

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: P243319

Luminaire Tested: **S123DR-H1000D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243319
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-59)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DR-H1000D927-X4F0-XX-UDD-A-W
Description: DEFINE 3 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: 3139.0 lumens
Efficiency: N/A
Efficacy: 99.7 lumens/watt
Spacing Criteria (0/90/45): 1.39 / 1.21 / 1.5
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')
CIE Type: Direct

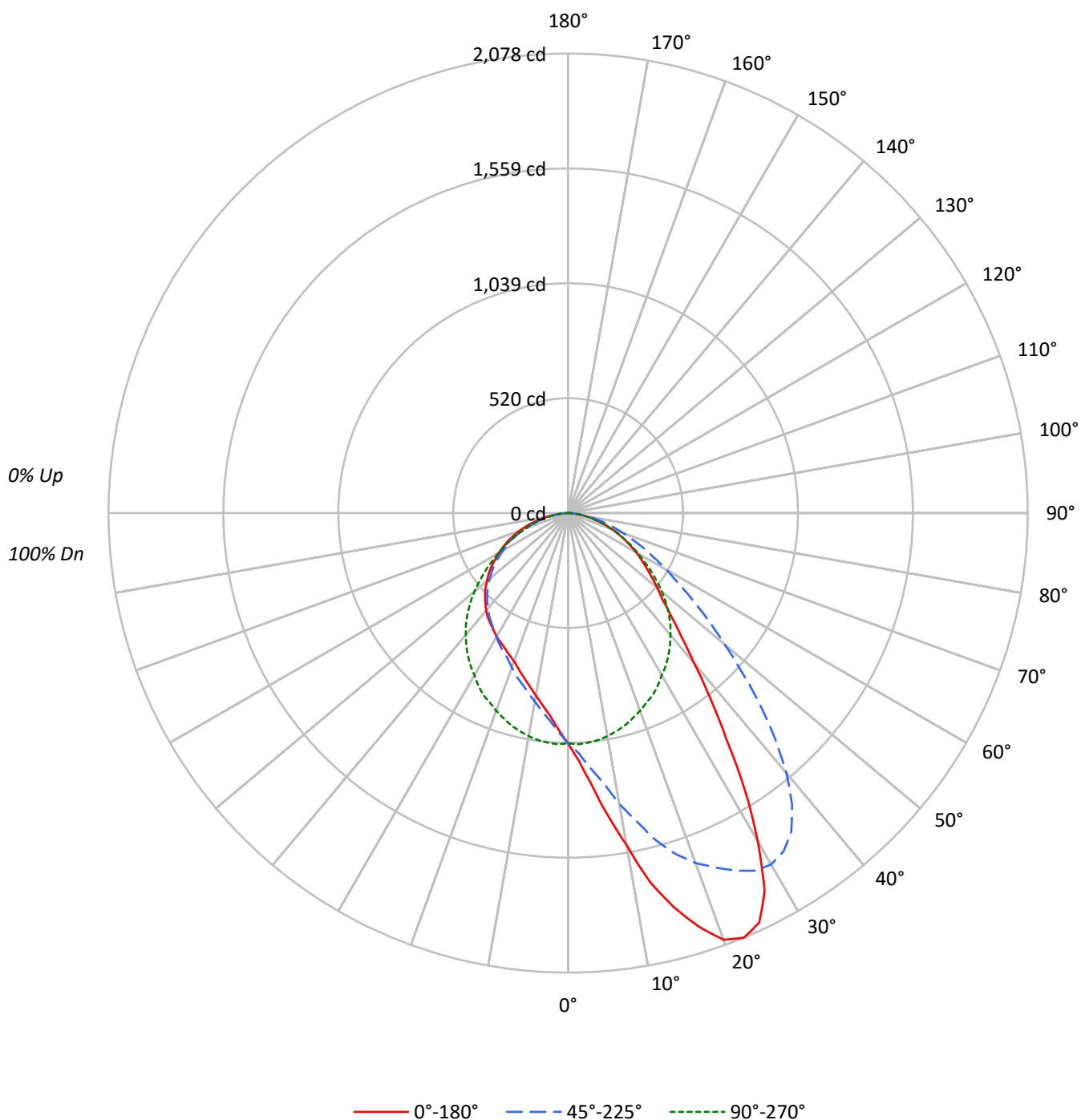
Input Watts (W): 31.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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								
1	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85								
2	100	92	86	81	98	91	85	80	87	82	78	84	80	76	81	77	74	72								
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62								
4	84	73	64	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53								
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46								
6	72	59	50	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41								
7	67	54	45	39	65	53	45	39	51	44	39	50	43	39	49	43	38	36								
8	62	49	41	35	61	48	41	35	47	40	35	46	39	35	45	39	34	33								
9	58	45	37	32	57	45	37	32	43	36	31	42	36	31	41	35	31	29								
10	55	42	34	29	53	41	34	29	40	33	29	39	33	28	38	33	28	27								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	12624	12624	12624
5°	15040	12685	11211
10°	18784	12609	10307
15°	23148	12472	9671
20°	26488	12272	9202
25°	27337	12137	9032
30°	24016	11848	9037
35°	18433	11672	9047
40°	14021	11386	9116
45°	11281	11021	9108
50°	9928	10432	9029
55°	9150	9664	8969
60°	8625	8844	8785
65°	8016	8082	8616
70°	7336	7251	8247
75°	6524	6322	7685
80°	5459	5228	6722
85°	3852	3783	5035

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	102.5	3.3
10°-20°	329.0	10.5
20°-30°	543.4	17.3
30°-40°	621.9	19.8
40°-50°	563.6	18.0
50°-60°	455.4	14.5
60°-70°	317.3	10.1
70°-80°	166.4	5.3
80°-90°	39.7	1.3
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°	974.8	31.1
0°-40°	1596.8	50.9
0°-60°	2615.7	83.3
0°-90°	3139.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3139.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1042	1042	1042	1042	1042	
5°	1236	1156	1042	943	921	127
15°	1845	1532	994	801	771	525
25°	2044	1784	908	692	675	913
35°	1246	1758	789	605	611	789
45°	658	1228	643	518	531	519
55°	433	690	457	406	424	389
65°	280	377	282	278	300	277
75°	139	172	135	140	164	149
85°	28	35	27	30	36	35
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°	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5
2.5°	1121.7	1124.1	1120.2	1122.6	1116.9	1113.6	1108.3	1105.9	1094.5	1086.4	1083.5
5°	1236.1	1236.1	1237.1	1231.4	1224.7	1212.8	1197.0	1187.0	1175.6	1156.0	1146.0
7.5°	1380.1	1373.0	1368.2	1357.7	1348.7	1329.1	1311.9	1291.4	1264.7	1232.3	1215.1
10°	1526.1	1533.7	1528.9	1518.0	1494.6	1462.6	1437.4	1407.8	1366.3	1334.8	1290.0
12.5°	1708.3	1698.2	1690.6	1673.9	1648.2	1614.3	1575.2	1531.3	1477.9	1425.9	1375.9
15°	1844.6	1846.1	1845.6	1823.7	1798.4	1752.6	1716.4	1643.4	1575.7	1531.8	1448.8
17.5°	1960.1	1966.3	1959.1	1926.2	1903.8	1876.6	1830.3	1749.3	1687.7	1616.7	1525.1
20°	2053.5	2054.5	2043.0	2018.7	1993.0	1962.4	1901.4	1839.4	1779.3	1683.9	1596.7
22.5°	2078.3	2080.7	2078.3	2067.8	2046.9	2014.4	1968.6	1911.4	1835.6	1734.0	1652.9
25°	2044.0	2042.6	2050.7	2044.5	2043.5	2033.0	2003.0	1956.7	1881.8	1784.1	1681.1
27.5°	1923.8	1913.8	1934.3	1961.0	1964.8	1981.5	1982.0	1960.5	1906.6	1823.2	1711.1
30°	1715.9	1725.4	1735.4	1791.2	1822.2	1865.6	1903.3	1917.1	1896.6	1835.1	1730.2
32.5°	1489.8	1520.4	1548.5	1587.1	1632.4	1705.9	1765.5	1817.9	1840.4	1813.2	1730.2
35°	1245.7	1261.9	1306.2	1355.3	1420.7	1477.9	1596.2	1672.5	1740.7	1758.3	1708.3
37.5°	1054.9	1069.7	1084.9	1123.1	1196.5	1291.9	1389.7	1489.8	1590.9	1663.4	1660.6
40°	886.1	889.4	902.8	935.7	996.7	1081.6	1184.1	1304.8	1435.9	1534.7	1576.2
42.5°	756.4	756.4	773.1	811.2	846.5	908.5	1007.7	1114.0	1257.6	1384.4	1473.1
45°	658.1	659.1	672.4	699.6	727.3	775.9	849.4	949.5	1097.3	1228.5	1352.0
47.5°	578.0	587.1	594.7	609.0	636.7	679.6	733.0	818.4	923.8	1066.8	1210.8
50°	526.5	528.4	534.1	542.7	564.2	592.3	638.6	703.4	796.9	923.8	1069.2
52.5°	475.9	475.9	481.7	492.2	504.6	527.5	560.8	614.7	684.8	799.8	930.4
55°	433.0	434.5	435.4	444.0	454.5	471.7	497.9	533.2	597.6	689.6	803.6
57.5°	391.1	396.3	394.9	401.5	409.2	421.6	440.2	470.7	519.8	589.9	692.5
60°	355.8	354.8	357.2	360.1	365.3	373.9	391.1	413.5	454.5	513.1	597.1
62.5°	315.7	314.8	317.6	321.0	325.7	332.9	345.3	362.4	394.9	438.7	511.7
65°	279.5	278.5	279.9	281.8	287.1	292.8	302.4	316.7	338.1	376.8	432.5
67.5°	243.2	243.2	244.2	246.1	249.4	253.7	261.3	269.9	291.4	317.1	361.0
70°	207.0	207.5	207.5	209.4	212.2	215.6	221.8	229.4	242.7	265.6	300.9
72.5°	175.5	175.5	174.5	175.5	177.4	178.8	182.7	189.8	199.8	216.5	243.2
75°	139.3	141.6	141.2	140.7	142.1	144.5	147.8	153.6	159.8	171.7	191.7
77.5°	106.8	108.3	108.3	108.7	110.2	112.1	113.0	118.7	124.5	131.6	146.4
80°	78.2	79.2	78.2	78.7	79.6	81.5	83.5	84.4	88.7	94.9	102.1
82.5°	52.5	51.0	52.9	52.5	53.4	53.9	54.8	55.3	58.2	62.0	66.8
85°	27.7	30.0	29.6	30.5	29.6	30.0	30.5	32.4	32.9	35.3	38.2
87.5°	10.5	11.4	11.4	11.4	11.4	11.4	12.4	12.9	13.8	14.3	15.3
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°	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5
2.5°	1085.4	1081.1	1074.9	1068.3	1061.1	1053.9	1050.6	1046.3	1037.7	1029.1	1022.5
5°	1137.9	1126.0	1109.7	1097.8	1080.7	1064.4	1051.6	1042.5	1028.7	1012.0	1001.0
7.5°	1196.5	1175.1	1149.3	1123.1	1097.3	1073.0	1053.0	1035.8	1014.4	993.9	977.2
10°	1265.7	1224.2	1188.4	1150.3	1112.1	1077.8	1049.2	1024.4	996.7	971.9	951.4
12.5°	1326.7	1278.6	1229.0	1175.1	1123.6	1079.2	1042.5	1010.1	976.7	948.1	927.1
15°	1394.0	1326.3	1257.6	1196.5	1134.1	1079.7	1031.5	993.9	955.7	923.3	899.0
17.5°	1471.2	1380.6	1294.3	1206.6	1151.2	1081.1	1022.0	972.4	933.3	900.9	869.4
20°	1517.0	1426.9	1321.0	1230.9	1139.3	1067.3	1001.5	951.4	905.6	868.4	842.7
22.5°	1541.8	1446.9	1336.3	1243.8	1136.9	1056.3	986.2	927.1	878.0	840.8	811.7
25°	1576.6	1446.9	1344.4	1233.3	1140.7	1043.5	964.3	907.5	856.0	813.1	782.6
27.5°	1592.4	1459.8	1345.3	1213.2	1117.9	1019.1	939.0	878.9	821.7	779.7	753.5
30°	1605.2	1462.2	1326.3	1197.5	1091.1	992.0	913.7	846.5	793.1	753.0	725.4
32.5°	1606.2	1456.0	1300.5	1167.9	1055.4	960.0	883.7	820.3	764.5	722.0	694.8
35°	1597.6	1440.7	1270.9	1122.6	1013.9	927.1	850.8	788.8	732.0	691.5	663.8
37.5°	1575.7	1423.5	1243.3	1080.2	964.8	880.4	815.5	756.4	700.1	659.6	636.7
40°	1528.9	1395.9	1207.0	1034.9	915.2	830.8	774.0	719.6	669.6	627.6	604.7
42.5°	1466.9	1354.4	1163.2	986.7	859.8	778.3	728.2	684.4	633.3	597.1	573.7
45°	1379.2	1298.1	1119.3	936.2	805.0	724.9	679.1	642.9	599.0	562.7	542.2
47.5°	1280.0	1230.4	1062.5	879.4	747.3	672.0	628.6	599.5	562.3	531.3	510.8
50°	1168.4	1149.8	1000.1	822.2	693.4	616.2	576.1	553.2	521.7	496.9	479.3
52.5°	1047.3	1058.7	934.2	764.0	641.4	563.2	525.1	504.1	484.1	463.1	446.4
55°	924.2	951.4	854.6	700.6	581.8	513.6	476.4	457.3	442.6	424.9	413.0
57.5°	808.8	851.3	772.1	632.8	527.0	461.6	426.3	409.7	398.7	389.1	378.2
60°	696.7	745.9	687.2	569.4	472.1	412.5	381.0	364.8	359.6	352.4	341.9
62.5°	597.6	647.6	603.8	504.1	416.8	365.8	337.2	323.8	316.2	313.8	307.6
65°	504.6	551.3	517.9	435.9	364.4	319.0	293.8	281.8	277.6	277.1	272.3
67.5°	424.0	469.3	438.7	369.6	309.0	272.3	253.2	243.7	239.4	239.9	236.5
70°	349.6	381.5	363.4	309.0	262.3	229.9	215.1	204.6	201.3	201.3	200.3
72.5°	280.4	305.7	291.9	250.4	213.7	188.9	176.0	169.8	166.9	166.4	166.9
75°	219.4	241.3	228.9	196.5	168.8	150.2	139.3	135.0	133.5	132.6	133.1
77.5°	164.1	177.9	170.3	149.3	126.4	113.5	108.3	104.0	102.5	103.0	104.0
80°	115.9	123.5	119.2	105.9	90.6	82.0	78.2	74.9	73.4	74.9	74.9
82.5°	73.4	79.2	75.4	66.8	59.1	53.4	49.6	48.6	48.2	47.2	48.6
85°	40.1	42.9	41.0	38.2	32.9	30.5	27.7	27.2	27.2	27.2	27.2
87.5°	15.7	17.6	15.3	15.3	14.3	11.9	11.9	11.4	11.0	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

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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5	1041.5
2.5°	1019.6	1013.4	1009.6	1004.3	998.2	990.0	986.7	990.0	988.1	984.8	986.2
5°	991.5	983.4	972.9	964.3	954.8	942.8	939.0	937.1	934.2	932.8	930.4
7.5°	963.8	951.9	939.0	927.1	913.3	902.8	898.0	894.7	893.7	886.6	883.7
10°	935.2	920.4	907.5	891.3	879.4	865.6	859.8	856.0	851.7	847.0	843.6
12.5°	905.2	890.4	874.2	858.9	847.0	831.7	824.1	819.8	816.5	813.1	809.3
15°	878.9	864.1	841.7	830.3	816.0	800.7	795.9	786.4	787.4	781.6	777.8
17.5°	851.3	829.3	813.6	796.4	785.9	775.0	765.9	755.9	754.5	750.2	748.7
20°	820.3	797.4	786.4	768.8	754.5	743.5	735.4	734.4	731.6	725.4	723.0
22.5°	789.7	771.1	755.9	739.7	726.8	712.5	708.7	710.1	704.9	703.4	698.2
25°	762.1	745.9	726.8	711.5	701.0	692.0	686.7	684.8	682.9	681.5	679.1
27.5°	732.5	715.3	699.1	686.7	676.7	670.5	667.2	662.9	662.4	662.4	661.5
30°	702.9	687.7	676.7	661.0	651.9	648.1	645.2	643.8	645.2	645.2	645.7
32.5°	675.8	661.0	648.1	637.1	628.1	625.2	624.7	624.7	626.6	626.6	628.1
35°	647.6	632.8	620.9	613.3	605.7	605.2	605.7	606.6	609.0	609.5	611.4
37.5°	617.1	605.7	596.6	587.1	585.2	586.1	587.1	588.0	589.0	592.8	592.8
40°	589.0	580.4	571.3	565.1	561.8	564.2	565.6	566.1	568.9	571.3	573.2
42.5°	561.3	553.2	546.0	540.8	539.4	541.3	542.7	544.1	547.0	548.9	552.2
45°	530.3	525.1	518.9	514.6	515.1	517.9	517.9	522.7	524.6	525.5	527.9
47.5°	501.7	496.0	491.7	489.8	489.3	491.7	493.1	496.9	497.9	501.2	503.1
50°	471.2	466.9	463.5	461.2	461.6	462.6	465.9	469.7	470.7	474.5	477.9
52.5°	439.2	435.4	432.5	433.5	434.9	434.9	438.3	440.7	443.0	445.9	449.2
55°	407.7	402.5	403.0	401.5	403.0	406.3	407.7	411.6	413.5	414.9	419.7
57.5°	373.4	372.5	371.0	369.6	372.5	373.9	376.3	378.7	382.0	383.9	387.2
60°	338.1	336.7	336.7	338.6	339.6	342.4	346.2	347.7	348.6	352.4	356.7
62.5°	305.7	304.3	303.8	306.6	306.6	309.5	310.9	313.3	317.1	318.6	324.3
65°	270.9	269.9	269.9	272.3	272.8	278.0	278.0	278.0	280.4	285.7	288.5
67.5°	234.6	235.1	236.5	238.0	239.9	241.3	241.8	244.6	248.5	251.8	257.5
70°	198.4	200.8	203.6	203.2	204.6	207.0	207.5	210.3	213.7	217.9	224.6
72.5°	166.0	167.4	170.3	170.3	172.2	173.6	176.0	177.9	182.2	186.0	188.9
75°	133.5	134.0	136.4	137.8	139.3	140.2	142.6	145.9	148.3	151.7	155.9
77.5°	104.9	104.0	105.9	106.3	107.3	109.2	111.1	114.5	116.4	120.2	121.6
80°	74.4	76.3	76.8	77.3	78.2	80.6	82.0	83.5	85.4	88.7	90.1
82.5°	49.1	50.1	51.5	52.0	52.9	53.4	53.9	56.3	57.7	58.7	63.4
85°	28.6	30.0	29.1	29.1	30.0	30.5	32.4	32.4	34.3	33.4	35.8
87.5°	12.4	11.9	11.9	12.4	11.9	11.4	12.9	12.9	12.4	12.9	12.9
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: P243319

CATALOG NUMBER: S123DR-H1000D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1041.5	1041.5	1041.5	1041.5
2.5°	983.8	983.8	980.0	981.5
5°	925.7	927.6	922.8	921.4
7.5°	882.7	880.8	877.5	877.5
10°	840.8	838.9	837.4	837.4
12.5°	804.5	802.6	799.8	802.1
15°	772.1	772.6	770.7	770.7
17.5°	747.3	743.0	741.6	741.1
20°	717.7	718.7	716.8	713.4
22.5°	699.1	696.7	694.8	694.4
25°	680.1	677.7	677.2	675.3
27.5°	661.0	661.5	660.0	660.0
30°	645.2	646.7	645.2	645.7
32.5°	629.5	629.5	629.5	627.6
35°	612.3	612.8	612.3	611.4
37.5°	594.7	594.7	595.2	596.1
40°	575.1	575.1	576.1	576.1
42.5°	551.8	554.2	555.6	553.2
45°	530.8	531.3	531.7	531.3
47.5°	507.4	506.0	506.5	507.4
50°	478.3	481.7	481.7	478.8
52.5°	450.2	451.1	453.1	453.1
55°	422.5	423.0	423.5	424.4
57.5°	391.1	391.5	391.5	391.1
60°	359.6	362.4	362.0	362.4
62.5°	325.7	330.0	331.4	331.0
65°	293.8	294.7	297.1	300.4
67.5°	259.9	262.3	266.1	265.2
70°	226.5	229.9	230.8	232.7
72.5°	193.1	197.4	198.4	199.3
75°	160.7	162.6	164.5	164.1
77.5°	125.4	128.3	131.6	129.7
80°	93.9	94.4	97.3	96.3
82.5°	62.0	65.8	65.8	63.9
85°	36.2	36.2	36.2	36.2
87.5°	12.4	11.9	12.9	12.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)