

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: P197505

Luminaire Tested: **8WSL-LD2-160-UPL15-UNV-L830-CD2-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P197505  
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-L830-CD2-U  
Description: 8FT. Linear Wavestream System, 15% Uplight, L830  
Light Source: (476) 3000K CCT, 80 CRI LEDS  
EL236N0119D830  
Ballast/Driver: OSRAM  
OT85W1202772A0DIML

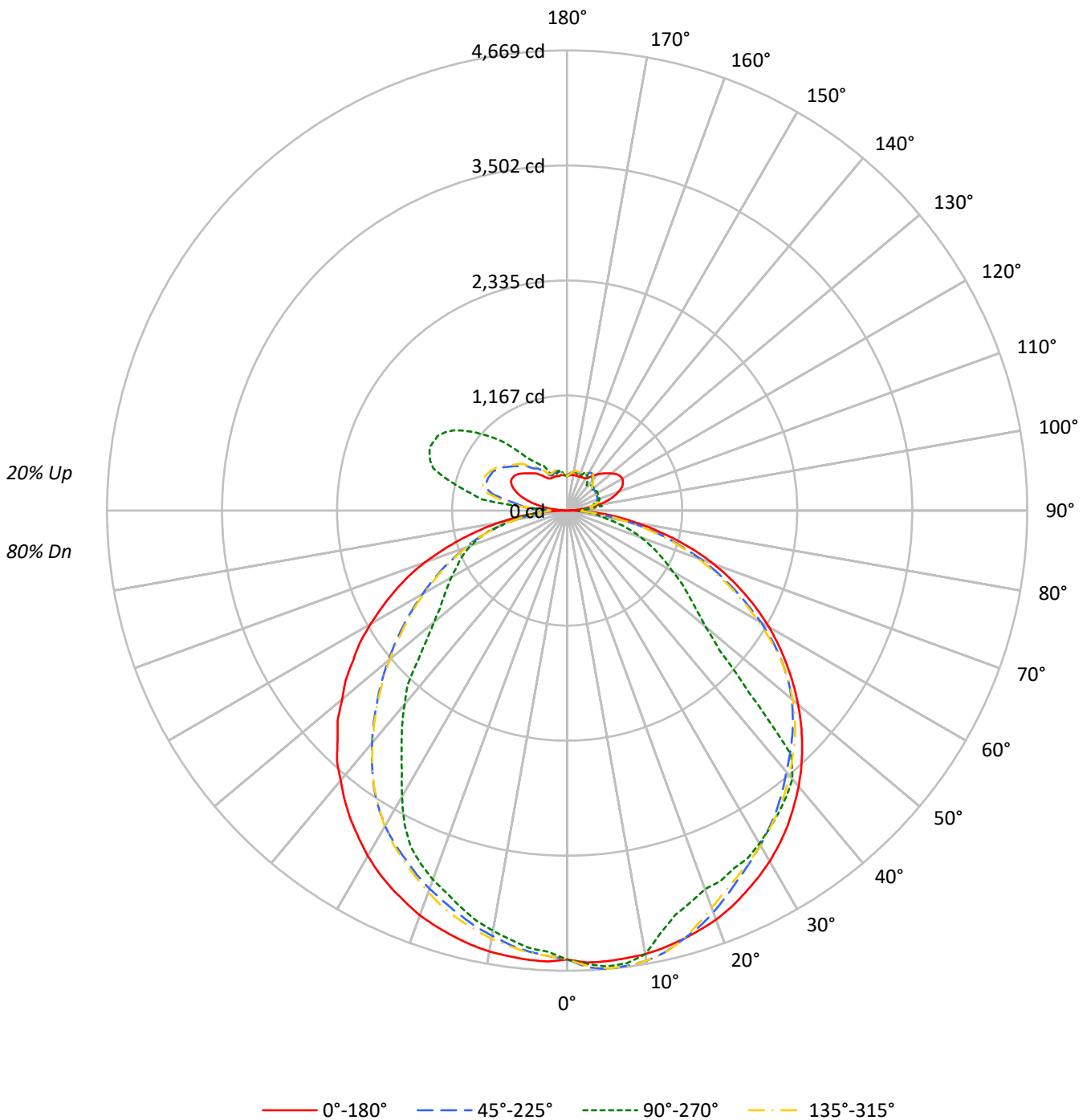
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 16115.9 lumens  
Efficiency: N/A  
Efficacy: 105.4 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										
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	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°	12899	12899	12899	12899
5°	13052	13201	13008	12666
10°	13143	13143	13068	12451
15°	13216	12449	13109	12220
20°	13317	12324	13175	12009
25°	13366	12517	13203	11749
30°	13441	12757	13236	10961
35°	13487	12945	13234	10124
40°	13513	13146	13223	9492
45°	13509	10451	13194	8545
50°	13478	8064	13133	7764
55°	13426	7436	13090	7539
60°	13387	7020	13032	7701
65°	13281	6798	12931	8060
70°	13076	6625	12730	8617
75°	12473	6294	12073	9155
80°	11685	5714	11342	9125
85°	11723	7475	10875	10875



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	433.3	2.7
10°-20°	1229.8	7.6
20°-30°	1858.5	11.5
30°-40°	2236.7	13.9
40°-50°	2274.7	14.1
50°-60°	1979.9	12.3
60°-70°	1544.5	9.6
70°-80°	954.8	5.9
80°-90°	335.9	2.1
90°-100°	316.3	2.0
100°-110°	612.4	3.8
110°-120°	670.0	4.2
120°-130°	587.4	3.6
130°-140°	440.1	2.7
140°-150°	301.3	1.9
150°-160°	191.9	1.2
160°-170°	112.2	0.7
170°-180°	36.2	0.2
0°-30°	3521.7	21.9
0°-40°	5758.4	35.7
0°-60°	10013.0	62.1
0°-90°	12848.2	79.7
90°-120°	1598.7	9.9
90°-150°	2927.5	18.2
90°-180°	3268.0	20.3
0°-180°	16115.9	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	4554	4554	4554	4554	4554	
5°	4590	4643	4575	4454	4590	437
15°	4507	4245	4470	4167	4507	1274
25°	4277	4005	4224	3759	4277	1974
35°	3900	3743	3827	2928	3900	2440
45°	3372	2609	3294	2133	3372	2601
55°	2719	1506	2651	1527	2719	2431
65°	1982	1014	1929	1202	1982	1958
75°	1140	575	1103	836	1140	1207
85°	361	230	335	335	361	360
90°	5	146	5	230	5	27
95°	141	240	110	481	141	146
105°	450	298	434	1281	450	468
115°	622	340	622	1537	622	609
125°	633	356	633	1417	633	562
135°	533	356	533	1035	533	414
145°	418	356	429	617	418	267
155°	371	429	366	424	371	171
165°	366	387	361	392	366	104
175°	361	376	361	366	361	35
180°	350	350	350	350	350	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	4553.7	4553.7	4553.7	4553.7	4553.7	4553.7	4553.7	4553.7	4553.7	4553.7	4553.7
2.5°	4590.3	4569.4	4637.4	4642.6	4606.0	4621.7	4621.7	4564.2	4579.9	4511.9	4522.4
5°	4590.3	4595.6	4668.8	4663.5	4642.6	4647.8	4663.5	4590.3	4574.6	4480.5	4491.0
7.5°	4579.9	4606.0	4658.3	4653.1	4632.2	4637.4	4663.5	4600.8	4559.0	4449.2	4443.9
10°	4569.4	4595.6	4637.4	4611.2	4569.4	4585.1	4637.4	4595.6	4543.3	4412.6	4381.2
12.5°	4543.3	4569.4	4590.3	4459.6	4386.4	4449.2	4595.6	4569.4	4511.9	4360.3	4318.5
15°	4506.7	4538.1	4511.9	4328.9	4245.3	4302.8	4511.9	4532.8	4470.1	4292.3	4240.0
17.5°	4464.9	4501.5	4433.5	4229.6	4166.9	4193.0	4402.1	4485.8	4423.0	4224.4	4161.6
20°	4417.8	4459.6	4339.4	4125.0	4088.4	4109.3	4287.1	4433.5	4370.8	4151.2	4083.2
22.5°	4355.1	4402.1	4229.6	4051.8	4067.5	4051.8	4182.5	4365.5	4297.6	4072.7	3994.3
25°	4276.6	4328.9	4119.8	3989.1	4004.8	3999.6	4093.7	4276.6	4224.4	3978.6	3895.0
27.5°	4198.2	4250.5	4020.5	3947.3	3973.4	3942.0	4010.0	4182.5	4140.7	3879.3	3800.9
30°	4109.3	4166.9	3921.1	3874.1	3900.2	3879.3	3926.4	4088.4	4046.6	3774.7	3696.3
32.5°	4010.0	4067.5	3816.6	3785.2	3821.8	3795.7	3827.0	3983.9	3936.8	3659.7	3565.6
35°	3900.2	3957.7	3706.8	3706.8	3743.4	3712.0	3727.7	3879.3	3827.0	3544.7	3419.2
37.5°	3780.0	3842.7	3586.5	3612.7	3654.5	3623.1	3623.1	3769.5	3706.8	3419.2	3251.9
40°	3654.5	3722.5	3461.0	3518.6	3555.2	3518.6	3508.1	3654.5	3576.1	3293.7	3079.4
42.5°	3518.6	3591.8	3346.0	3414.0	3366.9	3414.0	3387.9	3534.2	3455.8	3157.8	2901.6
45°	3372.2	3466.3	3231.0	3189.2	2608.9	3157.8	3267.6	3408.8	3293.7	3027.1	2723.9
47.5°	3220.6	3319.9	3105.5	2802.3	2096.5	2770.9	3136.9	3272.8	3157.8	2885.9	2546.1
50°	3058.5	3173.5	2974.8	2467.7	1829.9	2436.3	2990.5	3131.7	2980.1	2734.3	2368.4
52.5°	2891.2	3016.7	2828.4	2180.1	1652.1	2148.8	2833.7	2980.1	2833.7	2572.3	2195.8
55°	2718.6	2849.4	2655.9	1913.5	1505.7	1908.3	2650.7	2818.0	2650.7	2410.2	2023.3
57.5°	2546.1	2692.5	2472.9	1720.1	1380.2	1693.9	2446.8	2650.7	2493.8	2242.9	1856.0
60°	2363.1	2499.1	2274.3	1510.9	1239.1	1505.7	2242.9	2478.2	2300.4	2070.4	1693.9
62.5°	2174.9	2326.5	2059.9	1328.0	1124.1	1322.7	2023.3	2284.7	2112.2	1892.6	1537.1
65°	1981.5	2127.9	1856.0	1181.6	1014.3	1171.1	1819.4	2086.0	1929.2	1714.8	1390.7
67.5°	1782.8	1918.7	1652.1	1040.4	904.5	1029.9	1610.3	1876.9	1741.0	1531.9	1233.8
70°	1578.9	1704.4	1443.0	904.5	799.9	899.2	1406.4	1662.6	1537.1	1343.6	1092.7
72.5°	1364.6	1479.6	1223.4	773.8	690.1	768.5	1192.0	1443.0	1312.3	1145.0	967.2
75°	1139.7	1249.5	1019.5	643.1	575.1	637.8	988.1	1207.7	1103.1	962.0	820.8
77.5°	925.4	1035.2	810.4	496.7	439.2	486.2	773.8	988.1	899.2	779.0	669.2
80°	716.3	805.1	596.0	371.2	350.3	371.2	580.3	758.1	695.3	611.7	522.8
82.5°	528.0	580.3	402.6	303.2	303.2	303.2	392.1	538.5	512.4	454.9	397.3
85°	360.7	360.7	271.9	230.0	230.0	230.0	266.6	318.9	334.6	303.2	303.2
87.5°	151.6	156.8	141.2	125.5	120.2	125.5	135.9	130.7	130.7	146.4	183.0
90°	5.2	68.0	115.0	141.2	146.4	135.9	104.6	62.7	5.2	88.9	162.1
92.5°	36.6	146.4	135.9	177.8	183.0	167.3	141.2	115.0	20.9	162.1	172.5
95°	141.2	172.5	266.6	271.9	240.5	230.0	261.4	162.1	109.8	219.6	439.2
97.5°	224.8	261.4	240.5	313.7	355.5	313.7	251.0	251.0	209.1	339.8	512.4
100°	308.5	277.1	245.7	271.9	313.7	277.1	235.3	277.1	292.8	397.3	627.4
102.5°	386.9	308.5	308.5	266.6	271.9	261.4	298.0	303.2	366.0	449.6	773.8
105°	449.6	318.9	324.1	303.2	298.0	303.2	324.1	324.1	433.9	496.7	841.7
107.5°	507.1	329.4	318.9	334.6	339.8	334.6	318.9	329.4	496.7	528.0	857.4
110°	554.2	334.6	324.1	334.6	350.3	334.6	324.1	339.8	549.0	559.4	867.9



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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°	596.0	339.8	334.6	329.4	345.1	329.4	334.6	350.3	590.8	575.1	867.9
115°	622.2	345.1	334.6	334.6	339.8	334.6	339.8	355.5	622.2	580.3	857.4
117.5°	637.8	355.5	339.8	345.1	350.3	345.1	339.8	366.0	643.1	601.2	852.2
120°	648.3	392.1	339.8	350.3	355.5	350.3	339.8	397.3	648.3	611.7	831.3
122.5°	643.1	407.8	345.1	350.3	360.7	350.3	345.1	413.0	643.1	606.5	805.1
125°	632.6	423.5	345.1	345.1	355.5	350.3	350.3	423.5	632.6	596.0	768.5
127.5°	611.7	460.1	345.1	350.3	350.3	350.3	350.3	454.9	611.7	601.2	731.9
130°	585.6	486.2	334.6	355.5	350.3	360.7	345.1	486.2	585.6	585.6	700.6
132.5°	559.4	496.7	334.6	355.5	355.5	360.7	339.8	496.7	559.4	564.6	669.2
135°	533.3	507.1	355.5	350.3	355.5	355.5	360.7	507.1	533.3	543.7	648.3
137.5°	507.1	512.4	381.7	334.6	350.3	339.8	392.1	512.4	512.4	512.4	616.9
140°	481.0	507.1	402.6	324.1	329.4	334.6	413.0	512.4	491.4	496.7	564.6
142.5°	449.6	491.4	418.3	350.3	324.1	360.7	428.7	507.1	460.1	481.0	538.5
145°	418.3	475.8	449.6	386.9	355.5	402.6	465.3	491.4	428.7	470.5	522.8
147.5°	392.1	449.6	454.9	407.8	392.1	423.5	470.5	470.5	397.3	449.6	486.2
150°	376.4	423.5	439.2	423.5	407.8	444.4	460.1	433.9	376.4	433.9	454.9
152.5°	371.2	402.6	402.6	444.4	439.2	465.3	423.5	413.0	366.0	418.3	413.0
155°	371.2	397.3	386.9	407.8	428.7	428.7	402.6	402.6	366.0	418.3	392.1
157.5°	366.0	402.6	386.9	381.7	392.1	402.6	402.6	407.8	366.0	407.8	392.1
160°	366.0	407.8	392.1	376.4	381.7	397.3	407.8	407.8	366.0	407.8	397.3
162.5°	366.0	397.3	397.3	381.7	381.7	402.6	407.8	402.6	366.0	397.3	407.8
165°	366.0	397.3	402.6	392.1	386.9	413.0	407.8	392.1	360.7	392.1	413.0
167.5°	366.0	386.9	407.8	397.3	397.3	413.0	413.0	386.9	360.7	376.4	413.0
170°	366.0	381.7	402.6	397.3	402.6	418.3	402.6	381.7	366.0	371.2	397.3
172.5°	366.0	371.2	392.1	397.3	397.3	407.8	392.1	371.2	366.0	360.7	381.7
175°	360.7	371.2	381.7	381.7	376.4	392.1	376.4	366.0	360.7	355.5	366.0
177.5°	355.5	360.7	371.2	371.2	360.7	371.2	360.7	355.5	355.5	350.3	360.7
180°	350.3	350.3	350.3	350.3	350.3	350.3	350.3	350.3	350.3	350.3	350.3



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	4553.7	4553.7	4553.7	4553.7	4553.7	4553.7
2.5°	4517.1	4480.5	4491.0	4522.4	4517.1	4590.3
5°	4470.1	4454.4	4454.4	4501.5	4496.2	4590.3
7.5°	4417.8	4391.7	4407.3	4459.6	4475.3	4579.9
10°	4349.8	4328.9	4334.2	4412.6	4438.7	4569.4
12.5°	4281.9	4261.0	4276.6	4349.8	4386.4	4543.3
15°	4203.4	4166.9	4208.7	4287.1	4334.2	4506.7
17.5°	4109.3	4067.5	4109.3	4213.9	4271.4	4464.9
20°	4025.7	3983.9	4010.0	4119.8	4198.2	4417.8
22.5°	3931.6	3879.3	3900.2	4020.5	4119.8	4355.1
25°	3827.0	3759.1	3790.4	3921.1	4030.9	4276.6
27.5°	3691.1	3576.1	3654.5	3816.6	3921.1	4198.2
30°	3502.9	3351.3	3476.7	3701.5	3821.8	4109.3
32.5°	3283.3	3121.2	3257.2	3560.4	3706.8	4010.0
35°	3068.9	2927.8	3053.3	3414.0	3591.8	3900.2
37.5°	2880.7	2750.0	2865.0	3246.7	3466.3	3780.0
40°	2687.3	2567.0	2682.1	3068.9	3340.8	3654.5
42.5°	2509.5	2394.5	2504.3	2891.2	3204.9	3518.6
45°	2321.3	2133.1	2310.9	2708.2	3058.5	3372.2
47.5°	2122.6	1924.0	2107.0	2530.4	2912.1	3220.6
50°	1939.7	1761.9	1929.2	2347.4	2755.2	3058.5
52.5°	1777.6	1626.0	1772.3	2164.5	2593.2	2891.2
55°	1626.0	1526.6	1631.2	1997.2	2441.6	2718.6
57.5°	1505.7	1437.7	1510.9	1835.1	2274.3	2546.1
60°	1401.1	1359.3	1406.4	1673.0	2096.5	2363.1
62.5°	1286.1	1270.4	1286.1	1516.2	1924.0	2174.9
65°	1186.8	1202.5	1186.8	1375.0	1741.0	1981.5
67.5°	1092.7	1129.3	1097.9	1223.4	1558.0	1782.8
70°	988.1	1040.4	993.4	1087.5	1369.8	1578.9
72.5°	878.3	941.1	878.3	956.8	1171.1	1364.6
75°	763.3	836.5	768.5	815.6	982.9	1139.7
77.5°	637.8	684.9	648.3	664.0	799.9	925.4
80°	507.1	559.4	512.4	522.8	632.6	716.3
82.5°	423.5	460.1	428.7	397.3	470.5	528.0
85°	313.7	334.6	324.1	308.5	324.1	360.7
87.5°	193.4	203.9	193.4	193.4	167.3	151.6
90°	214.4	230.0	214.4	167.3	94.1	5.2
92.5°	219.6	240.5	219.6	183.0	177.8	36.6
95°	491.4	481.0	522.8	475.8	271.9	141.2
97.5°	763.3	873.1	789.5	569.9	366.0	224.8
100°	878.3	982.9	914.9	711.0	418.3	308.5
102.5°	1014.3	1129.3	1056.1	831.3	470.5	386.9
105°	1181.6	1280.9	1218.2	878.3	517.6	449.6
107.5°	1270.4	1422.1	1296.6	899.2	549.0	507.1
110°	1317.5	1479.6	1359.3	904.5	575.1	554.2





TEST NUMBER: P197505

CATALOG NUMBER: 8WSL-LD2-160-UPL15-UNV-L830-CD2-U

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	1354.1	1510.9	1385.5	904.5	585.6	596.0
115°	1354.1	1537.1	1385.5	888.8	601.2	622.2
117.5°	1354.1	1521.4	1385.5	873.1	622.2	637.8
120°	1307.0	1516.2	1348.9	852.2	627.4	648.3
122.5°	1270.4	1474.3	1296.6	826.1	627.4	643.1
125°	1202.5	1416.8	1233.8	794.7	616.9	632.6
127.5°	1129.3	1333.2	1155.4	758.1	622.2	611.7
130°	1061.3	1239.1	1077.0	721.5	601.2	585.6
132.5°	972.4	1134.5	988.1	695.3	580.3	559.4
135°	888.8	1035.2	909.7	674.4	554.2	533.3
137.5°	799.9	930.6	820.8	632.6	528.0	507.1
140°	695.3	799.9	716.3	585.6	512.4	481.0
142.5°	627.4	684.9	648.3	564.6	491.4	449.6
145°	585.6	616.9	601.2	543.7	481.0	418.3
147.5°	543.7	575.1	559.4	501.9	454.9	392.1
150°	528.0	528.0	549.0	465.3	439.2	376.4
152.5°	470.5	512.4	491.4	423.5	428.7	371.2
155°	402.6	423.5	423.5	407.8	428.7	371.2
157.5°	376.4	392.1	397.3	407.8	418.3	366.0
160°	376.4	381.7	397.3	413.0	413.0	366.0
162.5°	386.9	381.7	407.8	423.5	402.6	366.0
165°	397.3	392.1	418.3	428.7	392.1	366.0
167.5°	407.8	407.8	428.7	423.5	381.7	366.0
170°	407.8	418.3	428.7	407.8	376.4	366.0
172.5°	392.1	397.3	407.8	381.7	360.7	366.0
175°	371.2	366.0	381.7	366.0	360.7	360.7
177.5°	360.7	345.1	360.7	355.5	350.3	355.5
180°	350.3	350.3	350.3	350.3	350.3	350.3

(END OF REPORT)