

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: P392646

Luminaire Tested: **MWL-4-26-45-UNV-L830-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392646
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-4-26-45-UNV-L830-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

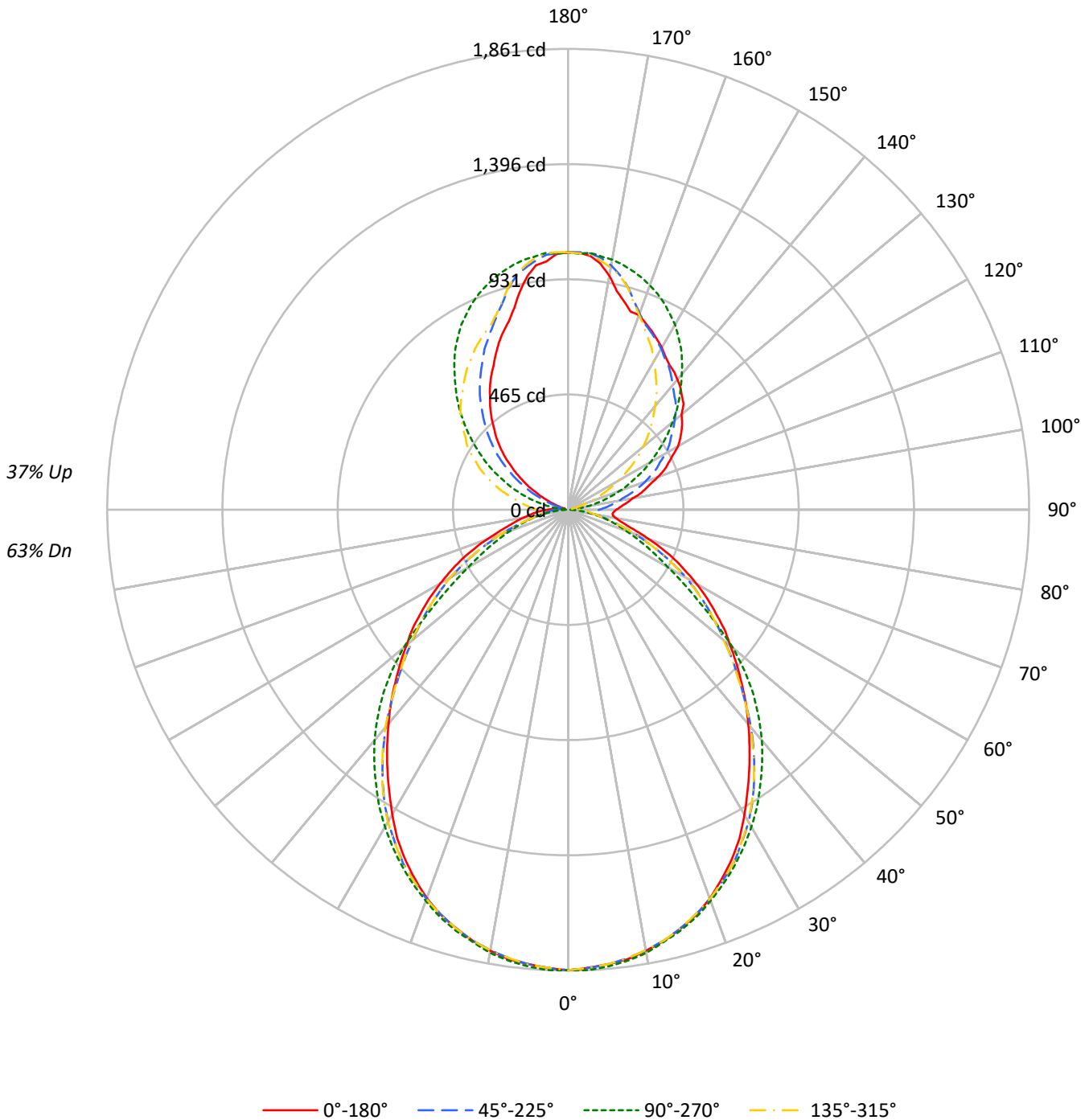
Lumens per Lamp: N/A
Luminaire Lumens: 6825.0 lumens
Efficiency: N/A
Efficacy: 99.2 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 68.8
Input Voltage (V): NR
Input Current (A_{in}): 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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68	63
1	101	97	93	89	95	91	87	84	80	77	75	70	68	66	61	59	58	54
2	92	85	79	74	86	80	75	70	71	66	63	62	59	56	54	52	50	46
3	85	75	68	62	79	71	64	59	63	58	53	55	51	48	48	45	43	39
4	78	67	59	53	73	63	56	50	56	50	46	49	45	41	43	40	37	34
5	71	60	52	46	67	57	49	44	50	44	40	45	40	36	39	36	33	30
6	66	54	46	40	62	51	44	38	46	40	35	41	36	32	36	32	29	26
7	61	49	41	35	57	46	39	34	41	36	31	37	32	29	33	29	26	23
8	57	44	37	31	53	42	35	30	38	32	28	34	29	26	30	26	23	21
9	53	41	33	28	50	39	32	27	35	29	25	31	27	23	28	24	21	19
10	50	38	30	25	47	36	29	24	32	27	23	29	24	21	26	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	12011	12011	12011	12011
5°	11835	11039	11835	11039
10°	11644	10132	11644	10132
15°	11395	9272	11380	9272
20°	11066	8470	11051	8470
25°	10602	7716	10587	7716
30°	10008	6994	9987	6994
35°	9370	6272	9354	6272
40°	8770	5579	8747	5579
45°	8183	4834	8165	4834
50°	7633	3974	7612	3974
55°	7121	2971	7106	2971
60°	6535	2198	6526	2198
65°	5915	1672	5915	1672
70°	5081	1250	5091	1250
75°	4390	905	4429	905
80°	4547	577	4222	577
85°	6092	268	4482	268



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	175.2	2.6
10°-20°	494.1	7.2
20°-30°	724.3	10.6
30°-40°	819.8	12.0
40°-50°	772.2	11.3
50°-60°	616.6	9.0
60°-70°	405.2	5.9
70°-80°	207.2	3.0
80°-90°	105.5	1.5
90°-100°	101.7	1.5
100°-110°	164.0	2.4
110°-120°	277.0	4.1
120°-130°	375.9	5.5
130°-140°	428.4	6.3
140°-150°	427.2	6.3
150°-160°	371.9	5.4
160°-170°	261.5	3.8
170°-180°	97.4	1.4
0°-30°	1393.6	20.4
0°-40°	2213.3	32.4
0°-60°	3602.1	52.8
0°-90°	4320.1	63.3
90°-120°	542.6	8.0
90°-150°	1774.1	26.0
90°-180°	2505.0	36.7
0°-180°	6825.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1860	1860	1860	1860	1860	
5°	1842	1852	1842	1852	1842	175
15°	1752	1758	1750	1758	1752	493
25°	1560	1588	1558	1588	1560	717
35°	1275	1353	1273	1353	1275	798
45°	989	1059	987	1059	989	765
55°	726	641	725	641	726	651
65°	474	344	474	344	474	467
75°	244	172	246	172	244	269
85°	180	45	132	45	180	150
90°	194	2	84	2	194	107
95°	224	30	50	30	224	192
105°	323	145	15	145	323	342
115°	447	297	104	297	447	444
125°	559	465	255	465	559	499
135°	649	634	409	634	649	501
145°	713	794	550	794	713	450
155°	797	918	691	918	797	367
165°	871	999	842	999	871	247
175°	1029	1041	1007	1041	1029	96
180°	1039	1039	1039	1039	1039	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1859.7	1859.7	1859.7	1859.7	1859.7	1859.7	1859.7	1859.7	1859.7	1859.7	1859.7
2.5°	1851.8	1857.1	1851.8	1862.2	1861.2	1861.4	1851.8	1857.1	1852.5	1857.1	1851.8
5°	1842.2	1847.5	1843.2	1850.8	1851.8	1850.8	1842.4	1847.5	1842.2	1847.5	1842.4
7.5°	1831.4	1831.8	1827.0	1837.4	1837.4	1836.6	1826.4	1831.2	1831.4	1831.2	1826.4
10°	1808.1	1811.7	1806.9	1817.4	1817.4	1816.8	1806.2	1810.2	1808.1	1810.2	1806.2
12.5°	1783.6	1784.8	1782.2	1790.8	1787.2	1790.8	1782.2	1783.4	1782.2	1783.4	1782.2
15°	1751.8	1751.2	1750.5	1760.1	1758.4	1759.4	1749.8	1749.8	1749.6	1749.8	1749.8
17.5°	1716.3	1715.7	1713.1	1722.9	1723.8	1722.9	1712.3	1715.0	1714.1	1715.0	1712.3
20°	1671.1	1670.4	1672.8	1680.6	1680.9	1680.0	1672.0	1668.9	1668.9	1668.9	1672.0
22.5°	1616.6	1622.4	1624.8	1636.5	1635.8	1635.8	1624.0	1620.9	1615.2	1620.9	1624.0
25°	1560.0	1566.7	1577.5	1587.5	1587.8	1586.9	1576.0	1564.5	1557.8	1564.5	1576.0
27.5°	1497.6	1505.3	1516.0	1536.5	1535.0	1535.7	1514.6	1503.1	1495.4	1503.1	1514.6
30°	1422.7	1434.2	1456.3	1477.6	1479.4	1476.2	1454.1	1432.0	1419.8	1432.0	1454.1
32.5°	1347.8	1359.4	1386.2	1414.3	1419.5	1412.8	1384.0	1356.5	1345.0	1356.5	1384.0
35°	1275.1	1282.8	1309.6	1349.0	1352.6	1346.9	1307.5	1280.6	1273.0	1280.6	1307.5
37.5°	1202.1	1204.0	1230.0	1277.0	1286.1	1274.9	1227.8	1201.9	1200.0	1201.9	1227.8
40°	1131.1	1126.3	1148.4	1196.7	1217.0	1195.2	1145.5	1123.4	1128.2	1123.4	1145.5
42.5°	1062.0	1051.4	1059.4	1117.0	1138.3	1115.5	1057.2	1048.5	1059.1	1048.5	1057.2
45°	989.3	976.8	976.8	1028.7	1058.6	1027.2	973.9	974.6	987.1	974.6	973.9
47.5°	922.1	906.8	900.0	943.4	967.4	942.7	897.1	904.5	919.9	904.5	897.1
50°	854.0	841.5	822.3	848.4	866.9	846.9	819.3	838.5	851.7	838.5	819.3
52.5°	795.4	778.1	752.4	761.0	749.8	759.6	750.2	775.1	793.2	775.1	750.2
55°	726.5	716.9	684.2	674.9	640.6	673.4	682.0	714.7	725.0	714.7	682.0
57.5°	663.1	657.4	616.1	580.9	548.4	579.3	613.9	655.2	661.7	655.2	613.9
60°	597.2	594.3	550.1	496.6	464.9	495.8	548.6	592.8	596.4	592.8	548.6
62.5°	532.9	529.0	480.1	415.9	402.7	415.2	478.5	527.5	532.1	527.5	478.5
65°	473.5	463.0	412.1	346.8	344.1	346.1	411.3	462.2	473.5	462.2	411.3
67.5°	409.2	392.9	344.9	289.4	294.2	289.4	344.1	392.1	409.2	392.1	344.1
70°	346.1	324.9	286.5	240.5	248.1	240.5	286.5	325.7	346.8	325.7	286.5
72.5°	289.4	265.4	230.9	196.3	208.1	195.6	230.9	266.2	291.0	266.2	230.9
75°	244.3	216.5	181.2	156.3	171.6	156.3	181.9	217.2	246.5	217.2	181.9
77.5°	215.6	178.2	139.0	120.8	138.0	120.8	139.7	176.0	212.7	176.0	139.7
80°	194.5	158.7	112.4	90.0	103.5	90.0	110.9	147.0	180.6	147.0	110.9
82.5°	182.3	147.9	101.0	64.1	72.8	64.1	92.2	121.5	154.5	121.5	92.2
85°	180.1	152.6	102.7	51.9	44.9	50.4	81.5	107.9	132.5	107.9	81.5
87.5°	184.4	162.4	109.6	52.3	15.4	42.0	67.8	92.1	109.0	92.1	67.8
90°	193.8	177.8	125.4	56.2	1.7	28.3	52.9	74.5	83.8	74.5	52.9
92.5°	208.8	197.1	142.9	68.3	12.7	17.8	42.5	61.5	65.1	61.5	42.5
95°	224.0	220.5	163.9	82.0	30.2	8.7	32.0	50.4	50.2	50.4	32.0
97.5°	244.7	241.9	184.6	103.6	53.0	9.8	22.7	40.4	39.5	40.4	22.7
100°	263.6	262.0	208.0	135.1	80.8	25.2	13.7	31.8	32.7	31.8	13.7
102.5°	296.8	285.1	232.3	165.1	110.9	46.4	13.9	21.2	24.1	21.2	13.9
105°	323.3	310.2	267.2	196.7	145.3	75.0	30.5	15.6	14.7	15.6	30.5
107.5°	349.0	340.8	299.5	229.9	182.0	109.0	55.4	30.0	20.7	30.0	55.4
110°	384.7	376.0	331.1	262.2	221.1	144.1	84.0	53.5	41.8	53.5	84.0



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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°	420.0	413.3	360.4	295.9	260.6	182.2	119.2	82.7	71.8	82.7	119.2
115°	447.0	443.4	394.1	327.3	297.3	225.5	158.0	117.2	104.1	117.2	158.0
117.5°	475.6	475.0	419.0	359.6	341.3	264.4	194.0	151.7	137.8	151.7	194.0
120°	511.5	505.7	454.4	391.8	383.1	305.4	234.5	191.2	177.3	191.2	234.5
122.5°	536.5	532.9	483.7	422.7	422.7	347.1	272.6	229.3	214.7	229.3	272.6
125°	559.3	557.7	505.7	453.5	465.2	386.0	315.1	271.2	255.1	271.2	315.1
127.5°	579.7	581.9	534.3	488.1	508.4	426.6	356.9	308.5	291.7	308.5	356.9
130°	597.4	604.7	561.5	518.9	549.5	469.8	394.3	346.0	334.9	346.0	394.3
132.5°	631.8	627.4	589.3	550.4	593.4	509.3	433.9	383.3	370.8	383.3	433.9
135°	649.4	650.8	613.5	577.6	634.5	549.0	471.2	421.4	408.9	421.4	471.2
137.5°	670.6	666.2	632.5	610.5	672.6	587.1	507.9	461.7	442.0	461.7	507.9
140°	686.1	685.3	657.5	639.9	713.6	624.4	545.3	498.4	480.1	498.4	545.3
142.5°	702.2	706.5	682.3	672.1	754.7	664.1	585.7	534.3	516.7	534.3	585.7
145°	713.1	722.6	707.3	712.5	794.5	708.0	620.8	568.8	549.7	568.8	620.8
147.5°	731.5	743.9	725.6	741.0	827.3	746.8	656.0	604.7	587.8	604.7	656.0
150°	756.4	762.3	751.2	780.6	862.7	790.1	691.9	639.1	622.2	639.1	691.9
152.5°	776.2	783.5	771.0	823.8	889.8	829.7	731.5	672.8	653.0	672.8	731.5
155°	796.7	799.6	790.9	865.6	918.4	868.5	763.0	710.3	691.2	710.3	763.0
157.5°	815.7	821.6	811.3	897.2	943.3	902.2	799.0	747.6	730.7	747.6	799.0
160°	836.3	836.3	842.1	933.8	963.9	931.6	837.1	788.7	765.2	788.7	837.1
162.5°	838.5	852.4	883.9	959.5	983.6	957.2	878.0	818.0	797.4	818.0	878.0
165°	870.8	883.2	930.8	982.2	999.0	980.0	928.6	866.3	842.1	866.3	928.6
167.5°	904.4	930.8	969.0	1007.8	1013.7	1001.2	967.5	924.2	902.2	924.2	967.5
170°	958.5	982.2	1001.2	1017.3	1025.4	1018.1	991.7	970.4	955.5	970.4	991.7
172.5°	1001.7	1017.3	1024.6	1034.9	1030.8	1026.8	1013.7	1003.4	995.2	1003.4	1013.7
175°	1028.9	1032.7	1039.3	1035.7	1041.0	1032.0	1032.7	1037.9	1006.9	1037.9	1032.7
177.5°	1038.4	1044.5	1040.8	1034.2	1034.9	1033.5	1036.4	1039.3	1033.9	1039.3	1036.4
180°	1039.3	1039.3	1039.3	1039.3	1039.3	1039.3	1039.3	1039.3	1039.3	1039.3	1039.3



TEST NUMBER: P392646

CATALOG NUMBER: MWL-4-26-45-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1859.7	1859.7	1859.7	1859.7	1859.7	1859.7
2.5°	1861.4	1861.2	1862.2	1851.8	1857.1	1851.8
5°	1850.8	1851.8	1850.8	1843.2	1847.5	1842.2
7.5°	1836.6	1837.4	1837.4	1827.0	1831.8	1831.4
10°	1816.8	1817.4	1817.4	1806.9	1811.7	1808.1
12.5°	1790.8	1787.2	1790.8	1782.2	1784.8	1783.6
15°	1759.4	1758.4	1760.1	1750.5	1751.2	1751.8
17.5°	1722.9	1723.8	1722.9	1713.1	1715.7	1716.3
20°	1680.0	1680.9	1680.6	1672.8	1670.4	1671.1
22.5°	1635.8	1635.8	1636.5	1624.8	1622.4	1616.6
25°	1586.9	1587.8	1587.5	1577.5	1566.7	1560.0
27.5°	1535.7	1535.0	1536.5	1516.0	1505.3	1497.6
30°	1476.2	1479.4	1477.6	1456.3	1434.2	1422.7
32.5°	1412.8	1419.5	1414.3	1386.2	1359.4	1347.8
35°	1346.9	1352.6	1349.0	1309.6	1282.8	1275.1
37.5°	1274.9	1286.1	1277.0	1230.0	1204.0	1202.1
40°	1195.2	1217.0	1196.7	1148.4	1126.3	1131.1
42.5°	1115.5	1138.3	1117.0	1059.4	1051.4	1062.0
45°	1027.2	1058.6	1028.7	976.8	976.8	989.3
47.5°	942.7	967.4	943.4	900.0	906.8	922.1
50°	846.9	866.9	848.4	822.3	841.5	854.0
52.5°	759.6	749.8	761.0	752.4	778.1	795.4
55°	673.4	640.6	674.9	684.2	716.9	726.5
57.5°	579.3	548.4	580.9	616.1	657.4	663.1
60°	495.8	464.9	496.6	550.1	594.3	597.2
62.5°	415.2	402.7	415.9	480.1	529.0	532.9
65°	346.1	344.1	346.8	412.1	463.0	473.5
67.5°	289.4	294.2	289.4	344.9	392.9	409.2
70°	240.5	248.1	240.5	286.5	324.9	346.1
72.5°	195.6	208.1	196.3	230.9	265.4	289.4
75°	156.3	171.6	156.3	181.2	216.5	244.3
77.5°	120.8	138.0	120.8	139.0	178.2	215.6
80°	90.0	103.5	90.0	112.4	158.7	194.5
82.5°	64.1	72.8	64.1	101.0	147.9	182.3
85°	50.4	44.9	51.9	102.7	152.6	180.1
87.5°	42.0	15.4	52.3	109.6	162.4	184.4
90°	28.3	1.7	56.2	125.4	177.8	193.8
92.5°	17.8	12.7	68.3	142.9	197.1	208.8
95°	8.7	30.2	82.0	163.9	220.5	224.0
97.5°	9.8	53.0	103.6	184.6	241.9	244.7
100°	25.2	80.8	135.1	208.0	262.0	263.6
102.5°	46.4	110.9	165.1	232.3	285.1	296.8
105°	75.0	145.3	196.7	267.2	310.2	323.3
107.5°	109.0	182.0	229.9	299.5	340.8	349.0
110°	144.1	221.1	262.2	331.1	376.0	384.7



TEST NUMBER: P392646

CATALOG NUMBER: MWL-4-26-45-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	182.2	260.6	295.9	360.4	413.3	420.0
115°	225.5	297.3	327.3	394.1	443.4	447.0
117.5°	264.4	341.3	359.6	419.0	475.0	475.6
120°	305.4	383.1	391.8	454.4	505.7	511.5
122.5°	347.1	422.7	422.7	483.7	532.9	536.5
125°	386.0	465.2	453.5	505.7	557.7	559.3
127.5°	426.6	508.4	488.1	534.3	581.9	579.7
130°	469.8	549.5	518.9	561.5	604.7	597.4
132.5°	509.3	593.4	550.4	589.3	627.4	631.8
135°	549.0	634.5	577.6	613.5	650.8	649.4
137.5°	587.1	672.6	610.5	632.5	666.2	670.6
140°	624.4	713.6	639.9	657.5	685.3	686.1
142.5°	664.1	754.7	672.1	682.3	706.5	702.2
145°	708.0	794.5	712.5	707.3	722.6	713.1
147.5°	746.8	827.3	741.0	725.6	743.9	731.5
150°	790.1	862.7	780.6	751.2	762.3	756.4
152.5°	829.7	889.8	823.8	771.0	783.5	776.2
155°	868.5	918.4	865.6	790.9	799.6	796.7
157.5°	902.2	943.3	897.2	811.3	821.6	815.7
160°	931.6	963.9	933.8	842.1	836.3	836.3
162.5°	957.2	983.6	959.5	883.9	852.4	838.5
165°	980.0	999.0	982.2	930.8	883.2	870.8
167.5°	1001.2	1013.7	1007.8	969.0	930.8	904.4
170°	1018.1	1025.4	1017.3	1001.2	982.2	958.5
172.5°	1026.8	1030.8	1034.9	1024.6	1017.3	1001.7
175°	1032.0	1041.0	1035.7	1039.3	1032.7	1028.9
177.5°	1033.5	1034.9	1034.2	1040.8	1044.5	1038.4
180°	1039.3	1039.3	1039.3	1039.3	1039.3	1039.3

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