

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: P192462

Luminaire Tested: **4WSL-LD2-55-UPL8-UNV-L835-CD1-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P192462  
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-LD2-55-UPL8-UNV-L835-CD1-U  
Description: 4FT Linear Wavestream System, 8% Uplight, L835  
Light Source: (238) 3500K CCT, 80 CRI LEDS  
EL236N0119D835  
Ballast/Driver: OSRAM  
OT50W

**Summary**

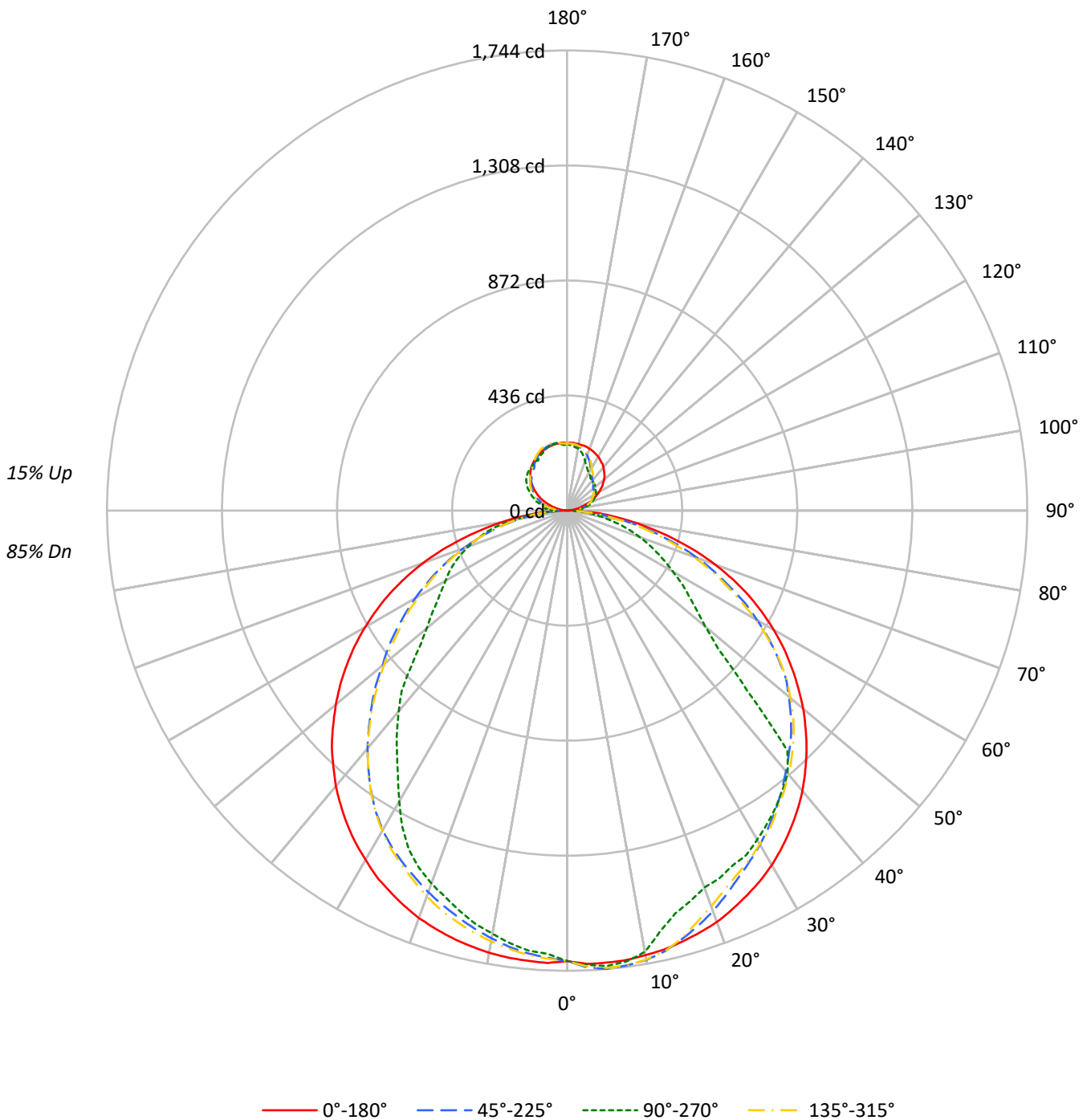
Lumens per Lamp: N/A  
Luminaire Lumens: 5662.0 lumens  
Efficiency: N/A  
Efficacy: 113.5 lumens/watt  
Spacing Criteria (0/90/45): 1.34 / 1.19 / 1.36  
Luminous Opening: Rectangular (W 0.5' x L: 3.8' x H: 0')  
CIE Type: Semi-Direct

Input Watts (W): 49.9  
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: P192462

CATALOG NUMBER: 4WSL-LD2-55-UPL8-UNV-L835-CD1-U

### Luminous Intensity Polar Plot





TEST NUMBER: P192462

CATALOG NUMBER: 4WSL-LD2-55-UPL8-UNV-L835-CD1-U

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				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	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°	9671	9671	9671	9671
5°	9780	9853	9739	9520
10°	9841	9767	9788	9368
15°	9915	9272	9840	9219
20°	10005	9167	9905	9068
25°	10065	9276	9951	8865
30°	10151	9421	9995	8321
35°	10200	9518	10049	7774
40°	10259	9610	10083	7339
45°	10279	7731	10104	6707
50°	10293	6008	10084	6121
55°	10271	5560	10073	5939
60°	10251	5239	10023	6026
65°	10142	5023	9922	6320
70°	9869	4843	9627	6599
75°	9241	4562	8961	6961
80°	8407	4173	8049	6620
85°	8197	4518	7365	5941



TEST NUMBER: P192462

CATALOG NUMBER: 4WSL-LD2-55-UPL8-UNV-L835-CD1-U

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	162.3	2.9
10°-20°	460.8	8.1
20°-30°	697.6	12.3
30°-40°	842.3	14.9
40°-50°	860.0	15.2
50°-60°	751.9	13.3
60°-70°	582.8	10.3
70°-80°	350.4	6.2
80°-90°	108.2	1.9
90°-100°	45.6	0.8
100°-110°	87.2	1.5
110°-120°	118.4	2.1
120°-130°	134.7	2.4
130°-140°	136.6	2.4
140°-150°	125.7	2.2
150°-160°	103.7	1.8
160°-170°	69.7	1.2
170°-180°	24.2	0.4
0°-30°	1320.7	23.3
0°-40°	2163.0	38.2
0°-60°	3774.8	66.7
0°-90°	4816.1	85.1
90°-120°	251.2	4.4
90°-150°	648.2	11.4
90°-180°	846.0	14.9
0°-180°	5662.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1707	1707	1707	1707	1707	
5°	1720	1733	1712	1674	1720	164
15°	1691	1581	1678	1572	1691	478
25°	1610	1484	1592	1418	1610	743
35°	1475	1376	1453	1124	1475	923
45°	1283	965	1261	837	1283	990
55°	1040	563	1020	601	1040	930
65°	757	375	740	472	757	747
75°	422	208	409	318	422	448
85°	126	70	113	91	126	127
90°	2	38	2	44	2	8
95°	11	53	11	84	11	14
105°	58	90	57	113	58	63
115°	113	115	112	154	113	112
125°	163	132	159	188	163	144
135°	199	144	197	208	199	154
145°	225	154	223	221	225	141
155°	243	179	241	234	243	112
165°	254	223	252	254	254	72
175°	258	245	258	252	258	24
180°	254	254	254	254	254	



TEST NUMBER: P192462

CATALOG NUMBER: 4WSL-LD2-55-UPL8-UNV-L835-CD1-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1707.0	1707.0	1707.0	1707.0	1707.0	1707.0	1707.0	1707.0	1707.0	1707.0	1707.0
2.5°	1719.8	1710.7	1732.6	1736.3	1723.5	1727.1	1728.9	1708.8	1716.2	1688.7	1696.0
5°	1719.8	1718.0	1743.6	1739.9	1732.6	1734.4	1739.9	1716.2	1712.5	1679.6	1685.1
7.5°	1718.0	1721.6	1738.1	1734.4	1723.5	1728.9	1738.1	1719.8	1708.8	1670.5	1668.6
10°	1710.7	1716.2	1728.9	1718.0	1697.9	1707.0	1727.1	1716.2	1701.5	1655.8	1646.7
12.5°	1703.4	1707.0	1710.7	1665.0	1632.1	1654.0	1710.7	1707.0	1690.6	1639.4	1622.9
15°	1690.6	1696.0	1681.4	1615.6	1580.9	1602.8	1677.8	1692.4	1677.8	1615.6	1595.5
17.5°	1675.9	1681.4	1650.4	1577.3	1551.7	1562.6	1635.7	1674.1	1661.3	1593.7	1568.1
20°	1659.5	1665.0	1615.6	1537.0	1520.6	1529.7	1595.5	1654.0	1643.0	1568.1	1538.9
22.5°	1635.7	1644.9	1575.4	1509.6	1507.8	1507.8	1557.1	1630.3	1619.3	1537.0	1506.0
25°	1610.2	1619.3	1535.2	1484.0	1484.0	1484.0	1522.4	1599.2	1591.9	1504.1	1473.1
27.5°	1582.7	1591.9	1498.7	1465.8	1471.3	1462.1	1493.2	1564.5	1564.5	1471.3	1438.4
30°	1551.7	1560.8	1462.1	1436.5	1440.2	1436.5	1460.3	1527.9	1527.9	1432.9	1398.1
32.5°	1515.1	1524.3	1421.9	1401.8	1409.1	1405.5	1429.2	1491.4	1493.2	1392.7	1350.6
35°	1474.9	1485.9	1379.9	1368.9	1376.2	1370.7	1387.2	1453.0	1453.0	1348.8	1295.8
37.5°	1432.9	1443.8	1336.0	1332.3	1339.7	1334.2	1347.0	1412.8	1409.1	1303.1	1237.3
40°	1387.2	1400.0	1290.3	1290.3	1299.5	1295.8	1306.8	1370.7	1363.4	1257.4	1177.0
42.5°	1336.0	1352.5	1244.6	1246.5	1235.5	1250.1	1261.1	1326.9	1312.2	1206.2	1111.2
45°	1283.0	1303.1	1200.8	1167.9	965.0	1155.1	1213.6	1283.0	1261.1	1155.1	1047.2
47.5°	1226.3	1251.9	1149.6	1029.0	776.7	1012.5	1162.4	1228.2	1202.6	1100.2	985.1
50°	1167.9	1197.1	1096.6	910.2	681.7	891.9	1105.7	1173.3	1144.1	1043.6	913.8
52.5°	1103.9	1136.8	1045.4	806.0	617.7	789.5	1047.2	1120.3	1083.8	983.3	855.3
55°	1039.9	1074.7	976.0	716.4	562.9	701.8	979.6	1052.7	1019.8	921.1	791.4
57.5°	974.1	1008.9	906.5	637.8	515.4	623.2	902.9	990.6	954.0	857.2	727.4
60°	904.7	939.4	831.6	566.6	462.4	555.6	824.3	921.1	884.6	791.4	665.3
62.5°	831.6	866.3	760.3	500.8	418.5	491.6	738.4	853.5	813.3	721.9	601.3
65°	756.6	782.2	676.2	438.6	374.7	431.3	661.6	769.4	740.2	648.8	541.0
67.5°	678.1	703.6	603.1	383.8	332.6	376.5	586.7	694.5	661.6	577.5	480.7
70°	595.8	617.7	526.4	330.8	292.4	325.3	508.1	610.4	581.2	502.6	416.7
72.5°	511.7	531.8	444.1	281.5	250.4	277.8	425.8	526.4	497.1	424.0	358.2
75°	422.2	442.3	367.4	232.1	208.4	228.5	350.9	436.8	409.4	349.1	297.9
77.5°	338.1	361.9	290.6	182.8	166.3	179.1	276.0	352.7	325.3	279.6	239.4
80°	257.7	277.8	215.7	138.9	127.9	137.1	201.0	268.7	246.7	215.7	186.4
82.5°	186.4	197.4	148.0	102.3	96.9	100.5	137.1	190.1	179.1	155.3	137.1
85°	126.1	124.3	91.4	71.3	69.5	71.3	82.2	115.1	113.3	104.2	87.7
87.5°	53.0	49.3	42.0	29.2	25.6	27.4	32.9	43.9	42.0	43.9	42.0
90°	1.8	18.3	29.2	36.6	38.4	36.6	29.2	18.3	1.8	20.1	32.9
92.5°	3.7	23.8	34.7	40.2	43.9	40.2	32.9	23.8	3.7	31.1	32.9
95°	11.0	32.9	40.2	49.3	53.0	49.3	40.2	31.1	11.0	27.4	49.3
97.5°	21.9	42.0	47.5	54.8	56.7	53.0	45.7	42.0	20.1	49.3	51.2
100°	32.9	53.0	62.1	62.1	64.0	62.1	60.3	51.2	31.1	54.8	62.1
102.5°	45.7	60.3	71.3	76.8	76.8	76.8	71.3	60.3	42.0	67.6	85.9
105°	58.5	65.8	78.6	85.9	89.6	85.9	78.6	67.6	56.7	78.6	91.4
107.5°	73.1	71.3	85.9	93.2	96.9	93.2	85.9	73.1	69.5	87.7	102.3
110°	87.7	78.6	93.2	100.5	102.3	100.5	93.2	78.6	84.1	98.7	113.3



TEST NUMBER: P192462

CATALOG NUMBER: 4WSL-LD2-55-UPL8-UNV-L835-CD1-U

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	100.5	84.1	100.5	107.8	109.7	107.8	100.5	85.9	96.9	106.0	124.3
115°	113.3	89.6	104.2	113.3	115.1	113.3	104.2	91.4	111.5	115.1	133.4
117.5°	126.1	96.9	107.8	118.8	120.6	118.8	109.7	98.7	124.3	126.1	142.6
120°	138.9	106.0	113.3	122.5	126.1	124.3	113.3	107.8	135.2	135.2	149.9
122.5°	149.9	113.3	118.8	126.1	129.8	126.1	118.8	117.0	148.0	144.4	159.0
125°	162.7	120.6	122.5	129.8	131.6	129.8	124.3	122.5	159.0	151.7	164.5
127.5°	171.8	129.8	126.1	133.4	135.2	133.4	127.9	131.6	170.0	166.3	170.0
130°	182.8	138.9	129.8	137.1	138.9	138.9	129.8	142.6	179.1	177.3	177.3
132.5°	191.9	148.0	133.4	140.7	142.6	142.6	135.2	149.9	188.2	186.4	182.8
135°	199.2	160.8	140.7	140.7	144.4	144.4	142.6	162.7	197.4	195.6	191.9
137.5°	206.5	171.8	146.2	142.6	144.4	144.4	149.9	173.6	204.7	204.7	197.4
140°	213.8	182.8	149.9	146.2	146.2	149.9	155.3	184.6	212.0	212.0	199.2
142.5°	221.1	191.9	155.3	151.7	148.0	155.3	160.8	195.6	217.5	219.3	204.7
145°	224.8	201.0	162.7	157.2	153.5	162.7	170.0	204.7	223.0	226.6	215.7
147.5°	230.3	210.2	171.8	160.8	160.8	166.3	177.3	212.0	228.5	232.1	221.1
150°	235.8	217.5	179.1	166.3	162.7	171.8	184.6	219.3	233.9	237.6	228.5
152.5°	239.4	224.8	190.1	173.6	170.0	180.9	197.4	224.8	237.6	241.2	235.8
155°	243.1	230.3	202.9	180.9	179.1	188.2	208.4	230.3	241.2	244.9	241.2
157.5°	246.7	235.8	212.0	191.9	184.6	199.2	217.5	237.6	244.9	248.6	246.7
160°	248.6	239.4	223.0	202.9	199.2	212.0	226.6	239.4	246.7	252.2	250.4
162.5°	252.2	243.1	230.3	215.7	212.0	223.0	233.9	244.9	250.4	254.0	254.0
165°	254.0	246.7	237.6	226.6	223.0	233.9	239.4	248.6	252.2	254.0	255.9
167.5°	254.0	250.4	243.1	233.9	232.1	241.2	246.7	252.2	254.0	254.0	257.7
170°	255.9	252.2	246.7	241.2	239.4	246.7	248.6	254.0	255.9	254.0	259.5
172.5°	255.9	254.0	250.4	244.9	241.2	250.4	252.2	254.0	255.9	254.0	257.7
175°	257.7	254.0	254.0	250.4	244.9	254.0	254.0	254.0	257.7	254.0	255.9
177.5°	257.7	254.0	254.0	252.2	248.6	254.0	254.0	254.0	257.7	254.0	255.9
180°	254.0	254.0	254.0	254.0	254.0	254.0	254.0	254.0	254.0	254.0	254.0



TEST NUMBER: P192462

CATALOG NUMBER: 4WSL-LD2-55-UPL8-UNV-L835-CD1-U

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1707.0	1707.0	1707.0	1707.0	1707.0	1707.0
2.5°	1694.2	1681.4	1685.1	1699.7	1694.2	1719.8
5°	1681.4	1674.1	1674.1	1690.6	1688.7	1719.8
7.5°	1661.3	1654.0	1657.7	1675.9	1679.6	1718.0
10°	1637.6	1628.4	1632.1	1657.7	1666.8	1710.7
12.5°	1612.0	1604.7	1608.3	1637.6	1650.4	1703.4
15°	1582.7	1571.8	1582.7	1613.8	1630.3	1690.6
17.5°	1549.8	1535.2	1548.0	1588.2	1608.3	1675.9
20°	1516.9	1504.1	1511.5	1555.3	1584.6	1659.5
22.5°	1484.0	1465.8	1473.1	1518.8	1555.3	1635.7
25°	1445.7	1418.2	1432.9	1482.2	1524.3	1610.2
27.5°	1394.5	1352.5	1383.5	1445.7	1487.7	1582.7
30°	1326.9	1272.0	1317.7	1401.8	1449.3	1551.7
32.5°	1251.9	1193.4	1244.6	1352.5	1409.1	1515.1
35°	1177.0	1124.0	1169.7	1297.6	1367.1	1474.9
37.5°	1105.7	1060.0	1102.1	1239.1	1323.2	1432.9
40°	1038.1	992.4	1036.3	1175.2	1275.7	1387.2
42.5°	970.5	928.4	970.5	1107.5	1226.3	1336.0
45°	902.9	837.1	899.2	1041.8	1173.3	1283.0
47.5°	829.7	753.0	824.3	970.5	1116.7	1226.3
50°	760.3	694.5	756.6	904.7	1058.2	1167.9
52.5°	700.0	647.0	696.3	837.1	997.9	1103.9
55°	643.3	601.3	643.3	771.3	933.9	1039.9
57.5°	592.2	564.7	594.0	714.6	868.1	974.1
60°	548.3	531.8	550.1	645.2	802.3	904.7
62.5°	506.3	504.4	508.1	590.3	732.9	831.6
65°	462.4	471.5	462.4	531.8	663.4	756.6
67.5°	418.5	436.8	422.2	473.4	588.5	678.1
70°	378.3	398.4	378.3	413.0	513.6	595.8
72.5°	332.6	358.2	332.6	356.4	435.0	511.7
75°	288.8	318.0	290.6	297.9	360.0	422.2
77.5°	241.2	268.7	246.7	241.2	290.6	338.1
80°	191.9	202.9	191.9	190.1	224.8	257.7
82.5°	133.4	142.6	133.4	138.9	164.5	186.4
85°	87.7	91.4	87.7	89.6	109.7	126.1
87.5°	36.6	36.6	36.6	45.7	49.3	53.0
90°	40.2	43.9	40.2	32.9	20.1	1.8
92.5°	42.0	45.7	42.0	36.6	23.8	3.7
95°	74.9	84.1	71.3	45.7	38.4	11.0
97.5°	60.3	65.8	62.1	53.0	47.5	21.9
100°	71.3	76.8	71.3	74.9	58.5	32.9
102.5°	84.1	87.7	85.9	87.7	71.3	45.7
105°	109.7	113.3	109.7	95.0	82.2	58.5
107.5°	117.0	126.1	118.8	106.0	93.2	73.1
110°	126.1	133.4	127.9	117.0	102.3	87.7





TEST NUMBER: P192462

CATALOG NUMBER: 4WSL-LD2-55-UPL8-UNV-L835-CD1-U

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	135.2	144.4	138.9	129.8	109.7	100.5
115°	146.2	153.5	149.9	138.9	120.6	113.3
117.5°	157.2	162.7	159.0	146.2	131.6	126.1
120°	166.3	173.6	170.0	155.3	140.7	138.9
122.5°	173.6	180.9	177.3	164.5	149.9	149.9
125°	180.9	188.2	184.6	171.8	157.2	162.7
127.5°	186.4	195.6	191.9	177.3	173.6	171.8
130°	193.7	199.2	197.4	182.8	182.8	182.8
132.5°	197.4	204.7	201.0	190.1	193.7	191.9
135°	199.2	208.4	204.7	199.2	202.9	199.2
137.5°	202.9	210.2	208.4	204.7	212.0	206.5
140°	208.4	212.0	213.8	208.4	219.3	213.8
142.5°	213.8	215.7	219.3	213.8	226.6	221.1
145°	217.5	221.1	224.8	224.8	232.1	224.8
147.5°	217.5	223.0	223.0	228.5	239.4	230.3
150°	223.0	219.3	230.3	235.8	243.1	235.8
152.5°	230.3	228.5	237.6	243.1	246.7	239.4
155°	232.1	233.9	239.4	248.6	250.4	243.1
157.5°	239.4	237.6	246.7	254.0	254.0	246.7
160°	244.9	244.9	254.0	257.7	255.9	248.6
162.5°	250.4	250.4	259.5	259.5	257.7	252.2
165°	254.0	254.0	263.2	261.4	257.7	254.0
167.5°	255.9	257.7	265.0	263.2	257.7	254.0
170°	257.7	257.7	265.0	261.4	257.7	255.9
172.5°	257.7	255.9	263.2	259.5	255.9	255.9
175°	255.9	252.2	259.5	255.9	255.9	257.7
177.5°	254.0	248.6	254.0	254.0	255.9	257.7
180°	254.0	254.0	254.0	254.0	254.0	254.0

(END OF REPORT)