

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: P392622

Luminaire Tested: **MWL-3-53-33-UNV-L930-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392622
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-3-53-33-UNV-L930-EDD
Description: MWL 3FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

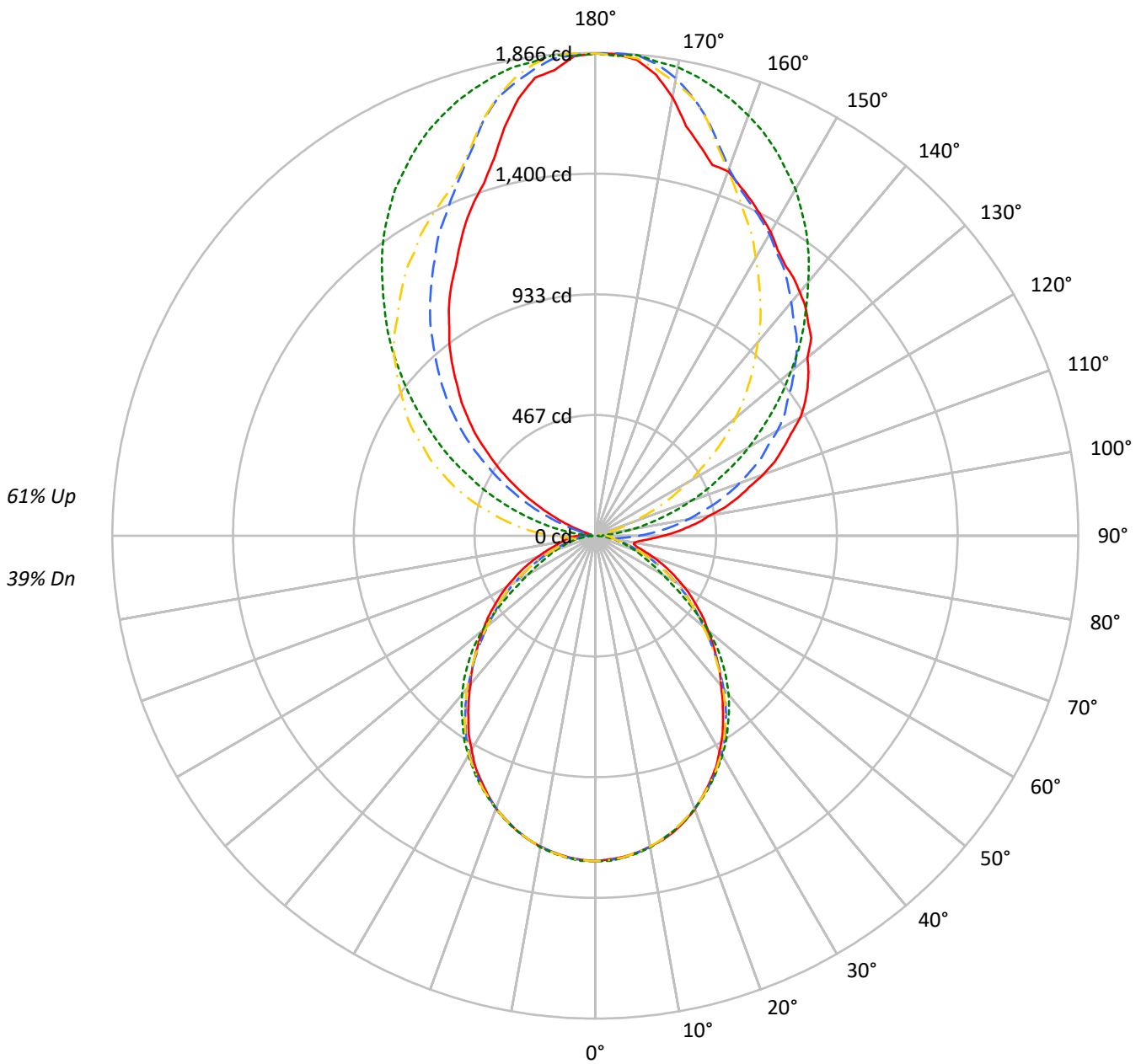
Lumens per Lamp: N/A
Luminaire Lumens: 7344.3 lumens
Efficiency: N/A
Efficacy: 69.4 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')
CIE Type: Semi-Indirect

Input Watts (W): 105.848
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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46	39				
1	95	91	87	84	87	83	80	77	68	66	64	54	52	51	41	40	39	33				
2	87	80	74	69	79	73	68	64	60	56	53	48	45	43	36	35	33	28				
3	80	70	63	58	72	64	58	53	53	49	45	42	39	37	33	31	29	24				
4	73	62	55	49	66	57	51	45	47	42	38	38	34	32	29	27	25	21				
5	67	56	48	42	61	51	44	39	42	37	33	34	30	28	26	24	22	18				
6	62	50	42	37	56	46	39	34	38	33	29	31	27	24	24	21	19	16				
7	57	45	37	32	52	42	35	30	35	29	26	28	24	21	22	19	17	15				
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	20	18	16	13				
9	49	37	30	25	45	34	28	24	29	24	20	24	20	17	19	16	14	12				
10	46	34	27	23	42	32	25	21	27	22	18	22	18	16	17	15	13	11				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	10828	10828	10828	10828
5°	10640	9932	10640	9932
10°	10411	9089	10411	9089
15°	10162	8288	10128	8288
20°	9811	7541	9777	7541
25°	9355	6852	9320	6852
30°	8842	6181	8793	6181
35°	8234	5519	8195	5519
40°	7606	4896	7553	4896
45°	7060	4224	7019	4224
50°	6531	3478	6486	3478
55°	6032	2601	6000	2601
60°	5517	1890	5499	1890
65°	4919	1419	4919	1419
70°	4237	1074	4262	1074
75°	3631	776	3719	776
80°	4244	500	3551	500
85°	7286	219	4017	219



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.3	1.6
10°-20°	331.9	4.5
20°-30°	484.4	6.6
30°-40°	547.8	7.5
40°-50°	512.4	7.0
50°-60°	404.7	5.5
60°-70°	264.9	3.6
70°-80°	138.9	1.9
80°-90°	93.0	1.3
90°-100°	149.3	2.0
100°-110°	288.8	3.9
110°-120°	494.9	6.7
120°-130°	672.5	9.2
130°-140°	767.1	10.4
140°-150°	765.2	10.4
150°-160°	666.4	9.1
160°-170°	468.9	6.4
170°-180°	174.6	2.4
0°-30°	934.6	12.7
0°-40°	1482.4	20.2
0°-60°	2399.5	32.7
0°-90°	2896.4	39.4
90°-120°	933.0	12.7
90°-150°	3137.9	42.7
90°-180°	4448.0	60.6
0°-180°	7344.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1257	1257	1257	1257	1257	
5°	1246	1250	1246	1250	1246	118
15°	1182	1179	1178	1179	1182	333
25°	1048	1057	1044	1057	1048	482
35°	860	893	855	893	860	538
45°	660	694	656	694	660	511
55°	482	421	479	421	482	432
65°	313	219	313	219	313	310
75°	166	110	170	110	166	187
85°	191	28	105	28	191	148
90°	262	2	64	2	262	145
95°	353	54	41	54	353	309
105°	571	260	17	260	571	602
115°	801	532	184	532	801	794
125°	1001	834	455	834	1001	894
135°	1163	1138	731	1138	1163	898
145°	1278	1424	984	1424	1278	805
155°	1428	1646	1238	1646	1428	659
165°	1561	1791	1509	1791	1561	443
175°	1846	1865	1806	1865	1846	172
180°	1864	1864	1864	1864	1864	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1257.4	1257.4	1257.4	1257.4	1257.4	1257.4	1257.4	1257.4	1257.4	1257.4	1257.4
2.5°	1251.8	1255.2	1254.6	1255.9	1257.5	1254.6	1254.6	1255.2	1253.1	1255.2	1254.6
5°	1245.9	1248.5	1248.7	1248.7	1249.5	1248.7	1247.3	1248.5	1245.9	1248.5	1247.3
7.5°	1234.5	1238.1	1235.5	1237.7	1237.7	1236.3	1234.1	1236.7	1234.5	1236.7	1234.1
10°	1219.8	1222.8	1221.2	1221.2	1222.8	1219.8	1219.8	1220.2	1219.8	1220.2	1219.8
12.5°	1203.9	1203.4	1200.4	1202.1	1200.7	1202.1	1200.4	1200.7	1201.2	1200.7	1200.4
15°	1182.3	1179.7	1178.4	1179.3	1178.8	1177.9	1177.1	1177.1	1178.4	1177.1	1177.1
17.5°	1154.4	1154.3	1150.5	1152.6	1152.6	1152.6	1149.2	1153.0	1150.5	1153.0	1149.2
20°	1124.8	1123.6	1121.8	1123.0	1122.5	1121.7	1120.4	1120.9	1120.9	1120.9	1120.4
22.5°	1086.4	1088.9	1088.8	1091.7	1090.4	1090.4	1087.5	1086.3	1083.7	1086.3	1087.5
25°	1048.4	1052.6	1054.7	1058.8	1057.4	1057.4	1052.0	1048.7	1044.4	1048.7	1052.0
27.5°	1008.7	1009.5	1016.6	1023.7	1019.4	1022.4	1014.0	1005.5	1004.7	1005.5	1014.0
30°	960.5	964.8	975.7	983.7	980.5	981.1	971.7	960.7	955.2	960.7	971.7
32.5°	914.8	916.5	931.0	940.6	940.5	937.9	926.9	911.2	909.6	911.2	926.9
35°	859.5	863.7	878.8	896.6	892.7	892.7	874.9	859.6	855.4	859.6	874.9
37.5°	807.9	810.4	827.3	849.2	848.4	845.3	823.4	806.4	803.9	806.4	823.4
40°	755.5	754.6	770.7	794.7	801.0	792.1	765.4	749.4	750.2	749.4	765.4
42.5°	711.5	701.4	711.9	738.9	749.5	736.3	708.0	696.1	706.2	696.1	708.0
45°	660.3	650.2	656.1	681.4	693.7	678.8	650.9	646.3	656.4	646.3	650.9
47.5°	614.7	602.0	601.1	619.3	637.0	617.9	595.9	598.1	610.8	598.1	595.9
50°	568.2	556.4	547.9	560.2	569.0	557.5	542.7	551.1	564.3	551.1	542.7
52.5°	528.5	512.4	497.7	501.0	493.7	498.4	493.6	507.2	524.6	507.2	493.6
55°	481.5	471.4	451.2	439.6	420.6	437.0	447.1	467.5	478.9	467.5	447.1
57.5°	440.2	430.8	406.4	379.7	353.0	377.0	402.4	426.9	437.5	426.9	402.4
60°	397.4	388.1	358.5	320.1	299.8	318.7	355.9	385.5	396.1	385.5	355.9
62.5°	353.4	347.5	313.7	270.2	257.8	268.8	311.1	344.9	352.2	344.9	311.1
65°	313.3	303.2	268.5	227.1	219.0	225.8	267.1	301.8	313.3	301.8	267.1
67.5°	272.7	260.0	227.1	188.5	187.7	188.5	225.8	258.7	272.7	258.7	225.8
70°	232.5	218.1	187.7	156.5	159.8	156.5	187.7	219.5	233.9	219.5	187.7
72.5°	197.8	178.4	153.9	128.6	131.5	127.3	153.9	179.8	200.5	179.8	153.9
75°	165.7	143.8	122.2	102.8	110.4	102.8	123.4	145.1	169.7	145.1	123.4
77.5°	152.6	122.8	94.3	80.8	88.4	80.8	95.6	118.9	147.3	118.9	95.6
80°	153.0	121.0	77.9	62.2	67.3	62.2	75.3	99.9	128.0	99.9	75.3
82.5°	166.1	133.8	80.2	44.5	47.8	44.5	64.4	86.5	116.0	86.5	64.4
85°	190.8	161.6	99.1	37.3	27.6	34.7	60.8	81.2	105.2	81.2	60.8
87.5°	222.9	200.1	129.6	49.5	7.6	31.1	54.6	73.8	87.3	73.8	54.6
90°	261.7	241.7	169.4	70.4	2.2	20.3	39.0	56.0	64.2	56.0	39.0
92.5°	308.6	289.4	212.2	103.6	21.9	12.8	31.9	45.8	50.5	45.8	31.9
95°	353.2	343.7	262.0	139.5	53.5	7.7	25.1	38.1	41.1	38.1	25.1
97.5°	404.4	395.3	311.6	185.2	94.3	16.6	20.5	33.1	35.7	33.1	20.5
100°	448.1	443.4	364.1	241.8	144.3	44.3	15.1	30.0	33.4	30.0	15.1
102.5°	515.6	496.4	413.8	295.8	198.4	82.5	21.5	22.4	25.8	22.4	21.5
105°	571.2	548.5	478.4	352.5	260.2	133.8	53.1	19.2	16.8	19.2	53.1
107.5°	622.7	608.8	536.3	410.4	326.0	193.1	97.8	50.4	32.8	50.4	97.8
110°	688.6	671.9	592.9	468.2	394.6	256.3	149.2	92.5	72.4	92.5	149.2



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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°	751.8	739.1	645.6	528.9	465.7	324.8	212.4	145.2	126.4	145.2	212.4
115°	800.6	793.1	706.2	585.5	531.5	402.5	282.2	207.2	184.2	207.2	282.2
117.5°	851.0	849.7	750.9	643.4	610.5	472.3	346.7	269.0	244.0	269.0	346.7
120°	915.5	905.0	812.9	701.4	685.6	546.0	417.7	340.0	315.0	340.0	417.7
122.5°	960.4	953.8	865.5	757.5	757.5	621.8	486.3	408.6	382.2	408.6	486.3
125°	1001.1	998.4	905.0	812.9	833.9	691.6	562.6	483.6	454.7	483.6	562.6
127.5°	1038.0	1042.0	956.3	873.4	911.6	762.8	637.7	550.8	520.6	550.8	637.7
130°	1069.6	1082.8	1005.0	928.8	985.4	840.5	704.8	617.9	598.2	617.9	704.8
132.5°	1131.4	1123.6	1055.1	985.4	1064.3	911.6	775.9	685.0	662.7	685.0	775.9
135°	1163.1	1165.7	1098.6	1034.1	1138.0	982.6	843.1	753.5	731.2	753.5	843.1
137.5°	1201.3	1193.3	1132.9	1093.2	1206.5	1051.1	908.9	825.9	790.4	825.9	908.9
140°	1228.9	1227.6	1177.5	1145.9	1280.3	1118.3	976.1	891.8	858.9	891.8	976.1
142.5°	1257.9	1265.7	1222.3	1203.9	1354.0	1189.5	1048.5	956.3	924.8	956.3	1048.5
145°	1277.6	1294.8	1267.1	1276.3	1423.8	1268.4	1111.7	1018.2	984.0	1018.2	1111.7
147.5°	1310.5	1333.0	1300.0	1327.7	1484.4	1338.2	1174.9	1082.8	1052.5	1082.8	1174.9
150°	1355.4	1365.8	1346.1	1398.8	1546.2	1415.8	1239.5	1144.6	1114.4	1144.6	1239.5
152.5°	1390.8	1404.0	1381.6	1476.4	1594.9	1487.0	1310.5	1205.2	1169.7	1205.2	1310.5
155°	1427.7	1433.0	1417.2	1551.5	1646.4	1556.8	1367.2	1272.3	1238.2	1272.3	1367.2
157.5°	1462.0	1472.5	1454.1	1608.1	1691.1	1617.3	1431.7	1339.5	1309.2	1339.5	1431.7
160°	1498.9	1498.9	1509.4	1673.9	1728.0	1670.0	1500.2	1413.2	1371.1	1413.2	1500.2
162.5°	1502.8	1527.8	1584.5	1720.1	1763.6	1716.1	1573.9	1465.9	1429.1	1465.9	1573.9
165°	1560.7	1583.1	1668.7	1760.9	1791.2	1756.9	1664.8	1552.8	1509.4	1552.8	1664.8
167.5°	1621.3	1668.7	1737.1	1807.0	1817.4	1795.2	1734.6	1656.9	1617.3	1656.9	1734.6
170°	1720.1	1760.9	1795.2	1824.0	1838.6	1825.4	1778.0	1739.8	1714.8	1739.8	1778.0
172.5°	1796.9	1824.0	1837.3	1855.7	1846.4	1841.2	1817.4	1799.0	1785.1	1799.0	1817.4
175°	1845.6	1851.8	1863.6	1857.0	1864.9	1850.5	1851.8	1861.0	1806.2	1861.0	1851.8
177.5°	1862.8	1872.8	1866.2	1854.4	1855.7	1853.0	1858.3	1863.6	1854.8	1863.6	1858.3
180°	1863.6	1863.6	1863.6	1863.6	1863.6	1863.6	1863.6	1863.6	1863.6	1863.6	1863.6



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1257.4	1257.4	1257.4	1257.4	1257.4	1257.4
2.5°	1254.6	1257.5	1255.9	1254.6	1255.2	1251.8
5°	1248.7	1249.5	1248.7	1248.7	1248.5	1245.9
7.5°	1236.3	1237.7	1237.7	1235.5	1238.1	1234.5
10°	1219.8	1222.8	1221.2	1221.2	1222.8	1219.8
12.5°	1202.1	1200.7	1202.1	1200.4	1203.4	1203.9
15°	1177.9	1178.8	1179.3	1178.4	1179.7	1182.3
17.5°	1152.6	1152.6	1152.6	1150.5	1154.3	1154.4
20°	1121.7	1122.5	1123.0	1121.8	1123.6	1124.8
22.5°	1090.4	1090.4	1091.7	1088.8	1088.9	1086.4
25°	1057.4	1057.4	1058.8	1054.7	1052.6	1048.4
27.5°	1022.4	1019.4	1023.7	1016.6	1009.5	1008.7
30°	981.1	980.5	983.7	975.7	964.8	960.5
32.5°	937.9	940.5	940.6	931.0	916.5	914.8
35°	892.7	892.7	896.6	878.8	863.7	859.5
37.5°	845.3	848.4	849.2	827.3	810.4	807.9
40°	792.1	801.0	794.7	770.7	754.6	755.5
42.5°	736.3	749.5	738.9	711.9	701.4	711.5
45°	678.8	693.7	681.4	656.1	650.2	660.3
47.5°	617.9	637.0	619.3	601.1	602.0	614.7
50°	557.5	569.0	560.2	547.9	556.4	568.2
52.5°	498.4	493.7	501.0	497.7	512.4	528.5
55°	437.0	420.6	439.6	451.2	471.4	481.5
57.5°	377.0	353.0	379.7	406.4	430.8	440.2
60°	318.7	299.8	320.1	358.5	388.1	397.4
62.5°	268.8	257.8	270.2	313.7	347.5	353.4
65°	225.8	219.0	227.1	268.5	303.2	313.3
67.5°	188.5	187.7	188.5	227.1	260.0	272.7
70°	156.5	159.8	156.5	187.7	218.1	232.5
72.5°	127.3	131.5	128.6	153.9	178.4	197.8
75°	102.8	110.4	102.8	122.2	143.8	165.7
77.5°	80.8	88.4	80.8	94.3	122.8	152.6
80°	62.2	67.3	62.2	77.9	121.0	153.0
82.5°	44.5	47.8	44.5	80.2	133.8	166.1
85°	34.7	27.6	37.3	99.1	161.6	190.8
87.5°	31.1	7.6	49.5	129.6	200.1	222.9
90°	20.3	2.2	70.4	169.4	241.7	261.7
92.5°	12.8	21.9	103.6	212.2	289.4	308.6
95°	7.7	53.5	139.5	262.0	343.7	353.2
97.5°	16.6	94.3	185.2	311.6	395.3	404.4
100°	44.3	144.3	241.8	364.1	443.4	448.1
102.5°	82.5	198.4	295.8	413.8	496.4	515.6
105°	133.8	260.2	352.5	478.4	548.5	571.2
107.5°	193.1	326.0	410.4	536.3	608.8	622.7
110°	256.3	394.6	468.2	592.9	671.9	688.6



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	324.8	465.7	528.9	645.6	739.1	751.8
115°	402.5	531.5	585.5	706.2	793.1	800.6
117.5°	472.3	610.5	643.4	750.9	849.7	851.0
120°	546.0	685.6	701.4	812.9	905.0	915.5
122.5°	621.8	757.5	757.5	865.5	953.8	960.4
125°	691.6	833.9	812.9	905.0	998.4	1001.1
127.5°	762.8	911.6	873.4	956.3	1042.0	1038.0
130°	840.5	985.4	928.8	1005.0	1082.8	1069.6
132.5°	911.6	1064.3	985.4	1055.1	1123.6	1131.4
135°	982.6	1138.0	1034.1	1098.6	1165.7	1163.1
137.5°	1051.1	1206.5	1093.2	1132.9	1193.3	1201.3
140°	1118.3	1280.3	1145.9	1177.5	1227.6	1228.9
142.5°	1189.5	1354.0	1203.9	1222.3	1265.7	1257.9
145°	1268.4	1423.8	1276.3	1267.1	1294.8	1277.6
147.5°	1338.2	1484.4	1327.7	1300.0	1333.0	1310.5
150°	1415.8	1546.2	1398.8	1346.1	1365.8	1355.4
152.5°	1487.0	1594.9	1476.4	1381.6	1404.0	1390.8
155°	1556.8	1646.4	1551.5	1417.2	1433.0	1427.7
157.5°	1617.3	1691.1	1608.1	1454.1	1472.5	1462.0
160°	1670.0	1728.0	1673.9	1509.4	1498.9	1498.9
162.5°	1716.1	1763.6	1720.1	1584.5	1527.8	1502.8
165°	1756.9	1791.2	1760.9	1668.7	1583.1	1560.7
167.5°	1795.2	1817.4	1807.0	1737.1	1668.7	1621.3
170°	1825.4	1838.6	1824.0	1795.2	1760.9	1720.1
172.5°	1841.2	1846.4	1855.7	1837.3	1824.0	1796.9
175°	1850.5	1864.9	1857.0	1863.6	1851.8	1845.6
177.5°	1853.0	1855.7	1854.4	1866.2	1872.8	1862.8
180°	1863.6	1863.6	1863.6	1863.6	1863.6	1863.6

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