

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: P243168

Luminaire Tested: **S122DR-H1005D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243168
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-58)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DR-H1005D930-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3438.4 lumens
Efficiency: N/A
Efficacy: 91.2 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

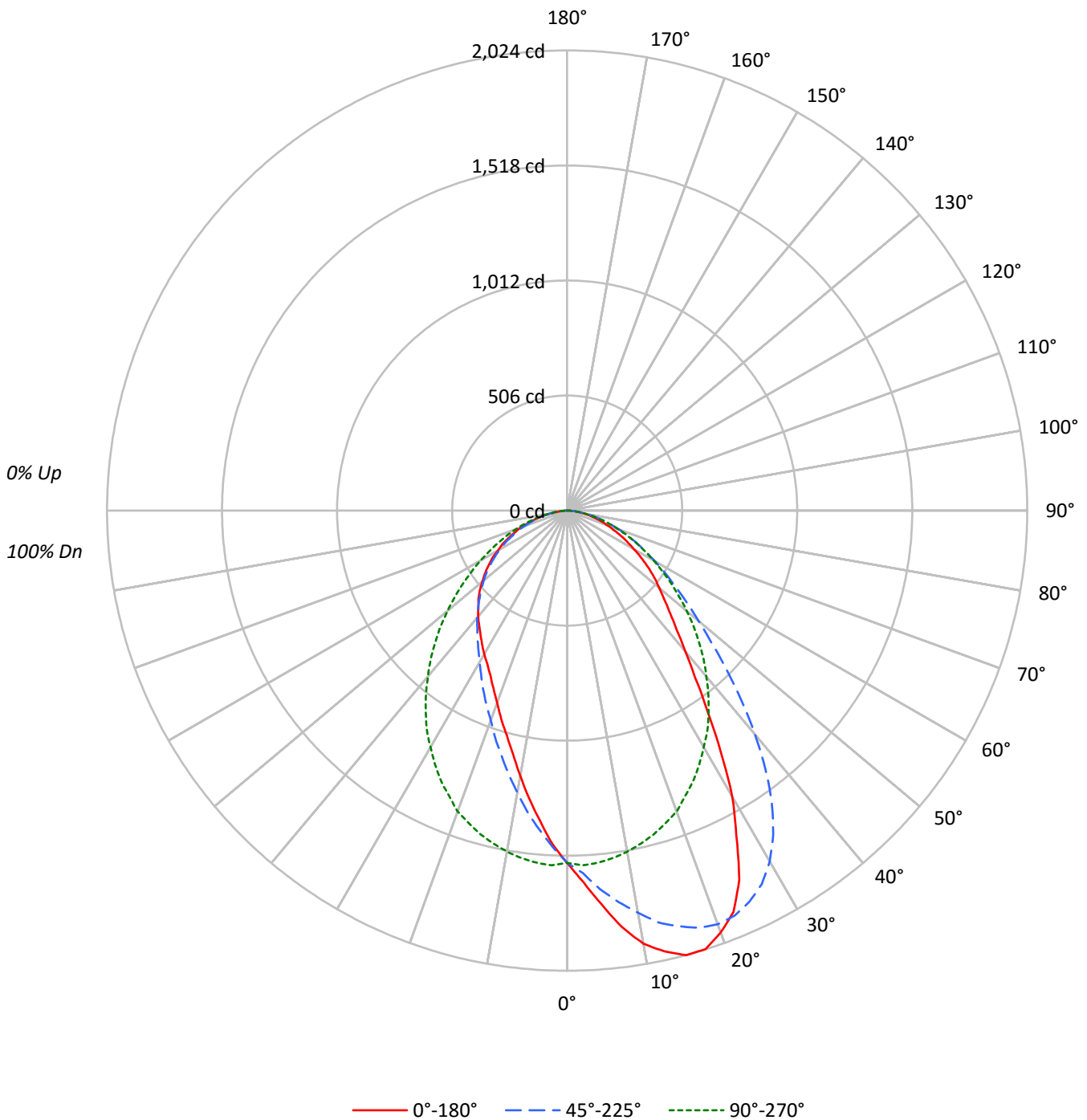
Input Watts (W): 37.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	73	69	66	63
4	86	74	66	60	83	73	66	60	71	64	59	68	63	58	66	61	57	55
5	79	67	59	52	77	66	58	52	64	57	52	62	56	51	60	55	51	49
6	73	61	52	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43
7	68	56	47	41	67	55	47	41	53	46	41	52	46	41	51	45	40	39
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35
9	60	47	39	34	58	46	39	34	45	38	34	44	38	34	43	38	33	32
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	29516	29516	29516
5°	33247	29727	26185
10°	37424	29461	22916
15°	39920	29065	20197
20°	40036	28538	18227
25°	37654	27589	16801
30°	31962	26437	16045
35°	24990	25204	15442
40°	20079	23686	15143
45°	17272	22121	14861
50°	15670	20358	14446
55°	14436	18550	14054
60°	12975	16712	13413
65°	11682	15018	12769
70°	10414	13349	11946
75°	9369	11481	10465
80°	8183	9247	8183
85°	7015	6884	4502



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.6	4.3
10°-20°	424.3	12.3
20°-30°	617.1	17.9
30°-40°	661.9	19.3
40°-50°	593.3	17.3
50°-60°	472.9	13.8
60°-70°	319.9	9.3
70°-80°	163.2	4.7
80°-90°	38.2	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°	1189.0	34.6
0°-40°	1850.9	53.8
0°-60°	2917.1	84.8
0°-90°	3438.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3438.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1550	1550	1550	1550	1550	
5°	1739	1672	1555	1408	1370	172
15°	2024	1893	1474	1115	1024	567
25°	1792	1898	1313	872	799	806
35°	1075	1570	1084	686	664	681
45°	641	993	821	545	552	502
55°	435	578	559	411	423	388
65°	259	336	333	270	283	257
75°	127	159	156	134	142	136
85°	32	37	32	25	21	37
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°	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6
2.5°	1635.6	1640.7	1636.1	1634.4	1631.0	1629.8	1620.7	1613.2	1608.6	1596.0	1597.2
5°	1738.8	1750.3	1744.0	1743.4	1730.8	1722.7	1714.7	1703.2	1686.0	1672.3	1661.4
7.5°	1847.8	1842.0	1840.3	1834.0	1824.8	1813.4	1795.6	1778.9	1757.2	1737.1	1722.2
10°	1934.9	1933.2	1936.1	1920.0	1914.3	1896.5	1881.0	1855.2	1827.1	1795.6	1776.1
12.5°	1986.5	1991.7	1995.7	1989.4	1975.7	1970.5	1944.7	1908.6	1898.8	1855.8	1832.3
15°	2024.4	2026.7	2027.3	2020.4	2013.5	2000.3	1984.8	1961.9	1930.3	1893.1	1875.3
17.5°	2022.1	2021.5	2025.0	2021.0	2016.9	2012.9	2000.9	1983.1	1958.4	1923.5	1893.6
20°	1975.1	1985.4	1993.4	1995.2	1994.6	1996.9	1991.1	1979.7	1961.9	1936.7	1902.8
22.5°	1910.8	1906.8	1924.0	1922.9	1930.3	1947.6	1955.0	1950.4	1943.5	1927.5	1900.5
25°	1791.6	1795.6	1807.6	1820.2	1849.5	1859.8	1882.2	1899.4	1901.7	1897.7	1881.0
27.5°	1612.6	1641.3	1647.6	1664.2	1705.0	1738.8	1784.1	1811.1	1849.5	1852.9	1845.5
30°	1453.2	1452.1	1461.8	1491.6	1528.9	1579.9	1638.4	1707.8	1752.0	1782.4	1793.3
32.5°	1257.1	1261.7	1286.9	1323.6	1361.5	1412.5	1480.2	1565.0	1624.1	1687.2	1722.7
35°	1074.7	1089.0	1113.1	1138.4	1179.7	1249.6	1324.7	1395.3	1485.9	1570.2	1627.5
37.5°	924.5	944.0	962.3	986.4	1026.5	1080.4	1148.1	1241.6	1331.6	1433.1	1517.4
40°	807.5	814.9	827.5	851.0	878.0	931.9	1000.2	1070.1	1167.6	1284.0	1394.7
42.5°	715.7	714.0	727.8	742.7	767.3	807.5	867.1	937.1	1034.0	1137.2	1249.0
45°	641.2	641.7	647.5	662.9	682.4	705.4	751.3	817.2	890.6	993.3	1112.0
47.5°	580.4	582.1	590.7	601.6	613.1	634.3	664.7	707.7	776.5	862.5	973.8
50°	528.8	531.6	537.4	545.4	554.0	568.9	591.8	625.7	680.2	753.0	853.9
52.5°	482.9	484.0	485.7	493.2	500.1	513.8	531.0	557.4	600.4	661.2	739.8
55°	434.7	433.6	437.6	443.9	450.2	459.9	477.7	498.9	529.3	577.5	642.3
57.5°	385.4	387.1	390.0	393.4	404.9	415.2	428.4	447.9	472.0	509.8	563.7
60°	340.6	340.6	344.1	348.7	356.1	363.0	375.6	393.4	414.6	443.9	489.2
62.5°	297.1	299.4	302.8	305.1	312.0	320.6	330.3	344.1	363.6	387.1	420.9
65°	259.2	258.1	261.5	266.1	271.3	277.0	287.9	299.4	314.3	335.5	363.6
67.5°	220.2	223.7	224.8	227.1	231.1	238.6	243.7	255.8	267.8	286.7	310.3
70°	187.0	189.2	191.0	193.8	197.3	200.7	205.9	215.6	227.7	240.9	257.5
72.5°	157.1	158.9	157.1	160.0	161.7	165.2	172.0	176.6	185.8	197.3	212.2
75°	127.3	128.5	127.9	130.8	131.3	134.8	138.2	142.2	152.5	158.9	169.2
77.5°	99.8	100.9	101.5	102.7	103.8	105.5	107.2	111.3	117.0	122.7	130.8
80°	74.6	74.6	76.3	76.8	77.4	78.6	81.4	82.6	86.6	88.3	94.6
82.5°	51.6	52.2	52.8	52.8	53.3	54.5	55.1	57.3	58.5	61.4	64.2
85°	32.1	32.7	32.7	32.7	34.4	33.8	33.8	35.0	36.7	36.7	37.8
87.5°	16.1	16.6	16.6	16.6	17.2	17.2	17.2	17.2	17.2	18.4	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



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6
2.5°	1596.6	1596.0	1593.7	1583.4	1575.4	1565.0	1563.3	1561.6	1547.3	1531.8	1527.2
5°	1652.8	1642.5	1628.1	1610.9	1593.7	1574.8	1563.9	1554.7	1532.9	1508.8	1495.1
7.5°	1707.8	1687.8	1665.4	1638.4	1609.8	1579.4	1559.9	1541.5	1511.7	1480.2	1461.2
10°	1754.9	1727.9	1696.9	1661.4	1621.8	1580.5	1551.8	1523.2	1485.3	1446.9	1421.7
12.5°	1793.9	1759.4	1718.7	1670.6	1634.4	1577.7	1537.5	1499.7	1457.8	1407.9	1380.4
15°	1823.7	1789.8	1734.8	1686.0	1638.4	1562.7	1514.0	1473.9	1417.7	1368.9	1325.3
17.5°	1859.8	1811.6	1757.2	1687.2	1634.4	1547.8	1492.8	1440.6	1379.8	1322.5	1274.3
20°	1875.9	1825.4	1766.9	1688.9	1621.8	1531.8	1458.4	1407.9	1334.5	1268.5	1214.1
22.5°	1878.2	1830.0	1766.3	1683.7	1600.0	1508.3	1424.0	1358.0	1284.6	1214.6	1153.3
25°	1868.4	1822.5	1756.6	1674.6	1575.9	1483.0	1389.0	1312.7	1227.8	1155.6	1093.1
27.5°	1842.0	1804.8	1742.2	1654.5	1551.3	1444.0	1341.4	1258.2	1174.5	1092.5	1032.8
30°	1799.6	1774.9	1721.0	1628.1	1519.7	1401.6	1298.9	1202.0	1111.4	1034.6	970.3
32.5°	1745.1	1733.1	1688.3	1596.6	1487.6	1355.1	1247.9	1148.1	1049.5	976.6	910.7
35°	1675.7	1682.0	1644.2	1561.0	1446.9	1308.1	1188.3	1083.9	987.5	910.1	849.3
37.5°	1585.7	1616.7	1592.6	1514.6	1394.7	1260.5	1125.7	1020.8	919.9	845.3	792.0
40°	1484.7	1539.2	1527.8	1462.4	1338.5	1204.9	1065.5	952.6	853.9	783.4	732.3
42.5°	1366.0	1445.2	1457.8	1398.7	1282.9	1135.5	997.9	888.9	793.7	724.3	675.6
45°	1233.0	1331.1	1373.5	1327.0	1218.1	1068.4	928.5	821.2	727.2	668.1	627.4
47.5°	1099.4	1217.5	1274.9	1252.5	1142.4	996.7	859.7	754.7	665.8	614.2	575.8
50°	967.5	1094.2	1177.9	1163.0	1067.8	928.5	790.3	687.0	605.6	558.0	525.3
52.5°	851.6	971.5	1062.7	1070.1	984.7	850.5	716.9	621.1	551.7	508.7	481.2
55°	737.5	848.8	948.5	966.9	897.5	768.5	649.2	558.6	495.5	459.9	437.6
57.5°	635.4	736.4	835.6	867.7	811.5	695.1	576.4	496.6	442.2	414.6	395.1
60°	548.8	640.0	725.5	758.1	719.7	613.6	509.8	438.7	393.4	368.8	353.3
62.5°	473.1	543.7	619.4	655.5	629.7	537.4	446.7	383.7	347.0	325.7	313.7
65°	404.9	459.4	519.0	560.9	532.2	463.4	387.7	333.2	302.2	282.7	274.1
67.5°	341.8	387.1	434.7	468.0	453.6	391.1	327.5	285.0	259.2	244.3	236.3
70°	284.4	318.3	356.7	382.5	372.2	324.0	273.6	239.7	217.9	207.6	200.7
72.5°	233.4	255.2	284.4	305.7	294.8	260.9	224.8	197.9	181.8	169.8	164.6
75°	185.2	204.2	224.8	239.1	230.5	205.3	176.6	156.0	145.1	137.6	134.2
77.5°	140.5	155.4	169.8	176.6	172.6	154.3	134.8	118.7	109.5	104.9	100.9
80°	100.9	109.5	119.3	125.6	123.3	110.7	96.9	84.3	80.3	74.6	73.4
82.5°	67.7	74.6	76.8	79.7	78.0	72.3	62.5	55.1	51.6	48.7	48.2
85°	40.1	41.9	44.7	44.7	43.0	39.0	33.8	31.5	28.1	27.5	25.8
87.5°	17.8	17.8	17.8	17.8	17.8	16.6	14.3	13.2	12.0	11.5	10.9
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°	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6	1549.6
2.5°	1523.2	1517.4	1509.4	1500.2	1492.2	1479.6	1475.6	1475.6	1478.4	1475.0	1472.1
5°	1483.6	1472.1	1460.7	1442.9	1428.0	1407.9	1402.2	1396.4	1395.9	1390.1	1382.7
7.5°	1441.2	1424.0	1400.4	1375.2	1359.2	1337.4	1325.3	1321.9	1311.0	1300.7	1288.6
10°	1391.8	1365.5	1337.4	1313.3	1288.0	1259.9	1245.6	1235.9	1225.0	1212.3	1203.7
12.5°	1332.2	1302.4	1276.6	1248.5	1227.3	1187.7	1183.1	1170.5	1148.7	1129.8	1122.9
15°	1295.5	1243.3	1214.1	1188.3	1156.1	1115.4	1100.5	1086.8	1066.1	1054.1	1044.3
17.5°	1230.7	1183.7	1147.0	1112.6	1081.6	1050.0	1027.7	1016.2	999.6	989.3	979.5
20°	1171.6	1120.6	1082.2	1042.0	1009.9	981.2	962.3	948.0	939.4	929.0	919.3
22.5°	1112.0	1058.7	1021.9	981.2	943.4	926.2	903.8	891.8	880.3	872.3	861.9
25°	1042.6	1000.2	954.3	922.7	889.5	871.7	850.5	839.0	829.8	820.7	815.5
27.5°	980.7	937.6	895.2	863.7	835.6	818.4	805.2	794.3	782.8	775.9	771.9
30°	916.4	876.9	839.6	809.2	787.4	768.5	760.4	750.1	741.5	738.6	732.3
32.5°	859.1	814.9	785.1	757.6	739.2	726.0	720.3	709.4	707.7	704.8	701.4
35°	801.7	763.9	735.2	711.7	696.2	686.5	679.0	676.1	673.3	670.4	667.5
37.5°	745.0	715.1	688.2	669.3	656.6	649.2	647.5	641.7	641.2	637.1	637.1
40°	693.9	663.5	644.6	629.7	619.4	615.9	611.3	610.2	608.5	607.3	609.6
42.5°	642.9	622.2	606.2	590.7	582.7	579.8	578.6	576.9	575.8	579.2	580.4
45°	595.3	577.5	563.7	552.8	548.3	544.8	544.8	546.5	546.0	547.7	547.7
47.5°	551.1	535.1	523.6	519.6	513.8	512.7	513.3	512.7	515.6	517.9	520.1
50°	509.3	494.9	485.7	481.7	480.6	478.9	481.2	482.3	484.0	486.3	487.5
52.5°	462.8	455.9	450.2	446.2	445.6	446.2	445.6	449.6	451.3	454.8	454.2
55°	423.2	418.1	414.1	409.5	408.9	410.6	411.8	415.2	417.5	420.4	419.8
57.5°	386.0	381.9	377.4	376.2	375.6	376.2	381.4	380.8	384.2	386.5	387.7
60°	345.2	342.4	338.4	338.4	340.1	341.2	342.9	345.8	349.3	348.7	352.7
62.5°	308.0	304.5	303.4	305.1	304.5	307.4	309.1	309.1	313.7	315.4	316.6
65°	270.7	269.5	267.8	267.8	269.5	270.1	273.0	274.7	276.4	279.9	282.7
67.5°	235.7	232.8	232.8	231.7	234.0	235.7	237.4	239.7	240.9	244.9	246.6
70°	199.0	197.9	197.3	198.4	198.4	200.1	203.0	205.9	208.2	208.7	212.2
72.5°	163.4	163.4	163.4	165.2	166.3	168.0	168.6	170.9	174.3	174.9	176.6
75°	131.3	131.9	131.3	131.9	132.5	134.2	135.3	137.6	139.9	140.5	141.7
77.5°	101.5	100.4	99.2	100.9	102.1	105.5	104.9	106.1	108.4	107.2	108.4
80°	71.1	72.8	70.5	74.0	74.0	73.4	74.6	76.3	75.7	76.8	75.7
82.5°	48.2	46.5	46.5	48.2	48.7	47.0	48.2	48.7	49.3	48.2	47.6
85°	26.4	25.8	27.0	25.2	25.8	24.7	24.7	23.5	24.7	23.5	22.4
87.5°	9.7	9.2	9.7	8.0	7.5	6.9	6.3	6.3	5.2	5.2	5.2
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: P243168

CATALOG NUMBER: S122DR-H1005D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1549.6	1549.6	1549.6	1549.6
2.5°	1476.1	1469.8	1467.0	1469.3
5°	1374.6	1376.4	1366.0	1369.5
7.5°	1286.9	1279.4	1281.7	1277.7
10°	1194.0	1190.0	1183.7	1184.8
12.5°	1131.5	1104.5	1102.8	1097.6
15°	1043.7	1028.8	1025.4	1024.2
17.5°	973.8	961.2	965.7	962.3
20°	910.7	911.3	903.8	899.2
22.5°	855.1	853.9	851.0	846.5
25°	808.0	808.0	801.2	799.4
27.5°	765.0	766.2	760.4	760.4
30°	732.9	728.9	728.3	729.5
32.5°	700.8	696.2	696.8	696.2
35°	666.4	667.5	665.8	664.1
37.5°	637.1	637.1	637.1	635.4
40°	608.5	609.6	607.9	609.0
42.5°	579.8	580.4	580.4	578.1
45°	551.1	550.5	549.4	551.7
47.5°	521.3	521.3	520.7	521.9
50°	488.6	489.8	488.0	487.5
52.5°	455.3	455.9	455.3	456.5
55°	421.5	421.5	422.1	423.2
57.5°	386.5	390.5	387.7	390.0
60°	352.1	352.7	353.3	352.1
62.5°	319.4	318.9	319.4	321.2
65°	283.9	285.0	284.4	283.3
67.5°	248.9	247.7	249.5	247.7
70°	211.6	213.9	212.2	214.5
72.5°	177.8	177.2	178.4	175.5
75°	142.2	142.2	142.8	142.2
77.5°	109.0	107.8	107.2	105.5
80°	75.1	75.1	72.8	74.6
82.5°	45.9	46.5	47.0	43.6
85°	21.8	21.8	21.2	20.6
87.5°	4.6	4.6	5.2	5.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)