

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: P392648

Luminaire Tested: **MWL-4-26-45-UNV-L940-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392648  
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-L940-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

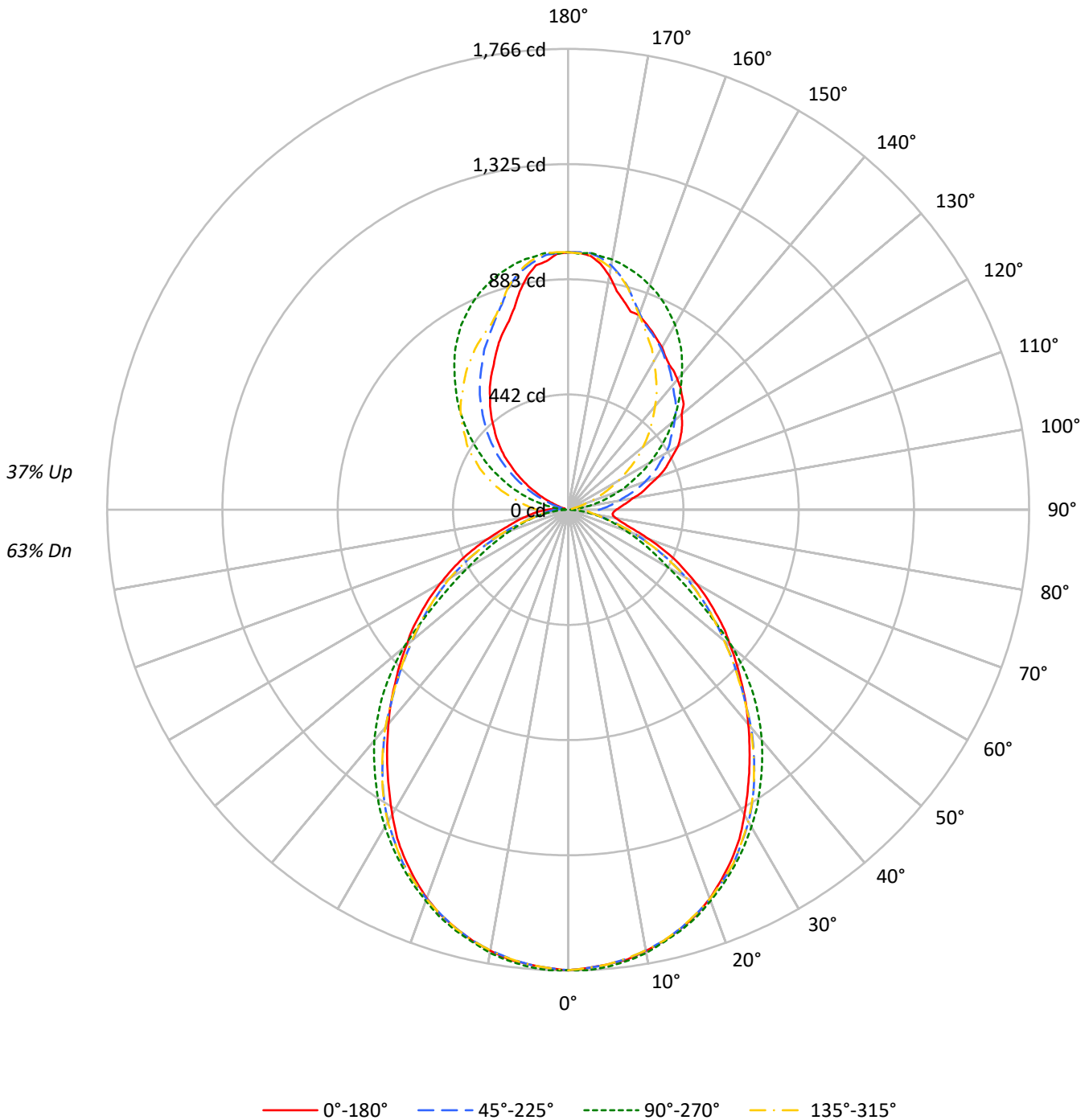
Lumens per Lamp: N/A  
Luminaire Lumens: 6477.8 lumens  
Efficiency: N/A  
Efficacy: 93.2 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: Semi-Direct

Input Watts (W): 69.488  
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



TEST NUMBER: P392648  
CATALOG NUMBER: MWL-4-26-45-UNV-L940-EDD

### 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	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°	11400	11400	11400	11400
5°	11233	10478	11233	10478
10°	11051	9617	11051	9617
15°	10815	8801	10802	8801
20°	10503	8039	10489	8039
25°	10062	7324	10048	7324
30°	9499	6638	9480	6638
35°	8893	5953	8878	5953
40°	8323	5295	8302	5295
45°	7767	4589	7750	4589
50°	7244	3772	7225	3772
55°	6758	2819	6745	2819
60°	6202	2086	6195	2086
65°	5614	1587	5614	1587
70°	4823	1187	4833	1187
75°	4167	859	4205	859
80°	4316	547	4007	547
85°	5781	254	4252	254



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	166.3	2.6
10°-20°	469.0	7.2
20°-30°	687.4	10.6
30°-40°	778.1	12.0
40°-50°	732.9	11.3
50°-60°	585.2	9.0
60°-70°	384.6	5.9
70°-80°	196.6	3.0
80°-90°	100.2	1.5
90°-100°	96.5	1.5
100°-110°	155.6	2.4
110°-120°	262.9	4.1
120°-130°	356.8	5.5
130°-140°	406.7	6.3
140°-150°	405.4	6.3
150°-160°	353.0	5.4
160°-170°	248.2	3.8
170°-180°	92.4	1.4
0°-30°	1322.7	20.4
0°-40°	2100.8	32.4
0°-60°	3418.9	52.8
0°-90°	4100.3	63.3
90°-120°	515.0	8.0
90°-150°	1683.8	26.0
90°-180°	2377.0	36.7
0°-180°	6477.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1765	1765	1765	1765	1765	
5°	1748	1758	1748	1758	1748	166
15°	1663	1669	1661	1669	1663	468
25°	1481	1507	1478	1507	1481	680
35°	1210	1284	1208	1284	1210	757
45°	939	1005	937	1005	939	726
55°	690	608	688	608	690	617
65°	449	327	449	327	449	443
75°	232	163	234	163	232	255
85°	171	43	126	43	171	143
90°	184	2	80	2	184	102
95°	213	29	48	29	213	182
105°	307	138	14	138	307	324
115°	424	282	99	282	424	421
125°	531	442	242	442	531	474
135°	616	602	388	602	616	476
145°	677	754	522	754	677	427
155°	756	872	656	872	756	349
165°	826	948	799	948	826	234
175°	976	988	956	988	976	91
180°	986	986	986	986	986	



TEST NUMBER: P392648

CATALOG NUMBER: MWL-4-26-45-UNV-L940-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1765.1	1765.1	1765.1	1765.1	1765.1	1765.1	1765.1	1765.1	1765.1	1765.1	1765.1
2.5°	1757.6	1762.6	1757.6	1767.4	1766.5	1766.7	1757.6	1762.6	1758.2	1762.6	1757.6
5°	1748.5	1753.5	1749.4	1756.7	1757.6	1756.7	1748.7	1753.5	1748.5	1753.5	1748.7
7.5°	1738.2	1738.7	1734.1	1743.9	1743.9	1743.2	1733.5	1738.0	1738.2	1738.0	1733.5
10°	1716.1	1719.5	1715.0	1725.0	1725.0	1724.3	1714.3	1718.2	1716.1	1718.2	1714.3
12.5°	1692.9	1694.0	1691.5	1699.7	1696.3	1699.7	1691.5	1692.6	1691.5	1692.6	1691.5
15°	1662.7	1662.1	1661.5	1670.6	1669.0	1669.9	1660.8	1660.8	1660.6	1660.8	1660.8
17.5°	1629.0	1628.4	1625.9	1635.2	1636.2	1635.2	1625.2	1627.8	1626.9	1627.8	1625.2
20°	1586.1	1585.4	1587.7	1595.2	1595.4	1594.5	1587.0	1584.0	1584.0	1584.0	1587.0
22.5°	1534.4	1539.9	1542.1	1553.2	1552.6	1552.6	1541.4	1538.5	1533.0	1538.5	1541.4
25°	1480.6	1487.0	1497.2	1506.8	1507.1	1506.1	1495.8	1484.9	1478.5	1484.9	1495.8
27.5°	1421.4	1428.7	1438.9	1458.3	1456.9	1457.6	1437.5	1426.6	1419.3	1426.6	1437.5
30°	1350.3	1361.3	1382.2	1402.5	1404.1	1401.1	1380.1	1359.2	1347.6	1359.2	1380.1
32.5°	1279.3	1290.2	1315.7	1342.3	1347.3	1341.0	1313.6	1287.5	1276.5	1287.5	1313.6
35°	1210.2	1217.5	1243.0	1280.4	1283.8	1278.4	1241.0	1215.5	1208.2	1215.5	1241.0
37.5°	1141.0	1142.8	1167.4	1212.0	1220.7	1210.0	1165.4	1140.8	1139.0	1140.8	1165.4
40°	1073.5	1069.0	1089.9	1135.8	1155.1	1134.4	1087.2	1066.3	1070.8	1066.3	1087.2
42.5°	1007.9	997.9	1005.5	1060.2	1080.4	1058.8	1003.4	995.2	1005.2	995.2	1003.4
45°	939.0	927.1	927.1	976.3	1004.8	975.0	924.3	925.0	936.9	925.0	924.3
47.5°	875.2	860.6	854.2	895.4	918.2	894.8	851.4	858.5	873.1	858.5	851.4
50°	810.5	798.7	780.4	805.2	822.8	803.9	777.6	795.8	808.4	795.8	777.6
52.5°	754.9	738.5	714.1	722.3	711.7	721.0	712.0	735.7	752.8	735.7	712.0
55°	689.5	680.4	649.4	640.6	608.0	639.1	647.3	678.3	688.2	678.3	647.3
57.5°	629.4	623.9	584.7	551.3	520.5	549.8	582.6	621.8	628.0	621.8	582.6
60°	566.8	564.1	522.2	471.3	441.2	470.6	520.7	562.6	566.1	562.6	520.7
62.5°	505.8	502.1	455.6	394.8	382.2	394.1	454.2	500.6	505.0	500.6	454.2
65°	449.4	439.4	391.1	329.2	326.6	328.5	390.4	438.7	449.4	438.7	390.4
67.5°	388.4	372.9	327.4	274.7	279.3	274.7	326.6	372.2	388.4	372.2	326.6
70°	328.5	308.4	272.0	228.2	235.5	228.2	272.0	309.1	329.2	309.1	272.0
72.5°	274.7	251.9	219.1	186.3	197.5	185.7	219.1	252.6	276.2	252.6	219.1
75°	231.9	205.5	172.0	148.3	162.9	148.3	172.7	206.2	234.0	206.2	172.7
77.5°	204.6	169.1	131.9	114.6	131.0	114.6	132.6	167.0	201.9	167.0	132.6
80°	184.6	150.6	106.7	85.5	98.2	85.5	105.2	139.5	171.4	139.5	105.2
82.5°	173.0	140.4	95.8	60.9	69.1	60.9	87.6	115.3	146.6	115.3	87.6
85°	170.9	144.9	97.5	49.3	42.6	47.8	77.4	102.4	125.7	102.4	77.4
87.5°	175.0	154.2	104.0	49.7	14.6	39.9	64.3	87.4	103.4	87.4	64.3
90°	184.0	168.7	119.0	53.3	1.6	26.9	50.2	70.7	79.5	70.7	50.2
92.5°	198.2	187.0	135.7	64.9	12.0	16.9	40.4	58.4	61.8	58.4	40.4
95°	212.6	209.3	155.5	77.8	28.7	8.3	30.3	47.8	47.7	47.8	30.3
97.5°	232.2	229.6	175.2	98.3	50.3	9.3	21.5	38.4	37.4	38.4	21.5
100°	250.2	248.6	197.4	128.2	76.7	23.9	13.0	30.2	31.1	30.2	13.0
102.5°	281.7	270.6	220.5	156.7	105.2	44.0	13.2	20.1	22.9	20.1	13.2
105°	306.9	294.4	253.7	186.7	137.9	71.2	29.0	14.8	13.9	14.8	29.0
107.5°	331.3	323.4	284.3	218.2	172.7	103.4	52.6	28.5	19.7	28.5	52.6
110°	365.2	356.9	314.2	248.8	209.8	136.8	79.7	50.7	39.6	50.7	79.7



TEST NUMBER: P392648

CATALOG NUMBER: MWL-4-26-45-UNV-L940-EDD

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	398.6	392.3	342.0	280.8	247.4	172.9	113.2	78.5	68.2	78.5	113.2
115°	424.3	420.8	374.0	310.7	282.2	214.0	150.0	111.2	98.8	111.2	150.0
117.5°	451.5	450.8	397.7	341.3	323.9	250.9	184.1	144.0	130.7	144.0	184.1
120°	485.5	480.0	431.3	371.9	363.6	289.8	222.6	181.5	168.3	181.5	222.6
122.5°	509.2	505.8	459.1	401.2	401.2	329.5	258.8	217.7	203.8	217.7	258.8
125°	530.8	529.3	480.0	430.4	441.5	366.4	299.1	257.4	242.1	257.4	299.1
127.5°	550.2	552.3	507.1	463.3	482.5	404.9	338.7	292.8	276.9	292.8	338.7
130°	567.0	573.9	532.9	492.5	521.5	445.9	374.3	328.4	317.9	328.4	374.3
132.5°	599.7	595.5	559.3	522.4	563.2	483.4	411.8	363.8	352.0	363.8	411.8
135°	616.4	617.7	582.3	548.2	602.2	521.1	447.3	400.0	388.1	400.0	447.3
137.5°	636.5	632.3	600.3	579.5	638.4	557.2	482.1	438.2	419.5	438.2	482.1
140°	651.2	650.4	624.0	607.3	677.3	592.7	517.6	473.0	455.6	473.0	517.6
142.5°	666.5	670.6	647.6	638.0	716.3	630.3	555.9	507.1	490.4	507.1	555.9
145°	676.9	685.9	671.3	676.2	754.1	672.0	589.2	539.8	521.7	539.8	589.2
147.5°	694.3	706.1	688.7	703.3	785.2	708.8	622.6	573.9	557.9	573.9	622.6
150°	717.9	723.5	713.0	740.9	818.8	749.9	656.7	606.6	590.6	606.6	656.7
152.5°	736.7	743.6	731.8	781.9	844.5	787.5	694.3	638.6	619.8	638.6	694.3
155°	756.2	758.9	750.7	821.5	871.6	824.4	724.1	674.1	656.0	674.1	724.1
157.5°	774.3	779.8	770.1	851.5	895.3	856.3	758.3	709.6	693.5	709.6	758.3
160°	793.8	793.8	799.3	886.3	914.8	884.2	794.5	748.6	726.2	748.6	794.5
162.5°	795.8	809.1	838.9	910.6	933.6	908.5	833.4	776.3	756.9	776.3	833.4
165°	826.5	838.3	883.5	932.2	948.2	930.1	881.4	822.3	799.3	822.3	881.4
167.5°	858.4	883.5	919.7	956.6	962.1	950.3	918.3	877.2	856.3	877.2	918.3
170°	909.7	932.2	950.3	965.6	973.2	966.3	941.3	921.0	906.9	921.0	941.3
172.5°	950.7	965.6	972.5	982.3	978.3	974.6	962.1	952.4	944.5	952.4	962.1
175°	976.5	980.2	986.4	983.0	988.1	979.5	980.2	985.1	955.7	985.1	980.2
177.5°	985.5	991.4	987.8	981.6	982.3	980.9	983.7	986.4	981.3	986.4	983.7
180°	986.4	986.4	986.4	986.4	986.4	986.4	986.4	986.4	986.4	986.4	986.4



TEST NUMBER: P392648

CATALOG NUMBER: MWL-4-26-45-UNV-L940-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1765.1	1765.1	1765.1	1765.1	1765.1	1765.1
2.5°	1766.7	1766.5	1767.4	1757.6	1762.6	1757.6
5°	1756.7	1757.6	1756.7	1749.4	1753.5	1748.5
7.5°	1743.2	1743.9	1743.9	1734.1	1738.7	1738.2
10°	1724.3	1725.0	1725.0	1715.0	1719.5	1716.1
12.5°	1699.7	1696.3	1699.7	1691.5	1694.0	1692.9
15°	1669.9	1669.0	1670.6	1661.5	1662.1	1662.7
17.5°	1635.2	1636.2	1635.2	1625.9	1628.4	1629.0
20°	1594.5	1595.4	1595.2	1587.7	1585.4	1586.1
22.5°	1552.6	1552.6	1553.2	1542.1	1539.9	1534.4
25°	1506.1	1507.1	1506.8	1497.2	1487.0	1480.6
27.5°	1457.6	1456.9	1458.3	1438.9	1428.7	1421.4
30°	1401.1	1404.1	1402.5	1382.2	1361.3	1350.3
32.5°	1341.0	1347.3	1342.3	1315.7	1290.2	1279.3
35°	1278.4	1283.8	1280.4	1243.0	1217.5	1210.2
37.5°	1210.0	1220.7	1212.0	1167.4	1142.8	1141.0
40°	1134.4	1155.1	1135.8	1089.9	1069.0	1073.5
42.5°	1058.8	1080.4	1060.2	1005.5	997.9	1007.9
45°	975.0	1004.8	976.3	927.1	927.1	939.0
47.5°	894.8	918.2	895.4	854.2	860.6	875.2
50°	803.9	822.8	805.2	780.4	798.7	810.5
52.5°	721.0	711.7	722.3	714.1	738.5	754.9
55°	639.1	608.0	640.6	649.4	680.4	689.5
57.5°	549.8	520.5	551.3	584.7	623.9	629.4
60°	470.6	441.2	471.3	522.2	564.1	566.8
62.5°	394.1	382.2	394.8	455.6	502.1	505.8
65°	328.5	326.6	329.2	391.1	439.4	449.4
67.5°	274.7	279.3	274.7	327.4	372.9	388.4
70°	228.2	235.5	228.2	272.0	308.4	328.5
72.5°	185.7	197.5	186.3	219.1	251.9	274.7
75°	148.3	162.9	148.3	172.0	205.5	231.9
77.5°	114.6	131.0	114.6	131.9	169.1	204.6
80°	85.5	98.2	85.5	106.7	150.6	184.6
82.5°	60.9	69.1	60.9	95.8	140.4	173.0
85°	47.8	42.6	49.3	97.5	144.9	170.9
87.5°	39.9	14.6	49.7	104.0	154.2	175.0
90°	26.9	1.6	53.3	119.0	168.7	184.0
92.5°	16.9	12.0	64.9	135.7	187.0	198.2
95°	8.3	28.7	77.8	155.5	209.3	212.6
97.5°	9.3	50.3	98.3	175.2	229.6	232.2
100°	23.9	76.7	128.2	197.4	248.6	250.2
102.5°	44.0	105.2	156.7	220.5	270.6	281.7
105°	71.2	137.9	186.7	253.7	294.4	306.9
107.5°	103.4	172.7	218.2	284.3	323.4	331.3
110°	136.8	209.8	248.8	314.2	356.9	365.2





TEST NUMBER: P392648

CATALOG NUMBER: MWL-4-26-45-UNV-L940-EDD

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	172.9	247.4	280.8	342.0	392.3	398.6
115°	214.0	282.2	310.7	374.0	420.8	424.3
117.5°	250.9	323.9	341.3	397.7	450.8	451.5
120°	289.8	363.6	371.9	431.3	480.0	485.5
122.5°	329.5	401.2	401.2	459.1	505.8	509.2
125°	366.4	441.5	430.4	480.0	529.3	530.8
127.5°	404.9	482.5	463.3	507.1	552.3	550.2
130°	445.9	521.5	492.5	532.9	573.9	567.0
132.5°	483.4	563.2	522.4	559.3	595.5	599.7
135°	521.1	602.2	548.2	582.3	617.7	616.4
137.5°	557.2	638.4	579.5	600.3	632.3	636.5
140°	592.7	677.3	607.3	624.0	650.4	651.2
142.5°	630.3	716.3	638.0	647.6	670.6	666.5
145°	672.0	754.1	676.2	671.3	685.9	676.9
147.5°	708.8	785.2	703.3	688.7	706.1	694.3
150°	749.9	818.8	740.9	713.0	723.5	717.9
152.5°	787.5	844.5	781.9	731.8	743.6	736.7
155°	824.4	871.6	821.5	750.7	758.9	756.2
157.5°	856.3	895.3	851.5	770.1	779.8	774.3
160°	884.2	914.8	886.3	799.3	793.8	793.8
162.5°	908.5	933.6	910.6	838.9	809.1	795.8
165°	930.1	948.2	932.2	883.5	838.3	826.5
167.5°	950.3	962.1	956.6	919.7	883.5	858.4
170°	966.3	973.2	965.6	950.3	932.2	909.7
172.5°	974.6	978.3	982.3	972.5	965.6	950.7
175°	979.5	988.1	983.0	986.4	980.2	976.5
177.5°	980.9	982.3	981.6	987.8	991.4	985.5
180°	986.4	986.4	986.4	986.4	986.4	986.4

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