

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: P392615

Luminaire Tested: **MWL-3-44-33-UNV-L940-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392615
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-L940-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

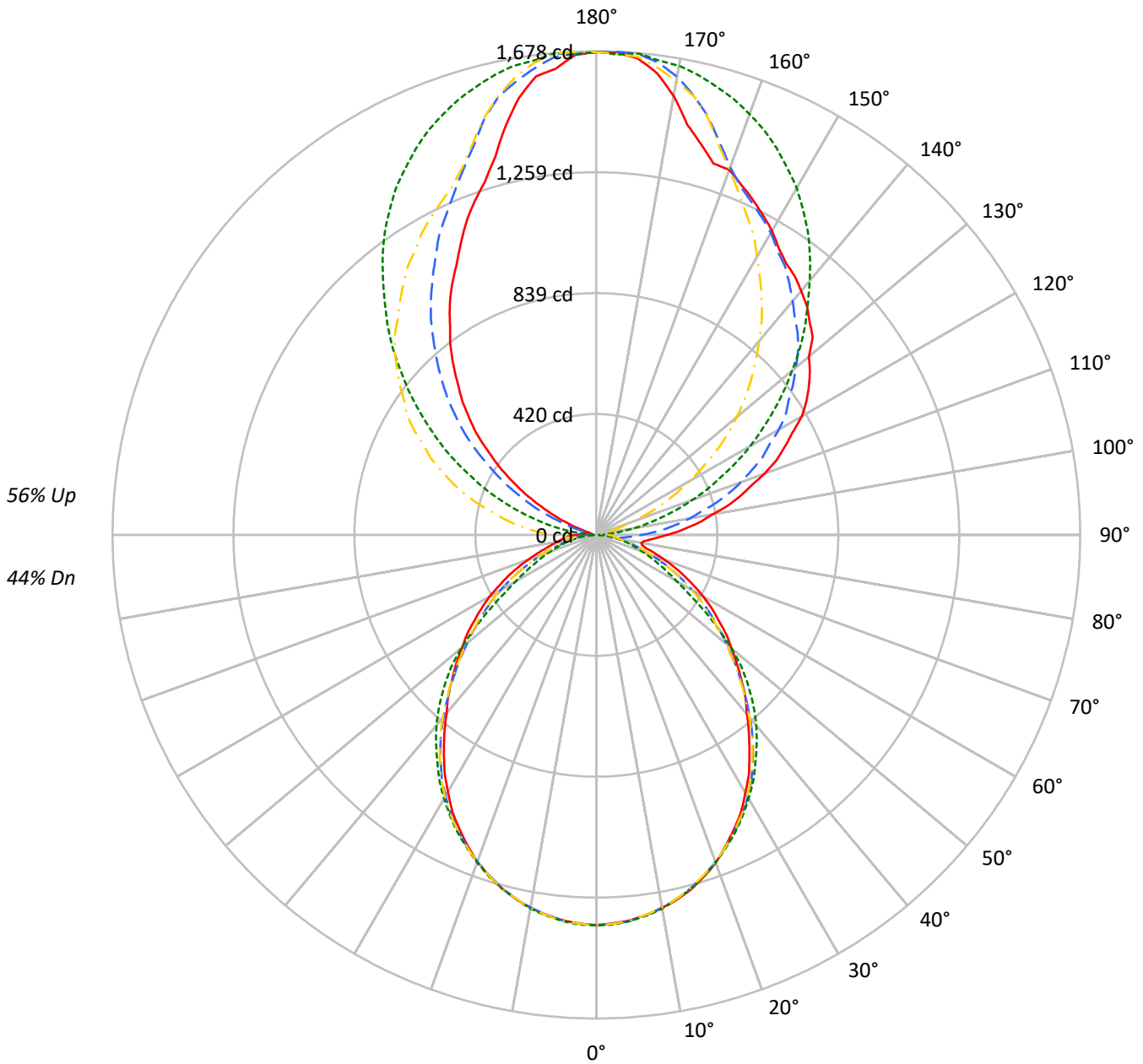
Lumens per Lamp: N/A
Luminaire Lumens: 7114.9 lumens
Efficiency: N/A
Efficacy: 78.2 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: General Diffuse

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	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°	11659	11659	11659	11659
5°	11463	10692	11463	10692
10°	11212	9787	11212	9787
15°	10937	8926	10907	8926
20°	10560	8124	10528	8124
25°	10068	7381	10037	7381
30°	9514	6657	9470	6657
35°	8861	5944	8827	5944
40°	8183	5271	8136	5271
45°	7597	4546	7559	4546
50°	7025	3743	6984	3743
55°	6490	2799	6459	2799
60°	5935	2032	5918	2032
65°	5291	1527	5291	1527
70°	4559	1154	4581	1154
75°	3905	835	3984	835
80°	4400	537	3775	537
85°	7114	234	4177	234



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.3	1.8
10°-20°	357.4	5.0
20°-30°	521.6	7.3
30°-40°	589.7	8.3
40°-50°	551.6	7.8
50°-60°	435.5	6.1
60°-70°	285.0	4.0
70°-80°	149.1	2.1
80°-90°	93.9	1.3
90°-100°	138.1	1.9
100°-110°	260.3	3.7
110°-120°	445.1	6.3
120°-130°	604.7	8.5
130°-140°	689.8	9.7
140°-150°	688.0	9.7
150°-160°	599.2	8.4
160°-170°	421.5	5.9
170°-180°	157.0	2.2
0°-30°	1006.4	14.1
0°-40°	1596.1	22.4
0°-60°	2583.2	36.3
0°-90°	3111.2	43.7
90°-120°	843.5	11.9
90°-150°	2826.0	39.7
90°-180°	4004.0	56.3
0°-180°	7114.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1354	1354	1354	1354	1354	
5°	1342	1345	1342	1345	1342	127
15°	1272	1270	1269	1270	1272	358
25°	1128	1139	1125	1139	1128	519
35°	925	961	921	961	925	579
45°	710	747	707	747	710	549
55°	518	453	516	453	518	465
65°	337	236	337	236	337	334
75°	178	119	182	119	178	200
85°	186	29	109	29	186	147
90°	245	2	68	2	245	135
95°	324	48	44	48	324	283
105°	515	234	16	234	515	542
115°	720	478	166	478	720	714
125°	900	750	409	750	900	804
135°	1046	1023	658	1023	1046	807
145°	1149	1280	885	1280	1149	724
155°	1284	1480	1113	1480	1284	592
165°	1403	1610	1357	1610	1403	398
175°	1659	1676	1624	1676	1659	155
180°	1675	1675	1675	1675	1675	



TEST NUMBER: P392615

CATALOG NUMBER: MWL-3-44-33-UNV-L940-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1354.0	1354.0	1354.0	1354.0	1354.0	1354.0	1354.0	1354.0	1354.0	1354.0	1354.0
2.5°	1348.6	1351.9	1350.6	1351.8	1353.6	1350.6	1350.6	1351.9	1349.8	1351.9	1350.6
5°	1342.2	1344.6	1344.2	1344.2	1345.1	1344.2	1343.1	1344.6	1342.2	1344.6	1343.1
7.5°	1329.8	1333.0	1330.3	1332.4	1332.4	1331.2	1329.1	1331.8	1329.8	1331.8	1329.1
10°	1313.6	1316.6	1314.8	1314.8	1316.6	1313.6	1313.6	1314.3	1313.6	1314.3	1313.6
12.5°	1295.9	1295.7	1292.7	1294.5	1293.3	1294.5	1292.7	1293.3	1293.6	1293.3	1292.7
15°	1272.5	1270.2	1269.0	1269.9	1269.6	1268.7	1267.8	1267.8	1269.0	1267.8	1267.8
17.5°	1242.5	1242.8	1238.9	1241.4	1241.4	1241.4	1237.7	1241.6	1238.9	1241.6	1237.7
20°	1210.6	1209.4	1207.9	1209.5	1209.2	1208.3	1206.8	1207.0	1207.0	1207.0	1206.8
22.5°	1169.3	1172.0	1172.4	1175.8	1174.6	1174.6	1171.2	1169.7	1166.9	1169.7	1171.2
25°	1128.3	1132.9	1135.3	1140.2	1139.1	1139.1	1133.0	1129.3	1124.8	1129.3	1133.0
27.5°	1085.5	1086.4	1094.3	1102.2	1098.1	1101.1	1092.0	1082.8	1081.9	1082.8	1092.0
30°	1033.6	1038.1	1050.0	1058.8	1056.1	1056.4	1046.4	1034.6	1028.8	1034.6	1046.4
32.5°	984.4	986.2	1001.7	1012.3	1012.7	1010.0	998.1	981.4	979.6	981.4	998.1
35°	924.9	929.4	945.8	964.9	961.4	961.4	942.3	925.9	921.3	925.9	942.3
37.5°	869.3	872.0	890.2	913.9	913.4	910.4	886.7	868.5	865.7	868.5	886.7
40°	812.8	811.9	829.2	855.3	862.4	853.0	824.5	807.1	808.1	807.1	824.5
42.5°	765.4	754.5	766.1	795.2	806.8	792.8	762.5	749.7	760.7	749.7	762.5
45°	710.5	699.5	705.9	733.3	746.6	730.9	701.2	696.0	706.9	696.0	701.2
47.5°	661.3	647.6	646.7	666.5	685.6	665.3	642.0	644.1	657.7	644.1	642.0
50°	611.2	598.4	589.3	602.7	612.4	600.3	584.6	593.7	607.6	593.7	584.6
52.5°	568.3	551.0	535.3	538.9	531.4	536.5	531.7	546.3	564.8	546.3	531.7
55°	518.0	507.0	485.2	473.0	452.7	470.7	481.6	503.5	515.6	503.5	481.6
57.5°	473.3	463.3	436.9	408.4	379.8	406.0	433.3	459.7	470.9	459.7	433.3
60°	427.5	417.5	385.6	344.3	322.4	343.1	383.2	415.1	426.3	415.1	383.2
62.5°	380.1	373.7	337.3	290.5	277.5	289.4	334.9	371.4	378.9	371.4	334.9
65°	337.0	326.1	288.7	244.1	235.6	242.9	287.5	324.9	337.0	324.9	287.5
67.5°	293.3	279.6	244.1	202.8	201.9	202.8	242.9	278.4	293.3	278.4	242.9
70°	250.2	234.7	201.9	168.2	171.8	168.2	201.9	235.9	251.4	235.9	201.9
72.5°	212.8	191.9	165.5	138.1	141.5	136.9	165.5	193.1	215.2	193.1	165.5
75°	178.2	154.5	131.5	110.5	118.7	110.5	132.7	155.7	181.8	155.7	132.7
77.5°	162.2	131.0	101.4	86.8	95.0	86.8	102.6	127.5	157.4	127.5	102.6
80°	158.6	125.7	83.1	66.8	72.3	66.8	80.7	106.8	136.1	106.8	80.7
82.5°	166.9	134.5	82.7	47.7	51.3	47.7	68.5	91.8	122.0	91.8	68.5
85°	186.3	157.2	97.9	39.4	29.4	37.0	63.5	85.0	109.4	85.0	63.5
87.5°	212.6	190.1	123.9	48.9	8.2	32.3	56.5	76.4	90.7	76.4	56.5
90°	245.0	226.0	158.3	66.5	2.1	21.5	41.2	59.0	67.5	59.0	41.2
92.5°	285.3	267.4	195.8	94.9	19.9	13.3	33.6	48.5	53.3	48.5	33.6
95°	324.2	315.2	239.3	125.8	48.3	7.5	26.3	40.6	43.6	40.6	26.3
97.5°	368.9	360.2	282.3	166.6	84.9	15.1	20.8	34.8	37.5	34.8	20.8
100°	406.9	402.1	328.3	217.5	129.9	40.0	14.7	30.4	34.1	30.4	14.7
102.5°	466.1	448.3	372.3	266.0	178.5	74.3	19.6	22.2	25.9	22.2	19.6
105°	514.8	493.6	430.2	316.9	234.1	120.4	48.0	17.9	16.5	17.9	48.0
107.5°	560.1	547.4	482.3	369.0	293.3	173.7	88.2	45.6	30.0	45.6	88.2
110°	619.4	604.2	533.3	421.0	354.8	230.5	134.4	83.5	65.4	83.5	134.4



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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°	676.1	664.6	580.6	475.5	418.7	292.1	191.1	130.8	114.0	130.8	191.1
115°	720.0	713.1	635.0	526.4	477.9	361.9	253.9	186.4	166.1	186.4	253.9
117.5°	765.2	764.0	675.2	578.5	548.8	424.6	311.9	242.1	219.6	242.1	311.9
120°	823.2	813.7	730.9	630.6	616.4	490.9	375.8	305.9	283.5	305.9	375.8
122.5°	863.4	857.5	778.3	681.1	681.1	559.2	437.3	367.5	343.8	367.5	437.3
125°	900.1	897.8	813.7	730.9	749.8	622.0	506.0	435.0	409.0	435.0	506.0
127.5°	933.2	936.8	859.9	785.3	819.6	685.9	573.4	495.4	468.1	495.4	573.4
130°	961.7	973.5	903.6	835.0	886.0	755.8	633.9	555.7	538.0	555.7	633.9
132.5°	1017.3	1010.2	948.6	886.0	956.9	819.6	697.7	616.1	596.0	616.1	697.7
135°	1045.7	1048.0	987.7	929.7	1023.2	883.6	758.1	677.6	657.5	677.6	758.1
137.5°	1080.0	1072.9	1018.5	983.0	1084.8	945.1	817.3	742.7	710.7	742.7	817.3
140°	1104.9	1103.7	1058.7	1030.3	1151.0	1005.5	877.7	801.9	772.3	801.9	877.7
142.5°	1130.9	1138.1	1099.0	1082.4	1217.3	1069.4	942.7	859.9	831.5	859.9	942.7
145°	1148.6	1164.0	1139.1	1147.4	1280.0	1140.3	999.6	915.5	884.8	915.5	999.6
147.5°	1178.2	1198.4	1168.8	1193.6	1334.5	1203.1	1056.3	973.5	946.3	973.5	1056.3
150°	1218.5	1228.0	1210.2	1257.6	1390.1	1272.9	1114.4	1029.1	1001.9	1029.1	1114.4
152.5°	1250.5	1262.2	1242.2	1327.4	1433.9	1336.9	1178.2	1083.6	1051.6	1083.6	1178.2
155°	1283.6	1288.3	1274.1	1394.8	1480.1	1399.5	1229.2	1143.9	1113.2	1143.9	1229.2
157.5°	1314.4	1323.8	1307.2	1445.7	1520.3	1454.0	1287.1	1204.3	1177.1	1204.3	1287.1
160°	1347.5	1347.5	1357.0	1504.9	1553.4	1501.3	1348.7	1270.5	1232.7	1270.5	1348.7
162.5°	1351.1	1373.6	1424.4	1546.3	1585.4	1542.8	1414.9	1317.9	1284.7	1317.9	1414.9
165°	1403.1	1423.2	1500.1	1583.0	1610.3	1579.5	1496.7	1396.0	1357.0	1396.0	1496.7
167.5°	1457.6	1500.1	1561.7	1624.4	1633.9	1613.8	1559.3	1489.6	1454.0	1489.6	1559.3
170°	1546.3	1583.0	1613.8	1639.8	1652.8	1641.0	1598.4	1564.1	1541.6	1564.1	1598.4
172.5°	1615.3	1639.8	1651.6	1668.2	1659.9	1655.2	1633.9	1617.3	1604.6	1617.3	1633.9
175°	1659.0	1664.7	1675.3	1669.4	1676.5	1663.5	1664.7	1673.0	1623.5	1673.0	1664.7
177.5°	1674.4	1683.6	1677.7	1667.0	1668.2	1665.9	1670.6	1675.3	1667.3	1675.3	1670.6
180°	1675.3	1675.3	1675.3	1675.3	1675.3	1675.3	1675.3	1675.3	1675.3	1675.3	1675.3



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1354.0	1354.0	1354.0	1354.0	1354.0	1354.0
2.5°	1350.6	1353.6	1351.8	1350.6	1351.9	1348.6
5°	1344.2	1345.1	1344.2	1344.2	1344.6	1342.2
7.5°	1331.2	1332.4	1332.4	1330.3	1333.0	1329.8
10°	1313.6	1316.6	1314.8	1314.8	1316.6	1313.6
12.5°	1294.5	1293.3	1294.5	1292.7	1295.7	1295.9
15°	1268.7	1269.6	1269.9	1269.0	1270.2	1272.5
17.5°	1241.4	1241.4	1241.4	1238.9	1242.8	1242.5
20°	1208.3	1209.2	1209.5	1207.9	1209.4	1210.6
22.5°	1174.6	1174.6	1175.8	1172.4	1172.0	1169.3
25°	1139.1	1139.1	1140.2	1135.3	1132.9	1128.3
27.5°	1101.1	1098.1	1102.2	1094.3	1086.4	1085.5
30°	1056.4	1056.1	1058.8	1050.0	1038.1	1033.6
32.5°	1010.0	1012.7	1012.3	1001.7	986.2	984.4
35°	961.4	961.4	964.9	945.8	929.4	924.9
37.5°	910.4	913.4	913.9	890.2	872.0	869.3
40°	853.0	862.4	855.3	829.2	811.9	812.8
42.5°	792.8	806.8	795.2	766.1	754.5	765.4
45°	730.9	746.6	733.3	705.9	699.5	710.5
47.5°	665.3	685.6	666.5	646.7	647.6	661.3
50°	600.3	612.4	602.7	589.3	598.4	611.2
52.5°	536.5	531.4	538.9	535.3	551.0	568.3
55°	470.7	452.7	473.0	485.2	507.0	518.0
57.5°	406.0	379.8	408.4	436.9	463.3	473.3
60°	343.1	322.4	344.3	385.6	417.5	427.5
62.5°	289.4	277.5	290.5	337.3	373.7	380.1
65°	242.9	235.6	244.1	288.7	326.1	337.0
67.5°	202.8	201.9	202.8	244.1	279.6	293.3
70°	168.2	171.8	168.2	201.9	234.7	250.2
72.5°	136.9	141.5	138.1	165.5	191.9	212.8
75°	110.5	118.7	110.5	131.5	154.5	178.2
77.5°	86.8	95.0	86.8	101.4	131.0	162.2
80°	66.8	72.3	66.8	83.1	125.7	158.6
82.5°	47.7	51.3	47.7	82.7	134.5	166.9
85°	37.0	29.4	39.4	97.9	157.2	186.3
87.5°	32.3	8.2	48.9	123.9	190.1	212.6
90°	21.5	2.1	66.5	158.3	226.0	245.0
92.5°	13.3	19.9	94.9	195.8	267.4	285.3
95°	7.5	48.3	125.8	239.3	315.2	324.2
97.5°	15.1	84.9	166.6	282.3	360.2	368.9
100°	40.0	129.9	217.5	328.3	402.1	406.9
102.5°	74.3	178.5	266.0	372.3	448.3	466.1
105°	120.4	234.1	316.9	430.2	493.6	514.8
107.5°	173.7	293.3	369.0	482.3	547.4	560.1
110°	230.5	354.8	421.0	533.3	604.2	619.4



TEST NUMBER: P392615

CATALOG NUMBER: MWL-3-44-33-UNV-L940-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	292.1	418.7	475.5	580.6	664.6	676.1
115°	361.9	477.9	526.4	635.0	713.1	720.0
117.5°	424.6	548.8	578.5	675.2	764.0	765.2
120°	490.9	616.4	630.6	730.9	813.7	823.2
122.5°	559.2	681.1	681.1	778.3	857.5	863.4
125°	622.0	749.8	730.9	813.7	897.8	900.1
127.5°	685.9	819.6	785.3	859.9	936.8	933.2
130°	755.8	886.0	835.0	903.6	973.5	961.7
132.5°	819.6	956.9	886.0	948.6	1010.2	1017.3
135°	883.6	1023.2	929.7	987.7	1048.0	1045.7
137.5°	945.1	1084.8	983.0	1018.5	1072.9	1080.0
140°	1005.5	1151.0	1030.3	1058.7	1103.7	1104.9
142.5°	1069.4	1217.3	1082.4	1099.0	1138.1	1130.9
145°	1140.3	1280.0	1147.4	1139.1	1164.0	1148.6
147.5°	1203.1	1334.5	1193.6	1168.8	1198.4	1178.2
150°	1272.9	1390.1	1257.6	1210.2	1228.0	1218.5
152.5°	1336.9	1433.9	1327.4	1242.2	1262.2	1250.5
155°	1399.5	1480.1	1394.8	1274.1	1288.3	1283.6
157.5°	1454.0	1520.3	1445.7	1307.2	1323.8	1314.4
160°	1501.3	1553.4	1504.9	1357.0	1347.5	1347.5
162.5°	1542.8	1585.4	1546.3	1424.4	1373.6	1351.1
165°	1579.5	1610.3	1583.0	1500.1	1423.2	1403.1
167.5°	1613.8	1633.9	1624.4	1561.7	1500.1	1457.6
170°	1641.0	1652.8	1639.8	1613.8	1583.0	1546.3
172.5°	1655.2	1659.9	1668.2	1651.6	1639.8	1615.3
175°	1663.5	1676.5	1669.4	1675.3	1664.7	1659.0
177.5°	1665.9	1668.2	1667.0	1677.7	1683.6	1674.4
180°	1675.3	1675.3	1675.3	1675.3	1675.3	1675.3

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