95.5
80°	147.6	117.0	77.3	62.1	67.2	62.1	75.2	99.4	126.7	99.4	75.2
82.5°	155.4	125.2	77.0	44.4	47.7	44.4	63.8	85.5	113.6	85.5	63.8
85°	173.4	146.3	91.1	36.7	27.4	34.4	59.1	79.1	101.8	79.1	59.1
87.5°	197.9	176.9	115.4	45.6	7.6	30.1	52.6	71.2	84.4	71.2	52.6
90°	228.1	210.3	147.4	61.9	2.0	20.0	38.3	55.0	62.8	55.0	38.3
92.5°	265.5	248.9	182.2	88.4	18.5	12.3	31.3	45.1	49.6	45.1	31.3
95°	301.8	293.5	222.8	117.1	45.0	7.0	24.5	37.8	40.6	37.8	24.5
97.5°	343.3	335.3	262.8	155.1	79.0	14.1	19.3	32.4	34.9	32.4	19.3
100°	378.7	374.2	305.6	202.4	121.0	37.2	13.6	28.3	31.8	28.3	13.6
102.5°	433.9	417.3	346.5	247.7	166.1	69.1	18.2	20.7	24.1	20.7	18.2
105°	479.2	459.5	400.5	294.9	217.9	112.1	44.7	16.7	15.4	16.7	44.7
107.5°	521.4	509.5	449.0	343.4	273.0	161.7	82.1	42.5	27.9	42.5	82.1
110°	576.5	562.4	496.3	391.9	330.2	214.6	125.1	77.7	60.9	77.7	125.1



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CATALOG NUMBER: MWL-3-44-33-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	629.4	618.6	540.4	442.6	389.8	271.9	177.9	121.8	106.1	121.8	177.9
115°	670.1	663.8	591.1	490.0	444.8	336.9	236.3	173.5	154.6	173.5	236.3
117.5°	712.3	711.2	628.5	538.4	510.9	395.2	290.3	225.3	204.4	225.3	290.3
120°	766.3	757.5	680.3	586.9	573.7	456.9	349.8	284.8	264.0	284.8	349.8
122.5°	803.7	798.2	724.4	634.1	634.1	520.6	407.1	342.1	320.0	342.1	407.1
125°	837.8	835.7	757.5	680.3	698.0	579.0	471.1	404.9	380.7	404.9	471.1
127.5°	868.7	872.0	800.4	731.0	763.0	638.5	533.8	461.1	435.8	461.1	533.8
130°	895.2	906.2	841.2	777.3	824.7	703.5	590.1	517.2	500.8	517.2	590.1
132.5°	946.9	940.4	883.0	824.7	890.8	763.0	649.5	573.5	554.8	573.5	649.5
135°	973.4	975.5	919.4	865.4	952.4	822.4	705.7	630.7	612.1	630.7	705.7
137.5°	1005.3	998.7	948.1	915.0	1009.8	879.7	760.7	691.4	661.6	691.4	760.7
140°	1028.5	1027.4	985.4	959.0	1071.4	936.0	817.0	746.4	718.9	746.4	817.0
142.5°	1052.7	1059.4	1023.0	1007.5	1133.2	995.4	877.5	800.4	773.9	800.4	877.5
145°	1069.2	1083.5	1060.3	1068.1	1191.5	1061.5	930.5	852.1	823.6	852.1	930.5
147.5°	1096.7	1115.5	1087.9	1111.1	1242.1	1119.9	983.3	906.2	880.8	906.2	983.3
150°	1134.2	1143.1	1126.5	1170.6	1293.9	1184.8	1037.3	957.9	932.6	957.9	1037.3
152.5°	1164.0	1174.9	1156.3	1235.6	1334.7	1244.4	1096.7	1008.6	978.9	1008.6	1096.7
155°	1194.8	1199.2	1186.0	1298.3	1377.7	1302.7	1144.1	1064.7	1036.2	1064.7	1144.1
157.5°	1223.4	1232.3	1216.9	1345.8	1415.1	1353.5	1198.1	1121.0	1095.6	1121.0	1198.1
160°	1254.3	1254.3	1263.1	1400.7	1446.0	1397.5	1255.4	1182.7	1147.5	1182.7	1255.4
162.5°	1257.6	1278.6	1325.9	1439.4	1475.7	1436.0	1317.0	1226.8	1195.9	1226.8	1317.0
165°	1306.1	1324.8	1396.3	1473.6	1498.9	1470.2	1393.2	1299.4	1263.1	1299.4	1393.2
167.5°	1356.7	1396.3	1453.7	1512.1	1520.9	1502.2	1451.5	1386.5	1353.5	1386.5	1451.5
170°	1439.4	1473.6	1502.2	1526.4	1538.6	1527.5	1487.9	1455.9	1434.9	1455.9	1487.9
172.5°	1503.6	1526.4	1537.4	1552.9	1545.1	1540.7	1520.9	1505.4	1493.7	1505.4	1520.9
175°	1544.2	1549.5	1559.4	1553.9	1560.6	1548.4	1549.5	1557.3	1511.2	1557.3	1549.5
177.5°	1558.6	1567.2	1561.7	1551.8	1552.9	1550.6	1555.0	1559.4	1552.0	1559.4	1555.0
180°	1559.4	1559.4	1559.4	1559.4	1559.4	1559.4	1559.4	1559.4	1559.4	1559.4	1559.4



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CATALOG NUMBER: MWL-3-44-33-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1260.4	1260.4	1260.4	1260.4	1260.4	1260.4
2.5°	1257.2	1260.0	1258.3	1257.2	1258.4	1255.3
5°	1251.3	1252.1	1251.3	1251.3	1251.6	1249.4
7.5°	1239.1	1240.2	1240.2	1238.3	1240.9	1237.7
10°	1222.7	1225.6	1223.9	1223.9	1225.6	1222.7
12.5°	1205.0	1203.8	1205.0	1203.2	1206.1	1206.3
15°	1181.0	1181.8	1182.1	1181.2	1182.3	1184.5
17.5°	1155.5	1155.5	1155.5	1153.3	1156.9	1156.5
20°	1124.7	1125.6	1125.8	1124.4	1125.7	1126.9
22.5°	1093.4	1093.4	1094.4	1091.3	1091.0	1088.5
25°	1060.2	1060.2	1061.4	1056.8	1054.5	1050.2
27.5°	1024.9	1022.1	1026.0	1018.7	1011.2	1010.4
30°	983.4	983.1	985.5	977.3	966.3	962.0
32.5°	940.1	942.6	942.3	932.4	918.0	916.2
35°	894.9	894.9	898.2	880.4	865.1	860.9
37.5°	847.4	850.2	850.7	828.6	811.7	809.1
40°	794.0	802.7	796.2	771.9	755.7	756.6
42.5°	738.0	751.0	740.2	713.1	702.3	712.5
45°	680.3	695.0	682.6	657.1	651.1	661.3
47.5°	619.3	638.2	620.3	602.0	602.8	615.5
50°	558.8	570.1	561.0	548.5	557.0	568.9
52.5°	499.4	494.6	501.6	498.2	512.9	529.0
55°	438.1	421.4	440.3	451.6	471.9	482.1
57.5°	377.9	353.5	380.1	406.7	431.3	440.6
60°	319.4	300.1	320.5	358.9	388.6	397.9
62.5°	269.3	258.4	270.4	313.9	347.9	353.8
65°	226.1	219.3	227.2	268.8	303.6	313.7
67.5°	188.8	187.9	188.8	227.2	260.3	273.0
70°	156.5	160.0	156.5	187.9	218.5	232.9
72.5°	127.5	131.7	128.6	154.0	178.6	198.1
75°	102.9	110.5	102.9	122.4	143.8	165.8
77.5°	80.9	88.4	80.9	94.4	121.9	150.9
80°	62.1	67.2	62.1	77.3	117.0	147.6
82.5°	44.4	47.7	44.4	77.0	125.2	155.4
85°	34.4	27.4	36.7	91.1	146.3	173.4
87.5°	30.1	7.6	45.6	115.4	176.9	197.9
90°	20.0	2.0	61.9	147.4	210.3	228.1
92.5°	12.3	18.5	88.4	182.2	248.9	265.5
95°	7.0	45.0	117.1	222.8	293.5	301.8
97.5°	14.1	79.0	155.1	262.8	335.3	343.3
100°	37.2	121.0	202.4	305.6	374.2	378.7
102.5°	69.1	166.1	247.7	346.5	417.3	433.9
105°	112.1	217.9	294.9	400.5	459.5	479.2
107.5°	161.7	273.0	343.4	449.0	509.5	521.4
110°	214.6	330.2	391.9	496.3	562.4	576.5



TEST NUMBER: P392614

CATALOG NUMBER: MWL-3-44-33-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	271.9	389.8	442.6	540.4	618.6	629.4
115°	336.9	444.8	490.0	591.1	663.8	670.1
117.5°	395.2	510.9	538.4	628.5	711.2	712.3
120°	456.9	573.7	586.9	680.3	757.5	766.3
122.5°	520.6	634.1	634.1	724.4	798.2	803.7
125°	579.0	698.0	680.3	757.5	835.7	837.8
127.5°	638.5	763.0	731.0	800.4	872.0	868.7
130°	703.5	824.7	777.3	841.2	906.2	895.2
132.5°	763.0	890.8	824.7	883.0	940.4	946.9
135°	822.4	952.4	865.4	919.4	975.5	973.4
137.5°	879.7	1009.8	915.0	948.1	998.7	1005.3
140°	936.0	1071.4	959.0	985.4	1027.4	1028.5
142.5°	995.4	1133.2	1007.5	1023.0	1059.4	1052.7
145°	1061.5	1191.5	1068.1	1060.3	1083.5	1069.2
147.5°	1119.9	1242.1	1111.1	1087.9	1115.5	1096.7
150°	1184.8	1293.9	1170.6	1126.5	1143.1	1134.2
152.5°	1244.4	1334.7	1235.6	1156.3	1174.9	1164.0
155°	1302.7	1377.7	1298.3	1186.0	1199.2	1194.8
157.5°	1353.5	1415.1	1345.8	1216.9	1232.3	1223.4
160°	1397.5	1446.0	1400.7	1263.1	1254.3	1254.3
162.5°	1436.0	1475.7	1439.4	1325.9	1278.6	1257.6
165°	1470.2	1498.9	1473.6	1396.3	1324.8	1306.1
167.5°	1502.2	1520.9	1512.1	1453.7	1396.3	1356.7
170°	1527.5	1538.6	1526.4	1502.2	1473.6	1439.4
172.5°	1540.7	1545.1	1552.9	1537.4	1526.4	1503.6
175°	1548.4	1560.6	1553.9	1559.4	1549.5	1544.2
177.5°	1550.6	1552.9	1551.8	1561.7	1567.2	1558.6
180°	1559.4	1559.4	1559.4	1559.4	1559.4	1559.4

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