

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: P242313

Luminaire Tested: **S122DR-S1005D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242313
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-S1005D935-X4F0-XX-UDD-A-W
Description: DEFINE 2 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: 3662.8 lumens
Efficiency: N/A
Efficacy: 89.1 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

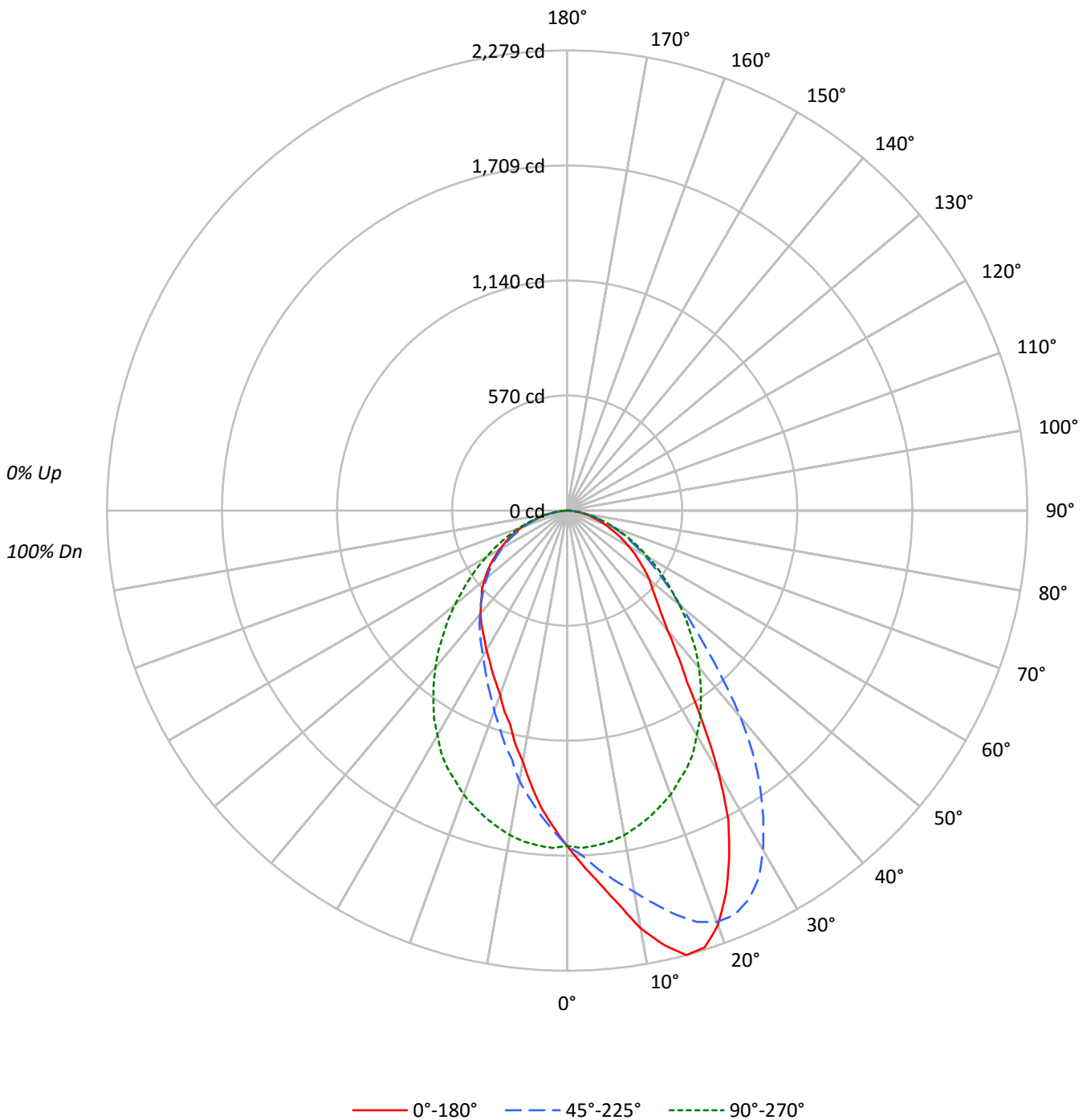
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242313

CATALOG NUMBER: S122DR-S1005D935-X4F0-XX-UDD-A-W

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	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°	31627	31627	31627
5°	35455	31832	28208
10°	40629	31571	24413
15°	44947	30993	21567
20°	44262	30371	19660
25°	39911	29543	18453
30°	32981	28223	17571
35°	24037	26841	16944
40°	19198	25213	16597
45°	16777	23325	16122
50°	15771	21499	15809
55°	14535	19643	15386
60°	13322	17672	14731
65°	12138	15905	14094
70°	11016	14179	13149
75°	9766	12254	11650
80°	8402	10146	9379
85°	7540	7540	5573



TEST NUMBER: P242313

CATALOG NUMBER: S122DR-S1005D935-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	158.2	4.3
10°-20°	460.3	12.6
20°-30°	668.0	18.2
30°-40°	704.2	19.2
40°-50°	623.1	17.0
50°-60°	497.4	13.6
60°-70°	337.9	9.2
70°-80°	172.9	4.7
80°-90°	40.9	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°	1286.5	35.1
0°-40°	1990.7	54.3
0°-60°	3111.2	84.9
0°-90°	3662.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3662.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1660	1660	1660	1660	1660	
5°	1854	1785	1665	1512	1475	184
15°	2279	2071	1572	1195	1094	632
25°	1899	2126	1406	935	878	861
35°	1034	1666	1154	750	729	669
45°	623	986	866	593	598	488
55°	438	567	592	446	463	392
65°	269	336	353	295	313	267
75°	133	163	166	149	158	141
85°	34	38	34	29	26	39
90°	0	0	0	0	0	



TEST NUMBER: P242313

CATALOG NUMBER: S122DR-S1005D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4
2.5°	1756.1	1756.7	1758.0	1747.8	1746.5	1746.5	1737.6	1729.9	1721.0	1708.8	1710.1
5°	1854.3	1861.4	1863.9	1856.3	1844.8	1843.5	1832.6	1814.8	1798.2	1784.8	1775.2
7.5°	1967.9	1970.5	1965.4	1956.4	1948.8	1934.1	1916.2	1899.0	1873.5	1850.5	1833.9
10°	2100.6	2104.5	2093.6	2078.9	2066.8	2049.0	2019.6	1989.6	1953.2	1918.1	1890.1
12.5°	2201.5	2212.3	2197.6	2198.9	2175.9	2149.8	2113.4	2101.9	2047.0	1994.7	1964.1
15°	2279.3	2278.7	2280.0	2267.8	2252.5	2248.7	2211.7	2171.5	2099.4	2070.7	2020.9
17.5°	2267.8	2276.8	2281.9	2278.0	2275.5	2269.7	2253.8	2223.8	2184.2	2135.7	2076.4
20°	2183.6	2196.4	2198.3	2213.0	2221.2	2232.1	2236.6	2229.5	2207.2	2168.3	2118.5
22.5°	2053.4	2054.7	2061.7	2086.6	2107.0	2138.3	2154.9	2186.2	2181.0	2167.0	2127.4
25°	1899.0	1892.6	1915.0	1926.4	1967.9	2011.3	2042.6	2077.0	2107.7	2126.2	2114.0
27.5°	1728.0	1714.6	1748.4	1778.4	1807.8	1849.9	1897.1	1953.2	1996.0	2054.1	2068.1
30°	1499.5	1505.3	1537.2	1569.7	1620.8	1687.2	1742.0	1805.2	1873.5	1940.5	1987.1
32.5°	1253.2	1279.4	1296.6	1350.9	1394.3	1470.2	1557.0	1639.9	1729.3	1807.8	1886.2
35°	1033.7	1059.3	1087.3	1123.7	1186.9	1260.3	1338.7	1445.3	1561.4	1665.5	1751.0
37.5°	894.6	890.2	907.4	934.2	988.4	1051.6	1144.8	1253.2	1392.3	1507.8	1622.7
40°	772.1	769.6	781.0	805.3	844.2	887.6	966.7	1059.3	1186.2	1335.6	1479.1
42.5°	687.9	690.4	695.5	710.9	734.5	768.3	822.5	897.8	1011.4	1149.9	1306.8
45°	622.8	627.3	634.3	642.6	657.9	687.2	720.4	776.6	868.5	985.9	1137.7
47.5°	571.7	573.0	580.7	588.3	597.3	615.1	644.5	680.2	750.4	850.6	986.5
50°	532.2	527.7	532.8	538.6	548.1	559.6	577.5	610.7	654.1	731.3	840.4
52.5°	483.7	485.0	489.4	490.7	499.0	510.5	526.4	546.9	585.1	641.3	726.2
55°	437.7	440.9	443.5	447.3	455.0	463.3	476.0	491.3	522.0	567.3	633.6
57.5°	394.3	395.6	397.5	405.8	410.3	418.0	430.7	444.8	465.2	500.3	552.6
60°	349.7	349.7	354.8	358.0	364.4	372.0	381.6	395.0	412.9	440.3	480.5
62.5°	308.8	308.2	309.5	315.2	319.7	326.7	336.3	347.1	363.7	387.3	418.6
65°	269.3	268.0	271.8	273.1	278.2	285.2	292.9	305.0	318.4	336.3	365.6
67.5°	229.7	231.6	234.2	236.7	239.3	247.6	252.7	261.6	273.1	288.4	308.8
70°	197.8	197.8	197.8	199.7	203.6	207.4	212.5	219.5	230.4	243.1	261.0
72.5°	162.1	164.6	167.2	165.3	170.4	172.3	178.7	181.9	192.1	199.1	214.4
75°	132.7	132.7	132.7	135.9	137.8	139.7	143.6	147.4	152.5	162.7	171.0
77.5°	104.6	104.0	104.6	105.3	107.8	110.4	111.7	114.9	120.0	125.1	132.7
80°	76.6	77.8	78.5	79.8	79.8	81.0	81.7	86.1	89.3	92.5	97.0
82.5°	54.9	54.9	54.9	54.9	55.5	56.2	58.1	58.7	59.3	61.9	65.1
85°	34.5	33.8	33.8	35.1	34.5	34.5	35.7	37.0	37.0	37.6	39.6
87.5°	16.6	16.6	17.2	16.6	16.6	17.2	17.2	16.6	17.2	17.9	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



TEST NUMBER: P242313

CATALOG NUMBER: S122DR-S1005D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4
2.5°	1714.6	1709.5	1706.3	1694.8	1684.6	1674.4	1671.2	1672.5	1658.4	1645.0	1639.3
5°	1770.1	1757.3	1745.2	1728.0	1707.6	1685.2	1673.8	1664.8	1642.5	1618.2	1604.2
7.5°	1820.5	1803.9	1782.2	1751.6	1723.5	1690.3	1669.9	1652.7	1621.4	1588.9	1569.1
10°	1865.8	1840.9	1810.9	1771.4	1735.0	1692.3	1662.3	1632.3	1594.0	1553.1	1527.6
12.5°	1904.7	1869.0	1839.7	1786.1	1741.4	1685.2	1648.2	1602.9	1562.1	1511.7	1486.8
15°	1971.1	1909.2	1853.1	1795.6	1742.7	1668.0	1628.4	1571.7	1518.7	1458.7	1430.0
17.5°	2020.2	1953.2	1866.5	1796.9	1738.2	1658.4	1601.6	1534.0	1474.0	1407.7	1369.4
20°	2061.1	1981.3	1886.2	1799.5	1725.4	1631.0	1567.8	1498.3	1424.9	1347.7	1305.6
22.5°	2085.3	2000.5	1906.7	1789.9	1699.9	1608.7	1525.1	1447.2	1372.6	1287.7	1243.0
25°	2086.6	2010.0	1910.5	1785.4	1679.5	1575.5	1479.8	1405.7	1315.8	1237.9	1173.5
27.5°	2065.5	2004.9	1908.6	1776.5	1655.9	1536.6	1432.5	1351.5	1256.4	1172.2	1107.8
30°	2019.0	1987.1	1893.9	1761.2	1626.5	1495.7	1378.3	1283.2	1188.8	1103.3	1036.9
32.5°	1946.9	1946.2	1867.1	1739.5	1595.3	1444.0	1321.5	1225.2	1118.0	1034.4	971.8
35°	1848.0	1878.6	1826.9	1705.0	1554.4	1395.5	1264.1	1154.3	1045.9	965.5	906.1
37.5°	1722.2	1793.1	1772.7	1659.1	1502.1	1343.9	1200.9	1086.1	982.0	899.1	841.0
40°	1591.4	1688.4	1702.5	1604.8	1445.9	1282.0	1128.2	1014.0	913.1	839.1	780.4
42.5°	1451.1	1568.5	1613.1	1539.7	1384.7	1216.9	1063.1	943.8	844.2	772.7	722.3
45°	1290.9	1440.8	1510.4	1465.7	1315.1	1144.1	985.9	865.9	775.3	707.7	667.5
47.5°	1146.0	1308.8	1397.5	1376.4	1240.5	1070.7	914.4	797.6	707.7	652.8	615.1
50°	990.3	1158.8	1271.7	1276.9	1158.8	991.0	834.0	725.5	644.5	594.1	564.7
52.5°	855.1	1014.0	1139.7	1172.2	1067.6	908.0	761.9	654.1	585.1	539.8	514.3
55°	740.8	876.8	1013.3	1063.1	976.9	823.8	686.6	591.5	524.5	492.6	469.6
57.5°	632.4	751.7	881.2	933.5	878.7	744.0	611.3	527.7	470.9	442.2	424.3
60°	550.0	639.4	751.7	817.4	771.5	654.7	542.4	463.9	419.2	394.3	377.8
62.5°	473.5	550.0	640.7	699.4	679.6	571.1	473.5	406.5	369.5	346.5	335.6
65°	403.3	465.8	539.2	594.7	578.1	494.5	412.2	352.9	322.2	303.7	294.2
67.5°	343.3	391.2	443.5	494.5	480.5	418.6	349.0	301.2	277.6	261.0	255.2
70°	287.1	321.6	366.9	405.8	395.0	346.5	294.2	254.6	234.8	221.4	215.7
72.5°	233.5	260.3	292.3	322.2	315.9	277.6	236.1	208.7	194.6	182.5	178.0
75°	184.4	206.1	227.2	248.2	246.3	215.0	189.5	166.5	154.4	144.9	142.9
77.5°	144.2	157.6	172.9	186.3	183.1	162.7	141.7	127.6	118.0	111.7	111.0
80°	104.0	111.0	121.2	130.2	125.7	118.0	102.1	92.5	86.1	79.8	77.2
82.5°	68.3	75.3	80.4	84.2	81.0	74.0	65.7	60.0	56.8	53.0	52.3
85°	39.6	43.4	45.9	47.2	45.9	41.5	37.0	34.5	31.3	29.4	28.7
87.5°	19.1	19.1	19.1	20.4	18.5	18.5	16.0	14.0	13.4	12.8	11.5
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: P242313

CATALOG NUMBER: S122DR-S1005D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4	1660.4
2.5°	1632.9	1629.1	1615.7	1608.7	1597.2	1586.3	1579.3	1582.5	1585.1	1583.8	1581.9
5°	1591.4	1579.3	1560.8	1544.9	1533.4	1512.3	1503.4	1498.9	1495.1	1490.6	1486.1
7.5°	1545.5	1528.3	1502.1	1481.7	1461.3	1434.5	1421.1	1413.4	1405.1	1395.5	1386.6
10°	1495.7	1468.9	1440.8	1408.9	1383.4	1359.8	1338.7	1324.7	1311.9	1299.8	1290.9
12.5°	1443.4	1411.5	1375.1	1328.5	1299.8	1263.4	1264.7	1237.3	1215.6	1209.2	1198.4
15°	1387.2	1343.9	1299.8	1248.1	1225.8	1195.2	1176.0	1156.9	1139.7	1127.5	1124.3
17.5°	1326.0	1267.9	1225.2	1186.9	1150.5	1119.2	1102.6	1087.3	1072.7	1054.8	1054.2
20°	1253.9	1205.4	1157.5	1125.0	1087.3	1055.4	1033.7	1018.4	1006.3	996.7	988.4
22.5°	1185.6	1131.4	1088.6	1052.2	1015.2	991.0	975.0	960.3	950.8	939.9	932.3
25°	1111.6	1070.1	1022.2	982.0	951.4	934.8	920.8	908.0	901.6	894.6	885.7
27.5°	1048.4	1002.5	955.2	924.0	895.9	881.2	870.4	860.8	855.1	850.6	844.9
30°	980.8	934.2	899.1	868.5	846.1	831.5	825.1	820.0	812.9	810.4	807.8
32.5°	915.7	874.8	846.1	820.6	799.5	791.3	785.5	781.0	775.9	773.4	767.6
35°	855.1	820.0	790.6	775.9	758.7	750.4	745.9	739.6	734.5	731.9	731.3
37.5°	797.0	765.1	745.3	725.5	717.2	712.8	706.4	701.9	700.0	699.4	698.7
40°	740.8	716.0	698.7	683.4	680.2	672.6	667.5	663.6	663.6	664.3	663.6
42.5°	689.8	668.1	653.4	640.7	636.8	633.0	627.9	628.5	629.8	632.4	629.8
45°	638.1	622.2	611.3	604.9	597.9	593.4	592.8	594.7	595.4	596.0	597.9
47.5°	589.6	579.4	569.2	561.5	558.3	557.7	556.4	559.6	562.8	563.4	566.6
50°	547.5	535.4	527.1	522.6	520.1	518.8	520.1	523.9	526.4	529.6	531.5
52.5°	500.3	492.6	487.5	484.3	483.7	485.0	485.0	489.4	493.9	494.5	495.2
55°	457.5	451.1	449.9	444.1	446.7	446.0	449.2	451.8	455.6	459.4	460.1
57.5°	414.1	408.4	404.6	405.2	405.8	408.4	410.9	415.4	419.9	424.3	424.3
60°	370.7	368.2	366.3	366.3	367.5	371.4	374.6	379.0	381.6	384.1	386.1
62.5°	331.2	328.6	326.7	328.0	331.8	333.7	337.6	339.5	342.0	344.6	345.2
65°	289.1	287.8	289.7	291.0	291.6	294.8	299.3	301.2	303.7	305.0	309.5
67.5°	250.8	250.8	250.1	252.1	255.9	256.5	261.0	266.1	266.1	268.6	271.8
70°	211.9	213.1	214.4	215.7	218.9	220.1	223.3	225.3	227.8	229.7	231.6
72.5°	176.1	176.1	177.4	176.8	179.3	182.5	185.1	187.0	189.5	192.1	194.0
75°	141.0	141.0	142.3	142.9	146.1	149.3	148.7	150.0	152.5	155.1	156.3
77.5°	109.1	107.8	109.1	109.8	111.0	113.6	114.2	116.1	119.3	118.7	120.0
80°	78.5	76.6	78.5	79.1	79.1	82.3	82.3	83.6	85.5	83.6	85.5
82.5°	50.4	49.8	51.0	51.0	52.3	51.7	53.0	53.0	54.9	54.2	54.9
85°	28.1	27.4	28.1	27.4	28.1	28.7	28.7	28.1	28.1	29.4	27.4
87.5°	10.8	10.2	9.6	9.6	8.9	8.3	7.7	7.7	7.7	6.4	6.4
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: P242313

CATALOG NUMBER: S122DR-S1005D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1660.4	1660.4	1660.4	1660.4
2.5°	1575.5	1574.2	1574.2	1568.5
5°	1477.2	1475.3	1472.1	1475.3
7.5°	1384.1	1375.8	1374.5	1368.1
10°	1280.0	1274.9	1274.3	1262.2
12.5°	1200.9	1186.9	1190.1	1184.3
15°	1107.1	1107.1	1104.6	1093.7
17.5°	1040.1	1039.5	1033.7	1037.6
20°	981.4	977.6	969.9	969.9
22.5°	925.9	926.5	918.2	921.4
25°	885.1	879.9	876.1	878.0
27.5°	842.9	841.0	840.4	834.6
30°	807.2	800.8	802.1	798.9
32.5°	766.4	765.1	763.2	760.6
35°	730.0	730.6	727.4	728.7
37.5°	697.4	700.0	698.1	698.1
40°	665.5	665.5	665.5	667.5
42.5°	634.9	633.6	632.4	631.7
45°	599.2	601.1	601.7	598.5
47.5°	567.9	568.6	567.9	571.7
50°	534.7	533.5	534.7	533.5
52.5°	499.6	500.3	499.0	499.0
55°	462.6	463.9	463.3	463.3
57.5°	425.0	425.6	426.9	423.7
60°	385.4	388.6	388.0	386.7
62.5°	349.0	349.7	349.7	349.7
65°	311.4	312.7	310.8	312.7
67.5°	270.6	271.2	272.5	273.1
70°	232.9	232.3	234.2	236.1
72.5°	193.3	195.3	194.0	195.3
75°	155.1	157.0	156.3	158.3
77.5°	118.7	119.3	119.3	120.0
80°	85.5	84.2	83.0	85.5
82.5°	53.0	54.2	53.0	52.3
85°	27.4	26.8	25.5	25.5
87.5°	6.4	5.7	5.7	5.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)