

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: P243266

Luminaire Tested: **S122RDR-H1005D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243266
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-H1005D840-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3658.2 lumens
Efficiency: N/A
Efficacy: 97.0 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

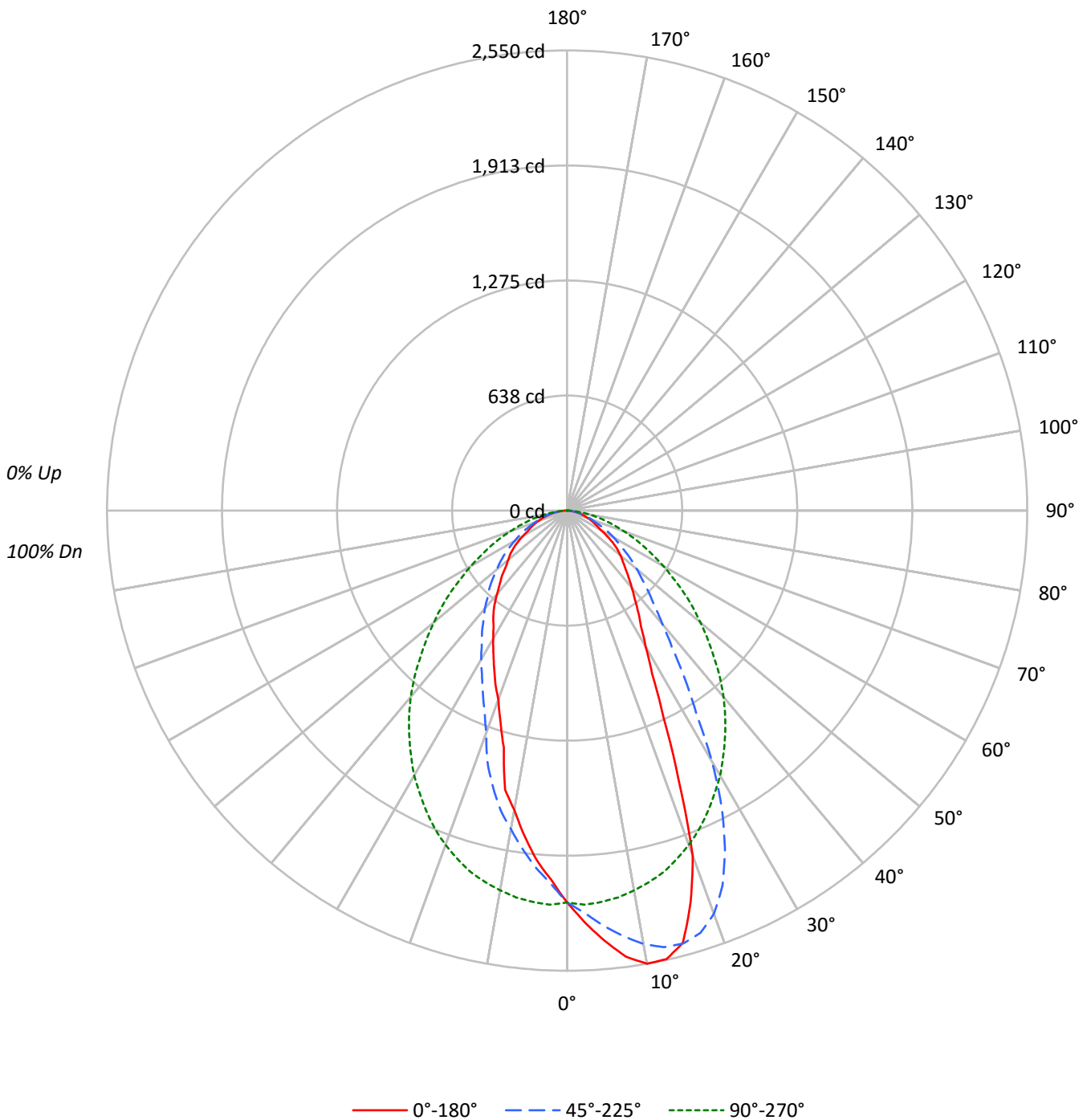
Input Watts (W): 37.7
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	110	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	86	83	79	84	80	78	76	76	76	76	76	76	76		
3	94	85	78	72	92	84	77	72	81	75	70	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	65	61	69	64	60	58	58	58	58	58	58	58		
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	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	38	38	38	38	38	38	38		
9	62	50	43	38	61	50	42	37	48	42	37	47	41	37	46	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°	41345	41345	41345
5°	45767	41625	37157
10°	49319	41337	32587
15°	48883	40857	26779
20°	41234	39952	22603
25°	26511	38721	20122
30°	19153	37289	18029
35°	15954	35493	16582
40°	13847	33521	15011
45°	12359	31016	13738
50°	11409	28560	12630
55°	10238	26089	12028
60°	8171	23486	10823
65°	7491	21098	9988
70°	6884	18629	9495
75°	6270	16309	8993
80°	5452	13558	8413
85°	4349	10862	7758



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	205.5	5.6
10°-20°	562.2	15.4
20°-30°	708.6	19.4
30°-40°	680.3	18.6
40°-50°	585.9	16.0
50°-60°	448.0	12.2
60°-70°	285.1	7.8
70°-80°	144.5	3.9
80°-90°	38.1	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°	1476.3	40.4
0°-40°	2156.6	59.0
0°-60°	3190.5	87.2
0°-90°	3658.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3658.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2171	2171	2171	2171	2171	
5°	2394	2310	2177	1987	1943	233
15°	2479	2484	2072	1587	1358	672
25°	1261	2070	1842	1107	957	603
35°	686	1136	1526	822	713	432
45°	459	636	1151	609	510	357
55°	308	388	786	423	362	272
65°	166	214	468	260	222	165
75°	85	97	222	134	122	90
85°	20	23	50	38	36	23
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°	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6
2.5°	2285.7	2288.5	2289.9	2286.4	2278.6	2279.3	2272.2	2260.1	2245.2	2231.7	2239.5
5°	2393.6	2397.2	2396.5	2390.1	2382.3	2375.2	2363.1	2346.0	2328.3	2309.8	2306.3
7.5°	2493.1	2500.9	2498.7	2486.7	2481.0	2471.0	2450.4	2431.3	2404.3	2378.0	2367.3
10°	2549.9	2556.3	2552.7	2549.9	2543.5	2533.5	2515.1	2496.6	2466.8	2439.1	2423.4
12.5°	2545.6	2551.3	2554.1	2557.0	2554.8	2551.3	2543.5	2527.9	2503.7	2478.1	2458.3
15°	2478.9	2469.6	2463.2	2481.0	2487.4	2511.5	2517.2	2519.3	2503.0	2483.8	2478.9
17.5°	2275.7	2278.6	2327.6	2319.7	2330.4	2389.4	2412.8	2444.8	2458.3	2454.0	2462.5
20°	2034.2	2000.8	2025.0	2060.5	2093.9	2179.8	2236.6	2287.1	2345.3	2378.0	2409.2
22.5°	1613.7	1614.4	1672.7	1730.9	1806.2	1899.3	1985.9	2082.5	2186.2	2249.4	2322.6
25°	1261.4	1295.5	1321.1	1346.7	1456.1	1545.6	1689.7	1806.9	1949.7	2069.7	2192.6
27.5°	1020.0	1055.5	1059.7	1117.3	1181.9	1254.3	1348.8	1533.5	1679.8	1855.9	2007.9
30°	870.8	877.9	892.8	907.7	955.3	1022.8	1124.4	1240.1	1402.8	1603.8	1807.6
32.5°	762.8	761.4	776.3	799.8	826.0	871.5	929.0	1024.9	1171.9	1331.8	1569.7
35°	686.1	684.0	694.6	703.2	718.8	755.7	807.6	870.8	976.6	1135.7	1320.4
37.5°	613.7	617.9	624.3	633.6	654.2	677.6	712.4	765.0	848.8	953.9	1130.8
40°	556.9	561.8	568.9	575.3	590.9	610.1	633.6	675.5	731.6	823.2	958.9
42.5°	505.7	507.8	513.5	522.8	534.1	551.2	573.9	605.9	652.7	716.7	835.3
45°	458.8	458.8	465.2	473.8	480.9	497.2	514.9	545.5	581.7	636.4	720.9
47.5°	419.1	419.8	423.3	424.7	432.6	447.5	466.6	490.8	520.6	562.5	641.4
50°	385.0	387.8	389.2	391.4	394.2	402.0	415.5	434.0	466.6	503.6	556.1
52.5°	349.5	353.0	355.8	360.1	364.4	365.1	375.0	387.1	409.8	448.2	490.8
55°	308.3	311.1	316.8	320.3	326.0	331.0	338.8	347.3	362.2	387.8	431.8
57.5°	261.4	262.1	267.8	271.3	282.7	294.1	301.2	310.4	321.0	338.8	372.2
60°	214.5	216.6	217.3	220.2	230.1	242.2	256.4	270.6	282.0	297.6	321.0
62.5°	188.9	189.6	191.8	194.6	195.3	201.0	205.3	222.3	242.2	257.8	273.5
65°	166.2	166.9	166.9	169.0	171.9	174.7	176.9	183.3	191.8	213.8	233.0
67.5°	144.9	144.2	145.6	147.7	148.4	150.6	154.1	157.7	163.4	169.8	189.6
70°	123.6	123.6	122.9	125.0	127.1	127.8	130.0	133.5	137.1	142.8	149.2
72.5°	102.3	103.7	103.7	105.1	105.8	108.7	110.1	111.5	116.5	119.3	124.3
75°	85.2	84.5	86.7	85.9	87.4	88.1	90.2	92.3	93.8	96.6	100.9
77.5°	68.2	66.8	68.2	67.5	68.9	70.3	70.3	72.4	73.9	76.7	78.8
80°	49.7	49.7	50.4	51.8	51.8	52.6	54.0	53.3	56.1	56.8	59.0
82.5°	34.1	34.8	34.8	35.5	35.5	35.5	36.9	36.9	37.6	39.1	39.8
85°	19.9	19.2	19.9	19.9	19.9	20.6	21.3	20.6	22.0	23.4	23.4
87.5°	5.7	5.7	6.4	7.1	7.1	7.8	7.8	7.8	8.5	8.5	9.2
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°	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6
2.5°	2239.5	2235.9	2226.7	2218.2	2202.6	2189.8	2185.5	2186.2	2167.0	2147.2	2141.5
5°	2301.3	2288.5	2270.0	2250.9	2227.4	2204.0	2189.1	2177.0	2147.2	2117.3	2100.3
7.5°	2352.4	2331.8	2304.8	2274.3	2243.8	2208.9	2184.8	2162.1	2120.9	2080.4	2058.4
10°	2399.3	2370.2	2333.2	2293.5	2253.0	2207.5	2172.7	2137.2	2085.4	2039.9	2002.3
12.5°	2444.0	2397.9	2360.2	2302.7	2258.0	2196.2	2148.6	2107.4	2046.3	1989.5	1947.6
15°	2448.3	2415.6	2365.2	2305.5	2237.4	2179.8	2120.2	2071.9	2002.3	1939.0	1867.3
17.5°	2447.6	2422.0	2369.5	2308.4	2226.7	2151.4	2086.8	2023.6	1944.0	1870.1	1808.4
20°	2422.0	2404.3	2358.8	2286.4	2204.0	2117.3	2045.6	1971.0	1878.0	1802.0	1734.5
22.5°	2361.7	2365.9	2330.4	2265.8	2177.0	2080.4	1997.3	1911.3	1816.2	1728.8	1643.6
25°	2259.4	2304.8	2294.2	2233.8	2139.3	2033.5	1939.0	1842.4	1740.2	1647.1	1568.3
27.5°	2132.2	2217.5	2235.9	2189.1	2098.9	1980.2	1873.0	1767.9	1663.5	1563.3	1482.3
30°	1981.7	2108.8	2155.7	2130.1	2047.0	1922.7	1798.4	1695.4	1581.1	1474.5	1389.3
32.5°	1792.0	1970.3	2052.7	2060.5	1992.3	1858.8	1721.0	1610.2	1493.0	1392.1	1300.5
35°	1580.4	1799.1	1933.4	1969.6	1920.6	1788.5	1643.6	1526.4	1401.4	1299.8	1207.5
37.5°	1367.3	1624.4	1800.5	1870.9	1838.2	1710.3	1556.9	1438.3	1314.7	1211.0	1124.4
40°	1171.2	1415.6	1644.3	1754.4	1744.4	1625.8	1471.0	1348.1	1222.4	1126.5	1031.3
42.5°	995.8	1231.6	1483.0	1630.8	1638.6	1534.9	1376.5	1252.9	1132.2	1037.0	937.6
45°	857.3	1064.7	1314.0	1490.2	1524.2	1439.0	1278.5	1151.4	1041.3	951.8	852.3
47.5°	746.5	907.7	1139.3	1346.0	1406.3	1331.8	1178.3	1057.6	953.9	877.2	783.4
50°	650.6	801.9	998.6	1189.7	1278.5	1222.4	1078.9	963.8	870.1	796.2	713.8
52.5°	565.4	682.6	853.0	1036.3	1155.6	1104.5	982.3	876.5	788.4	719.5	650.6
55°	495.1	593.1	743.7	907.0	1017.1	988.7	880.0	785.6	708.1	642.8	586.7
57.5°	422.6	505.0	626.5	772.1	880.0	875.8	786.3	695.4	634.3	572.5	532.0
60°	359.4	426.2	524.9	648.5	757.2	757.9	688.3	616.5	564.0	510.7	472.3
62.5°	303.3	356.6	442.5	541.9	628.6	650.6	598.8	536.3	493.6	452.4	419.8
65°	255.0	294.8	359.4	449.6	517.8	547.6	513.5	468.1	432.6	395.6	366.5
67.5°	210.2	239.4	287.0	358.0	426.2	448.2	434.0	399.2	373.6	343.1	321.0
70°	165.5	190.4	223.7	277.0	333.1	363.7	359.4	334.5	313.2	291.2	270.6
72.5°	131.4	145.6	171.2	209.5	254.3	288.4	289.8	277.0	259.2	240.8	227.3
75°	105.8	112.2	124.3	154.1	189.6	218.1	228.0	221.6	207.4	196.0	186.8
77.5°	81.7	87.4	95.2	109.4	137.1	159.1	171.2	171.9	163.4	153.4	146.3
80°	61.1	63.2	68.9	76.0	90.2	109.4	123.6	123.6	118.6	113.6	109.4
82.5°	41.9	44.0	46.9	50.4	57.5	68.9	81.7	83.8	81.0	79.6	73.9
85°	23.4	25.6	27.0	29.1	32.0	37.6	46.9	49.7	50.4	46.2	43.3
87.5°	9.2	9.2	9.9	10.7	11.4	13.5	17.0	21.3	21.3	19.2	18.5
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6	2170.6
2.5°	2134.4	2124.4	2111.6	2100.3	2084.6	2069.0	2066.2	2071.9	2073.3	2066.2	2068.3
5°	2083.9	2065.5	2049.8	2024.3	2007.9	1986.6	1972.4	1972.4	1972.4	1961.8	1951.8
7.5°	2031.4	2006.5	1976.7	1952.5	1919.2	1891.5	1878.0	1871.6	1858.8	1848.1	1836.1
10°	1970.3	1935.5	1898.6	1860.9	1831.8	1793.4	1770.7	1756.5	1734.5	1725.3	1707.5
12.5°	1898.6	1863.8	1819.0	1757.9	1749.4	1702.5	1670.6	1644.3	1617.3	1595.3	1587.5
15°	1841.0	1780.7	1721.0	1677.7	1614.4	1586.7	1539.9	1535.6	1513.6	1449.0	1398.5
17.5°	1748.0	1694.0	1627.9	1579.6	1529.2	1467.4	1417.7	1368.7	1321.8	1276.4	1274.9
20°	1665.6	1602.4	1539.9	1487.3	1399.2	1311.2	1280.6	1235.9	1208.2	1171.9	1161.3
22.5°	1575.4	1509.3	1431.2	1354.5	1251.5	1196.1	1162.7	1127.2	1099.5	1083.2	1066.8
25°	1484.5	1418.4	1314.7	1220.2	1149.9	1106.6	1078.2	1039.8	1020.0	1005.7	984.4
27.5°	1395.7	1311.9	1202.5	1127.2	1070.4	1021.4	995.8	964.5	942.5	924.1	910.6
30°	1307.6	1192.5	1099.5	1041.3	983.0	952.5	919.1	895.7	879.3	862.3	840.3
32.5°	1211.0	1090.3	1029.9	958.2	924.1	880.0	855.9	831.7	810.4	798.3	790.5
35°	1098.8	1001.5	947.5	894.9	851.6	822.5	788.4	773.5	762.1	738.7	728.7
37.5°	1003.6	933.3	876.5	829.6	789.8	758.6	742.9	717.4	701.0	693.2	682.6
40°	924.8	862.3	813.3	765.7	732.3	709.6	681.9	668.4	647.1	639.2	630.7
42.5°	856.6	799.1	747.9	711.7	682.6	651.3	637.1	614.4	605.2	586.0	578.9
45°	787.7	736.6	691.8	656.3	628.6	609.4	583.8	569.6	553.3	543.4	524.2
47.5°	718.8	673.3	636.4	606.6	582.4	559.0	537.7	525.6	505.0	494.3	484.4
50°	665.5	621.5	586.7	556.9	532.0	508.6	495.1	475.2	456.7	444.6	441.1
52.5°	602.3	564.0	532.0	509.3	484.4	467.4	448.9	426.9	417.6	405.6	402.7
55°	546.2	514.9	488.0	463.8	442.5	423.3	402.0	386.4	379.3	373.6	369.3
57.5°	493.6	463.8	438.9	416.9	398.5	378.6	360.8	351.6	345.2	338.8	334.5
60°	441.8	414.8	392.1	373.6	354.4	335.2	322.5	314.7	309.7	300.4	297.6
62.5°	395.6	370.8	347.3	330.3	312.5	297.6	287.0	276.3	268.5	261.4	246.5
65°	345.2	323.2	305.4	288.4	271.3	260.0	247.9	235.8	225.9	225.9	225.9
67.5°	300.4	281.3	262.8	247.9	233.0	219.5	207.4	206.7	203.1	201.7	199.6
70°	255.0	241.5	224.4	208.1	193.2	186.8	184.7	181.1	176.9	176.1	173.3
72.5°	213.8	198.2	182.5	168.3	165.5	162.7	158.4	154.8	152.0	149.9	148.4
75°	174.7	159.1	146.3	142.8	139.2	134.2	130.7	127.8	126.4	126.4	125.7
77.5°	133.5	124.3	118.6	112.9	110.1	107.3	105.1	103.7	101.6	102.3	100.9
80°	98.0	95.2	90.2	86.7	85.2	82.4	81.0	80.3	78.8	78.8	78.1
82.5°	70.3	65.3	63.2	61.1	59.7	58.2	59.0	58.2	57.5	56.8	57.5
85°	40.5	39.8	38.4	38.4	38.4	37.6	37.6	37.6	36.9	36.2	36.2
87.5°	17.8	18.5	18.5	17.0	19.2	19.2	18.5	18.5	17.8	19.2	17.8
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: P243266

CATALOG NUMBER: S122RDR-H1005D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	2170.6	2170.6	2170.6	2170.6
2.5°	2059.1	2058.4	2054.1	2047.0
5°	1947.6	1944.7	1937.6	1943.3
7.5°	1828.2	1820.4	1813.3	1816.9
10°	1700.4	1697.6	1693.3	1684.8
12.5°	1559.0	1570.4	1558.3	1585.3
15°	1349.5	1399.9	1336.7	1358.0
17.5°	1245.1	1245.8	1237.3	1227.4
20°	1147.1	1122.2	1131.5	1115.1
22.5°	1052.6	1046.9	1044.1	1038.4
25°	968.1	957.4	953.9	957.4
27.5°	905.6	900.6	887.1	885.0
30°	827.5	825.3	821.1	819.7
32.5°	778.5	769.2	767.1	758.6
35°	723.8	718.8	715.2	713.1
37.5°	669.1	666.2	659.8	663.4
40°	624.3	610.1	604.4	603.7
42.5°	575.3	567.5	556.1	552.6
45°	518.5	514.9	511.4	510.0
47.5°	468.8	466.6	462.4	460.3
50°	433.3	427.6	426.9	426.2
52.5°	399.2	397.0	394.9	397.8
55°	367.2	364.4	362.2	362.2
57.5°	332.4	327.4	323.2	323.9
60°	291.9	289.1	285.5	284.1
62.5°	245.0	245.0	244.3	244.3
65°	223.0	221.6	220.9	221.6
67.5°	198.9	197.5	195.3	196.0
70°	171.2	170.5	171.2	170.5
72.5°	146.3	145.6	146.3	147.7
75°	123.6	122.9	122.2	122.2
77.5°	100.1	99.4	98.0	99.4
80°	78.1	77.4	76.7	76.7
82.5°	55.4	56.1	55.4	55.4
85°	36.2	36.9	36.2	35.5
87.5°	18.5	19.2	17.8	17.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)