

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: P242318

Luminaire Tested: **S122DR-S1005D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242318
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-S1005D940-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3793.5 lumens
Efficiency: N/A
Efficacy: 92.3 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

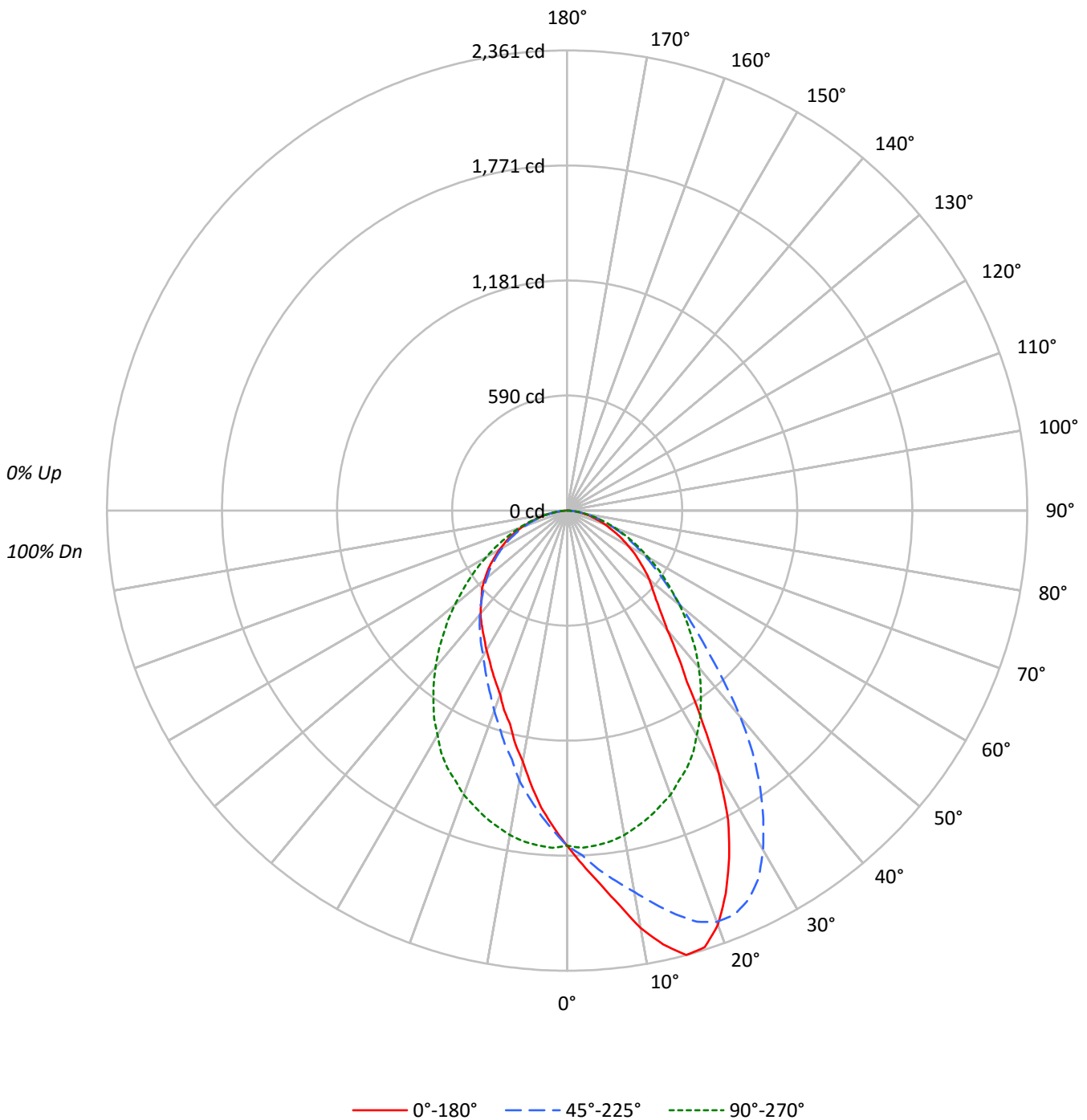
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242318

CATALOG NUMBER: S122DR-S1005D940-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P242318

CATALOG NUMBER: S122DR-S1005D940-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°	32754	32754	32754
5°	36721	32968	29214
10°	42079	32697	25283
15°	46550	32098	22336
20°	45841	31453	20361
25°	41334	30598	19113
30°	34157	29231	18198
35°	24895	27799	17549
40°	19882	26111	17189
45°	17375	24158	16699
50°	16334	22266	16372
55°	15057	20344	15934
60°	13798	18301	15257
65°	12570	16473	14594
70°	11411	14686	13617
75°	10119	12695	12062
80°	8699	10508	9719
85°	7802	7802	5770



TEST NUMBER: P242318

CATALOG NUMBER: S122DR-S1005D940-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.8	4.3
10°-20°	476.7	12.6
20°-30°	691.9	18.2
30°-40°	729.3	19.2
40°-50°	645.3	17.0
50°-60°	515.2	13.6
60°-70°	349.9	9.2
70°-80°	179.1	4.7
80°-90°	42.3	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°	1332.4	35.1
0°-40°	2061.7	54.3
0°-60°	3222.2	84.9
0°-90°	3793.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3793.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1720	1720	1720	1720	1720	
5°	1920	1848	1724	1566	1528	191
15°	2361	2144	1628	1238	1133	654
25°	1967	2202	1456	968	909	892
35°	1071	1725	1196	777	755	693
45°	645	1021	897	615	620	506
55°	453	588	613	462	480	406
65°	279	348	366	305	324	277
75°	138	168	172	155	164	147
85°	36	39	36	30	26	41
90°	0	0	0	0	0	



TEST NUMBER: P242318

CATALOG NUMBER: S122DR-S1005D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6
2.5°	1818.7	1819.4	1820.7	1810.1	1808.8	1808.8	1799.5	1791.6	1782.4	1769.8	1771.1
5°	1920.5	1927.7	1930.4	1922.5	1910.6	1909.2	1898.0	1879.5	1862.3	1848.4	1838.5
7.5°	2038.1	2040.8	2035.5	2026.2	2018.3	2003.1	1984.6	1966.7	1940.3	1916.5	1899.3
10°	2175.6	2179.5	2168.3	2153.1	2140.5	2122.0	2091.6	2060.6	2022.9	1986.6	1957.5
12.5°	2280.0	2291.2	2276.0	2277.3	2253.6	2226.5	2188.8	2176.9	2120.1	2065.9	2034.1
15°	2360.6	2360.0	2361.3	2348.7	2332.9	2328.9	2290.6	2248.9	2174.3	2144.5	2093.0
17.5°	2348.7	2358.0	2363.3	2359.3	2356.6	2350.7	2334.2	2303.1	2262.1	2211.9	2150.5
20°	2261.5	2274.7	2276.7	2291.9	2300.5	2311.7	2316.3	2309.1	2285.9	2245.6	2194.1
22.5°	2126.7	2128.0	2135.3	2161.0	2182.2	2214.6	2231.7	2264.1	2258.8	2244.3	2203.3
25°	1966.7	1960.1	1983.3	1995.2	2038.1	2083.1	2115.4	2151.1	2182.8	2202.0	2189.5
27.5°	1789.6	1775.7	1810.8	1841.8	1872.2	1915.9	1964.8	2022.9	2067.2	2127.3	2141.9
30°	1553.0	1559.0	1592.0	1625.7	1678.6	1747.3	1804.2	1869.6	1940.3	2009.7	2057.9
32.5°	1297.9	1325.0	1342.9	1399.1	1444.0	1522.6	1612.5	1698.4	1790.9	1872.2	1953.5
35°	1070.6	1097.0	1126.1	1163.8	1229.2	1305.2	1386.5	1496.9	1617.1	1724.9	1813.4
37.5°	926.5	921.9	939.8	967.5	1023.7	1089.1	1185.6	1297.9	1442.0	1561.6	1680.6
40°	799.6	797.0	808.9	834.0	874.3	919.3	1001.2	1097.0	1228.6	1383.2	1531.9
42.5°	712.4	715.1	720.3	736.2	760.7	795.7	851.9	929.8	1047.5	1190.9	1353.5
45°	645.0	649.6	656.9	665.5	681.4	711.8	746.1	804.3	899.4	1021.0	1178.3
47.5°	592.1	593.5	601.4	609.3	618.6	637.1	667.5	704.5	777.2	880.9	1021.7
50°	551.2	546.5	551.8	557.8	567.7	579.6	598.1	632.4	677.4	757.4	870.4
52.5°	500.9	502.3	506.9	508.2	516.8	528.7	545.2	566.4	606.0	664.2	752.1
55°	453.4	456.7	459.3	463.3	471.2	479.8	493.0	508.9	540.6	587.5	656.2
57.5°	408.4	409.7	411.7	420.3	424.9	432.9	446.1	460.6	481.8	518.1	572.3
60°	362.2	362.2	367.4	370.7	377.4	385.3	395.2	409.1	427.6	456.0	497.6
62.5°	319.9	319.2	320.5	326.5	331.1	338.4	348.3	359.5	376.7	401.1	433.5
65°	278.9	277.6	281.5	282.9	288.1	295.4	303.3	315.9	329.8	348.3	378.7
67.5°	237.9	239.9	242.5	245.2	247.8	256.4	261.7	271.0	282.9	298.7	319.9
70°	204.9	204.9	204.9	206.9	210.8	214.8	220.1	227.3	238.6	251.8	270.3
72.5°	167.9	170.5	173.1	171.2	176.5	178.4	185.0	188.3	198.9	206.2	222.1
75°	137.5	137.5	137.5	140.8	142.7	144.7	148.7	152.7	157.9	168.5	177.1
77.5°	108.4	107.7	108.4	109.0	111.7	114.3	115.7	119.0	124.2	129.5	137.5
80°	79.3	80.6	81.3	82.6	82.6	83.9	84.6	89.2	92.5	95.8	100.5
82.5°	56.8	56.8	56.8	56.8	57.5	58.2	60.1	60.8	61.5	64.1	67.4
85°	35.7	35.0	35.0	36.3	35.7	35.7	37.0	38.3	38.3	39.0	41.0
87.5°	17.2	17.2	17.8	17.2	17.2	17.8	17.8	17.2	17.8	18.5	19.2
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: P242318

CATALOG NUMBER: S122DR-S1005D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6
2.5°	1775.7	1770.5	1767.2	1755.3	1744.7	1734.1	1730.8	1732.1	1717.6	1703.7	1697.8
5°	1833.2	1820.0	1807.5	1789.6	1768.5	1745.3	1733.5	1724.2	1701.1	1676.0	1661.4
7.5°	1885.5	1868.3	1845.8	1814.1	1785.0	1750.6	1729.5	1711.6	1679.3	1645.6	1625.1
10°	1932.4	1906.6	1875.5	1834.6	1796.9	1752.6	1721.6	1690.5	1650.8	1608.5	1582.1
12.5°	1972.7	1935.7	1905.3	1849.8	1803.5	1745.3	1707.0	1660.1	1617.8	1565.6	1539.8
15°	2041.4	1977.3	1919.2	1859.7	1804.8	1727.5	1686.5	1627.7	1572.9	1510.7	1481.0
17.5°	2092.3	2022.9	1933.0	1861.0	1800.2	1717.6	1658.8	1588.7	1526.6	1457.9	1418.2
20°	2134.6	2052.0	1953.5	1863.6	1787.0	1689.2	1623.7	1551.7	1475.7	1395.7	1352.1
22.5°	2159.7	2071.8	1974.7	1853.7	1760.5	1666.0	1579.5	1498.8	1421.5	1333.6	1287.4
25°	2161.0	2081.7	1978.6	1849.1	1739.4	1631.7	1532.5	1455.9	1362.7	1282.1	1215.3
27.5°	2139.2	2076.4	1976.7	1839.9	1714.9	1591.4	1483.6	1399.7	1301.2	1214.0	1147.3
30°	2091.0	2057.9	1961.5	1824.0	1684.5	1549.1	1427.5	1329.0	1231.2	1142.6	1073.9
32.5°	2016.3	2015.6	1933.7	1801.5	1652.2	1495.5	1368.7	1268.9	1157.8	1071.3	1006.5
35°	1913.9	1945.6	1892.1	1765.8	1609.9	1445.3	1309.2	1195.5	1083.2	999.9	938.4
37.5°	1783.7	1857.0	1835.9	1718.3	1555.7	1391.8	1243.8	1124.8	1017.1	931.2	871.0
40°	1648.2	1748.7	1763.2	1662.1	1497.5	1327.7	1168.4	1050.1	945.7	869.0	808.2
42.5°	1502.8	1624.4	1670.7	1594.7	1434.1	1260.3	1101.0	977.4	874.3	800.3	748.1
45°	1336.9	1492.2	1564.3	1518.0	1362.0	1184.9	1021.0	896.8	803.0	732.9	691.3
47.5°	1186.9	1355.4	1447.3	1425.5	1284.7	1108.9	947.0	826.1	732.9	676.1	637.1
50°	1025.7	1200.1	1317.1	1322.4	1200.1	1026.3	863.8	751.4	667.5	615.3	584.9
52.5°	885.6	1050.1	1180.3	1214.0	1105.6	940.4	789.1	677.4	606.0	559.1	532.7
55°	767.3	908.0	1049.5	1101.0	1011.8	853.2	711.1	612.6	543.2	510.2	486.4
57.5°	654.9	778.5	912.7	966.8	910.0	770.6	633.1	546.5	487.7	458.0	439.5
60°	569.7	662.2	778.5	846.6	799.0	678.0	561.7	480.4	434.2	408.4	391.2
62.5°	490.4	569.7	663.5	724.3	703.8	591.5	490.4	421.0	382.6	358.9	347.6
65°	417.7	482.4	558.4	615.9	598.7	512.2	426.9	365.5	333.7	314.6	304.7
67.5°	355.5	405.1	459.3	512.2	497.6	433.5	361.5	311.9	287.5	270.3	264.3
70°	297.4	333.1	380.0	420.3	409.1	358.9	304.7	263.7	243.2	229.3	223.4
72.5°	241.9	269.6	302.7	333.7	327.1	287.5	244.5	216.1	201.6	189.0	184.4
75°	191.0	213.5	235.3	257.1	255.1	222.7	196.3	172.5	159.9	150.0	148.0
77.5°	149.4	163.2	179.1	193.0	189.7	168.5	146.7	132.2	122.3	115.7	115.0
80°	107.7	115.0	125.6	134.8	130.2	122.3	105.7	95.8	89.2	82.6	80.0
82.5°	70.7	78.0	83.3	87.2	83.9	76.7	68.1	62.1	58.8	54.9	54.2
85°	41.0	44.9	47.6	48.9	47.6	43.0	38.3	35.7	32.4	30.4	29.7
87.5°	19.8	19.8	19.8	21.1	19.2	19.2	16.5	14.5	13.9	13.2	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



TEST NUMBER: P242318

CATALOG NUMBER: S122DR-S1005D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6	1719.6
2.5°	1691.2	1687.2	1673.3	1666.0	1654.1	1642.9	1635.6	1638.9	1641.6	1640.3	1638.3
5°	1648.2	1635.6	1616.5	1600.0	1588.1	1566.3	1557.0	1552.4	1548.4	1543.8	1539.2
7.5°	1600.6	1582.8	1555.7	1534.5	1513.4	1485.6	1471.7	1463.8	1455.2	1445.3	1436.1
10°	1549.1	1521.3	1492.2	1459.2	1432.8	1408.3	1386.5	1372.0	1358.7	1346.2	1336.9
12.5°	1494.9	1461.8	1424.2	1375.9	1346.2	1308.5	1309.8	1281.4	1259.0	1252.3	1241.1
15°	1436.7	1391.8	1346.2	1292.7	1269.5	1237.8	1218.0	1198.2	1180.3	1167.8	1164.4
17.5°	1373.3	1313.1	1268.9	1229.2	1191.5	1159.2	1142.0	1126.1	1110.9	1092.4	1091.8
20°	1298.6	1248.4	1198.8	1165.1	1126.1	1093.1	1070.6	1054.7	1042.2	1032.3	1023.7
22.5°	1227.9	1171.7	1127.4	1089.8	1051.4	1026.3	1009.8	994.6	984.7	973.5	965.5
25°	1151.2	1108.3	1058.7	1017.1	985.4	968.2	953.6	940.4	933.8	926.5	917.3
27.5°	1085.8	1038.2	989.3	956.9	927.9	912.7	901.4	891.5	885.6	880.9	875.0
30°	1015.8	967.5	931.2	899.4	876.3	861.1	854.5	849.2	841.9	839.3	836.7
32.5°	948.3	906.0	876.3	849.9	828.1	819.5	813.5	808.9	803.6	801.0	795.0
35°	885.6	849.2	818.8	803.6	785.8	777.2	772.6	765.9	760.7	758.0	757.4
37.5°	825.4	792.4	771.9	751.4	742.8	738.2	731.6	727.0	725.0	724.3	723.6
40°	767.3	741.5	723.6	707.8	704.5	696.6	691.3	687.3	687.3	688.0	687.3
42.5°	714.4	691.9	676.7	663.5	659.5	655.6	650.3	651.0	652.3	654.9	652.3
45°	660.9	644.3	633.1	626.5	619.2	614.6	613.9	615.9	616.6	617.2	619.2
47.5°	610.6	600.1	589.5	581.6	578.3	577.6	576.3	579.6	582.9	583.5	586.8
50°	567.0	554.5	545.9	541.2	538.6	537.3	538.6	542.6	545.2	548.5	550.5
52.5°	518.1	510.2	504.9	501.6	500.9	502.3	502.3	506.9	511.5	512.2	512.8
55°	473.8	467.2	465.9	460.0	462.6	461.9	465.2	467.9	471.9	475.8	476.5
57.5°	428.9	423.0	419.0	419.7	420.3	423.0	425.6	430.2	434.9	439.5	439.5
60°	384.0	381.3	379.3	379.3	380.7	384.6	387.9	392.6	395.2	397.8	399.8
62.5°	343.0	340.3	338.4	339.7	343.7	345.6	349.6	351.6	354.2	356.9	357.5
65°	299.4	298.1	300.0	301.4	302.0	305.3	309.9	311.9	314.6	315.9	320.5
67.5°	259.7	259.7	259.1	261.0	265.0	265.7	270.3	275.6	275.6	278.2	281.5
70°	219.4	220.7	222.1	223.4	226.7	228.0	231.3	233.3	235.9	237.9	239.9
72.5°	182.4	182.4	183.7	183.1	185.7	189.0	191.7	193.6	196.3	198.9	200.9
75°	146.1	146.1	147.4	148.0	151.3	154.6	154.0	155.3	157.9	160.6	161.9
77.5°	113.0	111.7	113.0	113.7	115.0	117.6	118.3	120.3	123.6	122.9	124.2
80°	81.3	79.3	81.3	81.9	81.9	85.3	85.3	86.6	88.6	86.6	88.6
82.5°	52.2	51.5	52.9	52.9	54.2	53.5	54.9	54.9	56.8	56.2	56.8
85°	29.1	28.4	29.1	28.4	29.1	29.7	29.7	29.1	29.1	30.4	28.4
87.5°	11.2	10.6	9.9	9.9	9.3	8.6	7.9	7.9	7.9	6.6	6.6
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: P242318

CATALOG NUMBER: S122DR-S1005D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1719.6	1719.6	1719.6	1719.6
2.5°	1631.7	1630.4	1630.4	1624.4
5°	1529.9	1527.9	1524.6	1527.9
7.5°	1433.4	1424.8	1423.5	1416.9
10°	1325.7	1320.4	1319.8	1307.2
12.5°	1243.8	1229.2	1232.5	1226.6
15°	1146.6	1146.6	1144.0	1132.7
17.5°	1077.2	1076.6	1070.6	1074.6
20°	1016.4	1012.4	1004.5	1004.5
22.5°	958.9	959.6	951.0	954.3
25°	916.6	911.3	907.4	909.4
27.5°	873.0	871.0	870.4	864.4
30°	836.0	829.4	830.7	827.4
32.5°	793.7	792.4	790.4	787.8
35°	756.0	756.7	753.4	754.7
37.5°	722.3	725.0	723.0	723.0
40°	689.3	689.3	689.3	691.3
42.5°	657.6	656.2	654.9	654.3
45°	620.6	622.5	623.2	619.9
47.5°	588.2	588.8	588.2	592.1
50°	553.8	552.5	553.8	552.5
52.5°	517.5	518.1	516.8	516.8
55°	479.1	480.4	479.8	479.8
57.5°	440.1	440.8	442.1	438.8
60°	399.2	402.5	401.8	400.5
62.5°	361.5	362.2	362.2	362.2
65°	322.5	323.8	321.8	323.8
67.5°	280.2	280.9	282.2	282.9
70°	241.2	240.6	242.5	244.5
72.5°	200.2	202.2	200.9	202.2
75°	160.6	162.6	161.9	163.9
77.5°	122.9	123.6	123.6	124.2
80°	88.6	87.2	85.9	88.6
82.5°	54.9	56.2	54.9	54.2
85°	28.4	27.8	26.4	26.4
87.5°	6.6	5.9	5.9	5.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)