

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: P243447

Luminaire Tested: **S123RDR-H1000D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243447
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-H1000D935-X4F0-XX-UDD-A-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3128.0 lumens
Efficiency: N/A
Efficacy: 99.3 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

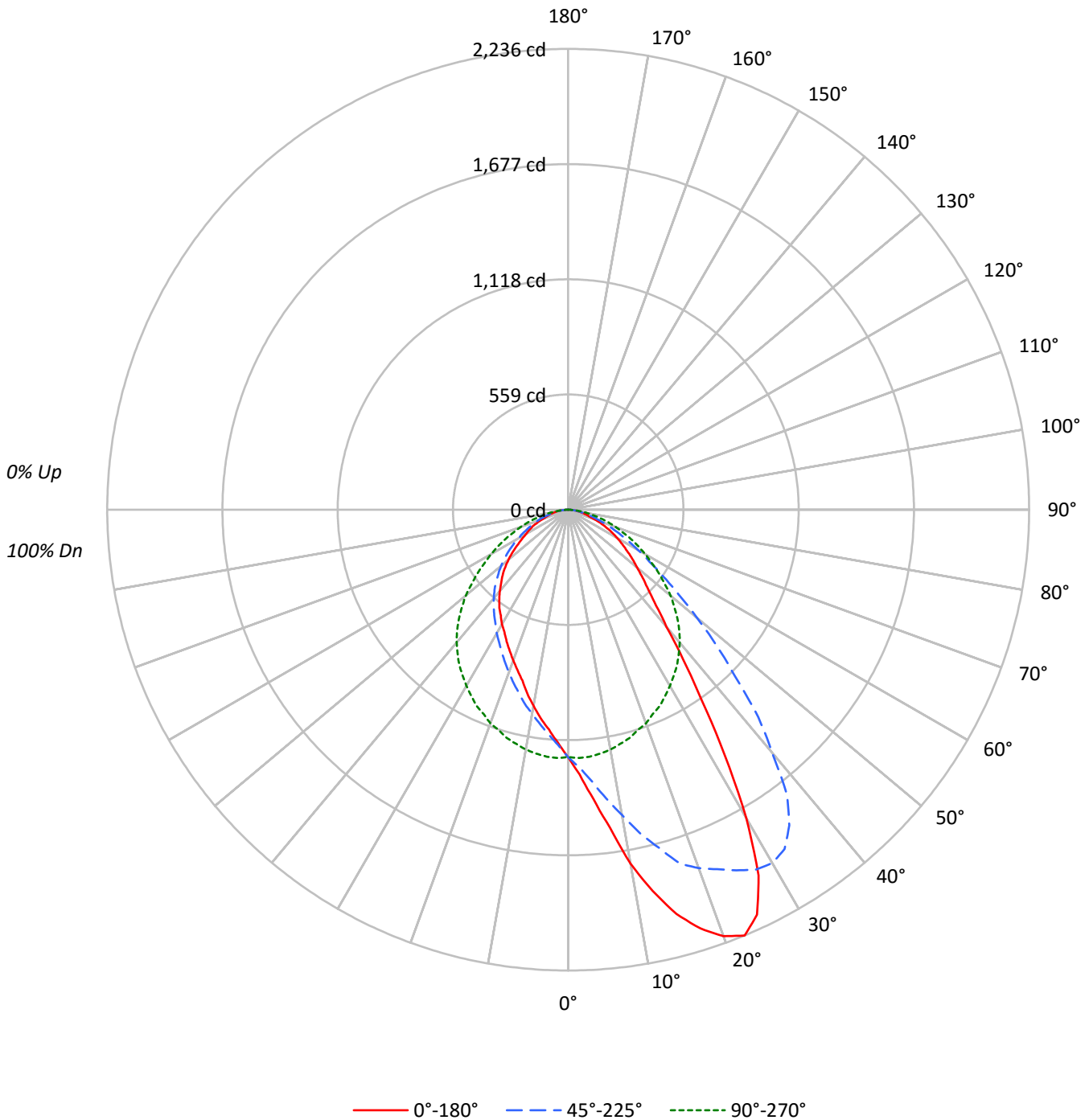
Input Watts (W): 31.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	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°	14552	14552	14552
5°	17155	14633	13030
10°	21475	14546	11892
15°	25485	14401	10772
20°	28403	14228	10029
25°	28991	14052	9442
30°	24159	13813	8981
35°	16690	13622	8606
40°	11728	13312	8152
45°	9418	12839	7712
50°	8210	12229	7136
55°	7361	11317	6352
60°	6659	10456	5755
65°	5828	9634	5381
70°	4703	8672	4554
75°	4079	7549	4468
80°	3762	6443	4488
85°	3310	5188	3894



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.7	3.8
10°-20°	370.8	11.9
20°-30°	594.1	19.0
30°-40°	644.9	20.6
40°-50°	552.5	17.7
50°-60°	418.8	13.4
60°-70°	267.6	8.6
70°-80°	128.0	4.1
80°-90°	33.6	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°	1082.5	34.6
0°-40°	1727.5	55.2
0°-60°	2698.8	86.3
0°-90°	3128.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3128.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1200	1200	1200	1200	1200	
5°	1410	1323	1203	1093	1071	145
15°	2031	1698	1148	922	858	576
25°	2168	1931	1051	763	706	962
35°	1128	1870	921	625	582	724
45°	549	1144	749	494	450	434
55°	348	561	536	354	301	314
65°	203	270	336	214	188	202
75°	87	106	161	102	95	94
85°	24	25	37	30	28	27
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°	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5
2.5°	1286.5	1288.1	1285.5	1285.0	1284.5	1276.2	1273.6	1269.4	1254.9	1251.3	1248.7
5°	1409.9	1405.8	1410.4	1401.6	1391.8	1386.1	1376.7	1356.0	1337.9	1323.3	1314.0
7.5°	1556.1	1557.6	1553.0	1544.7	1525.0	1516.7	1491.3	1466.4	1442.6	1412.5	1390.2
10°	1744.8	1732.3	1734.9	1709.0	1688.3	1663.4	1628.6	1588.7	1546.7	1504.2	1472.6
12.5°	1895.1	1903.9	1897.7	1885.2	1845.3	1820.9	1789.3	1731.3	1664.9	1607.9	1559.7
15°	2030.9	2019.0	2020.5	1990.4	1975.9	1953.6	1901.3	1843.8	1800.7	1697.6	1640.6
17.5°	2130.4	2129.4	2127.8	2102.4	2084.8	2038.1	1984.7	1925.7	1871.7	1800.2	1728.7
20°	2201.9	2209.7	2207.6	2186.9	2155.8	2110.7	2078.6	2005.0	1916.3	1851.0	1763.4
22.5°	2236.1	2236.7	2237.7	2227.8	2207.1	2178.1	2132.5	2073.4	1994.6	1887.8	1790.4
25°	2167.7	2170.3	2183.8	2192.1	2197.8	2184.8	2161.0	2107.6	2039.7	1930.8	1829.8
27.5°	1999.8	2008.1	2023.1	2072.9	2093.1	2121.1	2130.9	2109.7	2059.4	1968.7	1853.6
30°	1726.1	1749.4	1763.9	1820.4	1899.7	1974.4	2009.6	2044.4	2039.7	1979.6	1862.9
32.5°	1413.0	1428.0	1470.0	1530.7	1593.4	1702.8	1825.1	1909.1	1956.2	1953.1	1870.7
35°	1127.9	1149.7	1185.5	1231.6	1318.2	1431.7	1570.1	1702.2	1820.4	1869.7	1840.1
37.5°	915.4	917.5	951.2	1016.5	1070.4	1170.4	1295.3	1458.6	1613.6	1742.2	1770.7
40°	741.2	755.7	773.4	814.3	878.1	974.0	1056.9	1217.6	1378.3	1539.5	1654.6
42.5°	631.3	631.3	651.0	677.0	719.5	777.0	876.0	1021.7	1166.3	1364.3	1493.9
45°	549.4	554.6	563.4	580.0	610.1	654.7	731.4	830.4	978.1	1144.5	1339.4
47.5°	490.4	489.8	497.6	507.5	530.8	564.5	609.6	689.9	799.3	978.6	1150.7
50°	435.4	437.5	443.2	451.5	467.0	490.9	519.4	580.0	672.3	814.3	994.7
52.5°	392.9	392.4	397.1	402.2	414.2	427.6	453.0	498.1	561.9	674.9	824.7
55°	348.3	350.4	356.1	359.2	369.1	377.9	399.1	424.5	475.8	560.9	697.2
57.5°	310.0	312.6	315.7	318.8	325.5	334.3	352.0	367.5	404.8	466.0	574.8
60°	274.7	273.7	277.3	282.5	286.1	293.9	303.8	319.8	345.7	389.3	469.1
62.5°	239.5	240.0	240.5	243.6	250.4	257.1	265.9	277.8	293.4	325.5	382.0
65°	203.2	203.7	204.7	207.9	214.6	218.7	228.1	238.4	250.9	270.1	309.5
67.5°	171.1	173.1	173.1	175.7	178.3	182.5	189.2	197.0	207.3	221.3	246.7
70°	132.7	132.2	134.8	140.0	142.5	149.8	154.5	159.7	169.0	177.8	199.6
72.5°	106.8	106.8	106.8	108.9	109.4	110.9	114.0	124.9	132.2	141.0	152.9
75°	87.1	87.6	87.6	88.1	88.6	90.2	91.2	94.3	96.4	105.7	113.0
77.5°	69.5	70.0	70.0	70.5	71.0	71.5	73.6	73.6	75.2	77.2	80.3
80°	53.9	53.4	53.4	53.9	53.9	55.5	55.5	56.5	57.0	58.1	59.6
82.5°	38.4	37.8	38.4	37.8	38.4	38.9	39.9	39.4	40.4	41.5	42.0
85°	23.8	24.4	24.4	25.4	24.9	24.4	24.9	24.9	24.9	24.9	25.9
87.5°	10.4	11.4	11.4	10.9	11.4	11.4	10.4	11.4	11.4	11.4	11.9
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°	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5
2.5°	1247.1	1245.1	1237.3	1230.0	1219.1	1214.5	1208.3	1205.7	1197.4	1186.0	1180.8
5°	1305.2	1289.6	1274.6	1256.5	1241.4	1223.8	1214.0	1202.6	1184.9	1168.9	1157.5
7.5°	1366.9	1344.1	1316.1	1286.0	1259.1	1233.7	1211.9	1193.8	1170.9	1148.7	1131.0
10°	1434.8	1395.9	1350.8	1312.5	1273.6	1236.8	1209.3	1181.8	1152.3	1124.3	1103.0
12.5°	1507.9	1452.9	1398.5	1341.0	1282.9	1240.4	1199.5	1164.2	1131.0	1101.5	1076.1
15°	1583.5	1508.4	1438.9	1374.1	1293.3	1236.3	1191.2	1147.6	1106.1	1069.9	1045.0
17.5°	1637.5	1551.4	1463.8	1372.1	1302.6	1232.1	1176.1	1121.2	1082.8	1045.5	1011.8
20°	1687.2	1589.8	1485.6	1400.1	1303.1	1217.1	1155.9	1103.0	1049.7	1009.7	981.2
22.5°	1708.5	1620.3	1515.1	1396.4	1299.5	1211.4	1132.6	1073.0	1025.3	981.7	944.4
25°	1712.6	1614.1	1506.3	1391.8	1285.5	1190.1	1110.3	1050.7	988.5	943.4	914.4
27.5°	1730.8	1596.0	1490.2	1376.2	1268.4	1168.9	1084.9	1018.5	960.5	912.3	875.0
30°	1735.4	1588.2	1456.0	1347.2	1236.3	1138.8	1053.8	986.9	923.7	874.4	840.8
32.5°	1737.5	1577.8	1420.3	1301.0	1195.3	1103.6	1025.8	953.2	893.1	841.3	806.5
35°	1730.2	1563.3	1377.2	1248.7	1147.1	1056.9	984.9	920.6	853.7	805.0	768.2
37.5°	1701.7	1540.5	1352.9	1187.5	1090.6	1005.6	944.4	881.2	819.5	766.6	728.8
40°	1647.8	1507.3	1307.3	1136.2	1026.3	950.1	893.1	841.3	779.1	728.3	691.0
42.5°	1561.8	1462.3	1265.3	1078.2	962.6	890.5	842.8	798.3	742.3	694.1	653.1
45°	1434.3	1399.0	1209.3	1019.1	893.1	825.2	783.7	749.0	698.2	654.2	616.3
47.5°	1296.4	1304.2	1152.8	958.9	829.9	765.1	728.8	698.2	659.9	612.7	578.0
50°	1137.3	1179.8	1073.5	898.3	766.6	702.9	667.1	648.5	612.7	573.3	540.6
52.5°	991.6	1059.0	993.2	831.9	704.4	641.7	608.5	589.9	566.0	533.4	500.2
55°	840.8	926.3	878.6	760.4	641.2	578.0	550.0	535.5	515.8	490.4	460.3
57.5°	715.8	807.1	777.0	685.3	579.5	522.5	497.6	481.0	469.1	445.8	421.4
60°	593.5	678.0	666.1	598.7	518.3	463.9	444.7	431.3	421.4	404.3	380.5
62.5°	479.0	560.9	568.1	515.2	458.7	409.5	391.9	382.5	374.8	361.3	339.5
65°	379.9	452.0	467.0	426.6	396.0	358.7	341.6	335.9	330.2	314.6	298.0
67.5°	297.5	354.0	373.7	350.9	329.1	307.4	293.9	286.1	282.0	272.6	261.2
70°	227.6	276.3	292.9	283.0	268.5	260.2	249.8	244.7	240.5	228.6	222.4
72.5°	170.5	203.7	224.4	221.3	218.2	212.5	206.3	204.7	198.5	190.8	185.0
75°	124.9	144.1	162.8	169.5	168.5	170.5	163.8	161.2	157.6	151.9	147.2
77.5°	89.7	101.1	114.0	122.3	126.5	127.0	127.0	125.4	122.8	118.7	115.1
80°	62.2	64.8	76.7	84.5	88.6	91.7	91.7	92.3	89.7	88.1	85.5
82.5°	43.0	44.6	47.2	53.4	58.6	62.2	62.7	62.2	61.2	60.6	57.0
85°	27.0	26.4	26.4	28.0	32.1	35.8	36.3	37.3	36.8	36.3	32.7
87.5°	11.4	11.4	11.9	11.4	13.0	13.5	14.5	17.1	16.6	14.0	13.0
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°	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5	1200.5
2.5°	1177.7	1170.9	1164.7	1158.0	1149.7	1141.9	1140.9	1139.8	1142.4	1137.3	1135.2
5°	1148.7	1135.7	1125.8	1113.4	1104.6	1093.2	1087.0	1085.4	1084.9	1081.8	1077.6
7.5°	1117.0	1103.0	1089.0	1075.0	1060.5	1048.6	1041.9	1038.2	1035.1	1030.0	1025.8
10°	1087.5	1069.9	1054.8	1035.7	1020.1	1004.6	998.3	993.2	990.0	982.8	977.1
12.5°	1054.3	1032.0	1015.4	994.7	980.7	967.2	957.4	947.5	940.3	929.4	924.7
15°	1025.3	1002.0	974.0	961.5	941.8	921.6	910.7	910.7	895.7	886.9	881.2
17.5°	986.4	966.2	946.5	921.1	893.1	881.2	868.7	857.9	847.5	844.9	834.5
20°	952.2	928.4	908.1	880.7	855.3	841.3	826.8	814.8	807.1	799.8	794.1
22.5°	918.5	894.7	863.6	836.6	819.5	800.8	785.3	774.9	768.2	757.3	752.1
25°	883.3	854.8	826.8	800.3	779.1	763.0	746.9	741.2	729.3	723.6	716.4
27.5°	848.0	813.8	787.4	764.6	740.7	725.2	714.3	703.9	693.5	690.4	686.3
30°	808.6	777.0	751.6	729.3	706.5	693.0	680.1	670.7	661.9	655.2	650.5
32.5°	769.2	742.8	718.4	692.5	671.8	657.3	646.4	638.1	633.9	622.5	618.4
35°	732.9	706.0	680.1	655.7	639.1	625.1	615.3	607.5	598.7	591.4	587.3
37.5°	695.6	671.3	644.8	624.1	605.4	594.0	583.1	572.8	566.0	561.9	556.7
40°	659.3	633.4	613.2	590.4	573.8	560.9	549.4	541.7	533.4	529.7	523.0
42.5°	625.1	600.2	576.9	556.2	541.2	528.7	517.8	509.0	502.3	495.5	491.9
45°	585.7	564.0	542.7	522.0	508.0	494.5	482.6	474.8	465.5	459.8	457.7
47.5°	552.6	529.7	506.9	487.8	473.2	458.7	448.9	439.6	431.8	426.1	423.0
50°	513.2	491.9	473.2	454.1	440.1	424.5	412.6	403.8	395.0	390.8	385.6
52.5°	479.5	458.7	435.9	418.8	402.8	389.3	378.4	371.1	363.4	357.1	353.5
55°	437.5	417.3	399.1	381.0	364.9	354.0	345.2	332.8	326.0	319.8	310.0
57.5°	400.7	381.5	362.3	344.7	329.7	316.7	305.8	297.5	288.7	284.1	277.3
60°	361.8	341.6	324.0	310.5	293.9	279.9	272.6	262.8	255.5	248.3	246.2
62.5°	323.4	304.8	287.2	273.2	258.1	247.3	237.9	233.3	226.0	220.3	218.2
65°	283.5	268.0	251.4	235.8	226.5	214.1	208.9	201.1	197.0	194.4	193.9
67.5°	244.1	230.1	215.1	203.2	194.4	186.1	179.9	176.8	172.6	169.5	166.9
70°	208.4	194.9	181.9	172.1	165.4	159.1	155.0	149.3	145.1	141.0	135.3
72.5°	173.1	162.2	151.4	143.6	136.8	133.2	127.5	118.7	114.6	113.5	113.0
75°	140.5	128.5	120.8	116.6	110.4	101.6	98.0	96.9	96.4	95.4	95.4
77.5°	108.3	101.1	95.9	87.1	84.0	83.5	80.9	80.3	79.3	79.8	79.8
80°	78.8	74.6	68.4	65.8	64.8	65.3	64.3	64.8	63.8	64.3	63.2
82.5°	52.4	48.7	49.8	48.2	48.2	49.2	48.7	47.2	47.2	46.7	46.7
85°	31.1	30.6	31.6	31.6	31.1	29.5	30.6	30.1	28.5	29.0	29.0
87.5°	13.5	13.5	13.5	13.0	13.5	13.0	13.0	13.0	11.4	11.4	11.4
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: P243447

CATALOG NUMBER: S123RDR-H1000D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1200.5	1200.5	1200.5	1200.5
2.5°	1136.2	1135.2	1133.6	1132.1
5°	1077.6	1073.0	1072.5	1070.9
7.5°	1022.7	1020.6	1017.0	1021.1
10°	972.4	974.0	970.3	966.2
12.5°	920.1	917.0	911.3	914.4
15°	873.9	868.7	865.6	858.4
17.5°	825.7	821.6	821.6	816.9
20°	783.7	779.6	780.6	777.5
22.5°	748.5	745.4	740.7	741.2
25°	715.3	710.7	705.5	706.0
27.5°	678.5	674.4	673.3	669.7
30°	645.9	642.2	641.7	641.7
32.5°	614.2	612.7	610.1	608.5
35°	586.8	584.7	580.5	581.6
37.5°	552.6	550.5	550.0	549.4
40°	520.4	518.9	514.7	515.2
42.5°	488.3	485.7	483.1	482.1
45°	453.6	453.0	448.9	449.9
47.5°	420.4	419.3	417.3	414.7
50°	383.6	383.1	381.5	378.4
52.5°	347.8	346.3	343.1	340.0
55°	307.4	302.7	303.2	300.6
57.5°	274.2	272.1	268.0	266.4
60°	242.1	240.0	239.5	237.4
62.5°	215.1	213.0	211.5	211.5
65°	190.8	188.2	187.6	187.6
67.5°	163.8	161.2	160.7	159.7
70°	130.1	129.6	128.5	128.5
72.5°	112.0	111.4	112.0	109.9
75°	95.4	94.9	94.9	95.4
77.5°	79.3	79.3	78.8	78.8
80°	62.7	63.2	62.7	64.3
82.5°	47.2	46.1	46.7	45.6
85°	29.0	29.0	28.0	28.0
87.5°	11.4	11.4	11.4	11.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)