

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: P242567

Luminaire Tested: **S123RDR-S1000D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242567  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-30)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDR-S1000D830-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3495.8 lumens  
Efficiency: N/A  
Efficacy: 100.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.22 / 1.35  
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')  
CIE Type: Direct

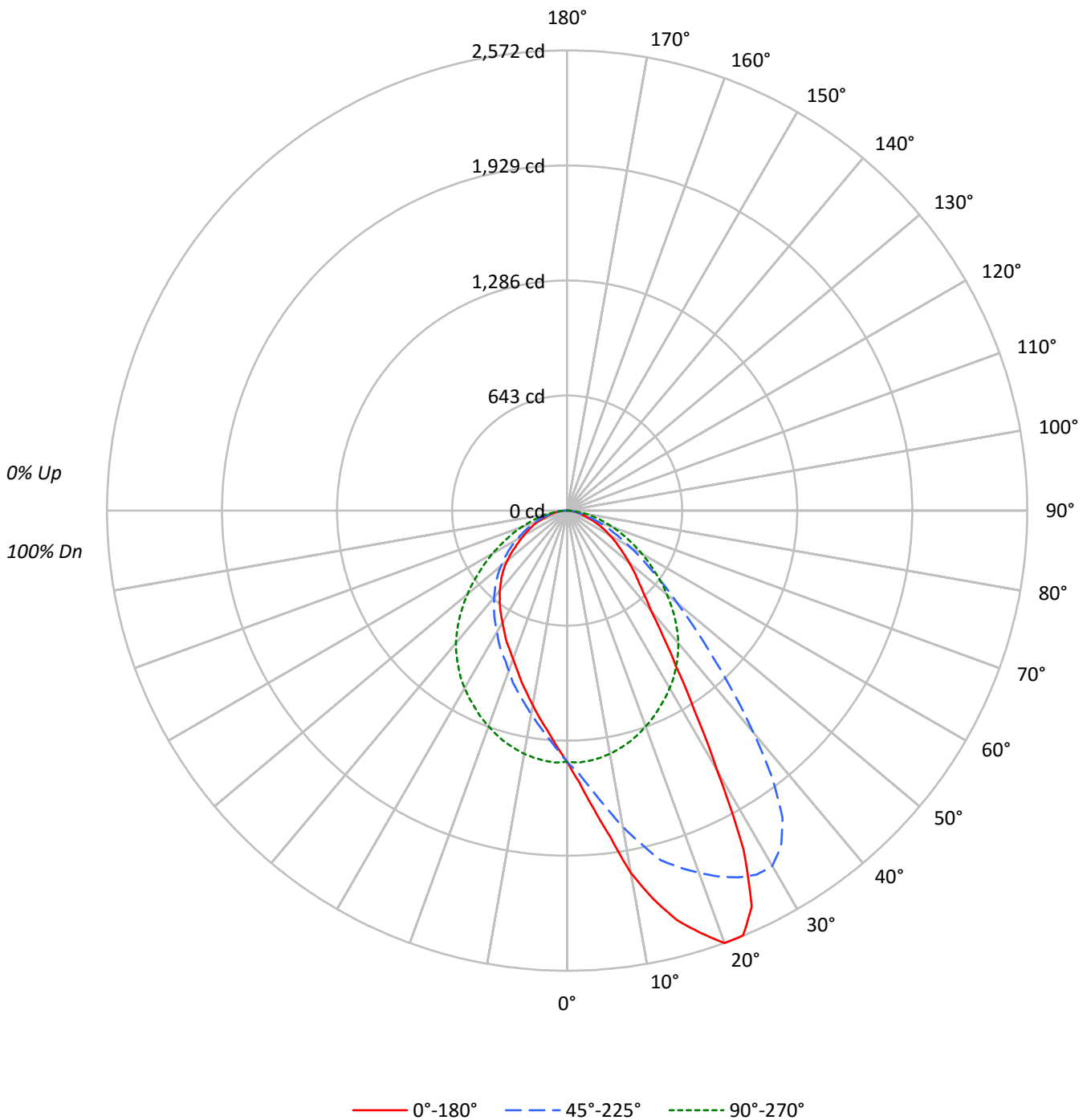
Input Watts (W): 34.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	108	104	100	97	100	97	94		96	93	91		92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80		86	82	78		83	79	77	74
3	93	84	76	71	91	82	75	70	79	74	69		77	72	68		74	70	66	64
4	86	75	67	61	84	74	66	61	71	65	60		69	64	59		67	62	58	56
5	80	68	60	53	78	67	59	53	65	58	53		63	57	52		61	56	52	50
6	74	62	53	47	72	61	53	47	59	52	47		57	51	46		56	50	46	44
7	69	56	48	42	67	55	48	42	54	47	42		53	46	42		51	46	41	39
8	64	52	44	38	63	51	43	38	50	43	38		48	42	38		47	42	37	36
9	60	48	40	35	59	47	40	35	46	39	34		45	39	34		44	38	34	32
10	57	44	37	32	55	44	36	32	43	36	31		42	36	31		41	35	31	29

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	17017	17017	17017
5°	20286	17089	15050
10°	25328	16991	13596
15°	29729	16818	12398
20°	33180	16559	11381
25°	32651	16285	10754
30°	23469	16033	10111
35°	15670	15706	9694
40°	11545	15310	9263
45°	9684	14619	8840
50°	8546	13713	8250
55°	7494	12675	7443
60°	6674	11685	6819
65°	5860	10618	6344
70°	4600	9672	5794
75°	4051	8444	5292
80°	3525	7176	5200
85°	2837	5772	5521



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	137.9	3.9
10°-20°	431.6	12.3
20°-30°	679.8	19.4
30°-40°	706.9	20.2
40°-50°	604.8	17.3
50°-60°	460.9	13.2
60°-70°	295.3	8.4
70°-80°	141.5	4.0
80°-90°	37.2	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°	1249.2	35.7
0°-40°	1956.1	56.0
0°-60°	3021.8	86.4
0°-90°	3495.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3495.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1404	1404	1404	1404	1404	
5°	1667	1564	1404	1268	1237	171
15°	2369	2023	1340	1054	988	672
25°	2441	2262	1218	870	804	1061
35°	1059	2099	1061	710	655	689
45°	565	1140	853	561	516	443
55°	355	568	600	405	352	320
65°	204	280	370	253	221	201
75°	86	102	180	129	113	93
85°	20	22	42	38	40	24
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°	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9
2.5°	1518.1	1520.5	1512.7	1511.5	1502.5	1500.1	1500.1	1487.5	1479.7	1469.4	1463.4
5°	1667.2	1676.8	1672.0	1661.2	1643.1	1638.9	1627.5	1609.5	1589.0	1563.8	1551.8
7.5°	1837.9	1857.7	1854.1	1837.3	1818.0	1806.0	1774.1	1748.3	1709.2	1673.8	1646.1
10°	2057.8	2044.0	2033.2	2017.0	1999.5	1971.3	1937.6	1891.3	1837.9	1795.8	1748.9
12.5°	2222.5	2223.1	2208.7	2191.8	2165.4	2139.0	2095.7	2036.8	1972.5	1907.0	1851.7
15°	2369.1	2372.7	2363.7	2346.3	2311.4	2264.0	2201.5	2178.0	2089.1	2023.0	1956.9
17.5°	2473.7	2474.3	2472.5	2449.1	2411.2	2378.8	2320.5	2265.8	2181.6	2092.1	2003.7
20°	2572.3	2566.3	2567.5	2540.4	2514.0	2474.9	2418.4	2328.9	2262.8	2155.2	2063.2
22.5°	2569.9	2569.9	2575.3	2570.5	2553.0	2525.4	2483.9	2411.8	2322.9	2214.1	2107.7
25°	2441.3	2436.4	2464.7	2472.5	2503.2	2508.6	2495.3	2453.9	2373.9	2262.2	2134.1
27.5°	2134.7	2117.3	2176.2	2234.5	2312.0	2361.3	2411.8	2423.2	2385.4	2294.0	2160.0
30°	1676.8	1733.3	1759.7	1854.7	1960.5	2086.7	2197.3	2302.4	2328.3	2293.4	2188.2
32.5°	1321.0	1368.5	1389.5	1467.6	1564.4	1717.7	1897.4	2057.2	2182.2	2224.3	2171.4
35°	1059.0	1059.6	1110.0	1146.1	1237.5	1389.5	1550.6	1750.1	1948.4	2098.7	2114.3
37.5°	873.9	876.3	908.7	944.8	1018.1	1103.4	1253.1	1421.4	1660.0	1884.1	2000.7
40°	729.6	735.0	757.9	793.3	842.6	903.3	1013.9	1170.1	1361.3	1617.9	1827.6
42.5°	637.1	646.7	655.7	680.9	706.8	762.7	846.8	958.6	1128.1	1367.3	1617.3
45°	564.9	569.7	578.8	591.4	619.0	658.7	718.8	799.9	944.2	1139.5	1381.7
47.5°	509.6	506.6	516.9	527.7	546.3	575.2	617.2	687.5	795.7	959.2	1168.9
50°	453.2	452.6	459.2	467.0	484.4	504.2	537.3	587.2	668.9	798.7	986.8
52.5°	400.3	403.3	407.5	417.7	429.1	444.1	473.0	505.4	572.8	680.3	829.4
55°	354.6	356.4	363.0	368.4	377.4	393.7	412.3	442.3	490.4	568.5	697.8
57.5°	314.9	314.3	320.9	321.5	333.0	346.8	361.8	385.2	421.9	483.8	574.0
60°	275.3	273.5	278.9	283.1	288.5	299.3	311.3	334.2	361.8	404.5	479.0
62.5°	239.2	238.6	242.2	246.4	250.6	260.2	269.8	286.1	306.5	340.8	396.1
65°	204.3	206.1	207.9	209.7	212.2	218.2	227.8	239.8	254.8	280.1	322.7
67.5°	168.3	170.7	171.3	175.5	180.3	183.3	188.7	200.1	211.6	234.4	259.6
70°	129.8	129.2	129.8	131.6	138.2	144.8	152.7	160.5	167.1	182.1	202.5
72.5°	107.0	105.8	107.6	107.6	110.0	110.6	114.8	122.0	131.0	140.0	153.3
75°	86.5	86.5	86.5	86.5	88.9	90.1	92.0	93.8	96.8	101.6	112.4
77.5°	67.3	67.3	68.5	69.1	69.7	70.3	71.5	73.3	74.5	76.9	82.3
80°	50.5	51.1	50.5	51.1	51.1	52.3	52.9	54.7	55.3	58.3	60.1
82.5°	34.9	34.3	34.9	35.5	35.5	36.7	36.7	37.9	37.9	39.1	40.9
85°	20.4	19.2	20.4	19.8	21.0	19.8	20.4	21.6	21.6	22.2	24.6
87.5°	6.0	7.2	6.0	6.6	6.6	7.2	7.2	7.2	8.4	7.8	8.4
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°	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9
2.5°	1461.0	1459.2	1450.8	1441.2	1428.6	1420.2	1413.5	1409.9	1399.1	1385.9	1376.9
5°	1539.2	1521.1	1501.9	1478.5	1456.8	1434.6	1420.8	1404.5	1384.7	1362.5	1346.8
7.5°	1616.7	1585.4	1551.2	1515.7	1479.7	1447.8	1418.4	1394.3	1364.3	1333.6	1312.6
10°	1708.6	1657.0	1603.5	1548.8	1498.9	1452.0	1416.0	1380.5	1342.6	1306.0	1278.3
12.5°	1792.2	1720.1	1656.4	1586.0	1518.7	1460.4	1404.5	1361.3	1313.8	1274.1	1241.7
15°	1860.1	1790.4	1715.9	1613.7	1528.9	1458.0	1394.9	1340.2	1284.9	1236.9	1206.2
17.5°	1931.0	1825.2	1727.3	1647.9	1537.4	1451.4	1377.5	1313.8	1253.7	1204.4	1165.9
20°	1971.9	1870.3	1761.5	1652.7	1544.6	1445.4	1355.9	1283.7	1220.6	1162.9	1128.1
22.5°	1996.5	1878.1	1762.1	1643.1	1526.5	1422.6	1334.2	1253.1	1183.4	1129.3	1084.2
25°	2014.5	1877.5	1751.3	1635.9	1518.7	1406.9	1301.8	1217.6	1143.7	1085.4	1039.7
27.5°	2029.0	1870.3	1725.5	1599.9	1481.5	1367.9	1272.9	1182.8	1108.8	1048.1	998.3
30°	2032.6	1861.3	1694.8	1556.0	1435.2	1333.0	1230.8	1145.5	1066.2	1000.7	955.0
32.5°	2037.4	1839.1	1653.3	1503.7	1379.3	1278.3	1188.2	1107.6	1025.9	961.6	914.7
35°	2020.6	1833.6	1611.3	1441.8	1318.0	1220.0	1136.5	1061.4	981.4	918.9	871.4
37.5°	1969.5	1804.2	1569.2	1372.7	1244.7	1154.5	1084.8	1016.3	942.4	873.9	830.0
40°	1883.5	1756.1	1518.7	1310.8	1175.6	1082.4	1021.1	967.6	896.7	833.6	785.5
42.5°	1755.5	1690.6	1470.6	1245.9	1097.4	1008.5	959.2	909.9	849.8	785.5	741.0
45°	1593.2	1603.5	1401.5	1176.2	1026.5	936.4	887.7	852.8	797.5	744.6	698.4
47.5°	1396.1	1481.5	1327.6	1102.8	949.6	864.8	822.2	790.3	751.8	697.2	654.5
50°	1203.8	1340.2	1235.1	1028.9	878.1	793.9	751.8	727.2	694.8	653.9	613.6
52.5°	1026.5	1175.6	1123.3	946.6	800.5	725.4	684.5	665.3	641.3	603.4	567.9
55°	866.0	1014.5	1000.1	863.6	723.0	653.9	622.6	599.8	582.4	553.5	524.7
57.5°	726.6	870.2	873.3	771.7	655.7	585.4	558.3	540.3	528.3	505.4	477.2
60°	596.2	725.4	750.6	678.5	582.4	522.3	495.8	482.0	473.0	455.6	435.1
62.5°	488.0	593.2	622.6	575.8	512.1	456.8	437.5	424.3	418.9	404.5	387.0
65°	390.0	481.4	509.0	480.2	443.5	398.5	381.6	370.2	364.8	356.4	343.2
67.5°	307.7	378.6	408.7	384.6	370.8	339.0	327.5	320.9	316.1	310.1	298.7
70°	235.6	284.9	316.1	310.7	299.9	284.9	277.1	272.9	268.0	263.2	253.6
72.5°	177.9	207.9	236.8	241.6	233.2	233.2	226.6	225.4	223.0	217.0	212.8
75°	125.6	149.0	169.5	177.3	180.9	183.9	180.9	180.3	179.7	174.9	171.9
77.5°	87.1	102.2	116.0	129.8	134.6	138.8	139.4	141.8	140.0	137.0	135.8
80°	63.1	66.1	75.1	86.5	95.6	99.2	101.6	102.8	102.2	101.6	99.2
82.5°	41.5	43.9	46.9	54.1	61.3	67.9	69.1	68.5	70.3	70.9	69.1
85°	24.6	25.2	26.4	27.6	31.9	38.5	40.3	41.5	42.7	42.7	39.1
87.5°	9.6	9.0	10.2	10.2	12.0	12.6	16.2	19.2	19.8	17.4	17.4
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°	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9	1403.9
2.5°	1373.9	1366.1	1360.7	1348.6	1340.8	1332.4	1324.0	1329.4	1328.8	1328.2	1328.2
5°	1333.6	1319.8	1307.2	1290.9	1280.7	1268.1	1258.5	1257.3	1259.7	1251.3	1246.5
7.5°	1295.8	1277.7	1259.7	1242.9	1224.2	1209.8	1200.8	1197.2	1190.6	1185.2	1180.4
10°	1255.5	1233.2	1215.8	1193.6	1173.1	1155.1	1143.7	1135.9	1131.7	1127.5	1119.7
12.5°	1214.0	1192.4	1168.9	1143.1	1123.9	1102.2	1094.4	1085.4	1076.4	1071.6	1060.2
15°	1173.8	1145.5	1122.1	1095.6	1074.0	1053.6	1041.5	1024.1	1021.7	1015.7	1004.9
17.5°	1134.7	1103.4	1069.2	1051.1	1029.5	1007.9	988.6	983.2	965.2	959.2	949.0
20°	1086.6	1058.4	1033.7	1007.9	972.4	952.6	938.2	930.3	916.5	908.1	902.1
22.5°	1045.1	1016.3	986.8	955.6	927.9	905.1	895.5	882.3	876.3	863.6	857.0
25°	1006.1	974.8	940.6	908.1	887.1	870.2	853.4	842.6	831.8	826.4	814.4
27.5°	958.6	927.3	894.3	869.0	845.0	828.2	811.9	802.9	789.1	780.1	773.5
30°	920.7	882.3	854.6	832.4	799.3	783.7	772.3	760.3	750.6	741.0	734.4
32.5°	876.9	842.6	816.8	787.9	764.5	747.0	731.4	721.2	713.4	704.4	697.8
35°	830.6	801.1	774.1	746.4	727.8	710.4	693.0	683.9	676.1	667.7	661.7
37.5°	788.5	760.9	735.6	709.2	686.3	671.3	656.9	650.9	640.1	634.1	628.0
40°	750.0	723.0	695.4	670.1	646.1	635.3	622.6	612.4	602.8	598.6	592.0
42.5°	708.0	680.9	658.7	631.0	612.4	596.8	585.4	574.0	567.3	560.7	557.7
45°	666.5	642.5	619.6	592.6	574.0	561.3	548.1	537.9	531.3	527.1	520.5
47.5°	626.8	602.2	579.4	555.3	537.3	522.9	509.0	502.4	493.4	488.6	483.8
50°	583.0	561.3	536.7	515.1	497.0	482.6	471.8	462.8	455.0	448.3	445.3
52.5°	542.7	519.3	498.8	479.0	459.8	442.9	433.3	423.7	418.3	410.5	406.9
55°	497.6	475.4	457.4	437.5	418.9	405.1	393.1	384.6	378.6	370.2	365.4
57.5°	456.2	436.9	414.7	397.3	377.4	366.6	356.4	344.4	337.2	330.5	325.7
60°	414.1	391.3	372.6	356.4	339.6	324.5	315.5	306.5	298.7	292.1	287.9
62.5°	370.2	351.0	333.6	315.5	300.5	287.9	277.1	269.8	263.2	259.6	255.4
65°	325.1	309.5	291.5	277.1	262.6	253.0	244.6	238.0	233.2	230.2	226.6
67.5°	283.7	268.6	252.4	237.4	227.8	220.0	214.0	207.9	205.5	201.9	199.5
70°	243.4	227.8	214.0	203.1	193.5	188.1	184.5	180.3	177.9	173.1	170.7
72.5°	199.5	189.3	180.3	171.9	164.7	159.9	155.1	149.6	145.4	140.0	137.6
75°	164.1	153.9	146.0	140.0	135.2	128.6	122.0	116.6	114.8	113.0	112.4
77.5°	128.0	121.4	115.4	110.6	104.0	98.0	96.2	95.0	94.4	93.2	93.2
80°	95.6	89.5	85.3	79.3	75.7	75.7	75.7	74.5	75.1	75.1	75.1
82.5°	64.9	59.5	57.7	56.5	56.5	57.1	57.1	57.7	57.1	58.3	57.7
85°	36.7	37.3	38.5	37.9	38.5	38.5	39.7	39.1	39.7	38.5	39.7
87.5°	16.8	18.6	19.2	19.8	20.4	19.8	20.4	20.4	21.0	21.0	21.0
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: P242567

CATALOG NUMBER: S123RDR-S1000D830-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1403.9	1403.9	1403.9	1403.9
2.5°	1321.0	1320.4	1321.0	1318.6
5°	1244.7	1244.1	1242.3	1236.9
7.5°	1175.6	1174.4	1169.5	1170.7
10°	1115.5	1116.1	1108.8	1104.6
12.5°	1057.2	1053.6	1048.1	1043.3
15°	1007.3	1001.3	986.8	988.0
17.5°	945.4	940.6	940.0	931.5
20°	892.5	889.5	890.7	882.3
22.5°	851.0	848.0	841.4	840.2
25°	810.7	805.9	801.1	804.1
27.5°	769.9	766.3	760.9	760.9
30°	731.4	727.8	725.4	722.4
32.5°	692.4	692.4	687.5	687.5
35°	659.3	655.7	654.5	655.1
37.5°	627.4	622.6	620.2	617.8
40°	592.6	587.8	586.6	585.4
42.5°	553.5	552.3	551.7	549.3
45°	518.7	518.1	514.5	515.7
47.5°	481.4	478.4	476.6	478.4
50°	442.9	441.7	436.3	437.5
52.5°	404.5	399.1	397.9	396.7
55°	361.2	355.8	353.4	352.2
57.5°	318.5	316.7	314.3	316.1
60°	281.9	281.9	281.9	281.3
62.5°	253.6	251.8	251.2	252.4
65°	224.8	224.2	221.8	221.2
67.5°	198.3	195.9	195.9	194.7
70°	167.7	166.5	162.9	163.5
72.5°	134.6	133.4	133.4	132.2
75°	111.8	111.2	110.6	113.0
77.5°	93.2	93.2	93.8	92.6
80°	75.1	75.1	74.5	74.5
82.5°	56.5	57.1	57.7	56.5
85°	39.7	39.1	40.3	39.7
87.5°	22.2	21.0	21.0	21.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)