

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: P392649

Luminaire Tested: **MWL-4-26-60-UNV-L830-EDD**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P392649
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-4-26-60-UNV-L830-EDD
Description: MWL 4FT MEDICAL LED FIXTURE
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

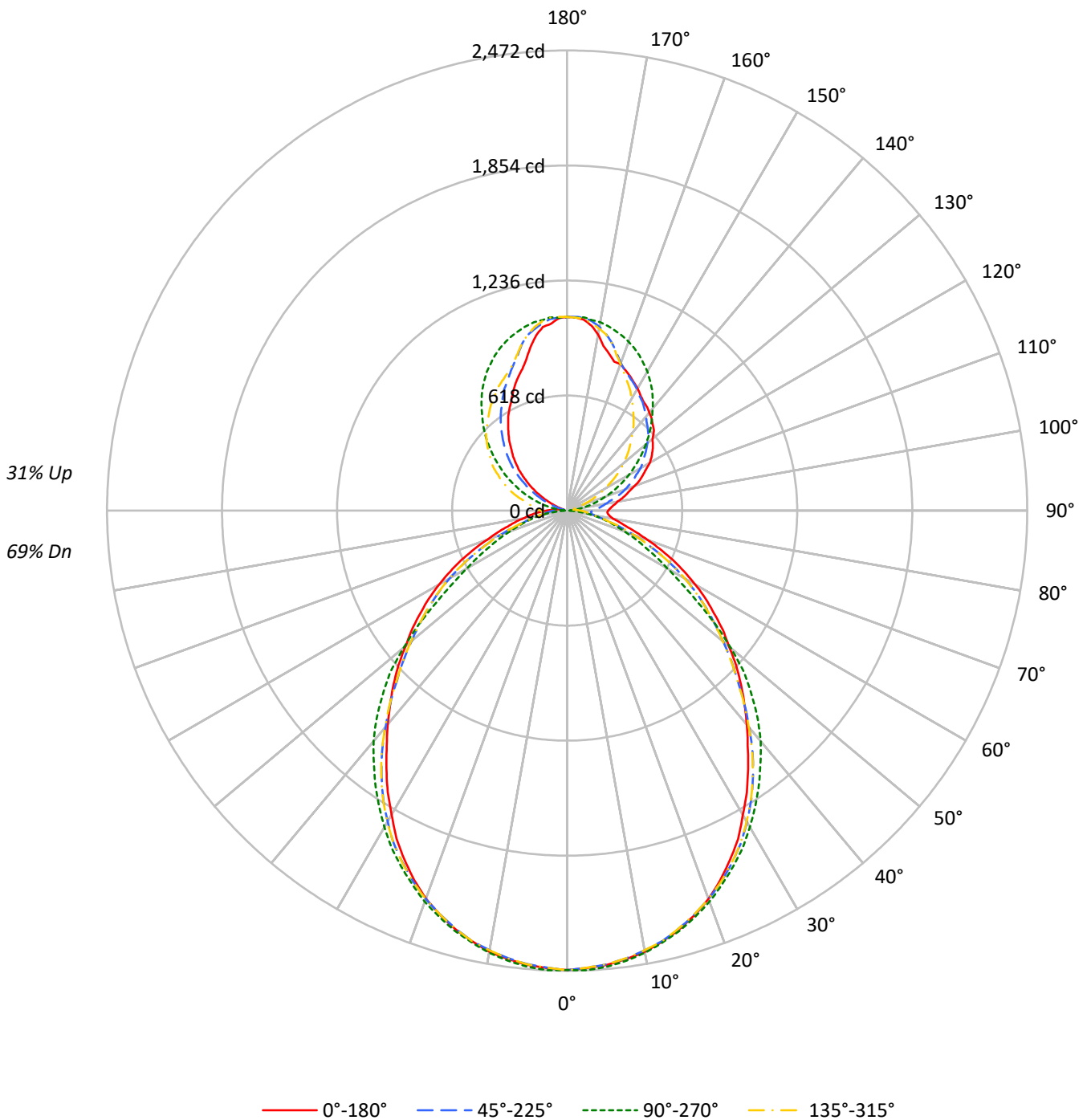
Lumens per Lamp: N/A
Luminaire Lumens: 8255.0 lumens
Efficiency: N/A
Efficacy: 93.9 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')
CIE Type: Semi-Direct

Input Watts (W): 87.9
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	112	112	112	112	106	106	106	106	94	94	94	84	84	84	74	74	74	69
1	102	98	94	91	97	93	89	86	83	80	78	74	72	70	66	64	63	59
2	94	86	80	75	88	82	76	72	73	69	65	66	62	59	59	56	54	50
3	86	76	69	63	81	72	66	60	65	60	56	59	54	51	52	49	46	43
4	79	68	60	54	74	65	57	52	58	52	48	52	48	44	47	43	40	37
5	73	61	53	47	68	58	50	45	52	46	42	47	42	39	43	39	35	33
6	67	55	47	41	63	52	45	39	48	41	37	43	38	34	39	35	31	29
7	62	50	42	36	59	48	40	35	43	37	33	39	34	30	36	31	28	26
8	58	45	38	32	55	43	36	31	40	34	29	36	31	27	33	29	25	23
9	54	42	34	29	51	40	33	28	37	31	26	33	28	25	30	26	23	21
10	51	38	31	26	48	37	30	25	34	28	24	31	26	22	28	24	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	15940	15940	15940	15940
5°	15738	14661	15738	14661
10°	15495	13444	15495	13444
15°	15147	12319	15132	12319
20°	14701	11265	14686	11265
25°	14072	10254	14057	10254
30°	13282	9281	13262	9281
35°	12452	8328	12436	8328
40°	11642	7418	11620	7418
45°	10922	6408	10904	6408
50°	10137	5254	10118	5254
55°	9444	3958	9430	3958
60°	8687	2937	8680	2937
65°	7810	2227	7810	2227
70°	6715	1647	6727	1647
75°	5890	1199	5929	1199
80°	5871	775	5546	775
85°	7455	348	5845	348



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.7	2.8
10°-20°	656.2	7.9
20°-30°	962.2	11.7
30°-40°	1089.2	13.2
40°-50°	1026.0	12.4
50°-60°	820.4	9.9
60°-70°	538.6	6.5
70°-80°	275.0	3.3
80°-90°	134.2	1.6
90°-100°	111.8	1.4
100°-110°	165.9	2.0
110°-120°	277.6	3.4
120°-130°	376.6	4.6
130°-140°	429.1	5.2
140°-150°	427.9	5.2
150°-160°	372.3	4.5
160°-170°	261.8	3.2
170°-180°	97.5	1.2
0°-30°	1851.1	22.4
0°-40°	2940.3	35.6
0°-60°	4786.7	58.0
0°-90°	5734.6	69.5
90°-120°	555.3	6.7
90°-150°	1788.9	21.7
90°-180°	2520.0	30.5
0°-180°	8255.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2468	2468	2468	2468	2468	
5°	2450	2459	2450	2459	2450	232
15°	2329	2336	2326	2336	2329	656
25°	2071	2110	2068	2110	2071	952
35°	1694	1796	1692	1796	1694	1060
45°	1320	1403	1318	1403	1320	1018
55°	964	854	962	854	964	864
65°	625	458	625	458	625	618
75°	328	227	330	227	328	359
85°	220	58	173	58	220	187
90°	220	2	110	2	220	121
95°	241	30	68	30	241	204
105°	326	146	18	146	326	346
115°	448	297	105	297	448	445
125°	560	466	256	466	560	500
135°	650	635	410	635	650	502
145°	715	794	552	794	715	450
155°	798	919	692	919	798	368
165°	872	1000	843	1000	872	247
175°	1029	1042	1007	1042	1029	96
180°	1040	1040	1040	1040	1040	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2468.2	2468.2	2468.2	2468.2	2468.2	2468.2	2468.2	2468.2	2468.2	2468.2	2468.2
2.5°	2459.3	2465.6	2457.4	2470.7	2471.6	2469.9	2457.4	2465.6	2460.0	2465.6	2457.4
5°	2449.7	2455.0	2446.9	2458.4	2459.3	2458.4	2446.1	2455.0	2449.7	2455.0	2446.1
7.5°	2430.2	2435.5	2425.9	2440.1	2439.2	2439.4	2425.3	2434.9	2430.2	2434.9	2425.3
10°	2406.1	2404.8	2399.1	2411.5	2411.5	2410.9	2398.4	2403.4	2406.1	2403.4	2398.4
12.5°	2370.1	2371.2	2367.7	2377.3	2375.5	2377.3	2367.7	2369.8	2368.6	2369.8	2367.7
15°	2328.6	2326.1	2323.5	2336.9	2336.2	2336.2	2322.7	2324.7	2326.4	2324.7	2322.7
17.5°	2277.7	2278.1	2274.6	2287.2	2288.2	2287.2	2273.8	2277.4	2275.5	2277.4	2273.8
20°	2220.1	2220.3	2220.8	2234.4	2235.7	2233.8	2220.0	2218.9	2217.9	2218.9	2220.0
22.5°	2149.3	2157.0	2159.4	2175.9	2174.2	2175.2	2158.6	2155.5	2147.8	2155.5	2158.6
25°	2070.6	2077.3	2090.9	2110.6	2109.9	2109.9	2089.5	2075.1	2068.4	2075.1	2089.5
27.5°	1988.0	1997.6	2018.0	2042.3	2041.8	2041.5	2016.5	1995.4	1985.8	1995.4	2016.5
30°	1888.2	1900.7	1931.4	1963.3	1963.1	1961.8	1929.2	1898.5	1885.3	1898.5	1929.2
32.5°	1796.0	1805.6	1841.2	1882.6	1882.2	1881.2	1839.0	1802.8	1793.2	1802.8	1839.0
35°	1694.5	1704.1	1740.6	1792.4	1796.0	1790.3	1738.5	1702.0	1692.4	1702.0	1738.5
37.5°	1593.7	1599.5	1635.9	1697.4	1706.5	1695.3	1633.8	1597.4	1591.6	1597.4	1633.8
40°	1501.6	1495.8	1520.8	1592.1	1618.2	1590.6	1517.9	1492.9	1498.7	1492.9	1517.9
42.5°	1409.4	1397.9	1409.7	1481.7	1514.5	1480.2	1407.5	1395.0	1406.5	1395.0	1407.5
45°	1320.4	1295.5	1296.4	1364.6	1403.2	1363.1	1293.5	1293.3	1318.2	1293.3	1293.5
47.5°	1230.2	1206.2	1196.6	1247.7	1289.9	1247.0	1193.6	1204.0	1228.0	1204.0	1193.6
50°	1134.2	1118.8	1093.9	1128.6	1146.2	1127.2	1090.9	1115.9	1132.0	1115.9	1090.9
52.5°	1054.5	1035.3	999.1	1012.5	1004.1	1011.1	996.8	1032.4	1052.3	1032.4	996.8
55°	963.5	953.0	911.7	891.8	853.6	890.3	909.5	950.8	962.1	950.8	909.5
57.5°	882.9	874.3	821.5	776.6	726.9	775.1	819.3	872.1	881.5	872.1	819.3
60°	793.9	793.9	730.6	658.8	621.3	658.0	729.0	792.4	793.2	792.4	729.0
62.5°	708.5	705.6	638.4	553.2	537.1	552.4	636.9	704.1	707.7	704.1	636.9
65°	625.2	611.7	546.5	463.0	458.3	462.2	545.7	611.0	625.2	611.0	545.7
67.5°	538.8	522.5	458.2	384.4	393.1	384.4	457.4	521.7	538.8	521.7	457.4
70°	457.4	434.4	381.6	317.2	326.8	317.2	381.6	435.1	458.2	435.1	381.6
72.5°	390.2	352.8	306.7	259.7	274.3	259.0	306.7	353.5	391.7	353.5	306.7
75°	327.8	285.6	237.9	208.1	227.3	208.1	238.5	286.3	330.0	286.3	238.5
77.5°	287.6	236.7	186.0	161.1	182.2	161.1	186.7	234.5	284.7	234.5	186.7
80°	251.1	204.7	149.8	119.8	139.0	119.8	148.3	193.0	237.2	193.0	148.3
82.5°	232.2	189.2	130.7	86.2	95.8	86.2	122.0	162.8	204.4	162.8	122.0
85°	220.4	185.3	127.7	68.2	58.4	66.7	106.5	140.5	172.8	140.5	106.5
87.5°	216.1	191.2	129.8	65.8	19.2	55.5	87.9	120.9	140.6	120.9	87.9
90°	219.7	200.8	141.7	65.8	1.7	37.9	69.2	97.5	109.7	97.5	69.2
92.5°	229.9	216.3	156.4	72.2	12.7	21.6	56.0	80.7	86.2	80.7	56.0
95°	241.2	236.8	173.5	82.9	30.2	9.7	41.6	66.7	67.5	66.7	41.6
97.5°	258.1	254.4	191.3	104.5	53.0	10.8	29.4	52.9	52.9	52.9	29.4
100°	273.2	270.6	210.9	136.0	81.8	26.1	16.6	40.4	42.3	40.4	16.6
102.5°	301.6	289.9	233.3	166.1	111.8	47.3	14.9	26.0	28.9	26.0	14.9
105°	326.2	312.1	268.2	197.6	146.3	75.9	31.5	17.5	17.6	17.5	31.5
107.5°	350.9	341.7	300.4	229.9	183.0	108.9	56.3	31.0	22.7	31.0	56.3
110°	385.7	376.9	332.0	262.1	221.1	144.1	85.0	54.4	42.7	54.4	85.0



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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°	420.9	414.3	361.3	295.8	260.6	182.2	120.2	83.7	72.8	83.7	120.2
115°	448.0	443.4	395.0	327.3	297.3	225.5	159.0	117.2	105.0	117.2	159.0
117.5°	476.6	475.0	420.0	360.5	342.2	265.3	195.0	151.7	138.7	151.7	195.0
120°	512.5	506.6	454.4	392.8	384.1	306.3	234.5	192.2	178.3	192.2	234.5
122.5°	537.4	533.8	483.7	423.6	423.6	348.1	272.6	230.3	215.7	230.3	272.6
125°	560.2	558.7	506.6	454.4	466.1	386.9	316.1	272.1	256.0	272.1	316.1
127.5°	580.6	582.8	535.2	488.1	509.3	426.6	357.8	309.5	292.7	309.5	357.8
130°	598.3	605.6	562.4	518.9	550.4	469.8	395.3	346.9	335.9	346.9	395.3
132.5°	632.8	628.3	590.2	551.4	594.4	510.3	434.8	384.2	371.8	384.2	434.8
135°	650.3	651.8	614.4	578.5	635.4	549.9	472.2	422.4	409.9	422.4	472.2
137.5°	671.5	667.1	633.4	611.4	673.6	588.0	508.8	462.7	442.9	462.7	508.8
140°	687.0	686.2	658.4	640.8	714.5	625.4	546.3	499.3	481.0	499.3	546.3
142.5°	703.1	708.4	683.2	673.1	755.6	665.0	586.6	536.2	517.7	536.2	586.6
145°	715.0	724.5	708.2	713.4	794.5	709.0	621.7	570.7	551.6	570.7	621.7
147.5°	733.4	745.8	726.5	741.9	828.2	747.8	656.9	606.6	589.7	606.6	656.9
150°	757.4	763.2	752.2	781.5	862.7	791.0	692.8	640.1	623.2	640.1	692.8
152.5°	777.1	784.4	771.9	824.7	889.7	830.6	732.4	673.7	654.0	673.7	732.4
155°	797.7	800.5	791.8	866.5	919.3	869.5	763.9	711.2	692.1	711.2	763.9
157.5°	816.7	822.5	812.3	898.1	944.2	903.2	799.9	748.5	731.6	748.5	799.9
160°	837.2	837.2	843.1	934.7	964.8	932.5	838.0	789.6	766.1	789.6	838.0
162.5°	839.4	853.3	884.8	960.4	984.6	958.2	879.0	818.9	798.3	818.9	879.0
165°	871.7	884.2	931.8	983.1	999.9	980.9	929.6	867.3	843.1	867.3	929.6
167.5°	905.4	931.8	969.9	1009.7	1015.6	1003.1	968.4	925.1	903.2	925.1	968.4
170°	959.4	983.1	1002.1	1018.3	1027.3	1019.0	992.6	971.3	956.4	971.3	992.6
172.5°	1001.6	1018.3	1025.5	1036.8	1031.7	1028.7	1014.6	1004.3	995.1	1004.3	1014.6
175°	1028.8	1033.6	1040.2	1037.5	1042.0	1033.9	1033.6	1038.8	1006.8	1038.8	1033.6
177.5°	1038.3	1045.4	1041.7	1036.1	1036.8	1035.3	1037.4	1040.2	1033.9	1040.2	1037.4
180°	1040.2	1040.2	1040.2	1040.2	1040.2	1040.2	1040.2	1040.2	1040.2	1040.2	1040.2



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CATALOG NUMBER: MWL-4-26-60-UNV-L830-EDD

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2468.2	2468.2	2468.2	2468.2	2468.2	2468.2
2.5°	2469.9	2471.6	2470.7	2457.4	2465.6	2459.3
5°	2458.4	2459.3	2458.4	2446.9	2455.0	2449.7
7.5°	2439.4	2439.2	2440.1	2425.9	2435.5	2430.2
10°	2410.9	2411.5	2411.5	2399.1	2404.8	2406.1
12.5°	2377.3	2375.5	2377.3	2367.7	2371.2	2370.1
15°	2336.2	2336.2	2336.9	2323.5	2326.1	2328.6
17.5°	2287.2	2288.2	2287.2	2274.6	2278.1	2277.7
20°	2233.8	2235.7	2234.4	2220.8	2220.3	2220.1
22.5°	2175.2	2174.2	2175.9	2159.4	2157.0	2149.3
25°	2109.9	2109.9	2110.6	2090.9	2077.3	2070.6
27.5°	2041.5	2041.8	2042.3	2018.0	1997.6	1988.0
30°	1961.8	1963.1	1963.3	1931.4	1900.7	1888.2
32.5°	1881.2	1882.2	1882.6	1841.2	1805.6	1796.0
35°	1790.3	1796.0	1792.4	1740.6	1704.1	1694.5
37.5°	1695.3	1706.5	1697.4	1635.9	1599.5	1593.7
40°	1590.6	1618.2	1592.1	1520.8	1495.8	1501.6
42.5°	1480.2	1514.5	1481.7	1409.7	1397.9	1409.4
45°	1363.1	1403.2	1364.6	1296.4	1295.5	1320.4
47.5°	1247.0	1289.9	1247.7	1196.6	1206.2	1230.2
50°	1127.2	1146.2	1128.6	1093.9	1118.8	1134.2
52.5°	1011.1	1004.1	1012.5	999.1	1035.3	1054.5
55°	890.3	853.6	891.8	911.7	953.0	963.5
57.5°	775.1	726.9	776.6	821.5	874.3	882.9
60°	658.0	621.3	658.8	730.6	793.9	793.9
62.5°	552.4	537.1	553.2	638.4	705.6	708.5
65°	462.2	458.3	463.0	546.5	611.7	625.2
67.5°	384.4	393.1	384.4	458.2	522.5	538.8
70°	317.2	326.8	317.2	381.6	434.4	457.4
72.5°	259.0	274.3	259.7	306.7	352.8	390.2
75°	208.1	227.3	208.1	237.9	285.6	327.8
77.5°	161.1	182.2	161.1	186.0	236.7	287.6
80°	119.8	139.0	119.8	149.8	204.7	251.1
82.5°	86.2	95.8	86.2	130.7	189.2	232.2
85°	66.7	58.4	68.2	127.7	185.3	220.4
87.5°	55.5	19.2	65.8	129.8	191.2	216.1
90°	37.9	1.7	65.8	141.7	200.8	219.7
92.5°	21.6	12.7	72.2	156.4	216.3	229.9
95°	9.7	30.2	82.9	173.5	236.8	241.2
97.5°	10.8	53.0	104.5	191.3	254.4	258.1
100°	26.1	81.8	136.0	210.9	270.6	273.2
102.5°	47.3	111.8	166.1	233.3	289.9	301.6
105°	75.9	146.3	197.6	268.2	312.1	326.2
107.5°	108.9	183.0	229.9	300.4	341.7	350.9
110°	144.1	221.1	262.1	332.0	376.9	385.7



TEST NUMBER: P392649

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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	182.2	260.6	295.8	361.3	414.3	420.9
115°	225.5	297.3	327.3	395.0	443.4	448.0
117.5°	265.3	342.2	360.5	420.0	475.0	476.6
120°	306.3	384.1	392.8	454.4	506.6	512.5
122.5°	348.1	423.6	423.6	483.7	533.8	537.4
125°	386.9	466.1	454.4	506.6	558.7	560.2
127.5°	426.6	509.3	488.1	535.2	582.8	580.6
130°	469.8	550.4	518.9	562.4	605.6	598.3
132.5°	510.3	594.4	551.4	590.2	628.3	632.8
135°	549.9	635.4	578.5	614.4	651.8	650.3
137.5°	588.0	673.6	611.4	633.4	667.1	671.5
140°	625.4	714.5	640.8	658.4	686.2	687.0
142.5°	665.0	755.6	673.1	683.2	708.4	703.1
145°	709.0	794.5	713.4	708.2	724.5	715.0
147.5°	747.8	828.2	741.9	726.5	745.8	733.4
150°	791.0	862.7	781.5	752.2	763.2	757.4
152.5°	830.6	889.7	824.7	771.9	784.4	777.1
155°	869.5	919.3	866.5	791.8	800.5	797.7
157.5°	903.2	944.2	898.1	812.3	822.5	816.7
160°	932.5	964.8	934.7	843.1	837.2	837.2
162.5°	958.2	984.6	960.4	884.8	853.3	839.4
165°	980.9	999.9	983.1	931.8	884.2	871.7
167.5°	1003.1	1015.6	1009.7	969.9	931.8	905.4
170°	1019.0	1027.3	1018.3	1002.1	983.1	959.4
172.5°	1028.7	1031.7	1036.8	1025.5	1018.3	1001.6
175°	1033.9	1042.0	1037.5	1040.2	1033.6	1028.8
177.5°	1035.3	1036.8	1036.1	1041.7	1045.4	1038.3
180°	1040.2	1040.2	1040.2	1040.2	1040.2	1040.2

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