

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: P242292

Luminaire Tested: **S122DR-S865D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242292
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-19)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DR-S865D830-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3450.1 lumens
Efficiency: N/A
Efficacy: 99.1 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

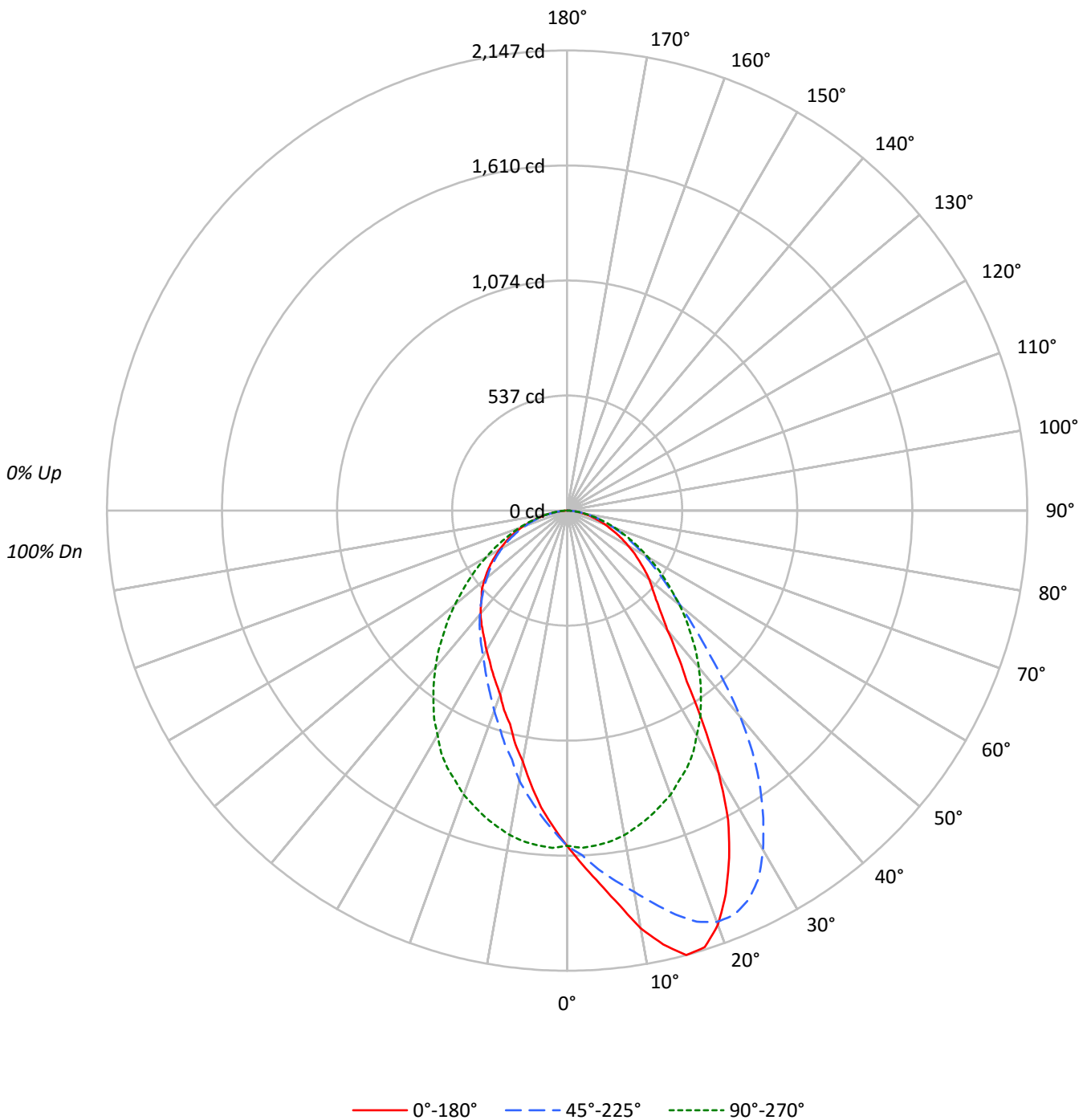
Input Watts (W): 34.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	64
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	58	55
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49
6	74	61	53	47	72	60	52	46	58	51	46	57	51	46	55	50	45	43
7	69	56	48	42	67	55	47	42	54	46	41	52	46	41	51	45	41	39
8	64	51	43	38	63	51	43	38	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	29789	29789	29789
5°	33398	29985	26570
10°	38271	29738	22995
15°	42338	29193	20315
20°	41692	28607	18519
25°	37593	27828	17383
30°	31067	26585	16551
35°	22641	25283	15961
40°	18084	23749	15633
45°	15802	21970	15187
50°	14855	20251	14891
55°	13692	18504	14492
60°	12549	16648	13874
65°	11430	14982	13273
70°	10375	13355	12386
75°	9199	11547	10973
80°	7909	9565	8830
85°	7103	7103	5245



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.0	4.3
10°-20°	433.6	12.6
20°-30°	629.3	18.2
30°-40°	663.3	19.2
40°-50°	586.9	17.0
50°-60°	468.5	13.6
60°-70°	318.2	9.2
70°-80°	162.9	4.7
80°-90°	38.5	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°	1211.8	35.1
0°-40°	1875.1	54.3
0°-60°	2930.5	84.9
0°-90°	3450.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3450.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1564	1564	1564	1564	1564	
5°	1747	1681	1568	1424	1390	174
15°	2147	1950	1480	1126	1030	595
25°	1789	2003	1324	880	827	811
35°	974	1569	1087	707	686	630
45°	587	929	816	559	564	460
55°	412	534	557	420	436	370
65°	254	317	332	278	294	252
75°	125	153	157	141	149	133
85°	32	36	32	27	24	37
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°	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9
2.5°	1654.1	1654.7	1655.9	1646.3	1645.1	1645.1	1636.7	1629.5	1621.0	1609.6	1610.8
5°	1746.7	1753.3	1755.7	1748.5	1737.6	1736.4	1726.2	1709.4	1693.8	1681.1	1672.1
7.5°	1853.7	1856.1	1851.2	1842.8	1835.6	1821.8	1805.0	1788.7	1764.7	1743.1	1727.4
10°	1978.7	1982.3	1972.1	1958.2	1946.8	1930.0	1902.3	1874.1	1839.8	1806.8	1780.3
12.5°	2073.6	2083.9	2070.0	2071.2	2049.6	2025.0	1990.7	1979.9	1928.2	1878.9	1850.0
15°	2147.0	2146.4	2147.6	2136.1	2121.7	2118.1	2083.3	2045.4	1977.5	1950.4	1903.5
17.5°	2136.1	2144.6	2149.4	2145.8	2143.4	2138.0	2122.9	2094.7	2057.4	2011.7	1955.8
20°	2056.8	2068.8	2070.6	2084.5	2092.3	2102.5	2106.7	2100.1	2079.0	2042.4	1995.5
22.5°	1934.2	1935.4	1942.0	1965.4	1984.7	2014.1	2029.8	2059.2	2054.4	2041.2	2003.9
25°	1788.7	1782.7	1803.8	1814.6	1853.7	1894.5	1924.0	1956.4	1985.3	2002.7	1991.3
27.5°	1627.7	1615.0	1646.9	1675.1	1702.8	1742.5	1786.9	1839.8	1880.1	1934.8	1948.0
30°	1412.5	1417.9	1447.9	1478.6	1526.7	1589.2	1640.9	1700.4	1764.7	1827.8	1871.7
32.5°	1180.5	1205.1	1221.3	1272.4	1313.3	1384.8	1466.6	1544.7	1628.9	1702.8	1776.7
35°	973.7	997.8	1024.2	1058.5	1118.0	1187.1	1261.0	1361.4	1470.8	1568.8	1649.3
37.5°	842.7	838.5	854.7	879.9	931.0	990.5	1078.3	1180.5	1311.5	1420.3	1528.5
40°	727.3	724.9	735.7	758.5	795.2	836.1	910.6	997.8	1117.4	1258.0	1393.2
42.5°	647.9	650.3	655.1	669.6	691.8	723.7	774.8	845.7	952.7	1083.1	1231.0
45°	586.6	590.8	597.4	605.3	619.7	647.3	678.6	731.5	818.0	928.6	1071.7
47.5°	538.5	539.7	547.0	554.2	562.6	579.4	607.1	640.7	706.8	801.2	929.2
50°	501.3	497.1	501.9	507.3	516.3	527.1	544.0	575.2	616.1	688.8	791.6
52.5°	455.6	456.8	461.0	462.2	470.0	480.8	495.9	515.1	551.2	604.1	684.0
55°	412.3	415.3	417.7	421.3	428.6	436.4	448.4	462.8	491.7	534.3	596.8
57.5°	371.5	372.7	374.5	382.3	386.5	393.7	405.7	418.9	438.2	471.2	520.5
60°	329.4	329.4	334.2	337.2	343.2	350.4	359.4	372.1	388.9	414.7	452.6
62.5°	290.9	290.3	291.5	296.9	301.1	307.7	316.8	327.0	342.6	364.8	394.3
65°	253.6	252.4	256.0	257.3	262.1	268.7	275.9	287.3	299.9	316.8	344.4
67.5°	216.4	218.2	220.6	223.0	225.4	233.2	238.0	246.4	257.3	271.7	290.9
70°	186.3	186.3	186.3	188.1	191.7	195.3	200.2	206.8	217.0	229.0	245.8
72.5°	152.7	155.1	157.5	155.7	160.5	162.3	168.3	171.3	180.9	187.5	202.0
75°	125.0	125.0	125.0	128.0	129.8	131.6	135.2	138.8	143.7	153.3	161.1
77.5°	98.6	98.0	98.6	99.2	101.6	104.0	105.2	108.2	113.0	117.8	125.0
80°	72.1	73.3	73.9	75.1	75.1	76.3	76.9	81.1	84.1	87.2	91.4
82.5°	51.7	51.7	51.7	51.7	52.3	52.9	54.7	55.3	55.9	58.3	61.3
85°	32.5	31.9	31.9	33.1	32.5	32.5	33.7	34.9	34.9	35.5	37.3
87.5°	15.6	15.6	16.2	15.6	15.6	16.2	16.2	15.6	16.2	16.8	17.4
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9
2.5°	1615.0	1610.2	1607.2	1596.4	1586.8	1577.2	1574.2	1575.4	1562.1	1549.5	1544.1
5°	1667.3	1655.3	1643.9	1627.7	1608.4	1587.4	1576.6	1568.2	1547.1	1524.3	1511.1
7.5°	1714.8	1699.2	1678.7	1649.9	1623.4	1592.2	1573.0	1556.7	1527.3	1496.6	1478.0
10°	1757.5	1734.0	1705.8	1668.5	1634.3	1594.0	1565.7	1537.5	1501.4	1463.0	1438.9
12.5°	1794.1	1760.5	1732.8	1682.4	1640.3	1587.4	1552.5	1509.8	1471.4	1423.9	1400.5
15°	1856.7	1798.4	1745.5	1691.4	1641.5	1571.2	1533.9	1480.4	1430.5	1374.0	1347.0
17.5°	1902.9	1839.8	1758.1	1692.6	1637.3	1562.1	1508.6	1444.9	1388.4	1325.9	1289.9
20°	1941.4	1866.3	1776.7	1695.0	1625.3	1536.3	1476.8	1411.3	1342.2	1269.4	1229.8
22.5°	1964.2	1884.3	1796.0	1686.0	1601.2	1515.3	1436.5	1363.2	1292.9	1212.9	1170.9
25°	1965.4	1893.3	1799.6	1681.8	1582.0	1484.0	1393.8	1324.1	1239.4	1166.0	1105.3
27.5°	1945.6	1888.5	1797.8	1673.3	1559.7	1447.3	1349.4	1273.0	1183.5	1104.1	1043.4
30°	1901.7	1871.7	1783.9	1658.9	1532.1	1408.9	1298.3	1208.7	1119.8	1039.2	976.7
32.5°	1833.8	1833.2	1758.7	1638.5	1502.6	1360.2	1244.8	1154.0	1053.0	974.3	915.4
35°	1740.7	1769.5	1720.8	1606.0	1464.2	1314.5	1190.7	1087.3	985.1	909.4	853.5
37.5°	1622.2	1689.0	1669.7	1562.7	1414.9	1265.8	1131.2	1023.0	925.0	846.9	792.2
40°	1499.0	1590.4	1603.6	1511.7	1362.0	1207.5	1062.7	955.1	860.1	790.4	735.1
42.5°	1366.8	1477.4	1519.5	1450.3	1304.3	1146.2	1001.4	889.0	795.2	727.9	680.4
45°	1215.9	1357.2	1422.7	1380.6	1238.8	1077.7	928.6	815.6	730.3	666.6	628.7
47.5°	1079.5	1232.8	1316.3	1296.5	1168.4	1008.6	861.3	751.3	666.6	614.9	579.4
50°	932.8	1091.5	1197.9	1202.7	1091.5	933.4	785.6	683.4	607.1	559.6	531.9
52.5°	805.4	955.1	1073.5	1104.1	1005.6	855.3	717.7	616.1	551.2	508.5	484.4
55°	697.8	825.8	954.5	1001.4	920.2	776.0	646.7	557.2	494.1	464.0	442.4
57.5°	595.6	708.0	830.1	879.3	827.7	700.8	575.8	497.1	443.6	416.5	399.7
60°	518.1	602.3	708.0	770.0	726.7	616.7	510.9	437.0	394.9	371.5	355.8
62.5°	446.0	518.1	603.5	658.8	640.1	537.9	446.0	382.9	348.0	326.4	316.2
65°	379.9	438.8	507.9	560.2	544.6	465.8	388.3	332.4	303.5	286.1	277.1
67.5°	323.4	368.4	417.7	465.8	452.6	394.3	328.8	283.7	261.5	245.8	240.4
70°	270.5	302.9	345.6	382.3	372.1	326.4	277.1	239.8	221.2	208.6	203.2
72.5°	220.0	245.2	275.3	303.5	297.5	261.5	222.4	196.5	183.3	171.9	167.7
75°	173.7	194.1	214.0	233.8	232.0	202.6	178.5	156.9	145.5	136.4	134.6
77.5°	135.8	148.5	162.9	175.5	172.5	153.3	133.4	120.2	111.2	105.2	104.6
80°	98.0	104.6	114.2	122.6	118.4	111.2	96.2	87.2	81.1	75.1	72.7
82.5°	64.3	70.9	75.7	79.3	76.3	69.7	61.9	56.5	53.5	49.9	49.3
85°	37.3	40.9	43.3	44.5	43.3	39.1	34.9	32.5	29.5	27.6	27.0
87.5°	18.0	18.0	18.0	19.2	17.4	17.4	15.0	13.2	12.6	12.0	10.8
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°	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9	1563.9
2.5°	1538.1	1534.5	1521.9	1515.3	1504.4	1494.2	1487.6	1490.6	1493.0	1491.8	1490.0
5°	1499.0	1487.6	1470.2	1455.2	1444.3	1424.5	1416.1	1411.9	1408.3	1404.1	1399.9
7.5°	1455.8	1439.5	1414.9	1395.6	1376.4	1351.2	1338.5	1331.3	1323.5	1314.5	1306.1
10°	1408.9	1383.6	1357.2	1327.1	1303.1	1280.8	1261.0	1247.8	1235.8	1224.3	1215.9
12.5°	1359.6	1329.5	1295.3	1251.4	1224.3	1190.1	1191.3	1165.4	1145.0	1139.0	1128.8
15°	1306.7	1265.8	1224.3	1175.7	1154.6	1125.8	1107.7	1089.7	1073.5	1062.1	1059.1
17.5°	1249.0	1194.3	1154.0	1118.0	1083.7	1054.2	1038.6	1024.2	1010.4	993.5	992.9
20°	1181.1	1135.4	1090.3	1059.7	1024.2	994.1	973.7	959.3	947.9	938.8	931.0
22.5°	1116.8	1065.7	1025.4	991.1	956.3	933.4	918.4	904.6	895.6	885.4	878.1
25°	1047.0	1008.0	962.9	925.0	896.2	880.5	867.3	855.3	849.3	842.7	834.3
27.5°	987.5	944.3	899.8	870.3	843.9	830.1	819.8	810.8	805.4	801.2	795.8
30°	923.8	879.9	846.9	818.0	797.0	783.2	777.2	772.4	765.7	763.3	760.9
32.5°	862.5	824.0	797.0	773.0	753.1	745.3	739.9	735.7	730.9	728.5	723.1
35°	805.4	772.4	744.7	730.9	714.7	706.8	702.6	696.6	691.8	689.4	688.8
37.5°	750.7	720.7	702.0	683.4	675.6	671.4	665.4	661.2	659.4	658.8	658.2
40°	697.8	674.4	658.2	643.7	640.7	633.5	628.7	625.1	625.1	625.7	625.1
42.5°	649.7	629.3	615.5	603.5	599.9	596.2	591.4	592.0	593.2	595.6	593.2
45°	601.1	586.0	575.8	569.8	563.2	559.0	558.4	560.2	560.8	561.4	563.2
47.5°	555.4	545.8	536.1	528.9	525.9	525.3	524.1	527.1	530.1	530.7	533.7
50°	515.7	504.3	496.5	492.3	489.9	488.7	489.9	493.5	495.9	498.9	500.7
52.5°	471.2	464.0	459.2	456.2	455.6	456.8	456.8	461.0	465.2	465.8	466.4
55°	431.0	424.9	423.7	418.3	420.7	420.1	423.1	425.5	429.2	432.8	433.4
57.5°	390.1	384.7	381.1	381.7	382.3	384.7	387.1	391.3	395.5	399.7	399.7
60°	349.2	346.8	345.0	345.0	346.2	349.8	352.8	357.0	359.4	361.8	363.6
62.5°	311.9	309.5	307.7	308.9	312.5	314.4	318.0	319.8	322.2	324.6	325.2
65°	272.3	271.1	272.9	274.1	274.7	277.7	281.9	283.7	286.1	287.3	291.5
67.5°	236.2	236.2	235.6	237.4	241.0	241.6	245.8	250.6	250.6	253.0	256.0
70°	199.6	200.8	202.0	203.2	206.2	207.4	210.4	212.2	214.6	216.4	218.2
72.5°	165.9	165.9	167.1	166.5	168.9	171.9	174.3	176.1	178.5	180.9	182.7
75°	132.8	132.8	134.0	134.6	137.6	140.6	140.0	141.2	143.7	146.1	147.3
77.5°	102.8	101.6	102.8	103.4	104.6	107.0	107.6	109.4	112.4	111.8	113.0
80°	73.9	72.1	73.9	74.5	74.5	77.5	77.5	78.7	80.5	78.7	80.5
82.5°	47.5	46.9	48.1	48.1	49.3	48.7	49.9	49.9	51.7	51.1	51.7
85°	26.4	25.8	26.4	25.8	26.4	27.0	27.0	26.4	26.4	27.6	25.8
87.5°	10.2	9.6	9.0	9.0	8.4	7.8	7.2	7.2	7.2	6.0	6.0
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: P242292

CATALOG NUMBER: S122DR-S865D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1563.9	1563.9	1563.9	1563.9
2.5°	1484.0	1482.8	1482.8	1477.4
5°	1391.4	1389.6	1386.6	1389.6
7.5°	1303.7	1295.9	1294.7	1288.7
10°	1205.7	1200.9	1200.3	1188.9
12.5°	1131.2	1118.0	1121.0	1115.6
15°	1042.8	1042.8	1040.4	1030.2
17.5°	979.7	979.1	973.7	977.3
20°	924.4	920.8	913.6	913.6
22.5°	872.1	872.7	864.9	867.9
25°	833.7	828.9	825.2	827.1
27.5°	794.0	792.2	791.6	786.2
30°	760.3	754.3	755.5	752.5
32.5°	721.9	720.7	718.9	716.5
35°	687.6	688.2	685.2	686.4
37.5°	657.0	659.4	657.6	657.6
40°	626.9	626.9	626.9	628.7
42.5°	598.0	596.8	595.6	595.0
45°	564.4	566.2	566.8	563.8
47.5°	534.9	535.5	534.9	538.5
50°	503.7	502.5	503.7	502.5
52.5°	470.6	471.2	470.0	470.0
55°	435.8	437.0	436.4	436.4
57.5°	400.3	400.9	402.1	399.1
60°	363.0	366.0	365.4	364.2
62.5°	328.8	329.4	329.4	329.4
65°	293.3	294.5	292.7	294.5
67.5°	254.8	255.4	256.7	257.3
70°	219.4	218.8	220.6	222.4
72.5°	182.1	183.9	182.7	183.9
75°	146.1	147.9	147.3	149.1
77.5°	111.8	112.4	112.4	113.0
80°	80.5	79.3	78.1	80.5
82.5°	49.9	51.1	49.9	49.3
85°	25.8	25.2	24.0	24.0
87.5°	6.0	5.4	5.4	4.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)