

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: P243167

Luminaire Tested: **S122DR-H865D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243167
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-H865D930-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2943.4 lumens
Efficiency: N/A
Efficacy: 93.4 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

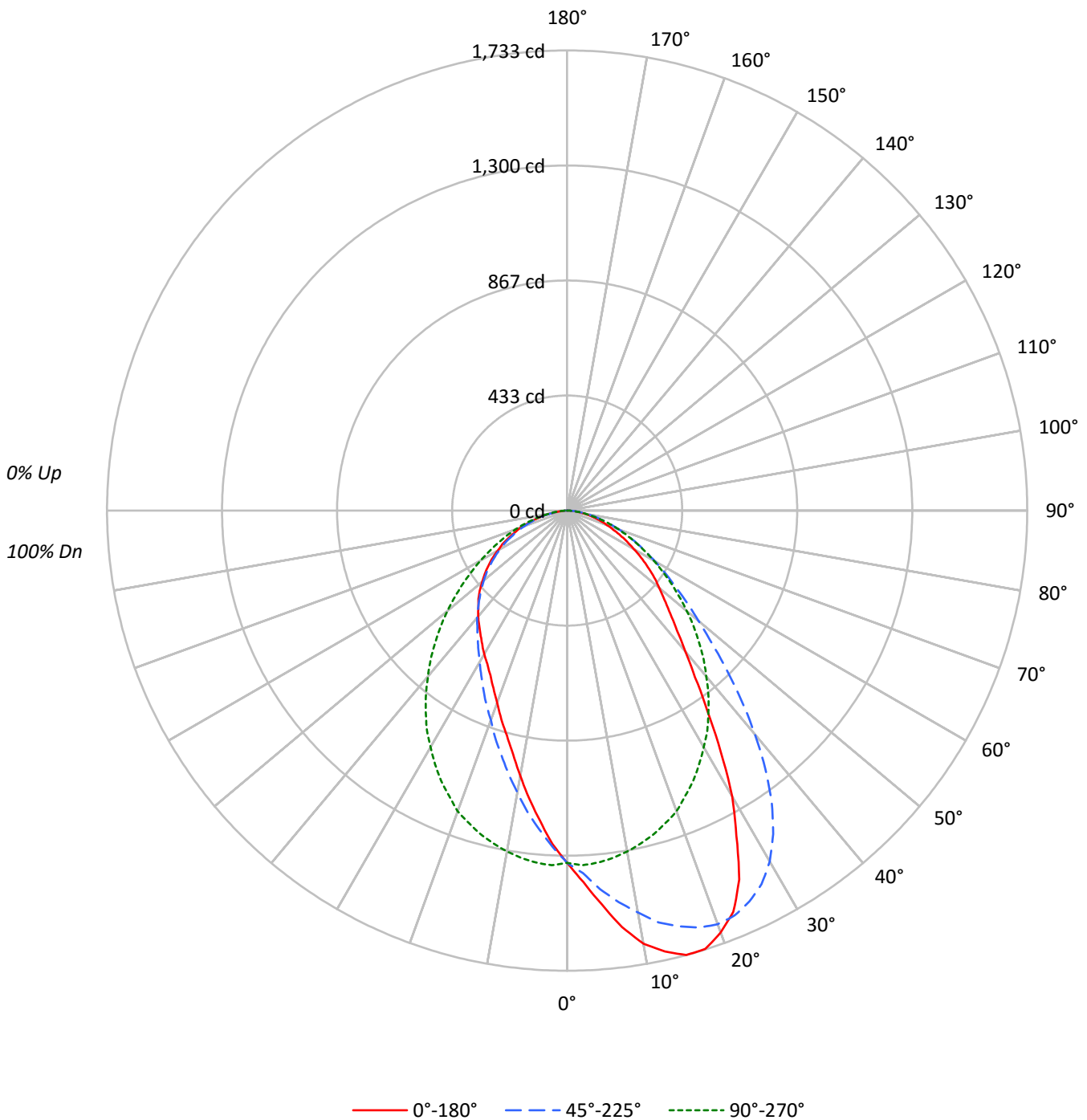
Input Watts (W): 31.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86				86
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74				74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	73	69	66	63				63
4	86	74	66	60	83	73	66	60	71	64	59	68	63	58	66	61	57	55				55
5	79	67	59	52	77	66	58	52	64	57	52	62	56	51	60	55	51	49				49
6	73	61	52	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43				43
7	68	56	47	41	67	55	47	41	53	46	41	52	46	41	51	45	40	39				39
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35				35
9	60	47	39	34	58	46	39	34	45	38	34	44	38	34	43	38	33	32				32
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29				29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	25267	25267	25267
5°	28461	25447	22415
10°	32037	25219	19616
15°	34172	24880	17290
20°	34271	24430	15604
25°	32231	23617	14382
30°	27361	22632	13733
35°	21393	21574	13219
40°	17187	20275	12965
45°	14783	18937	12723
50°	13412	17427	12366
55°	12357	15880	12032
60°	11109	14309	11482
65°	10001	12854	10930
70°	8911	11428	10225
75°	8022	9825	8956
80°	6998	7920	6998
85°	6010	5901	3868



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.4	4.3
10°-20°	363.2	12.3
20°-30°	528.2	17.9
30°-40°	566.6	19.3
40°-50°	507.8	17.3
50°-60°	404.9	13.8
60°-70°	273.9	9.3
70°-80°	139.7	4.7
80°-90°	32.7	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°	1017.8	34.6
0°-40°	1584.4	53.8
0°-60°	2497.1	84.8
0°-90°	2943.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2943.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1326	1326	1326	1326	1326	
5°	1488	1432	1331	1205	1172	147
15°	1733	1620	1262	955	877	485
25°	1534	1624	1124	746	684	690
35°	920	1344	928	588	568	583
45°	549	850	703	466	472	429
55°	372	494	478	352	362	332
65°	222	287	285	231	242	220
75°	109	136	134	115	122	116
85°	28	31	27	21	18	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°	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5
2.5°	1400.1	1404.5	1400.6	1399.1	1396.2	1395.2	1387.3	1380.9	1377.0	1366.2	1367.2
5°	1488.5	1498.3	1492.9	1492.4	1481.6	1474.7	1467.8	1458.0	1443.3	1431.5	1422.2
7.5°	1581.7	1576.8	1575.4	1570.0	1562.1	1552.3	1537.1	1522.8	1504.2	1487.0	1474.2
10°	1656.4	1654.9	1657.3	1643.6	1638.7	1623.5	1610.2	1588.1	1564.1	1537.1	1520.4
12.5°	1700.5	1705.0	1708.4	1703.0	1691.2	1686.8	1664.7	1633.8	1625.4	1588.6	1568.5
15°	1732.9	1734.9	1735.4	1729.5	1723.6	1712.3	1699.1	1679.4	1652.4	1620.5	1605.3
17.5°	1731.0	1730.5	1733.4	1730.0	1726.6	1723.1	1712.8	1697.6	1676.5	1646.5	1621.0
20°	1690.7	1699.6	1706.4	1707.9	1707.4	1709.4	1704.5	1694.6	1679.4	1657.8	1628.9
22.5°	1635.7	1632.3	1647.0	1646.0	1652.4	1667.2	1673.5	1669.6	1663.7	1650.0	1626.9
25°	1533.6	1537.1	1547.4	1558.2	1583.2	1592.0	1611.2	1625.9	1627.9	1624.4	1610.2
27.5°	1380.5	1405.0	1410.4	1424.6	1459.5	1488.5	1527.2	1550.3	1583.2	1586.2	1579.8
30°	1244.0	1243.0	1251.3	1276.9	1308.8	1352.5	1402.5	1461.9	1499.7	1525.8	1535.1
32.5°	1076.1	1080.0	1101.6	1133.0	1165.4	1209.1	1267.1	1339.7	1390.3	1444.3	1474.7
35°	920.0	932.3	952.9	974.5	1009.8	1069.7	1134.0	1194.4	1272.0	1344.1	1393.2
37.5°	791.4	808.0	823.8	844.4	878.7	924.9	982.8	1062.8	1139.9	1226.8	1299.0
40°	691.2	697.6	708.4	728.5	751.6	797.7	856.2	916.1	999.5	1099.2	1193.9
42.5°	612.7	611.2	623.0	635.7	656.8	691.2	742.3	802.2	885.1	973.5	1069.2
45°	548.8	549.3	554.2	567.5	584.2	603.8	643.1	699.6	762.4	850.3	951.9
47.5°	496.8	498.3	505.6	515.0	524.8	543.0	569.0	605.8	664.7	738.3	833.6
50°	452.6	455.1	460.0	466.9	474.2	487.0	506.6	535.6	582.2	644.6	731.0
52.5°	413.4	414.3	415.8	422.2	428.1	439.9	454.6	477.2	514.0	566.0	633.3
55°	372.1	371.1	374.6	380.0	385.4	393.7	408.9	427.1	453.1	494.4	549.8
57.5°	329.9	331.4	333.8	336.8	346.6	355.4	366.7	383.4	404.0	436.4	482.6
60°	291.6	291.6	294.5	298.5	304.9	310.8	321.6	336.8	354.9	380.0	418.8
62.5°	254.3	256.3	259.2	261.2	267.1	274.4	282.8	294.5	311.2	331.4	360.3
65°	221.9	220.9	223.9	227.8	232.2	237.1	246.4	256.3	269.0	287.2	311.2
67.5°	188.5	191.5	192.4	194.4	197.8	204.2	208.6	218.9	229.3	245.5	265.6
70°	160.0	162.0	163.5	165.9	168.9	171.8	176.2	184.6	194.9	206.2	220.4
72.5°	134.5	136.0	134.5	137.0	138.4	141.4	147.3	151.2	159.1	168.9	181.6
75°	109.0	110.0	109.5	111.9	112.4	115.4	118.3	121.7	130.6	136.0	144.8
77.5°	85.4	86.4	86.9	87.9	88.9	90.3	91.8	95.2	100.1	105.1	111.9
80°	63.8	63.8	65.3	65.8	66.3	67.3	69.7	70.7	74.1	75.6	81.0
82.5°	44.2	44.7	45.2	45.2	45.7	46.6	47.1	49.1	50.1	52.5	55.0
85°	27.5	28.0	28.0	28.0	29.5	29.0	29.0	29.9	31.4	31.4	32.4
87.5°	13.7	14.2	14.2	14.2	14.7	14.7	14.7	14.7	14.7	15.7	15.2
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°	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5
2.5°	1366.7	1366.2	1364.3	1355.4	1348.5	1339.7	1338.2	1336.8	1324.5	1311.2	1307.3
5°	1414.8	1406.0	1393.7	1379.0	1364.3	1348.1	1338.7	1330.9	1312.2	1291.6	1279.8
7.5°	1461.9	1444.8	1425.6	1402.5	1378.0	1352.0	1335.3	1319.6	1294.1	1267.1	1250.9
10°	1502.2	1479.1	1452.6	1422.2	1388.3	1353.0	1328.4	1303.9	1271.5	1238.6	1217.0
12.5°	1535.6	1506.1	1471.3	1430.0	1399.1	1350.5	1316.1	1283.7	1247.9	1205.2	1181.6
15°	1561.1	1532.2	1485.0	1443.3	1402.5	1337.7	1296.0	1261.7	1213.5	1171.8	1134.5
17.5°	1592.0	1550.8	1504.2	1444.3	1399.1	1325.0	1277.9	1233.2	1181.1	1132.1	1090.8
20°	1605.8	1562.6	1512.5	1445.7	1388.3	1311.2	1248.4	1205.2	1142.4	1085.9	1039.3
22.5°	1607.8	1566.5	1512.0	1441.3	1369.7	1291.1	1218.9	1162.5	1099.7	1039.8	987.2
25°	1599.4	1560.1	1503.7	1433.5	1349.0	1269.5	1189.0	1123.7	1051.1	989.2	935.7
27.5°	1576.8	1544.9	1491.4	1416.3	1327.9	1236.1	1148.3	1077.1	1005.4	935.2	884.1
30°	1540.5	1519.4	1473.2	1393.7	1300.9	1199.8	1111.9	1029.0	951.4	885.6	830.6
32.5°	1493.9	1483.5	1445.3	1366.7	1273.4	1160.0	1068.2	982.8	898.4	836.0	779.6
35°	1434.5	1439.9	1407.5	1336.3	1238.6	1119.8	1017.2	927.8	845.4	779.1	727.0
37.5°	1357.4	1383.9	1363.3	1296.5	1193.9	1079.0	963.7	873.8	787.4	723.6	678.0
40°	1271.0	1317.6	1307.8	1251.8	1145.8	1031.4	912.1	815.4	731.0	670.6	626.9
42.5°	1169.4	1237.1	1247.9	1197.3	1098.2	972.0	854.2	760.9	679.4	620.0	578.3
45°	1055.5	1139.4	1175.7	1136.0	1042.7	914.6	794.8	703.0	622.5	571.9	537.1
47.5°	941.1	1042.2	1091.3	1072.2	977.9	853.2	735.9	646.0	570.0	525.8	492.9
50°	828.2	936.7	1008.3	995.6	914.1	794.8	676.5	588.1	518.4	477.7	449.7
52.5°	729.0	831.6	909.7	916.1	842.9	728.0	613.6	531.7	472.3	435.4	411.9
55°	631.3	726.6	812.0	827.7	768.3	657.8	555.7	478.2	424.2	393.7	374.6
57.5°	543.9	630.3	715.3	742.8	694.6	595.0	493.4	425.1	378.5	354.9	338.2
60°	469.8	547.9	621.0	649.0	616.1	525.3	436.4	375.6	336.8	315.7	302.4
62.5°	405.0	465.4	530.2	561.1	539.0	460.0	382.4	328.4	297.0	278.8	268.5
65°	346.6	393.2	444.3	480.1	455.6	396.7	331.9	285.2	258.7	242.0	234.7
67.5°	292.6	331.4	372.1	400.6	388.3	334.8	280.3	244.0	221.9	209.1	202.3
70°	243.5	272.5	305.4	327.4	318.6	277.4	234.2	205.2	186.5	177.7	171.8
72.5°	199.8	218.5	243.5	261.7	252.3	223.4	192.4	169.4	155.6	145.3	140.9
75°	158.6	174.8	192.4	204.7	197.3	175.7	151.2	133.5	124.2	117.8	114.9
77.5°	120.3	133.0	145.3	151.2	147.8	132.1	115.4	101.6	93.8	89.8	86.4
80°	86.4	93.8	102.1	107.5	105.5	94.7	83.0	72.2	68.7	63.8	62.8
82.5°	57.9	63.8	65.8	68.2	66.8	61.9	53.5	47.1	44.2	41.7	41.2
85°	34.4	35.8	38.3	38.3	36.8	33.4	29.0	27.0	24.1	23.6	22.1
87.5°	15.2	15.2	15.2	15.2	15.2	14.2	12.3	11.3	10.3	9.8	9.3
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°	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5	1326.5
2.5°	1303.9	1299.0	1292.1	1284.2	1277.4	1266.6	1263.1	1263.1	1265.6	1262.6	1260.2
5°	1270.0	1260.2	1250.4	1235.1	1222.4	1205.2	1200.3	1195.4	1194.9	1190.0	1183.6
7.5°	1233.7	1218.9	1198.8	1177.2	1163.5	1144.8	1134.5	1131.6	1122.2	1113.4	1103.1
10°	1191.5	1168.9	1144.8	1124.2	1102.6	1078.5	1066.3	1057.9	1048.6	1037.8	1030.4
12.5°	1140.4	1114.9	1092.8	1068.7	1050.6	1016.7	1012.8	1002.0	983.3	967.1	961.2
15°	1109.0	1064.3	1039.3	1017.2	989.7	954.8	942.1	930.3	912.6	902.3	894.0
17.5°	1053.5	1013.3	981.8	952.4	925.9	898.9	879.7	869.9	855.7	846.8	838.5
20°	1002.9	959.3	926.4	892.0	864.5	840.0	823.8	811.5	804.1	795.3	786.9
22.5°	951.9	906.2	874.8	840.0	807.6	792.8	773.7	763.4	753.6	746.7	737.8
25°	892.5	856.2	816.9	789.9	761.4	746.2	728.0	718.2	710.4	702.5	698.1
27.5°	839.5	802.6	766.3	739.3	715.3	700.5	689.2	679.9	670.1	664.2	660.8
30°	784.5	750.6	718.7	692.7	674.0	657.8	651.0	642.1	634.8	632.3	626.9
32.5°	735.4	697.6	672.1	648.5	632.8	621.5	616.6	607.3	605.8	603.3	600.4
35°	686.3	653.9	629.4	609.2	596.0	587.6	581.2	578.8	576.3	573.9	571.4
37.5°	637.7	612.2	589.1	572.9	562.1	555.7	554.2	549.3	548.8	545.4	545.4
40°	594.0	568.0	551.8	539.0	530.2	527.2	523.3	522.3	520.9	519.9	521.8
42.5°	550.3	532.6	518.9	505.6	498.8	496.3	495.3	493.9	492.9	495.8	496.8
45°	509.6	494.4	482.6	473.2	469.3	466.4	466.4	467.8	467.4	468.8	468.8
47.5°	471.8	458.0	448.2	444.8	439.9	438.9	439.4	438.9	441.3	443.3	445.3
50°	435.9	423.7	415.8	412.4	411.4	409.9	411.9	412.9	414.3	416.3	417.3
52.5°	396.2	390.3	385.4	381.9	381.4	381.9	381.4	384.9	386.4	389.3	388.8
55°	362.3	357.9	354.4	350.5	350.0	351.5	352.5	355.4	357.4	359.8	359.4
57.5°	330.4	327.0	323.0	322.0	321.6	322.0	326.5	326.0	328.9	330.9	331.9
60°	295.5	293.1	289.6	289.6	291.1	292.1	293.6	296.0	299.0	298.5	301.9
62.5°	263.6	260.7	259.7	261.2	260.7	263.1	264.6	264.6	268.5	270.0	271.0
65°	231.7	230.7	229.3	229.3	230.7	231.2	233.7	235.1	236.6	239.6	242.0
67.5°	201.8	199.3	199.3	198.3	200.3	201.8	203.2	205.2	206.2	209.6	211.1
70°	170.3	169.4	168.9	169.9	169.9	171.3	173.8	176.2	178.2	178.7	181.6
72.5°	139.9	139.9	139.9	141.4	142.4	143.8	144.3	146.3	149.2	149.7	151.2
75°	112.4	112.9	112.4	112.9	113.4	114.9	115.9	117.8	119.8	120.3	121.3
77.5°	86.9	85.9	84.9	86.4	87.4	90.3	89.8	90.8	92.8	91.8	92.8
80°	60.9	62.3	60.4	63.3	63.3	62.8	63.8	65.3	64.8	65.8	64.8
82.5°	41.2	39.8	39.8	41.2	41.7	40.3	41.2	41.7	42.2	41.2	40.7
85°	22.6	22.1	23.1	21.6	22.1	21.1	21.1	20.1	21.1	20.1	19.1
87.5°	8.3	7.9	8.3	6.9	6.4	5.9	5.4	5.4	4.4	4.4	4.4
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: P243167

CATALOG NUMBER: S122DR-H865D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1326.5	1326.5	1326.5	1326.5
2.5°	1263.6	1258.2	1255.8	1257.7
5°	1176.7	1178.2	1169.4	1172.3
7.5°	1101.6	1095.2	1097.2	1093.8
10°	1022.1	1018.7	1013.3	1014.2
12.5°	968.6	945.5	944.0	939.6
15°	893.5	880.7	877.8	876.8
17.5°	833.6	822.8	826.7	823.8
20°	779.6	780.1	773.7	769.8
22.5°	732.0	731.0	728.5	724.6
25°	691.7	691.7	685.8	684.3
27.5°	654.9	655.9	651.0	651.0
30°	627.4	624.0	623.5	624.4
32.5°	599.9	596.0	596.5	596.0
35°	570.4	571.4	570.0	568.5
37.5°	545.4	545.4	545.4	543.9
40°	520.9	521.8	520.4	521.4
42.5°	496.3	496.8	496.8	494.8
45°	471.8	471.3	470.3	472.3
47.5°	446.2	446.2	445.8	446.7
50°	418.3	419.2	417.8	417.3
52.5°	389.8	390.3	389.8	390.8
55°	360.8	360.8	361.3	362.3
57.5°	330.9	334.3	331.9	333.8
60°	301.4	301.9	302.4	301.4
62.5°	273.4	272.9	273.4	274.9
65°	243.0	244.0	243.5	242.5
67.5°	213.1	212.1	213.5	212.1
70°	181.1	183.1	181.6	183.6
72.5°	152.2	151.7	152.7	150.2
75°	121.7	121.7	122.2	121.7
77.5°	93.3	92.3	91.8	90.3
80°	64.3	64.3	62.3	63.8
82.5°	39.3	39.8	40.3	37.3
85°	18.7	18.7	18.2	17.7
87.5°	3.9	3.9	4.4	4.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)