

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: METALUX

Report Number: P192480

Luminaire Tested: **4WSL-LD2-75-UPL8-UNV-L850-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P192480
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P28106)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4WSL-LD2-75-UPL8-UNV-L850-CD1-U
Description: 4FT Linear Wavestream System, 8% Uplight, L850
Light Source: (238) 5000K CCT, 80 CRI LEDS
EL236N0119D850
Ballast/Driver: OSRAM
OT85W1202772A0DIML

Summary

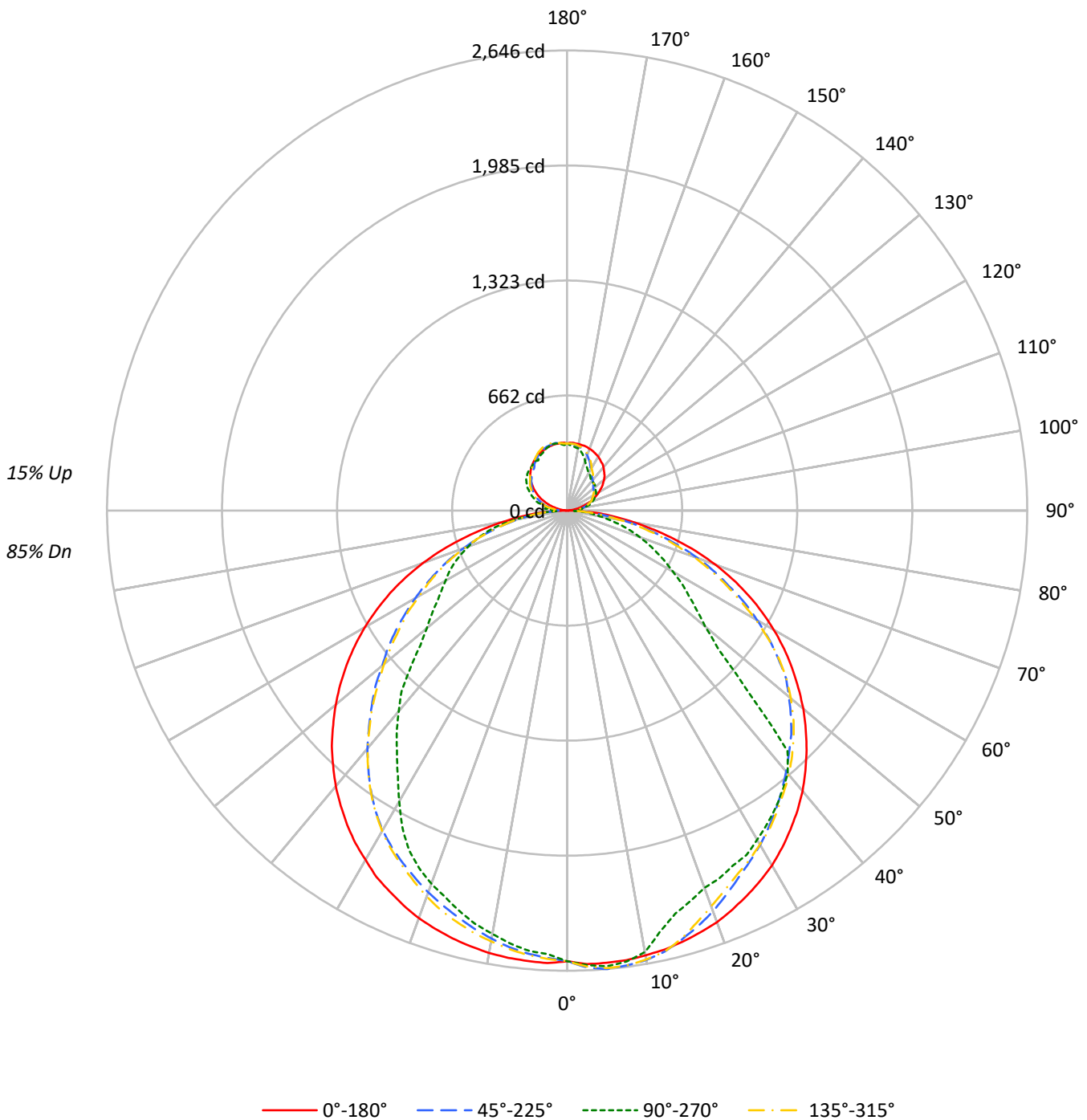
Lumens per Lamp: N/A
Luminaire Lumens: 8594.0 lumens
Efficiency: N/A
Efficacy: 116.3 lumens/watt
Spacing Criteria (0/90/45): 1.34 / 1.19 / 1.36
Luminous Opening: Rectangular (W 0.5' x L: 3.8' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 73.9
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	50	30	10	0	
RCR																						
0	115	115	115	115	111	111	111	111	103	103	103	95	95	95	88	88	88	85				
1	105	101	96	92	101	97	93	90	90	87	84	83	81	79	78	76	74	71				
2	96	88	81	75	92	84	78	73	78	73	69	73	69	65	68	65	62	59				
3	87	77	69	62	83	74	67	61	69	63	58	64	59	55	60	56	52	50				
4	80	68	59	53	76	66	58	52	61	55	49	57	52	47	53	49	45	42				
5	73	61	52	45	70	59	51	44	55	48	43	51	45	41	48	43	39	37				
6	68	55	46	40	65	53	45	39	50	43	37	47	40	36	44	38	34	32				
7	63	49	41	35	60	48	40	34	45	38	33	42	36	32	40	35	31	28				
8	58	45	37	31	56	44	36	30	41	34	29	39	33	28	37	31	27	25				
9	54	41	33	28	52	40	33	27	38	31	26	36	30	26	34	29	25	23				
10	51	38	30	25	49	37	30	25	35	28	24	33	27	23	31	26	22	21				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	14679	14679	14679	14679
5°	14845	14955	14782	14450
10°	14937	14825	14857	14219
15°	15050	14074	14936	13992
20°	15185	13914	15035	13764
25°	15277	14080	15103	13456
30°	15407	14300	15171	12630
35°	15483	14447	15252	11799
40°	15571	14587	15305	11140
45°	15602	11735	15335	10179
50°	15623	9119	15306	9290
55°	15590	8439	15289	9015
60°	15559	7952	15212	9147
65°	15396	7623	15061	9594
70°	14979	7351	14613	10016
75°	14026	6921	13602	10566
80°	12760	6336	12218	10045
85°	12441	6851	11180	9016



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	246.3	2.9
10°-20°	699.4	8.1
20°-30°	1058.8	12.3
30°-40°	1278.5	14.9
40°-50°	1305.3	15.2
50°-60°	1141.2	13.3
60°-70°	884.5	10.3
70°-80°	531.8	6.2
80°-90°	164.2	1.9
90°-100°	69.2	0.8
100°-110°	132.3	1.5
110°-120°	179.8	2.1
120°-130°	204.4	2.4
130°-140°	207.3	2.4
140°-150°	190.8	2.2
150°-160°	157.4	1.8
160°-170°	105.9	1.2
170°-180°	36.8	0.4
0°-30°	2004.5	23.3
0°-40°	3283.1	38.2
0°-60°	5729.6	66.7
0°-90°	7310.1	85.1
90°-120°	381.3	4.4
90°-150°	983.8	11.4
90°-180°	1284.0	14.9
0°-180°	8594.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2591	2591	2591	2591	2591	
5°	2610	2630	2599	2541	2610	249
15°	2566	2400	2547	2386	2566	725
25°	2444	2252	2416	2153	2444	1128
35°	2239	2089	2205	1706	2239	1402
45°	1947	1465	1914	1270	1947	1502
55°	1578	854	1548	913	1578	1411
65°	1148	569	1124	716	1148	1133
75°	641	316	621	483	641	680
85°	191	105	172	139	191	193
90°	3	58	3	67	3	13
95°	17	80	17	128	17	21
105°	89	136	86	172	89	95
115°	172	175	169	233	172	170
125°	247	200	241	286	247	219
135°	302	219	300	316	302	233
145°	341	233	338	336	341	214
155°	369	272	366	355	369	170
165°	386	338	383	386	386	109
175°	391	372	391	383	391	37
180°	386	386	386	386	386	



TEST NUMBER: P192480

CATALOG NUMBER: 4WSL-LD2-75-UPL8-UNV-L850-CD1-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2591.0	2591.0	2591.0	2591.0	2591.0	2591.0	2591.0	2591.0	2591.0	2591.0	2591.0
2.5°	2610.4	2596.5	2629.8	2635.4	2615.9	2621.5	2624.3	2593.7	2604.8	2563.2	2574.3
5°	2610.4	2607.6	2646.5	2640.9	2629.8	2632.6	2640.9	2604.8	2599.3	2549.4	2557.7
7.5°	2607.6	2613.2	2638.1	2632.6	2615.9	2624.3	2638.1	2610.4	2593.7	2535.5	2532.7
10°	2596.5	2604.8	2624.3	2607.6	2577.1	2591.0	2621.5	2604.8	2582.7	2513.3	2499.4
12.5°	2585.4	2591.0	2596.5	2527.2	2477.2	2510.5	2596.5	2591.0	2566.0	2488.3	2463.4
15°	2566.0	2574.3	2552.1	2452.3	2399.6	2432.9	2546.6	2568.8	2546.6	2452.3	2421.8
17.5°	2543.8	2552.1	2505.0	2394.0	2355.2	2371.8	2482.8	2541.0	2521.6	2419.0	2380.1
20°	2518.8	2527.2	2452.3	2333.0	2308.0	2321.9	2421.8	2510.5	2493.9	2380.1	2335.8
22.5°	2482.8	2496.7	2391.2	2291.4	2288.6	2288.6	2363.5	2474.5	2457.8	2333.0	2285.8
25°	2443.9	2457.8	2330.2	2252.5	2252.5	2252.5	2310.8	2427.3	2416.2	2283.1	2235.9
27.5°	2402.3	2416.2	2274.7	2224.8	2233.1	2219.2	2266.4	2374.6	2374.6	2233.1	2183.2
30°	2355.2	2369.0	2219.2	2180.4	2186.0	2180.4	2216.5	2319.1	2319.1	2174.9	2122.2
32.5°	2299.7	2313.6	2158.2	2127.7	2138.8	2133.3	2169.3	2263.6	2266.4	2113.8	2050.0
35°	2238.7	2255.3	2094.4	2077.8	2088.9	2080.5	2105.5	2205.4	2205.4	2047.3	1966.8
37.5°	2174.9	2191.5	2027.8	2022.3	2033.4	2025.1	2044.5	2144.3	2138.8	1977.9	1878.0
40°	2105.5	2124.9	1958.5	1958.5	1972.4	1966.8	1983.5	2080.5	2069.5	1908.6	1786.5
42.5°	2027.8	2052.8	1889.1	1891.9	1875.3	1897.5	1914.1	2014.0	1991.8	1830.9	1686.6
45°	1947.4	1977.9	1822.6	1772.6	1464.7	1753.2	1842.0	1947.4	1914.1	1753.2	1589.5
47.5°	1861.4	1900.2	1744.9	1561.8	1179.0	1536.8	1764.3	1864.2	1825.3	1670.0	1495.2
50°	1772.6	1817.0	1664.4	1381.5	1034.7	1353.7	1678.3	1780.9	1736.6	1584.0	1387.0
52.5°	1675.5	1725.5	1586.8	1223.4	937.6	1198.4	1589.5	1700.5	1645.0	1492.4	1298.3
55°	1578.4	1631.1	1481.3	1087.4	854.4	1065.2	1486.9	1597.9	1547.9	1398.1	1201.2
57.5°	1478.6	1531.3	1375.9	968.1	782.3	946.0	1370.4	1503.5	1448.1	1301.0	1104.1
60°	1373.2	1425.9	1262.2	860.0	701.8	843.3	1251.1	1398.1	1342.6	1201.2	1009.8
62.5°	1262.2	1314.9	1154.0	760.1	635.3	746.2	1120.7	1295.5	1234.5	1095.8	912.7
65°	1148.5	1187.3	1026.4	665.8	568.7	654.7	1004.2	1167.9	1123.5	984.8	821.1
67.5°	1029.2	1068.0	915.4	582.6	504.9	571.5	890.5	1054.1	1004.2	876.6	729.6
70°	904.3	937.6	798.9	502.1	443.8	493.8	771.2	926.5	882.2	762.9	632.5
72.5°	776.7	807.3	674.1	427.2	380.0	421.7	646.4	798.9	754.5	643.6	543.7
75°	640.8	671.3	557.6	352.3	316.2	346.8	532.6	663.0	621.4	529.8	452.2
77.5°	513.2	549.3	441.1	277.4	252.4	271.9	418.9	535.4	493.8	424.4	363.4
80°	391.1	421.7	327.3	210.8	194.2	208.1	305.1	407.8	374.5	327.3	283.0
82.5°	283.0	299.6	224.7	155.3	147.0	152.6	208.1	288.5	271.9	235.8	208.1
85°	191.4	188.6	138.7	108.2	105.4	108.2	124.8	174.8	172.0	158.1	133.2
87.5°	80.4	74.9	63.8	44.4	38.8	41.6	49.9	66.6	63.8	66.6	63.8
90°	2.8	27.7	44.4	55.5	58.3	55.5	44.4	27.7	2.8	30.5	49.9
92.5°	5.5	36.1	52.7	61.0	66.6	61.0	49.9	36.1	5.5	47.2	49.9
95°	16.6	49.9	61.0	74.9	80.4	74.9	61.0	47.2	16.6	41.6	74.9
97.5°	33.3	63.8	72.1	83.2	86.0	80.4	69.4	63.8	30.5	74.9	77.7
100°	49.9	80.4	94.3	94.3	97.1	94.3	91.5	77.7	47.2	83.2	94.3
102.5°	69.4	91.5	108.2	116.5	116.5	116.5	108.2	91.5	63.8	102.6	130.4
105°	88.8	99.9	119.3	130.4	135.9	130.4	119.3	102.6	86.0	119.3	138.7
107.5°	111.0	108.2	130.4	141.5	147.0	141.5	130.4	111.0	105.4	133.2	155.3
110°	133.2	119.3	141.5	152.6	155.3	152.6	141.5	119.3	127.6	149.8	172.0



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CATALOG NUMBER: 4WSL-LD2-75-UPL8-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	152.6	127.6	152.6	163.7	166.4	163.7	152.6	130.4	147.0	160.9	188.6
115°	172.0	135.9	158.1	172.0	174.8	172.0	158.1	138.7	169.2	174.8	202.5
117.5°	191.4	147.0	163.7	180.3	183.1	180.3	166.4	149.8	188.6	191.4	216.4
120°	210.8	160.9	172.0	185.9	191.4	188.6	172.0	163.7	205.3	205.3	227.5
122.5°	227.5	172.0	180.3	191.4	197.0	191.4	180.3	177.5	224.7	219.2	241.3
125°	246.9	183.1	185.9	197.0	199.7	197.0	188.6	185.9	241.3	230.2	249.7
127.5°	260.8	197.0	191.4	202.5	205.3	202.5	194.2	199.7	258.0	252.4	258.0
130°	277.4	210.8	197.0	208.1	210.8	210.8	197.0	216.4	271.9	269.1	269.1
132.5°	291.3	224.7	202.5	213.6	216.4	216.4	205.3	227.5	285.7	283.0	277.4
135°	302.4	244.1	213.6	213.6	219.2	219.2	216.4	246.9	299.6	296.8	291.3
137.5°	313.5	260.8	221.9	216.4	219.2	219.2	227.5	263.5	310.7	310.7	299.6
140°	324.6	277.4	227.5	221.9	221.9	227.5	235.8	280.2	321.8	321.8	302.4
142.5°	335.7	291.3	235.8	230.2	224.7	235.8	244.1	296.8	330.1	332.9	310.7
145°	341.2	305.1	246.9	238.6	233.0	246.9	258.0	310.7	338.4	344.0	327.3
147.5°	349.5	319.0	260.8	244.1	244.1	252.4	269.1	321.8	346.8	352.3	335.7
150°	357.9	330.1	271.9	252.4	246.9	260.8	280.2	332.9	355.1	360.6	346.8
152.5°	363.4	341.2	288.5	263.5	258.0	274.6	299.6	341.2	360.6	366.2	357.9
155°	369.0	349.5	307.9	274.6	271.9	285.7	316.2	349.5	366.2	371.7	366.2
157.5°	374.5	357.9	321.8	291.3	280.2	302.4	330.1	360.6	371.7	377.3	374.5
160°	377.3	363.4	338.4	307.9	302.4	321.8	344.0	363.4	374.5	382.8	380.0
162.5°	382.8	369.0	349.5	327.3	321.8	338.4	355.1	371.7	380.0	385.6	385.6
165°	385.6	374.5	360.6	344.0	338.4	355.1	363.4	377.3	382.8	385.6	388.4
167.5°	385.6	380.0	369.0	355.1	352.3	366.2	374.5	382.8	385.6	385.6	391.1
170°	388.4	382.8	374.5	366.2	363.4	374.5	377.3	385.6	388.4	385.6	393.9
172.5°	388.4	385.6	380.0	371.7	366.2	380.0	382.8	385.6	388.4	385.6	391.1
175°	391.1	385.6	385.6	380.0	371.7	385.6	385.6	385.6	391.1	385.6	388.4
177.5°	391.1	385.6	385.6	382.8	377.3	385.6	385.6	385.6	391.1	385.6	388.4
180°	385.6	385.6	385.6	385.6	385.6	385.6	385.6	385.6	385.6	385.6	385.6



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2591.0	2591.0	2591.0	2591.0	2591.0	2591.0
2.5°	2571.6	2552.1	2557.7	2579.9	2571.6	2610.4
5°	2552.1	2541.0	2541.0	2566.0	2563.2	2610.4
7.5°	2521.6	2510.5	2516.1	2543.8	2549.4	2607.6
10°	2485.6	2471.7	2477.2	2516.1	2529.9	2596.5
12.5°	2446.7	2435.6	2441.2	2485.6	2505.0	2585.4
15°	2402.3	2385.7	2402.3	2449.5	2474.5	2566.0
17.5°	2352.4	2330.2	2349.6	2410.7	2441.2	2543.8
20°	2302.5	2283.1	2294.1	2360.7	2405.1	2518.8
22.5°	2252.5	2224.8	2235.9	2305.2	2360.7	2482.8
25°	2194.3	2152.7	2174.9	2249.8	2313.6	2443.9
27.5°	2116.6	2052.8	2100.0	2194.3	2258.1	2402.3
30°	2014.0	1930.7	2000.1	2127.7	2199.8	2355.2
32.5°	1900.2	1811.5	1889.1	2052.8	2138.8	2299.7
35°	1786.5	1706.0	1775.4	1969.6	2075.0	2238.7
37.5°	1678.3	1609.0	1672.8	1880.8	2008.4	2174.9
40°	1575.7	1506.3	1572.9	1783.7	1936.3	2105.5
42.5°	1473.0	1409.2	1473.0	1681.1	1861.4	2027.8
45°	1370.4	1270.5	1364.8	1581.2	1780.9	1947.4
47.5°	1259.4	1142.9	1251.1	1473.0	1695.0	1861.4
50°	1154.0	1054.1	1148.5	1373.2	1606.2	1772.6
52.5°	1062.5	982.0	1056.9	1270.5	1514.6	1675.5
55°	976.5	912.7	976.5	1170.7	1417.5	1578.4
57.5°	898.8	857.2	901.6	1084.7	1317.7	1478.6
60°	832.2	807.3	835.0	979.2	1217.8	1373.2
62.5°	768.4	765.6	771.2	896.0	1112.4	1262.2
65°	701.8	715.7	701.8	807.3	1007.0	1148.5
67.5°	635.3	663.0	640.8	718.5	893.2	1029.2
70°	574.2	604.7	574.2	626.9	779.5	904.3
72.5°	504.9	543.7	504.9	540.9	660.2	776.7
75°	438.3	482.7	441.1	452.2	546.5	640.8
77.5°	366.2	407.8	374.5	366.2	441.1	513.2
80°	291.3	307.9	291.3	288.5	341.2	391.1
82.5°	202.5	216.4	202.5	210.8	249.7	283.0
85°	133.2	138.7	133.2	135.9	166.4	191.4
87.5°	55.5	55.5	55.5	69.4	74.9	80.4
90°	61.0	66.6	61.0	49.9	30.5	2.8
92.5°	63.8	69.4	63.8	55.5	36.1	5.5
95°	113.7	127.6	108.2	69.4	58.3	16.6
97.5°	91.5	99.9	94.3	80.4	72.1	33.3
100°	108.2	116.5	108.2	113.7	88.8	49.9
102.5°	127.6	133.2	130.4	133.2	108.2	69.4
105°	166.4	172.0	166.4	144.3	124.8	88.8
107.5°	177.5	191.4	180.3	160.9	141.5	111.0
110°	191.4	202.5	194.2	177.5	155.3	133.2



TEST NUMBER: P192480

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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	205.3	219.2	210.8	197.0	166.4	152.6
115°	221.9	233.0	227.5	210.8	183.1	172.0
117.5°	238.6	246.9	241.3	221.9	199.7	191.4
120°	252.4	263.5	258.0	235.8	213.6	210.8
122.5°	263.5	274.6	269.1	249.7	227.5	227.5
125°	274.6	285.7	280.2	260.8	238.6	246.9
127.5°	283.0	296.8	291.3	269.1	263.5	260.8
130°	294.1	302.4	299.6	277.4	277.4	277.4
132.5°	299.6	310.7	305.1	288.5	294.1	291.3
135°	302.4	316.2	310.7	302.4	307.9	302.4
137.5°	307.9	319.0	316.2	310.7	321.8	313.5
140°	316.2	321.8	324.6	316.2	332.9	324.6
142.5°	324.6	327.3	332.9	324.6	344.0	335.7
145°	330.1	335.7	341.2	341.2	352.3	341.2
147.5°	330.1	338.4	338.4	346.8	363.4	349.5
150°	338.4	332.9	349.5	357.9	369.0	357.9
152.5°	349.5	346.8	360.6	369.0	374.5	363.4
155°	352.3	355.1	363.4	377.3	380.0	369.0
157.5°	363.4	360.6	374.5	385.6	385.6	374.5
160°	371.7	371.7	385.6	391.1	388.4	377.3
162.5°	380.0	380.0	393.9	393.9	391.1	382.8
165°	385.6	385.6	399.5	396.7	391.1	385.6
167.5°	388.4	391.1	402.2	399.5	391.1	385.6
170°	391.1	391.1	402.2	396.7	391.1	388.4
172.5°	391.1	388.4	399.5	393.9	388.4	388.4
175°	388.4	382.8	393.9	388.4	388.4	391.1
177.5°	385.6	377.3	385.6	385.6	388.4	391.1
180°	385.6	385.6	385.6	385.6	385.6	385.6

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