

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: P242396

Luminaire Tested: **S122RDR-S1005D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242396
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-29)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122RDR-S1005D830-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3473.8 lumens
Efficiency: N/A
Efficacy: 84.5 lumens/watt
Spacing Criteria (0/90/45): 0.85 / 1.16 / 1.02
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

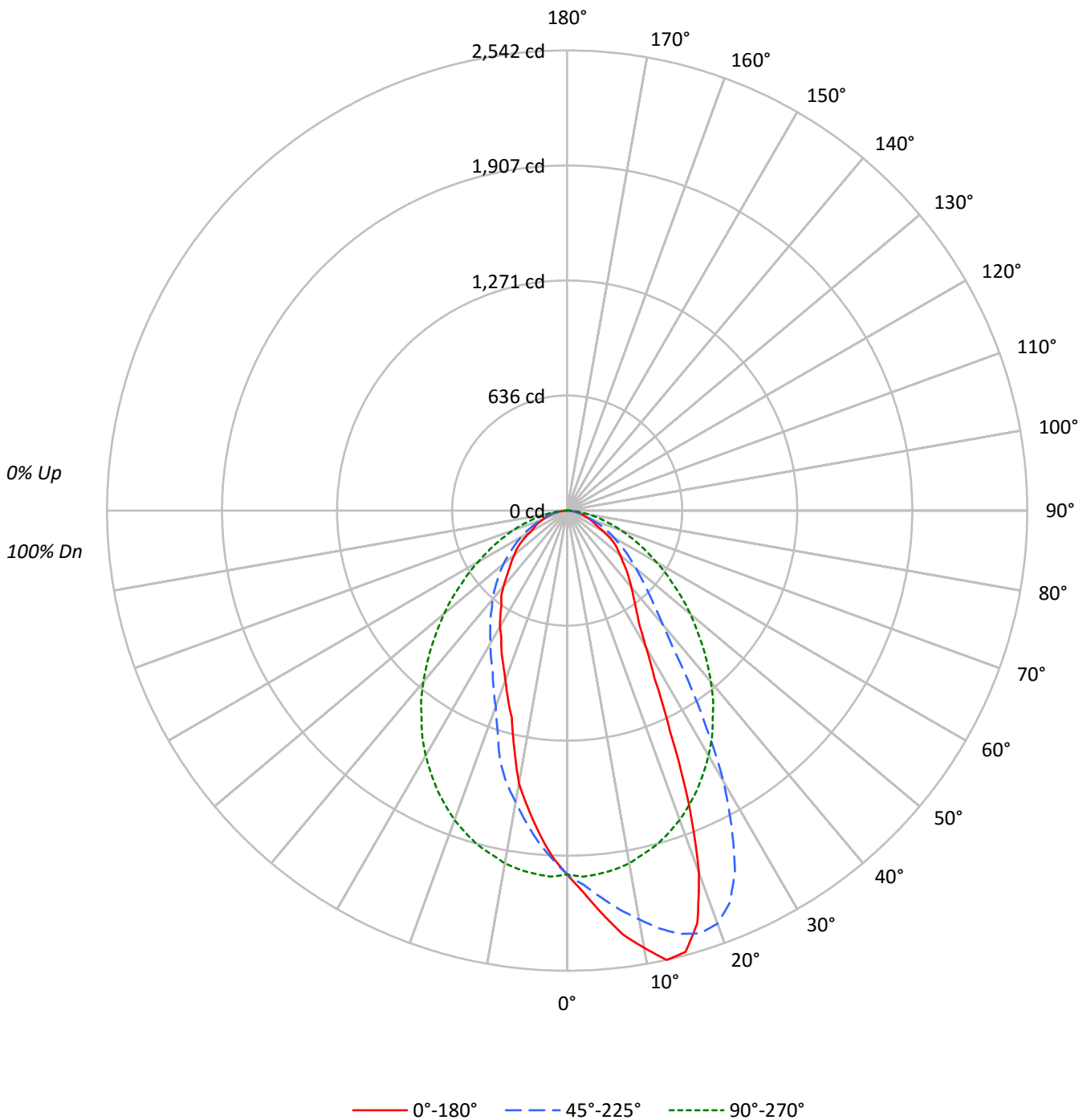
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	100	100	100	100	100		
1	111	106	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89	87	87	87	87	87	87	87		
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76	76	76	76	76	76	76		
3	94	85	78	72	92	84	77	72	81	75	71	78	73	69	76	72	68	66	66	66	66	66	66	66		
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	59	59	59	59	59	59	59		
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52	52	52	52	52	52	52		
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47	47	47	47	47	47	47		
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42	42	42	42	42	42	42		
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	39	39	39	39	39	39	39		
9	62	50	43	38	61	50	42	37	49	42	37	47	41	37	47	41	37	35	35	35	35	35	35	35		
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	44	38	34	33	33	33	33	33	33	33		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	38292	38292	38292
5°	42765	38532	34164
10°	47447	38260	29614
15°	49780	37700	23334
20°	43155	36869	20191
25°	28303	35731	18028
30°	19049	34351	16315
35°	15431	32615	14714
40°	13721	30723	13616
45°	12418	28505	12154
50°	11302	26308	11261
55°	10623	23870	10484
60°	8888	21634	8781
65°	7491	19646	8500
70°	6922	17543	8014
75°	6476	15271	7404
80°	5978	12571	6592
85°	5486	9922	5792



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	190.7	5.5
10°-20°	532.2	15.3
20°-30°	684.9	19.7
30°-40°	649.8	18.7
40°-50°	556.8	16.0
50°-60°	424.1	12.2
60°-70°	267.5	7.7
70°-80°	133.5	3.8
80°-90°	34.3	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°	1407.8	40.5
0°-40°	2057.6	59.2
0°-60°	3038.5	87.5
0°-90°	3473.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3473.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2010	2010	2010	2010	2010	
5°	2237	2144	2015	1836	1787	220
15°	2524	2421	1912	1431	1183	686
25°	1347	2194	1700	974	858	636
35°	664	1192	1403	739	633	422
45°	461	629	1058	546	451	357
55°	320	391	719	370	316	282
65°	166	224	436	222	189	168
75°	88	98	208	113	101	93
85°	25	26	45	26	26	28
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°	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3
2.5°	2112.3	2114.4	2116.4	2111.6	2111.6	2107.4	2098.3	2091.3	2071.7	2069.0	2069.0
5°	2236.6	2235.2	2238.0	2228.9	2216.3	2213.5	2200.3	2182.8	2164.6	2144.4	2140.2
7.5°	2362.3	2353.9	2350.4	2354.6	2341.4	2323.2	2300.9	2279.9	2248.5	2222.6	2206.6
10°	2453.1	2476.2	2462.2	2437.8	2442.6	2409.8	2392.4	2362.3	2337.2	2293.2	2283.4
12.5°	2542.5	2548.1	2546.0	2534.9	2525.8	2505.5	2480.4	2455.2	2403.5	2365.1	2324.6
15°	2524.4	2537.6	2541.1	2536.9	2540.4	2539.0	2526.5	2504.8	2464.3	2421.0	2383.3
17.5°	2390.3	2405.6	2418.2	2429.4	2446.8	2481.1	2491.5	2495.7	2479.0	2448.2	2416.8
20°	2129.0	2113.7	2177.9	2210.7	2238.7	2308.5	2368.6	2391.7	2428.7	2428.0	2421.0
22.5°	1758.8	1767.2	1827.3	1867.8	1962.8	2032.6	2103.2	2205.9	2286.2	2345.6	2381.9
25°	1346.7	1373.2	1434.0	1487.1	1577.9	1707.8	1825.9	1962.8	2092.0	2194.0	2291.1
27.5°	1047.7	1051.2	1106.4	1160.2	1216.1	1328.5	1486.4	1650.6	1835.0	1967.7	2135.3
30°	866.1	861.9	882.2	912.2	958.3	1040.8	1152.5	1313.2	1496.9	1726.0	1930.0
32.5°	737.6	739.0	753.0	773.2	809.6	858.5	926.2	1049.1	1220.3	1444.5	1692.5
35°	663.6	662.9	674.1	690.1	706.2	741.8	794.2	862.6	982.1	1192.3	1436.8
37.5°	602.1	605.6	610.5	621.0	640.5	661.5	694.3	742.5	833.3	963.9	1183.3
40°	551.8	553.2	560.9	569.3	579.8	595.1	621.0	658.0	720.2	819.3	969.5
42.5°	505.7	507.1	512.0	519.7	527.4	542.7	563.0	593.7	641.2	713.2	830.5
45°	461.0	461.0	465.9	469.4	478.5	492.4	509.9	536.4	571.4	628.6	711.1
47.5°	417.7	417.7	421.2	427.5	433.8	444.9	463.1	485.5	510.6	557.4	630.7
50°	381.4	382.1	384.2	389.1	392.6	402.3	415.6	434.5	461.0	495.2	553.9
52.5°	352.0	351.3	354.1	355.5	357.6	363.9	373.0	389.1	412.1	440.8	486.9
55°	319.9	317.1	321.3	324.8	326.9	329.7	335.3	345.8	366.0	391.2	427.5
57.5°	282.2	280.8	282.9	286.4	292.7	299.7	303.1	310.1	320.6	340.2	378.6
60°	233.3	233.3	239.6	241.7	249.4	259.1	268.9	274.5	285.0	296.9	323.4
62.5°	190.0	190.7	192.8	194.9	198.4	210.9	225.6	239.6	249.4	260.5	275.9
65°	166.2	167.6	167.6	169.0	171.8	174.6	180.2	190.0	207.5	223.5	236.8
67.5°	145.3	145.3	146.0	147.4	148.1	151.6	153.7	158.6	162.1	180.2	198.4
70°	124.3	126.4	125.7	127.1	127.8	129.2	132.0	134.1	140.4	143.9	153.7
72.5°	104.8	106.2	106.2	106.9	109.0	109.0	111.1	113.2	116.6	119.4	123.6
75°	88.0	87.3	88.0	89.4	90.1	90.8	90.8	93.6	95.7	98.5	102.0
77.5°	71.2	71.9	71.9	71.9	71.9	73.3	73.3	74.7	76.8	78.2	80.3
80°	54.5	55.2	54.5	55.2	55.9	56.6	55.9	56.6	58.7	60.1	60.1
82.5°	39.1	39.1	39.8	39.8	39.8	39.8	41.2	41.2	42.6	41.9	42.6
85°	25.1	24.4	24.4	24.4	25.1	25.8	25.1	25.1	25.8	25.8	25.8
87.5°	11.2	11.9	11.9	11.9	11.9	11.9	11.9	12.6	11.9	12.6	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°	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3
2.5°	2070.3	2064.8	2059.9	2047.3	2041.0	2027.0	2024.9	2024.2	2006.1	1988.6	1983.7
5°	2129.0	2117.8	2101.1	2081.5	2061.3	2040.3	2026.3	2015.2	1987.2	1960.7	1945.3
7.5°	2187.0	2166.7	2140.2	2106.7	2078.0	2044.5	2021.5	2000.5	1962.1	1927.2	1904.1
10°	2253.4	2214.2	2175.8	2124.8	2085.0	2045.9	2009.6	1978.1	1933.4	1883.2	1847.5
12.5°	2294.6	2250.6	2194.0	2144.4	2089.9	2037.5	1985.8	1943.2	1888.7	1836.4	1792.3
15°	2330.9	2284.8	2220.5	2149.3	2082.9	2018.0	1962.1	1911.8	1843.3	1781.2	1729.5
17.5°	2364.4	2300.9	2234.5	2152.1	2078.7	1999.8	1929.3	1866.4	1791.6	1718.3	1659.6
20°	2379.1	2316.2	2236.6	2154.2	2063.4	1966.3	1888.7	1818.9	1737.2	1655.4	1585.6
22.5°	2370.0	2324.6	2233.8	2131.1	2037.5	1934.8	1844.7	1760.9	1668.0	1584.2	1500.4
25°	2322.5	2305.7	2221.9	2114.4	2008.2	1890.1	1788.9	1700.1	1596.8	1507.4	1419.3
27.5°	2235.2	2259.6	2200.3	2083.6	1969.1	1841.9	1731.6	1631.7	1526.2	1426.3	1338.3
30°	2096.9	2180.0	2157.7	2051.5	1919.5	1795.1	1667.3	1561.8	1447.3	1343.9	1257.3
32.5°	1907.6	2058.5	2091.3	2006.8	1869.2	1729.5	1594.0	1489.2	1368.4	1258.0	1174.2
35°	1704.3	1909.7	2004.0	1947.4	1810.5	1663.1	1524.8	1402.6	1282.4	1174.9	1091.1
37.5°	1463.4	1737.2	1882.5	1876.2	1745.5	1595.4	1445.2	1324.4	1200.7	1094.5	1007.2
40°	1230.1	1533.2	1737.9	1783.3	1677.1	1511.6	1359.3	1235.6	1115.5	1012.1	908.0
42.5°	1020.5	1322.3	1585.6	1672.9	1594.0	1429.8	1276.9	1146.2	1030.3	933.9	827.0
45°	859.2	1123.2	1400.5	1541.6	1494.8	1342.5	1181.2	1058.2	948.6	864.0	762.1
47.5°	743.9	936.0	1214.7	1399.1	1393.5	1248.9	1088.3	970.2	866.8	788.6	702.0
50°	648.2	810.3	1037.3	1253.8	1272.0	1155.3	1004.4	887.8	792.8	709.7	643.3
52.5°	562.3	688.7	887.1	1092.5	1152.5	1055.4	910.1	804.7	713.2	638.4	583.9
55°	489.6	593.0	748.1	942.3	1020.5	949.3	819.3	718.8	644.0	579.8	530.9
57.5°	426.1	507.1	636.3	799.1	887.8	839.6	728.5	645.4	579.1	519.0	479.9
60°	366.7	430.3	535.7	666.4	767.0	735.5	644.0	567.9	513.4	463.1	426.8
62.5°	310.8	363.2	449.8	549.7	639.8	631.4	560.9	500.1	454.0	409.3	380.0
65°	259.1	299.0	369.5	452.6	526.7	533.0	479.2	435.9	393.3	356.9	329.7
67.5°	214.4	241.7	294.8	368.1	424.7	444.2	407.9	373.0	338.1	308.7	284.3
70°	173.9	194.9	231.2	287.8	338.8	359.7	340.9	315.0	285.7	262.6	242.4
72.5°	132.7	153.0	177.4	215.1	257.0	280.1	276.6	259.8	237.5	219.3	200.5
75°	106.2	112.5	130.6	158.6	192.8	212.3	217.2	207.5	188.6	173.9	162.8
77.5°	82.4	86.6	96.4	113.2	136.9	154.4	162.1	160.7	146.7	136.9	126.4
80°	62.9	65.0	69.2	75.4	92.2	109.7	114.6	114.6	105.5	102.0	91.5
82.5°	44.0	45.4	47.5	50.3	55.9	70.5	76.1	77.5	72.6	67.8	60.1
85°	27.2	26.5	27.9	30.0	31.4	35.6	44.0	45.4	44.0	38.4	36.3
87.5°	11.9	12.6	12.6	11.9	12.6	13.3	16.8	20.3	17.5	15.4	14.0
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°	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3	2010.3
2.5°	1974.7	1969.8	1960.7	1946.7	1938.3	1923.7	1913.9	1919.5	1920.9	1919.5	1918.1
5°	1928.6	1913.9	1893.6	1874.1	1855.9	1836.4	1825.2	1820.3	1810.5	1804.9	1802.1
7.5°	1876.2	1854.5	1825.9	1794.4	1765.1	1737.2	1724.6	1714.8	1696.7	1686.9	1677.8
10°	1816.1	1776.3	1747.6	1702.9	1675.7	1635.9	1608.6	1609.3	1582.1	1566.7	1555.6
12.5°	1749.7	1705.0	1652.6	1613.5	1573.0	1543.0	1508.8	1492.0	1462.7	1448.0	1413.1
15°	1675.0	1624.0	1573.7	1519.2	1480.8	1431.2	1383.7	1325.7	1279.0	1238.4	1227.3
17.5°	1595.4	1532.5	1482.9	1427.0	1367.0	1276.9	1218.2	1182.6	1154.6	1133.7	1116.9
20°	1512.9	1448.7	1394.9	1298.5	1209.8	1153.2	1112.7	1086.9	1057.5	1034.5	1021.9
22.5°	1426.3	1358.6	1280.3	1170.0	1105.7	1063.1	1028.2	997.5	980.0	963.2	952.1
25°	1345.3	1272.0	1151.1	1077.1	1021.2	973.7	948.6	930.4	909.4	885.0	873.8
27.5°	1260.8	1144.1	1052.6	998.9	941.6	911.5	889.9	859.9	841.0	831.9	819.3
30°	1163.7	1047.0	979.3	919.2	881.5	847.3	820.7	805.4	787.2	768.3	760.7
32.5°	1055.4	968.1	903.9	856.4	817.9	790.0	770.4	743.2	731.3	721.5	703.4
35°	969.5	899.0	839.6	799.1	762.8	739.0	714.6	699.9	676.1	666.4	660.1
37.5°	891.3	829.8	785.1	740.4	712.5	684.5	670.6	646.1	637.0	621.7	609.1
40°	827.0	767.0	724.3	689.4	657.3	637.7	618.9	600.0	584.6	578.4	562.3
42.5°	761.4	715.3	672.7	633.5	614.7	593.7	568.6	556.0	539.9	528.8	520.4
45°	702.0	658.7	622.4	590.9	567.2	545.5	530.2	507.1	498.0	477.8	469.4
47.5°	649.6	607.7	572.8	542.0	518.3	505.7	483.4	463.1	450.5	436.6	424.7
50°	593.0	559.5	526.0	499.4	478.5	458.2	435.2	426.1	403.7	397.4	391.2
52.5°	541.3	509.9	479.9	454.0	433.1	413.5	394.0	381.4	368.1	361.8	357.6
55°	493.8	463.1	433.8	410.7	389.8	369.5	356.9	342.3	335.3	330.4	324.8
57.5°	444.9	417.0	394.0	370.2	349.2	332.5	317.1	308.7	301.8	296.2	288.5
60°	398.8	372.3	352.0	330.4	308.7	295.5	284.3	273.8	265.4	255.7	252.9
62.5°	349.9	327.6	309.4	288.5	270.3	258.4	248.0	238.2	227.7	212.3	208.2
65°	305.9	287.8	268.2	250.8	234.0	222.1	206.8	195.6	191.4	190.0	189.3
67.5°	265.4	248.0	231.2	213.0	197.7	184.4	175.3	173.9	171.1	170.4	168.3
70°	224.9	208.9	192.1	175.3	160.7	158.6	155.8	153.0	149.5	148.1	146.7
72.5°	188.6	171.8	155.1	142.5	138.3	135.5	132.7	129.9	127.8	126.4	125.7
75°	150.2	134.8	123.6	118.7	115.3	113.2	109.0	106.9	105.5	103.4	102.7
77.5°	114.6	104.8	99.2	96.4	92.2	90.1	87.3	85.2	83.1	83.1	81.7
80°	82.4	78.2	74.7	70.5	69.2	66.4	65.7	63.6	64.3	62.2	62.2
82.5°	59.4	53.8	51.0	49.6	48.2	46.1	45.4	44.7	44.7	43.3	43.3
85°	32.8	31.4	30.0	28.6	28.6	26.5	27.2	26.5	26.5	25.1	24.4
87.5°	13.3	12.6	11.2	11.2	11.2	10.5	10.5	9.8	9.8	9.8	9.1
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: P242396

CATALOG NUMBER: S122RDR-S1005D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	2010.3	2010.3	2010.3	2010.3
2.5°	1910.4	1911.8	1909.7	1911.1
5°	1798.6	1790.3	1788.9	1786.8
7.5°	1666.6	1665.9	1661.7	1656.8
10°	1540.2	1536.7	1536.0	1531.1
12.5°	1392.1	1364.9	1362.1	1348.1
15°	1210.5	1206.3	1192.3	1183.3
17.5°	1109.2	1095.2	1090.4	1088.3
20°	1012.1	999.6	997.5	996.1
22.5°	945.1	931.8	925.5	920.6
25°	866.8	861.9	859.2	857.8
27.5°	805.4	792.8	791.4	787.9
30°	754.4	750.9	746.0	741.8
32.5°	694.3	691.5	687.3	685.9
35°	653.1	643.3	639.1	632.8
37.5°	607.7	602.1	595.1	597.9
40°	553.2	549.7	548.3	547.6
42.5°	509.9	498.7	494.5	494.5
45°	465.9	456.8	450.5	451.2
47.5°	418.4	419.1	414.9	416.3
50°	386.3	382.1	379.3	380.0
52.5°	355.5	352.0	349.9	353.4
55°	321.3	317.1	316.4	315.7
57.5°	284.3	282.2	278.7	276.6
60°	243.8	238.2	231.2	230.5
62.5°	206.8	206.8	206.8	206.8
65°	187.9	187.2	187.9	188.6
67.5°	168.3	166.9	165.5	166.2
70°	145.3	144.6	143.9	143.9
72.5°	122.9	122.9	122.2	121.5
75°	102.0	100.6	100.6	100.6
77.5°	81.7	81.0	80.3	79.6
80°	61.5	60.8	60.1	60.1
82.5°	43.3	42.6	42.6	41.9
85°	25.1	25.8	25.1	26.5
87.5°	9.1	8.4	9.1	8.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)