

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: P392530

Luminaire Tested: **MWL-2-28-38-UNV-L935-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392530
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-2-28-38-UNV-L935-EDD
Description: MWL 2FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

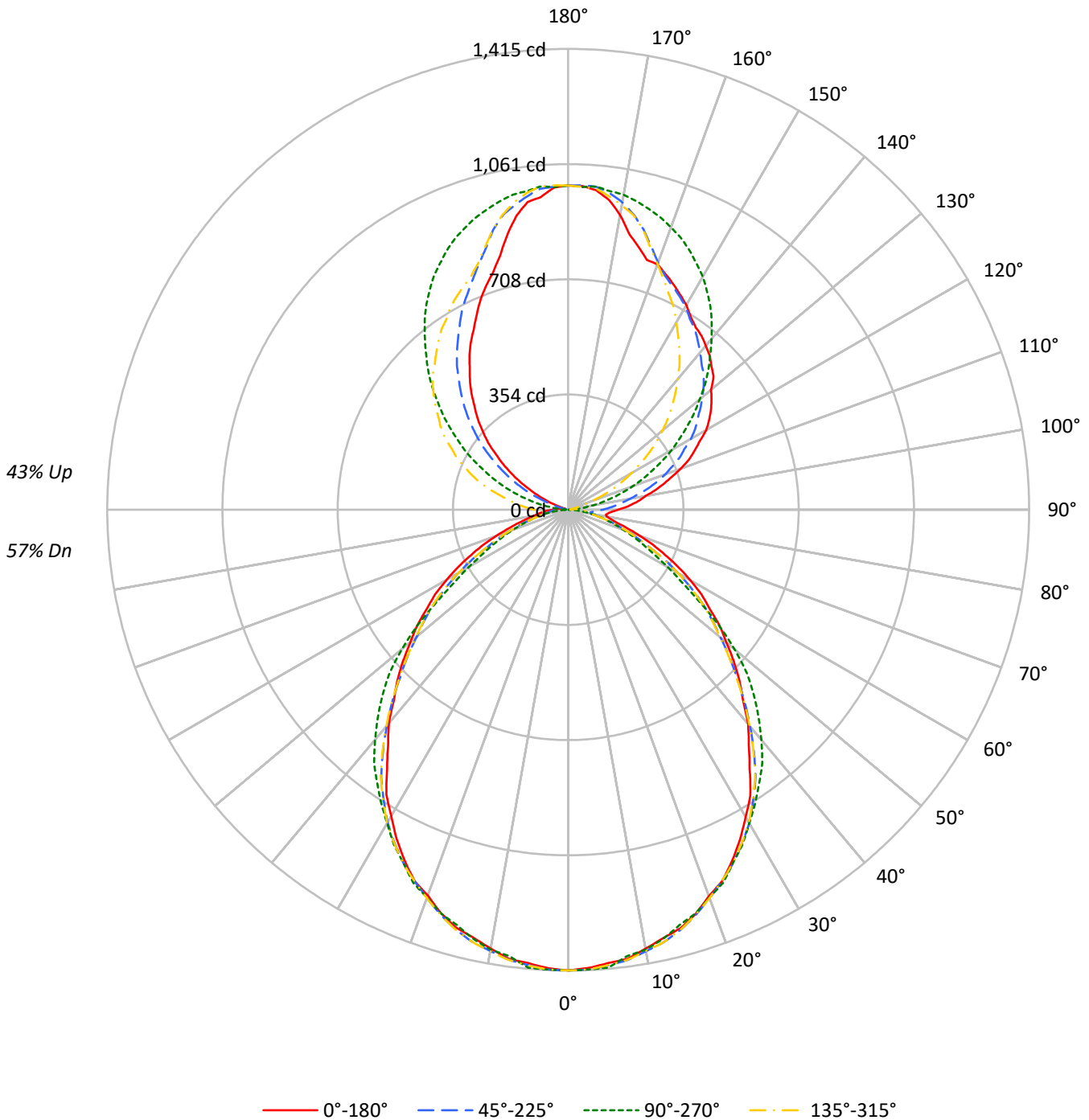
Lumens per Lamp: N/A
Luminaire Lumens: 5596.8 lumens
Efficiency: N/A
Efficacy: 73.8 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.18 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 2' x H: 0.42')
CIE Type: General Diffuse

Input Watts (W): 75.851
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			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	75	75	75	63	63	63	57
1	100	96	92	88	93	89	86	83	77	75	73	66	64	63	56	55	54	49
2	91	84	78	73	85	79	73	69	68	64	61	59	56	53	50	48	46	42
3	84	74	67	61	78	70	63	58	61	56	52	52	49	46	45	42	40	36
4	77	66	58	52	71	62	55	50	54	49	45	47	43	39	40	37	35	31
5	71	59	51	45	66	56	48	43	49	43	39	42	38	35	36	33	30	27
6	65	53	45	39	61	50	43	38	44	38	34	38	34	30	33	30	27	24
7	60	48	40	35	56	45	38	33	40	34	30	35	31	27	30	27	24	22
8	56	44	36	31	52	41	34	30	37	31	27	32	28	24	28	24	22	19
9	52	40	33	28	49	38	31	27	34	28	24	30	25	22	26	22	20	18
10	49	37	30	25	46	35	28	24	31	26	22	28	23	20	24	21	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	18276	18276	18276	18276
5°	17799	16828	17799	16828
10°	17311	15292	17311	15292
15°	16850	13922	16822	13922
20°	16135	12766	16106	12766
25°	15462	11632	15435	11632
30°	14502	10511	14466	10511
35°	13362	9482	13334	9482
40°	12333	8454	12292	8454
45°	11238	7362	11207	7362
50°	10208	6114	10174	6114
55°	9199	4539	9172	4539
60°	8195	3333	8180	3333
65°	6935	2479	6935	2479
70°	5603	1814	5620	1814
75°	4349	1274	4408	1274
80°	4088	807	3635	807
85°	5413	336	3410	336



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.0	2.4
10°-20°	374.2	6.7
20°-30°	549.0	9.8
30°-40°	622.6	11.1
40°-50°	581.1	10.4
50°-60°	456.5	8.2
60°-70°	284.3	5.1
70°-80°	137.8	2.5
80°-90°	73.5	1.3
90°-100°	86.1	1.5
100°-110°	153.8	2.7
110°-120°	264.8	4.7
120°-130°	359.8	6.4
130°-140°	410.5	7.3
140°-150°	409.3	7.3
150°-160°	356.4	6.4
160°-170°	250.5	4.5
170°-180°	93.3	1.7
0°-30°	1056.3	18.9
0°-40°	1678.9	30.0
0°-60°	2716.6	48.5
0°-90°	3212.2	57.4
90°-120°	504.8	9.0
90°-150°	1684.4	30.1
90°-180°	2385.0	42.6
0°-180°	5596.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1415	1415	1415	1415	1415	
5°	1398	1411	1398	1411	1398	133
15°	1330	1320	1328	1320	1330	374
25°	1190	1197	1188	1197	1190	546
35°	971	1022	969	1022	971	609
45°	743	806	741	806	743	573
55°	530	489	528	489	530	477
65°	328	255	328	255	328	327
75°	155	121	157	121	155	173
85°	124	28	78	28	124	100
90°	153	2	48	2	153	85
95°	198	29	31	29	198	171
105°	302	139	7	139	302	319
115°	428	284	99	284	428	424
125°	535	446	244	446	535	478
135°	622	609	392	609	622	480
145°	683	761	527	761	683	431
155°	764	880	663	880	764	352
165°	835	956	807	956	835	237
175°	985	996	964	996	985	92
180°	995	995	995	995	995	



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CATALOG NUMBER: MWL-2-28-38-UNV-L935-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1414.9	1414.9	1414.9	1414.9	1414.9	1414.9	1414.9	1414.9	1414.9	1414.9	1414.9
2.5°	1408.6	1405.8	1413.1	1408.8	1413.0	1408.1	1413.1	1405.8	1409.3	1405.8	1413.1
5°	1397.8	1401.6	1404.7	1402.2	1411.4	1402.2	1404.0	1401.6	1397.8	1401.6	1404.0
7.5°	1391.0	1394.0	1394.9	1391.3	1382.2	1390.7	1394.1	1393.3	1391.0	1393.3	1394.1
10°	1368.3	1379.0	1376.5	1373.2	1371.5	1372.4	1375.8	1377.6	1368.3	1377.6	1375.8
12.5°	1347.2	1349.8	1359.9	1352.4	1349.2	1352.4	1359.9	1348.4	1345.7	1348.4	1359.9
15°	1330.4	1327.3	1334.9	1326.5	1320.1	1325.8	1334.2	1325.8	1328.2	1325.8	1334.2
17.5°	1301.2	1296.4	1304.0	1303.3	1300.0	1303.3	1303.3	1295.6	1299.0	1295.6	1303.3
20°	1262.8	1270.4	1269.0	1270.8	1266.8	1270.2	1268.3	1269.0	1260.6	1269.0	1268.3
22.5°	1234.6	1232.8	1233.9	1236.6	1240.9	1235.9	1233.3	1231.4	1233.1	1231.4	1233.3
25°	1190.3	1187.8	1198.0	1195.7	1196.8	1195.0	1196.6	1185.7	1188.2	1185.7	1196.6
27.5°	1141.9	1140.2	1155.4	1158.0	1158.4	1157.3	1154.0	1138.2	1139.8	1138.2	1154.0
30°	1089.3	1093.6	1111.1	1112.9	1111.6	1111.5	1109.0	1091.4	1086.6	1091.4	1109.0
32.5°	1041.0	1037.6	1056.8	1070.3	1068.1	1068.9	1054.7	1034.9	1038.2	1034.9	1054.7
35°	971.0	975.2	1002.8	1019.4	1022.4	1017.4	1000.7	973.1	969.0	973.1	1000.7
37.5°	910.1	913.5	936.0	969.4	978.8	967.3	933.9	911.4	908.0	911.4	933.9
40°	859.3	849.3	868.4	907.7	922.1	906.4	865.6	846.4	856.4	846.4	865.6
42.5°	794.2	790.0	801.8	845.1	865.3	843.8	799.6	787.1	791.4	787.1	799.6
45°	743.4	731.7	733.4	777.6	806.1	776.3	730.6	729.6	741.3	729.6	730.6
47.5°	689.1	674.1	672.5	708.5	744.3	707.8	669.7	672.0	687.0	672.0	669.7
50°	634.1	626.6	609.9	635.9	666.9	634.5	607.1	623.8	632.0	623.8	607.1
52.5°	586.5	576.5	557.5	573.3	581.9	571.9	555.4	573.7	584.4	573.7	555.4
55°	530.0	525.8	504.1	505.1	489.4	503.7	502.0	523.7	528.5	523.7	502.0
57.5°	485.7	479.9	447.3	432.5	412.6	431.1	445.3	477.8	484.3	477.8	445.3
60°	431.7	425.0	389.1	362.5	352.5	361.8	387.7	423.6	430.9	423.6	387.7
62.5°	380.8	373.3	334.9	300.8	296.8	300.1	333.5	371.8	380.0	371.8	333.5
65°	328.3	315.8	277.4	249.0	255.1	248.3	276.7	315.1	328.3	315.1	276.7
67.5°	281.6	262.4	233.2	206.7	215.8	206.7	232.6	261.7	281.6	261.7	232.6
70°	233.3	212.5	191.7	169.9	180.0	169.9	191.7	213.1	234.0	213.1	191.7
72.5°	190.8	171.6	154.1	139.1	147.5	138.3	154.1	172.3	192.3	172.3	154.1
75°	154.9	134.1	119.2	109.9	120.8	109.9	119.9	134.7	157.0	134.7	119.9
77.5°	133.0	112.6	89.1	85.8	95.8	85.8	89.8	110.5	130.1	110.5	89.8
80°	119.9	104.2	71.3	64.1	72.4	64.1	69.8	92.9	106.6	92.9	69.8
82.5°	116.8	105.4	68.0	44.9	48.2	44.9	59.5	80.1	90.0	80.1	59.5
85°	123.5	114.7	74.3	36.2	28.2	34.8	53.9	72.0	77.8	72.0	53.9
87.5°	135.3	132.4	87.0	39.2	8.4	29.3	47.0	65.0	63.1	65.0	47.0
90°	152.6	150.7	105.6	45.6	1.5	18.9	36.2	51.7	47.5	51.7	36.2
92.5°	177.7	171.8	124.9	57.3	12.1	8.9	28.8	42.0	40.2	42.0	28.8
95°	197.6	194.2	145.9	73.9	28.9	3.7	19.6	31.5	31.3	31.5	19.6
97.5°	221.8	215.7	166.8	99.1	50.7	9.2	11.6	22.9	25.4	22.9	11.6
100°	240.0	235.1	192.5	129.3	77.3	24.0	6.6	14.8	18.9	14.8	6.6
102.5°	271.6	261.5	220.4	158.0	106.1	44.3	11.3	8.9	10.6	8.9	11.3
105°	301.9	292.1	255.6	188.1	139.1	71.7	29.0	10.1	6.6	10.1	29.0
107.5°	332.1	325.1	286.5	219.9	174.1	104.2	52.9	27.6	17.8	27.6	52.9
110°	367.2	358.8	316.7	250.7	211.4	137.7	80.2	50.0	38.9	50.0	80.2



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CATALOG NUMBER: MWL-2-28-38-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	400.9	394.5	344.7	283.0	249.3	174.3	113.9	78.2	67.6	78.2	113.9
115°	427.7	423.3	377.0	313.2	284.4	215.6	151.1	111.1	99.3	111.1	151.1
117.5°	455.0	454.4	401.7	344.0	326.4	252.8	186.3	144.9	131.6	144.9	186.3
120°	489.4	483.8	434.6	375.8	367.3	293.0	224.2	182.8	169.5	182.8	224.2
122.5°	513.3	509.8	462.7	405.2	405.2	333.0	260.7	219.3	205.2	219.3	260.7
125°	535.0	533.6	483.8	434.6	445.9	370.1	301.3	259.3	243.9	259.3	301.3
127.5°	554.7	556.7	511.2	467.0	487.3	408.1	341.4	295.1	278.9	295.1	341.4
130°	572.4	578.5	537.2	496.4	526.6	449.4	377.1	330.8	321.1	330.8	377.1
132.5°	605.3	601.1	563.7	527.4	569.5	488.1	415.1	367.4	355.5	367.4	415.1
135°	622.2	623.5	587.8	553.4	608.8	526.0	451.6	404.0	392.0	404.0	451.6
137.5°	642.5	638.2	605.9	585.0	645.3	562.5	486.8	442.5	423.6	442.5	486.8
140°	657.2	656.5	629.8	613.0	684.5	598.2	522.5	477.6	460.0	477.6	522.5
142.5°	672.6	676.9	653.6	643.9	723.8	636.1	561.1	512.0	495.1	512.0	561.1
145°	683.2	692.3	677.5	682.5	761.1	678.3	594.8	545.0	526.7	545.0	594.8
147.5°	700.8	712.7	695.1	709.8	793.4	715.4	628.5	579.4	563.2	579.4	628.5
150°	725.4	731.0	720.5	747.7	826.3	756.8	663.7	613.1	597.0	613.1	663.7
152.5°	744.3	751.4	739.4	789.1	852.2	794.7	701.5	645.4	626.5	645.4	701.5
155°	764.0	766.8	757.5	829.2	879.6	831.9	730.9	681.2	663.0	681.2	730.9
157.5°	782.2	787.8	777.1	859.3	903.5	864.2	765.2	717.0	700.8	717.0	765.2
160°	801.9	801.9	806.6	894.4	922.3	892.2	801.8	756.3	733.9	756.3	801.8
162.5°	804.0	816.5	846.7	918.9	941.2	916.8	841.1	783.5	764.7	783.5	841.1
165°	834.8	845.9	891.5	940.6	955.9	938.5	889.5	829.8	807.4	829.8	889.5
167.5°	866.3	891.5	928.0	964.4	970.0	958.0	926.6	885.2	864.2	885.2	926.6
170°	918.9	940.6	958.0	974.3	982.1	975.1	948.9	929.4	916.1	929.4	948.9
172.5°	959.5	974.3	980.5	991.1	986.2	983.4	970.0	961.0	953.1	961.0	970.0
175°	984.6	988.2	995.4	991.9	996.0	988.3	989.1	993.2	963.5	993.2	989.1
177.5°	994.6	999.4	996.7	991.3	992.0	990.6	992.6	994.6	990.4	994.6	992.6
180°	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4	995.4



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CATALOG NUMBER: MWL-2-28-38-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1414.9	1414.9	1414.9	1414.9	1414.9	1414.9
2.5°	1408.1	1413.0	1408.8	1413.1	1405.8	1408.6
5°	1402.2	1411.4	1402.2	1404.7	1401.6	1397.8
7.5°	1390.7	1382.2	1391.3	1394.9	1394.0	1391.0
10°	1372.4	1371.5	1373.2	1376.5	1379.0	1368.3
12.5°	1352.4	1349.2	1352.4	1359.9	1349.8	1347.2
15°	1325.8	1320.1	1326.5	1334.9	1327.3	1330.4
17.5°	1303.3	1300.0	1303.3	1304.0	1296.4	1301.2
20°	1270.2	1266.8	1270.8	1269.0	1270.4	1262.8
22.5°	1235.9	1240.9	1236.6	1233.9	1232.8	1234.6
25°	1195.0	1196.8	1195.7	1198.0	1187.8	1190.3
27.5°	1157.3	1158.4	1158.0	1155.4	1140.2	1141.9
30°	1111.5	1111.6	1112.9	1111.1	1093.6	1089.3
32.5°	1068.9	1068.1	1070.3	1056.8	1037.6	1041.0
35°	1017.4	1022.4	1019.4	1002.8	975.2	971.0
37.5°	967.3	978.8	969.4	936.0	913.5	910.1
40°	906.4	922.1	907.7	868.4	849.3	859.3
42.5°	843.8	865.3	845.1	801.8	790.0	794.2
45°	776.3	806.1	777.6	733.4	731.7	743.4
47.5°	707.8	744.3	708.5	672.5	674.1	689.1
50°	634.5	666.9	635.9	609.9	626.6	634.1
52.5°	571.9	581.9	573.3	557.5	576.5	586.5
55°	503.7	489.4	505.1	504.1	525.8	530.0
57.5°	431.1	412.6	432.5	447.3	479.9	485.7
60°	361.8	352.5	362.5	389.1	425.0	431.7
62.5°	300.1	296.8	300.8	334.9	373.3	380.8
65°	248.3	255.1	249.0	277.4	315.8	328.3
67.5°	206.7	215.8	206.7	233.2	262.4	281.6
70°	169.9	180.0	169.9	191.7	212.5	233.3
72.5°	138.3	147.5	139.1	154.1	171.6	190.8
75°	109.9	120.8	109.9	119.2	134.1	154.9
77.5°	85.8	95.8	85.8	89.1	112.6	133.0
80°	64.1	72.4	64.1	71.3	104.2	119.9
82.5°	44.9	48.2	44.9	68.0	105.4	116.8
85°	34.8	28.2	36.2	74.3	114.7	123.5
87.5°	29.3	8.4	39.2	87.0	132.4	135.3
90°	18.9	1.5	45.6	105.6	150.7	152.6
92.5°	8.9	12.1	57.3	124.9	171.8	177.7
95°	3.7	28.9	73.9	145.9	194.2	197.6
97.5°	9.2	50.7	99.1	166.8	215.7	221.8
100°	24.0	77.3	129.3	192.5	235.1	240.0
102.5°	44.3	106.1	158.0	220.4	261.5	271.6
105°	71.7	139.1	188.1	255.6	292.1	301.9
107.5°	104.2	174.1	219.9	286.5	325.1	332.1
110°	137.7	211.4	250.7	316.7	358.8	367.2



TEST NUMBER: P392530

CATALOG NUMBER: MWL-2-28-38-UNV-L935-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	174.3	249.3	283.0	344.7	394.5	400.9
115°	215.6	284.4	313.2	377.0	423.3	427.7
117.5°	252.8	326.4	344.0	401.7	454.4	455.0
120°	293.0	367.3	375.8	434.6	483.8	489.4
122.5°	333.0	405.2	405.2	462.7	509.8	513.3
125°	370.1	445.9	434.6	483.8	533.6	535.0
127.5°	408.1	487.3	467.0	511.2	556.7	554.7
130°	449.4	526.6	496.4	537.2	578.5	572.4
132.5°	488.1	569.5	527.4	563.7	601.1	605.3
135°	526.0	608.8	553.4	587.8	623.5	622.2
137.5°	562.5	645.3	585.0	605.9	638.2	642.5
140°	598.2	684.5	613.0	629.8	656.5	657.2
142.5°	636.1	723.8	643.9	653.6	676.9	672.6
145°	678.3	761.1	682.5	677.5	692.3	683.2
147.5°	715.4	793.4	709.8	695.1	712.7	700.8
150°	756.8	826.3	747.7	720.5	731.0	725.4
152.5°	794.7	852.2	789.1	739.4	751.4	744.3
155°	831.9	879.6	829.2	757.5	766.8	764.0
157.5°	864.2	903.5	859.3	777.1	787.8	782.2
160°	892.2	922.3	894.4	806.6	801.9	801.9
162.5°	916.8	941.2	918.9	846.7	816.5	804.0
165°	938.5	955.9	940.6	891.5	845.9	834.8
167.5°	958.0	970.0	964.4	928.0	891.5	866.3
170°	975.1	982.1	974.3	958.0	940.6	918.9
172.5°	983.4	986.2	991.1	980.5	974.3	959.5
175°	988.3	996.0	991.9	995.4	988.2	984.6
177.5°	990.6	992.0	991.3	996.7	999.4	994.6
180°	995.4	995.4	995.4	995.4	995.4	995.4

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