

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: P243427

Luminaire Tested: **S123RDR-H1000D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243427
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-69)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDR-H1000D830-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3424.3 lumens
Efficiency: N/A
Efficacy: 108.7 lumens/watt
Spacing Criteria (0/90/45): 1.28 / 1.22 / 1.4
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

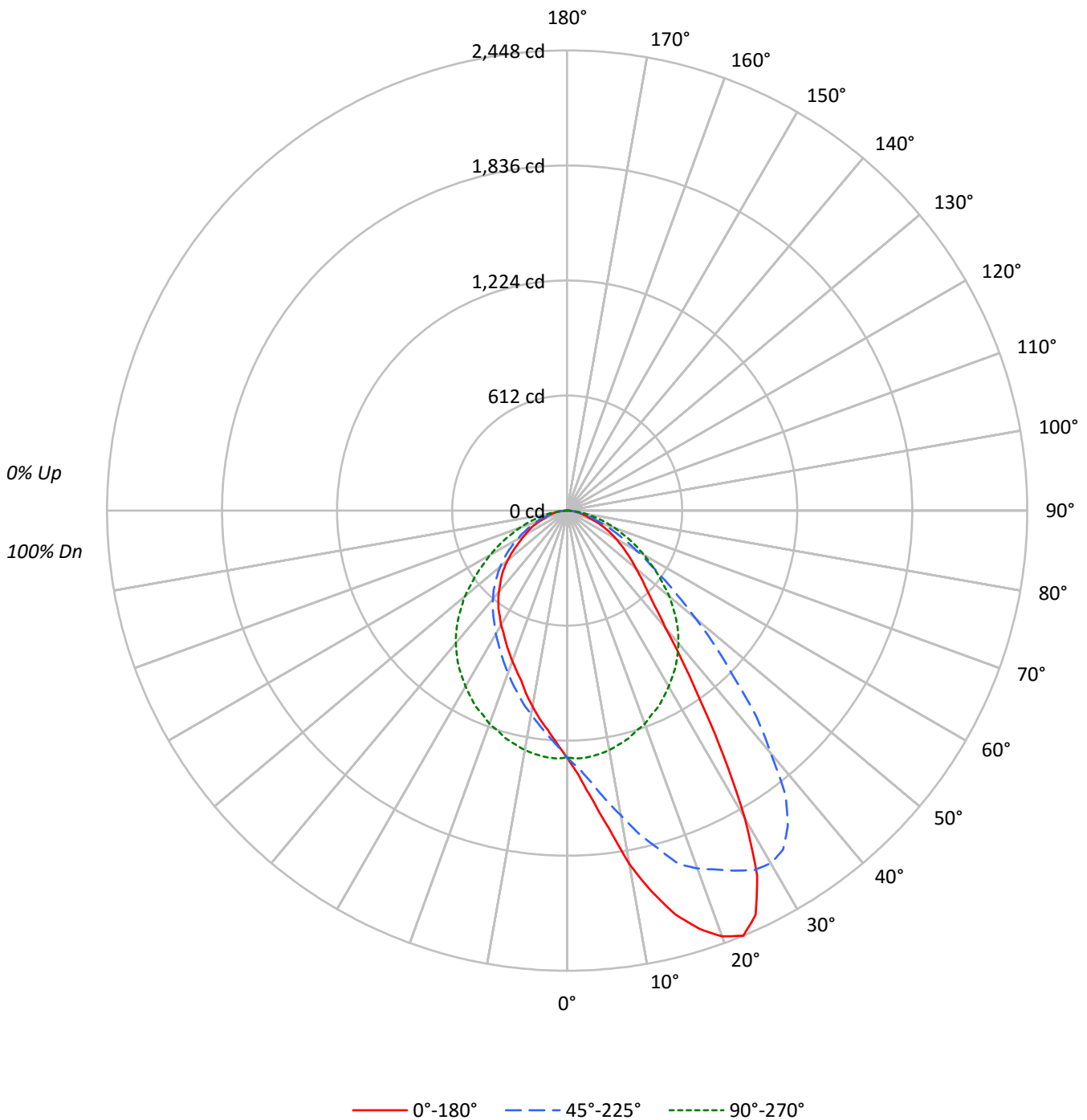
Input Watts (W): 31.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	86	82	89	84	80	85	81	78	82	79	76	74
3	93	84	76	70	91	82	75	70	79	73	68	76	71	67	74	70	66	64
4	86	75	67	61	84	74	66	60	71	65	59	69	63	59	67	62	58	56
5	79	68	59	53	77	66	59	53	64	57	52	62	56	52	61	55	51	49
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46	44
7	69	56	48	42	67	55	47	42	54	47	41	52	46	41	51	45	41	39
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	45	39	34	44	38	34	43	38	33	32
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	15930	15930	15930
5°	18779	16019	14264
10°	23509	15924	13018
15°	27899	15765	11792
20°	31093	15576	10980
25°	31737	15383	10336
30°	26448	15122	9832
35°	18270	14913	9421
40°	12839	14572	8924
45°	10311	14055	8442
50°	8987	13387	7811
55°	8058	12388	6955
60°	7290	11445	6301
65°	6379	10546	5891
70°	5149	9491	4986
75°	4463	8266	4889
80°	4118	7050	4914
85°	3630	5688	4256



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.9	3.8
10°-20°	405.9	11.9
20°-30°	650.3	19.0
30°-40°	706.0	20.6
40°-50°	604.9	17.7
50°-60°	458.5	13.4
60°-70°	293.0	8.6
70°-80°	140.1	4.1
80°-90°	36.8	1.1
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°	1185.1	34.6
0°-40°	1891.1	55.2
0°-60°	2954.4	86.3
0°-90°	3424.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3424.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1314	1314	1314	1314	1314	
5°	1543	1449	1316	1197	1172	158
15°	2223	1858	1256	1009	940	630
25°	2373	2114	1150	835	773	1053
35°	1235	2047	1008	684	637	793
45°	602	1253	820	541	492	475
55°	381	614	586	388	329	344
65°	222	296	368	234	205	221
75°	95	116	176	111	104	103
85°	26	27	41	32	31	30
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°	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2
2.5°	1408.4	1410.1	1407.2	1406.7	1406.1	1397.0	1394.2	1389.7	1373.8	1369.8	1367.0
5°	1543.4	1538.9	1544.0	1534.3	1523.6	1517.3	1507.1	1484.4	1464.6	1448.7	1438.5
7.5°	1703.4	1705.1	1700.0	1691.0	1669.4	1660.3	1632.5	1605.3	1579.2	1546.3	1521.9
10°	1910.0	1896.4	1899.2	1870.8	1848.1	1820.9	1782.9	1739.2	1693.2	1646.7	1612.1
12.5°	2074.5	2084.2	2077.4	2063.8	2020.1	1993.4	1958.8	1895.2	1822.6	1760.2	1707.4
15°	2223.2	2210.2	2211.9	2179.0	2163.1	2138.7	2081.4	2018.4	1971.3	1858.4	1795.9
17.5°	2332.2	2331.0	2329.3	2301.5	2282.2	2231.2	2172.7	2108.0	2049.0	1970.7	1892.4
20°	2410.5	2419.0	2416.7	2394.0	2360.0	2310.6	2275.4	2194.8	2097.8	2026.3	1930.4
22.5°	2447.9	2448.5	2449.6	2438.8	2416.1	2384.4	2334.4	2269.7	2183.5	2066.6	1959.9
25°	2373.0	2375.9	2390.6	2399.7	2405.9	2391.7	2365.6	2307.2	2232.9	2113.7	2003.1
27.5°	2189.2	2198.2	2214.7	2269.2	2291.3	2322.0	2332.7	2309.5	2254.4	2155.1	2029.2
30°	1889.6	1915.1	1931.0	1992.8	2079.7	2161.4	2200.0	2238.0	2232.9	2167.0	2039.4
32.5°	1546.8	1563.3	1609.3	1675.6	1744.3	1864.0	1997.9	2089.9	2141.5	2138.1	2047.9
35°	1234.7	1258.6	1297.7	1348.2	1443.0	1567.3	1718.8	1863.5	1992.8	2046.7	2014.4
37.5°	1002.1	1004.4	1041.2	1112.7	1171.8	1281.3	1418.0	1596.8	1766.4	1907.2	1938.4
40°	811.4	827.3	846.6	891.4	961.2	1066.2	1157.0	1332.9	1508.8	1685.3	1811.3
42.5°	691.1	691.1	712.7	741.1	787.6	850.6	959.0	1118.4	1276.7	1493.5	1635.4
45°	601.5	607.2	616.8	635.0	667.9	716.7	800.7	909.0	1070.8	1252.9	1466.3
47.5°	536.8	536.2	544.7	555.5	581.1	617.9	667.3	755.3	875.0	1071.3	1259.7
50°	476.6	478.9	485.2	494.2	511.3	537.4	568.6	635.0	736.0	891.4	1088.9
52.5°	430.1	429.5	434.7	440.3	453.4	468.1	495.9	545.3	615.1	738.8	902.8
55°	381.3	383.6	389.8	393.2	404.0	413.7	436.9	464.7	520.9	614.0	763.2
57.5°	339.3	342.2	345.6	349.0	356.4	366.0	385.3	402.3	443.2	510.1	629.3
60°	300.7	299.6	303.6	309.3	313.2	321.7	332.5	350.1	378.5	426.1	513.5
62.5°	262.2	262.7	263.3	266.7	274.1	281.4	291.1	304.1	321.2	356.4	418.2
65°	222.4	223.0	224.1	227.5	234.9	239.5	249.7	261.0	274.6	295.6	338.8
67.5°	187.3	189.5	189.5	192.4	195.2	199.7	207.1	215.6	227.0	242.3	270.1
70°	145.3	144.7	147.5	153.2	156.0	164.0	169.1	174.8	185.0	194.6	218.5
72.5°	116.9	116.9	116.9	119.2	119.7	121.4	124.8	136.8	144.7	154.3	167.4
75°	95.3	95.9	95.9	96.5	97.0	98.7	99.9	103.3	105.5	115.8	123.7
77.5°	76.0	76.6	76.6	77.2	77.7	78.3	80.6	80.6	82.3	84.5	88.0
80°	59.0	58.4	58.4	59.0	59.0	60.7	60.7	61.9	62.4	63.6	65.3
82.5°	42.0	41.4	42.0	41.4	42.0	42.6	43.7	43.1	44.3	45.4	46.0
85°	26.1	26.7	26.7	27.8	27.2	26.7	27.2	27.2	27.2	27.2	28.4
87.5°	11.3	12.5	12.5	11.9	12.5	12.5	11.3	12.5	12.5	12.5	13.1
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°	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2
2.5°	1365.3	1363.0	1354.5	1346.5	1334.6	1329.5	1322.7	1319.9	1310.8	1298.3	1292.6
5°	1428.8	1411.8	1395.3	1375.5	1359.0	1339.7	1328.9	1316.5	1297.2	1279.6	1267.1
7.5°	1496.3	1471.4	1440.7	1407.8	1378.3	1350.5	1326.7	1306.8	1281.8	1257.4	1238.1
10°	1570.7	1528.1	1478.7	1436.7	1394.2	1353.9	1323.8	1293.8	1261.4	1230.8	1207.5
12.5°	1650.7	1590.5	1530.9	1468.0	1404.4	1357.9	1313.0	1274.5	1238.1	1205.8	1178.0
15°	1733.5	1651.2	1575.2	1504.3	1415.8	1353.3	1304.0	1256.3	1210.9	1171.2	1144.0
17.5°	1792.5	1698.3	1602.4	1502.0	1426.0	1348.8	1287.5	1227.4	1185.4	1144.5	1107.6
20°	1847.0	1740.3	1626.3	1532.6	1426.5	1332.3	1265.4	1207.5	1149.1	1105.4	1074.2
22.5°	1870.3	1773.8	1658.6	1528.7	1422.6	1326.1	1239.8	1174.6	1122.4	1074.7	1033.9
25°	1874.8	1767.0	1649.0	1523.6	1407.2	1302.8	1215.4	1150.2	1082.1	1032.7	1001.0
27.5°	1894.7	1747.1	1631.4	1506.5	1388.5	1279.6	1187.6	1115.0	1051.5	998.7	957.8
30°	1899.8	1738.6	1593.9	1474.8	1353.3	1246.7	1153.6	1080.4	1011.2	957.3	920.4
32.5°	1902.0	1727.3	1554.8	1424.3	1308.5	1208.1	1123.0	1043.5	977.7	920.9	882.9
35°	1894.1	1711.4	1507.7	1367.0	1255.7	1157.0	1078.1	1007.8	934.6	881.2	840.9
37.5°	1862.9	1686.4	1481.0	1300.0	1193.9	1100.8	1033.9	964.6	897.1	839.2	797.8
40°	1803.9	1650.1	1431.1	1243.8	1123.5	1040.1	977.7	920.9	852.9	797.2	756.4
42.5°	1709.7	1600.7	1385.1	1180.3	1053.7	974.9	922.7	873.9	812.6	759.8	715.0
45°	1570.1	1531.5	1323.8	1115.6	977.7	903.4	858.0	819.9	764.3	716.1	674.7
47.5°	1419.2	1427.7	1262.0	1049.8	908.5	837.5	797.8	764.3	722.3	670.7	632.7
50°	1245.0	1291.5	1175.2	983.4	839.2	769.4	730.3	709.9	670.7	627.6	591.8
52.5°	1085.5	1159.3	1087.2	910.7	771.1	702.5	666.2	645.7	619.6	583.9	547.6
55°	920.4	1014.0	961.8	832.4	701.9	632.7	602.1	586.2	564.6	536.8	503.9
57.5°	783.6	883.5	850.6	750.2	634.4	572.0	544.7	526.6	513.5	488.0	461.3
60°	649.7	742.2	729.2	655.4	567.4	507.9	486.9	472.1	461.3	442.6	416.5
62.5°	524.3	614.0	621.9	564.0	502.2	448.3	429.0	418.8	410.3	395.5	371.7
65°	415.9	494.8	511.3	467.0	433.5	392.7	373.9	367.7	361.5	344.4	326.3
67.5°	325.7	387.6	409.1	384.2	360.3	336.5	321.7	313.2	308.7	298.5	286.0
70°	249.1	302.4	320.6	309.8	293.9	284.9	273.5	267.8	263.3	250.2	243.4
72.5°	186.7	223.0	245.7	242.3	238.9	232.6	225.8	224.1	217.3	208.8	202.6
75°	136.8	157.7	178.2	185.6	184.4	186.7	179.3	176.5	172.5	166.3	161.2
77.5°	98.2	110.7	124.8	133.9	138.5	139.0	139.0	137.3	134.5	129.9	126.0
80°	68.1	70.9	84.0	92.5	97.0	100.4	100.4	101.0	98.2	96.5	93.6
82.5°	47.1	48.8	51.6	58.4	64.1	68.1	68.7	68.1	67.0	66.4	62.4
85°	29.5	28.9	28.9	30.6	35.2	39.2	39.7	40.9	40.3	39.7	35.7
87.5°	12.5	12.5	13.1	12.5	14.2	14.8	15.9	18.7	18.2	15.3	14.2
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°	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2	1314.2
2.5°	1289.2	1281.8	1275.0	1267.7	1258.6	1250.1	1248.9	1247.8	1250.6	1245.0	1242.7
5°	1257.4	1243.3	1232.5	1218.9	1209.2	1196.7	1189.9	1188.2	1187.6	1184.2	1179.7
7.5°	1222.8	1207.5	1192.2	1176.9	1161.0	1147.9	1140.5	1136.6	1133.2	1127.5	1123.0
10°	1190.5	1171.2	1154.7	1133.7	1116.7	1099.7	1092.9	1087.2	1083.8	1075.9	1069.6
12.5°	1154.2	1129.8	1111.6	1088.9	1073.6	1058.8	1048.1	1037.3	1029.3	1017.4	1012.3
15°	1122.4	1096.9	1066.2	1052.6	1031.0	1008.9	997.0	997.0	980.5	970.9	964.6
17.5°	1079.8	1057.7	1036.1	1008.3	977.7	964.6	951.0	939.1	927.8	924.9	913.6
20°	1042.4	1016.3	994.1	964.1	936.3	920.9	905.1	892.0	883.5	875.6	869.3
22.5°	1005.5	979.4	945.3	915.8	897.1	876.7	859.7	848.3	840.9	829.0	823.4
25°	966.9	935.7	905.1	876.1	852.9	835.3	817.7	811.4	798.4	792.1	784.2
27.5°	928.3	890.9	861.9	837.0	810.9	793.8	781.9	770.6	759.2	755.8	751.3
30°	885.2	850.6	822.8	798.4	773.4	758.7	744.5	734.3	724.6	717.2	712.1
32.5°	842.1	813.1	786.5	758.1	735.4	719.5	707.6	698.5	694.0	681.5	677.0
35°	802.4	772.8	744.5	717.8	699.6	684.3	673.5	665.0	655.4	647.4	642.9
37.5°	761.5	734.8	705.9	683.2	662.8	650.3	638.4	627.0	619.6	615.1	609.4
40°	721.8	693.4	671.3	646.3	628.2	614.0	601.5	593.0	583.9	579.9	572.5
42.5°	684.3	657.1	631.6	608.9	592.4	578.8	566.9	557.2	549.8	542.5	538.5
45°	641.2	617.4	594.1	571.4	556.1	541.3	528.3	519.8	509.6	503.3	501.0
47.5°	604.9	579.9	555.0	534.0	518.1	502.2	491.4	481.2	472.7	466.4	463.0
50°	561.8	538.5	518.1	497.1	481.8	464.7	451.7	442.0	432.4	427.8	422.2
52.5°	524.9	502.2	477.2	458.5	440.9	426.1	414.2	406.3	397.8	391.0	387.0
55°	478.9	456.8	436.9	417.1	399.5	387.6	377.9	364.3	356.9	350.1	339.3
57.5°	438.6	417.6	396.6	377.3	360.9	346.7	334.8	325.7	316.1	311.0	303.6
60°	396.1	373.9	354.6	339.9	321.7	306.4	298.5	287.7	279.7	271.8	269.5
62.5°	354.1	333.7	314.4	299.0	282.6	270.7	260.5	255.3	247.4	241.2	238.9
65°	310.4	293.4	275.2	258.2	248.0	234.4	228.7	220.2	215.6	212.8	212.2
67.5°	267.3	251.9	235.5	222.4	212.8	203.7	196.9	193.5	189.0	185.6	182.7
70°	228.1	213.4	199.2	188.4	181.0	174.2	169.7	163.4	158.9	154.3	148.1
72.5°	189.5	177.6	165.7	157.2	149.8	145.8	139.6	129.9	125.4	124.3	123.7
75°	153.8	140.7	132.2	127.7	120.9	111.2	107.2	106.1	105.5	104.4	104.4
77.5°	118.6	110.7	105.0	95.3	91.9	91.4	88.5	88.0	86.8	87.4	87.4
80°	86.3	81.7	74.9	72.1	70.9	71.5	70.4	70.9	69.8	70.4	69.2
82.5°	57.3	53.3	54.5	52.8	52.8	53.9	53.3	51.6	51.6	51.1	51.1
85°	34.0	33.5	34.6	34.6	34.0	32.3	33.5	32.9	31.2	31.8	31.8
87.5°	14.8	14.8	14.8	14.2	14.8	14.2	14.2	14.2	12.5	12.5	12.5
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: P243427

CATALOG NUMBER: S123RDR-H1000D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1314.2	1314.2	1314.2	1314.2
2.5°	1243.8	1242.7	1241.0	1239.3
5°	1179.7	1174.6	1174.0	1172.3
7.5°	1119.6	1117.3	1113.3	1117.9
10°	1064.5	1066.2	1062.2	1057.7
12.5°	1007.2	1003.8	997.6	1001.0
15°	956.7	951.0	947.6	939.7
17.5°	903.9	899.4	899.4	894.3
20°	858.0	853.4	854.6	851.2
22.5°	819.4	816.0	810.9	811.4
25°	783.1	778.0	772.3	772.8
27.5°	742.8	738.2	737.1	733.1
30°	707.0	703.1	702.5	702.5
32.5°	672.4	670.7	667.9	666.2
35°	642.3	640.1	635.5	636.7
37.5°	604.9	602.6	602.1	601.5
40°	569.7	568.0	563.5	564.0
42.5°	534.5	531.7	528.9	527.7
45°	496.5	495.9	491.4	492.5
47.5°	460.2	459.1	456.8	453.9
50°	419.9	419.3	417.6	414.2
52.5°	380.7	379.0	375.6	372.2
55°	336.5	331.4	332.0	329.1
57.5°	300.2	297.9	293.4	291.7
60°	265.0	262.7	262.2	259.9
62.5°	235.5	233.2	231.5	231.5
65°	208.8	206.0	205.4	205.4
67.5°	179.3	176.5	175.9	174.8
70°	142.4	141.9	140.7	140.7
72.5°	122.6	122.0	122.6	120.3
75°	104.4	103.8	103.8	104.4
77.5°	86.8	86.8	86.3	86.3
80°	68.7	69.2	68.7	70.4
82.5°	51.6	50.5	51.1	49.9
85°	31.8	31.8	30.6	30.6
87.5°	12.5	12.5	12.5	12.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)