

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: P197507

Luminaire Tested: **8WSL-LD2-160-UPL15-UNV-L840-CD2-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P197507  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P28105)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 8WSL-LD2-160-UPL15-UNV-L840-CD2-U  
Description: 8FT. Linear Wavestream System, 15% Uplight, L840  
Light Source: (476) 4000K CCT, 80 CRI LEDS  
EL236N0119D840  
Ballast/Driver: OSRAM  
OT85W1202772A0DIML

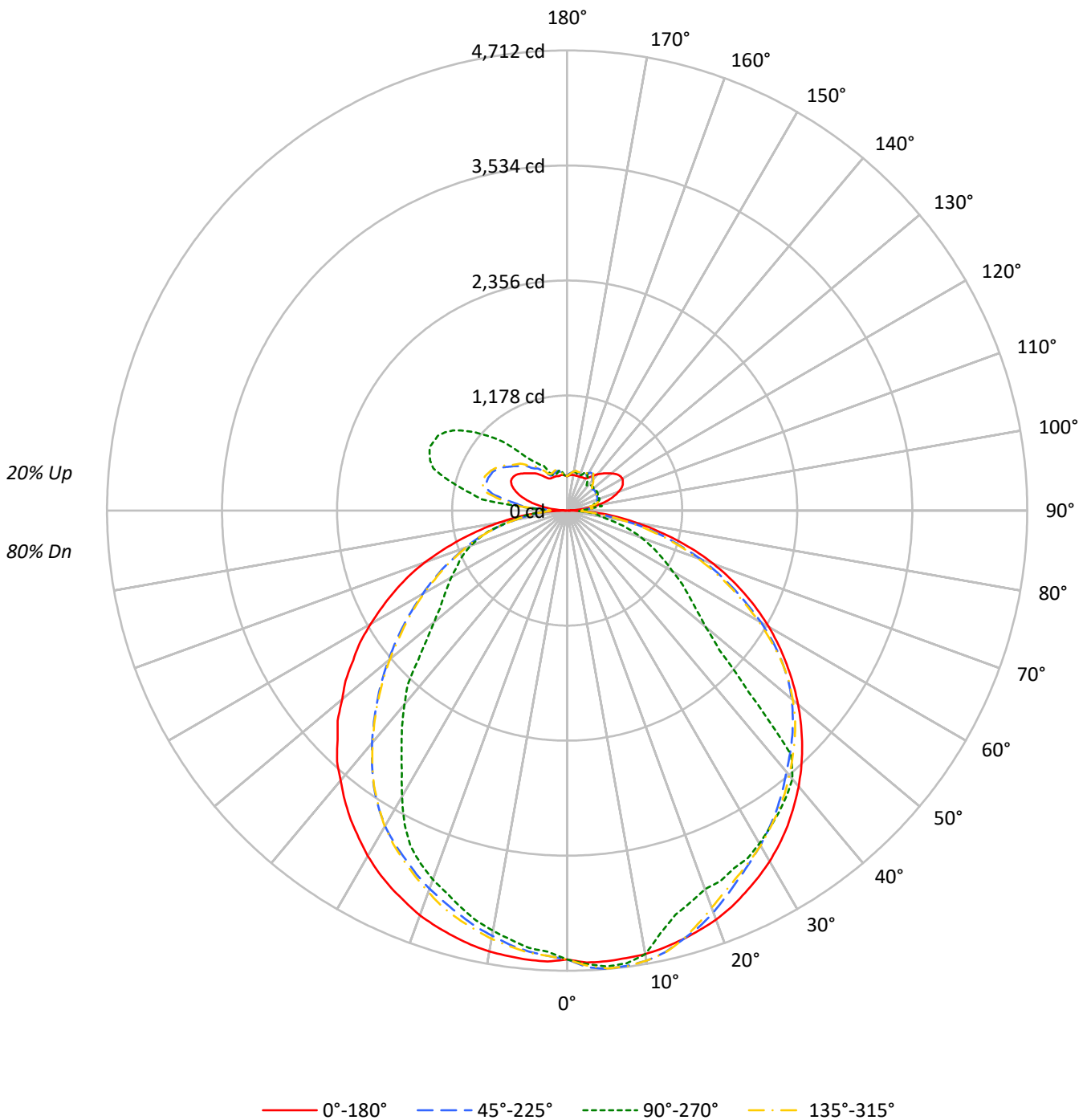
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 16264.2 lumens  
Efficiency: N/A  
Efficacy: 106.4 lumens/watt  
Spacing Criteria (0/90/45): 1.32 / 1.19 / 1.35  
Luminous Opening: Rectangular (W 0.5' x L: 7.6' x H: 0')  
CIE Type: Semi-Direct  
  
Input Watts (W): 152.9  
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	114	114	114	114	109	109	109	109	100	100	100	91	91	91	83	83	83	80
1	104	99	95	91	99	95	91	88	87	84	81	80	77	75	73	71	70	66
2	94	86	80	74	90	83	77	72	76	71	67	70	66	62	64	61	58	55
3	86	76	68	62	82	73	66	60	67	61	56	61	57	53	56	53	49	46
4	79	67	59	52	75	64	57	51	59	53	48	55	49	45	50	46	42	40
5	72	60	51	45	69	58	50	44	53	46	41	49	43	39	45	41	37	34
6	67	54	45	39	64	52	44	38	48	41	36	44	39	34	41	36	32	30
7	62	49	40	34	59	47	39	33	44	37	32	40	35	30	38	33	29	26
8	58	44	36	30	55	43	35	30	40	33	28	37	31	27	34	29	26	24
9	54	41	33	27	51	39	32	27	37	30	26	34	28	24	32	27	23	21
10	50	37	30	25	48	36	29	24	34	27	23	32	26	22	30	25	21	19

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	13018	13018	13018	13018
5°	13172	13322	13127	12782
10°	13264	13264	13188	12566
15°	13338	12564	13229	12332
20°	13440	12438	13297	12119
25°	13489	12632	13324	11857
30°	13565	12874	13357	11062
35°	13611	13064	13355	10217
40°	13638	13267	13345	9580
45°	13633	10547	13316	8624
50°	13602	8138	13253	7836
55°	13550	7505	13211	7609
60°	13511	7084	13152	7772
65°	13403	6861	13049	8134
70°	13197	6686	12847	8696
75°	12588	6352	12184	9239
80°	11792	5766	11446	9210
85°	11833	7547	10975	10975



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	437.3	2.7
10°-20°	1241.1	7.6
20°-30°	1875.6	11.5
30°-40°	2257.3	13.9
40°-50°	2295.6	14.1
50°-60°	1998.1	12.3
60°-70°	1558.7	9.6
70°-80°	963.5	5.9
80°-90°	339.0	2.1
90°-100°	319.2	2.0
100°-110°	618.0	3.8
110°-120°	676.2	4.2
120°-130°	592.8	3.6
130°-140°	444.2	2.7
140°-150°	304.1	1.9
150°-160°	193.6	1.2
160°-170°	113.2	0.7
170°-180°	36.5	0.2
0°-30°	3554.1	21.9
0°-40°	5811.4	35.7
0°-60°	10105.2	62.1
0°-90°	12966.4	79.7
90°-120°	1613.4	9.9
90°-150°	2954.5	18.2
90°-180°	3298.0	20.3
0°-180°	16264.2	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	4596	4596	4596	4596	4596	
5°	4633	4685	4617	4495	4633	441
15°	4548	4284	4511	4205	4548	1286
25°	4316	4042	4263	3794	4316	1992
35°	3936	3778	3862	2955	3936	2462
45°	3403	2633	3324	2153	3403	2625
55°	2744	1520	2675	1541	2744	2454
65°	2000	1024	1947	1214	2000	1976
75°	1150	580	1113	844	1150	1218
85°	364	232	338	338	364	363
90°	5	148	5	232	5	27
95°	142	243	111	485	142	148
105°	454	301	438	1293	454	473
115°	628	343	628	1551	628	615
125°	638	359	638	1430	638	567
135°	538	359	538	1045	538	418
145°	422	359	433	623	422	269
155°	375	433	369	427	375	173
165°	369	390	364	396	369	105
175°	364	380	364	369	364	35
180°	354	354	354	354	354	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	4595.6	4595.6	4595.6	4595.6	4595.6	4595.6	4595.6	4595.6	4595.6	4595.6	4595.6
2.5°	4632.6	4611.5	4680.1	4685.3	4648.4	4664.2	4664.2	4606.2	4622.0	4553.4	4564.0
5°	4632.6	4637.9	4711.7	4706.4	4685.3	4690.6	4706.4	4632.6	4616.7	4521.8	4532.3
7.5°	4622.0	4648.4	4701.2	4695.9	4674.8	4680.1	4706.4	4643.1	4600.9	4490.1	4484.8
10°	4611.5	4637.9	4680.1	4653.7	4611.5	4627.3	4680.1	4637.9	4585.1	4453.2	4421.5
12.5°	4585.1	4611.5	4632.6	4500.7	4426.8	4490.1	4637.9	4611.5	4553.4	4400.4	4358.2
15°	4548.2	4579.8	4553.4	4368.8	4284.3	4342.4	4553.4	4574.5	4511.2	4331.8	4279.1
17.5°	4505.9	4542.9	4474.3	4268.5	4205.2	4231.6	4442.6	4527.1	4463.7	4263.2	4199.9
20°	4458.5	4500.7	4379.3	4163.0	4126.1	4147.2	4326.6	4474.3	4411.0	4189.4	4120.8
22.5°	4395.1	4442.6	4268.5	4089.1	4104.9	4089.1	4221.0	4405.7	4337.1	4110.2	4031.1
25°	4316.0	4368.8	4157.7	4025.8	4041.6	4036.4	4131.3	4316.0	4263.2	4015.3	3930.8
27.5°	4236.9	4289.6	4057.5	3983.6	4010.0	3978.3	4046.9	4221.0	4178.8	3915.0	3835.9
30°	4147.2	4205.2	3957.2	3909.7	3936.1	3915.0	3962.5	4126.1	4083.8	3809.5	3730.3
32.5°	4046.9	4104.9	3851.7	3820.0	3857.0	3830.6	3862.2	4020.5	3973.0	3693.4	3598.4
35°	3936.1	3994.1	3740.9	3740.9	3777.8	3746.2	3762.0	3915.0	3862.2	3577.3	3450.7
37.5°	3814.8	3878.1	3619.5	3645.9	3688.1	3656.5	3656.5	3804.2	3740.9	3450.7	3281.8
40°	3688.1	3756.7	3492.9	3550.9	3587.9	3550.9	3540.4	3688.1	3609.0	3324.1	3107.7
42.5°	3550.9	3624.8	3376.8	3445.4	3397.9	3445.4	3419.0	3566.8	3487.6	3186.9	2928.3
45°	3403.2	3498.2	3260.7	3218.5	2632.9	3186.9	3297.7	3440.1	3324.1	3055.0	2748.9
47.5°	3250.2	3350.4	3134.1	2828.1	2115.8	2796.4	3165.8	3303.0	3186.9	2912.5	2569.5
50°	3086.6	3202.7	3002.2	2490.4	1846.7	2458.7	3018.0	3160.5	3007.5	2759.5	2390.2
52.5°	2917.8	3044.4	2854.5	2200.2	1667.3	2168.6	2859.7	3007.5	2859.7	2595.9	2216.0
55°	2743.7	2875.6	2680.4	1931.1	1519.6	1925.8	2675.1	2843.9	2675.1	2432.4	2041.9
57.5°	2569.5	2717.3	2495.7	1735.9	1392.9	1709.5	2469.3	2675.1	2516.8	2263.5	1873.1
60°	2384.9	2522.1	2295.2	1524.8	1250.5	1519.6	2263.5	2501.0	2321.6	2089.4	1709.5
62.5°	2194.9	2347.9	2078.9	1340.2	1134.4	1334.9	2041.9	2305.7	2131.6	1910.0	1551.2
65°	1999.7	2147.4	1873.1	1192.4	1023.6	1181.9	1836.1	2105.2	1946.9	1730.6	1403.5
67.5°	1799.2	1936.4	1667.3	1050.0	912.8	1039.4	1625.1	1894.2	1757.0	1546.0	1245.2
70°	1593.4	1720.1	1456.3	912.8	807.3	907.5	1419.3	1677.9	1551.2	1356.0	1102.7
72.5°	1377.1	1493.2	1234.7	780.9	696.5	775.6	1203.0	1456.3	1324.3	1155.5	976.1
75°	1150.2	1261.0	1028.9	649.0	580.4	643.7	997.2	1218.8	1113.3	970.8	828.4
77.5°	933.9	1044.7	817.8	501.2	443.2	490.7	780.9	997.2	907.5	786.2	675.4
80°	722.9	812.5	601.5	374.6	353.5	374.6	585.7	765.1	701.7	617.3	527.6
82.5°	532.9	585.7	406.3	306.0	306.0	306.0	395.7	543.5	517.1	459.0	401.0
85°	364.1	364.1	274.4	232.2	232.2	232.2	269.1	321.9	337.7	306.0	306.0
87.5°	153.0	158.3	142.5	126.6	121.4	126.6	137.2	131.9	131.9	147.7	184.7
90°	5.3	68.6	116.1	142.5	147.7	137.2	105.5	63.3	5.3	89.7	163.6
92.5°	36.9	147.7	137.2	179.4	184.7	168.8	142.5	116.1	21.1	163.6	174.1
95°	142.5	174.1	269.1	274.4	242.7	232.2	263.8	163.6	110.8	221.6	443.2
97.5°	226.9	263.8	242.7	316.6	358.8	316.6	253.3	253.3	211.1	343.0	517.1
100°	311.3	279.6	248.0	274.4	316.6	279.6	237.4	279.6	295.5	401.0	633.2
102.5°	390.4	311.3	311.3	269.1	274.4	263.8	300.7	306.0	369.3	453.8	780.9
105°	453.8	321.9	327.1	306.0	300.7	306.0	327.1	327.1	437.9	501.2	849.5
107.5°	511.8	332.4	321.9	337.7	343.0	337.7	321.9	332.4	501.2	532.9	865.3
110°	559.3	337.7	327.1	337.7	353.5	337.7	327.1	343.0	554.0	564.6	875.9



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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°	601.5	343.0	337.7	332.4	348.2	332.4	337.7	353.5	596.2	580.4	875.9
115°	627.9	348.2	337.7	337.7	343.0	337.7	343.0	358.8	627.9	585.7	865.3
117.5°	643.7	358.8	343.0	348.2	353.5	348.2	343.0	369.3	649.0	606.8	860.0
120°	654.3	395.7	343.0	353.5	358.8	353.5	343.0	401.0	654.3	617.3	838.9
122.5°	649.0	411.6	348.2	353.5	364.1	353.5	348.2	416.8	649.0	612.0	812.5
125°	638.4	427.4	348.2	348.2	358.8	353.5	353.5	427.4	638.4	601.5	775.6
127.5°	617.3	464.3	348.2	353.5	353.5	353.5	353.5	459.0	617.3	606.8	738.7
130°	590.9	490.7	337.7	358.8	353.5	364.1	348.2	490.7	590.9	590.9	707.0
132.5°	564.6	501.2	337.7	358.8	358.8	364.1	343.0	501.2	564.6	569.8	675.4
135°	538.2	511.8	358.8	353.5	358.8	358.8	364.1	511.8	538.2	548.7	654.3
137.5°	511.8	517.1	385.2	337.7	353.5	343.0	395.7	517.1	517.1	517.1	622.6
140°	485.4	511.8	406.3	327.1	332.4	337.7	416.8	517.1	496.0	501.2	569.8
142.5°	453.8	496.0	422.1	353.5	327.1	364.1	432.7	511.8	464.3	485.4	543.5
145°	422.1	480.1	453.8	390.4	358.8	406.3	469.6	496.0	432.7	474.9	527.6
147.5°	395.7	453.8	459.0	411.6	395.7	427.4	474.9	474.9	401.0	453.8	490.7
150°	379.9	427.4	443.2	427.4	411.6	448.5	464.3	437.9	379.9	437.9	459.0
152.5°	374.6	406.3	406.3	448.5	443.2	469.6	427.4	416.8	369.3	422.1	416.8
155°	374.6	401.0	390.4	411.6	432.7	432.7	406.3	406.3	369.3	422.1	395.7
157.5°	369.3	406.3	390.4	385.2	395.7	406.3	406.3	411.6	369.3	411.6	395.7
160°	369.3	411.6	395.7	379.9	385.2	401.0	411.6	411.6	369.3	411.6	401.0
162.5°	369.3	401.0	401.0	385.2	385.2	406.3	411.6	406.3	369.3	401.0	411.6
165°	369.3	401.0	406.3	395.7	390.4	416.8	411.6	395.7	364.1	395.7	416.8
167.5°	369.3	390.4	411.6	401.0	401.0	416.8	416.8	390.4	364.1	379.9	416.8
170°	369.3	385.2	406.3	401.0	406.3	422.1	406.3	385.2	369.3	374.6	401.0
172.5°	369.3	374.6	395.7	401.0	401.0	411.6	395.7	374.6	369.3	364.1	385.2
175°	364.1	374.6	385.2	385.2	379.9	395.7	379.9	369.3	364.1	358.8	369.3
177.5°	358.8	364.1	374.6	374.6	364.1	374.6	364.1	358.8	358.8	353.5	364.1
180°	353.5	353.5	353.5	353.5	353.5	353.5	353.5	353.5	353.5	353.5	353.5



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	4595.6	4595.6	4595.6	4595.6	4595.6	4595.6
2.5°	4558.7	4521.8	4532.3	4564.0	4558.7	4632.6
5°	4511.2	4495.4	4495.4	4542.9	4537.6	4632.6
7.5°	4458.5	4432.1	4447.9	4500.7	4516.5	4622.0
10°	4389.9	4368.8	4374.0	4453.2	4479.6	4611.5
12.5°	4321.3	4300.2	4316.0	4389.9	4426.8	4585.1
15°	4242.1	4205.2	4247.4	4326.6	4374.0	4548.2
17.5°	4147.2	4104.9	4147.2	4252.7	4310.7	4505.9
20°	4062.7	4020.5	4046.9	4157.7	4236.9	4458.5
22.5°	3967.8	3915.0	3936.1	4057.5	4157.7	4395.1
25°	3862.2	3793.6	3825.3	3957.2	4068.0	4316.0
27.5°	3725.1	3609.0	3688.1	3851.7	3957.2	4236.9
30°	3535.1	3382.1	3508.7	3735.6	3857.0	4147.2
32.5°	3313.5	3149.9	3287.1	3593.1	3740.9	4046.9
35°	3097.2	2954.7	3081.3	3445.4	3624.8	3936.1
37.5°	2907.2	2775.3	2891.4	3276.6	3498.2	3814.8
40°	2712.0	2590.7	2706.7	3097.2	3371.5	3688.1
42.5°	2532.6	2416.5	2527.3	2917.8	3234.4	3550.9
45°	2342.7	2152.7	2332.1	2733.1	3086.6	3403.2
47.5°	2142.2	1941.7	2126.3	2553.7	2938.9	3250.2
50°	1957.5	1778.1	1946.9	2369.1	2780.6	3086.6
52.5°	1793.9	1640.9	1788.7	2184.4	2617.0	2917.8
55°	1640.9	1540.7	1646.2	2015.5	2464.0	2743.7
57.5°	1519.6	1451.0	1524.8	1852.0	2295.2	2569.5
60°	1414.0	1371.8	1419.3	1688.4	2115.8	2384.9
62.5°	1298.0	1282.1	1298.0	1530.1	1941.7	2194.9
65°	1197.7	1213.5	1197.7	1387.7	1757.0	1999.7
67.5°	1102.7	1139.7	1108.0	1234.7	1572.3	1799.2
70°	997.2	1050.0	1002.5	1097.5	1382.4	1593.4
72.5°	886.4	949.7	886.4	965.6	1181.9	1377.1
75°	770.3	844.2	775.6	823.1	991.9	1150.2
77.5°	643.7	691.2	654.3	670.1	807.3	933.9
80°	511.8	564.6	517.1	527.6	638.4	722.9
82.5°	427.4	464.3	432.7	401.0	474.9	532.9
85°	316.6	337.7	327.1	311.3	327.1	364.1
87.5°	195.2	205.8	195.2	195.2	168.8	153.0
90°	216.3	232.2	216.3	168.8	95.0	5.3
92.5°	221.6	242.7	221.6	184.7	179.4	36.9
95°	496.0	485.4	527.6	480.1	274.4	142.5
97.5°	770.3	881.1	796.7	575.1	369.3	226.9
100°	886.4	991.9	923.3	717.6	422.1	311.3
102.5°	1023.6	1139.7	1065.8	838.9	474.9	390.4
105°	1192.4	1292.7	1229.4	886.4	522.4	453.8
107.5°	1282.1	1435.1	1308.5	907.5	554.0	511.8
110°	1329.6	1493.2	1371.8	912.8	580.4	559.3





TEST NUMBER: P197507

CATALOG NUMBER: 8WSL-LD2-160-UPL15-UNV-L840-CD2-U

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	1366.6	1524.8	1398.2	912.8	590.9	601.5
115°	1366.6	1551.2	1398.2	897.0	606.8	627.9
117.5°	1366.6	1535.4	1398.2	881.1	627.9	643.7
120°	1319.1	1530.1	1361.3	860.0	633.2	654.3
122.5°	1282.1	1487.9	1308.5	833.7	633.2	649.0
125°	1213.5	1429.9	1245.2	802.0	622.6	638.4
127.5°	1139.7	1345.5	1166.1	765.1	627.9	617.3
130°	1071.1	1250.5	1086.9	728.1	606.8	590.9
132.5°	981.4	1145.0	997.2	701.7	585.7	564.6
135°	897.0	1044.7	918.1	680.6	559.3	538.2
137.5°	807.3	939.2	828.4	638.4	532.9	511.8
140°	701.7	807.3	722.9	590.9	517.1	485.4
142.5°	633.2	691.2	654.3	569.8	496.0	453.8
145°	590.9	622.6	606.8	548.7	485.4	422.1
147.5°	548.7	580.4	564.6	506.5	459.0	395.7
150°	532.9	532.9	554.0	469.6	443.2	379.9
152.5°	474.9	517.1	496.0	427.4	432.7	374.6
155°	406.3	427.4	427.4	411.6	432.7	374.6
157.5°	379.9	395.7	401.0	411.6	422.1	369.3
160°	379.9	385.2	401.0	416.8	416.8	369.3
162.5°	390.4	385.2	411.6	427.4	406.3	369.3
165°	401.0	395.7	422.1	432.7	395.7	369.3
167.5°	411.6	411.6	432.7	427.4	385.2	369.3
170°	411.6	422.1	432.7	411.6	379.9	369.3
172.5°	395.7	401.0	411.6	385.2	364.1	369.3
175°	374.6	369.3	385.2	369.3	364.1	364.1
177.5°	364.1	348.2	364.1	358.8	353.5	358.8
180°	353.5	353.5	353.5	353.5	353.5	353.5

(END OF REPORT)