

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: P392584

Luminaire Tested: **MWL-3-30-33-UNV-L935-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392584  
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-3-30-33-UNV-L935-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

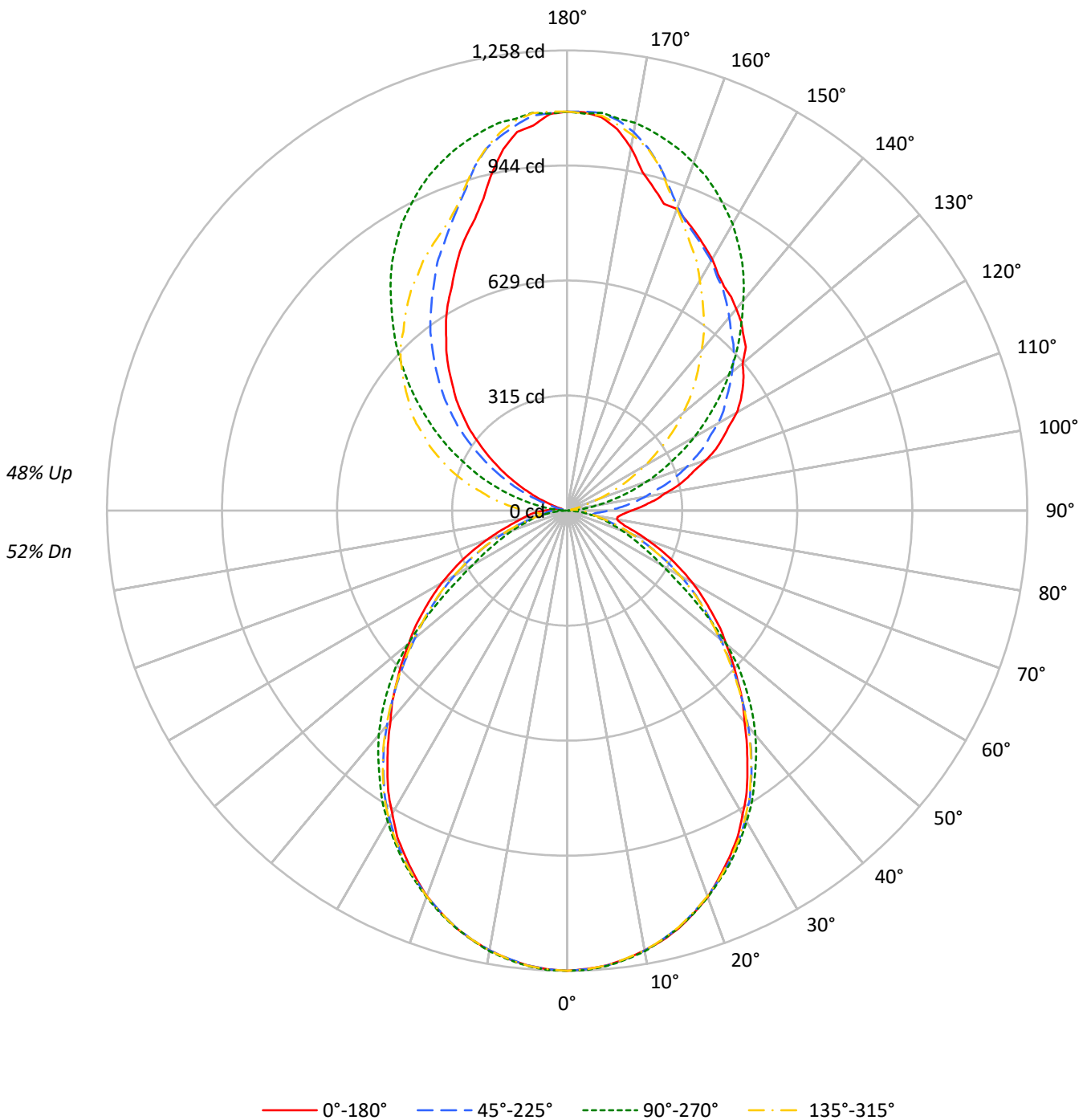
Lumens per Lamp: N/A  
Luminaire Lumens: 5495.0 lumens  
Efficiency: N/A  
Efficacy: 85.0 lumens/watt  
Spacing Criteria (0/90/45): 1.14 / 1.17 / 1.24  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: General Diffuse

Input Watts (W): 64.64  
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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52
1	98	94	90	87	91	87	84	81	74	72	70	63	61	59	52	51	50	44
2	90	83	77	72	83	77	72	67	66	62	58	55	53	50	46	44	42	38
3	82	73	66	60	76	68	62	56	58	53	50	49	46	43	41	39	36	32
4	75	65	57	51	70	60	54	48	52	47	43	44	40	37	37	34	32	28
5	69	58	50	44	64	54	47	42	47	41	37	40	36	32	34	30	28	25
6	64	52	44	38	59	49	42	36	42	37	32	36	32	29	31	27	25	22
7	59	47	39	34	55	44	37	32	38	33	29	33	29	25	28	25	22	20
8	55	43	35	30	51	40	33	29	35	30	26	30	26	23	26	22	20	18
9	51	39	32	27	48	37	30	26	32	27	23	28	24	21	24	20	18	16
10	48	36	29	24	45	34	27	23	30	24	21	26	22	19	22	19	16	15

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	10834	10834	10834	10834
5°	10659	9933	10659	9933
10°	10419	9093	10419	9093
15°	10156	8298	10135	8298
20°	9804	7554	9784	7554
25°	9348	6862	9328	6862
30°	8832	6189	8804	6189
35°	8227	5525	8204	5525
40°	7594	4896	7563	4896
45°	7050	4221	7025	4221
50°	6516	3476	6490	3476
55°	6020	2599	6000	2599
60°	5506	1886	5495	1886
65°	4909	1417	4909	1417
70°	4231	1070	4246	1070
75°	3620	775	3670	775
80°	3847	497	3442	497
85°	5586	215	3673	215



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.3	2.2
10°-20°	332.2	6.0
20°-30°	484.7	8.8
30°-40°	547.8	10.0
40°-50°	512.2	9.3
50°-60°	404.4	7.4
60°-70°	264.4	4.8
70°-80°	137.8	2.5
80°-90°	78.4	1.4
90°-100°	96.5	1.8
100°-110°	170.6	3.1
110°-120°	290.0	5.3
120°-130°	393.9	7.2
130°-140°	449.2	8.2
140°-150°	448.0	8.2
150°-160°	390.1	7.1
160°-170°	274.4	5.0
170°-180°	102.2	1.9
0°-30°	935.2	17.0
0°-40°	1483.0	27.0
0°-60°	2399.6	43.7
0°-90°	2880.2	52.4
90°-120°	557.0	10.1
90°-150°	1848.1	33.6
90°-180°	2615.0	47.6
0°-180°	5495.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1258	1258	1258	1258	1258	
5°	1248	1250	1248	1250	1248	118
15°	1182	1180	1179	1180	1182	332
25°	1048	1059	1045	1059	1048	482
35°	859	894	856	894	859	537
45°	659	693	657	693	659	510
55°	480	420	479	420	480	431
65°	313	219	313	219	313	310
75°	165	110	168	110	165	184
85°	146	27	96	27	146	118
90°	176	2	61	2	176	97
95°	222	32	40	32	222	192
105°	337	153	13	153	337	356
115°	469	311	109	311	469	465
125°	586	488	266	488	586	523
135°	681	666	428	666	681	526
145°	748	833	576	833	748	472
155°	836	963	725	963	836	385
165°	914	1048	883	1048	914	259
175°	1080	1091	1057	1091	1080	101
180°	1090	1090	1090	1090	1090	



TEST NUMBER: P392584

CATALOG NUMBER: MWL-3-30-33-UNV-L935-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1258.1	1258.1	1258.1	1258.1	1258.1	1258.1	1258.1	1258.1	1258.1	1258.1	1258.1
2.5°	1254.1	1256.4	1254.7	1255.4	1257.1	1254.7	1254.7	1256.4	1254.8	1256.4	1254.7
5°	1248.1	1249.7	1248.7	1248.7	1249.6	1248.7	1247.9	1249.7	1248.1	1249.7	1247.9
7.5°	1236.1	1238.6	1236.0	1237.7	1237.7	1236.9	1235.2	1237.7	1236.1	1237.7	1235.2
10°	1220.8	1223.3	1221.6	1221.6	1223.3	1220.8	1220.8	1221.7	1220.8	1221.7	1220.8
12.5°	1203.7	1203.8	1201.2	1203.0	1202.2	1203.0	1201.2	1202.2	1202.1	1202.2	1201.2
15°	1181.6	1180.1	1179.2	1180.1	1180.2	1179.3	1178.5	1178.5	1179.2	1178.5	1178.5
17.5°	1153.6	1154.6	1151.3	1153.9	1153.9	1153.9	1150.5	1153.8	1151.3	1153.8	1150.5
20°	1123.9	1123.2	1122.4	1124.2	1124.3	1123.4	1121.7	1121.6	1121.6	1121.6	1121.7
22.5°	1085.9	1088.4	1089.3	1092.8	1092.1	1092.1	1088.5	1086.8	1084.2	1086.8	1088.5
25°	1047.6	1052.0	1054.6	1059.7	1059.0	1059.0	1052.9	1049.5	1045.3	1049.5	1052.9
27.5°	1007.9	1008.6	1016.4	1024.0	1020.8	1023.2	1014.8	1006.3	1005.5	1006.3	1014.8
30°	959.5	963.7	974.7	983.3	981.8	981.7	972.4	961.4	956.4	961.4	972.4
32.5°	913.7	915.4	929.8	940.0	941.0	938.5	927.4	912.3	910.5	912.3	927.4
35°	858.7	862.9	878.2	895.9	893.6	893.6	875.8	860.5	856.3	860.5	875.8
37.5°	806.9	809.5	826.4	848.5	848.6	846.1	824.1	807.1	804.6	807.1	824.1
40°	754.3	753.5	769.6	794.2	801.0	792.7	766.4	750.3	751.2	750.3	766.4
42.5°	710.3	700.1	711.0	738.2	749.3	736.7	708.8	696.9	707.1	696.9	708.8
45°	659.3	649.2	655.1	680.6	693.3	679.0	652.0	646.8	657.0	646.8	652.0
47.5°	613.5	600.8	600.0	618.7	636.5	617.9	596.9	598.5	611.3	598.5	596.9
50°	566.9	555.0	546.6	559.3	568.7	557.8	543.5	552.0	564.6	552.0	543.5
52.5°	527.1	510.9	496.6	500.0	493.2	498.4	494.3	507.8	524.7	507.8	494.3
55°	480.5	470.3	449.9	439.0	420.4	437.5	447.7	468.0	478.9	468.0	447.7
57.5°	438.9	429.6	405.0	378.8	352.6	377.3	402.7	427.3	437.4	427.3	402.7
60°	396.6	387.3	357.6	319.4	299.2	318.8	356.0	385.7	395.8	385.7	356.0
62.5°	352.5	346.5	312.6	269.5	257.7	268.7	311.1	345.0	351.7	345.0	311.1
65°	312.7	302.5	267.8	226.2	218.7	225.4	267.0	301.8	312.7	301.8	267.0
67.5°	272.0	259.3	226.2	188.1	187.2	188.1	225.4	258.5	272.0	258.5	225.4
70°	232.2	217.8	187.2	155.9	159.3	155.9	187.2	218.6	233.0	218.6	187.2
72.5°	197.4	177.9	153.3	127.9	131.3	127.1	153.3	178.7	199.0	178.7	153.3
75°	165.2	143.2	122.0	102.5	110.2	102.5	122.8	143.9	167.5	143.9	122.8
77.5°	147.6	119.9	94.1	80.5	88.1	80.5	94.8	117.6	144.5	117.6	94.8
80°	138.7	110.5	76.0	61.9	66.9	61.9	74.5	98.0	124.1	98.0	74.5
82.5°	138.5	111.2	71.7	44.0	47.4	44.0	62.4	83.4	109.2	83.4	62.4
85°	146.3	122.4	78.4	35.3	27.1	33.7	56.2	75.5	96.2	75.5	56.2
87.5°	158.7	140.8	93.1	39.3	7.6	28.4	49.3	66.9	79.4	66.9	49.3
90°	175.9	161.5	113.2	48.6	1.6	19.3	37.0	52.9	60.6	52.9	37.0
92.5°	198.9	186.2	135.8	64.9	13.1	11.7	30.3	43.7	47.9	43.7	30.3
95°	222.1	215.8	162.1	82.6	31.7	5.6	23.5	37.1	39.6	37.1	23.5
97.5°	249.3	242.8	187.5	108.6	55.6	10.1	17.3	31.1	33.6	31.1	17.3
100°	271.6	267.5	215.5	141.8	84.8	26.3	11.4	25.7	29.1	25.7	11.4
102.5°	307.9	295.2	242.7	173.4	116.4	48.6	13.2	18.0	21.5	18.0	13.2
105°	337.2	322.2	280.4	206.4	152.6	78.6	31.8	12.6	13.0	12.6	31.8
107.5°	365.2	356.7	314.4	240.3	191.0	113.3	57.9	30.2	20.3	30.2	57.9
110°	403.7	393.7	347.5	274.2	231.1	150.2	87.9	54.8	43.3	54.8	87.9



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CATALOG NUMBER: MWL-3-30-33-UNV-L935-EDD

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	440.7	433.0	378.3	309.6	272.7	190.4	124.9	85.7	74.9	85.7	124.9
115°	469.2	464.5	413.7	342.7	311.2	235.7	165.8	121.8	108.8	121.8	165.8
117.5°	498.3	497.6	439.8	376.7	357.4	276.5	203.5	158.0	143.4	158.0	203.5
120°	536.1	530.0	476.1	410.5	401.2	319.6	245.1	199.6	185.0	199.6	245.1
122.5°	562.3	558.5	506.9	443.7	443.7	364.3	285.0	239.7	224.3	239.7	285.0
125°	586.2	584.6	530.0	476.1	488.3	405.2	329.7	283.5	266.5	283.5	329.7
127.5°	607.7	610.1	560.0	511.5	533.8	446.8	373.6	322.8	305.0	322.8	373.6
130°	626.3	633.9	588.5	543.8	576.9	492.3	412.9	362.1	350.5	362.1	412.9
132.5°	662.4	657.8	617.8	576.9	623.1	533.8	454.5	401.3	388.3	401.3	454.5
135°	680.9	682.4	643.1	605.4	666.2	575.4	493.8	441.4	428.3	441.4	493.8
137.5°	703.2	698.6	663.1	640.1	706.3	615.4	532.3	483.7	463.0	483.7	532.3
140°	719.4	718.6	689.4	670.9	749.4	654.7	571.6	522.3	503.0	522.3	571.6
142.5°	736.3	740.9	715.6	704.8	792.6	696.3	613.9	560.0	541.6	560.0	613.9
145°	747.9	757.9	741.7	747.1	833.4	742.5	650.9	596.2	576.2	596.2	650.9
147.5°	767.1	780.1	760.9	777.1	868.9	783.3	687.8	633.9	616.2	633.9	687.8
150°	793.4	799.5	787.9	818.7	904.9	828.7	725.5	670.1	652.4	670.1	725.5
152.5°	814.1	821.8	808.7	864.2	933.5	870.3	767.1	705.6	684.8	705.6	767.1
155°	835.6	838.7	829.6	908.1	963.4	911.1	800.2	744.9	724.8	744.9	800.2
157.5°	855.7	861.9	851.1	941.2	989.7	946.6	838.0	784.1	766.3	784.1	838.0
160°	877.2	877.2	883.4	979.7	1011.2	977.4	878.1	827.2	802.6	827.2	878.1
162.5°	879.6	894.1	927.4	1006.7	1032.0	1004.3	921.1	858.0	836.4	858.0	921.1
165°	913.5	926.6	976.6	1030.5	1048.2	1028.1	974.2	908.8	883.4	908.8	974.2
167.5°	948.8	976.6	1016.7	1057.4	1063.6	1050.5	1015.1	969.6	946.6	969.6	1015.1
170°	1006.7	1030.5	1050.5	1067.4	1076.0	1068.2	1040.5	1018.1	1003.5	1018.1	1040.5
172.5°	1051.3	1067.4	1075.2	1086.0	1080.5	1077.4	1063.6	1052.8	1044.3	1052.8	1063.6
175°	1079.7	1083.6	1090.5	1086.7	1091.4	1082.9	1083.6	1089.0	1056.6	1089.0	1083.6
177.5°	1089.7	1096.0	1092.1	1085.2	1086.0	1084.4	1087.4	1090.5	1085.1	1090.5	1087.4
180°	1090.5	1090.5	1090.5	1090.5	1090.5	1090.5	1090.5	1090.5	1090.5	1090.5	1090.5



TEST NUMBER: P392584

CATALOG NUMBER: MWL-3-30-33-UNV-L935-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1258.1	1258.1	1258.1	1258.1	1258.1	1258.1
2.5°	1254.7	1257.1	1255.4	1254.7	1256.4	1254.1
5°	1248.7	1249.6	1248.7	1248.7	1249.7	1248.1
7.5°	1236.9	1237.7	1237.7	1236.0	1238.6	1236.1
10°	1220.8	1223.3	1221.6	1221.6	1223.3	1220.8
12.5°	1203.0	1202.2	1203.0	1201.2	1203.8	1203.7
15°	1179.3	1180.2	1180.1	1179.2	1180.1	1181.6
17.5°	1153.9	1153.9	1153.9	1151.3	1154.6	1153.6
20°	1123.4	1124.3	1124.2	1122.4	1123.2	1123.9
22.5°	1092.1	1092.1	1092.8	1089.3	1088.4	1085.9
25°	1059.0	1059.0	1059.7	1054.6	1052.0	1047.6
27.5°	1023.2	1020.8	1024.0	1016.4	1008.6	1007.9
30°	981.7	981.8	983.3	974.7	963.7	959.5
32.5°	938.5	941.0	940.0	929.8	915.4	913.7
35°	893.6	893.6	895.9	878.2	862.9	858.7
37.5°	846.1	848.6	848.5	826.4	809.5	806.9
40°	792.7	801.0	794.2	769.6	753.5	754.3
42.5°	736.7	749.3	738.2	711.0	700.1	710.3
45°	679.0	693.3	680.6	655.1	649.2	659.3
47.5°	617.9	636.5	618.7	600.0	600.8	613.5
50°	557.8	568.7	559.3	546.6	555.0	566.9
52.5°	498.4	493.2	500.0	496.6	510.9	527.1
55°	437.5	420.4	439.0	449.9	470.3	480.5
57.5°	377.3	352.6	378.8	405.0	429.6	438.9
60°	318.8	299.2	319.4	357.6	387.3	396.6
62.5°	268.7	257.7	269.5	312.6	346.5	352.5
65°	225.4	218.7	226.2	267.8	302.5	312.7
67.5°	188.1	187.2	188.1	226.2	259.3	272.0
70°	155.9	159.3	155.9	187.2	217.8	232.2
72.5°	127.1	131.3	127.9	153.3	177.9	197.4
75°	102.5	110.2	102.5	122.0	143.2	165.2
77.5°	80.5	88.1	80.5	94.1	119.9	147.6
80°	61.9	66.9	61.9	76.0	110.5	138.7
82.5°	44.0	47.4	44.0	71.7	111.2	138.5
85°	33.7	27.1	35.3	78.4	122.4	146.3
87.5°	28.4	7.6	39.3	93.1	140.8	158.7
90°	19.3	1.6	48.6	113.2	161.5	175.9
92.5°	11.7	13.1	64.9	135.8	186.2	198.9
95°	5.6	31.7	82.6	162.1	215.8	222.1
97.5°	10.1	55.6	108.6	187.5	242.8	249.3
100°	26.3	84.8	141.8	215.5	267.5	271.6
102.5°	48.6	116.4	173.4	242.7	295.2	307.9
105°	78.6	152.6	206.4	280.4	322.2	337.2
107.5°	113.3	191.0	240.3	314.4	356.7	365.2
110°	150.2	231.1	274.2	347.5	393.7	403.7





TEST NUMBER: P392584

CATALOG NUMBER: MWL-3-30-33-UNV-L935-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	190.4	272.7	309.6	378.3	433.0	440.7
115°	235.7	311.2	342.7	413.7	464.5	469.2
117.5°	276.5	357.4	376.7	439.8	497.6	498.3
120°	319.6	401.2	410.5	476.1	530.0	536.1
122.5°	364.3	443.7	443.7	506.9	558.5	562.3
125°	405.2	488.3	476.1	530.0	584.6	586.2
127.5°	446.8	533.8	511.5	560.0	610.1	607.7
130°	492.3	576.9	543.8	588.5	633.9	626.3
132.5°	533.8	623.1	576.9	617.8	657.8	662.4
135°	575.4	666.2	605.4	643.1	682.4	680.9
137.5°	615.4	706.3	640.1	663.1	698.6	703.2
140°	654.7	749.4	670.9	689.4	718.6	719.4
142.5°	696.3	792.6	704.8	715.6	740.9	736.3
145°	742.5	833.4	747.1	741.7	757.9	747.9
147.5°	783.3	868.9	777.1	760.9	780.1	767.1
150°	828.7	904.9	818.7	787.9	799.5	793.4
152.5°	870.3	933.5	864.2	808.7	821.8	814.1
155°	911.1	963.4	908.1	829.6	838.7	835.6
157.5°	946.6	989.7	941.2	851.1	861.9	855.7
160°	977.4	1011.2	979.7	883.4	877.2	877.2
162.5°	1004.3	1032.0	1006.7	927.4	894.1	879.6
165°	1028.1	1048.2	1030.5	976.6	926.6	913.5
167.5°	1050.5	1063.6	1057.4	1016.7	976.6	948.8
170°	1068.2	1076.0	1067.4	1050.5	1030.5	1006.7
172.5°	1077.4	1080.5	1086.0	1075.2	1067.4	1051.3
175°	1082.9	1091.4	1086.7	1090.5	1083.6	1079.7
177.5°	1084.4	1086.0	1085.2	1092.1	1096.0	1089.7
180°	1090.5	1090.5	1090.5	1090.5	1090.5	1090.5

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