

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: P243151

Luminaire Tested: **S122DR-H675D830-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243151
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-H675D830-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2638.5 lumens
Efficiency: N/A
Efficacy: 111.8 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

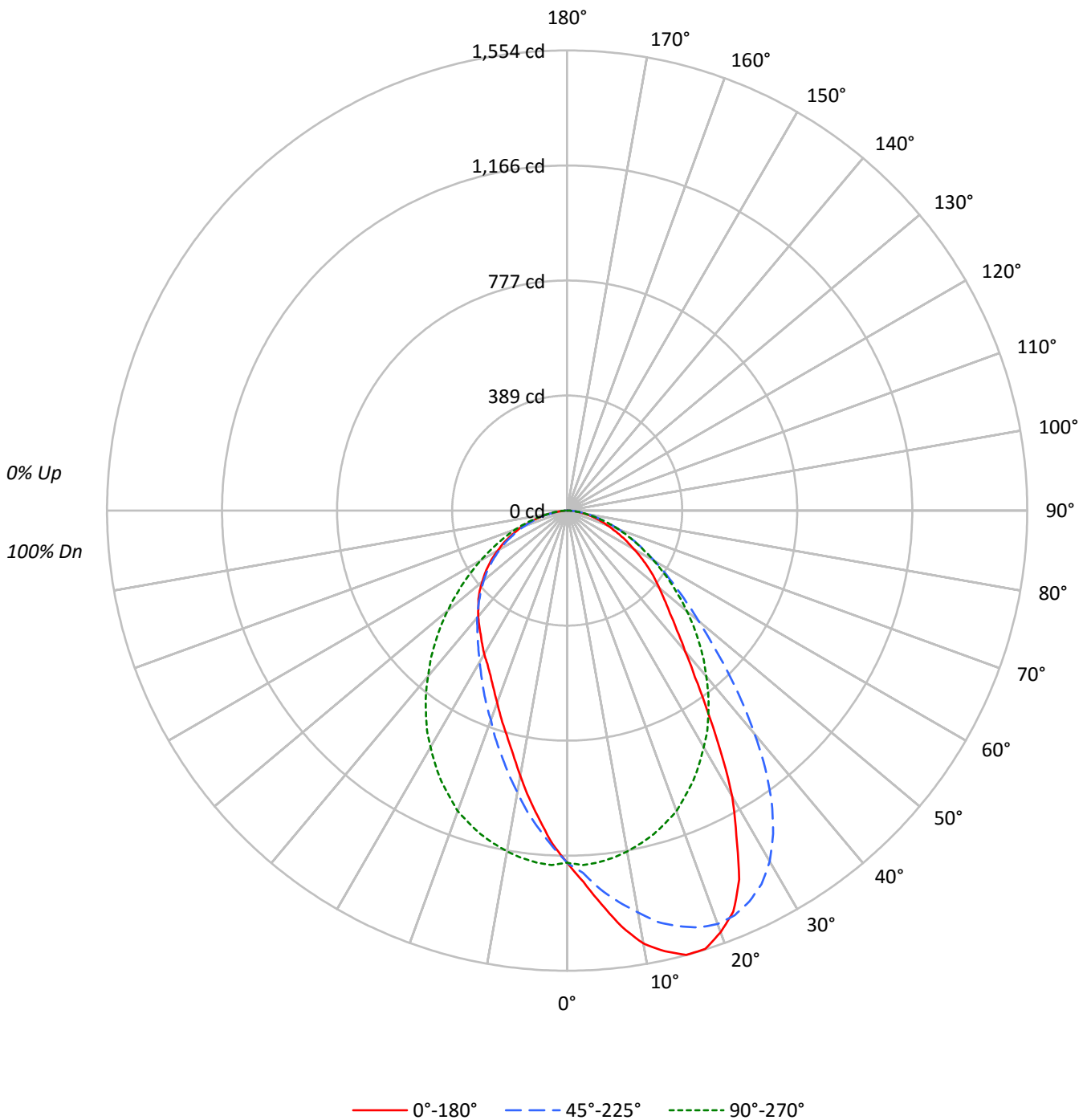
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	22650	22650	22650
5°	25512	22811	20094
10°	28718	22606	17585
15°	30634	22303	15500
20°	30721	21900	13986
25°	28894	21170	12894
30°	24528	20288	12312
35°	19177	19339	11850
40°	15406	18176	11622
45°	13253	16976	11405
50°	12022	15623	11086
55°	11078	14233	10786
60°	9958	12827	10293
65°	8965	11525	9798
70°	7992	10247	9167
75°	7190	8809	8029
80°	6274	7097	6274
85°	5376	5289	3453



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	113.3	4.3
10°-20°	325.6	12.3
20°-30°	473.5	17.9
30°-40°	507.9	19.3
40°-50°	455.2	17.3
50°-60°	362.9	13.8
60°-70°	245.5	9.3
70°-80°	125.2	4.7
80°-90°	29.3	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°	912.4	34.6
0°-40°	1420.3	53.8
0°-60°	2238.5	84.8
0°-90°	2638.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2638.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1189	1189	1189	1189	1189	
5°	1334	1283	1193	1080	1051	132
15°	1554	1453	1131	856	786	435
25°	1375	1456	1007	669	614	618
35°	825	1205	832	527	510	523
45°	492	762	630	418	423	385
55°	334	443	429	315	325	298
65°	199	257	256	207	217	197
75°	98	122	120	103	109	104
85°	25	28	24	19	16	29
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°	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1
2.5°	1255.1	1259.1	1255.5	1254.2	1251.6	1250.7	1243.7	1237.9	1234.4	1224.7	1225.6
5°	1334.3	1343.1	1338.3	1337.8	1328.1	1322.0	1315.8	1307.0	1293.8	1283.3	1274.9
7.5°	1417.9	1413.5	1412.2	1407.4	1400.3	1391.5	1377.9	1365.1	1348.4	1333.0	1321.5
10°	1484.8	1483.5	1485.7	1473.4	1469.0	1455.3	1443.4	1423.6	1402.1	1377.9	1362.9
12.5°	1524.4	1528.4	1531.5	1526.6	1516.1	1512.1	1492.3	1464.6	1457.1	1424.1	1406.0
15°	1553.5	1555.2	1555.7	1550.4	1545.1	1535.0	1523.1	1505.5	1481.3	1452.7	1439.0
17.5°	1551.7	1551.3	1553.9	1550.8	1547.7	1544.7	1535.4	1521.8	1502.9	1476.0	1453.1
20°	1515.6	1523.5	1529.7	1531.0	1530.6	1532.3	1527.9	1519.1	1505.5	1486.1	1460.2
22.5°	1466.3	1463.3	1476.5	1475.6	1481.3	1494.5	1500.2	1496.7	1491.4	1479.1	1458.4
25°	1374.8	1377.9	1387.1	1396.8	1419.2	1427.2	1444.3	1457.5	1459.3	1456.2	1443.4
27.5°	1237.5	1259.5	1264.3	1277.1	1308.3	1334.3	1369.1	1389.8	1419.2	1421.9	1416.2
30°	1115.2	1114.3	1121.8	1144.6	1173.2	1212.4	1257.3	1310.5	1344.4	1367.8	1376.1
32.5°	964.6	968.2	987.5	1015.7	1044.7	1083.9	1135.8	1201.0	1246.3	1294.7	1322.0
35°	824.7	835.7	854.2	873.5	905.2	958.9	1016.6	1070.7	1140.2	1204.9	1248.9
37.5°	709.4	724.4	738.4	756.9	787.7	829.1	881.0	952.8	1021.9	1099.7	1164.4
40°	619.6	625.3	635.0	653.1	673.8	715.1	767.5	821.2	896.0	985.3	1070.3
42.5°	549.2	547.9	558.5	569.9	588.8	619.6	665.4	719.1	793.5	872.7	958.5
45°	492.0	492.4	496.8	508.7	523.7	541.3	576.5	627.1	683.4	762.2	853.3
47.5°	445.4	446.7	453.3	461.6	470.4	486.7	510.0	543.1	595.9	661.9	747.2
50°	405.7	408.0	412.4	418.5	425.1	436.6	454.2	480.1	521.9	577.8	655.3
52.5°	370.5	371.4	372.7	378.5	383.7	394.3	407.5	427.8	460.8	507.4	567.7
55°	333.6	332.7	335.8	340.6	345.5	352.9	366.6	382.9	406.2	443.2	492.9
57.5°	295.7	297.1	299.3	301.9	310.7	318.6	328.7	343.7	362.2	391.2	432.6
60°	261.4	261.4	264.0	267.6	273.3	278.6	288.2	301.9	318.2	340.6	375.4
62.5°	228.0	229.7	232.4	234.1	239.4	246.0	253.5	264.0	279.0	297.1	323.0
65°	198.9	198.0	200.7	204.2	208.2	212.6	220.9	229.7	241.2	257.4	279.0
67.5°	169.0	171.6	172.5	174.3	177.4	183.1	187.0	196.3	205.5	220.0	238.1
70°	143.5	145.2	146.5	148.7	151.4	154.0	158.0	165.5	174.7	184.8	197.6
72.5°	120.6	121.9	120.6	122.8	124.1	126.7	132.0	135.5	142.6	151.4	162.8
75°	97.7	98.6	98.1	100.3	100.8	103.4	106.1	109.1	117.1	121.9	129.8
77.5°	76.6	77.5	77.9	78.8	79.7	81.0	82.3	85.4	89.8	94.2	100.3
80°	57.2	57.2	58.5	59.0	59.4	60.3	62.5	63.4	66.5	67.8	72.6
82.5°	39.6	40.0	40.5	40.5	40.9	41.8	42.2	44.0	44.9	47.1	49.3
85°	24.6	25.1	25.1	25.1	26.4	26.0	26.0	26.8	28.2	28.2	29.0
87.5°	12.3	12.8	12.8	12.8	13.2	13.2	13.2	13.2	13.2	14.1	13.6
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°	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1
2.5°	1225.2	1224.7	1223.0	1215.0	1208.9	1201.0	1199.6	1198.3	1187.3	1175.4	1171.9
5°	1268.3	1260.4	1249.4	1236.2	1223.0	1208.4	1200.1	1193.0	1176.3	1157.8	1147.3
7.5°	1310.5	1295.1	1278.0	1257.3	1235.3	1212.0	1197.0	1182.9	1160.0	1135.8	1121.3
10°	1346.6	1325.9	1302.2	1274.9	1244.5	1212.8	1190.8	1168.8	1139.8	1110.3	1090.9
12.5°	1376.6	1350.2	1318.9	1281.9	1254.2	1210.6	1179.8	1150.8	1118.7	1080.4	1059.3
15°	1399.4	1373.5	1331.2	1293.8	1257.3	1199.2	1161.8	1131.0	1087.9	1050.5	1017.0
17.5°	1427.2	1390.2	1348.4	1294.7	1254.2	1187.8	1145.5	1105.5	1058.8	1014.8	977.8
20°	1439.5	1400.8	1355.9	1296.0	1244.5	1175.4	1119.1	1080.4	1024.1	973.4	931.6
22.5°	1441.2	1404.3	1355.4	1292.1	1227.8	1157.4	1092.7	1042.1	985.8	932.1	885.0
25°	1433.8	1398.6	1348.0	1285.0	1209.3	1138.0	1065.9	1007.3	942.2	886.8	838.8
27.5°	1413.5	1384.9	1336.9	1269.6	1190.4	1108.1	1029.3	965.5	901.3	838.3	792.6
30°	1381.0	1362.0	1320.7	1249.4	1166.2	1075.5	996.8	922.4	852.9	793.9	744.6
32.5°	1339.1	1329.9	1295.6	1225.2	1141.6	1039.9	957.6	881.0	805.3	749.4	698.8
35°	1285.9	1290.7	1261.7	1197.9	1110.3	1003.8	911.8	831.7	757.8	698.4	651.8
37.5°	1216.8	1240.6	1222.1	1162.2	1070.3	967.3	863.9	783.3	705.9	648.7	607.7
40°	1139.4	1181.2	1172.4	1122.2	1027.1	924.6	817.7	731.0	655.3	601.1	562.0
42.5°	1048.3	1109.0	1118.7	1073.3	984.4	871.3	765.7	682.1	609.1	555.8	518.4
45°	946.2	1021.4	1054.0	1018.3	934.7	819.9	712.5	630.2	558.0	512.7	481.4
47.5°	843.6	934.3	978.3	961.1	876.6	764.9	659.7	579.1	510.9	471.3	441.8
50°	742.4	839.7	903.9	892.5	819.4	712.5	606.4	527.2	464.7	428.2	403.1
52.5°	653.5	745.5	815.5	821.2	755.6	652.6	550.1	476.6	423.4	390.3	369.2
55°	565.9	651.3	727.9	742.0	688.7	589.7	498.2	428.6	380.2	352.9	335.8
57.5°	487.6	565.1	641.2	665.8	622.7	533.4	442.3	381.1	339.3	318.2	303.2
60°	421.2	491.1	556.7	581.8	552.3	470.9	391.2	336.7	301.9	283.0	271.1
62.5°	363.1	417.2	475.3	503.0	483.2	412.4	342.8	294.4	266.2	250.0	240.7
65°	310.7	352.5	398.3	430.4	408.4	355.6	297.5	255.7	231.9	217.0	210.4
67.5°	262.3	297.1	333.6	359.1	348.1	300.1	251.3	218.7	198.9	187.5	181.3
70°	218.3	244.2	273.7	293.5	285.6	248.6	209.9	184.0	167.2	159.3	154.0
72.5°	179.1	195.8	218.3	234.6	226.2	200.2	172.5	151.8	139.5	130.3	126.3
75°	142.1	156.7	172.5	183.5	176.9	157.5	135.5	119.7	111.3	105.6	103.0
77.5°	107.8	119.3	130.3	135.5	132.5	118.4	103.4	91.1	84.1	80.5	77.5
80°	77.5	84.1	91.5	96.4	94.6	84.9	74.4	64.7	61.6	57.2	56.3
82.5°	51.9	57.2	59.0	61.2	59.9	55.4	48.0	42.2	39.6	37.4	37.0
85°	30.8	32.1	34.3	34.3	33.0	29.9	26.0	24.2	21.6	21.1	19.8
87.5°	13.6	13.6	13.6	13.6	13.6	12.8	11.0	10.1	9.2	8.8	8.4
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1	1189.1
2.5°	1168.8	1164.4	1158.3	1151.2	1145.1	1135.4	1132.3	1132.3	1134.5	1131.9	1129.7
5°	1138.5	1129.7	1120.9	1107.2	1095.8	1080.4	1076.0	1071.6	1071.1	1066.7	1061.0
7.5°	1105.9	1092.7	1074.7	1055.3	1043.0	1026.3	1017.0	1014.4	1006.0	998.1	988.8
10°	1068.1	1047.8	1026.3	1007.8	988.4	966.8	955.8	948.4	940.0	930.3	923.7
12.5°	1022.3	999.4	979.6	958.0	941.8	911.4	907.9	898.2	881.5	866.9	861.7
15°	994.1	954.1	931.6	911.8	887.2	855.9	844.5	833.9	818.1	808.9	801.4
17.5°	944.4	908.3	880.2	853.7	830.0	805.8	788.6	779.8	767.1	759.1	751.6
20°	899.1	859.9	830.4	799.6	775.0	753.0	738.4	727.4	720.8	712.9	705.4
22.5°	853.3	812.4	784.2	753.0	723.9	710.7	693.6	684.3	675.5	669.4	661.4
25°	800.1	767.5	732.3	708.1	682.6	668.9	652.6	643.8	636.8	629.7	625.8
27.5°	752.5	719.5	687.0	662.8	641.2	628.0	617.9	609.5	600.7	595.4	592.3
30°	703.2	672.9	644.3	620.9	604.2	589.7	583.5	575.6	569.0	566.8	562.0
32.5°	659.2	625.3	602.5	581.3	567.3	557.1	552.7	544.4	543.1	540.9	538.2
35°	615.2	586.2	564.2	546.1	534.3	526.8	521.0	518.8	516.6	514.4	512.2
37.5°	571.7	548.8	528.1	513.6	503.9	498.2	496.8	492.4	492.0	488.9	488.9
40°	532.5	509.2	494.6	483.2	475.3	472.6	469.1	468.2	466.9	466.0	467.8
42.5°	493.3	477.5	465.2	453.3	447.1	444.9	444.0	442.7	441.8	444.5	445.4
45°	456.8	443.2	432.6	424.2	420.7	418.1	418.1	419.4	419.0	420.3	420.3
47.5°	422.9	410.6	401.8	398.7	394.3	393.4	393.9	393.4	395.6	397.4	399.1
50°	390.8	379.8	372.7	369.7	368.8	367.5	369.2	370.1	371.4	373.2	374.1
52.5°	355.1	349.9	345.5	342.4	341.9	342.4	341.9	345.0	346.3	349.0	348.5
55°	324.8	320.8	317.7	314.2	313.8	315.1	316.0	318.6	320.4	322.6	322.1
57.5°	296.2	293.1	289.6	288.7	288.2	288.7	292.7	292.2	294.9	296.6	297.5
60°	264.9	262.7	259.6	259.6	261.0	261.8	263.2	265.4	268.0	267.6	270.6
62.5°	236.3	233.7	232.8	234.1	233.7	235.9	237.2	237.2	240.7	242.0	242.9
65°	207.7	206.8	205.5	205.5	206.8	207.3	209.5	210.8	212.1	214.8	217.0
67.5°	180.9	178.7	178.7	177.8	179.6	180.9	182.2	184.0	184.8	187.9	189.2
70°	152.7	151.8	151.4	152.3	152.3	153.6	155.8	158.0	159.7	160.2	162.8
72.5°	125.4	125.4	125.4	126.7	127.6	128.9	129.4	131.1	133.8	134.2	135.5
75°	100.8	101.2	100.8	101.2	101.7	103.0	103.9	105.6	107.4	107.8	108.7
77.5°	77.9	77.0	76.1	77.5	78.3	81.0	80.5	81.4	83.2	82.3	83.2
80°	54.6	55.9	54.1	56.8	56.8	56.3	57.2	58.5	58.1	59.0	58.1
82.5°	37.0	35.6	35.6	37.0	37.4	36.1	37.0	37.4	37.8	37.0	36.5
85°	20.2	19.8	20.7	19.4	19.8	18.9	18.9	18.0	18.9	18.0	17.2
87.5°	7.5	7.0	7.5	6.2	5.7	5.3	4.8	4.8	4.0	4.0	4.0
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: P243151

CATALOG NUMBER: S122DR-H675D830-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1189.1	1189.1	1189.1	1189.1
2.5°	1132.8	1127.9	1125.7	1127.5
5°	1054.9	1056.2	1048.3	1050.9
7.5°	987.5	981.8	983.6	980.5
10°	916.2	913.2	908.3	909.2
12.5°	868.3	847.6	846.3	842.3
15°	800.9	789.5	786.9	786.0
17.5°	747.2	737.6	741.1	738.4
20°	698.8	699.3	693.6	690.0
22.5°	656.2	655.3	653.1	649.6
25°	620.1	620.1	614.8	613.5
27.5°	587.1	587.9	583.5	583.5
30°	562.4	559.3	558.9	559.8
32.5°	537.8	534.3	534.7	534.3
35°	511.4	512.2	510.9	509.6
37.5°	488.9	488.9	488.9	487.6
40°	466.9	467.8	466.5	467.4
42.5°	444.9	445.4	445.4	443.6
45°	422.9	422.5	421.6	423.4
47.5°	400.0	400.0	399.6	400.5
50°	374.9	375.8	374.5	374.1
52.5°	349.4	349.9	349.4	350.3
55°	323.5	323.5	323.9	324.8
57.5°	296.6	299.7	297.5	299.3
60°	270.2	270.6	271.1	270.2
62.5°	245.1	244.7	245.1	246.4
65°	217.8	218.7	218.3	217.4
67.5°	191.0	190.1	191.4	190.1
70°	162.4	164.1	162.8	164.6
72.5°	136.4	136.0	136.9	134.7
75°	109.1	109.1	109.6	109.1
77.5°	83.6	82.7	82.3	81.0
80°	57.6	57.6	55.9	57.2
82.5°	35.2	35.6	36.1	33.4
85°	16.7	16.7	16.3	15.8
87.5°	3.5	3.5	4.0	4.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)