

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: P197455

Luminaire Tested: **8WSL-LD2-160-UPL8-UNV-L840-CD2-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P197455  
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: 8WSL-LD2-160-UPL8-UNV-L840-CD2-U  
Description: 8FT. Linear Wavestream System, 8% Uplight, L840  
Light Source: (476) 4000K CCT, 80 CRI LEDS  
EL236N0119D840  
Ballast/Driver: OSRAM  
OT85W1202772A0DIML

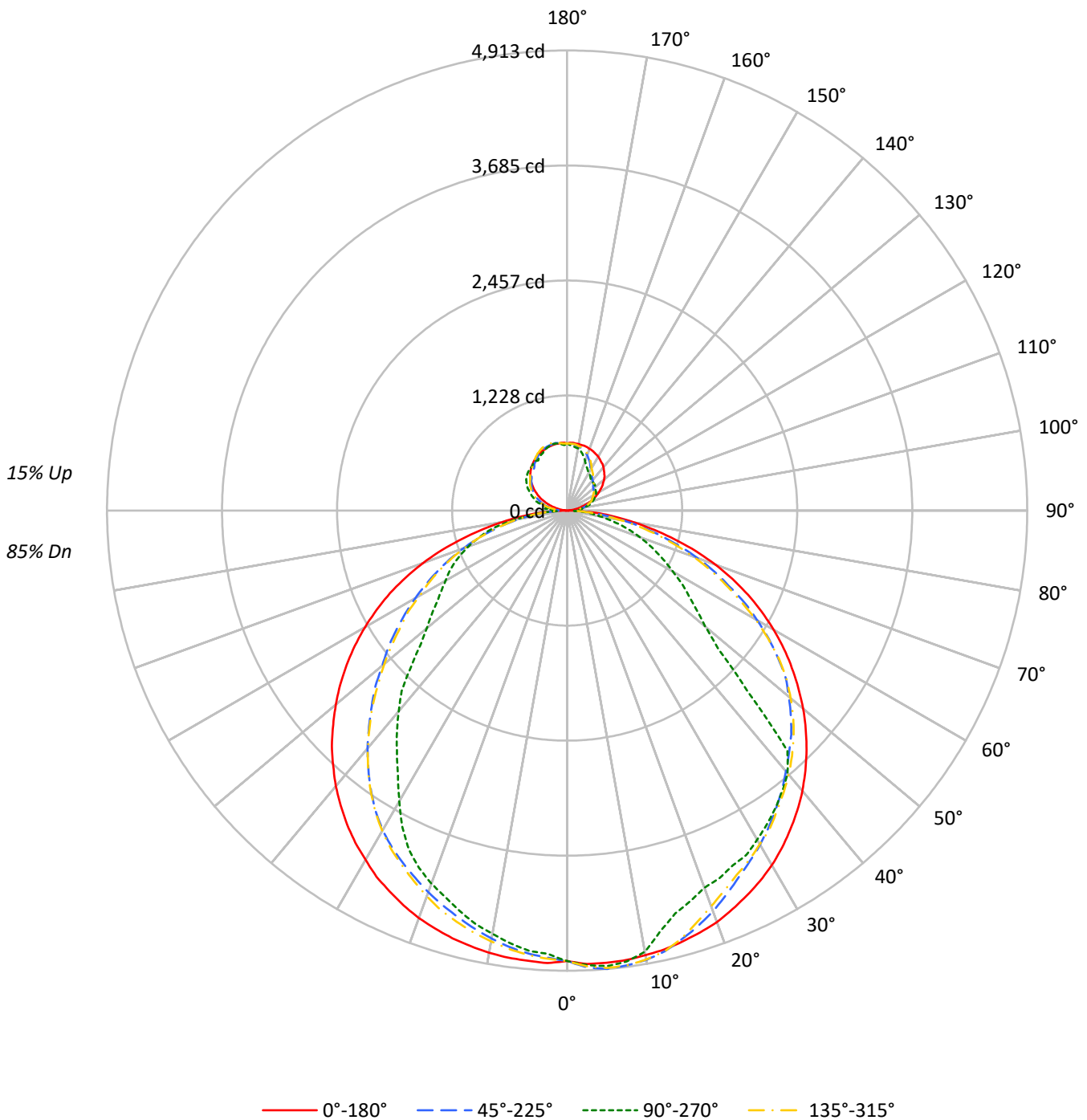
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 15952.8 lumens  
Efficiency: N/A  
Efficacy: 104.3 lumens/watt  
Spacing Criteria (0/90/45): 1.34 / 1.19 / 1.36  
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

TEST NUMBER: P197455

CATALOG NUMBER: 8WSL-LD2-160-UPL8-UNV-L840-CD2-U

### Luminous Intensity Polar Plot





TEST NUMBER: P197455

CATALOG NUMBER: 8WSL-LD2-160-UPL8-UNV-L840-CD2-U

**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°	13624	13624	13624	13624
5°	13778	13881	13720	13412
10°	13864	13760	13789	13197
15°	13968	13062	13863	12987
20°	14094	12915	13955	12775
25°	14179	13068	14018	12489
30°	14300	13272	14081	11723
35°	14370	13408	14156	10951
40°	14452	13538	14205	10339
45°	14481	10892	14233	9448
50°	14500	8464	14205	8623
55°	14470	7832	14190	8367
60°	14441	7381	14119	8489
65°	14289	7075	13978	8905
70°	13903	6824	13562	9297
75°	13018	6424	12624	9806
80°	11844	5881	11340	9324
85°	11547	6360	10377	8369



TEST NUMBER: P197455

CATALOG NUMBER: 8WSL-LD2-160-UPL8-UNV-L840-CD2-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	457.2	2.9
10°-20°	1298.3	8.1
20°-30°	1965.5	12.3
30°-40°	2373.3	14.9
40°-50°	2423.0	15.2
50°-60°	2118.4	13.3
60°-70°	1641.9	10.3
70°-80°	987.2	6.2
80°-90°	304.7	1.9
90°-100°	128.5	0.8
100°-110°	245.7	1.5
110°-120°	333.7	2.1
120°-130°	379.4	2.4
130°-140°	384.8	2.4
140°-150°	354.2	2.2
150°-160°	292.2	1.8
160°-170°	196.5	1.2
170°-180°	68.3	0.4
0°-30°	3721.0	23.3
0°-40°	6094.3	38.2
0°-60°	10635.7	66.7
0°-90°	13569.6	85.1
90°-120°	707.9	4.4
90°-150°	1826.3	11.4
90°-180°	2383.0	14.9
0°-180°	15952.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	4810	4810	4810	4810	4810	
5°	4846	4882	4825	4717	4846	462
15°	4763	4454	4727	4428	4763	1347
25°	4537	4181	4485	3996	4537	2094
35°	4156	3878	4094	3167	4156	2602
45°	3615	2719	3553	2358	3615	2788
55°	2930	1586	2873	1694	2930	2619
65°	2132	1056	2086	1329	2132	2104
75°	1190	587	1154	896	1190	1262
85°	355	196	319	258	355	359
90°	5	108	5	124	5	23
95°	31	149	31	237	31	39
105°	165	252	160	319	165	176
115°	319	324	314	433	319	316
125°	458	371	448	530	458	407
135°	561	407	556	587	561	433
145°	633	433	628	623	633	398
155°	685	505	680	659	685	316
165°	716	628	711	716	716	202
175°	726	690	726	711	726	69
180°	716	716	716	716	716	



TEST NUMBER: P197455

CATALOG NUMBER: 8WSL-LD2-160-UPL8-UNV-L840-CD2-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	4809.6	4809.6	4809.6	4809.6	4809.6	4809.6	4809.6	4809.6	4809.6	4809.6	4809.6
2.5°	4845.6	4819.9	4881.7	4892.0	4855.9	4866.2	4871.4	4814.7	4835.3	4758.1	4778.7
5°	4845.6	4840.5	4912.6	4902.3	4881.7	4886.8	4902.3	4835.3	4825.0	4732.3	4747.8
7.5°	4840.5	4850.8	4897.1	4886.8	4855.9	4871.4	4897.1	4845.6	4814.7	4706.6	4701.4
10°	4819.9	4835.3	4871.4	4840.5	4783.8	4809.6	4866.2	4835.3	4794.1	4665.4	4639.6
12.5°	4799.3	4809.6	4819.9	4691.1	4598.4	4660.2	4819.9	4809.6	4763.2	4619.0	4572.7
15°	4763.2	4778.7	4737.5	4552.1	4454.3	4516.0	4727.2	4768.4	4727.2	4552.1	4495.5
17.5°	4722.0	4737.5	4649.9	4444.0	4371.9	4402.8	4608.7	4716.9	4680.8	4490.3	4418.2
20°	4675.7	4691.1	4552.1	4330.7	4284.3	4310.1	4495.5	4660.2	4629.3	4418.2	4335.8
22.5°	4608.7	4634.5	4438.8	4253.4	4248.3	4248.3	4387.3	4593.3	4562.4	4330.7	4243.1
25°	4536.6	4562.4	4325.5	4181.3	4181.3	4181.3	4289.5	4505.8	4485.2	4238.0	4150.4
27.5°	4459.4	4485.2	4222.5	4129.8	4145.3	4119.5	4207.1	4407.9	4407.9	4145.3	4052.6
30°	4371.9	4397.6	4119.5	4047.5	4057.8	4047.5	4114.4	4304.9	4304.9	4037.2	3939.3
32.5°	4268.9	4294.6	4006.3	3949.6	3970.2	3959.9	4026.9	4201.9	4207.1	3923.9	3805.4
35°	4155.6	4186.5	3887.8	3856.9	3877.5	3862.1	3908.4	4093.8	4093.8	3800.3	3650.9
37.5°	4037.2	4068.0	3764.2	3753.9	3774.5	3759.1	3795.1	3980.5	3970.2	3671.5	3486.2
40°	3908.4	3944.5	3635.5	3635.5	3661.2	3650.9	3681.8	3862.1	3841.5	3542.8	3316.2
42.5°	3764.2	3810.6	3506.8	3511.9	3481.0	3522.2	3553.1	3738.5	3697.3	3398.6	3130.9
45°	3614.9	3671.5	3383.2	3290.5	2718.9	3254.4	3419.2	3614.9	3553.1	3254.4	2950.6
47.5°	3455.3	3527.4	3239.0	2899.1	2188.5	2852.8	3275.0	3460.4	3388.3	3100.0	2775.5
50°	3290.5	3372.9	3089.7	2564.4	1920.7	2512.9	3115.4	3305.9	3223.5	2940.3	2574.7
52.5°	3110.3	3202.9	2945.5	2270.9	1740.5	2224.6	2950.6	3156.6	3053.6	2770.4	2409.9
55°	2930.0	3027.9	2749.8	2018.6	1586.0	1977.4	2760.1	2966.1	2873.4	2595.3	2229.7
57.5°	2744.6	2842.5	2554.1	1797.2	1452.1	1756.0	2543.8	2791.0	2688.0	2415.1	2049.5
60°	2549.0	2646.8	2343.0	1596.3	1302.8	1565.4	2322.4	2595.3	2492.3	2229.7	1874.4
62.5°	2343.0	2440.8	2142.2	1410.9	1179.2	1385.2	2080.4	2404.8	2291.5	2034.0	1694.2
65°	2131.9	2204.0	1905.3	1235.9	1055.6	1215.3	1864.1	2167.9	2085.5	1828.0	1524.2
67.5°	1910.4	1982.5	1699.3	1081.4	937.2	1060.8	1653.0	1956.8	1864.1	1627.2	1354.3
70°	1678.7	1740.5	1483.0	932.0	823.9	916.6	1431.5	1719.9	1637.5	1416.1	1174.1
72.5°	1441.8	1498.5	1251.3	793.0	705.5	782.7	1199.8	1483.0	1400.6	1194.7	1009.3
75°	1189.5	1246.2	1035.0	654.0	587.0	643.7	988.7	1230.7	1153.5	983.5	839.4
77.5°	952.6	1019.6	818.8	514.9	468.6	504.6	777.6	993.8	916.6	787.9	674.6
80°	726.1	782.7	607.6	391.4	360.5	386.2	566.4	757.0	695.2	607.6	525.2
82.5°	525.2	556.1	417.1	288.4	272.9	283.2	386.2	535.5	504.6	437.7	386.2
85°	355.3	350.2	257.5	200.8	195.7	200.8	231.7	324.4	319.3	293.5	247.2
87.5°	149.3	139.0	118.4	82.4	72.1	77.2	92.7	123.6	118.4	123.6	118.4
90°	5.1	51.5	82.4	103.0	108.1	103.0	82.4	51.5	5.1	56.6	92.7
92.5°	10.3	66.9	97.8	113.3	123.6	113.3	92.7	66.9	10.3	87.5	92.7
95°	30.9	92.7	113.3	139.0	149.3	139.0	113.3	87.5	30.9	77.2	139.0
97.5°	61.8	118.4	133.9	154.5	159.6	149.3	128.7	118.4	56.6	139.0	144.2
100°	92.7	149.3	175.1	175.1	180.2	175.1	169.9	144.2	87.5	154.5	175.1
102.5°	128.7	169.9	200.8	216.3	216.3	216.3	200.8	169.9	118.4	190.5	242.0
105°	164.8	185.4	221.4	242.0	252.3	242.0	221.4	190.5	159.6	221.4	257.5
107.5°	206.0	200.8	242.0	262.6	272.9	262.6	242.0	206.0	195.7	247.2	288.4
110°	247.2	221.4	262.6	283.2	288.4	283.2	262.6	221.4	236.9	278.1	319.3



TEST NUMBER: P197455

CATALOG NUMBER: 8WSL-LD2-160-UPL8-UNV-L840-CD2-U

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	283.2	236.9	283.2	303.8	309.0	303.8	283.2	242.0	272.9	298.7	350.2
115°	319.3	252.3	293.5	319.3	324.4	319.3	293.5	257.5	314.1	324.4	375.9
117.5°	355.3	272.9	303.8	334.7	339.9	334.7	309.0	278.1	350.2	355.3	401.7
120°	391.4	298.7	319.3	345.0	355.3	350.2	319.3	303.8	381.1	381.1	422.3
122.5°	422.3	319.3	334.7	355.3	365.6	355.3	334.7	329.6	417.1	406.8	448.0
125°	458.3	339.9	345.0	365.6	370.8	365.6	350.2	345.0	448.0	427.4	463.4
127.5°	484.0	365.6	355.3	375.9	381.1	375.9	360.5	370.8	478.9	468.6	478.9
130°	514.9	391.4	365.6	386.2	391.4	391.4	365.6	401.7	504.6	499.5	499.5
132.5°	540.7	417.1	375.9	396.5	401.7	401.7	381.1	422.3	530.4	525.2	514.9
135°	561.3	453.1	396.5	396.5	406.8	406.8	401.7	458.3	556.1	551.0	540.7
137.5°	581.9	484.0	412.0	401.7	406.8	406.8	422.3	489.2	576.7	576.7	556.1
140°	602.5	514.9	422.3	412.0	412.0	422.3	437.7	520.1	597.3	597.3	561.3
142.5°	623.1	540.7	437.7	427.4	417.1	437.7	453.1	551.0	612.8	617.9	576.7
145°	633.4	566.4	458.3	442.9	432.6	458.3	478.9	576.7	628.2	638.5	607.6
147.5°	648.8	592.2	484.0	453.1	453.1	468.6	499.5	597.3	643.7	654.0	623.1
150°	664.3	612.8	504.6	468.6	458.3	484.0	520.1	617.9	659.1	669.4	643.7
152.5°	674.6	633.4	535.5	489.2	478.9	509.8	556.1	633.4	669.4	679.7	664.3
155°	684.9	648.8	571.6	509.8	504.6	530.4	587.0	648.8	679.7	690.0	679.7
157.5°	695.2	664.3	597.3	540.7	520.1	561.3	612.8	669.4	690.0	700.3	695.2
160°	700.3	674.6	628.2	571.6	561.3	597.3	638.5	674.6	695.2	710.6	705.5
162.5°	710.6	684.9	648.8	607.6	597.3	628.2	659.1	690.0	705.5	715.8	715.8
165°	715.8	695.2	669.4	638.5	628.2	659.1	674.6	700.3	710.6	715.8	720.9
167.5°	715.8	705.5	684.9	659.1	654.0	679.7	695.2	710.6	715.8	715.8	726.1
170°	720.9	710.6	695.2	679.7	674.6	695.2	700.3	715.8	720.9	715.8	731.2
172.5°	720.9	715.8	705.5	690.0	679.7	705.5	710.6	715.8	720.9	715.8	726.1
175°	726.1	715.8	715.8	705.5	690.0	715.8	715.8	715.8	726.1	715.8	720.9
177.5°	726.1	715.8	715.8	710.6	700.3	715.8	715.8	715.8	726.1	715.8	720.9
180°	715.8	715.8	715.8	715.8	715.8	715.8	715.8	715.8	715.8	715.8	715.8



TEST NUMBER: P197455

CATALOG NUMBER: 8WSL-LD2-160-UPL8-UNV-L840-CD2-U

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	4809.6	4809.6	4809.6	4809.6	4809.6	4809.6
2.5°	4773.5	4737.5	4747.8	4789.0	4773.5	4845.6
5°	4737.5	4716.9	4716.9	4763.2	4758.1	4845.6
7.5°	4680.8	4660.2	4670.5	4722.0	4732.3	4840.5
10°	4613.9	4588.1	4598.4	4670.5	4696.3	4819.9
12.5°	4541.8	4521.2	4531.5	4613.9	4649.9	4799.3
15°	4459.4	4428.5	4459.4	4546.9	4593.3	4763.2
17.5°	4366.7	4325.5	4361.6	4474.9	4531.5	4722.0
20°	4274.0	4238.0	4258.6	4382.2	4464.6	4675.7
22.5°	4181.3	4129.8	4150.4	4279.2	4382.2	4608.7
25°	4073.2	3996.0	4037.2	4176.2	4294.6	4536.6
27.5°	3929.0	3810.6	3898.1	4073.2	4191.6	4459.4
30°	3738.5	3584.0	3712.7	3949.6	4083.5	4371.9
32.5°	3527.4	3362.6	3506.8	3810.6	3970.2	4268.9
35°	3316.2	3166.9	3295.6	3656.1	3851.8	4155.6
37.5°	3115.4	2986.7	3105.1	3491.3	3728.2	4037.2
40°	2924.9	2796.1	2919.7	3311.1	3594.3	3908.4
42.5°	2734.3	2615.9	2734.3	3120.6	3455.3	3764.2
45°	2543.8	2358.4	2533.5	2935.2	3305.9	3614.9
47.5°	2337.8	2121.6	2322.4	2734.3	3146.3	3455.3
50°	2142.2	1956.8	2131.9	2549.0	2981.5	3290.5
52.5°	1972.2	1822.9	1961.9	2358.4	2811.6	3110.3
55°	1812.6	1694.2	1812.6	2173.1	2631.4	2930.0
57.5°	1668.4	1591.2	1673.6	2013.4	2446.0	2744.6
60°	1544.8	1498.5	1550.0	1817.7	2260.6	2549.0
62.5°	1426.4	1421.2	1431.5	1663.3	2064.9	2343.0
65°	1302.8	1328.6	1302.8	1498.5	1869.2	2131.9
67.5°	1179.2	1230.7	1189.5	1333.7	1658.1	1910.4
70°	1065.9	1122.6	1065.9	1163.8	1447.0	1678.7
72.5°	937.2	1009.3	937.2	1004.1	1225.6	1441.8
75°	813.6	896.0	818.8	839.4	1014.4	1189.5
77.5°	679.7	757.0	695.2	679.7	818.8	952.6
80°	540.7	571.6	540.7	535.5	633.4	726.1
82.5°	375.9	401.7	375.9	391.4	463.4	525.2
85°	247.2	257.5	247.2	252.3	309.0	355.3
87.5°	103.0	103.0	103.0	128.7	139.0	149.3
90°	113.3	123.6	113.3	92.7	56.6	5.1
92.5°	118.4	128.7	118.4	103.0	66.9	10.3
95°	211.1	236.9	200.8	128.7	108.1	30.9
97.5°	169.9	185.4	175.1	149.3	133.9	61.8
100°	200.8	216.3	200.8	211.1	164.8	92.7
102.5°	236.9	247.2	242.0	247.2	200.8	128.7
105°	309.0	319.3	309.0	267.8	231.7	164.8
107.5°	329.6	355.3	334.7	298.7	262.6	206.0
110°	355.3	375.9	360.5	329.6	288.4	247.2





TEST NUMBER: P197455

CATALOG NUMBER: 8WSL-LD2-160-UPL8-UNV-L840-CD2-U

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	381.1	406.8	391.4	365.6	309.0	283.2
115°	412.0	432.6	422.3	391.4	339.9	319.3
117.5°	442.9	458.3	448.0	412.0	370.8	355.3
120°	468.6	489.2	478.9	437.7	396.5	391.4
122.5°	489.2	509.8	499.5	463.4	422.3	422.3
125°	509.8	530.4	520.1	484.0	442.9	458.3
127.5°	525.2	551.0	540.7	499.5	489.2	484.0
130°	545.8	561.3	556.1	514.9	514.9	514.9
132.5°	556.1	576.7	566.4	535.5	545.8	540.7
135°	561.3	587.0	576.7	561.3	571.6	561.3
137.5°	571.6	592.2	587.0	576.7	597.3	581.9
140°	587.0	597.3	602.5	587.0	617.9	602.5
142.5°	602.5	607.6	617.9	602.5	638.5	623.1
145°	612.8	623.1	633.4	633.4	654.0	633.4
147.5°	612.8	628.2	628.2	643.7	674.6	648.8
150°	628.2	617.9	648.8	664.3	684.9	664.3
152.5°	648.8	643.7	669.4	684.9	695.2	674.6
155°	654.0	659.1	674.6	700.3	705.5	684.9
157.5°	674.6	669.4	695.2	715.8	715.8	695.2
160°	690.0	690.0	715.8	726.1	720.9	700.3
162.5°	705.5	705.5	731.2	731.2	726.1	710.6
165°	715.8	715.8	741.5	736.4	726.1	715.8
167.5°	720.9	726.1	746.7	741.5	726.1	715.8
170°	726.1	726.1	746.7	736.4	726.1	720.9
172.5°	726.1	720.9	741.5	731.2	720.9	720.9
175°	720.9	710.6	731.2	720.9	720.9	726.1
177.5°	715.8	700.3	715.8	715.8	720.9	726.1
180°	715.8	715.8	715.8	715.8	715.8	715.8

(END OF REPORT)