

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: P242303

Luminaire Tested: **S122DR-S1005D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242303
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-S1005D840-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4296.1 lumens
Efficiency: N/A
Efficacy: 104.5 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

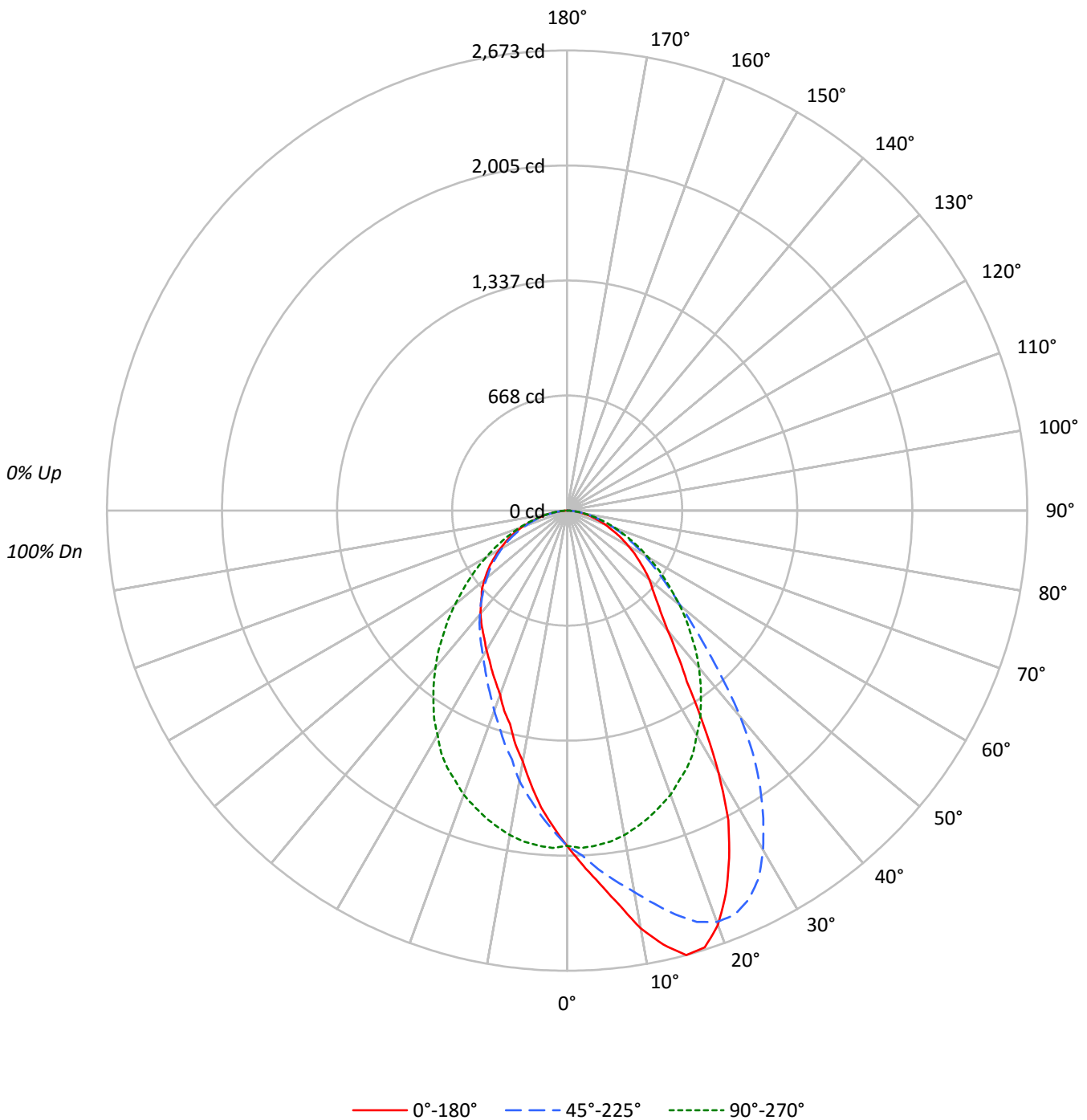
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242303

CATALOG NUMBER: S122DR-S1005D840-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P242303

CATALOG NUMBER: S122DR-S1005D840-X4F0-XX-UDD-A-W

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	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	64
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	58	55
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49
6	74	61	53	47	72	60	52	46	58	51	46	57	51	46	55	50	45	43
7	69	56	48	42	67	55	47	42	54	46	41	52	46	41	51	45	41	39
8	64	51	43	38	63	51	43	38	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	37094	37094	37094
5°	41585	37337	33086
10°	47654	37029	28633
15°	52718	36351	25296
20°	51914	35621	23059
25°	46811	34653	21643
30°	38684	33104	20609
35°	28194	31482	19874
40°	22518	29572	19467
45°	19678	27358	18910
50°	18497	25218	18541
55°	17049	23040	18046
60°	15623	20728	17280
65°	14233	18655	16527
70°	12920	16630	15421
75°	11459	14373	13659
80°	9850	11902	11002
85°	8829	8829	6535



TEST NUMBER: P242303

CATALOG NUMBER: S122DR-S1005D840-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	185.5	4.3
10°-20°	539.9	12.6
20°-30°	783.5	18.2
30°-40°	826.0	19.2
40°-50°	730.8	17.0
50°-60°	583.4	13.6
60°-70°	396.3	9.2
70°-80°	202.8	4.7
80°-90°	47.9	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°	1508.9	35.1
0°-40°	2334.9	54.3
0°-60°	3649.1	84.9
0°-90°	4296.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4296.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1947	1947	1947	1947	1947	
5°	2175	2093	1953	1774	1730	216
15°	2673	2429	1843	1402	1283	741
25°	2227	2494	1649	1096	1030	1010
35°	1212	1953	1354	880	855	785
45°	730	1156	1016	696	702	573
55°	513	665	694	523	543	460
65°	316	394	414	346	367	314
75°	156	191	195	175	186	166
85°	40	44	40	34	30	46
90°	0	0	0	0	0	



TEST NUMBER: P242303

CATALOG NUMBER: S122DR-S1005D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4
2.5°	2059.7	2060.4	2061.9	2050.0	2048.5	2048.5	2038.0	2029.0	2018.5	2004.3	2005.8
5°	2174.9	2183.2	2186.2	2177.2	2163.7	2162.2	2149.5	2128.5	2109.1	2093.4	2082.1
7.5°	2308.2	2311.2	2305.2	2294.7	2285.7	2268.5	2247.5	2227.3	2197.4	2170.5	2151.0
10°	2463.8	2468.3	2455.6	2438.4	2424.2	2403.2	2368.8	2333.6	2291.0	2249.8	2216.9
12.5°	2582.1	2594.8	2577.6	2579.1	2552.2	2521.5	2478.8	2465.3	2401.0	2339.6	2303.7
15°	2673.4	2672.7	2674.2	2659.9	2642.0	2637.5	2594.1	2546.9	2462.3	2428.7	2370.3
17.5°	2659.9	2670.4	2676.4	2671.9	2668.9	2662.2	2643.5	2608.3	2561.9	2505.0	2435.4
20°	2561.1	2576.1	2578.4	2595.6	2605.3	2618.0	2623.3	2615.0	2588.8	2543.2	2484.8
22.5°	2408.5	2410.0	2418.2	2447.4	2471.3	2508.0	2527.5	2564.1	2558.1	2541.7	2495.3
25°	2227.3	2219.9	2246.0	2259.5	2308.2	2359.1	2395.7	2436.1	2472.1	2493.8	2479.6
27.5°	2026.8	2011.0	2050.7	2085.9	2120.3	2169.7	2225.1	2291.0	2341.1	2409.2	2425.7
30°	1758.8	1765.6	1803.0	1841.1	1901.0	1978.9	2043.2	2117.3	2197.4	2276.0	2330.6
32.5°	1469.9	1500.6	1520.8	1584.4	1635.3	1724.4	1826.2	1923.5	2028.3	2120.3	2212.4
35°	1212.5	1242.4	1275.3	1318.0	1392.1	1478.2	1570.2	1695.2	1831.4	1953.4	2053.7
37.5°	1049.3	1044.1	1064.3	1095.7	1159.3	1233.4	1342.7	1469.9	1633.1	1768.5	1903.3
40°	905.6	902.6	916.1	944.5	990.2	1041.1	1133.9	1242.4	1391.3	1566.5	1734.9
42.5°	806.8	809.8	815.8	833.8	861.4	901.1	964.7	1053.0	1186.3	1348.7	1532.8
45°	730.5	735.7	743.9	753.7	771.6	806.1	845.0	910.8	1018.6	1156.3	1334.5
47.5°	670.6	672.1	681.1	690.1	700.5	721.5	755.9	797.8	880.2	997.7	1157.1
50°	624.2	619.0	624.9	631.7	642.9	656.4	677.3	716.3	767.1	857.7	985.7
52.5°	567.3	568.8	574.0	575.5	585.3	598.7	617.5	641.4	686.3	752.2	851.7
55°	513.4	517.2	520.2	524.7	533.6	543.4	558.3	576.3	612.2	665.4	743.2
57.5°	462.5	464.0	466.3	476.0	481.2	490.2	505.2	521.7	545.6	586.8	648.1
60°	410.1	410.1	416.1	419.9	427.4	436.3	447.6	463.3	484.2	516.4	563.6
62.5°	362.2	361.5	363.0	369.7	375.0	383.2	394.4	407.1	426.6	454.3	491.0
65°	315.8	314.3	318.8	320.3	326.3	334.5	343.5	357.8	373.5	394.4	428.9
67.5°	269.4	271.7	274.7	277.7	280.7	290.4	296.4	306.9	320.3	338.3	362.2
70°	232.0	232.0	232.0	234.3	238.8	243.2	249.2	257.5	270.2	285.2	306.1
72.5°	190.1	193.1	196.1	193.8	199.8	202.1	209.6	213.3	225.3	233.5	251.5
75°	155.7	155.7	155.7	159.4	161.7	163.9	168.4	172.9	178.9	190.9	200.6
77.5°	122.7	122.0	122.7	123.5	126.5	129.5	131.0	134.7	140.7	146.7	155.7
80°	89.8	91.3	92.1	93.6	93.6	95.1	95.8	101.0	104.8	108.5	113.8
82.5°	64.4	64.4	64.4	64.4	65.1	65.9	68.1	68.9	69.6	72.6	76.3
85°	40.4	39.7	39.7	41.2	40.4	40.4	41.9	43.4	43.4	44.2	46.4
87.5°	19.5	19.5	20.2	19.5	19.5	20.2	20.2	19.5	20.2	21.0	21.7
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: P242303

CATALOG NUMBER: S122DR-S1005D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4
2.5°	2011.0	2005.1	2001.3	1987.8	1975.9	1963.9	1960.1	1961.6	1945.2	1929.5	1922.7
5°	2076.2	2061.2	2047.0	2026.8	2002.8	1976.6	1963.1	1952.7	1926.5	1898.0	1881.6
7.5°	2135.3	2115.8	2090.4	2054.4	2021.5	1982.6	1958.6	1938.4	1901.8	1863.6	1840.4
10°	2188.4	2159.2	2124.1	2077.7	2035.0	1984.8	1949.7	1914.5	1869.6	1821.7	1791.7
12.5°	2234.1	2192.2	2157.7	2094.9	2042.5	1976.6	1933.2	1880.1	1832.2	1773.0	1743.8
15°	2311.9	2239.3	2173.4	2106.1	2044.0	1956.4	1910.0	1843.4	1781.3	1710.9	1677.2
17.5°	2369.5	2291.0	2189.2	2107.6	2038.7	1945.2	1878.6	1799.2	1728.9	1651.0	1606.1
20°	2417.4	2323.9	2212.4	2110.6	2023.8	1913.0	1838.9	1757.3	1671.3	1580.7	1531.3
22.5°	2445.9	2346.3	2236.3	2099.4	1993.8	1886.8	1788.8	1697.4	1609.9	1510.3	1457.9
25°	2447.4	2357.6	2240.8	2094.1	1969.9	1847.9	1735.6	1648.8	1543.3	1452.0	1376.4
27.5°	2422.7	2351.6	2238.6	2083.6	1942.2	1802.2	1680.2	1585.2	1473.7	1374.9	1299.3
30°	2368.0	2330.6	2221.3	2065.7	1907.8	1754.3	1616.6	1505.1	1394.3	1294.0	1216.2
32.5°	2283.5	2282.7	2189.9	2040.2	1871.1	1693.7	1550.0	1437.0	1311.3	1213.2	1139.9
35°	2167.5	2203.4	2142.8	1999.8	1823.2	1636.8	1482.6	1353.9	1226.7	1132.4	1062.8
37.5°	2020.0	2103.1	2079.1	1945.9	1761.8	1576.2	1408.6	1273.8	1151.8	1054.5	986.4
40°	1866.6	1980.4	1996.8	1882.3	1695.9	1503.6	1323.2	1189.3	1071.0	984.2	915.3
42.5°	1701.9	1839.6	1892.0	1806.0	1624.1	1427.3	1246.9	1106.9	990.2	906.4	847.2
45°	1514.1	1690.0	1771.5	1719.2	1542.5	1341.9	1156.3	1015.6	909.3	830.0	782.9
47.5°	1344.2	1535.0	1639.1	1614.4	1455.0	1255.9	1072.5	935.5	830.0	765.6	721.5
50°	1161.6	1359.2	1491.6	1497.6	1359.2	1162.3	978.2	851.0	755.9	696.8	662.4
52.5°	1002.9	1189.3	1336.7	1374.9	1252.1	1065.0	893.6	767.1	686.3	633.2	603.2
55°	868.9	1028.3	1188.5	1246.9	1145.9	966.2	805.3	693.8	615.2	577.8	550.8
57.5°	741.7	881.7	1033.6	1095.0	1030.6	872.7	717.0	619.0	552.3	518.7	497.7
60°	645.1	749.9	881.7	958.7	904.9	767.9	636.2	544.1	491.7	462.5	443.1
62.5°	555.3	645.1	751.4	820.3	797.1	669.8	555.3	476.8	433.3	406.4	393.7
65°	473.0	546.4	632.4	697.5	678.1	580.0	483.5	413.9	378.0	356.3	345.0
67.5°	402.7	458.8	520.2	580.0	563.6	491.0	409.4	353.3	325.6	306.1	299.4
70°	336.8	377.2	430.3	476.0	463.3	406.4	345.0	298.6	275.4	259.7	253.0
72.5°	273.9	305.4	342.8	378.0	370.5	325.6	276.9	244.7	228.3	214.1	208.8
75°	216.3	241.7	266.4	291.1	288.9	252.2	222.3	195.3	181.1	169.9	167.6
77.5°	169.1	184.9	202.8	218.5	214.8	190.9	166.2	149.7	138.5	131.0	130.2
80°	122.0	130.2	142.2	152.7	147.4	138.5	119.7	108.5	101.0	93.6	90.6
82.5°	80.1	88.3	94.3	98.8	95.1	86.8	77.1	70.4	66.6	62.1	61.4
85°	46.4	50.9	53.9	55.4	53.9	48.6	43.4	40.4	36.7	34.4	33.7
87.5°	22.5	22.5	22.5	23.9	21.7	21.7	18.7	16.5	15.7	15.0	13.5
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: P242303

CATALOG NUMBER: S122DR-S1005D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4	1947.4
2.5°	1915.2	1910.7	1895.0	1886.8	1873.3	1860.6	1852.4	1856.1	1859.1	1857.6	1855.4
5°	1866.6	1852.4	1830.7	1812.0	1798.5	1773.8	1763.3	1758.1	1753.6	1748.3	1743.1
7.5°	1812.7	1792.5	1761.8	1737.9	1713.9	1682.5	1666.8	1657.8	1648.0	1636.8	1626.3
10°	1754.3	1722.9	1690.0	1652.5	1622.6	1594.9	1570.2	1553.7	1538.8	1524.6	1514.1
12.5°	1693.0	1655.5	1612.9	1558.2	1524.6	1481.9	1483.4	1451.2	1425.8	1418.3	1405.6
15°	1627.1	1576.2	1524.6	1463.9	1437.7	1401.8	1379.4	1356.9	1336.7	1322.5	1318.7
17.5°	1555.2	1487.1	1437.0	1392.1	1349.4	1312.8	1293.3	1275.3	1258.1	1237.2	1236.4
20°	1470.7	1413.8	1357.7	1319.5	1275.3	1237.9	1212.5	1194.5	1180.3	1169.1	1159.3
22.5°	1390.6	1327.0	1276.8	1234.2	1190.8	1162.3	1143.6	1126.4	1115.2	1102.4	1093.5
25°	1303.8	1255.1	1199.0	1151.8	1115.9	1096.5	1080.0	1065.0	1057.5	1049.3	1038.8
27.5°	1229.7	1175.8	1120.4	1083.7	1050.8	1033.6	1020.9	1009.6	1002.9	997.7	990.9
30°	1150.3	1095.7	1054.5	1018.6	992.4	975.2	967.7	961.7	953.5	950.5	947.5
32.5°	1074.0	1026.1	992.4	962.5	937.8	928.1	921.3	916.1	910.1	907.1	900.4
35°	1002.9	961.7	927.3	910.1	889.9	880.2	874.9	867.4	861.4	858.5	857.7
37.5°	934.8	897.4	874.2	851.0	841.2	836.0	828.5	823.3	821.0	820.3	819.5
40°	868.9	839.7	819.5	801.6	797.8	788.8	782.9	778.4	778.4	779.1	778.4
42.5°	809.1	783.6	766.4	751.4	746.9	742.4	736.5	737.2	738.7	741.7	738.7
45°	748.4	729.7	717.0	709.5	701.3	696.0	695.3	697.5	698.3	699.0	701.3
47.5°	691.6	679.6	667.6	658.6	654.9	654.1	652.6	656.4	660.1	660.9	664.6
50°	642.2	627.9	618.2	613.0	610.0	608.5	610.0	614.5	617.5	621.2	623.4
52.5°	586.8	577.8	571.8	568.1	567.3	568.8	568.8	574.0	579.3	580.0	580.8
55°	536.6	529.1	527.6	520.9	523.9	523.2	526.9	529.9	534.4	538.9	539.6
57.5°	485.7	479.0	474.5	475.3	476.0	479.0	482.0	487.2	492.5	497.7	497.7
60°	434.8	431.8	429.6	429.6	431.1	435.6	439.3	444.6	447.6	450.6	452.8
62.5°	388.4	385.4	383.2	384.7	389.2	391.4	395.9	398.2	401.2	404.2	404.9
65°	339.0	337.5	339.8	341.3	342.0	345.8	351.0	353.3	356.3	357.8	363.0
67.5°	294.1	294.1	293.4	295.6	300.1	300.9	306.1	312.1	312.1	315.1	318.8
70°	248.5	250.0	251.5	253.0	256.7	258.2	262.0	264.2	267.2	269.4	271.7
72.5°	206.6	206.6	208.1	207.3	210.3	214.1	217.0	219.3	222.3	225.3	227.5
75°	165.4	165.4	166.9	167.6	171.4	175.1	174.4	175.9	178.9	181.9	183.4
77.5°	128.0	126.5	128.0	128.7	130.2	133.2	134.0	136.2	140.0	139.2	140.7
80°	92.1	89.8	92.1	92.8	92.8	96.5	96.5	98.0	100.3	98.0	100.3
82.5°	59.1	58.4	59.9	59.9	61.4	60.6	62.1	62.1	64.4	63.6	64.4
85°	32.9	32.2	32.9	32.2	32.9	33.7	33.7	32.9	32.9	34.4	32.2
87.5°	12.7	12.0	11.2	11.2	10.5	9.7	9.0	9.0	9.0	7.5	7.5
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: P242303

CATALOG NUMBER: S122DR-S1005D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1947.4	1947.4	1947.4	1947.4
2.5°	1847.9	1846.4	1846.4	1839.6
5°	1732.6	1730.4	1726.6	1730.4
7.5°	1623.4	1613.6	1612.1	1604.6
10°	1501.4	1495.4	1494.6	1480.4
12.5°	1408.6	1392.1	1395.8	1389.1
15°	1298.5	1298.5	1295.5	1282.8
17.5°	1219.9	1219.2	1212.5	1217.0
20°	1151.1	1146.6	1137.6	1137.6
22.5°	1086.0	1086.7	1077.0	1080.7
25°	1038.1	1032.1	1027.6	1029.8
27.5°	988.7	986.4	985.7	979.0
30°	946.8	939.3	940.8	937.0
32.5°	898.9	897.4	895.1	892.1
35°	856.2	857.0	853.2	854.7
37.5°	818.0	821.0	818.8	818.8
40°	780.6	780.6	780.6	782.9
42.5°	744.7	743.2	741.7	740.9
45°	702.8	705.0	705.8	702.0
47.5°	666.1	666.9	666.1	670.6
50°	627.2	625.7	627.2	625.7
52.5°	586.0	586.8	585.3	585.3
55°	542.6	544.1	543.4	543.4
57.5°	498.5	499.2	500.7	497.0
60°	452.1	455.8	455.0	453.6
62.5°	409.4	410.1	410.1	410.1
65°	365.2	366.7	364.5	366.7
67.5°	317.3	318.1	319.6	320.3
70°	273.2	272.4	274.7	276.9
72.5°	226.8	229.0	227.5	229.0
75°	181.9	184.1	183.4	185.6
77.5°	139.2	140.0	140.0	140.7
80°	100.3	98.8	97.3	100.3
82.5°	62.1	63.6	62.1	61.4
85°	32.2	31.4	29.9	29.9
87.5°	7.5	6.7	6.7	6.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)