

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: P243281

Luminaire Tested: **S122RDR-H1005D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243281
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-68)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122RDR-H1005D940-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3230.2 lumens
Efficiency: N/A
Efficacy: 85.7 lumens/watt
Spacing Criteria (0/90/45): 0.81 / 1.17 / 0.99
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

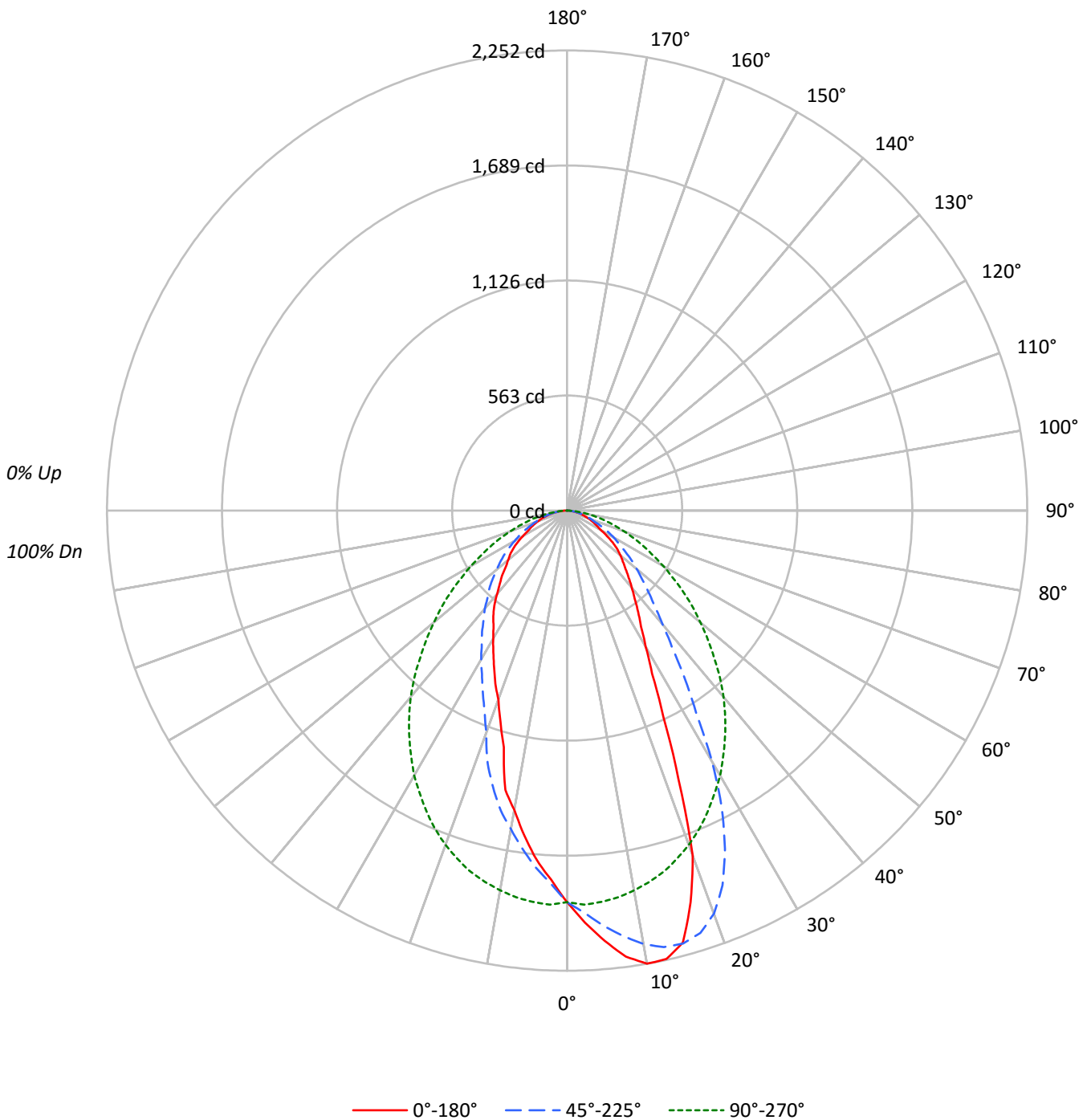
Input Watts (W): 37.7
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89	87
2	102	95	89	84	100	93	88	83	90	85	81	86	83	79	84	80	78	76
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66
4	87	77	69	63	85	76	68	63	73	67	62	71	65	61	69	64	60	58
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38
9	62	50	43	38	61	50	42	37	48	42	37	47	41	37	46	41	37	35
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	44	38	34	33

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	36507	36507	36507
5°	40413	36755	32809
10°	43548	36501	28772
15°	43162	36077	23646
20°	36409	35278	19960
25°	23411	34192	17768
30°	16911	32928	15920
35°	14087	31340	14642
40°	12226	29599	13256
45°	10915	27385	12130
50°	10072	25221	11151
55°	9039	23037	10623
60°	7215	20739	9558
65°	6616	18628	8820
70°	6076	16451	8382
75°	5542	14402	7941
80°	4815	11967	7426
85°	3846	9594	6862



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	181.4	5.6
10°-20°	496.4	15.4
20°-30°	625.7	19.4
30°-40°	600.7	18.6
40°-50°	517.4	16.0
50°-60°	395.6	12.2
60°-70°	251.7	7.8
70°-80°	127.6	3.9
80°-90°	33.7	1.0
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°	1303.6	40.4
0°-40°	1904.3	59.0
0°-60°	2817.2	87.2
0°-90°	3230.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3230.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1917	1917	1917	1917	1917	
5°	2114	2040	1922	1754	1716	206
15°	2189	2193	1830	1401	1199	594
25°	1114	1828	1627	977	845	532
35°	606	1003	1348	726	630	382
45°	405	562	1017	538	450	315
55°	272	342	694	374	320	240
65°	147	189	413	230	196	146
75°	75	85	196	118	108	80
85°	18	21	44	33	31	20
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°	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6
2.5°	2018.2	2020.7	2022.0	2018.9	2012.0	2012.6	2006.3	1995.7	1982.5	1970.6	1977.5
5°	2113.6	2116.7	2116.1	2110.4	2103.5	2097.3	2086.6	2071.5	2055.9	2039.6	2036.4
7.5°	2201.4	2208.3	2206.4	2195.7	2190.7	2181.9	2163.7	2146.8	2123.0	2099.8	2090.4
10°	2251.5	2257.2	2254.1	2251.5	2245.9	2237.1	2220.8	2204.5	2178.2	2153.7	2139.9
12.5°	2247.8	2252.8	2255.3	2257.8	2255.9	2252.8	2245.9	2232.1	2210.8	2188.2	2170.6
15°	2188.8	2180.7	2175.0	2190.7	2196.4	2217.7	2222.7	2224.6	2210.1	2193.2	2188.8
17.5°	2009.5	2012.0	2055.2	2048.3	2057.7	2109.8	2130.5	2158.7	2170.6	2166.9	2174.4
20°	1796.2	1766.7	1788.1	1819.4	1848.9	1924.8	1975.0	2019.5	2070.9	2099.8	2127.4
22.5°	1424.9	1425.6	1477.0	1528.4	1594.9	1677.1	1753.6	1838.9	1930.4	1986.2	2050.8
25°	1113.9	1144.0	1166.5	1189.1	1285.7	1364.7	1492.0	1595.5	1721.6	1827.6	1936.1
27.5°	900.6	932.0	935.7	986.5	1043.6	1107.6	1191.0	1354.1	1483.3	1638.8	1773.0
30°	768.9	775.2	788.4	801.5	843.5	903.1	992.8	1095.0	1238.7	1416.2	1596.1
32.5°	673.6	672.3	685.5	706.2	729.4	769.5	820.3	905.0	1034.8	1175.9	1386.0
35°	605.8	604.0	613.4	620.9	634.7	667.3	713.1	768.9	862.4	1002.8	1165.9
37.5°	541.9	545.6	551.3	559.4	577.6	598.3	629.1	675.5	749.5	842.3	998.5
40°	491.7	496.1	502.4	508.0	521.8	538.7	559.4	596.4	646.0	726.9	846.7
42.5°	446.5	448.4	453.4	461.6	471.6	486.7	506.8	535.0	576.4	632.8	737.6
45°	405.2	405.2	410.8	418.3	424.6	439.0	454.7	481.7	513.7	561.9	636.6
47.5°	370.0	370.7	373.8	375.0	381.9	395.1	412.1	433.4	459.7	496.7	566.3
50°	339.9	342.4	343.7	345.6	348.1	355.0	366.9	383.2	412.1	444.7	491.1
52.5°	308.6	311.7	314.2	318.0	321.7	322.4	331.1	341.8	361.9	395.7	433.4
55°	272.2	274.7	279.7	282.9	287.9	292.3	299.2	306.7	319.9	342.4	381.3
57.5°	230.8	231.4	236.4	239.6	249.6	259.6	265.9	274.1	283.5	299.2	328.6
60°	189.4	191.3	191.9	194.4	203.2	213.9	226.4	239.0	249.0	262.8	283.5
62.5°	166.8	167.5	169.3	171.8	172.5	177.5	181.3	196.3	213.9	227.7	241.5
65°	146.8	147.4	147.4	149.3	151.8	154.3	156.2	161.8	169.3	188.8	205.7
67.5°	127.9	127.3	128.6	130.5	131.1	133.0	136.1	139.2	144.2	149.9	167.5
70°	109.1	109.1	108.5	110.4	112.3	112.9	114.8	117.9	121.0	126.1	131.7
72.5°	90.3	91.6	91.6	92.8	93.4	96.0	97.2	98.5	102.9	105.4	109.8
75°	75.3	74.6	76.5	75.9	77.1	77.8	79.7	81.5	82.8	85.3	89.1
77.5°	60.2	59.0	60.2	59.6	60.8	62.1	62.1	64.0	65.2	67.7	69.6
80°	43.9	43.9	44.5	45.8	45.8	46.4	47.7	47.0	49.5	50.2	52.1
82.5°	30.1	30.7	30.7	31.4	31.4	31.4	32.6	32.6	33.2	34.5	35.1
85°	17.6	16.9	17.6	17.6	17.6	18.2	18.8	18.2	19.4	20.7	20.7
87.5°	5.0	5.0	5.6	6.3	6.3	6.9	6.9	6.9	7.5	7.5	8.2
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°	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6
2.5°	1977.5	1974.3	1966.2	1958.7	1944.9	1933.6	1929.8	1930.4	1913.5	1895.9	1890.9
5°	2032.0	2020.7	2004.4	1987.5	1966.8	1946.1	1932.9	1922.3	1895.9	1869.6	1854.5
7.5°	2077.2	2059.0	2035.2	2008.2	1981.2	1950.5	1929.2	1909.1	1872.7	1837.0	1817.5
10°	2118.6	2092.9	2060.3	2025.1	1989.4	1949.2	1918.5	1887.2	1841.4	1801.2	1768.0
12.5°	2158.1	2117.3	2084.1	2033.3	1993.8	1939.2	1897.2	1860.8	1806.9	1756.7	1719.7
15°	2161.9	2133.0	2088.5	2035.8	1975.6	1924.8	1872.1	1829.5	1768.0	1712.2	1648.8
17.5°	2161.2	2138.7	2092.2	2038.3	1966.2	1899.7	1842.6	1786.8	1716.6	1651.3	1596.8
20°	2138.7	2123.0	2082.8	2018.9	1946.1	1869.6	1806.3	1740.4	1658.2	1591.1	1531.6
22.5°	2085.3	2089.1	2057.7	2000.7	1922.3	1837.0	1763.6	1687.7	1603.7	1526.5	1451.3
25°	1995.0	2035.2	2025.8	1972.5	1889.0	1795.6	1712.2	1626.9	1536.6	1454.4	1384.8
27.5°	1882.8	1958.0	1974.3	1932.9	1853.3	1748.6	1653.8	1561.0	1468.8	1380.4	1308.9
30°	1749.8	1862.1	1903.5	1880.9	1807.5	1697.8	1588.0	1497.1	1396.1	1302.0	1226.7
32.5°	1582.4	1739.8	1812.5	1819.4	1759.2	1641.3	1519.6	1421.8	1318.3	1229.3	1148.3
35°	1395.5	1588.6	1707.2	1739.1	1695.9	1579.2	1451.3	1347.8	1237.4	1147.7	1066.2
37.5°	1207.3	1434.3	1589.9	1652.0	1623.1	1510.2	1374.8	1270.0	1160.9	1069.3	992.8
40°	1034.2	1250.0	1451.9	1549.1	1540.3	1435.6	1298.9	1190.4	1079.4	994.7	910.7
42.5°	879.3	1087.5	1309.5	1440.0	1446.9	1355.3	1215.5	1106.3	999.7	915.7	827.9
45°	757.0	940.1	1160.3	1315.8	1345.9	1270.6	1128.9	1016.6	919.4	840.4	752.6
47.5°	659.2	801.5	1006.0	1188.5	1241.8	1175.9	1040.5	933.9	842.3	774.6	691.8
50°	574.5	708.1	881.8	1050.5	1128.9	1079.4	952.7	851.1	768.3	703.1	630.3
52.5°	499.2	602.7	753.2	915.0	1020.4	975.3	867.4	773.9	696.2	635.3	574.5
55°	437.1	523.7	656.6	800.9	898.1	873.0	777.1	693.7	625.3	567.6	518.0
57.5°	373.2	445.9	553.2	681.7	777.1	773.3	694.3	614.0	560.1	505.5	469.8
60°	317.3	376.3	463.5	572.6	668.6	669.2	607.7	544.4	498.0	450.9	417.1
62.5°	267.8	314.8	390.7	478.5	555.0	574.5	528.7	473.5	435.9	399.5	370.7
65°	225.2	260.3	317.3	397.0	457.2	483.5	453.4	413.3	381.9	349.3	323.6
67.5°	185.6	211.4	253.4	316.1	376.3	395.7	383.2	352.5	329.9	302.9	283.5
70°	146.1	168.1	197.6	244.6	294.1	321.1	317.3	295.4	276.6	257.1	239.0
72.5°	116.0	128.6	151.1	185.0	224.5	254.6	255.9	244.6	228.9	212.6	200.7
75°	93.4	99.1	109.8	136.1	167.5	192.5	201.3	195.7	183.1	173.1	164.9
77.5°	72.1	77.1	84.0	96.6	121.0	140.5	151.1	151.8	144.2	135.5	129.2
80°	53.9	55.8	60.8	67.1	79.7	96.6	109.1	109.1	104.7	100.3	96.6
82.5°	37.0	38.9	41.4	44.5	50.8	60.8	72.1	74.0	71.5	70.2	65.2
85°	20.7	22.6	23.8	25.7	28.2	33.2	41.4	43.9	44.5	40.8	38.3
87.5°	8.2	8.2	8.8	9.4	10.0	11.9	15.1	18.8	18.8	16.9	16.3
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6	1916.6
2.5°	1884.6	1875.9	1864.6	1854.5	1840.7	1826.9	1824.4	1829.5	1830.7	1824.4	1826.3
5°	1840.1	1823.8	1810.0	1787.4	1773.0	1754.2	1741.7	1741.7	1741.7	1732.2	1723.5
7.5°	1793.7	1771.8	1745.4	1724.1	1694.6	1670.2	1658.2	1652.6	1641.3	1631.9	1621.2
10°	1739.8	1709.0	1676.4	1643.2	1617.5	1583.6	1563.5	1551.0	1531.6	1523.4	1507.7
12.5°	1676.4	1645.7	1606.2	1552.2	1544.7	1503.3	1475.1	1451.9	1428.1	1408.6	1401.7
15°	1625.6	1572.3	1519.6	1481.4	1425.6	1401.1	1359.7	1355.9	1336.5	1279.4	1234.9
17.5°	1543.5	1495.8	1437.5	1394.8	1350.3	1295.7	1251.8	1208.6	1167.2	1127.0	1125.8
20°	1470.7	1414.9	1359.7	1313.3	1235.5	1157.8	1130.8	1091.3	1066.8	1034.8	1025.4
22.5°	1391.1	1332.7	1263.7	1196.0	1105.1	1056.2	1026.7	995.3	970.9	956.4	942.0
25°	1310.8	1252.5	1160.9	1077.5	1015.4	977.1	952.0	918.2	900.6	888.1	869.3
27.5°	1232.4	1158.4	1061.8	995.3	945.1	901.9	879.3	851.7	832.3	815.9	804.0
30°	1154.6	1053.0	970.9	919.4	868.0	841.0	811.6	790.9	776.4	761.4	741.9
32.5°	1069.3	962.7	909.4	846.1	815.9	777.1	755.7	734.4	715.6	704.9	698.0
35°	970.2	884.3	836.6	790.2	752.0	726.3	696.2	683.0	673.0	652.3	643.5
37.5°	886.2	824.1	773.9	732.5	697.4	669.8	656.0	633.4	619.0	612.1	602.7
40°	816.6	761.4	718.1	676.1	646.6	626.5	602.1	590.2	571.4	564.5	556.9
42.5°	756.4	705.6	660.4	628.4	602.7	575.1	562.6	542.5	534.3	517.4	511.1
45°	695.5	650.4	610.9	579.5	555.0	538.1	515.5	503.0	488.6	479.8	462.9
47.5°	634.7	594.6	561.9	535.6	514.3	493.6	474.8	464.1	445.9	436.5	427.7
50°	587.7	548.8	518.0	491.7	469.8	449.1	437.1	419.6	403.3	392.6	389.5
52.5°	531.8	498.0	469.8	449.7	427.7	412.7	396.4	376.9	368.8	358.1	355.6
55°	482.3	454.7	430.9	409.5	390.7	373.8	355.0	341.2	334.9	329.9	326.1
57.5°	435.9	409.5	387.6	368.1	351.8	334.3	318.6	310.4	304.8	299.2	295.4
60°	390.1	366.3	346.2	329.9	313.0	296.0	284.7	277.8	273.4	265.3	262.8
62.5°	349.3	327.4	306.7	291.6	276.0	262.8	253.4	244.0	237.1	230.8	217.6
65°	304.8	285.4	269.7	254.6	239.6	229.5	218.9	208.2	199.4	199.4	199.4
67.5°	265.3	248.4	232.1	218.9	205.7	193.8	183.1	182.5	179.4	178.1	176.2
70°	225.2	213.2	198.2	183.8	170.6	164.9	163.1	159.9	156.2	155.5	153.0
72.5°	188.8	175.0	161.2	148.6	146.1	143.6	139.9	136.7	134.2	132.3	131.1
75°	154.3	140.5	129.2	126.1	122.9	118.5	115.4	112.9	111.6	111.6	111.0
77.5°	117.9	109.8	104.7	99.7	97.2	94.7	92.8	91.6	89.7	90.3	89.1
80°	86.5	84.0	79.7	76.5	75.3	72.8	71.5	70.9	69.6	69.6	69.0
82.5°	62.1	57.7	55.8	53.9	52.7	51.4	52.1	51.4	50.8	50.2	50.8
85°	35.7	35.1	33.9	33.9	33.9	33.2	33.2	33.2	32.6	32.0	32.0
87.5°	15.7	16.3	16.3	15.1	16.9	16.9	16.3	16.3	15.7	16.9	15.7
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: P243281

CATALOG NUMBER: S122RDR-H1005D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1916.6	1916.6	1916.6	1916.6
2.5°	1818.2	1817.5	1813.8	1807.5
5°	1719.7	1717.2	1710.9	1715.9
7.5°	1614.3	1607.4	1601.2	1604.3
10°	1501.4	1498.9	1495.2	1487.6
12.5°	1376.6	1386.7	1376.0	1399.8
15°	1191.6	1236.2	1180.3	1199.1
17.5°	1099.4	1100.1	1092.5	1083.8
20°	1012.9	990.9	999.1	984.7
22.5°	929.5	924.4	921.9	916.9
25°	854.8	845.4	842.3	845.4
27.5°	799.6	795.3	783.3	781.5
30°	730.7	728.8	725.0	723.8
32.5°	687.4	679.2	677.3	669.8
35°	639.1	634.7	631.6	629.7
37.5°	590.8	588.3	582.6	585.8
40°	551.3	538.7	533.7	533.1
42.5°	508.0	501.1	491.1	487.9
45°	457.8	454.7	451.6	450.3
47.5°	413.9	412.1	408.3	406.4
50°	382.6	377.6	376.9	376.3
52.5°	352.5	350.6	348.7	351.2
55°	324.2	321.7	319.9	319.9
57.5°	293.5	289.1	285.4	286.0
60°	257.8	255.3	252.1	250.9
62.5°	216.4	216.4	215.7	215.7
65°	196.9	195.7	195.1	195.7
67.5°	175.6	174.4	172.5	173.1
70°	151.1	150.5	151.1	150.5
72.5°	129.2	128.6	129.2	130.5
75°	109.1	108.5	107.9	107.9
77.5°	88.4	87.8	86.5	87.8
80°	69.0	68.4	67.7	67.7
82.5°	48.9	49.5	48.9	48.9
85°	32.0	32.6	32.0	31.4
87.5°	16.3	16.9	15.7	15.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)