

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: NEO-RAY

Report Number: P243608

Luminaire Tested: **S124RDR-H795D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243608
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-70)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDR-H795D840-X4F0-XX-UDD-A-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3124.6 lumens
Efficiency: N/A
Efficacy: 132.4 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.23 / 1.39
Luminous Opening: Rectangular (W 3.88' x L: 0.31' x H: 0')
CIE Type: Direct

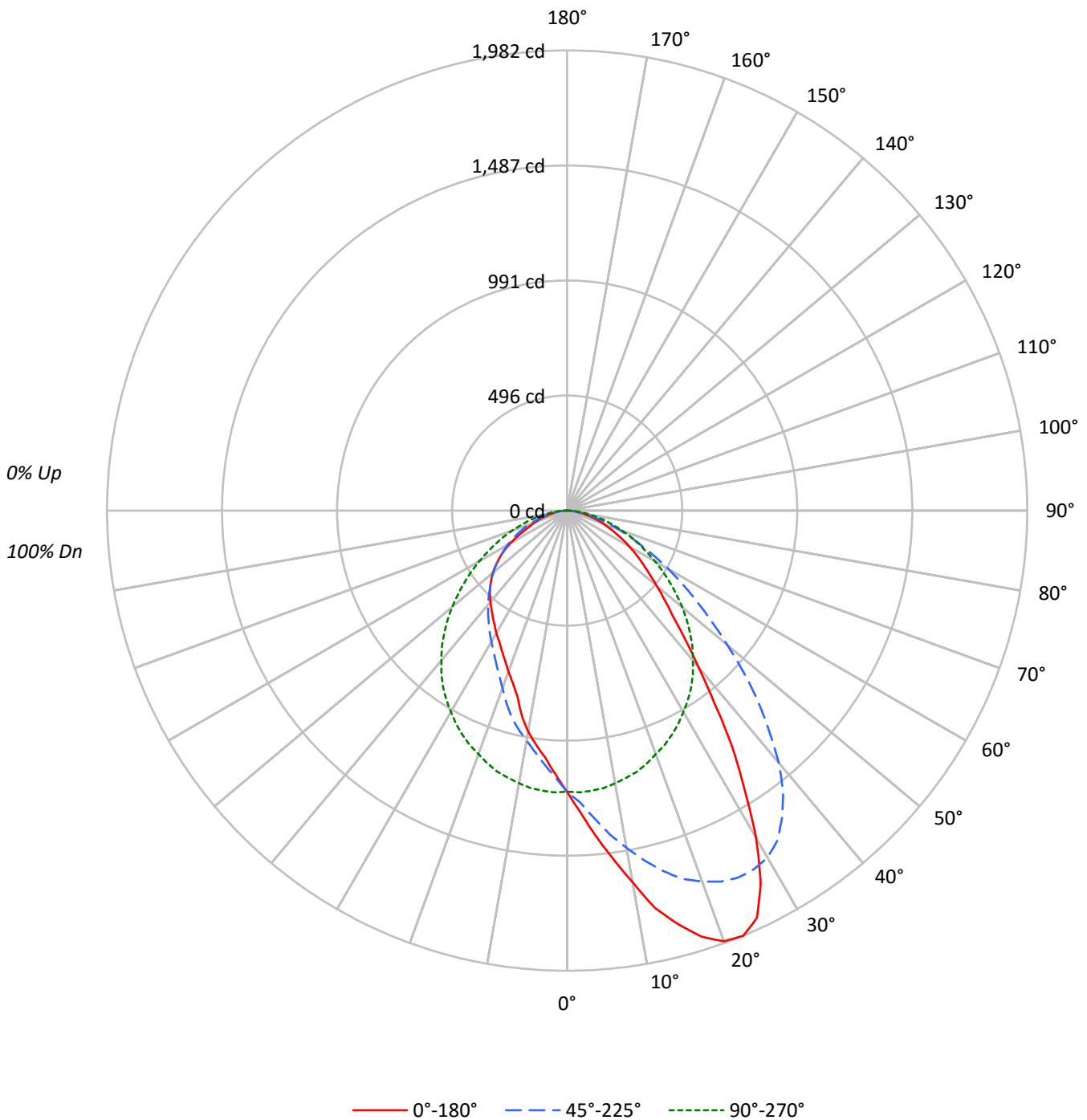
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88	86
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	78	75	73
3	92	83	75	69	90	81	74	68	78	72	67	76	70	66	73	69	65	63
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57	55
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50	48
6	73	60	52	46	71	59	51	45	58	50	45	56	50	45	54	49	44	42
7	68	55	46	41	66	54	46	40	53	45	40	51	45	40	50	44	40	38
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36	34
9	59	46	38	33	58	46	38	33	45	38	33	43	37	33	42	37	32	31
10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	39	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	10762	10762	10762
5°	12536	10806	9540
10°	14681	10762	8724
15°	16964	10707	7619
20°	18677	10556	6984
25°	18976	10459	6529
30°	16704	10273	6262
35°	13404	10098	6057
40°	10197	9776	5963
45°	8096	9417	5891
50°	6950	8951	5789
55°	6137	8373	5509
60°	5499	7769	5045
65°	4840	7179	4244
70°	4312	6518	3823
75°	3757	5924	3400
80°	3184	5093	3138
85°	2784	4375	3172



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.5	3.8
10°-20°	356.3	11.4
20°-30°	556.0	17.8
30°-40°	620.0	19.8
40°-50°	557.3	17.8
50°-60°	440.4	14.1
60°-70°	292.5	9.4
70°-80°	146.6	4.7
80°-90°	38.2	1.2
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°	1029.7	33.0
0°-40°	1649.7	52.8
0°-60°	2647.3	84.7
0°-90°	3124.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3124.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1211	1211	1211	1211	1211	
5°	1405	1329	1211	1099	1069	141
15°	1843	1609	1164	922	828	524
25°	1935	1744	1066	725	666	866
35°	1235	1614	931	589	558	767
45°	644	1163	749	471	469	510
55°	396	683	540	357	356	357
65°	230	350	341	234	202	230
75°	109	139	172	116	99	117
85°	27	29	43	32	31	31
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7
2.5°	1300.2	1295.5	1295.1	1288.9	1288.5	1282.3	1280.4	1275.3	1264.9	1256.9	1257.3
5°	1404.9	1401.1	1400.7	1394.5	1392.6	1385.1	1373.3	1359.2	1342.7	1329.0	1320.0
7.5°	1512.4	1519.0	1511.9	1511.9	1498.3	1489.3	1466.2	1454.4	1426.1	1406.3	1385.6
10°	1626.5	1632.6	1629.8	1624.1	1606.2	1587.8	1563.8	1540.7	1506.3	1475.2	1454.4
12.5°	1753.8	1735.4	1747.2	1729.7	1715.1	1685.9	1662.8	1616.6	1589.2	1544.0	1503.4
15°	1843.4	1836.3	1835.8	1824.0	1808.0	1775.9	1750.9	1702.9	1656.2	1608.6	1562.8
17.5°	1923.5	1924.4	1917.8	1899.0	1878.2	1847.1	1813.2	1770.3	1717.0	1664.2	1610.0
20°	1974.4	1974.9	1970.2	1960.3	1937.6	1909.4	1874.5	1818.4	1758.0	1699.6	1645.3
22.5°	1982.0	1983.4	1982.0	1975.8	1960.3	1937.2	1905.1	1857.5	1796.7	1729.7	1665.1
25°	1934.8	1939.5	1940.0	1948.5	1940.5	1931.5	1907.9	1867.9	1811.8	1743.9	1673.6
27.5°	1805.6	1818.8	1831.1	1846.2	1859.9	1872.1	1874.0	1852.8	1804.7	1741.5	1674.6
30°	1627.4	1643.0	1667.5	1683.5	1726.0	1752.8	1789.1	1797.1	1774.0	1725.5	1660.9
32.5°	1420.0	1436.5	1445.9	1498.7	1559.5	1603.4	1663.7	1699.6	1708.5	1685.4	1632.6
35°	1235.2	1238.0	1245.1	1305.0	1365.3	1431.8	1506.7	1569.0	1611.4	1613.8	1587.8
37.5°	1037.2	1040.5	1068.3	1114.0	1166.4	1239.4	1325.7	1414.3	1492.1	1528.0	1520.4
40°	878.8	877.8	907.5	947.1	998.0	1074.0	1163.1	1259.7	1342.7	1417.6	1435.6
42.5°	750.5	753.8	779.3	802.4	851.4	904.7	999.9	1100.4	1206.9	1288.9	1343.6
45°	644.0	652.5	669.9	691.6	728.4	777.4	855.2	955.1	1064.1	1162.6	1228.1
47.5°	570.4	572.8	581.8	608.6	633.2	672.8	739.2	824.1	920.7	1031.1	1117.3
50°	502.6	508.2	511.5	527.5	551.6	589.3	640.7	703.9	799.6	900.9	1008.9
52.5°	444.1	447.4	453.5	468.1	487.0	513.4	553.9	609.6	689.3	783.1	884.9
55°	396.0	396.5	402.6	413.0	427.6	447.9	486.5	526.6	597.3	682.7	775.1
57.5°	352.6	349.8	355.5	361.6	375.7	393.2	418.2	459.2	514.3	586.9	670.4
60°	309.3	311.6	311.2	318.2	325.8	343.2	364.4	391.3	436.6	503.0	573.7
62.5°	268.7	268.3	273.0	277.2	282.4	296.5	314.0	336.1	371.5	420.5	488.9
65°	230.1	231.0	234.8	238.1	243.7	252.7	265.9	283.8	312.1	349.8	407.3
67.5°	195.2	198.5	200.4	201.3	206.5	213.1	224.4	239.0	258.4	288.5	336.6
70°	165.9	166.9	167.8	171.1	173.5	177.3	185.7	193.8	211.2	233.4	268.3
72.5°	138.6	137.7	140.5	141.4	142.4	146.1	151.3	155.6	166.9	185.7	207.4
75°	109.4	109.8	110.3	111.7	115.5	116.0	118.3	123.0	131.1	138.6	153.2
77.5°	82.0	83.4	83.0	84.4	85.8	87.2	88.2	92.4	98.1	104.2	111.3
80°	62.2	62.2	62.2	63.2	62.2	65.5	65.5	66.9	68.4	71.2	76.4
82.5°	42.4	43.4	43.8	44.3	44.8	44.8	45.3	46.2	48.1	49.0	50.4
85°	27.3	26.4	26.9	26.9	26.9	26.9	27.8	28.8	28.8	29.2	30.6
87.5°	12.3	12.3	12.3	12.3	11.8	12.3	12.7	12.7	13.2	13.2	14.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7
2.5°	1254.5	1253.1	1246.0	1238.5	1231.4	1224.3	1222.0	1214.9	1206.4	1198.9	1190.4
5°	1310.6	1299.3	1283.7	1267.7	1251.2	1236.1	1224.3	1211.1	1196.1	1178.1	1164.0
7.5°	1367.2	1346.4	1321.0	1297.4	1269.1	1246.5	1223.9	1205.0	1183.3	1157.9	1138.5
10°	1422.4	1387.9	1356.8	1319.6	1283.7	1252.6	1223.9	1192.3	1163.5	1136.2	1109.3
12.5°	1466.2	1431.8	1387.0	1341.3	1295.1	1254.5	1215.9	1178.6	1142.8	1109.8	1080.1
15°	1516.2	1466.7	1411.5	1361.1	1297.9	1247.9	1203.6	1163.5	1122.5	1082.4	1049.9
17.5°	1552.9	1494.5	1426.1	1368.1	1307.3	1245.1	1191.8	1141.4	1094.2	1052.3	1018.8
20°	1581.2	1511.9	1443.6	1370.0	1297.4	1233.8	1173.9	1115.9	1068.3	1022.6	987.2
22.5°	1593.5	1520.4	1444.5	1364.8	1287.5	1215.4	1153.2	1093.3	1039.5	992.4	951.4
25°	1598.7	1518.5	1439.8	1349.3	1271.0	1197.5	1128.2	1066.4	1011.3	958.0	917.4
27.5°	1594.4	1508.6	1418.1	1332.8	1244.1	1172.0	1098.5	1035.8	978.2	926.9	881.6
30°	1583.1	1486.0	1395.9	1300.2	1214.9	1139.0	1067.4	1000.9	942.9	890.6	845.8
32.5°	1553.9	1460.5	1358.2	1264.9	1173.0	1098.0	1032.9	967.4	908.5	853.8	810.4
35°	1517.6	1426.1	1319.1	1221.5	1130.5	1054.6	989.1	930.6	872.6	814.7	770.3
37.5°	1471.9	1379.0	1275.7	1170.6	1081.5	1008.0	948.1	889.1	831.6	778.4	728.9
40°	1410.1	1325.2	1221.5	1115.9	1026.3	955.6	896.7	842.5	791.6	739.2	686.0
42.5°	1333.2	1268.7	1161.6	1057.5	969.8	899.5	847.2	798.6	749.6	695.9	647.8
45°	1251.2	1196.1	1098.9	993.8	910.4	842.0	792.0	749.1	702.9	655.3	604.9
47.5°	1158.8	1117.8	1033.9	929.7	842.0	783.5	737.3	698.2	656.3	613.8	564.8
50°	1054.6	1029.6	958.0	863.2	779.8	720.4	682.2	647.3	611.5	569.0	527.1
52.5°	950.4	945.7	878.8	795.3	716.6	661.4	624.2	592.1	562.9	522.8	487.5
55°	841.1	855.2	799.6	722.7	652.5	599.2	566.2	540.3	514.8	480.9	446.9
57.5°	743.9	760.0	721.8	651.1	585.5	540.3	512.0	488.4	466.3	435.1	412.5
60°	636.5	665.7	645.4	580.8	522.8	482.3	455.9	437.0	418.6	391.8	372.0
62.5°	551.6	571.9	560.1	512.0	460.6	427.6	404.0	386.6	372.0	351.2	331.9
65°	460.6	486.1	479.9	448.3	403.1	372.9	355.0	341.3	326.2	309.7	293.7
67.5°	378.6	405.0	403.6	381.9	348.4	323.4	306.4	296.5	284.3	268.3	258.4
70°	304.6	329.1	330.0	319.2	295.6	272.0	259.8	250.8	241.4	229.6	222.5
72.5°	236.7	258.8	262.6	257.4	242.3	226.8	215.9	209.8	201.8	191.9	185.7
75°	176.8	192.8	201.8	199.4	193.3	182.9	176.8	172.5	164.5	157.5	152.3
77.5°	125.9	138.6	147.6	151.3	148.5	144.3	138.6	135.3	126.8	123.5	120.7
80°	84.4	95.7	103.7	106.1	107.5	106.5	101.4	99.5	95.2	93.8	91.0
82.5°	51.9	58.0	63.6	69.8	72.6	72.6	69.8	70.2	66.5	64.6	63.6
85°	31.6	33.0	33.9	38.7	42.4	43.8	42.4	42.9	41.5	40.1	38.7
87.5°	14.6	14.6	15.1	16.0	17.0	19.8	20.7	22.2	20.3	20.3	17.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7	1210.7
2.5°	1185.2	1179.1	1174.4	1166.8	1160.7	1150.8	1147.5	1147.5	1149.4	1147.0	1149.4
5°	1154.1	1142.8	1130.5	1119.7	1107.9	1099.4	1090.9	1089.0	1088.1	1082.4	1082.9
7.5°	1123.0	1107.9	1092.3	1078.2	1063.6	1050.4	1041.4	1037.7	1034.4	1030.6	1026.3
10°	1089.5	1072.1	1053.7	1037.7	1023.5	1005.6	996.6	993.8	984.4	982.5	975.9
12.5°	1054.2	1036.2	1017.9	997.1	983.4	966.0	952.8	946.7	937.7	931.1	921.2
15°	1026.3	1003.7	979.2	958.9	941.0	921.7	903.8	892.0	880.2	861.8	852.8
17.5°	991.9	966.0	944.8	923.1	897.2	868.9	847.7	830.2	817.5	802.4	793.4
20°	954.7	930.6	904.2	873.6	846.2	814.2	794.9	780.2	770.3	761.4	756.7
22.5°	921.7	893.9	857.6	828.3	790.1	764.7	749.1	739.7	730.3	720.8	716.1
25°	885.8	853.3	809.0	773.2	744.4	724.6	709.5	700.6	690.7	685.0	677.9
27.5°	850.5	808.5	764.2	731.7	709.1	686.0	673.2	666.2	658.6	650.6	644.9
30°	807.6	760.0	723.2	693.5	670.9	651.5	642.1	631.7	625.1	620.4	617.1
32.5°	762.8	717.1	683.6	658.1	636.0	621.4	609.6	603.0	597.3	592.1	588.4
35°	720.8	676.5	648.2	623.7	605.3	588.8	579.9	573.7	569.0	564.8	562.9
37.5°	679.4	641.6	611.0	591.7	572.3	559.1	550.6	545.0	542.2	537.9	538.4
40°	638.3	604.4	579.9	557.7	539.8	528.5	521.9	519.5	515.3	513.9	515.3
42.5°	601.6	570.4	546.9	526.1	510.6	499.7	494.5	491.2	489.8	489.4	489.8
45°	565.7	536.5	513.9	496.9	480.9	471.0	466.7	464.4	463.0	465.3	465.8
47.5°	529.9	503.5	483.2	463.4	450.2	443.2	438.9	437.0	438.4	439.4	442.7
50°	494.5	470.0	448.8	431.4	421.0	414.4	413.0	409.7	412.0	413.5	415.8
52.5°	458.7	436.6	417.7	401.2	390.4	386.1	382.8	381.4	384.7	384.7	387.1
55°	422.4	403.1	385.6	370.6	362.1	356.9	354.5	352.6	354.5	355.0	354.5
57.5°	388.5	370.1	351.7	339.0	331.9	326.2	323.9	322.9	322.5	324.4	323.9
60°	352.6	335.2	320.6	307.4	300.3	297.0	291.8	292.8	292.8	292.8	288.1
62.5°	316.8	299.4	286.6	277.7	269.2	263.5	262.6	261.2	258.4	257.9	251.8
65°	280.0	266.8	256.0	247.0	238.6	233.8	232.4	228.2	224.9	218.8	214.5
67.5°	246.1	236.7	223.9	216.4	209.3	203.7	198.5	195.2	188.6	182.4	178.7
70°	212.2	202.3	193.8	185.7	178.7	173.5	167.4	161.2	157.0	153.2	150.4
72.5°	178.2	169.7	162.6	155.1	147.6	142.4	137.7	132.9	131.1	129.2	127.8
75°	146.6	138.6	132.0	125.9	121.6	115.5	113.1	111.3	109.4	107.0	104.2
77.5°	116.0	109.8	104.7	99.5	95.7	92.4	90.5	84.9	80.1	79.2	78.3
80°	86.3	81.6	78.3	74.5	70.2	65.5	64.1	62.2	61.3	61.3	61.8
82.5°	60.3	57.5	53.7	50.4	49.0	47.1	47.1	46.7	46.2	46.7	46.7
85°	36.8	33.0	32.1	31.6	32.1	32.1	32.1	32.1	31.6	32.1	31.1
87.5°	16.0	17.4	17.9	16.5	17.0	16.0	16.5	16.5	16.5	17.0	16.5
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: P243608

CATALOG NUMBER: S124RDR-H795D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1210.7	1210.7	1210.7	1210.7
2.5°	1146.6	1146.6	1141.8	1138.1
5°	1082.0	1075.8	1074.9	1069.2
7.5°	1021.6	1020.7	1018.3	1018.3
10°	973.5	970.2	966.9	966.5
12.5°	905.6	910.4	904.7	903.3
15°	846.2	842.5	837.8	827.9
17.5°	791.1	784.0	782.1	777.9
20°	747.7	742.5	740.6	738.3
22.5°	706.7	705.8	700.1	698.7
25°	676.5	671.8	668.0	665.7
27.5°	643.5	640.2	638.3	634.6
30°	613.4	612.4	610.1	610.1
32.5°	586.0	583.2	583.2	582.7
35°	561.0	562.0	559.1	558.2
37.5°	537.4	536.0	536.5	535.6
40°	514.3	513.4	513.4	513.9
42.5°	490.8	491.2	492.2	492.2
45°	467.2	467.7	468.6	468.6
47.5°	445.0	444.1	445.0	444.1
50°	416.8	419.6	419.1	418.6
52.5°	388.0	387.1	388.9	388.5
55°	356.9	355.5	357.4	355.5
57.5°	322.0	322.5	322.5	321.5
60°	287.1	285.7	283.8	283.8
62.5°	246.6	242.3	239.5	241.4
65°	207.4	204.1	203.2	201.8
67.5°	176.3	172.5	171.1	170.7
70°	149.4	147.6	147.1	147.1
72.5°	126.8	126.8	125.4	124.5
75°	103.2	101.4	99.0	99.0
77.5°	77.3	76.8	76.4	76.4
80°	60.3	60.3	60.8	61.3
82.5°	45.3	45.7	46.2	46.2
85°	30.6	30.6	31.1	31.1
87.5°	16.5	16.5	16.5	16.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)