

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: P273755

Luminaire Tested: **4RCG-4-78D-L830-A**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P273755
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-20)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4RCG-4-78D-L830-A
Description: RCG SERIES DIRECT RECESSED LED LUMINAIRE WITH ASYMMETRIC FLUSH LENS
Light Source: (168) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

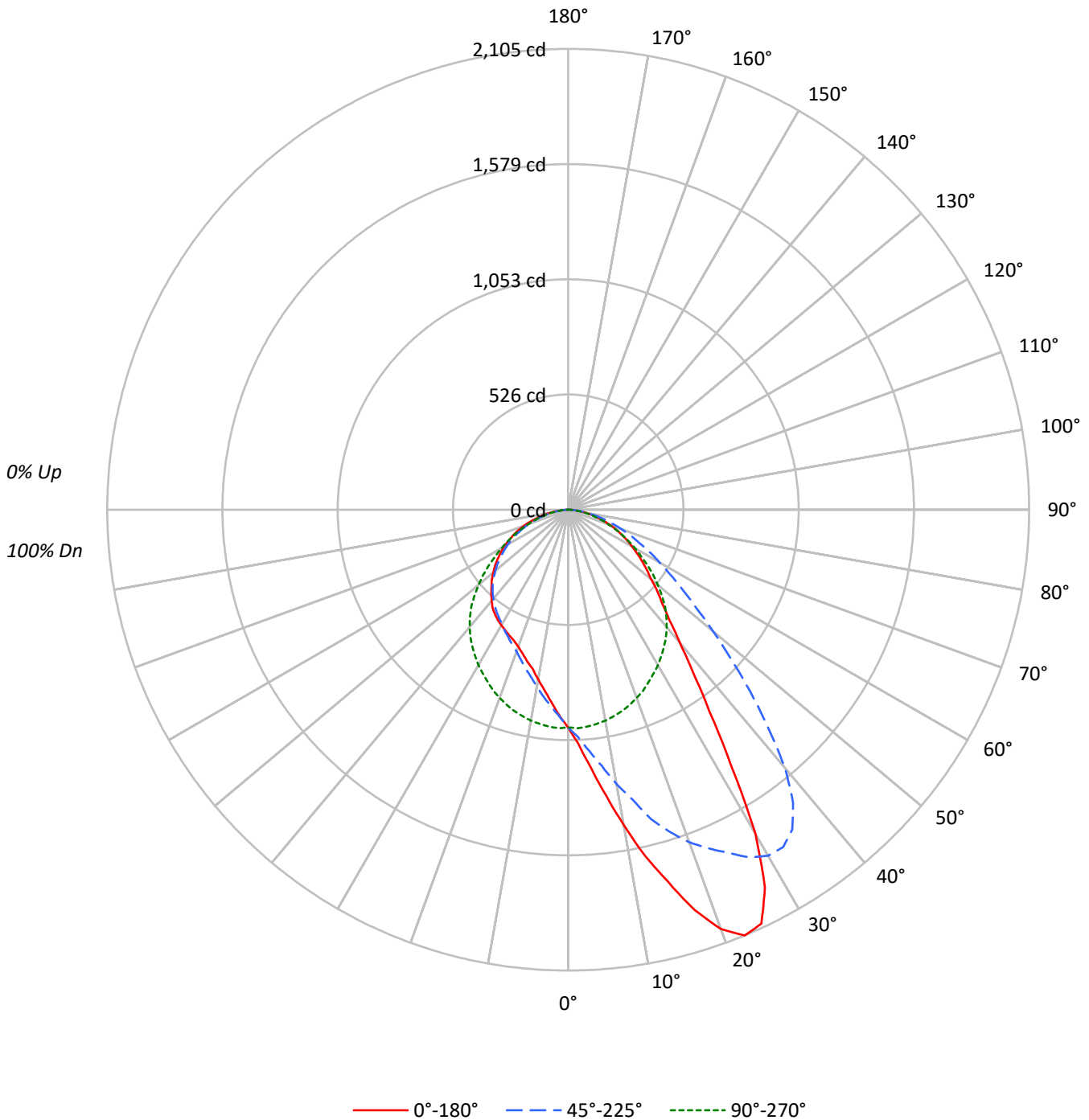
Lumens per Lamp: N/A
Luminaire Lumens: 3000.9 lumens
Efficiency: N/A
Efficacy: 115.4 lumens/watt
Spacing Criteria (0/90/45): 1.37 / 1.23 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

Input Watts (W): 26
Input Voltage (V): 120
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: P273755
CATALOG NUMBER: 4RCG-4-78D-L830-A

Luminous Intensity Polar Plot





TEST NUMBER: P273755

CATALOG NUMBER: 4RCG-4-78D-L830-A

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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87					85				
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	74					72				
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64					62				
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56					53				
5	78	66	57	51	76	64	56	50	62	55	50	60	54	49	59	53	49					47				
6	72	59	51	44	70	58	50	44	56	49	44	55	48	43	53	48	43					41				
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38					36				
8	62	49	41	35	61	49	41	35	47	40	35	46	39	35	45	39	35					33				
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31					29				
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28					27				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	12052	12052	12052
5°	14372	12103	10726
10°	17988	12042	9688
15°	22065	11945	9019
20°	26283	11794	8587
25°	27909	11609	8491
30°	23921	11476	8535
35°	16637	11284	8625
40°	12530	11060	8598
45°	10405	10726	8489
50°	9319	10047	8412
55°	8713	9315	8307
60°	8175	8548	8221
65°	7681	7793	7959
70°	7205	6932	7581
75°	6454	6070	6950
80°	5647	4977	5982
85°	4423	3616	4019



TEST NUMBER: P273755

CATALOG NUMBER: 4RCG-4-78D-L830-A

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	97.8	3.3
10°-20°	314.1	10.5
20°-30°	528.5	17.6
30°-40°	597.2	19.9
40°-50°	535.0	17.8
50°-60°	431.8	14.4
60°-70°	300.9	10.0
70°-80°	157.9	5.3
80°-90°	37.8	1.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	940.3	31.3
0°-40°	1537.6	51.2
0°-60°	2504.3	83.5
0°-90°	3000.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3000.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	994	994	994	994	994	
5°	1181	1107	995	901	882	122
15°	1758	1463	952	750	719	508
25°	2087	1729	868	645	635	923
35°	1124	1783	763	570	583	726
45°	607	1175	626	488	495	479
55°	412	638	441	377	393	370
65°	268	358	272	256	278	267
75°	138	170	130	129	148	147
85°	32	37	26	26	29	39
90°	0	0	0	0	0	



TEST NUMBER: P273755

CATALOG NUMBER: 4RCG-4-78D-L830-A

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3
2.5°	1070.4	1069.4	1067.0	1068.9	1065.1	1059.8	1059.3	1054.5	1040.5	1039.5	1035.7
5°	1181.2	1177.3	1176.8	1176.3	1169.6	1160.4	1143.1	1141.7	1118.5	1107.0	1093.0
7.5°	1315.1	1313.6	1309.8	1305.4	1282.8	1271.7	1255.3	1234.1	1207.2	1181.2	1164.8
10°	1461.5	1477.4	1457.7	1444.2	1431.7	1408.0	1380.6	1346.4	1312.2	1272.2	1241.9
12.5°	1618.6	1624.3	1624.3	1611.8	1590.6	1551.6	1497.6	1459.1	1428.3	1355.1	1329.0
15°	1758.3	1787.6	1768.9	1725.5	1726.5	1692.3	1628.7	1558.8	1521.7	1463.4	1384.0
17.5°	1916.3	1921.6	1915.8	1875.3	1855.6	1805.9	1748.6	1683.6	1613.7	1542.9	1460.6
20°	2037.6	2034.8	2017.9	1999.1	1957.7	1921.1	1857.0	1782.3	1686.0	1616.6	1524.6
22.5°	2105.1	2099.8	2094.0	2079.1	2046.3	2006.3	1950.5	1867.1	1776.6	1674.4	1564.6
25°	2086.8	2093.0	2094.0	2089.7	2077.6	2054.0	2008.7	1943.7	1852.2	1729.4	1618.6
27.5°	1945.2	1961.1	1981.3	1994.8	2016.5	2030.9	2016.5	1975.5	1900.4	1790.5	1654.2
30°	1709.1	1689.8	1737.5	1797.8	1838.7	1911.0	1951.4	1953.8	1915.8	1824.7	1692.7
32.5°	1381.6	1412.9	1427.3	1504.9	1606.5	1689.8	1780.4	1860.9	1879.6	1826.7	1715.4
35°	1124.3	1150.8	1189.3	1227.9	1324.2	1407.1	1548.7	1672.0	1770.3	1783.3	1712.5
37.5°	934.5	949.9	973.5	1014.5	1080.5	1183.1	1295.3	1455.7	1591.1	1686.5	1676.8
40°	791.9	795.8	823.2	852.6	903.7	984.6	1083.4	1221.1	1391.7	1539.6	1601.2
42.5°	685.0	694.6	702.3	730.3	768.3	824.2	914.3	1022.2	1174.9	1350.7	1486.1
45°	607.0	616.6	623.8	642.6	671.5	712.5	776.5	880.6	999.6	1175.4	1337.7
47.5°	553.0	552.0	558.3	573.2	594.0	626.7	673.9	743.3	857.4	1004.4	1174.4
50°	494.2	501.9	503.9	515.0	530.4	553.0	590.6	647.4	737.0	862.3	1015.5
52.5°	452.8	453.8	460.0	467.3	480.3	496.6	528.0	569.4	634.9	737.0	874.8
55°	412.3	412.3	417.6	423.9	431.6	447.5	469.2	501.9	555.4	638.3	754.8
57.5°	374.8	376.7	381.5	383.0	389.7	400.8	419.6	445.6	486.5	553.5	649.8
60°	337.2	341.5	341.1	344.9	350.7	358.9	374.3	394.5	430.2	481.2	559.3
62.5°	304.4	303.0	303.0	307.8	313.6	321.3	330.0	346.8	375.7	419.6	483.2
65°	267.8	266.9	270.2	273.1	275.1	280.8	288.5	304.0	324.2	357.9	409.5
67.5°	236.0	233.1	235.6	236.5	239.9	244.7	252.4	262.1	278.4	306.9	348.3
70°	203.3	200.9	200.4	201.4	204.2	207.6	212.9	222.1	237.0	258.7	287.1
72.5°	169.6	168.1	168.1	170.5	171.5	173.4	176.8	185.0	196.1	211.0	237.0
75°	137.8	137.8	137.8	138.3	139.7	141.6	144.5	148.8	158.0	169.6	187.4
77.5°	108.9	109.3	108.4	107.9	110.3	111.3	111.8	116.6	121.9	130.5	144.5
80°	80.9	78.5	79.5	80.9	81.9	82.4	83.8	84.8	89.1	93.5	102.6
82.5°	54.9	53.0	53.0	55.4	55.4	55.9	57.3	58.8	59.7	63.6	67.4
85°	31.8	31.8	32.3	32.3	32.8	32.3	33.7	34.2	34.2	36.6	39.5
87.5°	14.5	13.5	14.0	14.5	14.0	14.5	14.9	15.4	15.9	16.4	16.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P273755

CATALOG NUMBER: 4RCG-4-78D-L830-A

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3
2.5°	1032.8	1028.9	1025.1	1018.3	1012.6	1004.4	1002.0	999.1	990.4	982.7	976.9
5°	1087.7	1076.1	1059.3	1043.9	1031.3	1014.5	1004.9	994.7	980.3	967.3	956.7
7.5°	1140.2	1120.0	1096.4	1070.8	1046.3	1022.7	1003.9	987.0	968.2	949.9	936.0
10°	1205.2	1172.5	1135.9	1096.4	1062.7	1029.9	1002.4	978.4	952.3	929.7	910.9
12.5°	1279.4	1226.9	1173.0	1122.9	1081.4	1032.8	998.1	965.8	935.5	907.1	885.4
15°	1334.8	1273.2	1213.4	1147.4	1086.7	1029.9	990.4	951.9	917.7	889.7	862.7
17.5°	1389.7	1322.3	1246.2	1166.7	1095.4	1029.9	976.0	934.5	892.6	858.9	832.9
20°	1435.0	1355.5	1266.4	1183.1	1102.2	1027.0	966.3	914.3	868.0	831.9	801.6
22.5°	1474.0	1377.7	1284.7	1194.2	1101.7	1019.3	948.5	894.5	843.5	808.3	775.6
25°	1498.6	1387.3	1294.8	1190.3	1089.6	1005.8	928.7	868.0	817.9	776.5	743.3
27.5°	1521.7	1385.9	1281.4	1168.6	1075.2	991.8	909.0	844.0	791.5	746.7	712.5
30°	1544.9	1388.3	1257.8	1146.5	1052.1	965.4	885.4	819.9	764.0	718.2	686.4
32.5°	1559.3	1386.9	1236.1	1115.6	1015.5	941.3	859.9	791.5	733.6	688.8	658.5
35°	1563.2	1378.7	1210.5	1070.8	975.5	900.8	832.9	762.6	702.3	660.4	625.7
37.5°	1555.0	1363.7	1182.6	1030.4	927.3	853.1	793.9	733.6	675.8	629.1	598.8
40°	1528.5	1349.3	1148.9	987.0	877.2	806.4	757.7	699.0	642.1	598.3	570.3
42.5°	1477.9	1319.9	1111.8	938.9	825.2	754.4	710.5	663.8	610.8	570.3	542.4
45°	1389.3	1274.6	1074.7	890.7	774.1	700.9	661.4	625.7	577.1	537.1	513.0
47.5°	1276.1	1213.4	1021.2	840.1	720.6	649.8	608.4	579.0	541.0	508.7	485.1
50°	1157.1	1134.4	966.8	788.1	667.2	598.3	558.8	532.8	507.2	475.0	453.8
52.5°	1019.8	1042.9	903.2	734.1	612.7	545.3	508.7	489.4	466.8	441.7	423.9
55°	892.6	943.2	828.1	672.5	558.8	494.2	459.1	440.8	427.3	407.5	391.6
57.5°	769.3	833.8	750.0	610.3	505.8	449.4	414.8	394.0	385.4	374.3	361.3
60°	661.9	725.5	665.2	547.7	452.3	399.3	369.5	352.6	343.9	336.7	326.1
62.5°	566.0	630.6	582.4	484.1	399.8	351.7	326.6	310.2	304.0	301.1	292.4
65°	479.8	535.2	501.5	417.6	350.2	306.9	283.2	271.7	265.4	264.0	258.2
67.5°	405.1	448.0	422.0	358.9	304.0	264.5	243.7	233.6	228.3	227.9	223.0
70°	331.9	371.4	352.6	296.7	251.0	221.6	204.2	195.6	192.7	192.2	189.8
72.5°	275.1	299.6	285.7	241.3	208.6	182.6	171.0	161.9	158.5	159.4	158.0
75°	212.0	232.7	224.0	191.7	163.3	146.0	135.4	129.6	126.7	128.1	126.2
77.5°	161.9	176.3	167.6	143.1	124.8	111.8	103.6	99.7	96.8	96.8	95.9
80°	115.1	122.8	118.5	105.0	90.6	80.0	73.7	71.3	69.8	69.4	68.9
82.5°	73.7	80.0	74.7	66.5	57.8	52.5	49.6	46.2	45.3	45.8	45.3
85°	41.4	43.8	41.9	36.1	32.3	29.4	27.5	26.0	25.0	25.5	24.6
87.5°	17.8	18.3	16.9	14.9	14.0	12.5	12.5	11.6	10.6	10.6	10.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P273755

CATALOG NUMBER: 4RCG-4-78D-L830-A

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3	994.3
2.5°	973.5	970.2	965.4	958.1	952.3	943.2	943.2	944.6	944.6	944.2	943.2
5°	948.0	940.8	932.1	922.0	911.4	900.8	898.9	895.0	892.1	890.2	887.8
7.5°	922.0	910.0	897.9	883.9	871.9	861.8	854.6	848.3	844.4	840.1	836.7
10°	895.5	879.6	864.7	849.7	833.4	820.4	812.2	806.4	802.1	798.2	796.3
12.5°	864.2	845.4	828.5	814.6	796.3	782.8	775.1	773.1	767.9	758.7	753.9
15°	833.8	817.0	797.2	775.6	766.9	750.5	741.4	737.0	734.1	727.9	725.9
17.5°	808.8	786.2	763.5	747.6	731.7	718.7	713.4	707.6	703.8	698.0	696.6
20°	777.5	757.7	737.5	720.2	703.3	688.8	684.5	680.7	676.8	674.4	672.5
22.5°	745.7	725.9	710.0	694.1	675.8	667.7	662.8	658.5	656.1	654.6	652.7
25°	716.3	699.0	680.2	665.7	651.3	645.0	642.1	639.7	637.8	635.4	634.9
27.5°	690.3	671.0	655.1	641.2	630.6	625.3	621.9	620.4	620.4	621.4	621.9
30°	660.4	643.1	630.6	619.0	609.4	604.6	604.1	604.1	606.0	606.5	607.4
32.5°	633.0	619.5	607.0	595.9	589.1	586.2	588.7	588.7	590.1	591.5	593.5
35°	606.5	594.0	584.3	574.7	568.4	569.9	570.8	571.8	574.2	577.1	579.0
37.5°	581.4	569.9	559.8	552.0	548.2	551.1	553.5	555.4	558.3	560.7	562.6
40°	554.0	545.8	536.1	529.4	530.4	531.8	533.7	536.1	538.6	540.0	541.9
42.5°	528.4	519.8	513.0	507.7	509.2	511.1	512.1	513.0	515.9	518.8	519.8
45°	502.4	495.7	488.9	485.6	486.5	487.5	488.5	489.9	492.3	494.2	494.7
47.5°	473.0	468.2	463.9	460.0	462.0	461.5	462.9	465.8	466.8	467.7	470.6
50°	445.1	440.8	435.5	434.5	434.5	434.5	435.0	438.8	438.8	440.8	442.7
52.5°	414.3	411.9	409.0	407.0	406.1	406.1	408.5	409.9	410.9	413.8	415.7
55°	383.9	381.0	378.1	376.7	375.7	376.7	380.6	381.5	383.9	385.4	386.8
57.5°	352.1	350.2	347.8	346.8	346.8	347.3	350.2	352.6	353.1	357.9	359.8
60°	320.8	317.4	315.5	315.5	314.6	318.9	317.9	322.7	323.7	326.6	330.0
62.5°	288.5	283.7	283.2	283.2	285.2	285.7	287.6	289.0	291.9	295.8	298.2
65°	253.4	251.0	254.3	253.9	252.9	255.8	255.8	258.2	261.1	264.5	269.8
67.5°	220.6	218.7	219.7	219.2	220.6	222.6	224.0	225.9	229.3	233.1	236.5
70°	187.4	188.8	186.4	188.3	189.8	190.3	191.2	194.1	198.0	200.4	204.2
72.5°	155.1	154.6	155.6	156.1	157.5	158.5	159.4	162.8	167.2	169.1	172.0
75°	124.3	123.8	125.2	125.2	127.7	128.6	129.6	131.0	134.9	137.8	140.2
77.5°	96.3	96.8	96.3	98.3	97.3	97.8	100.7	102.1	102.6	108.9	109.8
80°	68.4	69.4	69.8	70.3	70.8	69.8	73.2	74.7	74.7	78.0	80.4
82.5°	44.3	44.8	46.2	46.7	46.7	48.2	47.7	48.7	50.1	51.1	54.4
85°	24.6	26.0	26.5	26.0	26.5	25.5	27.0	27.5	27.9	27.9	27.9
87.5°	9.6	10.1	9.6	10.1	9.6	10.1	10.1	9.2	9.2	10.6	8.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P273755

CATALOG NUMBER: 4RCG-4-78D-L830-A

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	994.3	994.3	994.3	994.3
2.5°	939.8	939.3	942.7	940.3
5°	884.9	886.4	881.5	881.5
7.5°	835.3	833.4	833.8	830.5
10°	790.5	787.6	786.6	787.1
12.5°	753.4	753.4	745.7	745.7
15°	725.9	716.8	715.8	718.7
17.5°	695.6	690.3	690.8	689.8
20°	672.5	669.6	669.1	665.7
22.5°	651.3	650.8	651.3	647.4
25°	634.4	636.8	634.9	634.9
27.5°	622.9	622.9	621.4	621.4
30°	609.4	608.9	609.8	609.8
32.5°	595.9	596.8	596.8	597.3
35°	581.9	582.4	583.8	582.9
37.5°	563.6	566.0	565.5	566.5
40°	542.4	543.9	543.4	543.4
42.5°	520.7	521.7	520.3	519.3
45°	496.6	495.7	497.1	495.2
47.5°	470.2	470.6	471.1	473.0
50°	443.7	446.5	446.5	446.1
52.5°	417.6	418.6	421.0	421.0
55°	390.7	391.6	392.6	393.1
57.5°	363.2	362.7	364.7	365.1
60°	333.8	333.8	337.7	339.1
62.5°	302.5	304.4	308.3	305.4
65°	272.2	276.0	275.5	277.5
67.5°	240.4	242.8	246.6	246.6
70°	208.1	210.5	212.4	213.9
72.5°	176.8	177.8	183.1	180.2
75°	143.6	146.9	149.8	148.4
77.5°	111.8	116.1	117.1	115.6
80°	83.8	83.3	86.2	85.7
82.5°	55.9	55.4	56.4	56.8
85°	29.9	31.3	29.4	28.9
87.5°	8.7	8.7	8.2	7.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)