

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: P392661

Luminaire Tested: **MWL-4-34-45-UNV-L930-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392661
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-4-34-45-UNV-L930-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

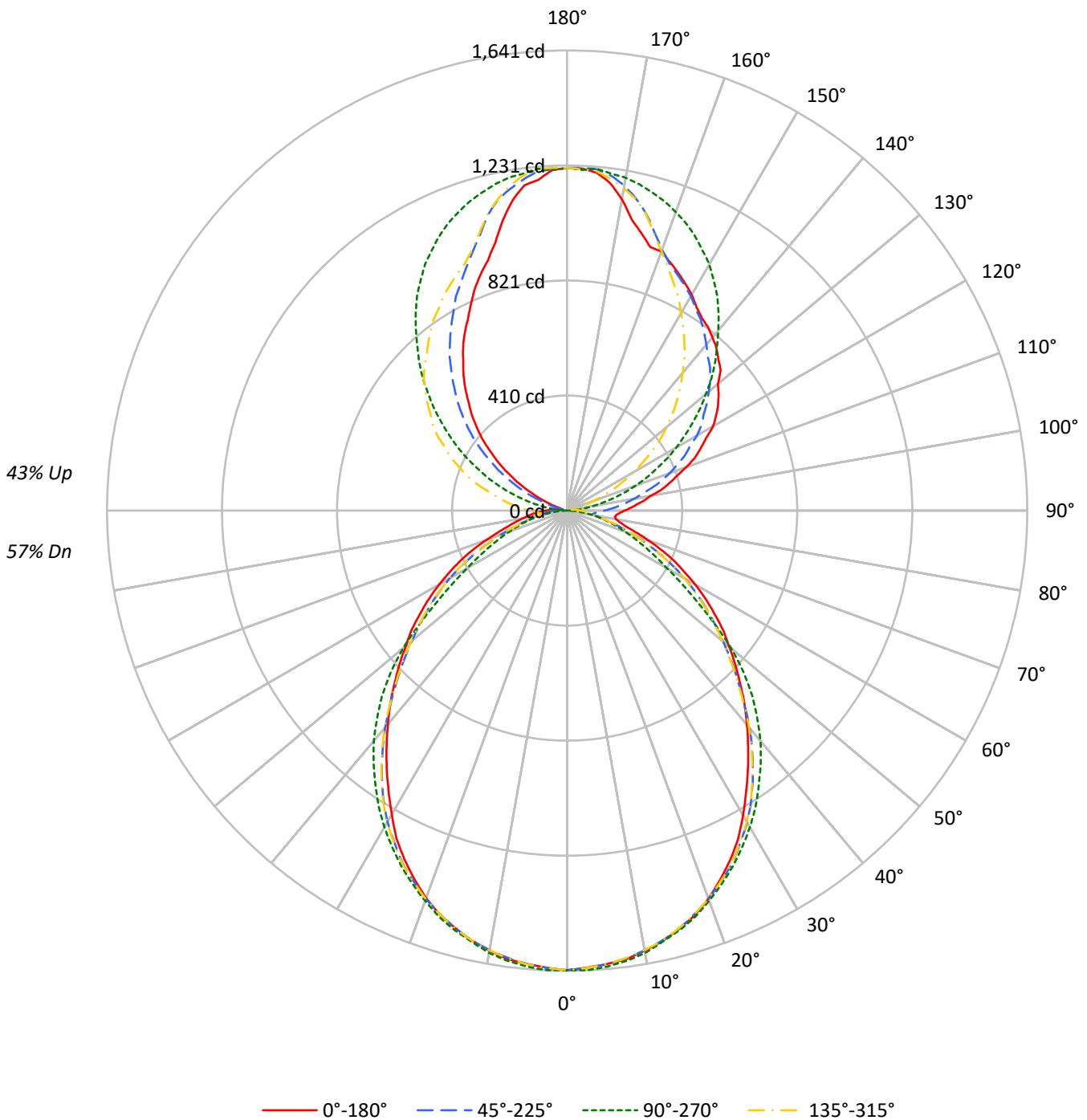
Lumens per Lamp: N/A
Luminaire Lumens: 6746.4 lumens
Efficiency: N/A
Efficacy: 84.1 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 80.194
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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	57
1	99	95	91	88	92	89	85	82	77	74	72	65	64	62	55	54	53	48
2	91	83	77	72	84	78	73	68	68	64	60	58	55	52	49	47	45	41
3	83	74	66	61	77	69	63	57	60	55	51	52	48	45	44	41	39	35
4	76	66	58	52	71	61	54	49	53	48	44	46	42	39	39	36	34	30
5	70	59	51	45	65	55	48	42	48	42	38	42	37	34	36	32	30	27
6	65	53	45	39	60	50	42	37	43	38	33	38	33	30	32	29	26	23
7	60	48	40	34	56	45	38	33	40	34	30	34	30	26	30	26	23	21
8	56	43	36	30	52	41	34	29	36	30	26	32	27	24	27	24	21	19
9	52	40	32	27	48	38	31	26	33	28	24	29	25	21	25	22	19	17
10	49	37	29	25	45	35	28	24	31	25	21	27	23	19	24	20	17	16

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	10585	10585	10585	10585
5°	10426	9731	10426	9731
10°	10261	8930	10261	8930
15°	10046	8170	10029	8170
20°	9756	7462	9739	7462
25°	9346	6798	9329	6798
30°	8824	6162	8800	6162
35°	8261	5527	8242	5527
40°	7733	4917	7707	4917
45°	7216	4262	7195	4262
50°	6732	3503	6709	3503
55°	6280	2619	6264	2619
60°	5762	1938	5754	1938
65°	5216	1474	5216	1474
70°	4479	1103	4494	1103
75°	3872	798	3921	798
80°	4141	509	3760	509
85°	5964	237	4069	237



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.4	2.3
10°-20°	435.4	6.5
20°-30°	638.3	9.5
30°-40°	722.6	10.7
40°-50°	680.7	10.1
50°-60°	543.6	8.1
60°-70°	357.4	5.3
70°-80°	183.0	2.7
80°-90°	98.8	1.5
90°-100°	110.5	1.6
100°-110°	191.2	2.8
110°-120°	325.1	4.8
120°-130°	441.4	6.5
130°-140°	503.3	7.5
140°-150°	501.9	7.4
150°-160°	437.0	6.5
160°-170°	307.4	4.6
170°-180°	114.5	1.7
0°-30°	1228.1	18.2
0°-40°	1950.7	28.9
0°-60°	3174.9	47.1
0°-90°	3814.1	56.5
90°-120°	626.9	9.3
90°-150°	2073.4	30.7
90°-180°	2932.0	43.5
0°-180°	6746.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1639	1639	1639	1639	1639	
5°	1623	1632	1623	1632	1623	154
15°	1544	1549	1542	1549	1544	435
25°	1375	1399	1373	1399	1375	632
35°	1124	1192	1122	1192	1124	703
45°	872	933	870	933	872	675
55°	641	565	639	565	641	574
65°	418	303	418	303	418	412
75°	216	151	218	151	216	239
85°	176	40	120	40	176	144
90°	205	2	75	2	205	113
95°	249	35	45	35	249	215
105°	378	171	14	171	378	398
115°	525	349	122	349	525	521
125°	657	546	299	546	657	587
135°	763	746	480	746	763	589
145°	838	934	646	934	838	528
155°	936	1079	812	1079	936	432
165°	1023	1174	990	1174	1023	290
175°	1210	1223	1184	1223	1210	113
180°	1222	1222	1222	1222	1222	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1639.0	1639.0	1639.0	1639.0	1639.0	1639.0	1639.0	1639.0	1639.0	1639.0	1639.0
2.5°	1631.4	1636.4	1632.3	1641.6	1640.7	1640.7	1632.3	1636.4	1632.2	1636.4	1632.3
5°	1622.9	1628.0	1624.7	1631.4	1632.3	1631.4	1623.7	1628.0	1622.9	1628.0	1623.7
7.5°	1613.6	1614.5	1610.3	1619.6	1619.6	1618.7	1609.4	1613.6	1613.6	1613.6	1609.4
10°	1593.4	1596.7	1592.5	1601.8	1601.8	1600.9	1591.6	1595.0	1593.4	1595.0	1591.6
12.5°	1572.3	1573.0	1570.5	1578.1	1574.7	1578.1	1570.5	1571.3	1570.5	1571.3	1570.5
15°	1544.4	1543.4	1542.6	1551.1	1549.3	1550.2	1541.8	1541.8	1541.8	1541.8	1541.8
17.5°	1513.1	1512.2	1509.6	1518.1	1519.0	1518.1	1508.8	1511.3	1510.5	1511.3	1508.8
20°	1473.3	1472.5	1474.1	1480.9	1480.9	1480.0	1473.3	1470.8	1470.8	1470.8	1473.3
22.5°	1425.2	1430.3	1431.9	1442.0	1441.2	1441.2	1431.0	1428.5	1423.4	1428.5	1431.0
25°	1375.3	1381.2	1390.5	1398.9	1398.9	1398.1	1388.8	1378.6	1372.7	1378.6	1388.8
27.5°	1320.4	1327.2	1336.3	1354.1	1352.4	1353.2	1334.7	1324.5	1317.8	1324.5	1334.7
30°	1254.4	1264.6	1284.0	1302.5	1303.4	1300.9	1281.4	1262.0	1251.0	1262.0	1281.4
32.5°	1188.5	1198.7	1222.3	1246.8	1251.0	1245.1	1219.8	1195.2	1185.1	1195.2	1219.8
35°	1124.2	1131.0	1154.7	1189.3	1191.8	1186.7	1152.1	1128.4	1121.7	1128.4	1152.1
37.5°	1059.9	1061.7	1084.5	1125.9	1133.6	1123.3	1082.0	1059.2	1057.5	1059.2	1082.0
40°	997.4	993.2	1012.7	1054.9	1072.6	1053.3	1009.2	989.9	994.1	989.9	1009.2
42.5°	936.6	927.3	934.0	984.8	1003.3	983.1	931.5	923.9	933.2	923.9	931.5
45°	872.3	861.4	861.4	907.0	933.2	905.3	857.9	858.8	869.8	858.8	857.9
47.5°	813.1	799.7	793.8	831.8	852.9	830.9	790.2	797.1	810.7	797.1	790.2
50°	753.2	742.2	725.3	748.1	764.2	746.4	721.8	738.7	750.6	738.7	721.8
52.5°	701.6	686.4	663.5	671.2	661.1	669.5	661.0	682.9	699.1	682.9	661.0
55°	640.7	632.3	603.6	595.1	564.7	593.4	600.9	629.6	639.1	629.6	600.9
57.5°	585.0	579.9	543.5	512.3	483.6	510.5	541.0	577.3	583.2	577.3	541.0
60°	526.6	524.1	485.2	437.9	410.0	437.0	483.5	522.3	525.8	522.3	483.5
62.5°	470.0	466.7	423.5	366.9	355.0	365.9	421.8	464.9	469.2	464.9	421.8
65°	417.6	408.3	363.6	306.1	303.4	305.1	362.6	407.4	417.6	407.4	362.6
67.5°	361.0	346.7	304.4	255.3	259.5	255.3	303.4	345.7	361.0	345.7	303.4
70°	305.1	286.5	252.7	212.1	218.9	212.1	252.7	287.5	306.1	287.5	252.7
72.5°	255.3	234.1	203.7	173.3	183.4	172.4	203.7	235.1	257.0	235.1	203.7
75°	215.5	191.0	159.7	137.8	151.3	137.8	160.6	191.9	218.2	191.9	160.6
77.5°	192.0	158.1	122.6	106.5	121.7	106.5	123.4	155.6	188.6	155.6	123.4
80°	177.1	144.0	99.8	79.4	91.3	79.4	98.1	130.2	160.8	130.2	98.1
82.5°	171.6	139.3	92.4	56.6	64.3	56.6	82.1	108.3	138.9	108.3	82.1
85°	176.3	149.9	98.7	46.6	39.7	44.8	73.7	97.4	120.3	97.4	73.7
87.5°	188.0	166.7	110.9	50.2	13.6	38.1	61.9	83.9	99.1	83.9	61.9
90°	204.6	188.4	132.8	58.1	1.7	25.4	47.5	66.8	75.3	66.8	47.5
92.5°	227.3	214.5	156.2	75.5	14.6	16.0	38.1	55.0	58.4	55.0	38.1
95°	249.2	244.9	184.0	94.7	35.3	8.5	28.8	44.8	44.9	44.8	28.8
97.5°	277.0	273.5	211.8	121.5	62.1	11.2	21.2	36.5	35.6	36.5	21.2
100°	302.2	300.4	242.0	158.7	94.8	29.3	13.6	29.8	30.6	29.8	13.6
102.5°	343.7	330.8	272.4	194.0	130.1	54.2	15.5	20.4	23.0	20.4	15.5
105°	377.5	362.9	313.7	231.0	170.6	87.9	35.3	16.2	14.4	16.2	35.3
107.5°	409.4	399.9	351.7	269.8	213.8	127.6	64.6	34.4	23.2	34.4	64.6
110°	451.7	441.4	388.8	307.7	259.5	169.0	98.2	62.1	48.3	62.1	98.2



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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°	493.1	485.3	423.3	347.4	306.1	213.8	139.6	96.5	83.6	96.5	139.6
115°	525.0	520.6	463.0	384.5	349.1	264.7	185.3	137.0	121.5	137.0	185.3
117.5°	558.6	557.8	492.3	422.4	400.9	310.4	227.5	177.6	161.2	177.6	227.5
120°	600.9	593.9	533.6	460.3	450.0	358.6	275.0	224.1	207.7	224.1	275.0
122.5°	630.1	625.8	568.1	496.6	496.6	407.8	319.8	268.9	251.7	268.9	319.8
125°	656.9	655.1	593.9	532.7	546.5	453.5	369.8	318.0	299.1	318.0	369.8
127.5°	681.0	683.6	627.5	573.2	597.4	500.8	418.9	362.0	342.3	362.0	418.9
130°	701.7	710.3	659.4	609.5	645.7	551.6	463.0	406.0	393.1	406.0	463.0
132.5°	742.2	737.1	692.2	646.5	697.4	598.2	509.4	450.0	435.3	450.0	509.4
135°	762.9	764.6	720.6	678.4	745.6	644.8	553.5	494.8	480.1	494.8	553.5
137.5°	787.9	782.8	743.1	717.3	790.5	689.6	596.5	542.2	519.0	542.2	596.5
140°	806.0	805.1	772.4	751.8	838.8	733.5	640.5	585.3	563.8	585.3	640.5
142.5°	825.0	830.1	801.7	789.6	887.0	780.1	687.9	627.5	606.8	627.5	687.9
145°	838.0	849.1	831.0	837.0	933.6	831.9	729.2	668.0	645.7	668.0	729.2
147.5°	859.5	874.2	852.6	870.6	972.4	877.6	770.7	710.3	690.5	710.3	770.7
150°	888.8	895.6	882.7	917.2	1013.7	928.5	813.0	750.8	731.0	750.8	813.0
152.5°	912.1	920.7	905.9	968.1	1045.7	975.0	859.5	790.5	767.2	790.5	859.5
155°	936.1	939.6	929.3	1017.2	1079.3	1020.7	896.5	834.4	812.1	834.4	896.5
157.5°	958.6	965.5	953.4	1054.3	1108.5	1060.3	938.8	878.5	858.6	878.5	938.8
160°	982.7	982.7	989.7	1097.5	1132.8	1094.8	983.6	926.7	899.2	926.7	983.6
162.5°	985.4	1001.7	1038.7	1127.6	1156.0	1125.0	1031.9	961.2	937.1	961.2	1031.9
165°	1023.3	1037.9	1093.9	1154.3	1174.1	1151.7	1091.4	1018.0	989.7	1018.0	1091.4
167.5°	1062.9	1093.9	1138.8	1184.4	1191.4	1176.7	1137.1	1086.2	1060.3	1086.2	1137.1
170°	1126.8	1154.3	1176.7	1195.7	1205.2	1196.6	1165.5	1140.5	1123.3	1140.5	1165.5
172.5°	1177.7	1195.7	1204.3	1216.3	1211.2	1206.9	1191.4	1179.3	1169.8	1179.3	1191.4
175°	1209.5	1213.8	1221.6	1217.3	1223.3	1213.0	1213.8	1219.8	1183.7	1219.8	1213.8
177.5°	1220.7	1227.6	1223.3	1215.5	1216.3	1214.6	1218.1	1221.6	1215.5	1221.6	1218.1
180°	1221.6	1221.6	1221.6	1221.6	1221.6	1221.6	1221.6	1221.6	1221.6	1221.6	1221.6



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CATALOG NUMBER: MWL-4-34-45-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1639.0	1639.0	1639.0	1639.0	1639.0	1639.0
2.5°	1640.7	1640.7	1641.6	1632.3	1636.4	1631.4
5°	1631.4	1632.3	1631.4	1624.7	1628.0	1622.9
7.5°	1618.7	1619.6	1619.6	1610.3	1614.5	1613.6
10°	1600.9	1601.8	1601.8	1592.5	1596.7	1593.4
12.5°	1578.1	1574.7	1578.1	1570.5	1573.0	1572.3
15°	1550.2	1549.3	1551.1	1542.6	1543.4	1544.4
17.5°	1518.1	1519.0	1518.1	1509.6	1512.2	1513.1
20°	1480.0	1480.9	1480.9	1474.1	1472.5	1473.3
22.5°	1441.2	1441.2	1442.0	1431.9	1430.3	1425.2
25°	1398.1	1398.9	1398.9	1390.5	1381.2	1375.3
27.5°	1353.2	1352.4	1354.1	1336.3	1327.2	1320.4
30°	1300.9	1303.4	1302.5	1284.0	1264.6	1254.4
32.5°	1245.1	1251.0	1246.8	1222.3	1198.7	1188.5
35°	1186.7	1191.8	1189.3	1154.7	1131.0	1124.2
37.5°	1123.3	1133.6	1125.9	1084.5	1061.7	1059.9
40°	1053.3	1072.6	1054.9	1012.7	993.2	997.4
42.5°	983.1	1003.3	984.8	934.0	927.3	936.6
45°	905.3	933.2	907.0	861.4	861.4	872.3
47.5°	830.9	852.9	831.8	793.8	799.7	813.1
50°	746.4	764.2	748.1	725.3	742.2	753.2
52.5°	669.5	661.1	671.2	663.5	686.4	701.6
55°	593.4	564.7	595.1	603.6	632.3	640.7
57.5°	510.5	483.6	512.3	543.5	579.9	585.0
60°	437.0	410.0	437.9	485.2	524.1	526.6
62.5°	365.9	355.0	366.9	423.5	466.7	470.0
65°	305.1	303.4	306.1	363.6	408.3	417.6
67.5°	255.3	259.5	255.3	304.4	346.7	361.0
70°	212.1	218.9	212.1	252.7	286.5	305.1
72.5°	172.4	183.4	173.3	203.7	234.1	255.3
75°	137.8	151.3	137.8	159.7	191.0	215.5
77.5°	106.5	121.7	106.5	122.6	158.1	192.0
80°	79.4	91.3	79.4	99.8	144.0	177.1
82.5°	56.6	64.3	56.6	92.4	139.3	171.6
85°	44.8	39.7	46.6	98.7	149.9	176.3
87.5°	38.1	13.6	50.2	110.9	166.7	188.0
90°	25.4	1.7	58.1	132.8	188.4	204.6
92.5°	16.0	14.6	75.5	156.2	214.5	227.3
95°	8.5	35.3	94.7	184.0	244.9	249.2
97.5°	11.2	62.1	121.5	211.8	273.5	277.0
100°	29.3	94.8	158.7	242.0	300.4	302.2
102.5°	54.2	130.1	194.0	272.4	330.8	343.7
105°	87.9	170.6	231.0	313.7	362.9	377.5
107.5°	127.6	213.8	269.8	351.7	399.9	409.4
110°	169.0	259.5	307.7	388.8	441.4	451.7



TEST NUMBER: P392661

CATALOG NUMBER: MWL-4-34-45-UNV-L930-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	213.8	306.1	347.4	423.3	485.3	493.1
115°	264.7	349.1	384.5	463.0	520.6	525.0
117.5°	310.4	400.9	422.4	492.3	557.8	558.6
120°	358.6	450.0	460.3	533.6	593.9	600.9
122.5°	407.8	496.6	496.6	568.1	625.8	630.1
125°	453.5	546.5	532.7	593.9	655.1	656.9
127.5°	500.8	597.4	573.2	627.5	683.6	681.0
130°	551.6	645.7	609.5	659.4	710.3	701.7
132.5°	598.2	697.4	646.5	692.2	737.1	742.2
135°	644.8	745.6	678.4	720.6	764.6	762.9
137.5°	689.6	790.5	717.3	743.1	782.8	787.9
140°	733.5	838.8	751.8	772.4	805.1	806.0
142.5°	780.1	887.0	789.6	801.7	830.1	825.0
145°	831.9	933.6	837.0	831.0	849.1	838.0
147.5°	877.6	972.4	870.6	852.6	874.2	859.5
150°	928.5	1013.7	917.2	882.7	895.6	888.8
152.5°	975.0	1045.7	968.1	905.9	920.7	912.1
155°	1020.7	1079.3	1017.2	929.3	939.6	936.1
157.5°	1060.3	1108.5	1054.3	953.4	965.5	958.6
160°	1094.8	1132.8	1097.5	989.7	982.7	982.7
162.5°	1125.0	1156.0	1127.6	1038.7	1001.7	985.4
165°	1151.7	1174.1	1154.3	1093.9	1037.9	1023.3
167.5°	1176.7	1191.4	1184.4	1138.8	1093.9	1062.9
170°	1196.6	1205.2	1195.7	1176.7	1154.3	1126.8
172.5°	1206.9	1211.2	1216.3	1204.3	1195.7	1177.7
175°	1213.0	1223.3	1217.3	1221.6	1213.8	1209.5
177.5°	1214.6	1216.3	1215.5	1223.3	1227.6	1220.7
180°	1221.6	1221.6	1221.6	1221.6	1221.6	1221.6

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