

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: P242312

Luminaire Tested: **S122DR-S865D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242312
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-S865D935-X4F0-XX-UDD-A-W
Description: DEFINE 2 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: 3151.7 lumens
Efficiency: N/A
Efficacy: 90.6 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

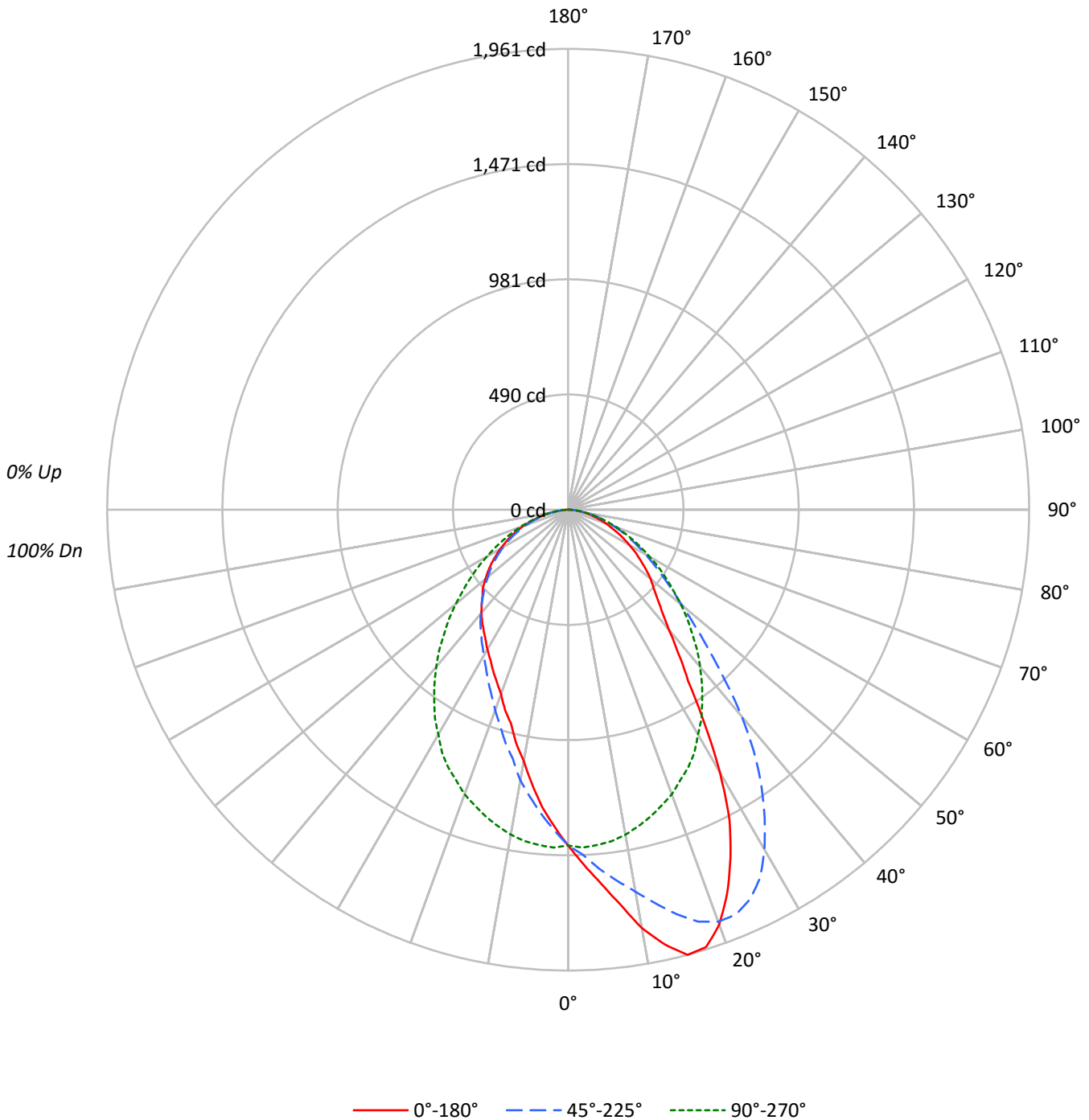
Input Watts (W): 34.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P242312

CATALOG NUMBER: S122DR-S865D935-X4F0-XX-UDD-A-W

Luminous Intensity Polar Plot





TEST NUMBER: P242312

CATALOG NUMBER: S122DR-S865D935-X4F0-XX-UDD-A-W

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°	27212	27212	27212
5°	30509	27390	24272
10°	34960	27165	21005
15°	38674	26667	18558
20°	38086	26132	16917
25°	34341	25422	15878
30°	28379	24284	15119
35°	20684	23095	14580
40°	16520	21692	14280
45°	14436	20071	13873
50°	13569	18500	13602
55°	12510	16903	13237
60°	11463	15208	12674
65°	10443	13683	12124
70°	9479	12202	11317
75°	8405	10546	10024
80°	7229	8731	8073
85°	6469	6469	4808



TEST NUMBER: P242312

CATALOG NUMBER: S122DR-S865D935-X4F0-XX-UDD-A-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.1	4.3
10°-20°	396.0	12.6
20°-30°	574.8	18.2
30°-40°	605.9	19.2
40°-50°	536.1	17.0
50°-60°	428.0	13.6
60°-70°	290.7	9.2
70°-80°	148.8	4.7
80°-90°	35.2	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°	1106.9	35.1
0°-40°	1712.9	54.3
0°-60°	2677.0	84.9
0°-90°	3151.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3151.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1429	1429	1429	1429	1429	
5°	1596	1536	1432	1301	1269	159
15°	1961	1782	1352	1028	941	543
25°	1634	1830	1210	804	756	741
35°	890	1433	993	646	627	576
45°	536	848	745	511	515	420
55°	377	488	509	384	399	338
65°	232	289	304	254	269	230
75°	114	140	143	128	136	122
85°	30	32	30	25	22	34
90°	0	0	0	0	0	



TEST NUMBER: P242312

CATALOG NUMBER: S122DR-S865D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6
2.5°	1511.0	1511.5	1512.6	1503.9	1502.8	1502.8	1495.1	1488.5	1480.8	1470.4	1471.5
5°	1595.6	1601.6	1603.8	1597.2	1587.3	1586.2	1576.9	1561.5	1547.2	1535.7	1527.5
7.5°	1693.3	1695.5	1691.1	1683.4	1676.8	1664.2	1648.8	1634.0	1612.0	1592.3	1578.0
10°	1807.5	1810.8	1801.4	1788.8	1778.4	1763.0	1737.8	1712.0	1680.7	1650.5	1626.3
12.5°	1894.2	1903.6	1890.9	1892.0	1872.3	1849.8	1818.5	1808.6	1761.4	1716.3	1690.0
15°	1961.2	1960.7	1961.8	1951.3	1938.2	1934.9	1903.0	1868.4	1806.4	1781.7	1738.9
17.5°	1951.3	1959.0	1963.4	1960.1	1957.9	1953.0	1939.3	1913.5	1879.4	1837.7	1786.6
20°	1878.9	1889.8	1891.5	1904.1	1911.3	1920.6	1924.4	1918.4	1899.2	1865.7	1822.9
22.5°	1766.9	1768.0	1774.0	1795.4	1813.0	1839.9	1854.2	1881.1	1876.7	1864.6	1830.5
25°	1634.0	1628.5	1647.7	1657.6	1693.3	1730.6	1757.5	1787.2	1813.5	1829.5	1819.0
27.5°	1486.8	1475.3	1504.4	1530.2	1555.5	1591.7	1632.3	1680.7	1717.4	1767.4	1779.5
30°	1290.3	1295.2	1322.7	1350.7	1394.6	1451.7	1498.9	1553.3	1612.0	1669.7	1709.8
32.5°	1078.3	1100.9	1115.7	1162.3	1199.7	1265.0	1339.7	1411.1	1487.9	1555.5	1623.0
35°	889.5	911.4	935.6	966.9	1021.2	1084.4	1151.9	1243.6	1343.5	1433.0	1506.6
37.5°	769.8	765.9	780.8	803.8	850.5	904.8	985.0	1078.3	1198.0	1297.4	1396.2
40°	664.4	662.2	672.0	692.9	726.4	763.7	831.8	911.4	1020.7	1149.2	1272.7
42.5°	591.9	594.1	598.5	611.6	632.0	661.1	707.7	772.5	870.3	989.4	1124.5
45°	535.9	539.7	545.8	552.9	566.1	591.3	619.9	668.2	747.3	848.3	979.0
47.5°	492.0	493.1	499.6	506.2	513.9	529.3	554.5	585.3	645.7	731.9	848.8
50°	457.9	454.1	458.5	463.4	471.6	481.5	496.9	525.4	562.8	629.2	723.1
52.5°	416.2	417.3	421.1	422.2	429.4	439.2	453.0	470.5	503.5	551.8	624.8
55°	376.7	379.4	381.6	384.9	391.5	398.6	409.6	422.8	449.1	488.1	545.2
57.5°	339.3	340.4	342.1	349.2	353.0	359.6	370.6	382.7	400.3	430.5	475.5
60°	300.9	300.9	305.3	308.0	313.5	320.1	328.3	339.9	355.2	378.8	413.4
62.5°	265.7	265.2	266.3	271.2	275.1	281.1	289.4	298.7	313.0	333.3	360.2
65°	231.7	230.6	233.9	235.0	239.4	245.4	252.0	262.4	274.0	289.4	314.6
67.5°	197.7	199.3	201.5	203.7	205.9	213.0	217.4	225.1	235.0	248.2	265.7
70°	170.2	170.2	170.2	171.9	175.1	178.4	182.8	188.9	198.2	209.2	224.6
72.5°	139.5	141.7	143.9	142.2	146.6	148.2	153.7	156.5	165.3	171.3	184.5
75°	114.2	114.2	114.2	116.9	118.6	120.2	123.5	126.8	131.2	140.0	147.1
77.5°	90.0	89.5	90.0	90.6	92.8	95.0	96.1	98.8	103.2	107.6	114.2
80°	65.9	67.0	67.5	68.6	68.6	69.7	70.3	74.1	76.9	79.6	83.5
82.5°	47.2	47.2	47.2	47.2	47.8	48.3	50.0	50.5	51.1	53.3	56.0
85°	29.6	29.1	29.1	30.2	29.6	29.6	30.7	31.8	31.8	32.4	34.0
87.5°	14.3	14.3	14.8	14.3	14.3	14.8	14.8	14.3	14.8	15.4	15.9
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: P242312

CATALOG NUMBER: S122DR-S865D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6
2.5°	1475.3	1470.9	1468.2	1458.3	1449.5	1440.7	1438.0	1439.1	1427.0	1415.5	1410.5
5°	1523.1	1512.1	1501.7	1486.8	1469.3	1450.1	1440.2	1432.5	1413.3	1392.4	1380.3
7.5°	1566.5	1552.2	1533.5	1507.2	1483.0	1454.4	1436.9	1422.1	1395.1	1367.1	1350.1
10°	1605.4	1584.0	1558.2	1524.2	1492.9	1456.1	1430.3	1404.5	1371.5	1336.4	1314.4
12.5°	1638.9	1608.2	1582.9	1536.8	1498.4	1450.1	1418.2	1379.2	1344.1	1300.7	1279.3
15°	1696.0	1642.8	1594.5	1545.0	1499.5	1435.2	1401.2	1352.3	1306.8	1255.1	1230.4
17.5°	1738.3	1680.7	1606.0	1546.1	1495.6	1427.0	1378.1	1319.9	1268.3	1211.2	1178.3
20°	1773.4	1704.8	1623.0	1548.3	1484.6	1403.4	1349.0	1289.2	1226.0	1159.6	1123.4
22.5°	1794.3	1721.3	1640.6	1540.1	1462.7	1384.2	1312.2	1245.3	1181.0	1108.0	1069.6
25°	1795.4	1729.5	1643.9	1536.3	1445.1	1355.6	1273.3	1209.6	1132.2	1065.2	1009.7
27.5°	1777.3	1725.1	1642.2	1528.6	1424.8	1322.1	1232.6	1162.9	1081.1	1008.6	953.2
30°	1737.2	1709.8	1629.6	1515.4	1399.5	1287.0	1186.0	1104.1	1022.9	949.3	892.2
32.5°	1675.2	1674.6	1606.5	1496.7	1372.6	1242.5	1137.1	1054.2	961.9	890.0	836.2
35°	1590.1	1616.4	1571.9	1467.1	1337.5	1200.8	1087.7	993.2	899.9	830.7	779.7
37.5°	1481.9	1542.8	1525.3	1427.5	1292.5	1156.3	1033.3	934.5	845.0	773.6	723.7
40°	1369.3	1452.8	1464.9	1380.9	1244.2	1103.1	970.7	872.4	785.7	722.0	671.5
42.5°	1248.6	1349.6	1388.0	1324.9	1191.4	1047.0	914.7	812.1	726.4	664.9	621.5
45°	1110.7	1239.8	1299.6	1261.2	1131.6	984.5	848.3	745.1	667.1	608.9	574.3
47.5°	986.1	1126.1	1202.4	1184.3	1067.4	921.3	786.8	686.3	608.9	561.7	529.3
50°	852.1	997.1	1094.3	1098.7	997.1	852.7	717.6	624.3	554.5	511.2	485.9
52.5°	735.7	872.4	980.6	1008.6	918.6	781.3	655.6	562.8	503.5	464.5	442.5
55°	637.5	754.4	871.9	914.7	840.6	708.8	590.8	509.0	451.3	423.9	404.1
57.5°	544.1	646.8	758.2	803.3	756.0	640.2	526.0	454.1	405.2	380.5	365.1
60°	473.3	550.2	646.8	703.3	663.8	563.3	466.7	399.2	360.7	339.3	325.0
62.5°	407.4	473.3	551.3	601.8	584.7	491.4	407.4	349.7	317.9	298.1	288.8
65°	347.0	400.8	464.0	511.7	497.4	425.5	354.7	303.6	277.3	261.4	253.1
67.5°	295.4	336.6	381.6	425.5	413.4	360.2	300.3	259.2	238.8	224.6	219.6
70°	247.1	276.7	315.7	349.2	339.9	298.1	253.1	219.1	202.1	190.5	185.6
72.5°	201.0	224.0	251.5	277.3	271.8	238.8	203.2	179.5	167.5	157.0	153.2
75°	158.7	177.3	195.5	213.6	211.9	185.0	163.1	143.3	132.9	124.6	123.0
77.5°	124.1	135.6	148.8	160.3	157.6	140.0	121.9	109.8	101.6	96.1	95.5
80°	89.5	95.5	104.3	112.0	108.2	101.6	87.8	79.6	74.1	68.6	66.4
82.5°	58.7	64.8	69.2	72.5	69.7	63.7	56.6	51.6	48.9	45.6	45.0
85°	34.0	37.3	39.5	40.6	39.5	35.7	31.8	29.6	26.9	25.3	24.7
87.5°	16.5	16.5	16.5	17.6	15.9	15.9	13.7	12.1	11.5	11.0	9.9
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: P242312

CATALOG NUMBER: S122DR-S865D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6	1428.6
2.5°	1405.0	1401.7	1390.2	1384.2	1374.3	1365.0	1358.9	1361.7	1363.9	1362.8	1361.1
5°	1369.3	1358.9	1343.0	1329.3	1319.4	1301.3	1293.6	1289.7	1286.4	1282.6	1278.7
7.5°	1329.8	1315.0	1292.5	1274.9	1257.3	1234.3	1222.7	1216.2	1209.0	1200.8	1193.1
10°	1287.0	1263.9	1239.8	1212.3	1190.4	1170.0	1151.9	1139.8	1128.9	1118.4	1110.7
12.5°	1242.0	1214.5	1183.2	1143.1	1118.4	1087.1	1088.2	1064.6	1046.0	1040.5	1031.1
15°	1193.6	1156.3	1118.4	1074.0	1054.7	1028.4	1011.9	995.4	980.6	970.2	967.4
17.5°	1140.9	1091.0	1054.2	1021.2	989.9	963.0	948.8	935.6	923.0	907.6	907.0
20°	1078.9	1037.2	996.0	968.0	935.6	908.1	889.5	876.3	865.9	857.6	850.5
22.5°	1020.1	973.5	936.7	905.4	873.5	852.7	839.0	826.3	818.1	808.8	802.2
25°	956.5	920.8	879.6	845.0	818.6	804.4	792.3	781.3	775.8	769.8	762.1
27.5°	902.1	862.6	821.9	795.0	770.9	758.2	748.9	740.7	735.7	731.9	726.9
30°	843.9	803.8	773.6	747.3	728.0	715.4	709.9	705.5	699.5	697.3	695.1
32.5°	787.9	752.8	728.0	706.1	688.0	680.8	675.9	672.0	667.7	665.5	660.5
35°	735.7	705.5	680.3	667.7	652.8	645.7	641.8	636.4	632.0	629.8	629.2
37.5°	685.8	658.3	641.3	624.3	617.1	613.3	607.8	604.0	602.3	601.8	601.2
40°	637.5	616.0	601.2	588.0	585.3	578.7	574.3	571.0	571.0	571.6	571.0
42.5°	593.5	574.9	562.2	551.3	548.0	544.7	540.3	540.8	541.9	544.1	541.9
45°	549.1	535.3	526.0	520.5	514.5	510.6	510.1	511.7	512.3	512.8	514.5
47.5°	507.3	498.5	489.8	483.2	480.4	479.9	478.8	481.5	484.3	484.8	487.6
50°	471.1	460.7	453.5	449.7	447.5	446.4	447.5	450.8	453.0	455.7	457.4
52.5°	430.5	423.9	419.5	416.7	416.2	417.3	417.3	421.1	425.0	425.5	426.1
55°	393.7	388.2	387.1	382.1	384.3	383.8	386.5	388.7	392.0	395.3	395.9
57.5°	356.3	351.4	348.1	348.7	349.2	351.4	353.6	357.4	361.3	365.1	365.1
60°	319.0	316.8	315.2	315.2	316.3	319.6	322.3	326.1	328.3	330.5	332.2
62.5°	285.0	282.8	281.1	282.2	285.5	287.2	290.5	292.1	294.3	296.5	297.0
65°	248.7	247.6	249.3	250.4	250.9	253.7	257.5	259.2	261.4	262.4	266.3
67.5°	215.8	215.8	215.2	216.9	220.2	220.7	224.6	229.0	229.0	231.2	233.9
70°	182.3	183.4	184.5	185.6	188.3	189.4	192.2	193.8	196.0	197.7	199.3
72.5°	151.5	151.5	152.6	152.1	154.3	157.0	159.2	160.9	163.1	165.3	166.9
75°	121.3	121.3	122.4	123.0	125.7	128.5	127.9	129.0	131.2	133.4	134.5
77.5°	93.9	92.8	93.9	94.4	95.5	97.7	98.3	99.9	102.7	102.1	103.2
80°	67.5	65.9	67.5	68.1	68.1	70.8	70.8	71.9	73.6	71.9	73.6
82.5°	43.4	42.8	43.9	43.9	45.0	44.5	45.6	45.6	47.2	46.7	47.2
85°	24.2	23.6	24.2	23.6	24.2	24.7	24.7	24.2	24.2	25.3	23.6
87.5°	9.3	8.8	8.2	8.2	7.7	7.1	6.6	6.6	6.6	5.5	5.5
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: P242312

CATALOG NUMBER: S122DR-S865D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1428.6	1428.6	1428.6	1428.6
2.5°	1355.6	1354.5	1354.5	1349.6
5°	1271.1	1269.4	1266.7	1269.4
7.5°	1190.9	1183.8	1182.7	1177.2
10°	1101.4	1097.0	1096.5	1086.0
12.5°	1033.3	1021.2	1024.0	1019.0
15°	952.6	952.6	950.4	941.1
17.5°	895.0	894.4	889.5	892.8
20°	844.4	841.2	834.6	834.6
22.5°	796.7	797.2	790.1	792.8
25°	761.5	757.1	753.9	755.5
27.5°	725.3	723.7	723.1	718.2
30°	694.6	689.1	690.2	687.4
32.5°	659.4	658.3	656.7	654.5
35°	628.1	628.7	625.9	627.0
37.5°	600.1	602.3	600.7	600.7
40°	572.7	572.7	572.7	574.3
42.5°	546.3	545.2	544.1	543.6
45°	515.6	517.2	517.8	515.0
47.5°	488.7	489.2	488.7	492.0
50°	460.1	459.0	460.1	459.0
52.5°	429.9	430.5	429.4	429.4
55°	398.1	399.2	398.6	398.6
57.5°	365.7	366.2	367.3	364.6
60°	331.6	334.4	333.8	332.7
62.5°	300.3	300.9	300.9	300.9
65°	267.9	269.0	267.4	269.0
67.5°	232.8	233.3	234.4	235.0
70°	200.4	199.9	201.5	203.2
72.5°	166.4	168.0	166.9	168.0
75°	133.4	135.1	134.5	136.2
77.5°	102.1	102.7	102.7	103.2
80°	73.6	72.5	71.4	73.6
82.5°	45.6	46.7	45.6	45.0
85°	23.6	23.1	22.0	22.0
87.5°	5.5	4.9	4.9	4.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)