

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: P242239

Luminaire Tested: **S121RDR-S1025D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242239
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-28)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S121RDR-S1025D930-X4F0-XX-UDD-A-W
Description: DEFINE 1 REGRESSED 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: 2911.9 lumens
Efficiency: N/A
Efficacy: 70.8 lumens/watt
Spacing Criteria (0/90/45): 0.96 / 1.23 / 1.1
Luminous Opening: Rectangular (W 3.88' x L: 0.09' x H: 0')
CIE Type: Direct

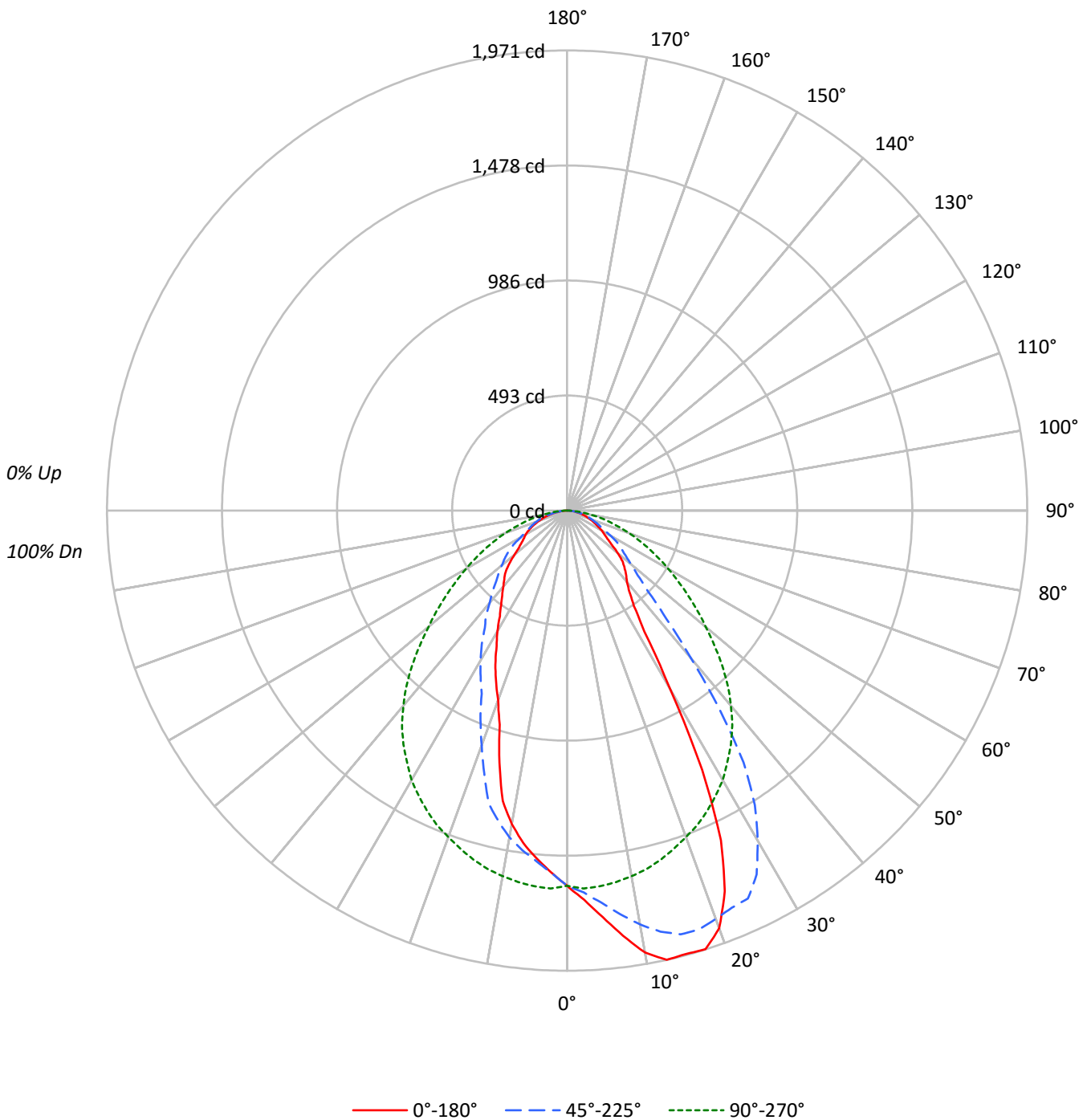
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	107	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89	87
2	102	95	89	84	100	93	88	83	90	85	82	87	83	80	84	81	78	76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	68	67
4	88	77	69	64	85	76	69	63	73	67	62	71	66	61	69	65	61	59
5	81	70	62	56	79	69	62	56	67	60	55	65	59	55	63	58	54	52
6	76	64	56	50	74	63	56	50	61	55	50	60	54	49	58	53	49	47
7	71	59	51	45	69	58	51	45	57	50	45	55	49	45	54	48	44	43
8	67	54	47	41	65	54	46	41	52	46	41	51	45	41	50	45	40	39
9	63	50	43	38	61	50	43	38	49	42	37	48	42	37	47	41	37	35
10	59	47	40	35	58	46	39	35	45	39	35	44	39	34	44	38	34	33

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	47621	47621	47621
5°	51973	48035	44495
10°	57845	47847	41011
15°	60310	47485	34325
20°	60048	46925	27243
25°	50922	46401	23784
30°	29974	45603	20425
35°	18010	44212	17832
40°	15425	42206	16454
45°	14582	39342	15646
50°	13036	35733	13534
55°	10864	32617	12233
60°	10098	29719	12172
65°	9318	27069	11778
70°	8793	24395	11097
75°	8300	21580	10097
80°	7422	18036	8873
85°	6969	14176	6969



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.1	5.3
10°-20°	438.9	15.1
20°-30°	599.5	20.6
30°-40°	558.6	19.2
40°-50°	461.8	15.9
50°-60°	340.5	11.7
60°-70°	217.7	7.5
70°-80°	112.0	3.8
80°-90°	28.8	1.0
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°	1192.6	41.0
0°-40°	1751.1	60.1
0°-60°	2553.4	87.7
0°-90°	2911.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2911.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1607	1607	1607	1607	1607	
5°	1747	1686	1615	1508	1496	172
15°	1966	1879	1548	1298	1119	554
25°	1558	1833	1419	866	728	676
35°	498	1317	1222	614	493	338
45°	348	491	939	430	373	267
55°	210	282	631	308	237	194
65°	133	154	386	179	168	132
75°	72	79	188	99	88	76
85°	20	21	42	24	20	23
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°	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2
2.5°	1668.8	1667.6	1669.4	1668.2	1667.0	1664.0	1661.6	1654.3	1643.4	1637.4	1643.4
5°	1747.4	1752.2	1750.4	1748.0	1742.5	1737.7	1726.8	1720.2	1700.8	1685.7	1690.0
7.5°	1836.8	1842.8	1835.0	1829.5	1826.5	1812.6	1800.5	1781.8	1760.6	1743.7	1734.1
10°	1922.6	1924.4	1922.0	1917.1	1906.9	1891.8	1874.2	1853.1	1826.5	1800.5	1783.0
12.5°	1970.9	1973.9	1977.6	1969.1	1961.2	1949.2	1931.0	1909.9	1877.3	1847.0	1827.1
15°	1966.1	1968.5	1975.1	1972.1	1968.5	1963.1	1952.8	1935.3	1912.3	1879.1	1850.7
17.5°	1969.7	1971.5	1974.5	1963.7	1957.6	1951.0	1937.7	1925.6	1906.3	1880.3	1859.1
20°	1904.4	1934.1	1930.4	1944.9	1951.0	1950.4	1937.7	1914.7	1888.1	1861.5	1851.9
22.5°	1764.3	1787.8	1790.9	1813.2	1841.0	1863.4	1891.2	1901.4	1880.9	1841.0	1827.7
25°	1557.6	1574.6	1591.5	1623.5	1653.1	1715.3	1772.1	1815.0	1838.6	1833.1	1807.2
27.5°	1251.9	1233.8	1300.8	1337.7	1420.5	1511.1	1590.9	1669.4	1706.9	1757.0	1782.4
30°	876.1	874.3	925.0	989.1	1112.9	1196.3	1345.6	1471.8	1570.3	1632.0	1700.8
32.5°	615.1	624.1	661.6	700.9	769.1	905.1	1019.3	1193.3	1361.3	1496.0	1580.6
35°	497.9	499.1	507.5	531.1	572.8	648.3	737.1	906.3	1134.1	1317.2	1443.4
37.5°	436.2	439.9	442.3	455.6	470.7	502.7	558.9	676.1	864.6	1068.8	1288.2
40°	398.8	401.8	404.2	408.4	417.5	432.6	469.5	525.7	634.4	822.3	1066.4
42.5°	373.4	372.2	377.6	379.4	384.3	392.7	409.0	439.3	502.1	629.6	839.8
45°	348.0	349.8	349.8	352.2	356.5	361.3	368.0	386.7	418.7	491.2	656.2
47.5°	321.4	320.8	324.5	326.3	330.5	334.7	339.6	349.2	368.0	410.3	505.7
50°	282.8	284.0	290.6	296.7	302.7	308.1	314.2	320.2	332.3	355.3	413.9
52.5°	241.7	241.7	248.9	253.2	261.6	274.9	285.2	294.2	302.1	313.6	348.6
55°	210.3	210.9	213.3	216.9	223.0	229.6	242.9	258.6	271.9	281.6	300.9
57.5°	188.5	189.1	189.7	192.7	195.8	198.2	206.0	218.1	235.6	253.2	264.6
60°	170.4	169.8	169.8	171.6	174.0	177.0	181.3	186.1	195.8	214.5	235.0
62.5°	149.8	151.1	151.1	152.9	154.7	157.7	159.5	164.3	169.8	178.2	199.4
65°	132.9	134.1	132.9	134.7	135.9	137.8	140.8	143.2	148.0	153.5	161.9
67.5°	116.0	116.6	117.8	118.4	119.6	120.2	122.7	125.7	128.7	132.3	139.0
70°	101.5	101.5	101.5	102.7	103.9	103.9	105.7	106.9	110.0	113.6	117.2
72.5°	85.8	86.4	86.4	85.8	88.2	88.8	89.4	90.6	93.0	96.1	99.1
75°	72.5	71.3	71.3	71.9	73.7	73.7	74.3	74.9	76.7	79.2	81.0
77.5°	56.8	56.8	57.4	58.0	58.6	58.6	59.8	59.8	62.2	63.4	64.6
80°	43.5	44.7	45.3	44.7	44.7	45.3	45.3	46.5	47.1	47.7	48.9
82.5°	32.6	33.2	32.0	32.0	32.6	32.6	33.2	33.2	33.8	34.4	34.4
85°	20.5	20.5	21.1	20.5	21.1	20.5	20.5	21.8	21.1	21.1	21.8
87.5°	9.7	10.3	9.7	10.3	9.7	10.3	10.3	10.3	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



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2
2.5°	1641.6	1641.0	1638.0	1631.3	1626.5	1617.4	1617.4	1620.5	1604.8	1593.9	1593.3
5°	1679.7	1673.6	1663.4	1650.7	1639.2	1623.5	1617.4	1615.0	1593.9	1577.6	1572.1
7.5°	1720.2	1705.1	1687.5	1667.0	1647.7	1625.3	1613.8	1604.8	1577.6	1557.6	1545.5
10°	1762.5	1738.3	1711.1	1681.5	1654.9	1624.7	1606.0	1590.3	1558.8	1531.0	1517.2
12.5°	1799.9	1766.1	1731.6	1693.0	1656.7	1618.7	1592.7	1572.1	1535.3	1502.0	1485.1
15°	1817.4	1781.2	1752.8	1699.6	1650.7	1612.0	1578.8	1548.0	1508.7	1471.8	1445.9
17.5°	1832.5	1792.7	1755.2	1705.1	1648.3	1598.1	1558.2	1519.0	1476.7	1438.0	1406.0
20°	1828.3	1794.5	1748.6	1695.4	1641.6	1583.6	1538.3	1488.2	1435.6	1396.3	1362.5
22.5°	1804.1	1776.4	1728.6	1677.9	1625.9	1563.7	1512.3	1457.9	1393.3	1350.4	1312.3
25°	1773.3	1746.7	1699.6	1647.1	1595.7	1535.3	1474.9	1419.3	1349.8	1298.4	1249.5
27.5°	1749.2	1709.3	1662.2	1603.6	1554.0	1496.6	1433.2	1377.0	1302.1	1245.3	1188.5
30°	1721.4	1676.1	1618.1	1555.8	1503.3	1450.7	1389.1	1332.9	1250.1	1185.4	1114.8
32.5°	1641.6	1642.2	1573.3	1503.9	1447.7	1391.5	1336.5	1276.7	1194.5	1118.4	1045.9
35°	1537.7	1578.2	1527.4	1447.7	1378.2	1326.2	1280.9	1222.3	1131.1	1052.5	970.3
37.5°	1398.7	1470.0	1476.1	1393.3	1316.6	1255.5	1210.8	1161.9	1070.0	985.5	903.9
40°	1259.8	1354.0	1391.5	1334.1	1250.7	1180.6	1135.9	1091.2	1004.8	913.6	838.0
42.5°	1089.4	1242.2	1288.8	1271.8	1182.4	1106.9	1059.8	1019.3	935.3	845.9	771.0
45°	897.2	1103.9	1171.5	1189.1	1113.5	1032.6	978.2	938.9	865.2	786.7	708.7
47.5°	720.8	948.0	1059.8	1077.9	1038.0	959.5	897.2	856.2	797.5	729.9	652.5
50°	549.8	782.4	942.6	970.3	960.7	880.9	823.5	775.2	730.5	670.1	597.6
52.5°	437.4	625.3	815.7	867.6	870.7	807.8	747.4	703.3	659.8	612.1	546.2
55°	349.2	483.4	676.1	764.3	772.8	729.3	673.7	631.4	598.8	554.1	498.5
57.5°	294.2	374.0	541.4	660.4	664.0	651.9	598.8	563.7	536.5	497.9	448.9
60°	251.3	296.7	417.5	556.5	574.6	574.6	532.3	501.5	475.5	446.5	400.0
62.5°	217.5	242.3	316.6	442.3	488.8	496.1	469.5	442.3	422.9	393.9	351.0
65°	183.1	201.8	245.3	342.0	406.0	419.3	406.0	386.1	371.0	340.8	306.9
67.5°	150.4	168.6	195.8	259.2	329.3	345.6	343.2	332.9	317.2	294.9	259.2
70°	124.5	135.3	155.3	192.1	258.6	283.4	290.6	281.6	267.7	243.5	217.5
72.5°	102.7	111.2	120.8	147.4	193.3	226.0	238.1	233.2	223.0	200.0	178.2
75°	84.0	89.4	96.1	108.8	139.0	175.8	189.7	188.5	178.2	158.9	141.4
77.5°	67.7	69.5	74.3	82.2	97.3	130.5	141.4	145.0	137.2	120.8	106.9
80°	50.8	53.2	55.6	59.8	67.1	86.4	100.3	105.7	99.1	89.4	75.5
82.5°	35.6	36.3	38.7	41.1	44.7	52.6	67.1	73.1	67.1	56.8	52.6
85°	22.4	21.8	22.4	23.0	26.6	28.4	37.5	41.7	40.5	34.4	29.6
87.5°	10.3	10.3	9.7	10.3	9.7	11.5	13.3	19.3	14.5	12.7	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



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2	1607.2
2.5°	1588.4	1586.6	1580.6	1572.1	1564.9	1552.8	1552.8	1555.8	1555.2	1556.4	1555.2
5°	1563.1	1554.6	1545.5	1534.1	1523.2	1507.5	1505.7	1506.9	1506.3	1505.7	1502.0
7.5°	1530.4	1520.8	1509.3	1494.8	1482.7	1467.6	1463.4	1462.2	1457.3	1455.5	1450.7
10°	1499.0	1487.5	1472.4	1454.9	1438.6	1421.1	1410.2	1404.2	1396.3	1387.9	1380.6
12.5°	1464.0	1448.9	1429.5	1408.4	1381.2	1361.9	1345.6	1335.3	1324.4	1309.9	1299.6
15°	1426.5	1395.7	1372.7	1338.3	1305.1	1298.4	1273.7	1241.0	1238.6	1167.9	1143.2
17.5°	1376.4	1351.0	1308.1	1263.4	1218.1	1181.2	1181.8	1093.6	1066.4	1065.8	1022.3
20°	1324.4	1289.4	1239.8	1194.5	1146.8	1070.6	1010.2	981.2	937.1	920.2	895.4
22.5°	1263.4	1217.5	1159.5	1097.8	1031.4	969.7	910.5	882.7	860.4	841.7	831.4
25°	1190.9	1144.4	1074.9	998.1	923.8	866.4	833.8	821.1	783.0	769.8	757.1
27.5°	1117.8	1067.0	976.4	902.7	841.7	802.4	768.5	747.4	729.3	695.4	680.3
30°	1048.3	966.7	891.8	824.1	778.2	741.4	716.6	673.7	648.3	632.6	626.0
32.5°	972.8	885.8	818.1	759.5	712.4	680.3	643.5	614.5	603.0	582.5	552.8
35°	895.4	816.3	745.6	698.5	658.0	614.5	591.5	563.7	534.7	519.0	516.6
37.5°	820.5	745.6	694.8	645.3	596.3	571.0	537.1	507.5	497.3	482.8	467.0
40°	752.8	688.8	641.7	584.9	555.3	516.0	490.0	474.9	450.1	444.7	439.9
42.5°	697.2	642.3	589.1	538.3	503.9	472.5	449.5	432.0	424.2	410.9	406.6
45°	641.1	590.3	535.9	496.1	456.8	430.2	414.5	399.4	390.3	386.7	379.4
47.5°	590.3	540.8	490.6	441.7	415.1	397.6	380.0	372.2	366.8	358.9	354.7
50°	542.0	487.0	439.9	409.0	380.6	364.9	353.5	346.2	337.7	329.3	317.2
52.5°	493.0	445.9	400.6	368.0	346.8	336.5	325.7	317.8	300.9	284.6	274.3
55°	443.5	395.1	358.3	333.5	318.4	307.5	294.9	271.9	256.2	247.1	242.3
57.5°	398.8	355.3	322.6	302.1	291.2	273.1	250.7	236.2	228.4	224.8	222.3
60°	351.0	313.6	286.4	270.7	253.8	229.6	217.5	210.3	207.8	206.6	204.8
62.5°	310.0	276.7	255.6	238.1	213.9	201.2	194.6	190.9	190.9	189.1	187.9
65°	266.5	240.5	222.3	197.0	184.3	178.8	176.4	174.6	172.8	172.2	169.8
67.5°	230.8	207.8	184.3	171.0	163.1	160.1	157.7	157.1	154.7	152.9	151.1
70°	194.6	172.2	152.9	146.8	142.6	141.4	139.0	136.5	134.7	132.3	131.1
72.5°	158.3	137.2	130.5	127.5	123.3	121.4	118.4	116.6	113.6	112.4	111.2
75°	120.8	112.4	108.8	106.3	103.3	99.1	97.9	96.1	94.9	93.0	91.2
77.5°	96.1	91.2	87.0	84.0	81.6	78.5	76.1	75.5	74.3	72.5	71.9
80°	71.9	68.3	66.5	63.4	60.4	58.6	57.4	56.8	55.0	54.4	53.8
82.5°	49.5	46.5	45.3	41.7	40.5	40.5	39.9	38.7	37.5	36.9	36.3
85°	27.8	26.6	24.8	25.4	23.6	23.6	23.0	22.4	21.8	21.1	20.5
87.5°	10.9	10.3	9.7	9.1	9.1	7.3	7.3	7.3	7.9	7.3	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: P242239

CATALOG NUMBER: S121RDR-S1025D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1607.2	1607.2	1607.2	1607.2
2.5°	1557.0	1558.2	1554.0	1551.6
5°	1502.0	1500.2	1497.8	1496.0
7.5°	1445.9	1444.0	1444.0	1436.8
10°	1377.6	1372.7	1369.1	1363.1
12.5°	1290.6	1283.3	1280.9	1273.7
15°	1126.2	1111.1	1100.9	1119.0
17.5°	1012.0	972.8	975.8	960.7
20°	894.8	879.1	887.0	864.0
22.5°	818.7	809.0	800.0	795.1
25°	748.0	736.5	722.6	727.5
27.5°	659.2	659.2	650.1	653.7
30°	613.9	609.0	593.9	597.0
32.5°	543.2	537.1	535.3	536.5
35°	509.3	499.7	496.7	493.0
37.5°	462.2	458.6	459.2	456.8
40°	430.8	427.8	424.2	425.4
42.5°	403.6	401.8	398.2	398.8
45°	377.0	375.2	373.4	373.4
47.5°	347.4	343.8	340.8	337.1
50°	308.7	301.5	296.1	293.6
52.5°	267.1	263.4	259.8	259.8
55°	240.5	238.7	237.5	236.8
57.5°	221.7	220.5	220.5	218.7
60°	204.8	204.8	204.2	205.4
62.5°	188.5	186.7	187.3	187.3
65°	169.8	169.2	168.6	168.0
67.5°	149.8	149.2	149.8	148.6
70°	129.9	129.9	129.3	128.1
72.5°	109.4	110.6	109.4	108.8
75°	90.0	89.4	90.0	88.2
77.5°	71.9	69.5	70.7	71.3
80°	53.2	53.2	52.6	52.0
82.5°	35.6	36.3	35.0	35.0
85°	20.5	20.5	19.3	20.5
87.5°	6.0	6.0	6.0	7.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)