

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: P242308

Luminaire Tested: **S122DR-S1005D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242308  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-19)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DR-S1005D930-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3468.4 lumens  
Efficiency: N/A  
Efficacy: 84.4 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23  
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')  
CIE Type: Direct

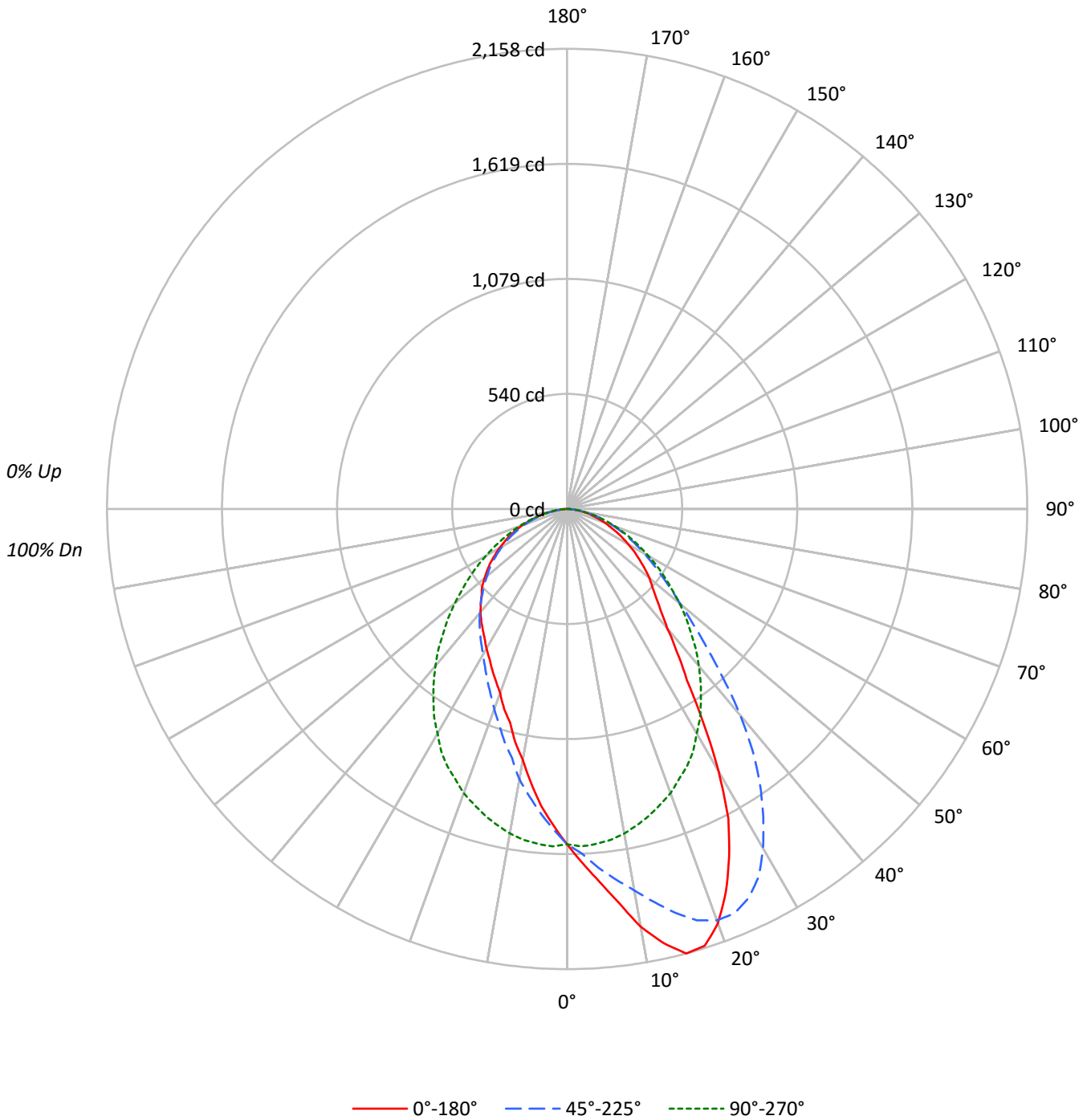
Input Watts (W): 41.1  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86					86			
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74					74			
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	64					64			
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	58	55					55			
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49					49			
6	74	61	53	47	72	60	52	46	58	51	46	57	51	46	55	50	45	43					43			
7	69	56	48	42	67	55	47	42	54	46	41	52	46	41	51	45	41	39					39			
8	64	51	43	38	63	51	43	38	49	42	37	48	42	37	47	41	37	35					35			
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32					32			
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29					29			

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

	0°	90°	180°
0°	29947	29947	29947
5°	33574	30143	26711
10°	38472	29894	23117
15°	42561	29347	20424
20°	41913	28757	18616
25°	37792	27975	17473
30°	31232	26725	16639
35°	22762	25418	16045
40°	18179	23873	15715
45°	15885	22086	15268
50°	14932	20358	14968
55°	13765	18600	14569
60°	12613	16735	13951
65°	11493	15058	13345
70°	10431	13427	12453
75°	9251	11606	11032
80°	7953	9609	8885
85°	7125	7125	5289



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.8	4.3
10°-20°	435.9	12.6
20°-30°	632.6	18.2
30°-40°	666.8	19.2
40°-50°	590.0	17.0
50°-60°	471.0	13.6
60°-70°	319.9	9.2
70°-80°	163.7	4.7
80°-90°	38.7	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°	1218.2	35.1
0°-40°	1885.0	54.3
0°-60°	2946.0	84.9
0°-90°	3468.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3468.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1572	1572	1572	1572	1572	
5°	1756	1690	1576	1432	1397	175
15°	2158	1961	1488	1132	1036	598
25°	1798	2013	1331	885	831	816
35°	979	1577	1093	711	690	634
45°	590	934	820	562	567	462
55°	414	537	560	422	439	372
65°	255	318	334	279	296	253
75°	126	154	158	141	150	134
85°	33	36	33	27	24	37
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°	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2
2.5°	1662.9	1663.5	1664.7	1655.0	1653.8	1653.8	1645.3	1638.1	1629.6	1618.1	1619.4
5°	1755.9	1762.6	1765.0	1757.7	1746.8	1745.6	1735.4	1718.4	1702.7	1690.0	1681.0
7.5°	1863.5	1865.9	1861.0	1852.6	1845.3	1831.4	1814.5	1798.2	1774.0	1752.3	1736.6
10°	1989.1	1992.8	1982.5	1968.6	1957.1	1940.2	1912.4	1884.0	1849.6	1816.3	1789.7
12.5°	2084.6	2094.9	2081.0	2082.2	2060.4	2035.7	2001.2	1990.4	1938.4	1888.8	1859.8
15°	2158.3	2157.7	2158.9	2147.5	2133.0	2129.3	2094.3	2056.2	1987.9	1960.7	1913.6
17.5°	2147.5	2155.9	2160.7	2157.1	2154.7	2149.3	2134.2	2105.8	2068.3	2022.4	1966.2
20°	2067.7	2079.8	2081.6	2095.5	2103.3	2113.6	2117.8	2111.2	2090.1	2053.2	2006.1
22.5°	1944.4	1945.6	1952.3	1975.9	1995.2	2024.8	2040.5	2070.1	2065.3	2052.0	2014.5
25°	1798.2	1792.2	1813.3	1824.2	1863.5	1904.6	1934.2	1966.8	1995.8	2013.3	2001.8
27.5°	1636.3	1623.6	1655.6	1684.0	1711.8	1751.7	1796.4	1849.6	1890.1	1945.0	1958.3
30°	1420.0	1425.4	1455.6	1486.4	1534.8	1597.6	1649.6	1709.4	1774.0	1837.5	1881.6
32.5°	1186.7	1211.5	1227.8	1279.2	1320.3	1392.2	1474.3	1552.9	1637.5	1711.8	1786.1
35°	978.9	1003.0	1029.6	1064.1	1123.9	1193.4	1267.7	1368.6	1478.6	1577.1	1658.0
37.5°	847.1	842.9	859.2	884.6	936.0	995.8	1084.0	1186.7	1318.4	1427.8	1536.6
40°	731.1	728.7	739.6	762.5	799.4	840.5	915.4	1003.0	1123.3	1264.7	1400.6
42.5°	651.4	653.8	658.6	673.1	695.5	727.5	778.9	850.2	957.7	1088.8	1237.5
45°	589.7	594.0	600.6	608.5	623.0	650.8	682.2	735.4	822.4	933.5	1077.4
47.5°	541.4	542.6	549.9	557.1	565.6	582.5	610.3	644.1	710.6	805.4	934.1
50°	503.9	499.7	504.5	510.0	519.0	529.9	546.8	578.3	619.3	692.5	795.8
52.5°	458.0	459.2	463.4	464.7	472.5	483.4	498.5	517.8	554.1	607.3	687.6
55°	414.5	417.5	419.9	423.6	430.8	438.7	450.8	465.3	494.3	537.2	600.0
57.5°	373.4	374.6	376.4	384.3	388.5	395.8	407.9	421.2	440.5	473.7	523.3
60°	331.1	331.1	336.0	339.0	345.0	352.3	361.3	374.0	390.9	416.9	455.0
62.5°	292.5	291.8	293.1	298.5	302.7	309.4	318.4	328.7	344.4	366.8	396.4
65°	255.0	253.8	257.4	258.6	263.4	270.1	277.3	288.8	301.5	318.4	346.2
67.5°	217.5	219.3	221.8	224.2	226.6	234.4	239.3	247.7	258.6	273.1	292.5
70°	187.3	187.3	187.3	189.1	192.8	196.4	201.2	207.9	218.1	230.2	247.1
72.5°	153.5	155.9	158.3	156.5	161.3	163.1	169.2	172.2	181.9	188.5	203.0
75°	125.7	125.7	125.7	128.7	130.5	132.3	136.0	139.6	144.4	154.1	161.9
77.5°	99.1	98.5	99.1	99.7	102.1	104.5	105.7	108.8	113.6	118.4	125.7
80°	72.5	73.7	74.3	75.5	75.5	76.7	77.3	81.6	84.6	87.6	91.8
82.5°	52.0	52.0	52.0	52.0	52.6	53.2	55.0	55.6	56.2	58.6	61.6
85°	32.6	32.0	32.0	33.2	32.6	32.6	33.8	35.0	35.0	35.6	37.5
87.5°	15.7	15.7	16.3	15.7	15.7	16.3	16.3	15.7	16.3	16.9	17.5
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°	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2
2.5°	1623.6	1618.7	1615.7	1604.9	1595.2	1585.5	1582.5	1583.7	1570.4	1557.7	1552.3
5°	1676.2	1664.1	1652.6	1636.3	1616.9	1595.8	1584.9	1576.5	1555.3	1532.3	1519.0
7.5°	1723.9	1708.2	1687.6	1658.6	1632.0	1600.6	1581.3	1565.0	1535.4	1504.5	1485.8
10°	1766.8	1743.2	1714.8	1677.4	1642.9	1602.4	1574.0	1545.6	1509.4	1470.7	1446.5
12.5°	1803.6	1769.8	1742.0	1691.3	1649.0	1595.8	1560.7	1517.8	1479.2	1431.4	1407.9
15°	1866.5	1807.9	1754.7	1700.3	1650.2	1579.5	1542.0	1488.2	1438.1	1381.3	1354.1
17.5°	1913.0	1849.6	1767.4	1701.5	1645.9	1570.4	1516.6	1452.6	1395.8	1332.9	1296.7
20°	1951.7	1876.2	1786.1	1703.9	1633.9	1544.4	1484.6	1418.7	1349.3	1276.1	1236.3
22.5°	1974.6	1894.3	1805.5	1694.9	1609.7	1523.3	1444.1	1370.4	1299.7	1219.3	1177.1
25°	1975.9	1903.3	1809.1	1690.7	1590.3	1491.9	1401.2	1331.1	1245.9	1172.2	1111.2
27.5°	1955.9	1898.5	1807.3	1682.2	1568.0	1455.0	1356.5	1279.8	1189.7	1110.0	1049.0
30°	1911.8	1881.6	1793.4	1667.7	1540.2	1416.3	1305.2	1215.1	1125.7	1044.7	981.9
32.5°	1843.5	1842.9	1768.0	1647.1	1510.6	1367.4	1251.4	1160.1	1058.6	979.5	920.3
35°	1749.9	1778.9	1729.9	1614.5	1471.9	1321.5	1197.0	1093.1	990.3	914.2	858.0
37.5°	1630.8	1697.9	1678.6	1571.0	1422.4	1272.5	1137.2	1028.4	929.9	851.4	796.4
40°	1507.0	1598.8	1612.1	1519.7	1369.2	1213.9	1068.3	960.1	864.7	794.6	739.0
42.5°	1374.0	1485.2	1527.5	1458.0	1311.2	1152.3	1006.7	893.7	799.4	731.7	684.0
45°	1222.4	1364.4	1430.2	1387.9	1245.3	1083.4	933.5	819.9	734.1	670.1	632.0
47.5°	1085.2	1239.3	1323.3	1303.3	1174.6	1013.9	865.9	755.3	670.1	618.1	582.5
50°	937.8	1097.3	1204.2	1209.1	1097.3	938.4	789.7	687.0	610.3	562.5	534.7
52.5°	809.7	960.1	1079.2	1110.0	1010.9	859.8	721.5	619.3	554.1	511.2	487.0
55°	701.5	830.2	959.5	1006.7	925.1	780.1	650.2	560.1	496.7	466.5	444.7
57.5°	598.8	711.8	834.5	884.0	832.0	704.5	578.9	499.7	445.9	418.7	401.8
60°	520.9	605.4	711.8	774.0	730.5	619.9	513.6	439.3	397.0	373.4	357.7
62.5°	448.3	520.9	606.7	662.2	643.5	540.8	448.3	384.9	349.9	328.1	317.8
65°	381.9	441.1	510.6	563.1	547.4	468.3	390.3	334.1	305.1	287.6	278.6
67.5°	325.1	370.4	419.9	468.3	455.0	396.4	330.5	285.2	262.8	247.1	241.7
70°	271.9	304.5	347.4	384.3	374.0	328.1	278.6	241.1	222.4	209.7	204.2
72.5°	221.2	246.5	276.7	305.1	299.1	262.8	223.6	197.6	184.3	172.8	168.6
75°	174.6	195.2	215.1	235.0	233.2	203.6	179.5	157.7	146.2	137.2	135.3
77.5°	136.6	149.2	163.7	176.4	173.4	154.1	134.1	120.8	111.8	105.7	105.1
80°	98.5	105.1	114.8	123.3	119.0	111.8	96.7	87.6	81.6	75.5	73.1
82.5°	64.7	71.3	76.1	79.8	76.7	70.1	62.2	56.8	53.8	50.2	49.5
85°	37.5	41.1	43.5	44.7	43.5	39.3	35.0	32.6	29.6	27.8	27.2
87.5°	18.1	18.1	18.1	19.3	17.5	17.5	15.1	13.3	12.7	12.1	10.9
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°	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2	1572.2
2.5°	1546.2	1542.6	1529.9	1523.3	1512.4	1502.1	1495.5	1498.5	1500.9	1499.7	1497.9
5°	1507.0	1495.5	1478.0	1462.9	1452.0	1432.0	1423.6	1419.4	1415.7	1411.5	1407.3
7.5°	1463.5	1447.1	1422.4	1403.0	1383.7	1358.3	1345.6	1338.4	1330.5	1321.5	1313.0
10°	1416.3	1391.0	1364.4	1334.2	1310.0	1287.6	1267.7	1254.4	1242.3	1230.8	1222.4
12.5°	1366.8	1336.6	1302.1	1258.0	1230.8	1196.4	1197.6	1171.6	1151.1	1145.0	1134.8
15°	1313.6	1272.5	1230.8	1181.9	1160.7	1131.7	1113.6	1095.5	1079.2	1067.7	1064.7
17.5°	1255.6	1200.6	1160.1	1123.9	1089.4	1059.8	1044.1	1029.6	1015.7	998.8	998.2
20°	1187.3	1141.4	1096.1	1065.3	1029.6	999.4	978.9	964.4	952.9	943.8	936.0
22.5°	1122.7	1071.3	1030.8	996.4	961.3	938.4	923.3	909.4	900.3	890.0	882.8
25°	1052.6	1013.3	968.0	929.9	900.9	885.2	871.9	859.8	853.8	847.1	838.7
27.5°	992.8	949.3	904.5	874.9	848.3	834.5	824.2	815.1	809.7	805.4	800.0
30°	928.7	884.6	851.4	822.4	801.2	787.3	781.3	776.4	769.8	767.4	765.0
32.5°	867.1	828.4	801.2	777.0	757.1	749.3	743.8	739.6	734.8	732.3	726.9
35°	809.7	776.4	748.6	734.8	718.4	710.6	706.4	700.3	695.5	693.1	692.5
37.5°	754.7	724.5	705.7	687.0	679.2	674.9	668.9	664.7	662.8	662.2	661.6
40°	701.5	678.0	661.6	647.1	644.1	636.9	632.0	628.4	628.4	629.0	628.4
42.5°	653.2	632.6	618.7	606.7	603.0	599.4	594.6	595.2	596.4	598.8	596.4
45°	604.2	589.1	578.9	572.8	566.2	561.9	561.3	563.1	563.8	564.4	566.2
47.5°	558.3	548.6	539.0	531.7	528.7	528.1	526.9	529.9	532.9	533.5	536.6
50°	518.4	507.0	499.1	494.9	492.5	491.2	492.5	496.1	498.5	501.5	503.3
52.5°	473.7	466.5	461.6	458.6	458.0	459.2	459.2	463.4	467.7	468.3	468.9
55°	433.2	427.2	426.0	420.5	423.0	422.4	425.4	427.8	431.4	435.1	435.7
57.5°	392.1	386.7	383.1	383.7	384.3	386.7	389.1	393.4	397.6	401.8	401.8
60°	351.1	348.6	346.8	346.8	348.0	351.7	354.7	358.9	361.3	363.8	365.6
62.5°	313.6	311.2	309.4	310.6	314.2	316.0	319.6	321.5	323.9	326.3	326.9
65°	273.7	272.5	274.3	275.5	276.1	279.2	283.4	285.2	287.6	288.8	293.1
67.5°	237.5	237.5	236.9	238.7	242.3	242.9	247.1	252.0	252.0	254.4	257.4
70°	200.6	201.8	203.0	204.2	207.3	208.5	211.5	213.3	215.7	217.5	219.3
72.5°	166.8	166.8	168.0	167.4	169.8	172.8	175.2	177.0	179.5	181.9	183.7
75°	133.5	133.5	134.7	135.3	138.4	141.4	140.8	142.0	144.4	146.8	148.0
77.5°	103.3	102.1	103.3	103.9	105.1	107.6	108.2	110.0	113.0	112.4	113.6
80°	74.3	72.5	74.3	74.9	74.9	77.9	77.9	79.2	81.0	79.2	81.0
82.5°	47.7	47.1	48.3	48.3	49.5	48.9	50.2	50.2	52.0	51.4	52.0
85°	26.6	26.0	26.6	26.0	26.6	27.2	27.2	26.6	26.6	27.8	26.0
87.5°	10.3	9.7	9.1	9.1	8.5	7.9	7.3	7.3	7.3	6.0	6.0
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: P242308

CATALOG NUMBER: S122DR-S1005D930-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1572.2	1572.2	1572.2	1572.2
2.5°	1491.9	1490.7	1490.7	1485.2
5°	1398.8	1397.0	1394.0	1397.0
7.5°	1310.6	1302.7	1301.5	1295.5
10°	1212.1	1207.3	1206.7	1195.2
12.5°	1137.2	1123.9	1126.9	1121.5
15°	1048.3	1048.3	1045.9	1035.7
17.5°	984.9	984.3	978.9	982.5
20°	929.3	925.7	918.4	918.4
22.5°	876.7	877.4	869.5	872.5
25°	838.1	833.2	829.6	831.4
27.5°	798.2	796.4	795.8	790.3
30°	764.4	758.3	759.5	756.5
32.5°	725.7	724.5	722.7	720.2
35°	691.2	691.9	688.8	690.0
37.5°	660.4	662.8	661.0	661.0
40°	630.2	630.2	630.2	632.0
42.5°	601.2	600.0	598.8	598.2
45°	567.4	569.2	569.8	566.8
47.5°	537.8	538.4	537.8	541.4
50°	506.3	505.1	506.3	505.1
52.5°	473.1	473.7	472.5	472.5
55°	438.1	439.3	438.7	438.7
57.5°	402.4	403.0	404.2	401.2
60°	365.0	368.0	367.4	366.2
62.5°	330.5	331.1	331.1	331.1
65°	294.9	296.1	294.3	296.1
67.5°	256.2	256.8	258.0	258.6
70°	220.5	219.9	221.8	223.6
72.5°	183.1	184.9	183.7	184.9
75°	146.8	148.6	148.0	149.9
77.5°	112.4	113.0	113.0	113.6
80°	81.0	79.8	78.6	81.0
82.5°	50.2	51.4	50.2	49.5
85°	26.0	25.4	24.2	24.2
87.5°	6.0	5.4	5.4	4.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)