

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: P242136

Luminaire Tested: **S121DR-S1025D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242136
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-18)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S121DR-S1025D930-X4F0-XX-UDD-A-W
Description: DEFINE 1 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3460.0 lumens
Efficiency: N/A
Efficacy: 84.2 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.22 / 1.37
Luminous Opening: Rectangular (W 3.88' x L: 0.09' x H: 0')
CIE Type: Direct

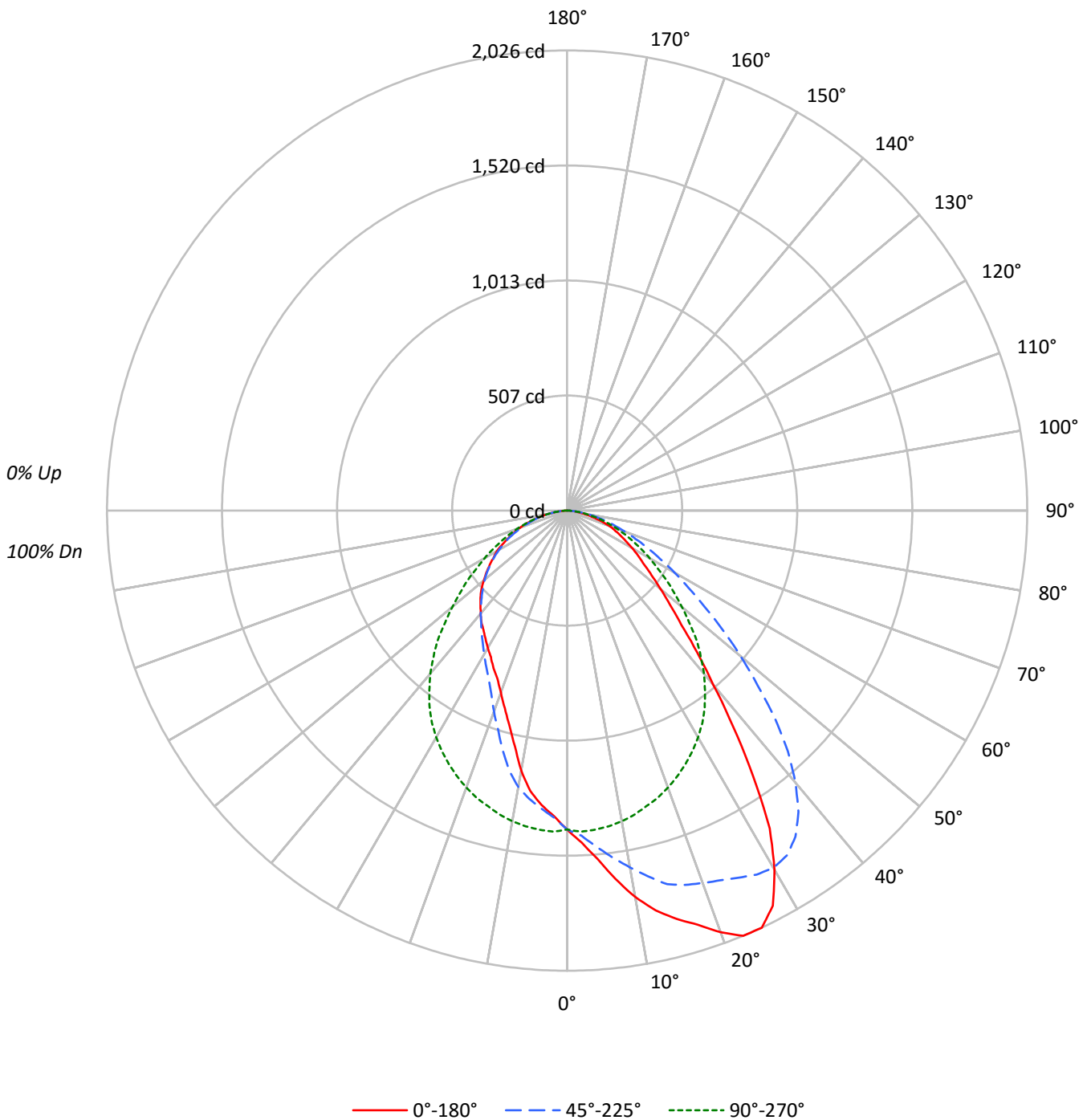
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242136

CATALOG NUMBER: S121DR-S1025D930-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P242136

CATALOG NUMBER: S121DR-S1025D930-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	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	100	100	100	100	100	100		
1	110	105	102	98	107	103	100	96	99	96	93	95	93	91	92	90	88	86	86	86	86	86	86	86		
2	101	93	87	82	98	91	85	81	88	83	79	85	80	77	82	78	75	73	73	73	73	73	73	73		
3	92	83	75	69	90	81	74	68	78	72	67	75	70	66	73	69	65	63	63	63	63	63	63	63		
4	85	74	66	59	83	73	65	59	70	63	58	68	62	57	66	61	57	54	54	54	54	54	54	54		
5	79	66	58	52	77	65	57	51	63	56	51	61	55	50	60	54	50	48	48	48	48	48	48	48		
6	73	60	52	46	71	59	51	45	57	50	45	56	49	45	54	49	44	42	42	42	42	42	42	42		
7	68	55	46	41	66	54	46	40	52	45	40	51	45	40	50	44	40	38	38	38	38	38	38	38		
8	63	50	42	36	62	50	42	36	48	41	36	47	41	36	46	40	36	34	34	34	34	34	34	34		
9	59	46	38	33	58	46	38	33	44	38	33	43	37	33	42	37	32	31	31	31	31	31	31	31		
10	56	43	35	30	54	42	35	30	41	34	30	40	34	30	39	34	30	28	28	28	28	28	28	28		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	41603	41603	41603
5°	45789	41943	38672
10°	51990	41791	34976
15°	57083	41328	30061
20°	62296	40921	26899
25°	66249	40274	25046
30°	62470	39441	23895
35°	51620	38200	23207
40°	38698	36223	22902
45°	29822	33774	22632
50°	24730	30386	22112
55°	21350	27590	21474
60°	19621	24883	21197
65°	18130	22491	19995
70°	17170	20202	19154
75°	14115	17847	17012
80°	11142	14538	14026
85°	8635	10675	9451



TEST NUMBER: P242136

CATALOG NUMBER: S121DR-S1025D930-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	135.0	3.9
10°-20°	393.8	11.4
20°-30°	603.0	17.4
30°-40°	688.1	19.9
40°-50°	617.4	17.8
50°-60°	484.4	14.0
60°-70°	329.5	9.5
70°-80°	169.7	4.9
80°-90°	39.1	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°	1131.9	32.7
0°-40°	1820.0	52.6
0°-60°	2921.8	84.4
0°-90°	3460.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3460.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1404	1404	1404	1404	1404	
5°	1540	1485	1410	1316	1300	153
15°	1861	1703	1347	1094	980	530
25°	2026	1784	1232	818	766	914
35°	1427	1752	1056	656	642	885
45°	712	1293	806	531	540	564
55°	413	738	534	411	416	377
65°	259	393	321	280	285	258
75°	123	173	156	143	149	133
85°	25	34	31	30	28	31
90°	0	0	0	0	0	



TEST NUMBER: P242136

CATALOG NUMBER: S121DR-S1025D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1
2.5°	1463.3	1463.3	1465.8	1465.2	1462.7	1458.5	1454.9	1450.7	1439.8	1432.5	1439.2
5°	1539.5	1542.5	1545.5	1544.9	1535.8	1528.0	1516.5	1513.5	1494.2	1485.1	1482.1
7.5°	1636.1	1635.5	1636.7	1626.5	1618.6	1610.8	1595.7	1576.9	1554.0	1541.3	1529.2
10°	1728.0	1733.4	1731.0	1718.3	1706.2	1697.8	1673.6	1650.6	1622.2	1595.1	1579.9
12.5°	1802.9	1799.9	1810.1	1798.1	1783.6	1767.9	1744.3	1723.7	1686.9	1650.0	1619.2
15°	1860.9	1857.9	1859.1	1850.0	1834.9	1821.0	1796.9	1775.1	1740.1	1703.2	1670.6
17.5°	1911.6	1914.7	1909.2	1898.4	1877.8	1861.5	1831.3	1801.7	1764.8	1728.0	1696.0
20°	1975.7	1978.7	1968.4	1952.7	1932.8	1905.0	1873.6	1831.3	1790.2	1744.9	1705.0
22.5°	2026.4	2024.6	2021.0	2005.9	1984.8	1958.8	1913.5	1866.9	1818.0	1761.8	1710.5
25°	2026.4	2028.9	2030.7	2022.8	2008.9	1987.2	1956.4	1907.4	1852.4	1783.6	1711.7
27.5°	1961.2	1972.1	1979.9	1979.9	1976.9	1976.3	1958.2	1927.4	1876.0	1806.5	1726.8
30°	1825.9	1840.4	1852.4	1871.2	1893.5	1908.0	1913.5	1901.4	1874.8	1816.2	1733.4
32.5°	1659.1	1657.9	1682.7	1712.9	1757.0	1787.8	1818.6	1836.7	1835.5	1800.5	1731.6
35°	1427.1	1444.0	1473.6	1515.9	1572.7	1623.5	1690.5	1725.6	1753.4	1752.1	1708.0
37.5°	1201.1	1203.5	1236.8	1294.8	1344.9	1423.5	1511.1	1584.2	1651.2	1673.0	1658.5
40°	1000.5	1017.5	1039.8	1088.1	1138.3	1207.2	1318.3	1416.2	1499.0	1563.0	1580.6
42.5°	845.9	854.9	876.7	919.0	963.7	1045.8	1127.4	1231.9	1336.5	1438.6	1491.1
45°	711.7	720.2	740.1	769.7	811.4	876.1	960.1	1061.6	1173.3	1293.0	1367.9
47.5°	613.9	616.9	632.0	654.3	693.6	740.7	808.4	906.9	1019.9	1136.5	1246.4
50°	536.5	541.4	551.6	569.1	598.1	642.3	696.0	770.3	874.9	995.7	1107.5
52.5°	468.8	472.5	484.6	494.2	516.6	554.0	600.6	668.2	756.4	865.2	980.6
55°	413.3	416.9	422.9	433.8	451.3	476.7	516.6	570.4	645.9	737.7	845.9
57.5°	371.0	372.8	374.0	381.2	395.1	415.7	449.5	491.8	550.4	634.4	730.5
60°	331.1	330.5	335.3	340.8	349.2	361.9	386.7	424.7	477.3	545.6	635.0
62.5°	291.2	294.2	297.3	301.5	306.9	314.2	334.1	362.5	404.2	462.8	536.5
65°	258.6	259.2	261.6	262.2	268.9	276.1	291.2	310.6	345.0	392.7	453.7
67.5°	227.2	227.8	227.2	229.0	232.0	238.0	245.9	261.6	288.2	326.9	380.0
70°	198.2	196.4	193.9	197.0	200.0	203.0	208.4	220.5	240.5	269.5	313.6
72.5°	159.5	160.7	161.9	163.1	163.7	168.0	172.8	181.3	197.0	219.3	253.2
75°	123.3	123.3	125.1	126.3	131.7	132.9	138.4	144.4	157.1	172.8	199.4
77.5°	90.6	90.0	93.0	93.6	96.7	100.3	103.3	109.4	119.0	132.3	149.8
80°	65.3	65.9	65.3	65.3	67.1	69.5	73.7	76.7	83.4	91.8	104.5
82.5°	43.5	43.5	44.1	44.1	45.9	45.9	48.3	50.8	55.0	60.4	69.5
85°	25.4	25.4	24.8	24.8	25.4	25.4	27.8	29.6	30.2	33.8	36.9
87.5°	10.9	10.9	10.3	10.9	10.3	10.9	10.3	11.5	12.1	12.7	13.9
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: P242136

CATALOG NUMBER: S121DR-S1025D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1
2.5°	1437.4	1435.5	1434.9	1428.3	1421.7	1413.8	1412.6	1415.0	1404.7	1392.0	1391.4
5°	1474.8	1468.2	1458.5	1445.8	1434.9	1420.4	1413.2	1410.2	1394.5	1376.3	1372.7
7.5°	1516.5	1500.2	1482.7	1463.3	1444.0	1422.9	1409.6	1401.7	1380.0	1357.6	1348.5
10°	1556.4	1535.2	1508.7	1479.0	1451.9	1422.9	1402.9	1389.0	1362.4	1334.6	1320.8
12.5°	1602.3	1567.3	1529.8	1492.9	1459.7	1422.3	1392.0	1370.9	1340.1	1310.5	1289.9
15°	1635.5	1584.8	1555.8	1503.2	1461.5	1416.2	1379.4	1347.3	1313.5	1280.9	1260.3
17.5°	1661.5	1621.6	1570.9	1512.9	1456.7	1407.8	1361.8	1326.2	1281.5	1245.8	1223.5
20°	1670.0	1629.5	1577.5	1514.1	1457.9	1395.1	1340.7	1297.8	1250.1	1206.6	1175.7
22.5°	1667.0	1621.0	1567.9	1505.6	1448.8	1374.5	1317.7	1266.4	1213.2	1166.7	1124.4
25°	1660.3	1607.1	1548.5	1489.9	1426.5	1353.4	1288.1	1231.9	1167.9	1117.1	1066.4
27.5°	1656.7	1587.2	1521.3	1457.9	1397.5	1326.8	1256.7	1193.9	1123.2	1061.6	996.3
30°	1655.5	1572.7	1489.9	1416.2	1360.6	1288.7	1219.2	1152.8	1070.0	1000.5	934.1
32.5°	1653.1	1560.6	1463.3	1375.1	1311.7	1247.0	1173.3	1107.5	1013.8	941.3	870.0
35°	1636.7	1539.5	1432.5	1332.2	1257.9	1190.9	1125.0	1056.1	958.8	880.9	812.6
37.5°	1601.7	1516.5	1402.3	1289.3	1200.5	1132.2	1071.2	996.3	902.1	816.9	753.4
40°	1549.7	1480.3	1369.7	1247.0	1142.5	1067.6	1003.0	936.5	839.2	757.7	700.3
42.5°	1482.1	1428.3	1324.4	1197.5	1086.3	1002.3	936.5	870.6	781.2	702.7	651.3
45°	1393.3	1360.0	1268.8	1143.7	1032.0	934.7	863.4	806.0	723.2	651.3	604.2
47.5°	1294.8	1280.3	1204.1	1083.9	966.1	871.8	788.5	728.0	663.4	602.4	560.7
50°	1175.7	1187.2	1127.4	1016.8	902.7	806.0	724.4	659.2	603.0	555.9	519.0
52.5°	1064.6	1091.8	1043.4	938.3	836.2	735.9	653.7	593.9	549.8	511.1	479.1
55°	940.7	980.0	951.0	860.4	758.9	670.0	587.9	534.1	496.0	466.4	439.2
57.5°	821.7	877.3	856.1	774.6	688.2	601.8	524.4	471.3	444.1	422.3	399.4
60°	716.0	766.7	763.7	694.2	607.8	531.1	467.6	419.9	395.7	381.2	361.3
62.5°	621.1	672.5	667.6	604.8	536.5	465.2	411.5	367.9	350.4	334.7	322.0
65°	524.4	568.5	571.0	524.4	458.6	401.2	355.3	320.8	305.1	295.4	286.4
67.5°	436.8	479.7	484.0	447.1	389.1	339.6	305.1	276.1	262.2	253.8	247.1
70°	360.1	395.1	403.0	372.2	323.2	284.6	255.6	233.2	224.2	215.7	213.3
72.5°	291.8	320.2	325.7	297.3	261.0	232.0	209.7	192.7	186.1	177.6	175.8
75°	232.0	251.9	252.6	233.8	206.6	184.3	166.2	155.9	148.6	142.6	141.4
77.5°	168.6	186.1	191.5	177.6	155.3	136.5	126.3	118.4	113.6	110.6	110.0
80°	122.0	133.5	135.9	123.9	110.6	99.1	91.8	85.2	82.2	79.1	77.9
82.5°	76.1	86.4	87.0	78.5	71.9	64.0	58.0	55.6	53.8	52.0	52.0
85°	41.1	46.5	45.9	42.3	39.3	35.0	32.6	31.4	30.2	29.0	29.0
87.5°	15.7	17.5	17.5	18.1	15.7	13.9	12.7	13.3	12.7	12.7	12.7
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: P242136

CATALOG NUMBER: S121DR-S1025D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1	1404.1
2.5°	1387.2	1384.8	1378.8	1369.1	1363.6	1351.6	1352.2	1354.6	1355.2	1353.4	1352.8
5°	1362.4	1355.2	1345.5	1333.4	1325.0	1315.9	1309.9	1313.5	1311.7	1311.1	1308.1
7.5°	1335.3	1325.6	1313.5	1301.4	1291.8	1279.7	1274.8	1270.6	1265.8	1265.2	1262.8
10°	1308.1	1296.0	1282.1	1264.6	1251.3	1236.2	1221.7	1213.8	1204.7	1198.1	1184.2
12.5°	1276.0	1255.5	1239.8	1221.7	1197.5	1173.3	1157.0	1134.7	1122.6	1110.5	1094.2
15°	1239.2	1212.6	1185.4	1149.2	1128.0	1094.2	1070.0	1053.7	1035.0	1022.9	1009.0
17.5°	1186.6	1158.8	1124.4	1083.3	1045.8	1011.4	993.9	972.7	964.9	938.3	935.9
20°	1134.7	1093.0	1050.1	1008.4	966.7	941.9	919.6	905.7	891.2	874.3	868.8
22.5°	1076.1	1021.7	976.4	937.7	899.6	872.4	861.6	845.9	832.0	822.3	813.2
25°	1004.8	954.6	908.7	872.4	838.0	817.5	803.6	792.1	786.0	775.2	771.5
27.5°	938.9	888.8	851.9	818.1	790.3	772.2	760.1	749.8	741.9	740.1	735.9
30°	871.8	828.9	793.9	764.9	740.1	730.5	719.0	714.1	709.3	706.9	702.1
32.5°	811.4	773.4	742.5	714.8	700.3	691.2	685.1	680.3	676.7	675.5	674.3
35°	756.4	721.4	696.0	676.1	665.2	655.5	652.5	648.3	646.5	645.9	645.3
37.5°	708.1	675.5	656.1	638.6	630.8	621.7	622.3	620.5	619.3	615.7	618.1
40°	659.2	633.8	613.9	600.0	594.5	591.5	590.3	589.1	589.7	589.7	589.1
42.5°	614.5	592.1	579.4	566.1	563.7	561.3	561.3	559.5	560.1	563.1	564.3
45°	574.0	556.5	545.0	534.1	534.1	531.1	533.5	532.9	534.7	536.5	537.7
47.5°	533.5	517.8	509.3	503.9	501.5	501.5	503.3	506.3	507.5	508.1	509.3
50°	493.0	481.5	474.3	471.3	470.7	473.7	475.5	474.9	476.7	479.1	480.9
52.5°	457.4	447.1	442.3	441.1	441.1	443.5	444.1	445.9	447.1	447.1	449.5
55°	420.5	413.3	409.6	409.0	409.6	410.8	413.3	414.5	413.9	415.1	415.1
57.5°	383.7	378.2	376.4	378.2	378.2	380.6	380.6	380.6	380.0	382.5	381.8
60°	349.2	343.2	345.0	344.4	346.2	346.2	348.0	348.0	346.2	348.6	349.8
62.5°	314.8	313.6	311.2	311.2	313.0	313.6	311.8	313.6	314.2	316.0	317.2
65°	278.5	274.3	276.1	275.5	277.3	280.3	277.9	277.9	279.7	282.2	283.4
67.5°	244.1	240.5	242.3	242.9	242.9	244.1	242.3	243.5	245.9	248.9	250.7
70°	209.0	207.8	208.4	207.8	207.8	210.9	211.5	210.9	213.3	216.3	216.9
72.5°	173.4	174.6	173.4	174.6	175.8	174.0	174.6	176.4	178.8	180.7	183.7
75°	140.8	139.0	139.6	142.6	142.0	143.2	142.6	144.4	148.6	147.4	148.0
77.5°	108.8	108.1	108.8	109.4	110.0	111.8	111.2	114.2	114.8	115.4	116.6
80°	77.3	77.9	78.5	79.8	81.6	81.0	82.2	82.8	85.2	82.8	84.6
82.5°	52.6	52.0	53.2	53.2	55.0	56.2	54.4	54.4	54.4	53.8	53.8
85°	29.0	30.8	30.8	30.8	29.6	29.6	30.2	29.6	29.6	29.6	29.0
87.5°	12.7	12.7	12.1	11.5	12.1	11.5	11.5	10.9	10.3	10.3	9.7
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: P242136

CATALOG NUMBER: S121DR-S1025D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1404.1	1404.1	1404.1	1404.1
2.5°	1349.1	1352.2	1348.5	1346.1
5°	1305.0	1305.0	1301.4	1300.2
7.5°	1255.5	1256.1	1249.5	1244.6
10°	1181.2	1177.6	1167.9	1162.5
12.5°	1082.1	1087.5	1073.0	1062.2
15°	995.7	980.6	986.6	980.0
17.5°	923.2	918.4	911.7	912.3
20°	859.8	856.1	852.5	853.1
22.5°	809.6	806.6	805.4	801.2
25°	767.9	769.1	766.1	766.1
27.5°	733.5	731.7	729.9	727.4
30°	700.9	701.5	699.6	698.4
32.5°	671.9	672.5	671.3	669.4
35°	643.5	642.9	643.5	641.6
37.5°	617.5	616.9	617.5	619.9
40°	590.9	591.5	589.7	592.1
42.5°	564.9	565.5	565.5	564.3
45°	536.5	538.3	538.9	540.1
47.5°	508.7	511.7	510.5	511.1
50°	480.9	480.3	480.3	479.7
52.5°	450.1	448.3	447.7	448.3
55°	413.3	415.7	415.7	415.7
57.5°	383.1	383.7	385.5	383.1
60°	352.2	352.2	352.8	357.7
62.5°	317.8	318.4	319.6	320.2
65°	284.6	286.4	285.8	285.2
67.5°	251.9	251.9	252.6	251.3
70°	218.1	218.1	218.1	221.1
72.5°	183.1	183.1	183.7	184.9
75°	150.4	150.4	150.4	148.6
77.5°	114.8	115.4	115.4	116.0
80°	83.4	82.8	82.8	82.2
82.5°	52.6	53.2	52.6	52.0
85°	29.0	29.6	27.8	27.8
87.5°	10.3	10.3	9.7	10.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)