

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: P392541

Luminaire Tested: **MWL-2-35-31-UNV-L930-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392541
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-25 &
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MWL-2-35-31-UNV-L930-EDD
Description: MWL 2FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

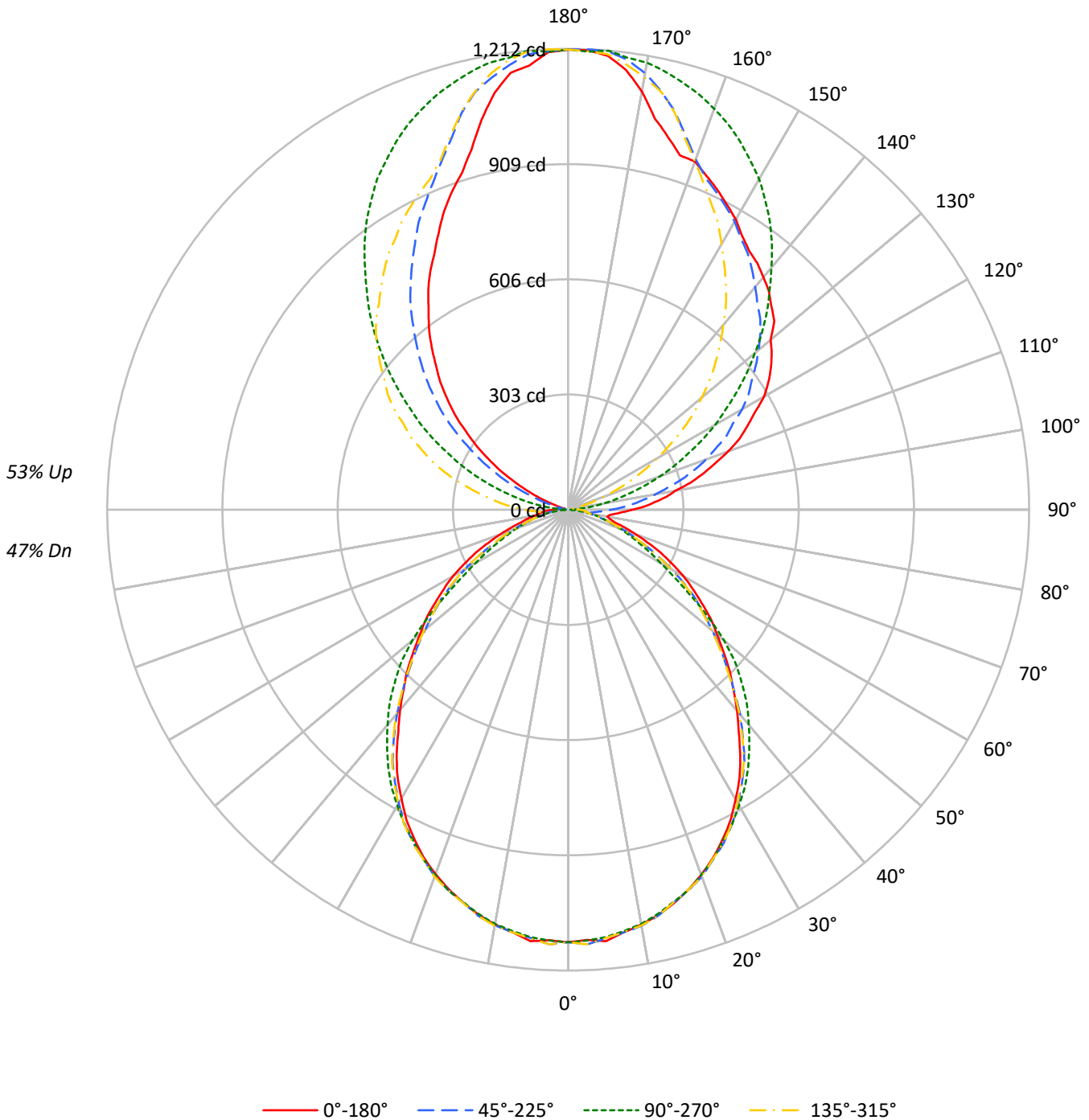
Lumens per Lamp: N/A
Luminaire Lumens: 5488.1 lumens
Efficiency: N/A
Efficacy: 72.5 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 75.75
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	0
RCR																		
0	107	107	107	107	98	98	98	98	82	82	82	67	67	67	54	54	54	47
1	97	93	89	86	89	86	83	80	72	70	68	59	58	56	48	47	46	40
2	89	82	76	71	82	75	70	66	64	60	57	53	50	48	43	41	39	34
3	81	72	65	59	75	67	61	56	56	52	48	47	44	41	38	36	34	30
4	75	64	56	51	68	59	53	47	50	45	41	42	38	35	34	32	29	26
5	69	57	49	44	63	53	46	41	45	40	36	38	34	31	31	28	26	23
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23	20
7	59	47	39	33	54	43	36	31	37	32	28	31	27	24	26	23	20	18
8	54	42	35	30	50	39	33	28	34	29	25	29	25	22	24	21	18	16
9	51	39	31	26	47	36	29	25	31	26	22	26	22	19	22	19	17	15
10	47	36	28	24	44	33	27	22	29	24	20	24	20	18	20	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	14693	14693	14693	14693
5°	14504	13454	14504	13454
10°	14015	12335	14015	12335
15°	13573	11267	13542	11267
20°	13062	10302	13030	10302
25°	12457	9352	12425	9352
30°	11717	8492	11672	8492
35°	10855	7650	10820	7650
40°	9918	6772	9867	6772
45°	9077	5897	9039	5897
50°	8223	4901	8181	4901
55°	7437	3639	7409	3639
60°	6652	2660	6637	2660
65°	5664	1975	5664	1975
70°	4544	1467	4563	1467
75°	3510	1023	3583	1023
80°	3560	651	3007	651
85°	5413	274	2980	274



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	107.3	2.0
10°-20°	301.8	5.5
20°-30°	442.6	8.1
30°-40°	502.2	9.2
40°-50°	468.6	8.5
50°-60°	367.7	6.7
60°-70°	229.7	4.2
70°-80°	111.6	2.0
80°-90°	67.3	1.2
90°-100°	97.5	1.8
100°-110°	186.5	3.4
110°-120°	321.6	5.9
120°-130°	437.1	8.0
130°-140°	498.6	9.1
140°-150°	497.3	9.1
150°-160°	433.1	7.9
160°-170°	304.5	5.5
170°-180°	113.4	2.1
0°-30°	851.6	15.5
0°-40°	1353.8	24.7
0°-60°	2190.1	39.9
0°-90°	2598.7	47.4
90°-120°	605.5	11.0
90°-150°	2038.5	37.1
90°-180°	2889.0	52.6
0°-180°	5488.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1138	1138	1138	1138	1138	
5°	1139	1128	1139	1128	1139	107
15°	1072	1068	1069	1068	1072	302
25°	959	962	956	962	959	441
35°	789	825	786	825	789	492
45°	600	646	598	646	600	462
55°	428	392	427	392	428	385
65°	268	203	268	203	268	265
75°	125	97	128	97	125	142
85°	124	23	68	23	124	97
90°	168	2	40	2	168	93
95°	229	35	26	35	229	200
105°	367	169	8	169	367	387
115°	519	346	120	346	519	515
125°	651	541	296	541	651	581
135°	756	739	476	739	756	583
145°	830	925	640	925	830	523
155°	928	1069	805	1069	928	428
165°	1014	1163	981	1163	1014	288
175°	1198	1212	1172	1212	1198	112
180°	1210	1210	1210	1210	1210	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1137.5	1137.5	1137.5	1137.5	1137.5	1137.5	1137.5	1137.5	1137.5	1137.5	1137.5
2.5°	1132.5	1139.9	1144.0	1133.4	1134.2	1132.6	1144.0	1139.9	1133.3	1139.9	1144.0
5°	1139.0	1131.6	1131.7	1130.9	1128.4	1130.9	1130.9	1131.6	1139.0	1131.6	1130.9
7.5°	1121.0	1126.8	1121.1	1120.3	1117.8	1119.4	1120.2	1125.9	1121.0	1125.9	1120.2
10°	1107.8	1112.0	1111.2	1105.4	1106.3	1104.5	1110.3	1110.3	1107.8	1110.3	1110.3
12.5°	1092.3	1094.7	1093.8	1087.2	1088.9	1087.2	1093.8	1093.0	1090.5	1093.0	1093.8
15°	1071.7	1070.9	1070.0	1067.5	1068.3	1066.7	1069.2	1069.2	1069.2	1069.2	1069.2
17.5°	1048.7	1050.3	1049.4	1049.4	1049.4	1049.4	1048.6	1049.4	1046.1	1049.4	1048.6
20°	1022.3	1026.5	1027.2	1022.3	1022.3	1021.5	1026.4	1024.7	1019.8	1024.7	1026.4
22.5°	992.8	993.6	995.1	988.5	995.1	987.7	994.3	991.9	991.0	991.9	994.3
25°	959.0	959.8	967.2	963.1	962.2	962.2	965.6	957.3	956.5	957.3	965.6
27.5°	922.9	922.9	932.7	929.4	932.6	928.6	931.0	920.3	920.3	920.3	931.0
30°	880.1	887.5	893.3	904.8	898.1	903.0	890.7	885.0	876.7	885.0	890.7
32.5°	838.1	842.3	850.5	858.8	864.4	857.0	847.9	838.9	834.8	838.9	847.9
35°	788.8	788.8	807.8	823.4	824.9	820.8	805.2	786.3	786.3	786.3	805.2
37.5°	736.2	737.9	754.3	778.1	782.1	775.6	751.8	735.3	733.6	735.3	751.8
40°	691.0	687.7	703.3	733.6	738.6	732.0	699.8	684.2	687.5	684.2	699.8
42.5°	643.3	638.4	645.7	683.5	695.9	681.9	643.1	634.9	639.9	634.9	643.1
45°	600.4	590.6	592.2	627.6	645.7	625.9	588.9	588.0	597.9	588.0	588.9
47.5°	553.6	550.3	543.7	566.7	596.4	565.9	540.4	547.8	551.0	547.8	540.4
50°	510.8	504.3	494.4	513.2	534.6	511.6	491.0	500.8	508.2	500.8	491.0
52.5°	473.0	467.2	448.4	459.8	463.9	458.1	445.8	463.8	470.5	463.8	445.8
55°	428.5	427.7	408.8	403.1	392.4	401.3	406.3	425.2	426.9	425.2	406.3
57.5°	389.1	387.5	360.3	350.4	330.6	348.8	357.7	385.0	387.4	385.0	357.7
60°	350.4	344.7	315.1	291.2	281.3	290.4	313.4	343.0	349.6	343.0	313.4
62.5°	307.7	304.4	268.2	242.7	240.2	241.9	266.5	302.7	306.8	302.7	266.5
65°	268.1	255.8	225.4	202.3	203.2	201.5	224.5	255.0	268.1	255.0	224.5
67.5°	226.2	213.9	187.5	166.2	172.8	166.2	186.8	213.1	226.2	213.1	186.8
70°	189.2	172.8	153.0	135.8	145.6	135.8	153.0	173.5	190.0	173.5	153.0
72.5°	155.5	138.2	123.4	111.1	119.2	110.2	123.4	139.0	157.3	139.0	123.4
75°	125.0	109.4	95.4	88.8	97.0	88.8	96.3	110.2	127.6	110.2	96.3
77.5°	112.2	92.3	72.4	69.0	79.0	69.0	73.3	89.7	108.7	89.7	73.3
80°	104.4	89.5	58.6	51.8	58.4	51.8	56.8	75.8	88.2	75.8	56.8
82.5°	109.4	97.6	59.7	37.0	40.3	37.0	49.5	66.7	76.9	66.7	49.5
85°	123.5	114.1	70.3	30.6	23.0	28.9	45.4	62.0	68.0	62.0	45.4
87.5°	143.5	138.3	89.3	36.7	6.6	24.8	40.6	56.4	55.6	56.4	40.6
90°	168.5	164.2	114.3	48.1	1.7	15.7	29.8	43.8	40.5	43.8	29.8
92.5°	201.2	193.4	141.0	67.2	14.4	8.3	23.9	35.5	33.9	35.5	23.9
95°	228.8	223.6	171.1	89.6	35.0	4.3	17.3	25.5	26.4	25.5	17.3
97.5°	260.6	254.6	199.6	120.4	61.5	11.1	10.8	19.9	21.6	19.9	10.8
100°	286.5	283.2	233.2	157.1	93.9	29.1	6.9	15.1	17.5	15.1	6.9
102.5°	329.4	316.7	268.1	192.1	128.9	53.8	13.6	9.3	11.8	9.3	13.6
105°	367.2	355.2	309.9	228.8	169.1	87.1	34.2	11.9	7.7	11.9	34.2
107.5°	403.8	395.3	348.3	266.4	211.8	125.5	64.0	33.2	21.3	33.2	64.0
110°	446.6	436.3	385.0	304.0	256.1	166.5	97.3	60.6	46.8	60.6	97.3



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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°	487.5	479.9	419.2	344.0	302.3	211.8	138.3	94.7	81.9	94.7	138.3
115°	519.1	514.8	458.5	380.8	345.8	262.0	183.5	134.9	119.5	134.9	183.5
117.5°	552.4	551.6	487.5	418.4	397.0	307.4	225.4	175.0	158.8	175.0	225.4
120°	594.2	587.5	527.7	455.9	445.7	355.2	271.5	221.1	204.9	221.1	271.5
122.5°	624.1	619.0	561.8	491.8	491.8	403.8	315.9	265.6	249.3	265.6	315.9
125°	650.6	648.8	588.3	527.7	541.3	449.1	366.3	315.0	296.2	315.0	366.3
127.5°	674.6	677.1	621.5	567.8	592.6	496.1	414.9	358.6	339.0	358.6	414.9
130°	695.0	703.5	653.2	603.7	640.4	546.4	458.5	402.1	389.3	402.1	458.5
132.5°	735.1	730.0	685.6	640.4	691.6	592.6	504.5	445.7	431.1	445.7	504.5
135°	755.7	757.3	713.8	672.0	739.4	638.7	548.1	490.1	475.6	490.1	548.1
137.5°	780.5	775.3	736.0	710.4	783.8	683.1	590.8	537.0	514.0	537.0	590.8
140°	798.3	797.5	765.1	744.6	831.6	726.7	634.4	579.7	558.4	579.7	634.4
142.5°	817.1	822.3	794.1	782.1	879.4	772.7	681.3	621.5	601.1	621.5	681.3
145°	830.0	841.8	823.1	829.2	924.8	824.0	722.4	662.5	639.5	662.5	722.4
147.5°	852.1	866.6	845.3	862.4	964.1	869.2	764.2	704.4	684.8	704.4	764.2
150°	881.2	888.0	875.1	908.6	1004.2	919.7	806.0	744.6	724.8	744.6	806.0
152.5°	904.2	912.7	898.3	958.9	1035.7	965.7	852.1	783.8	760.8	783.8	852.1
155°	928.1	931.6	921.3	1007.6	1069.1	1011.0	888.9	827.4	805.2	827.4	888.9
157.5°	950.3	957.2	944.4	1044.4	1098.1	1050.3	929.9	870.9	851.3	870.9	929.9
160°	974.3	974.3	980.3	1087.0	1122.0	1084.4	974.3	918.7	891.3	918.7	974.3
162.5°	976.8	993.0	1029.0	1116.8	1145.1	1114.3	1022.1	952.9	928.9	952.9	1022.1
165°	1014.4	1028.1	1083.5	1143.3	1163.0	1140.8	1081.0	1008.4	981.1	1008.4	1081.0
167.5°	1053.7	1083.5	1127.9	1173.3	1180.0	1165.5	1126.3	1075.9	1051.1	1075.9	1126.3
170°	1116.8	1143.3	1165.5	1184.4	1193.7	1185.2	1154.4	1129.7	1113.5	1129.7	1154.4
172.5°	1166.4	1184.4	1192.9	1204.9	1198.8	1195.5	1180.0	1168.2	1158.8	1168.2	1180.0
175°	1198.0	1202.3	1209.9	1206.5	1211.7	1202.3	1202.3	1208.3	1172.5	1208.3	1202.3
177.5°	1209.1	1215.1	1211.7	1204.9	1205.7	1203.9	1206.5	1209.1	1204.0	1209.1	1206.5
180°	1209.9	1209.9	1209.9	1209.9	1209.9	1209.9	1209.9	1209.9	1209.9	1209.9	1209.9



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CATALOG NUMBER: MWL-2-35-31-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1137.5	1137.5	1137.5	1137.5	1137.5	1137.5
2.5°	1132.6	1134.2	1133.4	1144.0	1139.9	1132.5
5°	1130.9	1128.4	1130.9	1131.7	1131.6	1139.0
7.5°	1119.4	1117.8	1120.3	1121.1	1126.8	1121.0
10°	1104.5	1106.3	1105.4	1111.2	1112.0	1107.8
12.5°	1087.2	1088.9	1087.2	1093.8	1094.7	1092.3
15°	1066.7	1068.3	1067.5	1070.0	1070.9	1071.7
17.5°	1049.4	1049.4	1049.4	1049.4	1050.3	1048.7
20°	1021.5	1022.3	1022.3	1027.2	1026.5	1022.3
22.5°	987.7	995.1	988.5	995.1	993.6	992.8
25°	962.2	962.2	963.1	967.2	959.8	959.0
27.5°	928.6	932.6	929.4	932.7	922.9	922.9
30°	903.0	898.1	904.8	893.3	887.5	880.1
32.5°	857.0	864.4	858.8	850.5	842.3	838.1
35°	820.8	824.9	823.4	807.8	788.8	788.8
37.5°	775.6	782.1	778.1	754.3	737.9	736.2
40°	732.0	738.6	733.6	703.3	687.7	691.0
42.5°	681.9	695.9	683.5	645.7	638.4	643.3
45°	625.9	645.7	627.6	592.2	590.6	600.4
47.5°	565.9	596.4	566.7	543.7	550.3	553.6
50°	511.6	534.6	513.2	494.4	504.3	510.8
52.5°	458.1	463.9	459.8	448.4	467.2	473.0
55°	401.3	392.4	403.1	408.8	427.7	428.5
57.5°	348.8	330.6	350.4	360.3	387.5	389.1
60°	290.4	281.3	291.2	315.1	344.7	350.4
62.5°	241.9	240.2	242.7	268.2	304.4	307.7
65°	201.5	203.2	202.3	225.4	255.8	268.1
67.5°	166.2	172.8	166.2	187.5	213.9	226.2
70°	135.8	145.6	135.8	153.0	172.8	189.2
72.5°	110.2	119.2	111.1	123.4	138.2	155.5
75°	88.8	97.0	88.8	95.4	109.4	125.0
77.5°	69.0	79.0	69.0	72.4	92.3	112.2
80°	51.8	58.4	51.8	58.6	89.5	104.4
82.5°	37.0	40.3	37.0	59.7	97.6	109.4
85°	28.9	23.0	30.6	70.3	114.1	123.5
87.5°	24.8	6.6	36.7	89.3	138.3	143.5
90°	15.7	1.7	48.1	114.3	164.2	168.5
92.5°	8.3	14.4	67.2	141.0	193.4	201.2
95°	4.3	35.0	89.6	171.1	223.6	228.8
97.5°	11.1	61.5	120.4	199.6	254.6	260.6
100°	29.1	93.9	157.1	233.2	283.2	286.5
102.5°	53.8	128.9	192.1	268.1	316.7	329.4
105°	87.1	169.1	228.8	309.9	355.2	367.2
107.5°	125.5	211.8	266.4	348.3	395.3	403.8
110°	166.5	256.1	304.0	385.0	436.3	446.6



TEST NUMBER: P392541

CATALOG NUMBER: MWL-2-35-31-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	211.8	302.3	344.0	419.2	479.9	487.5
115°	262.0	345.8	380.8	458.5	514.8	519.1
117.5°	307.4	397.0	418.4	487.5	551.6	552.4
120°	355.2	445.7	455.9	527.7	587.5	594.2
122.5°	403.8	491.8	491.8	561.8	619.0	624.1
125°	449.1	541.3	527.7	588.3	648.8	650.6
127.5°	496.1	592.6	567.8	621.5	677.1	674.6
130°	546.4	640.4	603.7	653.2	703.5	695.0
132.5°	592.6	691.6	640.4	685.6	730.0	735.1
135°	638.7	739.4	672.0	713.8	757.3	755.7
137.5°	683.1	783.8	710.4	736.0	775.3	780.5
140°	726.7	831.6	744.6	765.1	797.5	798.3
142.5°	772.7	879.4	782.1	794.1	822.3	817.1
145°	824.0	924.8	829.2	823.1	841.8	830.0
147.5°	869.2	964.1	862.4	845.3	866.6	852.1
150°	919.7	1004.2	908.6	875.1	888.0	881.2
152.5°	965.7	1035.7	958.9	898.3	912.7	904.2
155°	1011.0	1069.1	1007.6	921.3	931.6	928.1
157.5°	1050.3	1098.1	1044.4	944.4	957.2	950.3
160°	1084.4	1122.0	1087.0	980.3	974.3	974.3
162.5°	1114.3	1145.1	1116.8	1029.0	993.0	976.8
165°	1140.8	1163.0	1143.3	1083.5	1028.1	1014.4
167.5°	1165.5	1180.0	1173.3	1127.9	1083.5	1053.7
170°	1185.2	1193.7	1184.4	1165.5	1143.3	1116.8
172.5°	1195.5	1198.8	1204.9	1192.9	1184.4	1166.4
175°	1202.3	1211.7	1206.5	1209.9	1202.3	1198.0
177.5°	1203.9	1205.7	1204.9	1211.7	1215.1	1209.1
180°	1209.9	1209.9	1209.9	1209.9	1209.9	1209.9

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