

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: P243422

Luminaire Tested: **S123RDR-H1000D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243422  
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-H1000D927-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2878.0 lumens  
Efficiency: N/A  
Efficacy: 91.4 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

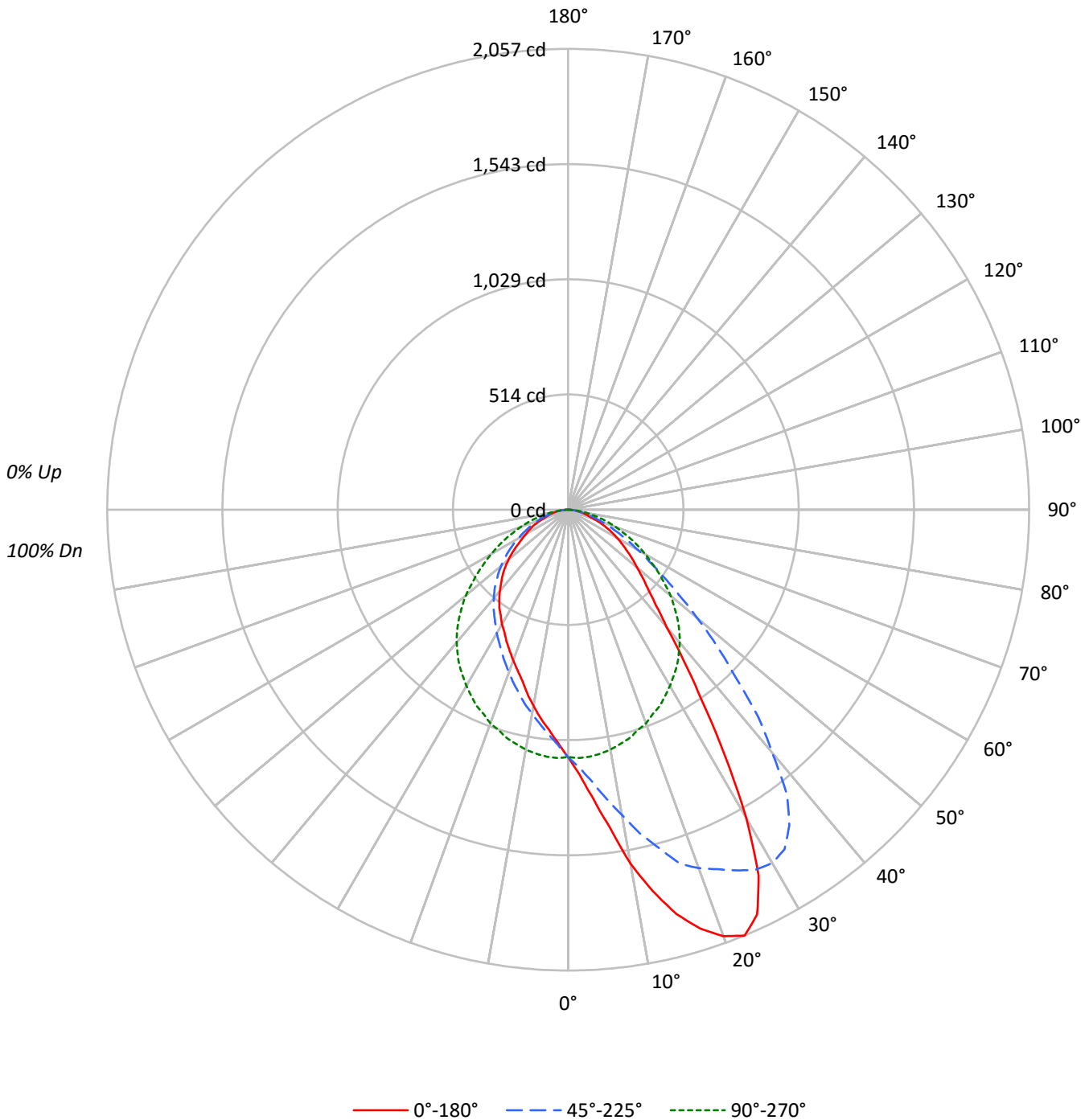
Input Watts (W): 31.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	13388	13388	13388
5°	15784	13462	11989
10°	19758	13384	10942
15°	23449	13250	9911
20°	26132	13091	9228
25°	26675	12929	8688
30°	22228	12709	8263
35°	15357	12533	7918
40°	10791	12247	7502
45°	8665	11813	7097
50°	7554	11250	6564
55°	6773	10412	5845
60°	6128	9619	5295
65°	5363	8863	4950
70°	4327	7978	4193
75°	3751	6945	4112
80°	3462	5926	4125
85°	3046	4770	3588



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	108.3	3.8
10°-20°	341.1	11.9
20°-30°	546.6	19.0
30°-40°	593.4	20.6
40°-50°	508.4	17.7
50°-60°	385.3	13.4
60°-70°	246.2	8.6
70°-80°	117.7	4.1
80°-90°	30.9	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°	996.0	34.6
0°-40°	1589.4	55.2
0°-60°	2483.1	86.3
0°-90°	2878.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2878.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1104	1104	1104	1104	1104	
5°	1297	1218	1106	1006	985	133
15°	1869	1562	1056	848	790	530
25°	1994	1776	967	702	650	885
35°	1038	1720	847	575	535	667
45°	506	1053	689	455	414	400
55°	320	516	493	326	277	289
65°	187	248	309	197	173	186
75°	80	97	148	94	88	86
85°	22	23	34	27	26	25
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°	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5
2.5°	1183.7	1185.1	1182.8	1182.3	1181.8	1174.2	1171.8	1168.0	1154.6	1151.3	1148.9
5°	1297.2	1293.4	1297.7	1289.6	1280.5	1275.3	1266.7	1247.6	1230.9	1217.6	1209.0
7.5°	1431.7	1433.1	1428.8	1421.2	1403.1	1395.5	1372.1	1349.2	1327.3	1299.6	1279.1
10°	1605.3	1593.9	1596.2	1572.4	1553.3	1530.4	1498.5	1461.7	1423.1	1384.0	1354.9
12.5°	1743.6	1751.7	1746.0	1734.5	1697.8	1675.4	1646.3	1592.9	1531.9	1479.4	1435.0
15°	1868.6	1857.6	1859.0	1831.4	1818.0	1797.5	1749.3	1696.4	1656.8	1561.9	1509.4
17.5°	1960.1	1959.2	1957.7	1934.4	1918.2	1875.2	1826.1	1771.7	1722.1	1656.3	1590.5
20°	2025.9	2033.1	2031.2	2012.1	1983.5	1942.0	1912.4	1844.7	1763.2	1703.1	1622.5
22.5°	2057.4	2057.9	2058.8	2049.8	2030.7	2004.0	1962.0	1907.7	1835.2	1736.9	1647.3
25°	1994.5	1996.8	2009.2	2016.9	2022.1	2010.2	1988.3	1939.1	1876.7	1776.5	1683.5
27.5°	1839.9	1847.6	1861.4	1907.2	1925.8	1951.5	1960.6	1941.0	1894.8	1811.3	1705.5
30°	1588.1	1609.6	1622.9	1674.9	1747.9	1816.6	1849.0	1881.0	1876.7	1821.3	1714.0
32.5°	1300.1	1313.9	1352.5	1408.3	1466.0	1566.7	1679.2	1756.5	1799.9	1797.0	1721.2
35°	1037.8	1057.8	1090.7	1133.2	1212.8	1317.2	1444.6	1566.2	1674.9	1720.2	1693.1
37.5°	842.2	844.1	875.1	935.2	984.8	1076.9	1191.8	1342.0	1484.6	1602.9	1629.1
40°	682.0	695.3	711.6	749.2	807.9	896.1	972.4	1120.3	1268.1	1416.4	1522.3
42.5°	580.9	580.9	599.0	622.9	662.0	714.9	806.0	940.0	1073.1	1255.2	1374.5
45°	505.5	510.3	518.4	533.7	561.3	602.3	672.9	764.0	899.9	1053.0	1232.3
47.5°	451.2	450.7	457.8	466.9	488.4	519.4	560.9	634.8	735.4	900.4	1058.8
50°	400.6	402.5	407.8	415.4	429.7	451.6	477.9	533.7	618.6	749.2	915.2
52.5°	361.5	361.0	365.3	370.1	381.1	393.5	416.8	458.3	517.0	620.9	758.8
55°	320.5	322.4	327.6	330.5	339.6	347.7	367.2	390.6	437.8	516.0	641.5
57.5°	285.2	287.6	290.4	293.3	299.5	307.6	323.8	338.1	372.5	428.7	528.9
60°	252.8	251.8	255.1	259.9	263.3	270.4	279.5	294.3	318.1	358.2	431.6
62.5°	220.3	220.8	221.3	224.2	230.4	236.6	244.7	255.6	269.9	299.5	351.5
65°	187.0	187.4	188.4	191.2	197.4	201.3	209.8	219.4	230.8	248.5	284.7
67.5°	157.4	159.3	159.3	161.7	164.1	167.9	174.1	181.2	190.8	203.6	227.0
70°	122.1	121.6	124.0	128.8	131.2	137.8	142.1	146.9	155.5	163.6	183.6
72.5°	98.2	98.2	98.2	100.2	100.6	102.1	104.9	114.9	121.6	129.7	140.7
75°	80.1	80.6	80.6	81.1	81.6	83.0	83.9	86.8	88.7	97.3	104.0
77.5°	63.9	64.4	64.4	64.9	65.3	65.8	67.7	67.7	69.2	71.1	73.9
80°	49.6	49.1	49.1	49.6	49.6	51.0	51.0	52.0	52.5	53.4	54.8
82.5°	35.3	34.8	35.3	34.8	35.3	35.8	36.7	36.2	37.2	38.2	38.6
85°	21.9	22.4	22.4	23.4	22.9	22.4	22.9	22.9	22.9	22.9	23.8
87.5°	9.5	10.5	10.5	10.0	10.5	10.5	9.5	10.5	10.5	10.5	11.0
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5
2.5°	1147.5	1145.6	1138.4	1131.7	1121.7	1117.4	1111.7	1109.3	1101.7	1091.2	1086.4
5°	1200.9	1186.6	1172.7	1156.0	1142.2	1126.0	1116.9	1106.4	1090.2	1075.4	1065.0
7.5°	1257.6	1236.6	1210.9	1183.2	1158.4	1135.1	1115.0	1098.3	1077.4	1056.8	1040.6
10°	1320.1	1284.3	1242.8	1207.6	1171.8	1137.9	1112.6	1087.4	1060.2	1034.4	1014.9
12.5°	1387.3	1336.8	1286.7	1233.8	1180.4	1141.3	1103.6	1071.2	1040.6	1013.4	990.1
15°	1457.0	1387.8	1323.9	1264.3	1189.9	1137.4	1096.0	1055.9	1017.7	984.4	961.5
17.5°	1506.6	1427.4	1346.8	1262.4	1198.5	1133.6	1082.1	1031.6	996.3	961.9	930.9
20°	1552.4	1462.7	1366.8	1288.1	1199.0	1119.8	1063.5	1014.9	965.8	929.0	902.8
22.5°	1571.9	1490.8	1394.0	1284.8	1195.6	1114.6	1042.1	987.2	943.3	903.3	868.9
25°	1575.7	1485.1	1385.9	1280.5	1182.8	1095.0	1021.6	966.7	909.5	868.0	841.3
27.5°	1592.4	1468.4	1371.1	1266.2	1167.0	1075.4	998.2	937.1	883.7	839.4	805.0
30°	1596.7	1461.3	1339.7	1239.5	1137.4	1047.8	969.6	908.0	849.9	804.6	773.6
32.5°	1598.6	1451.7	1306.7	1197.1	1099.8	1015.4	943.8	877.0	821.7	774.0	742.1
35°	1591.9	1438.4	1267.2	1148.9	1055.4	972.4	906.1	847.0	785.5	740.6	706.8
37.5°	1565.7	1417.4	1244.7	1092.6	1003.4	925.2	868.9	810.8	754.0	705.4	670.5
40°	1516.1	1386.9	1202.8	1045.4	944.3	874.2	821.7	774.0	716.8	670.1	635.7
42.5°	1436.9	1345.4	1164.2	992.0	885.6	819.3	775.5	734.4	682.9	638.6	600.9
45°	1319.6	1287.2	1112.6	937.6	821.7	759.2	721.1	689.1	642.4	601.9	567.1
47.5°	1192.8	1199.9	1060.7	882.3	763.5	703.9	670.5	642.4	607.1	563.7	531.8
50°	1046.4	1085.5	987.7	826.5	705.4	646.7	613.8	596.6	563.7	527.5	497.4
52.5°	912.3	974.3	913.8	765.4	648.1	590.4	559.9	542.7	520.8	490.7	460.2
55°	773.6	852.2	808.4	699.6	589.9	531.8	506.0	492.7	474.5	451.2	423.5
57.5°	658.6	742.6	714.9	630.5	533.2	480.7	457.8	442.6	431.6	410.1	387.7
60°	546.1	623.8	612.8	550.8	476.9	426.8	409.2	396.8	387.7	372.0	350.1
62.5°	440.7	516.0	522.7	474.1	422.1	376.8	360.5	352.0	344.8	332.4	312.4
65°	349.6	415.9	429.7	392.5	364.4	330.0	314.3	309.0	303.8	289.5	274.2
67.5°	273.7	325.7	343.9	322.9	302.8	282.8	270.4	263.3	259.4	250.9	240.4
70°	209.4	254.2	269.5	260.4	247.0	239.4	229.9	225.1	221.3	210.3	204.6
72.5°	156.9	187.4	206.5	203.6	200.8	195.5	189.8	188.4	182.7	175.5	170.3
75°	114.9	132.6	149.8	156.0	155.0	156.9	150.7	148.3	145.0	139.7	135.4
77.5°	82.5	93.0	104.9	112.6	116.4	116.8	116.8	115.4	113.0	109.2	105.9
80°	57.2	59.6	70.6	77.7	81.6	84.4	84.4	84.9	82.5	81.1	78.7
82.5°	39.6	41.0	43.4	49.1	53.9	57.2	57.7	57.2	56.3	55.8	52.5
85°	24.8	24.3	24.3	25.8	29.6	32.9	33.4	34.3	33.9	33.4	30.0
87.5°	10.5	10.5	11.0	10.5	11.9	12.4	13.4	15.7	15.3	12.9	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):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5	1104.5
2.5°	1083.6	1077.4	1071.6	1065.4	1057.8	1050.6	1049.7	1048.7	1051.1	1046.4	1044.4
5°	1056.8	1044.9	1035.9	1024.4	1016.3	1005.8	1000.1	998.7	998.2	995.3	991.5
7.5°	1027.8	1014.9	1002.0	989.1	975.8	964.8	958.6	955.3	952.4	947.6	943.8
10°	1000.6	984.4	970.5	952.9	938.6	924.3	918.5	913.8	910.9	904.2	899.0
12.5°	970.0	949.5	934.3	915.2	902.3	889.9	880.9	871.8	865.1	855.1	850.8
15°	943.3	921.9	896.1	884.7	866.6	848.0	837.9	837.9	824.1	816.0	810.8
17.5°	907.6	889.0	870.8	847.5	821.7	810.8	799.3	789.3	779.8	777.4	767.8
20°	876.1	854.2	835.6	810.3	786.9	774.0	760.7	749.7	742.6	735.9	730.6
22.5°	845.1	823.2	794.5	769.7	754.0	736.8	722.5	713.0	706.8	696.8	692.0
25°	812.7	786.4	760.7	736.4	716.8	702.0	687.2	682.0	671.0	665.8	659.1
27.5°	780.2	748.8	724.4	703.5	681.5	667.2	657.2	647.7	638.1	635.3	631.4
30°	744.0	714.9	691.5	671.0	650.0	637.6	625.7	617.1	609.0	602.8	598.5
32.5°	707.7	683.4	661.0	637.2	618.1	604.7	594.7	587.1	583.3	572.8	569.0
35°	674.4	649.6	625.7	603.3	588.0	575.2	566.1	558.9	550.8	544.2	540.3
37.5°	640.0	617.6	593.3	574.2	557.0	546.5	536.5	527.0	520.8	517.0	512.2
40°	606.6	582.8	564.2	543.2	527.9	516.0	505.5	498.4	490.7	487.4	481.2
42.5°	575.2	552.3	530.8	511.7	497.9	486.5	476.4	468.3	462.1	455.9	452.6
45°	538.9	518.9	499.3	480.3	467.4	455.0	444.0	436.9	428.3	423.0	421.1
47.5°	508.4	487.4	466.4	448.8	435.4	422.1	413.0	404.4	397.3	392.0	389.2
50°	472.1	452.6	435.4	417.8	404.9	390.6	379.6	371.5	363.4	359.6	354.8
52.5°	441.1	422.1	401.1	385.3	370.6	358.2	348.1	341.5	334.3	328.6	325.3
55°	402.5	383.9	367.2	350.5	335.7	325.7	317.6	306.2	300.0	294.3	285.2
57.5°	368.7	351.0	333.4	317.1	303.3	291.4	281.4	273.7	265.6	261.3	255.1
60°	332.9	314.3	298.1	285.7	270.4	257.5	250.9	241.8	235.1	228.4	226.5
62.5°	297.6	280.4	264.2	251.3	237.5	227.5	218.9	214.6	207.9	202.7	200.8
65°	260.9	246.6	231.3	217.0	208.4	197.0	192.2	185.0	181.2	178.8	178.4
67.5°	224.6	211.8	197.9	187.0	178.8	171.2	165.5	162.6	158.8	156.0	153.6
70°	191.7	179.3	167.4	158.3	152.1	146.4	142.6	137.4	133.5	129.7	124.5
72.5°	159.3	149.3	139.3	132.1	125.9	122.6	117.3	109.2	105.4	104.4	104.0
75°	129.2	118.3	111.1	107.3	101.6	93.5	90.1	89.2	88.7	87.8	87.8
77.5°	99.7	93.0	88.2	80.1	77.3	76.8	74.4	73.9	73.0	73.4	73.4
80°	72.5	68.7	63.0	60.6	59.6	60.1	59.1	59.6	58.7	59.1	58.2
82.5°	48.2	44.8	45.8	44.4	44.4	45.3	44.8	43.4	43.4	42.9	42.9
85°	28.6	28.1	29.1	29.1	28.6	27.2	28.1	27.7	26.2	26.7	26.7
87.5°	12.4	12.4	12.4	11.9	12.4	11.9	11.9	11.9	10.5	10.5	10.5
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: P243422

CATALOG NUMBER: S123RDR-H1000D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1104.5	1104.5	1104.5	1104.5
2.5°	1045.4	1044.4	1043.0	1041.6
5°	991.5	987.2	986.7	985.3
7.5°	941.0	939.0	935.7	939.5
10°	894.7	896.1	892.8	889.0
12.5°	846.5	843.7	838.4	841.3
15°	804.1	799.3	796.4	789.8
17.5°	759.7	755.9	755.9	751.6
20°	721.1	717.3	718.2	715.4
22.5°	688.7	685.8	681.5	682.0
25°	658.1	653.9	649.1	649.6
27.5°	624.3	620.5	619.5	616.2
30°	594.2	590.9	590.4	590.4
32.5°	565.1	563.7	561.3	559.9
35°	539.9	538.0	534.1	535.1
37.5°	508.4	506.5	506.0	505.5
40°	478.8	477.4	473.6	474.1
42.5°	449.3	446.9	444.5	443.5
45°	417.3	416.8	413.0	414.0
47.5°	386.8	385.8	383.9	381.5
50°	352.9	352.4	351.0	348.1
52.5°	320.0	318.6	315.7	312.9
55°	282.8	278.5	279.0	276.6
57.5°	252.3	250.4	246.6	245.1
60°	222.7	220.8	220.3	218.4
62.5°	197.9	196.0	194.6	194.6
65°	175.5	173.1	172.6	172.6
67.5°	150.7	148.3	147.8	146.9
70°	119.7	119.2	118.3	118.3
72.5°	103.0	102.5	103.0	101.1
75°	87.8	87.3	87.3	87.8
77.5°	73.0	73.0	72.5	72.5
80°	57.7	58.2	57.7	59.1
82.5°	43.4	42.4	42.9	42.0
85°	26.7	26.7	25.8	25.8
87.5°	10.5	10.5	10.5	10.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)