

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: P242141

Luminaire Tested: **S121DR-S1025D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242141
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-S1025D935-X4F0-XX-UDD-A-W
Description: DEFINE 1 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: 3654.0 lumens
Efficiency: N/A
Efficacy: 88.9 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

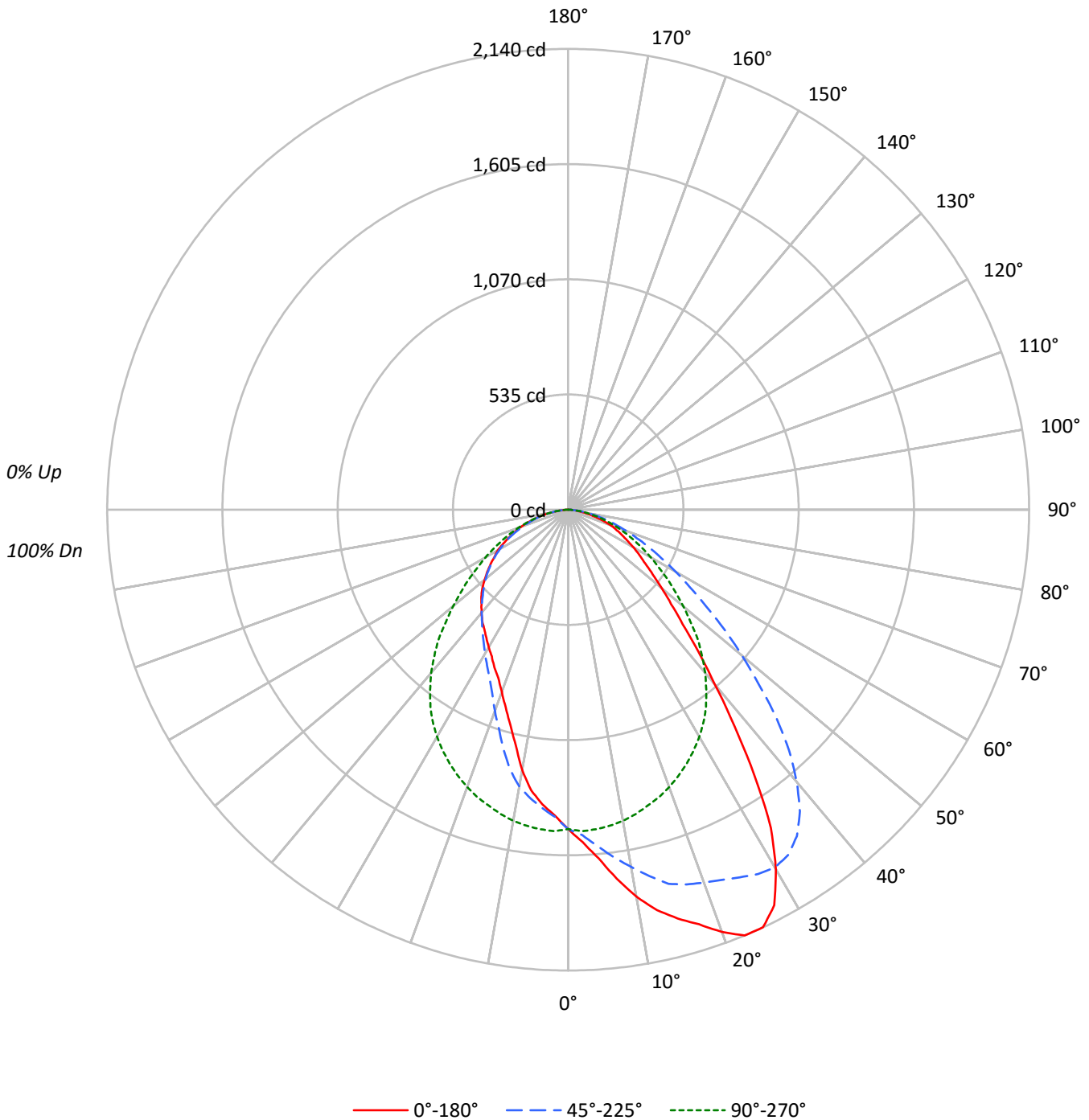
Input Watts (W): 41.1
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	43935	43935	43935
5°	48356	44293	40840
10°	54902	44134	36935
15°	60282	43647	31745
20°	65787	43214	28407
25°	69963	42533	26452
30°	65970	41651	25236
35°	54514	40342	24510
40°	40868	38253	24186
45°	31494	35668	23901
50°	26118	32087	23352
55°	22543	29135	22678
60°	20723	26276	22382
65°	19147	23753	21117
70°	18132	21337	20228
75°	14905	18843	17973
80°	11756	15357	14811
85°	9111	11287	9995



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.6	3.9
10°-20°	415.9	11.4
20°-30°	636.8	17.4
30°-40°	726.7	19.9
40°-50°	652.0	17.8
50°-60°	511.5	14.0
60°-70°	348.0	9.5
70°-80°	179.2	4.9
80°-90°	41.3	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°	1195.3	32.7
0°-40°	1922.0	52.6
0°-60°	3085.6	84.4
0°-90°	3654.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3654.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1483	1483	1483	1483	1483	
5°	1626	1568	1489	1390	1373	162
15°	1965	1799	1423	1156	1035	559
25°	2140	1884	1301	863	809	965
35°	1507	1850	1115	692	678	934
45°	752	1365	851	561	570	596
55°	436	779	564	434	439	398
65°	273	415	339	296	301	272
75°	130	182	165	151	157	141
85°	27	36	33	31	29	32
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°	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8
2.5°	1545.4	1545.4	1547.9	1547.3	1544.7	1540.3	1536.4	1532.0	1520.5	1512.8	1519.8
5°	1625.8	1629.0	1632.1	1631.5	1621.9	1613.6	1601.5	1598.3	1577.9	1568.3	1565.1
7.5°	1727.9	1727.2	1728.5	1717.6	1709.3	1701.1	1685.1	1665.3	1641.1	1627.7	1614.9
10°	1824.8	1830.6	1828.0	1814.6	1801.9	1792.9	1767.4	1743.2	1713.2	1684.5	1668.5
12.5°	1904.0	1900.8	1911.6	1898.8	1883.5	1866.9	1842.1	1820.4	1781.4	1742.5	1710.0
15°	1965.2	1962.0	1963.3	1953.7	1937.8	1923.1	1897.6	1874.6	1837.6	1798.7	1764.2
17.5°	2018.8	2022.0	2016.3	2004.8	1983.1	1965.8	1933.9	1902.7	1863.8	1824.8	1791.0
20°	2086.4	2089.6	2078.8	2062.2	2041.1	2011.8	1978.6	1933.9	1890.6	1842.7	1800.6
22.5°	2140.0	2138.1	2134.3	2118.3	2096.0	2068.6	2020.7	1971.6	1919.9	1860.6	1806.3
25°	2140.0	2142.6	2144.5	2136.2	2121.5	2098.6	2066.0	2014.3	1956.3	1883.5	1807.6
27.5°	2071.1	2082.6	2090.9	2090.9	2087.7	2087.1	2067.9	2035.4	1981.2	1907.8	1823.6
30°	1928.2	1943.5	1956.3	1976.1	1999.7	2015.0	2020.7	2008.0	1979.9	1918.0	1830.6
32.5°	1752.1	1750.8	1777.0	1808.9	1855.5	1888.0	1920.5	1939.7	1938.4	1901.4	1828.7
35°	1507.1	1524.9	1556.2	1600.9	1660.9	1714.5	1785.3	1822.3	1851.6	1850.4	1803.8
37.5°	1268.5	1271.0	1306.1	1367.3	1420.3	1503.3	1595.8	1673.0	1743.8	1766.8	1751.5
40°	1056.6	1074.5	1098.1	1149.1	1202.1	1274.8	1392.2	1495.6	1583.0	1650.6	1669.1
42.5°	893.3	902.8	925.8	970.5	1017.7	1104.5	1190.6	1301.0	1411.4	1519.2	1574.7
45°	751.6	760.6	781.6	812.9	856.9	925.2	1013.9	1121.1	1239.1	1365.4	1444.6
47.5°	648.3	651.5	667.4	691.0	732.5	782.3	853.7	957.7	1077.0	1200.2	1316.3
50°	566.6	571.7	582.5	601.0	631.7	678.3	735.0	813.5	923.9	1051.5	1169.6
52.5°	495.1	499.0	511.7	521.9	545.5	585.1	634.2	705.7	798.8	913.7	1035.6
55°	436.4	440.3	446.6	458.1	476.6	503.4	545.5	602.3	682.1	779.1	893.3
57.5°	391.8	393.7	395.0	402.6	417.3	439.0	474.7	519.4	581.3	670.0	771.4
60°	349.7	349.0	354.1	359.9	368.8	382.2	408.4	448.6	504.1	576.2	670.6
62.5°	307.5	310.7	313.9	318.4	324.1	331.8	352.8	382.8	426.9	488.7	566.6
65°	273.1	273.7	276.3	276.9	283.9	291.6	307.5	328.0	364.3	414.7	479.2
67.5°	239.9	240.5	239.9	241.8	245.0	251.4	259.7	276.3	304.4	345.2	401.3
70°	209.3	207.4	204.8	208.0	211.2	214.4	220.1	232.9	253.9	284.6	331.2
72.5°	168.4	169.7	171.0	172.3	172.9	177.4	182.5	191.4	208.0	231.6	267.3
75°	130.2	130.2	132.1	133.4	139.1	140.4	146.1	152.5	165.9	182.5	210.6
77.5°	95.7	95.1	98.3	98.9	102.1	105.9	109.1	115.5	125.7	139.7	158.2
80°	68.9	69.5	68.9	68.9	70.8	73.4	77.8	81.0	88.1	97.0	110.4
82.5°	45.9	45.9	46.6	46.6	48.5	48.5	51.0	53.6	58.1	63.8	73.4
85°	26.8	26.8	26.2	26.2	26.8	26.8	29.4	31.3	31.9	35.7	38.9
87.5°	11.5	11.5	10.8	11.5	10.8	11.5	10.8	12.1	12.8	13.4	14.7
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°	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8
2.5°	1517.9	1516.0	1515.4	1508.4	1501.3	1493.0	1491.8	1494.3	1483.5	1470.1	1469.4
5°	1557.5	1550.5	1540.3	1526.9	1515.4	1500.1	1492.4	1489.2	1472.6	1453.5	1449.7
7.5°	1601.5	1584.3	1565.8	1545.4	1524.9	1502.6	1488.6	1480.3	1457.3	1433.7	1424.1
10°	1643.6	1621.3	1593.2	1562.0	1533.2	1502.6	1481.6	1466.9	1438.8	1409.5	1394.8
12.5°	1692.1	1655.1	1615.6	1576.6	1541.5	1502.0	1470.1	1447.7	1415.2	1383.9	1362.2
15°	1727.2	1673.6	1643.0	1587.5	1543.5	1495.6	1456.7	1422.9	1387.1	1352.7	1331.0
17.5°	1754.6	1712.5	1658.9	1597.7	1538.3	1486.7	1438.2	1400.5	1353.3	1315.7	1292.1
20°	1763.6	1720.8	1666.0	1599.0	1539.6	1473.3	1415.8	1370.5	1320.1	1274.2	1241.7
22.5°	1760.4	1711.9	1655.8	1590.0	1530.1	1451.6	1391.6	1337.4	1281.2	1232.1	1187.4
25°	1753.4	1697.2	1635.3	1573.4	1506.4	1429.2	1360.3	1301.0	1233.4	1179.8	1126.2
27.5°	1749.5	1676.2	1606.6	1539.6	1475.8	1401.2	1327.2	1260.8	1186.1	1121.1	1052.2
30°	1748.3	1660.9	1573.4	1495.6	1436.9	1361.0	1287.6	1217.4	1130.0	1056.6	986.4
32.5°	1745.7	1648.1	1545.4	1452.2	1385.2	1316.9	1239.1	1169.6	1070.7	994.1	918.8
35°	1728.5	1625.8	1512.8	1406.9	1328.4	1257.6	1188.1	1115.3	1012.6	930.3	858.2
37.5°	1691.5	1601.5	1480.9	1361.6	1267.8	1195.7	1131.3	1052.2	952.6	862.6	795.7
40°	1636.6	1563.2	1446.5	1316.9	1206.6	1127.4	1059.2	989.0	886.3	800.1	739.5
42.5°	1565.1	1508.4	1398.6	1264.6	1147.2	1058.5	989.0	919.4	825.0	742.1	687.8
45°	1471.4	1436.3	1339.9	1207.8	1089.8	987.1	911.8	851.2	763.8	687.8	638.1
47.5°	1367.3	1352.0	1271.6	1144.7	1020.2	920.7	832.7	768.9	700.6	636.1	592.1
50°	1241.7	1253.8	1190.6	1073.8	953.3	851.2	765.0	696.1	636.8	587.0	548.1
52.5°	1124.3	1153.0	1101.9	990.9	883.1	777.1	690.4	627.2	580.6	539.8	506.0
55°	993.5	1034.9	1004.3	908.6	801.4	707.6	620.8	564.0	523.8	492.6	463.9
57.5°	867.8	926.5	904.1	818.0	726.7	635.5	553.8	497.7	469.0	446.0	421.8
60°	756.1	809.7	806.5	733.1	641.9	560.8	493.9	443.4	417.9	402.6	381.6
62.5°	655.9	710.2	705.0	638.7	566.6	491.3	434.5	388.6	370.1	353.5	340.1
65°	553.8	600.4	603.0	553.8	484.3	423.7	375.2	338.8	322.2	312.0	302.4
67.5°	461.3	506.6	511.1	472.2	410.9	358.6	322.2	291.6	276.9	268.0	261.0
70°	380.3	417.3	425.6	393.0	341.4	300.5	269.9	246.3	236.7	227.8	225.2
72.5°	308.2	338.2	343.9	313.9	275.6	245.0	221.4	203.5	196.5	187.6	185.7
75°	245.0	266.1	266.7	246.9	218.2	194.6	175.5	164.6	157.0	150.6	149.3
77.5°	178.0	196.5	202.3	187.6	164.0	144.2	133.4	125.1	120.0	116.8	116.1
80°	128.9	141.0	143.6	130.8	116.8	104.6	97.0	90.0	86.8	83.6	82.3
82.5°	80.4	91.2	91.9	82.9	75.9	67.6	61.3	58.7	56.8	54.9	54.9
85°	43.4	49.1	48.5	44.7	41.5	37.0	34.5	33.2	31.9	30.6	30.6
87.5°	16.6	18.5	18.5	19.1	16.6	14.7	13.4	14.0	13.4	13.4	13.4
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°	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8	1482.8
2.5°	1465.0	1462.4	1456.0	1445.8	1440.1	1427.3	1428.0	1430.5	1431.2	1429.2	1428.6
5°	1438.8	1431.2	1420.9	1408.2	1399.3	1389.7	1383.3	1387.1	1385.2	1384.6	1381.4
7.5°	1410.1	1399.9	1387.1	1374.4	1364.2	1351.4	1346.3	1341.8	1336.7	1336.1	1333.5
10°	1381.4	1368.6	1354.0	1335.4	1321.4	1305.5	1290.1	1281.9	1272.3	1265.3	1250.6
12.5°	1347.6	1325.9	1309.3	1290.1	1264.6	1239.1	1221.9	1198.3	1185.5	1172.7	1155.5
15°	1308.6	1280.6	1251.9	1213.6	1191.2	1155.5	1130.0	1112.8	1093.0	1080.2	1065.6
17.5°	1253.1	1223.8	1187.4	1144.0	1104.5	1068.1	1049.6	1027.3	1019.0	990.9	988.3
20°	1198.3	1154.2	1108.9	1064.9	1020.9	994.7	971.1	956.4	941.1	923.3	917.5
22.5°	1136.4	1078.9	1031.1	990.3	950.1	921.3	909.9	893.3	878.6	868.4	858.8
25°	1061.1	1008.1	959.6	921.3	885.0	863.3	848.6	836.5	830.1	818.6	814.8
27.5°	991.5	938.6	899.7	863.9	834.6	815.4	802.7	791.8	783.5	781.6	777.1
30°	920.7	875.4	838.4	807.8	781.6	771.4	759.3	754.2	749.1	746.5	741.4
32.5°	856.9	816.7	784.2	754.8	739.5	729.9	723.6	718.4	714.6	713.3	712.1
35°	798.8	761.8	735.0	714.0	702.5	692.3	689.1	684.6	682.7	682.1	681.4
37.5°	747.8	713.3	692.9	674.4	666.1	656.6	657.2	655.3	654.0	650.2	652.7
40°	696.1	669.3	648.3	633.6	627.8	624.7	623.4	622.1	622.7	622.7	622.1
42.5°	648.9	625.3	611.9	597.9	595.3	592.8	592.8	590.8	591.5	594.7	595.9
45°	606.2	587.6	575.5	564.0	564.0	560.8	563.4	562.8	564.7	566.6	567.9
47.5°	563.4	546.8	537.9	532.1	529.6	529.6	531.5	534.7	536.0	536.6	537.9
50°	520.7	508.5	500.9	497.7	497.0	500.2	502.1	501.5	503.4	506.0	507.9
52.5°	483.0	472.2	467.1	465.8	465.8	468.3	469.0	470.9	472.2	472.2	474.7
55°	444.1	436.4	432.6	432.0	432.6	433.9	436.4	437.7	437.1	438.3	438.3
57.5°	405.2	399.4	397.5	399.4	399.4	402.0	402.0	402.0	401.3	403.9	403.3
60°	368.8	362.4	364.3	363.7	365.6	365.6	367.5	367.5	365.6	368.2	369.4
62.5°	332.4	331.2	328.6	328.6	330.5	331.2	329.2	331.2	331.8	333.7	335.0
65°	294.1	289.7	291.6	291.0	292.9	296.1	293.5	293.5	295.4	298.0	299.2
67.5°	257.8	253.9	255.9	256.5	256.5	257.8	255.9	257.1	259.7	262.9	264.8
70°	220.8	219.5	220.1	219.5	219.5	222.7	223.3	222.7	225.2	228.4	229.1
72.5°	183.1	184.4	183.1	184.4	185.7	183.8	184.4	186.3	188.9	190.8	194.0
75°	148.7	146.8	147.4	150.6	149.9	151.2	150.6	152.5	157.0	155.7	156.3
77.5°	114.8	114.2	114.8	115.5	116.1	118.0	117.4	120.6	121.2	121.9	123.1
80°	81.7	82.3	82.9	84.2	86.1	85.5	86.8	87.4	90.0	87.4	89.3
82.5°	55.5	54.9	56.1	56.1	58.1	59.3	57.4	57.4	57.4	56.8	56.8
85°	30.6	32.5	32.5	32.5	31.3	31.3	31.9	31.3	31.3	31.3	30.6
87.5°	13.4	13.4	12.8	12.1	12.8	12.1	12.1	11.5	10.8	10.8	10.2
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: P242141

CATALOG NUMBER: S121DR-S1025D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1482.8	1482.8	1482.8	1482.8
2.5°	1424.8	1428.0	1424.1	1421.6
5°	1378.2	1378.2	1374.4	1373.1
7.5°	1325.9	1326.5	1319.5	1314.4
10°	1247.4	1243.6	1233.4	1227.6
12.5°	1142.8	1148.5	1133.2	1121.7
15°	1051.5	1035.6	1041.9	1034.9
17.5°	974.9	969.8	962.8	963.5
20°	908.0	904.1	900.3	900.9
22.5°	855.0	851.8	850.5	846.1
25°	811.0	812.2	809.1	809.1
27.5°	774.6	772.7	770.8	768.2
30°	740.1	740.8	738.9	737.6
32.5°	709.5	710.2	708.9	707.0
35°	679.5	678.9	679.5	677.6
37.5°	652.1	651.5	652.1	654.6
40°	624.0	624.7	622.7	625.3
42.5°	596.6	597.2	597.2	595.9
45°	566.6	568.5	569.1	570.4
47.5°	537.2	540.4	539.2	539.8
50°	507.9	507.3	507.3	506.6
52.5°	475.4	473.4	472.8	473.4
55°	436.4	439.0	439.0	439.0
57.5°	404.5	405.2	407.1	404.5
60°	372.0	372.0	372.6	377.7
62.5°	335.6	336.3	337.5	338.2
65°	300.5	302.4	301.8	301.2
67.5°	266.1	266.1	266.7	265.4
70°	230.3	230.3	230.3	233.5
72.5°	193.3	193.3	194.0	195.2
75°	158.9	158.9	158.9	157.0
77.5°	121.2	121.9	121.9	122.5
80°	88.1	87.4	87.4	86.8
82.5°	55.5	56.1	55.5	54.9
85°	30.6	31.3	29.4	29.4
87.5°	10.8	10.8	10.2	11.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)