

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: P242416

Luminaire Tested: **S122RDR-S1005D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242416
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-S1005D935-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3173.3 lumens
Efficiency: N/A
Efficacy: 77.2 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

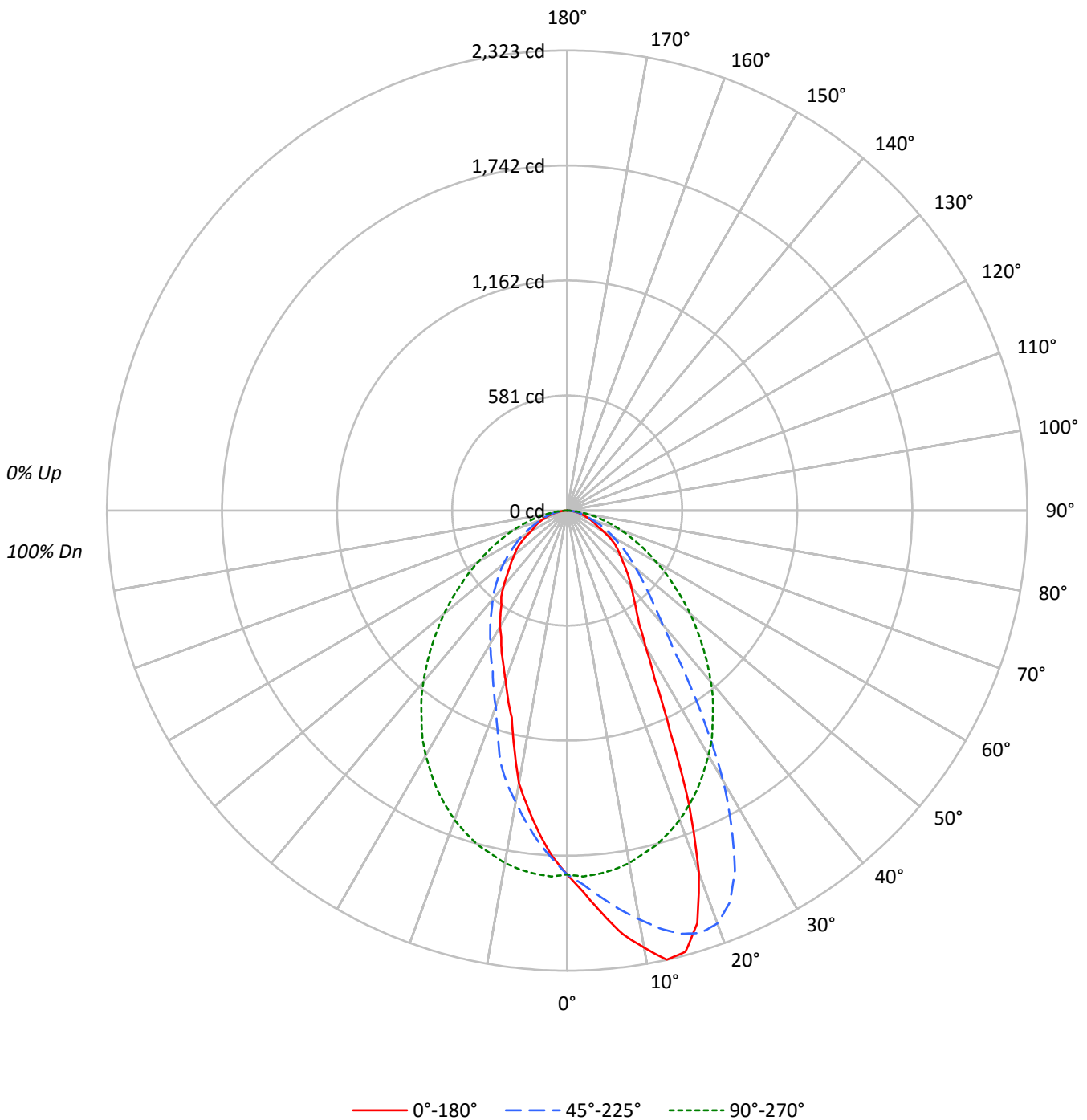
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	111	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	87	83	80	84	81	78	76
3	94	85	78	72	92	84	77	72	81	75	71	78	73	69	76	72	68	66
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	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	39
9	62	50	43	38	61	50	42	37	49	42	37	47	41	37	47	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°	34979	34979	34979
5°	39065	35197	31208
10°	43342	34950	27051
15°	45473	34438	21315
20°	39421	33679	18444
25°	25855	32641	16467
30°	17402	31379	14903
35°	14096	29792	13443
40°	12534	28065	12437
45°	11343	26041	11104
50°	10324	24032	10286
55°	9704	21805	9577
60°	8118	19760	8023
65°	6846	17947	7766
70°	6327	16028	7318
75°	5917	13946	6763
80°	5463	11474	6022
85°	5027	9070	5289



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.2	5.5
10°-20°	486.2	15.3
20°-30°	625.7	19.7
30°-40°	593.6	18.7
40°-50°	508.6	16.0
50°-60°	387.4	12.2
60°-70°	244.4	7.7
70°-80°	121.9	3.8
80°-90°	31.3	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°	1286.0	40.5
0°-40°	1879.6	59.2
0°-60°	2775.6	87.5
0°-90°	3173.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3173.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1836	1836	1836	1836	1836	
5°	2043	1959	1841	1678	1632	201
15°	2306	2212	1746	1307	1081	627
25°	1230	2004	1553	890	784	581
35°	606	1089	1281	675	578	386
45°	421	574	967	498	412	326
55°	292	357	657	338	288	257
65°	152	204	398	203	172	154
75°	80	90	190	103	92	85
85°	23	24	42	24	24	26
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°	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4
2.5°	1929.5	1931.4	1933.3	1928.9	1928.9	1925.1	1916.8	1910.4	1892.5	1890.0	1890.0
5°	2043.1	2041.8	2044.4	2036.1	2024.6	2022.0	2009.9	1994.0	1977.4	1958.9	1955.0
7.5°	2157.9	2150.3	2147.1	2150.9	2138.8	2122.2	2101.8	2082.7	2053.9	2030.3	2015.7
10°	2240.9	2262.0	2249.2	2226.9	2231.3	2201.3	2185.4	2157.9	2135.0	2094.8	2085.8
12.5°	2322.6	2327.7	2325.8	2315.6	2307.3	2288.8	2265.8	2242.8	2195.6	2160.5	2123.5
15°	2306.0	2318.1	2321.3	2317.5	2320.7	2319.4	2307.9	2288.1	2251.1	2211.5	2177.1
17.5°	2183.5	2197.5	2209.0	2219.2	2235.2	2266.4	2276.0	2279.8	2264.5	2236.4	2207.7
20°	1944.8	1930.8	1989.5	2019.5	2045.0	2108.8	2163.7	2184.7	2218.6	2217.9	2211.5
22.5°	1606.7	1614.3	1669.2	1706.2	1793.0	1856.8	1921.2	2015.0	2088.4	2142.6	2175.8
25°	1230.2	1254.4	1310.0	1358.4	1441.4	1560.1	1667.9	1793.0	1911.0	2004.2	2092.9
27.5°	957.1	960.3	1010.7	1059.8	1110.9	1213.6	1357.8	1507.8	1676.2	1797.4	1950.6
30°	791.2	787.4	805.9	833.3	875.4	950.7	1052.8	1199.6	1367.4	1576.7	1763.0
32.5°	673.8	675.1	687.8	706.3	739.5	784.2	846.1	958.4	1114.7	1319.5	1546.0
35°	606.2	605.5	615.7	630.4	645.1	677.6	725.5	788.0	897.1	1089.2	1312.5
37.5°	550.0	553.2	557.7	567.2	585.1	604.3	634.2	678.3	761.2	880.5	1080.9
40°	504.1	505.4	512.4	520.0	529.6	543.6	567.2	601.1	657.8	748.5	885.6
42.5°	462.0	463.2	467.7	474.7	481.7	495.8	514.3	542.4	585.7	651.5	758.7
45°	421.1	421.1	425.6	428.8	437.1	449.8	465.8	490.0	521.9	574.3	649.6
47.5°	381.6	381.6	384.8	390.5	396.2	406.4	423.0	443.5	466.4	509.2	576.2
50°	348.4	349.0	350.9	355.4	358.6	367.5	379.7	396.9	421.1	452.4	506.0
52.5°	321.6	320.9	323.5	324.8	326.7	332.4	340.7	355.4	376.5	402.6	444.7
55°	292.2	289.7	293.5	296.7	298.6	301.2	306.3	315.8	334.3	357.3	390.5
57.5°	257.8	256.5	258.4	261.6	267.4	273.7	276.9	283.3	292.9	310.7	345.8
60°	213.1	213.1	218.9	220.8	227.8	236.7	245.7	250.8	260.3	271.2	295.4
62.5°	173.6	174.2	176.1	178.0	181.2	192.7	206.1	218.9	227.8	238.0	252.0
65°	151.9	153.1	153.1	154.4	157.0	159.5	164.6	173.6	189.5	204.2	216.3
67.5°	132.7	132.7	133.4	134.6	135.3	138.5	140.4	144.8	148.0	164.6	181.2
70°	113.6	115.5	114.9	116.1	116.8	118.0	120.6	122.5	128.3	131.4	140.4
72.5°	95.7	97.0	97.0	97.6	99.5	99.5	101.5	103.4	106.6	109.1	112.9
75°	80.4	79.8	80.4	81.7	82.3	82.9	82.9	85.5	87.4	90.0	93.2
77.5°	65.1	65.7	65.7	65.7	65.7	67.0	67.0	68.3	70.2	71.5	73.4
80°	49.8	50.4	49.8	50.4	51.0	51.7	51.0	51.7	53.6	54.9	54.9
82.5°	35.7	35.7	36.4	36.4	36.4	36.4	37.6	37.6	38.9	38.3	38.9
85°	23.0	22.3	22.3	22.3	23.0	23.6	23.0	23.0	23.6	23.6	23.6
87.5°	10.2	10.8	10.8	10.8	10.8	10.8	10.8	11.5	10.8	11.5	10.8
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°	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4
2.5°	1891.2	1886.1	1881.7	1870.2	1864.4	1851.7	1849.8	1849.1	1832.5	1816.6	1812.1
5°	1944.8	1934.6	1919.3	1901.4	1882.9	1863.8	1851.0	1840.8	1815.3	1791.1	1777.0
7.5°	1997.8	1979.3	1955.0	1924.4	1898.3	1867.6	1846.6	1827.4	1792.3	1760.4	1739.4
10°	2058.4	2022.7	1987.6	1941.0	1904.6	1868.9	1835.7	1807.0	1766.2	1720.2	1687.7
12.5°	2096.1	2055.9	2004.2	1958.9	1909.1	1861.2	1814.0	1775.1	1725.3	1677.5	1637.3
15°	2129.2	2087.1	2028.4	1963.3	1902.7	1843.4	1792.3	1746.4	1683.9	1627.1	1579.9
17.5°	2159.9	2101.8	2041.2	1965.9	1898.9	1826.8	1762.3	1704.9	1636.6	1569.6	1516.1
20°	2173.3	2115.8	2043.1	1967.8	1884.9	1796.2	1725.3	1661.5	1586.9	1512.2	1448.4
22.5°	2165.0	2123.5	2040.5	1946.7	1861.2	1767.5	1685.1	1608.6	1523.7	1447.1	1370.6
25°	2121.6	2106.3	2029.7	1931.4	1834.4	1726.6	1634.1	1553.1	1458.6	1377.0	1296.6
27.5°	2041.8	2064.2	2009.9	1903.4	1798.7	1682.6	1581.8	1490.5	1394.2	1302.9	1222.5
30°	1915.5	1991.4	1971.0	1874.0	1753.4	1639.8	1523.1	1426.7	1322.1	1227.6	1148.5
32.5°	1742.6	1880.4	1910.4	1833.2	1707.5	1579.9	1456.1	1360.4	1250.0	1149.2	1072.6
35°	1556.9	1744.5	1830.6	1778.9	1653.9	1519.2	1392.9	1281.2	1171.5	1073.2	996.7
37.5°	1336.8	1586.9	1719.6	1713.9	1594.5	1457.3	1320.2	1209.8	1096.8	999.9	920.1
40°	1123.6	1400.6	1587.5	1629.0	1532.0	1380.8	1241.7	1128.7	1019.0	924.6	829.5
42.5°	932.2	1207.9	1448.4	1528.2	1456.1	1306.1	1166.4	1047.1	941.2	853.1	755.5
45°	784.8	1026.0	1279.3	1408.2	1365.5	1226.4	1079.0	966.7	866.5	789.3	696.1
47.5°	679.5	855.0	1109.6	1278.1	1272.9	1140.9	994.1	886.3	791.8	720.4	641.3
50°	592.1	740.2	947.5	1145.3	1161.9	1055.4	917.5	811.0	724.2	648.3	587.7
52.5°	513.6	629.1	810.3	997.9	1052.8	964.1	831.4	735.1	651.5	583.2	533.4
55°	447.3	541.7	683.4	860.8	932.2	867.1	748.5	656.6	588.3	529.6	484.9
57.5°	389.2	463.2	581.3	730.0	811.0	767.0	665.5	589.6	529.0	474.1	438.4
60°	335.0	393.1	489.4	608.7	700.6	671.9	588.3	518.7	469.0	423.0	389.9
62.5°	283.9	331.8	410.9	502.2	584.5	576.8	512.4	456.9	414.7	373.9	347.1
65°	236.7	273.1	337.5	413.5	481.1	486.8	437.7	398.2	359.2	326.1	301.2
67.5°	195.9	220.8	269.3	336.3	387.9	405.8	372.6	340.7	308.8	282.0	259.7
70°	158.9	178.0	211.2	262.9	309.5	328.6	311.4	287.8	261.0	239.9	221.4
72.5°	121.2	139.7	162.1	196.5	234.8	255.9	252.7	237.4	216.9	200.4	183.1
75°	97.0	102.7	119.3	144.8	176.1	194.0	198.4	189.5	172.3	158.9	148.7
77.5°	75.3	79.1	88.1	103.4	125.1	141.0	148.0	146.8	134.0	125.1	115.5
80°	57.4	59.3	63.2	68.9	84.2	100.2	104.6	104.6	96.3	93.2	83.6
82.5°	40.2	41.5	43.4	45.9	51.0	64.4	69.5	70.8	66.4	61.9	54.9
85°	24.9	24.2	25.5	27.4	28.7	32.5	40.2	41.5	40.2	35.1	33.2
87.5°	10.8	11.5	11.5	10.8	11.5	12.1	15.3	18.5	16.0	14.0	12.8
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°	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4	1836.4
2.5°	1803.8	1799.4	1791.1	1778.3	1770.6	1757.2	1748.3	1753.4	1754.7	1753.4	1752.1
5°	1761.7	1748.3	1729.8	1711.9	1695.3	1677.5	1667.3	1662.8	1653.9	1648.8	1646.2
7.5°	1713.9	1694.1	1667.9	1639.2	1612.4	1586.9	1575.4	1566.5	1549.9	1540.9	1532.6
10°	1659.0	1622.6	1596.4	1555.6	1530.7	1494.4	1469.5	1470.1	1445.2	1431.2	1421.0
12.5°	1598.4	1557.5	1509.7	1473.9	1436.9	1409.5	1378.2	1362.9	1336.1	1322.7	1290.8
15°	1530.1	1483.5	1437.6	1387.8	1352.7	1307.4	1264.0	1211.1	1168.3	1131.3	1121.1
17.5°	1457.3	1399.9	1354.6	1303.6	1248.7	1166.4	1112.8	1080.3	1054.7	1035.6	1020.3
20°	1382.1	1323.4	1274.2	1186.2	1105.1	1053.5	1016.4	992.8	966.0	945.0	933.5
22.5°	1302.9	1241.0	1169.6	1068.8	1010.1	971.1	939.2	911.2	895.2	879.9	869.7
25°	1228.9	1161.9	1051.5	983.9	932.9	889.5	866.5	849.9	830.8	808.4	798.2
27.5°	1151.7	1045.2	961.6	912.4	860.1	832.7	812.9	785.5	768.2	759.9	748.5
30°	1063.0	956.5	894.6	839.7	805.2	774.0	749.7	735.7	719.1	701.9	694.9
32.5°	964.1	884.4	825.7	782.3	747.2	721.7	703.8	678.9	668.1	659.1	642.5
35°	885.6	821.2	767.0	730.0	696.8	675.1	652.7	639.3	617.7	608.7	603.0
37.5°	814.2	758.0	717.2	676.4	650.8	625.3	612.5	590.2	581.9	567.9	556.4
40°	755.5	700.6	661.7	629.8	600.4	582.6	565.3	548.1	534.1	528.3	513.6
42.5°	695.5	653.4	614.5	578.7	561.5	542.4	519.4	507.9	493.2	483.0	475.4
45°	641.3	601.7	568.5	539.8	518.1	498.3	484.3	463.2	454.9	436.4	428.8
47.5°	593.4	555.1	523.2	495.1	473.4	462.0	441.5	423.0	411.6	398.8	387.9
50°	541.7	511.1	480.5	456.2	437.1	418.6	397.5	389.2	368.8	363.1	357.3
52.5°	494.5	465.8	438.4	414.7	395.6	377.7	359.9	348.4	336.3	330.5	326.7
55°	451.1	423.0	396.2	375.2	356.0	337.5	326.1	312.7	306.3	301.8	296.7
57.5°	406.4	380.9	359.9	338.2	319.0	303.7	289.7	282.0	275.6	270.5	263.5
60°	364.3	340.1	321.6	301.8	282.0	269.9	259.7	250.1	242.5	233.5	231.0
62.5°	319.7	299.3	282.7	263.5	246.9	236.1	226.5	217.6	208.0	194.0	190.1
65°	279.5	262.9	245.0	229.1	213.8	202.9	188.9	178.7	174.8	173.6	172.9
67.5°	242.5	226.5	211.2	194.6	180.6	168.5	160.2	158.9	156.3	155.7	153.8
70°	205.5	190.8	175.5	160.2	146.8	144.8	142.3	139.7	136.5	135.3	134.0
72.5°	172.3	157.0	141.7	130.2	126.3	123.8	121.2	118.7	116.8	115.5	114.9
75°	137.2	123.1	112.9	108.5	105.3	103.4	99.5	97.6	96.3	94.4	93.8
77.5°	104.6	95.7	90.6	88.1	84.2	82.3	79.8	77.8	75.9	75.9	74.7
80°	75.3	71.5	68.3	64.4	63.2	60.6	60.0	58.1	58.7	56.8	56.8
82.5°	54.2	49.1	46.6	45.3	44.0	42.1	41.5	40.8	40.8	39.6	39.6
85°	30.0	28.7	27.4	26.2	26.2	24.2	24.9	24.2	24.2	23.0	22.3
87.5°	12.1	11.5	10.2	10.2	10.2	9.6	9.6	8.9	8.9	8.9	8.3
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: P242416

CATALOG NUMBER: S122RDR-S1005D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1836.4	1836.4	1836.4	1836.4
2.5°	1745.1	1746.4	1744.5	1745.8
5°	1643.0	1635.4	1634.1	1632.2
7.5°	1522.4	1521.8	1518.0	1513.5
10°	1406.9	1403.8	1403.1	1398.6
12.5°	1271.7	1246.8	1244.2	1231.5
15°	1105.8	1101.9	1089.2	1080.9
17.5°	1013.3	1000.5	996.0	994.1
20°	924.6	913.1	911.2	909.9
22.5°	863.3	851.2	845.4	841.0
25°	791.8	787.4	784.8	783.5
27.5°	735.7	724.2	722.9	719.7
30°	689.1	685.9	681.5	677.6
32.5°	634.2	631.7	627.9	626.6
35°	596.6	587.7	583.8	578.1
37.5°	555.1	550.0	543.6	546.2
40°	505.4	502.2	500.9	500.2
42.5°	465.8	455.6	451.8	451.8
45°	425.6	417.3	411.6	412.2
47.5°	382.2	382.8	379.0	380.3
50°	352.9	349.0	346.5	347.1
52.5°	324.8	321.6	319.7	322.9
55°	293.5	289.7	289.0	288.4
57.5°	259.7	257.8	254.6	252.7
60°	222.7	217.6	211.2	210.6
62.5°	188.9	188.9	188.9	188.9
65°	171.6	171.0	171.6	172.3
67.5°	153.8	152.5	151.2	151.9
70°	132.7	132.1	131.4	131.4
72.5°	112.3	112.3	111.7	111.0
75°	93.2	91.9	91.9	91.9
77.5°	74.7	74.0	73.4	72.7
80°	56.2	55.5	54.9	54.9
82.5°	39.6	38.9	38.9	38.3
85°	23.0	23.6	23.0	24.2
87.5°	8.3	7.7	8.3	7.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)