

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: P243432

Luminaire Tested: **S123RDR-H1000D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243432
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-H1000D835-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3633.0 lumens
Efficiency: N/A
Efficacy: 115.3 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

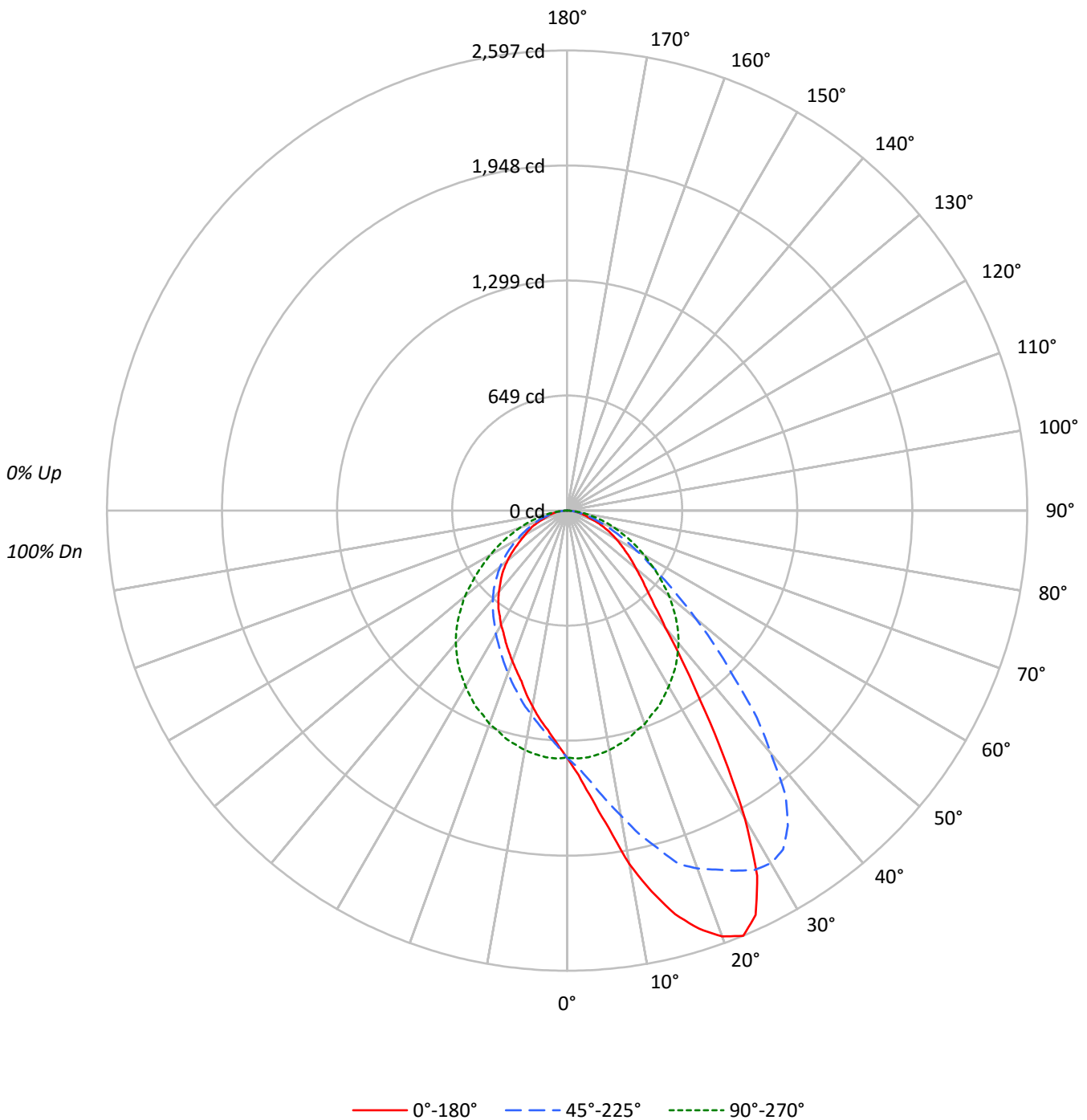
Input Watts (W): 31.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	16901	16901	16901
5°	19924	16994	15134
10°	24941	16894	13812
15°	29599	16726	12511
20°	32988	16525	11648
25°	33672	16321	10967
30°	28060	16044	10432
35°	19384	15821	9996
40°	13622	15461	9469
45°	10938	14912	8958
50°	9536	14201	8288
55°	8550	13142	7380
60°	7736	12143	6684
65°	6769	11189	6250
70°	5461	10072	5291
75°	4735	8767	5189
80°	4370	7483	5214
85°	3852	6022	4520



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.7	3.8
10°-20°	430.6	11.9
20°-30°	690.0	19.0
30°-40°	749.0	20.6
40°-50°	641.7	17.7
50°-60°	486.4	13.4
60°-70°	310.8	8.6
70°-80°	148.6	4.1
80°-90°	39.0	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°	1257.3	34.6
0°-40°	2006.3	55.2
0°-60°	3134.5	86.3
0°-90°	3633.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3633.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1394	1394	1394	1394	1394	
5°	1638	1537	1397	1270	1244	168
15°	2359	1972	1333	1070	997	669
25°	2518	2243	1220	886	820	1117
35°	1310	2172	1069	726	676	841
45°	638	1329	870	574	523	504
55°	405	651	622	411	349	365
65°	236	314	390	249	218	235
75°	101	123	187	118	111	109
85°	28	29	43	34	32	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°	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3
2.5°	1494.2	1496.0	1493.0	1492.4	1491.8	1482.2	1479.2	1474.4	1457.5	1453.3	1450.3
5°	1637.5	1632.7	1638.1	1627.9	1616.4	1609.8	1599.0	1574.9	1553.8	1537.0	1526.1
7.5°	1807.3	1809.1	1803.7	1794.0	1771.2	1761.5	1732.0	1703.1	1675.4	1640.5	1614.6
10°	2026.4	2012.0	2015.0	1984.9	1960.8	1931.9	1891.6	1845.2	1796.5	1747.1	1710.4
12.5°	2201.0	2211.2	2204.0	2189.6	2143.2	2114.9	2078.2	2010.8	1933.7	1867.5	1811.5
15°	2358.7	2344.9	2346.7	2311.8	2294.9	2269.0	2208.2	2141.4	2091.4	1971.6	1905.4
17.5°	2474.3	2473.1	2471.3	2441.8	2421.4	2367.2	2305.2	2236.5	2173.9	2090.8	2007.8
20°	2557.4	2566.4	2564.0	2540.0	2503.8	2451.5	2414.1	2328.6	2225.7	2149.8	2048.1
22.5°	2597.1	2597.7	2599.0	2587.5	2563.4	2529.7	2476.7	2408.1	2316.6	2192.6	2079.4
25°	2517.7	2520.7	2536.3	2546.0	2552.6	2537.5	2509.9	2447.8	2369.0	2242.6	2125.2
27.5°	2322.6	2332.3	2349.7	2407.5	2431.0	2463.5	2474.9	2450.3	2391.9	2286.5	2152.9
30°	2004.8	2031.8	2048.7	2114.3	2206.4	2293.1	2334.1	2374.4	2369.0	2299.1	2163.7
32.5°	1641.1	1658.6	1707.4	1777.8	1850.6	1977.7	2119.7	2217.3	2272.1	2268.4	2172.7
35°	1310.0	1335.3	1376.8	1430.4	1531.0	1662.8	1823.5	1977.1	2114.3	2171.5	2137.2
37.5°	1063.2	1065.6	1104.7	1180.6	1243.2	1359.4	1504.5	1694.1	1874.1	2023.4	2056.5
40°	860.9	877.8	898.2	945.8	1019.8	1131.2	1227.5	1414.2	1600.8	1788.0	1921.7
42.5°	733.3	733.3	756.1	786.2	835.6	902.4	1017.4	1186.6	1354.6	1584.5	1735.0
45°	638.1	644.2	654.4	673.7	708.6	760.4	849.5	964.4	1136.0	1329.3	1555.6
47.5°	569.5	568.9	577.9	589.4	616.5	655.6	708.0	801.3	928.3	1136.6	1336.5
50°	505.7	508.1	514.7	524.4	542.4	570.1	603.2	673.7	780.8	945.8	1155.3
52.5°	456.3	455.7	461.2	467.2	481.0	496.7	526.2	578.5	652.6	783.8	957.8
55°	404.6	407.0	413.6	417.2	428.6	438.9	463.6	493.1	552.7	651.4	809.7
57.5°	360.0	363.0	366.6	370.2	378.1	388.3	408.8	426.8	470.2	541.2	667.6
60°	319.1	317.9	322.1	328.1	332.3	341.3	352.8	371.5	401.6	452.1	544.8
62.5°	278.1	278.7	279.3	283.0	290.8	298.6	308.8	322.7	340.7	378.1	443.7
65°	236.0	236.6	237.8	241.4	249.2	254.1	264.9	276.9	291.4	313.7	359.4
67.5°	198.7	201.1	201.1	204.1	207.1	211.9	219.7	228.8	240.8	257.1	286.6
70°	154.1	153.5	156.5	162.5	165.6	174.0	179.4	185.4	196.3	206.5	231.8
72.5°	124.0	124.0	124.0	126.4	127.0	128.8	132.4	145.1	153.5	163.8	177.6
75°	101.1	101.7	101.7	102.3	102.9	104.8	106.0	109.6	112.0	122.8	131.2
77.5°	80.7	81.3	81.3	81.9	82.5	83.1	85.5	85.5	87.3	89.7	93.3
80°	62.6	62.0	62.0	62.6	62.6	64.4	64.4	65.6	66.2	67.4	69.2
82.5°	44.6	43.9	44.6	43.9	44.6	45.2	46.4	45.8	47.0	48.2	48.8
85°	27.7	28.3	28.3	29.5	28.9	28.3	28.9	28.9	28.9	28.9	30.1
87.5°	12.0	13.2	13.2	12.6	13.2	13.2	12.0	13.2	13.2	13.2	13.8
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°	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3
2.5°	1448.5	1446.1	1437.0	1428.6	1416.0	1410.6	1403.3	1400.3	1390.7	1377.4	1371.4
5°	1515.9	1497.8	1480.4	1459.3	1441.9	1421.4	1409.9	1396.7	1376.2	1357.6	1344.3
7.5°	1587.5	1561.1	1528.5	1493.6	1462.3	1432.8	1407.5	1386.5	1360.0	1334.1	1313.6
10°	1666.4	1621.3	1568.9	1524.3	1479.2	1436.4	1404.5	1372.6	1338.3	1305.8	1281.1
12.5°	1751.3	1687.5	1624.3	1557.4	1490.0	1440.7	1393.1	1352.2	1313.6	1279.3	1249.8
15°	1839.2	1751.9	1671.2	1596.0	1502.1	1435.8	1383.5	1332.9	1284.7	1242.6	1213.7
17.5°	1901.8	1801.9	1700.1	1593.6	1512.9	1431.0	1366.0	1302.2	1257.6	1214.3	1175.2
20°	1959.6	1846.4	1725.4	1626.1	1513.5	1413.6	1342.5	1281.1	1219.1	1172.7	1139.6
22.5°	1984.3	1881.9	1759.7	1621.9	1509.3	1406.9	1315.4	1246.2	1190.8	1140.2	1096.9
25°	1989.1	1874.7	1749.5	1616.4	1493.0	1382.3	1289.5	1220.3	1148.1	1095.7	1062.0
27.5°	2010.2	1853.6	1730.8	1598.4	1473.2	1357.6	1260.0	1183.0	1115.6	1059.6	1016.2
30°	2015.6	1844.6	1691.1	1564.7	1435.8	1322.7	1223.9	1146.3	1072.8	1015.6	976.5
32.5°	2018.0	1832.6	1649.6	1511.1	1388.3	1281.7	1191.4	1107.1	1037.3	977.1	936.8
35°	2009.6	1815.7	1599.6	1450.3	1332.3	1227.5	1143.9	1069.2	991.5	934.9	892.2
37.5°	1976.5	1789.2	1571.3	1379.2	1266.7	1167.9	1096.9	1023.4	951.8	890.4	846.5
40°	1913.8	1750.7	1518.3	1319.6	1192.0	1103.5	1037.3	977.1	904.8	845.8	802.5
42.5°	1813.9	1698.3	1469.5	1252.2	1118.0	1034.3	978.9	927.1	862.1	806.1	758.6
45°	1665.8	1624.9	1404.5	1183.6	1037.3	958.4	910.3	869.9	810.9	759.8	715.8
47.5°	1505.7	1514.7	1338.9	1113.8	963.8	888.6	846.5	810.9	766.4	711.6	671.3
50°	1320.8	1370.2	1246.8	1043.3	890.4	816.3	774.8	753.1	711.6	665.8	627.9
52.5°	1151.7	1229.9	1153.5	966.3	818.2	745.3	706.8	685.1	657.4	619.5	581.0
55°	976.5	1075.8	1020.4	883.2	744.7	671.3	638.8	621.9	599.0	569.5	534.6
57.5°	831.4	937.4	902.4	795.9	673.1	606.8	577.9	558.7	544.8	517.7	489.4
60°	689.3	787.5	773.6	695.3	602.0	538.8	516.5	500.9	489.4	469.6	441.9
62.5°	556.3	651.4	659.8	598.4	532.8	475.6	455.1	444.3	435.3	419.6	394.3
65°	441.3	525.0	542.4	495.5	459.9	416.6	396.7	390.1	383.5	365.4	346.2
67.5°	345.6	411.2	434.1	407.6	382.3	357.0	341.3	332.3	327.5	316.7	303.4
70°	264.3	320.9	340.1	328.7	311.9	302.2	290.2	284.2	279.3	265.5	258.3
72.5°	198.1	236.6	260.7	257.1	253.5	246.8	239.6	237.8	230.6	221.5	214.9
75°	145.1	167.4	189.0	196.9	195.7	198.1	190.2	187.2	183.0	176.4	171.0
77.5°	104.2	117.4	132.4	142.1	146.9	147.5	147.5	145.7	142.7	137.9	133.7
80°	72.2	75.3	89.1	98.1	102.9	106.6	106.6	107.2	104.2	102.3	99.3
82.5°	50.0	51.8	54.8	62.0	68.0	72.2	72.8	72.2	71.0	70.4	66.2
85°	31.3	30.7	30.7	32.5	37.3	41.5	42.1	43.3	42.7	42.1	37.9
87.5°	13.2	13.2	13.8	13.2	15.1	15.7	16.9	19.9	19.3	16.3	15.1
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3	1394.3
2.5°	1367.8	1360.0	1352.8	1344.9	1335.3	1326.3	1325.1	1323.9	1326.9	1320.8	1318.4
5°	1334.1	1319.0	1307.6	1293.2	1282.9	1269.7	1262.5	1260.6	1260.0	1256.4	1251.6
7.5°	1297.4	1281.1	1264.9	1248.6	1231.7	1217.9	1210.1	1205.9	1202.2	1196.2	1191.4
10°	1263.1	1242.6	1225.1	1202.9	1184.8	1166.7	1159.5	1153.5	1149.9	1141.4	1134.8
12.5°	1224.5	1198.6	1179.4	1155.3	1139.0	1123.4	1111.9	1100.5	1092.1	1079.4	1074.0
15°	1190.8	1163.7	1131.2	1116.8	1093.9	1070.4	1057.8	1057.8	1040.3	1030.1	1023.4
17.5°	1145.7	1122.2	1099.3	1069.8	1037.3	1023.4	1009.0	996.4	984.3	981.3	969.3
20°	1105.9	1078.2	1054.8	1022.8	993.3	977.1	960.2	946.4	937.4	928.9	922.3
22.5°	1066.8	1039.1	1003.0	971.7	951.8	930.1	912.1	900.0	892.2	879.6	873.5
25°	1025.9	992.7	960.2	929.5	904.8	886.2	867.5	860.9	847.1	840.4	832.0
27.5°	984.9	945.2	914.5	888.0	860.3	842.2	829.6	817.6	805.5	801.9	797.1
30°	939.2	902.4	872.9	847.1	820.6	804.9	789.9	779.0	768.8	761.0	755.5
32.5°	893.4	862.7	834.4	804.3	780.2	763.4	750.7	741.1	736.3	723.0	718.2
35°	851.3	820.0	789.9	761.6	742.3	726.0	714.6	705.6	695.3	686.9	682.1
37.5°	807.9	779.6	748.9	724.8	703.2	689.9	677.3	665.2	657.4	652.6	646.6
40°	765.8	735.7	712.2	685.7	666.4	651.4	638.1	629.1	619.5	615.3	607.4
42.5°	726.0	697.1	670.1	646.0	628.5	614.1	601.4	591.2	583.4	575.5	571.3
45°	680.3	655.0	630.3	606.2	590.0	574.3	560.5	551.5	540.6	534.0	531.6
47.5°	641.8	615.3	588.8	566.5	549.7	532.8	521.4	510.5	501.5	494.9	491.3
50°	596.0	571.3	549.7	527.4	511.1	493.1	479.2	469.0	458.7	453.9	447.9
52.5°	556.9	532.8	506.3	486.4	467.8	452.1	439.5	431.1	422.0	414.8	410.6
55°	508.1	484.6	463.6	442.5	423.8	411.2	401.0	386.5	378.7	371.5	360.0
57.5°	465.4	443.1	420.8	400.3	382.9	367.8	355.2	345.6	335.3	329.9	322.1
60°	420.2	396.7	376.3	360.6	341.3	325.1	316.7	305.2	296.8	288.4	286.0
62.5°	375.7	354.0	333.5	317.3	299.8	287.2	276.3	270.9	262.5	255.9	253.5
65°	329.3	311.2	292.0	273.9	263.1	248.6	242.6	233.6	228.8	225.8	225.2
67.5°	283.6	267.3	249.8	236.0	225.8	216.1	208.9	205.3	200.5	196.9	193.9
70°	242.0	226.4	211.3	199.9	192.0	184.8	180.0	173.4	168.6	163.8	157.1
72.5°	201.1	188.4	175.8	166.8	158.9	154.7	148.1	137.9	133.0	131.8	131.2
75°	163.1	149.3	140.3	135.5	128.2	118.0	113.8	112.6	112.0	110.8	110.8
77.5°	125.8	117.4	111.4	101.1	97.5	96.9	93.9	93.3	92.1	92.7	92.7
80°	91.5	86.7	79.5	76.5	75.3	75.9	74.7	75.3	74.0	74.7	73.4
82.5°	60.8	56.6	57.8	56.0	56.0	57.2	56.6	54.8	54.8	54.2	54.2
85°	36.1	35.5	36.7	36.7	36.1	34.3	35.5	34.9	33.1	33.7	33.7
87.5°	15.7	15.7	15.7	15.1	15.7	15.1	15.1	15.1	13.2	13.2	13.2
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: P243432

CATALOG NUMBER: S123RDR-H1000D835-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1394.3	1394.3	1394.3	1394.3
2.5°	1319.6	1318.4	1316.6	1314.8
5°	1251.6	1246.2	1245.6	1243.8
7.5°	1187.8	1185.4	1181.2	1186.0
10°	1129.4	1131.2	1127.0	1122.2
12.5°	1068.6	1065.0	1058.4	1062.0
15°	1015.0	1009.0	1005.4	997.0
17.5°	959.0	954.2	954.2	948.8
20°	910.3	905.4	906.7	903.0
22.5°	869.3	865.7	860.3	860.9
25°	830.8	825.4	819.4	820.0
27.5°	788.1	783.2	782.0	777.8
30°	750.1	745.9	745.3	745.3
32.5°	713.4	711.6	708.6	706.8
35°	681.5	679.1	674.3	675.5
37.5°	641.8	639.4	638.8	638.1
40°	604.4	602.6	597.8	598.4
42.5°	567.1	564.1	561.1	559.9
45°	526.8	526.2	521.4	522.6
47.5°	488.2	487.0	484.6	481.6
50°	445.5	444.9	443.1	439.5
52.5°	404.0	402.2	398.5	394.9
55°	357.0	351.6	352.2	349.2
57.5°	318.5	316.1	311.2	309.4
60°	281.1	278.7	278.1	275.7
62.5°	249.8	247.4	245.6	245.6
65°	221.5	218.5	217.9	217.9
67.5°	190.2	187.2	186.6	185.4
70°	151.1	150.5	149.3	149.3
72.5°	130.0	129.4	130.0	127.6
75°	110.8	110.2	110.2	110.8
77.5°	92.1	92.1	91.5	91.5
80°	72.8	73.4	72.8	74.7
82.5°	54.8	53.6	54.2	53.0
85°	33.7	33.7	32.5	32.5
87.5°	13.2	13.2	13.2	13.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)