

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: P243172

Luminaire Tested: **S122DR-H865D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243172  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-58)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DR-H865D935-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

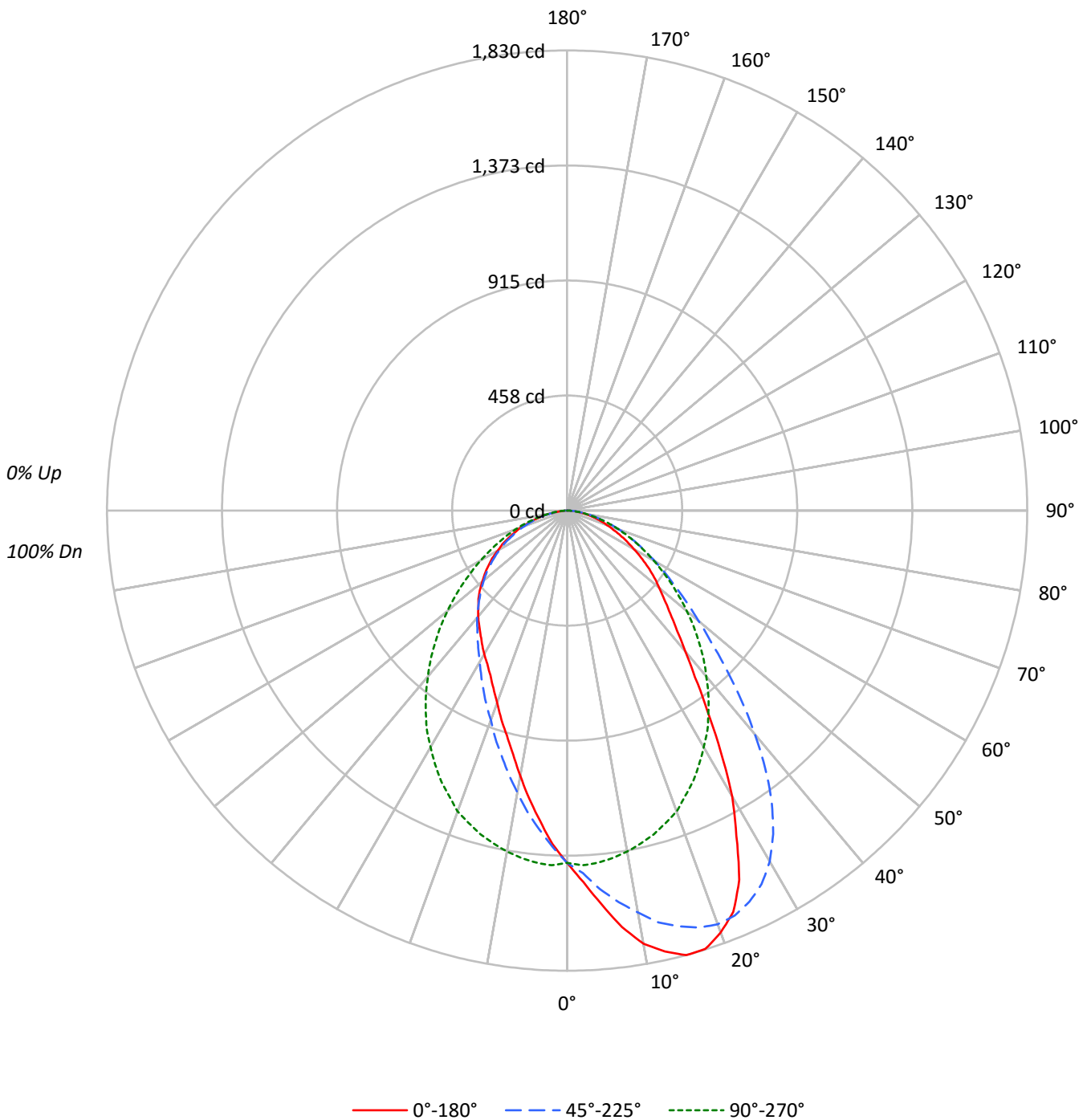
Lumens per Lamp: N/A  
Luminaire Lumens: 3108.4 lumens  
Efficiency: N/A  
Efficacy: 98.7 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24  
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 31.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	73	69	66	63
4	86	74	66	60	83	73	66	60	71	64	59	68	63	58	66	61	57	55
5	79	67	59	52	77	66	58	52	64	57	52	62	56	51	60	55	51	49
6	73	61	52	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43
7	68	56	47	41	67	55	47	41	53	46	41	52	46	41	51	45	40	39
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35
9	60	47	39	34	58	46	39	34	45	38	34	44	38	34	43	38	33	32
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	26682	26682	26682
5°	30055	26874	23671
10°	33832	26633	20717
15°	36089	26274	18258
20°	36192	25800	16478
25°	34039	24941	15189
30°	28894	23899	14503
35°	22590	22783	13959
40°	18151	21411	13691
45°	15613	19998	13434
50°	14165	18405	13059
55°	13051	16770	12706
60°	11730	15109	12126
65°	10560	13575	11543
70°	9412	12068	10799
75°	8471	10377	9464
80°	7393	8358	7393
85°	6338	6229	4087



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	133.5	4.3
10°-20°	383.6	12.3
20°-30°	557.8	17.9
30°-40°	598.4	19.3
40°-50°	536.3	17.3
50°-60°	427.5	13.8
60°-70°	289.2	9.3
70°-80°	147.5	4.7
80°-90°	34.6	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°	1074.9	34.6
0°-40°	1673.3	53.8
0°-60°	2637.1	84.8
0°-90°	3108.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3108.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1401	1401	1401	1401	1401	
5°	1572	1512	1406	1273	1238	156
15°	1830	1711	1332	1008	926	512
25°	1620	1716	1187	788	723	729
35°	972	1420	980	621	600	616
45°	580	898	742	492	499	453
55°	393	522	505	371	383	351
65°	234	303	301	244	256	232
75°	115	144	141	121	129	123
85°	29	33	28	22	19	34
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°	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8
2.5°	1478.6	1483.2	1479.1	1477.5	1474.4	1473.4	1465.1	1458.4	1454.2	1442.8	1443.8
5°	1571.9	1582.3	1576.6	1576.0	1564.6	1557.4	1550.1	1539.7	1524.2	1511.8	1501.9
7.5°	1670.4	1665.2	1663.7	1658.0	1649.7	1639.3	1623.2	1608.2	1588.5	1570.3	1556.9
10°	1749.2	1747.6	1750.2	1735.7	1730.5	1714.5	1700.5	1677.1	1651.7	1623.2	1605.6
12.5°	1795.9	1800.5	1804.2	1798.4	1786.0	1781.3	1758.0	1725.3	1716.5	1677.7	1656.4
15°	1830.1	1832.1	1832.7	1826.4	1820.2	1808.3	1794.3	1773.6	1745.0	1711.4	1695.3
17.5°	1828.0	1827.5	1830.6	1827.0	1823.3	1819.7	1808.8	1792.7	1770.5	1738.8	1711.9
20°	1785.5	1794.8	1802.1	1803.6	1803.1	1805.2	1800.0	1789.6	1773.6	1750.8	1720.2
22.5°	1727.4	1723.8	1739.3	1738.3	1745.0	1760.6	1767.3	1763.2	1757.0	1742.5	1718.1
25°	1619.6	1623.2	1634.1	1645.5	1672.0	1681.3	1701.5	1717.1	1719.1	1715.5	1700.5
27.5°	1457.8	1483.8	1489.5	1504.5	1541.3	1571.9	1612.8	1637.2	1672.0	1675.1	1668.3
30°	1313.7	1312.7	1321.5	1348.4	1382.1	1428.3	1481.2	1543.9	1583.8	1611.3	1621.1
32.5°	1136.4	1140.6	1163.4	1196.5	1230.8	1276.9	1338.1	1414.8	1468.2	1525.2	1557.4
35°	971.5	984.5	1006.3	1029.1	1066.4	1129.7	1197.6	1261.4	1343.3	1419.5	1471.3
37.5°	835.7	853.3	869.9	891.7	928.0	976.7	1037.9	1122.4	1203.8	1295.6	1371.8
40°	730.0	736.7	748.1	769.4	793.7	842.5	904.1	967.4	1055.5	1160.8	1260.8
42.5°	647.0	645.5	657.9	671.4	693.7	730.0	783.9	847.1	934.7	1028.1	1129.1
45°	579.6	580.1	585.3	599.3	616.9	637.7	679.1	738.8	805.1	897.9	1005.2
47.5°	524.7	526.2	534.0	543.8	554.2	573.4	600.9	639.7	702.0	779.7	880.3
50°	478.0	480.6	485.8	493.0	500.8	514.3	535.0	565.6	614.9	680.7	771.9
52.5°	436.5	437.6	439.1	445.9	452.1	464.5	480.1	503.9	542.8	597.8	668.8
55°	393.0	391.9	395.6	401.3	407.0	415.8	431.9	451.0	478.5	522.1	580.6
57.5°	348.4	349.9	352.5	355.6	366.0	375.3	387.3	404.9	426.7	460.9	509.6
60°	307.9	307.9	311.1	315.2	321.9	328.2	339.6	355.6	374.8	401.3	442.2
62.5°	268.5	270.6	273.7	275.8	282.0	289.8	298.6	311.1	328.7	349.9	380.5
65°	234.3	233.3	236.4	240.6	245.2	250.4	260.3	270.6	284.1	303.3	328.7
67.5°	199.1	202.2	203.2	205.3	208.9	215.7	220.3	231.2	242.1	259.2	280.5
70°	169.0	171.1	172.6	175.2	178.3	181.5	186.1	194.9	205.8	217.7	232.8
72.5°	142.1	143.6	142.1	144.6	146.2	149.3	155.5	159.7	168.0	178.3	191.8
75°	115.1	116.1	115.6	118.2	118.7	121.8	124.9	128.6	137.9	143.6	152.9
77.5°	90.2	91.2	91.8	92.8	93.8	95.4	96.9	100.6	105.8	110.9	118.2
80°	67.4	67.4	69.0	69.5	70.0	71.0	73.6	74.7	78.3	79.8	85.5
82.5°	46.7	47.2	47.7	47.7	48.2	49.3	49.8	51.8	52.9	55.5	58.1
85°	29.0	29.6	29.6	29.6	31.1	30.6	30.6	31.6	33.2	33.2	34.2
87.5°	14.5	15.0	15.0	15.0	15.6	15.6	15.6	15.6	15.6	16.6	16.1
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°	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8
2.5°	1443.3	1442.8	1440.7	1431.4	1424.1	1414.8	1413.3	1411.7	1398.7	1384.7	1380.6
5°	1494.1	1484.8	1471.8	1456.3	1440.7	1423.6	1413.8	1405.5	1385.8	1364.0	1351.6
7.5°	1543.9	1525.8	1505.5	1481.2	1455.2	1427.8	1410.1	1393.6	1366.6	1338.1	1321.0
10°	1586.4	1562.0	1534.0	1501.9	1466.1	1428.8	1402.9	1377.0	1342.7	1308.0	1285.2
12.5°	1621.7	1590.6	1553.7	1510.2	1477.5	1426.2	1389.9	1355.7	1317.9	1272.8	1247.9
15°	1648.6	1618.0	1568.3	1524.2	1481.2	1412.7	1368.7	1332.4	1281.6	1237.5	1198.1
17.5°	1681.3	1637.7	1588.5	1525.2	1477.5	1399.3	1349.5	1302.3	1247.4	1195.5	1152.0
20°	1695.8	1650.2	1597.3	1526.8	1466.1	1384.7	1318.4	1272.8	1206.4	1146.8	1097.5
22.5°	1697.9	1654.3	1596.8	1522.1	1446.4	1363.5	1287.3	1227.7	1161.3	1098.0	1042.6
25°	1689.1	1647.6	1588.0	1513.8	1424.7	1340.7	1255.6	1186.7	1110.0	1044.6	988.1
27.5°	1665.2	1631.5	1575.0	1495.7	1402.4	1305.4	1212.6	1137.4	1061.8	987.6	933.7
30°	1626.8	1604.6	1555.8	1471.8	1373.9	1267.1	1174.3	1086.6	1004.7	935.3	877.2
32.5°	1577.6	1566.7	1526.3	1443.3	1344.8	1225.1	1128.1	1037.9	948.7	882.9	823.3
35°	1514.9	1520.6	1486.4	1411.2	1308.0	1182.5	1074.2	979.8	892.7	822.8	767.8
37.5°	1433.5	1461.5	1439.7	1369.2	1260.8	1139.5	1017.7	922.8	831.6	764.2	716.0
40°	1342.2	1391.5	1381.1	1322.0	1210.0	1089.2	963.3	861.1	771.9	708.2	662.0
42.5°	1234.9	1306.5	1317.9	1264.5	1159.7	1026.5	902.1	803.6	717.5	654.8	610.7
45°	1114.6	1203.3	1241.6	1199.7	1101.2	965.8	839.3	742.4	657.4	604.0	567.2
47.5°	993.8	1100.6	1152.5	1132.3	1032.7	901.0	777.1	682.3	601.9	555.2	520.5
50°	874.6	989.2	1064.9	1051.4	965.3	839.3	714.4	621.1	547.5	504.4	474.9
52.5°	769.9	878.2	960.7	967.4	890.2	768.8	648.0	561.5	498.7	459.9	435.0
55°	666.7	767.3	857.5	874.1	811.3	694.7	586.9	505.0	447.9	415.8	395.6
57.5°	574.4	665.7	755.4	784.4	733.6	628.3	521.0	449.0	399.7	374.8	357.2
60°	496.1	578.6	655.8	685.4	650.6	554.7	460.9	396.6	355.6	333.4	319.4
62.5°	427.7	491.5	559.9	592.6	569.2	485.8	403.9	346.8	313.7	294.5	283.6
65°	366.0	415.3	469.2	507.0	481.1	418.9	350.5	301.2	273.2	255.6	247.8
67.5°	309.0	349.9	393.0	423.0	410.1	353.6	296.0	257.7	234.3	220.9	213.6
70°	257.1	287.7	322.5	345.8	336.5	292.9	247.3	216.7	197.0	187.7	181.5
72.5°	211.0	230.7	257.1	276.3	266.5	235.9	203.2	178.9	164.3	153.5	148.8
75°	167.5	184.6	203.2	216.2	208.4	185.6	159.7	141.0	131.2	124.4	121.3
77.5°	127.0	140.5	153.5	159.7	156.0	139.5	121.8	107.3	99.0	94.9	91.2
80°	91.2	99.0	107.8	113.5	111.5	100.1	87.6	76.2	72.6	67.4	66.4
82.5°	61.2	67.4	69.5	72.1	70.5	65.3	56.5	49.8	46.7	44.1	43.5
85°	36.3	37.8	40.4	40.4	38.9	35.3	30.6	28.5	25.4	24.9	23.3
87.5°	16.1	16.1	16.1	16.1	16.1	15.0	13.0	11.9	10.9	10.4	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



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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8	1400.8
2.5°	1377.0	1371.8	1364.5	1356.2	1349.0	1337.6	1333.9	1333.9	1336.5	1333.4	1330.8
5°	1341.2	1330.8	1320.5	1304.4	1290.9	1272.8	1267.6	1262.4	1261.9	1256.7	1249.9
7.5°	1302.8	1287.3	1266.0	1243.2	1228.7	1209.0	1198.1	1195.0	1185.1	1175.8	1164.9
10°	1258.2	1234.4	1209.0	1187.2	1164.4	1139.0	1126.0	1117.2	1107.4	1096.0	1088.2
12.5°	1204.3	1177.4	1154.0	1128.6	1109.4	1073.7	1069.5	1058.1	1038.4	1021.3	1015.1
15°	1171.1	1124.0	1097.5	1074.2	1045.2	1008.4	994.9	982.4	963.8	952.9	944.1
17.5°	1112.6	1070.0	1036.9	1005.8	977.8	949.3	929.0	918.7	903.6	894.3	885.5
20°	1059.2	1013.0	978.3	942.0	913.0	887.0	869.9	857.0	849.2	839.9	831.0
22.5°	1005.2	957.0	923.8	887.0	852.8	837.3	817.1	806.2	795.8	788.5	779.2
25°	942.5	904.1	862.7	834.2	804.1	788.0	768.8	758.5	750.2	741.9	737.2
27.5°	886.5	847.6	809.3	780.8	755.4	739.8	727.9	718.0	707.7	701.4	697.8
30°	828.5	792.7	759.0	731.5	711.8	694.7	687.4	678.1	670.3	667.7	662.0
32.5°	776.6	736.7	709.7	684.9	668.3	656.3	651.2	641.3	639.7	637.2	634.0
35°	724.8	690.6	664.6	643.4	629.4	620.6	613.8	611.2	608.6	606.0	603.5
37.5°	673.4	646.5	622.1	605.0	593.6	586.9	585.3	580.1	579.6	576.0	576.0
40°	627.3	599.8	582.7	569.2	559.9	556.8	552.7	551.6	550.1	549.0	551.1
42.5°	581.2	562.5	548.0	534.0	526.7	524.1	523.1	521.5	520.5	523.6	524.7
45°	538.1	522.1	509.6	499.8	495.6	492.5	492.5	494.1	493.5	495.1	495.1
47.5°	498.2	483.7	473.3	469.7	464.5	463.5	464.0	463.5	466.1	468.1	470.2
50°	460.4	447.4	439.1	435.5	434.4	432.9	435.0	436.0	437.6	439.6	440.7
52.5°	418.4	412.2	407.0	403.3	402.8	403.3	402.8	406.5	408.0	411.1	410.6
55°	382.6	377.9	374.3	370.2	369.6	371.2	372.2	375.3	377.4	380.0	379.5
57.5°	348.9	345.3	341.1	340.1	339.6	340.1	344.8	344.2	347.4	349.4	350.5
60°	312.1	309.5	305.9	305.9	307.4	308.5	310.0	312.6	315.7	315.2	318.8
62.5°	278.4	275.3	274.3	275.8	275.3	277.9	279.4	279.4	283.6	285.1	286.2
65°	244.7	243.7	242.1	242.1	243.7	244.2	246.8	248.3	249.9	253.0	255.6
67.5°	213.1	210.5	210.5	209.4	211.5	213.1	214.6	216.7	217.7	221.4	222.9
70°	179.9	178.9	178.3	179.4	179.4	180.9	183.5	186.1	188.2	188.7	191.8
72.5°	147.8	147.8	147.8	149.3	150.3	151.9	152.4	154.5	157.6	158.1	159.7
75°	118.7	119.2	118.7	119.2	119.8	121.3	122.4	124.4	126.5	127.0	128.1
77.5°	91.8	90.7	89.7	91.2	92.3	95.4	94.9	95.9	98.0	96.9	98.0
80°	64.3	65.8	63.8	66.9	66.9	66.4	67.4	69.0	68.4	69.5	68.4
82.5°	43.5	42.0	42.0	43.5	44.1	42.5	43.5	44.1	44.6	43.5	43.0
85°	23.8	23.3	24.4	22.8	23.3	22.3	22.3	21.3	22.3	21.3	20.2
87.5°	8.8	8.3	8.8	7.3	6.7	6.2	5.7	5.7	4.7	4.7	4.7
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: P243172

CATALOG NUMBER: S122DR-H865D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1400.8	1400.8	1400.8	1400.8
2.5°	1334.4	1328.7	1326.2	1328.2
5°	1242.7	1244.2	1234.9	1238.0
7.5°	1163.4	1156.6	1158.7	1155.1
10°	1079.4	1075.8	1070.0	1071.1
12.5°	1022.9	998.5	996.9	992.3
15°	943.6	930.1	927.0	925.9
17.5°	880.3	868.9	873.0	869.9
20°	823.3	823.8	817.1	812.9
22.5°	773.0	771.9	769.4	765.2
25°	730.5	730.5	724.3	722.7
27.5°	691.6	692.6	687.4	687.4
30°	662.6	658.9	658.4	659.4
32.5°	633.5	629.4	629.9	629.4
35°	602.4	603.5	601.9	600.3
37.5°	576.0	576.0	576.0	574.4
40°	550.1	551.1	549.5	550.6
42.5°	524.1	524.7	524.7	522.6
45°	498.2	497.7	496.7	498.7
47.5°	471.3	471.3	470.7	471.8
50°	441.7	442.7	441.2	440.7
52.5°	411.6	412.2	411.6	412.7
55°	381.0	381.0	381.6	382.6
57.5°	349.4	353.1	350.5	352.5
60°	318.3	318.8	319.4	318.3
62.5°	288.8	288.2	288.8	290.3
65°	256.6	257.7	257.1	256.1
67.5°	225.0	224.0	225.5	224.0
70°	191.3	193.4	191.8	193.9
72.5°	160.7	160.2	161.2	158.6
75°	128.6	128.6	129.1	128.6
77.5°	98.5	97.5	96.9	95.4
80°	67.9	67.9	65.8	67.4
82.5°	41.5	42.0	42.5	39.4
85°	19.7	19.7	19.2	18.7
87.5°	4.1	4.1	4.7	5.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)