

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: P243280

Luminaire Tested: **S122RDR-H865D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243280
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-68)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122RDR-H865D940-X4F0-XX-UDD-A-W
Description: DEFINE 2 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2765.1 lumens
Efficiency: N/A
Efficacy: 87.8 lumens/watt
Spacing Criteria (0/90/45): 0.81 / 1.17 / 0.99
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

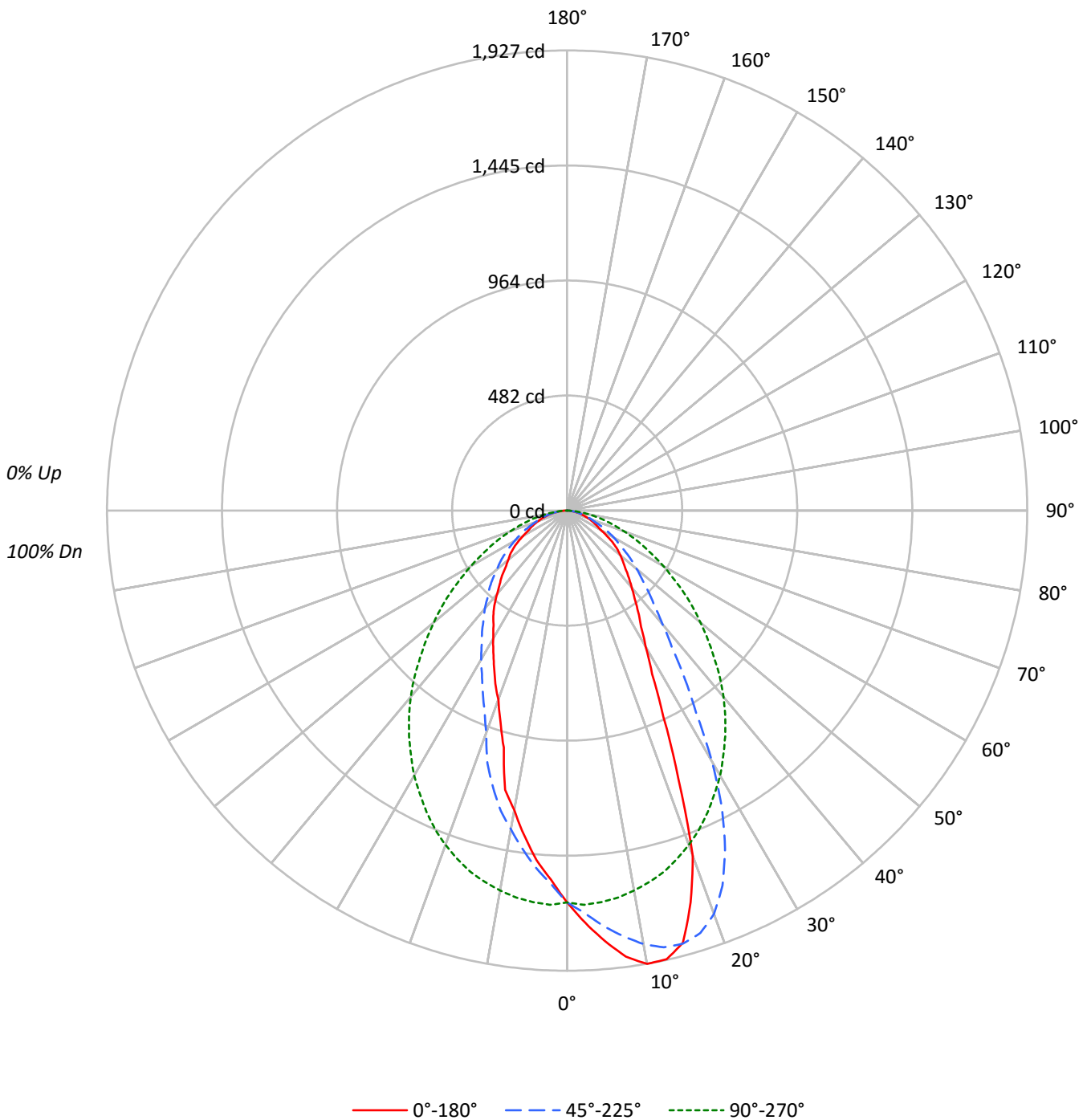
Input Watts (W): 31.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	106	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	81	86	83	79	84	80	78	76
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66
4	87	77	69	63	85	76	68	63	73	67	62	71	65	61	69	64	60	58
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42
8	66	54	46	41	65	53	46	41	52	45	41	51	45	40	50	44	40	38
9	62	50	43	38	61	50	42	37	48	42	37	47	41	37	46	41	37	35
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	44	38	34	33

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	31252	31252	31252
5°	34595	31463	28086
10°	37279	31246	24631
15°	36949	30883	20242
20°	31167	30198	17086
25°	20040	29270	15210
30°	14477	28186	13628
35°	12059	26827	12533
40°	10466	25337	11346
45°	9342	23444	10384
50°	8623	21588	9545
55°	7738	19719	9093
60°	6175	17752	8179
65°	5661	15946	7549
70°	5202	14084	7173
75°	4739	12327	6793
80°	4124	10245	6362
85°	3278	8217	5857



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	155.3	5.6
10°-20°	424.9	15.4
20°-30°	535.6	19.4
30°-40°	514.2	18.6
40°-50°	442.9	16.0
50°-60°	338.6	12.2
60°-70°	215.5	7.8
70°-80°	109.2	3.9
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°	1115.9	40.4
0°-40°	1630.1	59.0
0°-60°	2411.6	87.2
0°-90°	2765.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2765.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1641	1641	1641	1641	1641	
5°	1809	1746	1646	1502	1469	176
15°	1874	1877	1566	1199	1026	508
25°	954	1564	1393	836	724	456
35°	519	858	1154	622	539	327
45°	347	481	870	461	386	270
55°	233	293	594	320	274	206
65°	126	162	354	196	168	125
75°	64	73	168	102	92	68
85°	15	18	38	28	27	17
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°	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7
2.5°	1727.7	1729.8	1730.9	1728.2	1722.3	1722.8	1717.5	1708.3	1697.1	1686.9	1692.8
5°	1809.3	1811.9	1811.4	1806.6	1800.7	1795.3	1786.2	1773.3	1759.9	1745.9	1743.2
7.5°	1884.4	1890.3	1888.7	1879.6	1875.3	1867.8	1852.2	1837.7	1817.3	1797.5	1789.4
10°	1927.4	1932.2	1929.5	1927.4	1922.5	1915.0	1901.1	1887.1	1864.6	1843.6	1831.8
12.5°	1924.2	1928.4	1930.6	1932.7	1931.1	1928.4	1922.5	1910.7	1892.5	1873.2	1858.1
15°	1873.7	1866.7	1861.9	1875.3	1880.1	1898.4	1902.7	1904.3	1891.9	1877.4	1873.7
17.5°	1720.1	1722.3	1759.3	1753.4	1761.5	1806.0	1823.8	1847.9	1858.1	1854.9	1861.3
20°	1537.6	1512.4	1530.6	1557.5	1582.7	1647.7	1690.6	1728.7	1772.8	1797.5	1821.1
22.5°	1219.8	1220.3	1264.3	1308.4	1365.3	1435.6	1501.1	1574.1	1652.5	1700.3	1755.6
25°	953.5	979.3	998.6	1017.9	1100.6	1168.2	1277.2	1365.8	1473.7	1564.4	1657.3
27.5°	771.0	797.8	801.0	844.5	893.4	948.1	1019.5	1159.1	1269.7	1402.9	1517.7
30°	658.2	663.6	674.9	686.1	722.1	773.1	849.9	937.4	1060.3	1212.3	1366.3
32.5°	576.6	575.5	586.8	604.5	624.4	658.7	702.2	774.7	885.8	1006.6	1186.5
35°	518.6	517.0	525.1	531.5	543.3	571.2	610.4	658.2	738.2	858.5	998.0
37.5°	463.9	467.1	471.9	478.9	494.5	512.2	538.5	578.2	641.6	721.0	854.7
40°	420.9	424.7	430.0	434.9	446.7	461.2	478.9	510.6	553.0	622.2	724.8
42.5°	382.3	383.9	388.2	395.1	403.7	416.6	433.8	458.0	493.4	541.7	631.4
45°	346.8	346.8	351.7	358.1	363.5	375.8	389.2	412.3	439.7	481.0	544.9
47.5°	316.8	317.3	320.0	321.1	327.0	338.2	352.7	371.0	393.5	425.2	484.8
50°	291.0	293.1	294.2	295.8	298.0	303.9	314.1	328.0	352.7	380.6	420.4
52.5°	264.1	266.8	269.0	272.2	275.4	276.0	283.5	292.6	309.8	338.8	371.0
55°	233.0	235.2	239.4	242.1	246.4	250.2	256.1	262.5	273.8	293.1	326.4
57.5°	197.6	198.1	202.4	205.1	213.7	222.3	227.6	234.6	242.7	256.1	281.3
60°	162.1	163.7	164.3	166.4	173.9	183.1	193.8	204.5	213.1	225.0	242.7
62.5°	142.8	143.3	145.0	147.1	147.6	151.9	155.2	168.0	183.1	194.9	206.7
65°	125.6	126.2	126.2	127.8	129.9	132.1	133.7	138.5	145.0	161.6	176.1
67.5°	109.5	109.0	110.1	111.7	112.2	113.8	116.5	119.2	123.5	128.3	143.3
70°	93.4	93.4	92.9	94.5	96.1	96.6	98.2	100.9	103.6	107.9	112.7
72.5°	77.3	78.4	78.4	79.5	80.0	82.1	83.2	84.3	88.0	90.2	94.0
75°	64.4	63.9	65.5	65.0	66.0	66.6	68.2	69.8	70.9	73.0	76.2
77.5°	51.5	50.5	51.5	51.0	52.1	53.2	53.2	54.8	55.8	58.0	59.6
80°	37.6	37.6	38.1	39.2	39.2	39.7	40.8	40.3	42.4	42.9	44.6
82.5°	25.8	26.3	26.3	26.8	26.8	26.8	27.9	27.9	28.5	29.5	30.1
85°	15.0	14.5	15.0	15.0	15.0	15.6	16.1	15.6	16.6	17.7	17.7
87.5°	4.3	4.3	4.8	5.4	5.4	5.9	5.9	5.9	6.4	6.4	7.0
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°	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7
2.5°	1692.8	1690.1	1683.1	1676.7	1664.8	1655.2	1652.0	1652.5	1638.0	1623.0	1618.7
5°	1739.5	1729.8	1715.8	1701.4	1683.6	1665.9	1654.6	1645.5	1623.0	1600.4	1587.5
7.5°	1778.1	1762.6	1742.2	1719.1	1696.0	1669.7	1651.4	1634.2	1603.1	1572.5	1555.9
10°	1813.6	1791.5	1763.6	1733.6	1703.0	1668.6	1642.3	1615.5	1576.3	1541.9	1513.4
12.5°	1847.4	1812.5	1784.0	1740.5	1706.7	1660.0	1624.0	1592.9	1546.7	1503.8	1472.1
15°	1850.6	1825.9	1787.8	1742.7	1691.2	1647.7	1602.6	1566.1	1513.4	1465.7	1411.4
17.5°	1850.1	1830.7	1791.0	1744.8	1683.1	1626.2	1577.3	1529.6	1469.4	1413.6	1366.9
20°	1830.7	1817.3	1783.0	1728.2	1665.9	1600.4	1546.2	1489.8	1419.5	1362.0	1311.0
22.5°	1785.1	1788.3	1761.5	1712.6	1645.5	1572.5	1509.7	1444.7	1372.8	1306.8	1242.3
25°	1707.8	1742.2	1734.1	1688.5	1617.1	1537.1	1465.7	1392.7	1315.3	1245.0	1185.4
27.5°	1611.7	1676.1	1690.1	1654.6	1586.5	1496.8	1415.7	1336.3	1257.4	1181.7	1120.5
30°	1497.9	1594.0	1629.4	1610.1	1547.3	1453.3	1359.4	1281.5	1195.1	1114.5	1050.1
32.5°	1354.5	1489.3	1551.6	1557.5	1505.9	1405.0	1300.8	1217.1	1128.5	1052.3	983.0
35°	1194.5	1359.9	1461.4	1488.8	1451.7	1351.8	1242.3	1153.7	1059.3	982.5	912.7
37.5°	1033.5	1227.8	1361.0	1414.1	1389.4	1292.8	1176.8	1087.2	993.8	915.4	849.9
40°	885.3	1070.0	1242.9	1326.1	1318.6	1228.9	1111.9	1019.0	924.0	851.5	779.5
42.5°	752.7	930.9	1121.0	1232.7	1238.6	1160.2	1040.5	947.0	855.8	783.8	708.7
45°	648.0	804.8	993.2	1126.4	1152.1	1087.7	966.4	870.3	787.1	719.4	644.2
47.5°	564.3	686.1	861.1	1017.4	1063.0	1006.6	890.7	799.4	721.0	663.0	592.2
50°	491.8	606.1	754.8	899.3	966.4	924.0	815.5	728.5	657.7	601.8	539.6
52.5°	427.4	515.9	644.8	783.3	873.5	834.8	742.5	662.5	595.9	543.9	491.8
55°	374.2	448.3	562.1	685.6	768.8	747.3	665.2	593.8	535.3	485.9	443.5
57.5°	319.4	381.7	473.5	583.6	665.2	662.0	594.3	525.6	479.4	432.7	402.1
60°	271.7	322.1	396.7	490.2	572.3	572.8	520.2	466.0	426.3	386.0	357.0
62.5°	229.2	269.5	334.5	409.6	475.1	491.8	452.6	405.3	373.1	342.0	317.3
65°	192.7	222.8	271.7	339.8	391.4	413.9	388.2	353.8	327.0	299.0	277.0
67.5°	158.9	180.9	216.9	270.6	322.1	338.8	328.0	301.7	282.4	259.3	242.7
70°	125.1	143.9	169.1	209.4	251.8	274.9	271.7	252.9	236.8	220.1	204.5
72.5°	99.3	110.1	129.4	158.4	192.2	218.0	219.0	209.4	196.0	182.0	171.8
75°	80.0	84.8	94.0	116.5	143.3	164.8	172.3	167.5	156.8	148.2	141.2
77.5°	61.7	66.0	71.9	82.7	103.6	120.3	129.4	129.9	123.5	116.0	110.6
80°	46.2	47.8	52.1	57.4	68.2	82.7	93.4	93.4	89.7	85.9	82.7
82.5°	31.7	33.3	35.4	38.1	43.5	52.1	61.7	63.4	61.2	60.1	55.8
85°	17.7	19.3	20.4	22.0	24.2	28.5	35.4	37.6	38.1	34.9	32.7
87.5°	7.0	7.0	7.5	8.1	8.6	10.2	12.9	16.1	16.1	14.5	14.0
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°	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7	1640.7
2.5°	1613.3	1605.8	1596.1	1587.5	1575.7	1563.9	1561.8	1566.1	1567.1	1561.8	1563.4
5°	1575.2	1561.2	1549.4	1530.1	1517.7	1501.6	1490.9	1490.9	1490.9	1482.8	1475.3
7.5°	1535.5	1516.7	1494.1	1475.9	1450.6	1429.7	1419.5	1414.7	1405.0	1396.9	1387.8
10°	1489.3	1463.0	1435.1	1406.6	1384.6	1355.6	1338.4	1327.7	1311.0	1304.1	1290.6
12.5°	1435.1	1408.8	1374.9	1328.8	1322.3	1286.9	1262.7	1242.9	1222.5	1205.8	1199.9
15°	1391.6	1345.9	1300.8	1268.1	1220.3	1199.4	1163.9	1160.7	1144.1	1095.2	1057.1
17.5°	1321.2	1280.4	1230.5	1194.0	1155.9	1109.2	1071.6	1034.6	999.1	964.8	963.7
20°	1259.0	1211.2	1163.9	1124.2	1057.6	991.1	968.0	934.2	913.2	885.8	877.8
22.5°	1190.8	1140.9	1081.8	1023.8	946.0	904.1	878.9	852.0	831.1	818.7	806.4
25°	1122.1	1072.1	993.8	922.3	869.2	836.4	815.0	786.0	771.0	760.2	744.1
27.5°	1055.0	991.6	908.9	852.0	809.1	772.0	752.7	729.1	712.4	698.5	688.3
30°	988.4	901.4	831.1	787.1	743.0	719.9	694.7	677.0	664.6	651.8	635.1
32.5°	915.4	824.1	778.5	724.2	698.5	665.2	646.9	628.7	612.6	603.4	597.5
35°	830.5	757.0	716.2	676.5	643.7	621.7	595.9	584.7	576.1	558.3	550.8
37.5°	758.6	705.5	662.5	627.1	597.0	573.4	561.6	542.2	529.9	524.0	515.9
40°	699.0	651.8	614.7	578.7	553.5	536.3	515.4	505.2	489.1	483.2	476.7
42.5°	647.5	604.0	565.3	537.9	515.9	492.3	481.6	464.4	457.4	442.9	437.6
45°	595.4	556.7	522.9	496.1	475.1	460.6	441.3	430.6	418.2	410.7	396.2
47.5°	543.3	509.0	481.0	458.5	440.2	422.5	406.4	397.3	381.7	373.7	366.1
50°	503.1	469.8	443.5	420.9	402.1	384.4	374.2	359.2	345.2	336.1	333.4
52.5°	455.3	426.3	402.1	384.9	366.1	353.3	339.3	322.7	315.7	306.6	304.4
55°	412.9	389.2	368.8	350.6	334.5	320.0	303.9	292.1	286.7	282.4	279.2
57.5°	373.1	350.6	331.8	315.1	301.2	286.2	272.7	265.8	260.9	256.1	252.9
60°	333.9	313.5	296.4	282.4	267.9	253.4	243.7	237.8	234.1	227.1	225.0
62.5°	299.0	280.2	262.5	249.6	236.2	225.0	216.9	208.8	202.9	197.6	186.3
65°	260.9	244.3	230.9	218.0	205.1	196.5	187.4	178.2	170.7	170.7	170.7
67.5°	227.1	212.6	198.6	187.4	176.1	165.9	156.8	156.2	153.5	152.5	150.9
70°	192.7	182.5	169.7	157.3	146.0	141.2	139.6	136.9	133.7	133.1	131.0
72.5°	161.6	149.8	138.0	127.2	125.1	122.9	119.7	117.0	114.9	113.3	112.2
75°	132.1	120.3	110.6	107.9	105.2	101.5	98.8	96.6	95.6	95.6	95.0
77.5°	100.9	94.0	89.7	85.4	83.2	81.1	79.5	78.4	76.8	77.3	76.2
80°	74.1	71.9	68.2	65.5	64.4	62.3	61.2	60.7	59.6	59.6	59.1
82.5°	53.2	49.4	47.8	46.2	45.1	44.0	44.6	44.0	43.5	42.9	43.5
85°	30.6	30.1	29.0	29.0	29.0	28.5	28.5	28.5	27.9	27.4	27.4
87.5°	13.4	14.0	14.0	12.9	14.5	14.5	14.0	14.0	13.4	14.5	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



TEST NUMBER: P243280

CATALOG NUMBER: S122RDR-H865D940-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1640.7	1640.7	1640.7	1640.7
2.5°	1556.4	1555.9	1552.6	1547.3
5°	1472.1	1470.0	1464.6	1468.9
7.5°	1381.9	1376.0	1370.6	1373.3
10°	1285.3	1283.1	1279.9	1273.5
12.5°	1178.4	1187.0	1177.9	1198.3
15°	1020.1	1058.2	1010.4	1026.5
17.5°	941.1	941.7	935.2	927.7
20°	867.1	848.3	855.2	842.9
22.5°	795.6	791.4	789.2	784.9
25°	731.8	723.7	721.0	723.7
27.5°	684.5	680.8	670.6	668.9
30°	625.5	623.8	620.6	619.6
32.5°	588.4	581.4	579.8	573.4
35°	547.1	543.3	540.6	539.0
37.5°	505.7	503.6	498.8	501.4
40°	471.9	461.2	456.9	456.3
42.5°	434.9	429.0	420.4	417.7
45°	391.9	389.2	386.5	385.5
47.5°	354.3	352.7	349.5	347.9
50°	327.5	323.2	322.7	322.1
52.5°	301.7	300.1	298.5	300.6
55°	277.6	275.4	273.8	273.8
57.5°	251.3	247.5	244.3	244.8
60°	220.7	218.5	215.8	214.7
62.5°	185.2	185.2	184.7	184.7
65°	168.6	167.5	167.0	167.5
67.5°	150.3	149.3	147.6	148.2
70°	129.4	128.8	129.4	128.8
72.5°	110.6	110.1	110.6	111.7
75°	93.4	92.9	92.3	92.3
77.5°	75.7	75.2	74.1	75.2
80°	59.1	58.5	58.0	58.0
82.5°	41.9	42.4	41.9	41.9
85°	27.4	27.9	27.4	26.8
87.5°	14.0	14.5	13.4	12.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)