

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: P242219

Luminaire Tested: **S121RDR-S1025D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242219
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-S1025D927-X4F0-XX-UDD-A-W
Description: DEFINE 1 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2829.3 lumens
Efficiency: N/A
Efficacy: 68.8 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

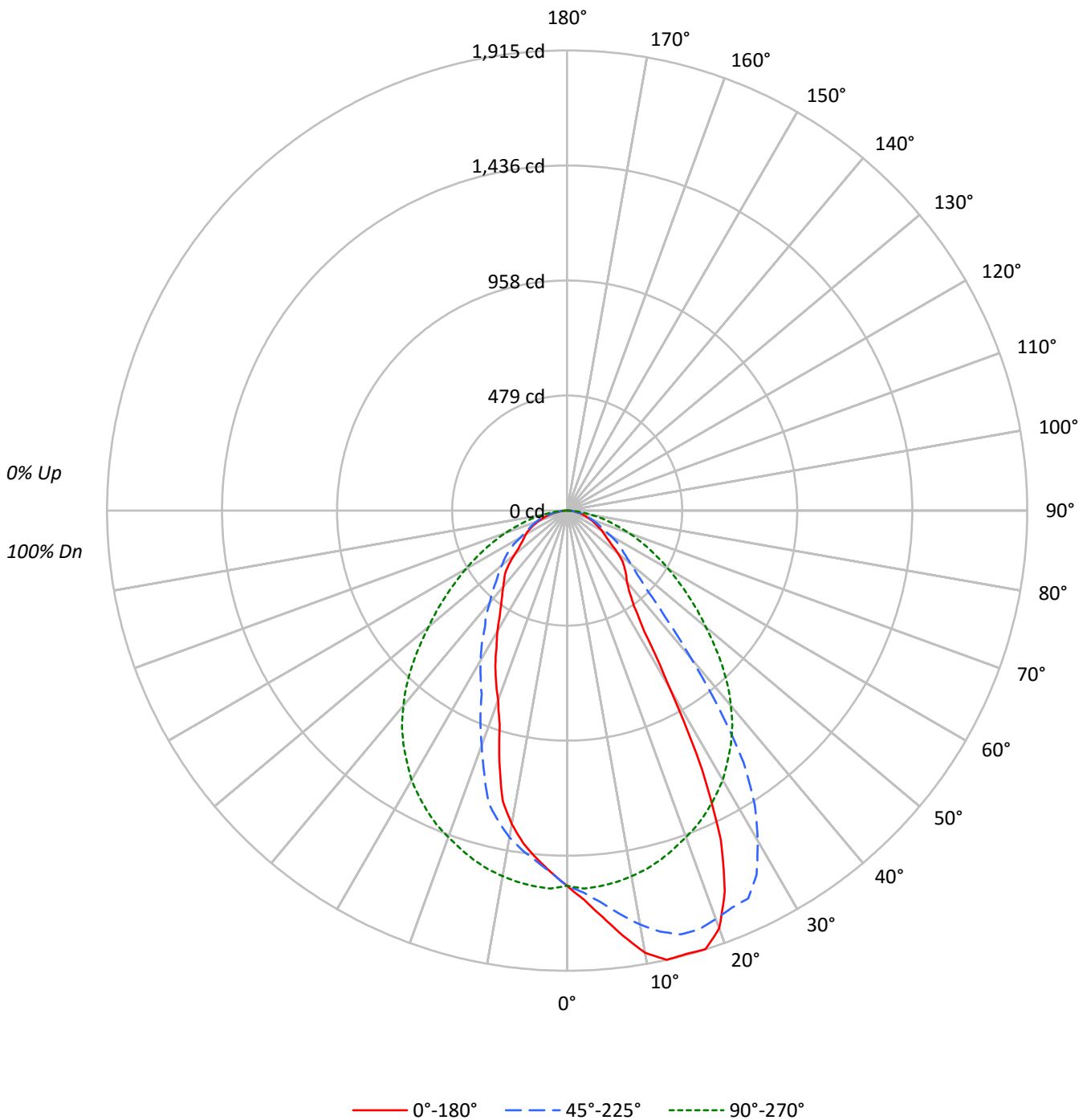
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242219

CATALOG NUMBER: S121RDR-S1025D927-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	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			
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°	46270	46270	46270
5°	50497	46673	43234
10°	56205	46490	39847
15°	58598	46138	33353
20°	58345	45594	26471
25°	49480	45083	23107
30°	29126	44310	19844
35°	17496	42957	17326
40°	14988	41007	15986
45°	14172	38228	15202
50°	12662	34719	13151
55°	10554	31692	11886
60°	9813	28877	11828
65°	9058	26298	11442
70°	8542	23702	10786
75°	8059	20973	9811
80°	7218	17524	8617
85°	6799	13768	6799



TEST NUMBER: P242219

CATALOG NUMBER: S121RDR-S1025D927-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.7	5.3
10°-20°	426.5	15.1
20°-30°	582.5	20.6
30°-40°	542.7	19.2
40°-50°	448.7	15.9
50°-60°	330.8	11.7
60°-70°	211.5	7.5
70°-80°	108.8	3.8
80°-90°	28.0	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°	1158.7	41.0
0°-40°	1701.5	60.1
0°-60°	2481.0	87.7
0°-90°	2829.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2829.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1562	1562	1562	1562	1562	
5°	1698	1638	1569	1465	1454	167
15°	1910	1826	1504	1262	1087	538
25°	1514	1781	1379	842	707	657
35°	484	1280	1188	597	479	329
45°	338	477	912	418	363	259
55°	204	274	614	299	230	188
65°	129	149	375	174	163	129
75°	70	77	183	96	86	74
85°	20	20	40	23	20	22
90°	0	0	0	0	0	



TEST NUMBER: P242219

CATALOG NUMBER: S121RDR-S1025D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6
2.5°	1621.5	1620.3	1622.1	1620.9	1619.7	1616.8	1614.4	1607.4	1596.8	1591.0	1596.8
5°	1697.8	1702.5	1700.7	1698.4	1693.1	1688.4	1677.8	1671.4	1652.6	1637.9	1642.0
7.5°	1784.7	1790.6	1782.9	1777.7	1774.7	1761.2	1749.5	1731.3	1710.7	1694.3	1684.9
10°	1868.1	1869.8	1867.5	1862.8	1852.8	1838.1	1821.1	1800.5	1774.7	1749.5	1732.4
12.5°	1915.0	1918.0	1921.5	1913.3	1905.6	1893.9	1876.3	1855.7	1824.0	1794.7	1775.3
15°	1910.3	1912.7	1919.1	1916.2	1912.7	1907.4	1897.4	1880.4	1858.1	1825.8	1798.2
17.5°	1913.9	1915.6	1918.5	1908.0	1902.1	1895.7	1882.7	1871.0	1852.2	1827.0	1806.4
20°	1850.4	1879.2	1875.7	1889.8	1895.7	1895.1	1882.7	1860.4	1834.6	1808.8	1799.4
22.5°	1714.2	1737.1	1740.1	1761.8	1788.8	1810.5	1837.5	1847.5	1827.6	1788.8	1775.9
25°	1513.5	1529.9	1546.3	1577.5	1606.2	1666.7	1721.9	1763.6	1786.5	1781.2	1755.9
27.5°	1216.4	1198.8	1264.0	1299.8	1380.2	1468.3	1545.8	1622.1	1658.5	1707.2	1731.9
30°	851.3	849.5	898.8	961.0	1081.4	1162.4	1307.4	1430.1	1525.8	1585.7	1652.6
32.5°	597.6	606.4	642.8	681.0	747.3	879.4	990.4	1159.5	1322.7	1453.6	1535.8
35°	483.7	484.9	493.1	516.0	556.5	629.9	716.2	880.6	1101.9	1279.8	1402.5
37.5°	423.9	427.4	429.7	442.7	457.3	488.4	543.0	656.9	840.1	1038.5	1251.6
40°	387.5	390.4	392.8	396.9	405.7	420.3	456.2	510.8	616.4	799.0	1036.2
42.5°	362.8	361.6	366.9	368.7	373.4	381.6	397.4	426.8	487.9	611.7	816.0
45°	338.2	339.9	339.9	342.3	346.4	351.1	357.5	375.7	406.8	477.3	637.6
47.5°	312.3	311.7	315.3	317.0	321.1	325.2	329.9	339.3	357.5	398.6	491.4
50°	274.7	275.9	282.4	288.3	294.1	299.4	305.3	311.1	322.9	345.2	402.1
52.5°	234.8	234.8	241.9	246.0	254.2	267.1	277.1	285.9	293.5	304.7	338.7
55°	204.3	204.9	207.2	210.8	216.6	223.1	236.0	251.3	264.2	273.6	292.4
57.5°	183.2	183.8	184.3	187.3	190.2	192.6	200.2	211.9	229.0	246.0	257.1
60°	165.6	165.0	165.0	166.7	169.1	172.0	176.1	180.8	190.2	208.4	228.4
62.5°	145.6	146.8	146.8	148.5	150.3	153.2	155.0	159.7	165.0	173.2	193.7
65°	129.2	130.3	129.2	130.9	132.1	133.9	136.8	139.1	143.8	149.1	157.3
67.5°	112.7	113.3	114.5	115.1	116.2	116.8	119.2	122.1	125.0	128.6	135.0
70°	98.6	98.6	98.6	99.8	101.0	101.0	102.7	103.9	106.8	110.4	113.9
72.5°	83.4	84.0	84.0	83.4	85.7	86.3	86.9	88.1	90.4	93.3	96.3
75°	70.4	69.3	69.3	69.9	71.6	71.6	72.2	72.8	74.6	76.9	78.7
77.5°	55.2	55.2	55.8	56.4	56.9	56.9	58.1	58.1	60.5	61.6	62.8
80°	42.3	43.4	44.0	43.4	43.4	44.0	44.0	45.2	45.8	46.4	47.6
82.5°	31.7	32.3	31.1	31.1	31.7	31.7	32.3	32.3	32.9	33.5	33.5
85°	20.0	20.0	20.5	20.0	20.5	20.0	20.0	21.1	20.5	20.5	21.1
87.5°	9.4	10.0	9.4	10.0	9.4	10.0	10.0	10.0	10.0	10.0	9.4
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: P242219

CATALOG NUMBER: S121RDR-S1025D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6
2.5°	1595.1	1594.5	1591.5	1585.1	1580.4	1571.6	1571.6	1574.5	1559.3	1548.7	1548.1
5°	1632.1	1626.2	1616.2	1603.9	1592.7	1577.5	1571.6	1569.2	1548.7	1532.8	1527.6
7.5°	1671.4	1656.7	1639.7	1619.7	1600.9	1579.2	1568.1	1559.3	1532.8	1513.5	1501.7
10°	1712.5	1689.0	1662.6	1633.8	1608.0	1578.6	1560.4	1545.2	1514.6	1487.6	1474.1
12.5°	1748.9	1716.0	1682.5	1645.0	1609.7	1572.8	1547.5	1527.6	1491.7	1459.5	1443.0
15°	1765.9	1730.7	1703.1	1651.4	1603.9	1566.3	1534.0	1504.1	1465.9	1430.1	1404.9
17.5°	1780.6	1741.8	1705.4	1656.7	1601.5	1552.8	1514.1	1475.9	1434.8	1397.2	1366.1
20°	1776.5	1743.6	1699.0	1647.3	1595.1	1538.7	1494.7	1446.0	1394.9	1356.7	1323.8
22.5°	1753.0	1726.0	1679.6	1630.3	1579.8	1519.3	1469.4	1416.6	1353.8	1312.1	1275.1
25°	1723.1	1697.2	1651.4	1600.4	1550.5	1491.7	1433.0	1379.0	1311.5	1261.6	1214.1
27.5°	1699.6	1660.8	1615.0	1558.1	1509.9	1454.2	1392.5	1337.9	1265.1	1210.0	1154.8
30°	1672.6	1628.5	1572.2	1511.7	1460.6	1409.6	1349.7	1295.1	1214.6	1151.8	1083.1
32.5°	1595.1	1595.7	1528.7	1461.2	1406.6	1352.0	1298.6	1240.5	1160.6	1086.7	1016.2
35°	1494.1	1533.4	1484.1	1406.6	1339.1	1288.6	1244.6	1187.6	1099.0	1022.7	942.8
37.5°	1359.1	1428.3	1434.2	1353.8	1279.2	1219.9	1176.5	1128.9	1039.7	957.5	878.3
40°	1224.0	1315.6	1352.0	1296.3	1215.2	1147.1	1103.7	1060.2	976.3	887.7	814.3
42.5°	1058.5	1207.0	1252.2	1235.8	1148.9	1075.5	1029.7	990.4	908.8	821.9	749.1
45°	871.8	1072.6	1138.3	1155.4	1082.0	1003.3	950.5	912.3	840.7	764.4	688.6
47.5°	700.4	921.1	1029.7	1047.3	1008.6	932.3	871.8	831.9	774.9	709.2	634.0
50°	534.2	760.3	915.8	942.8	933.4	855.9	800.2	753.2	709.8	651.1	580.6
52.5°	425.0	607.6	792.5	843.0	846.0	784.9	726.2	683.4	641.1	594.7	530.7
55°	339.3	469.7	656.9	742.6	750.9	708.6	654.6	613.5	581.8	538.3	484.3
57.5°	285.9	363.4	526.0	641.7	645.2	633.4	581.8	547.7	521.3	483.7	436.2
60°	244.2	288.3	405.7	540.7	558.3	558.3	517.2	487.3	462.0	433.8	388.6
62.5°	211.3	235.4	307.6	429.7	474.9	482.0	456.2	429.7	410.9	382.8	341.1
65°	177.9	196.1	238.4	332.3	394.5	407.4	394.5	375.1	360.5	331.1	298.2
67.5°	146.2	163.8	190.2	251.9	320.0	335.8	333.5	323.5	308.2	286.5	251.9
70°	120.9	131.5	150.9	186.7	251.3	275.3	282.4	273.6	260.1	236.6	211.3
72.5°	99.8	108.0	117.4	143.2	187.9	219.6	231.3	226.6	216.6	194.3	173.2
75°	81.6	86.9	93.3	105.7	135.0	170.8	184.3	183.2	173.2	154.4	137.4
77.5°	65.8	67.5	72.2	79.8	94.5	126.8	137.4	140.9	133.3	117.4	103.9
80°	49.3	51.7	54.0	58.1	65.2	84.0	97.5	102.7	96.3	86.9	73.4
82.5°	34.6	35.2	37.6	39.9	43.4	51.1	65.2	71.0	65.2	55.2	51.1
85°	21.7	21.1	21.7	22.3	25.8	27.6	36.4	40.5	39.3	33.5	28.8
87.5°	10.0	10.0	9.4	10.0	9.4	11.2	12.9	18.8	14.1	12.3	11.2
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: P242219

CATALOG NUMBER: S121RDR-S1025D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6
2.5°	1543.4	1541.6	1535.8	1527.6	1520.5	1508.8	1508.8	1511.7	1511.1	1512.3	1511.1
5°	1518.8	1510.5	1501.7	1490.6	1480.0	1464.7	1463.0	1464.2	1463.6	1463.0	1459.5
7.5°	1487.1	1477.7	1466.5	1452.4	1440.7	1426.0	1421.9	1420.7	1416.0	1414.3	1409.6
10°	1456.5	1445.4	1430.7	1413.7	1397.8	1380.8	1370.2	1364.4	1356.7	1348.5	1341.5
12.5°	1422.5	1407.8	1389.0	1368.5	1342.0	1323.3	1307.4	1297.4	1286.9	1272.8	1262.8
15°	1386.1	1356.1	1333.8	1300.4	1268.1	1261.6	1237.5	1205.8	1203.5	1134.8	1110.7
17.5°	1337.3	1312.7	1271.0	1227.6	1183.5	1147.7	1148.3	1062.6	1036.2	1035.6	993.3
20°	1286.9	1252.8	1204.7	1160.6	1114.3	1040.3	981.6	953.4	910.5	894.1	870.0
22.5°	1227.6	1182.9	1126.6	1066.7	1002.1	942.2	884.7	857.7	836.0	817.8	807.8
25°	1157.1	1111.9	1044.4	969.8	897.6	841.9	810.2	797.8	760.8	747.9	735.6
27.5°	1086.1	1036.8	948.7	877.1	817.8	779.6	746.8	726.2	708.6	675.7	661.0
30°	1018.6	939.3	866.5	800.8	756.1	720.3	696.3	654.6	629.9	614.7	608.2
32.5°	945.2	860.6	794.9	737.9	692.2	661.0	625.2	597.1	585.9	565.9	537.2
35°	870.0	793.1	724.4	678.7	639.3	597.1	574.7	547.7	519.6	504.3	501.9
37.5°	797.2	724.4	675.1	627.0	579.4	554.8	521.9	493.1	483.2	469.1	453.8
40°	731.5	669.3	623.5	568.3	539.5	501.4	476.1	461.4	437.4	432.1	427.4
42.5°	677.5	624.1	572.4	523.1	489.6	459.1	436.8	419.8	412.1	399.2	395.1
45°	622.9	573.6	520.7	482.0	443.8	418.0	402.7	388.1	379.2	375.7	368.7
47.5°	573.6	525.4	476.7	429.1	403.3	386.3	369.3	361.6	356.4	348.7	344.6
50°	526.6	473.2	427.4	397.4	369.9	354.6	343.4	336.4	328.2	320.0	308.2
52.5°	479.0	433.3	389.2	357.5	337.0	327.0	316.4	308.8	292.4	276.5	266.5
55°	430.9	383.9	348.1	324.1	309.4	298.8	286.5	264.2	248.9	240.1	235.4
57.5°	387.5	345.2	313.5	293.5	283.0	265.4	243.6	229.5	221.9	218.4	216.0
60°	341.1	304.7	278.3	263.0	246.6	223.1	211.3	204.3	202.0	200.8	199.0
62.5°	301.2	268.9	248.3	231.3	207.8	195.5	189.0	185.5	185.5	183.8	182.6
65°	258.9	233.7	216.0	191.4	179.1	173.8	171.4	169.7	167.9	167.3	165.0
67.5°	224.3	202.0	179.1	166.1	158.5	155.6	153.2	152.6	150.3	148.5	146.8
70°	189.0	167.3	148.5	142.7	138.5	137.4	135.0	132.7	130.9	128.6	127.4
72.5°	153.8	133.3	126.8	123.9	119.8	118.0	115.1	113.3	110.4	109.2	108.0
75°	117.4	109.2	105.7	103.3	100.4	96.3	95.1	93.3	92.2	90.4	88.6
77.5°	93.3	88.6	84.5	81.6	79.3	76.3	74.0	73.4	72.2	70.4	69.9
80°	69.9	66.3	64.6	61.6	58.7	56.9	55.8	55.2	53.4	52.8	52.2
82.5°	48.1	45.2	44.0	40.5	39.3	39.3	38.7	37.6	36.4	35.8	35.2
85°	27.0	25.8	24.1	24.7	22.9	22.9	22.3	21.7	21.1	20.5	20.0
87.5°	10.6	10.0	9.4	8.8	8.8	7.0	7.0	7.0	7.6	7.0	6.5
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: P242219

CATALOG NUMBER: S121RDR-S1025D927-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1561.6	1561.6	1561.6	1561.6
2.5°	1512.9	1514.1	1509.9	1507.6
5°	1459.5	1457.7	1455.3	1453.6
7.5°	1404.9	1403.1	1403.1	1396.1
10°	1338.5	1333.8	1330.3	1324.4
12.5°	1254.0	1246.9	1244.6	1237.5
15°	1094.3	1079.6	1069.6	1087.3
17.5°	983.3	945.2	948.1	933.4
20°	869.5	854.2	861.8	839.5
22.5°	795.5	786.1	777.3	772.6
25°	726.8	715.6	702.1	706.8
27.5°	640.5	640.5	631.7	635.2
30°	596.5	591.8	577.1	580.0
32.5°	527.8	521.9	520.1	521.3
35°	494.9	485.5	482.6	479.0
37.5°	449.1	445.6	446.2	443.8
40°	418.6	415.6	412.1	413.3
42.5°	392.2	390.4	386.9	387.5
45°	366.3	364.6	362.8	362.8
47.5°	337.6	334.0	331.1	327.6
50°	300.0	292.9	287.7	285.3
52.5°	259.5	256.0	252.4	252.4
55°	233.7	231.9	230.7	230.1
57.5°	215.5	214.3	214.3	212.5
60°	199.0	199.0	198.4	199.6
62.5°	183.2	181.4	182.0	182.0
65°	165.0	164.4	163.8	163.2
67.5°	145.6	145.0	145.6	144.4
70°	126.2	126.2	125.6	124.5
72.5°	106.3	107.4	106.3	105.7
75°	87.5	86.9	87.5	85.7
77.5°	69.9	67.5	68.7	69.3
80°	51.7	51.7	51.1	50.5
82.5°	34.6	35.2	34.1	34.1
85°	20.0	20.0	18.8	20.0
87.5°	5.9	5.9	5.9	7.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)