

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: P243171

Luminaire Tested: **S122DR-H675D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243171
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-H675D935-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: 2410.3 lumens
Efficiency: N/A
Efficacy: 102.1 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

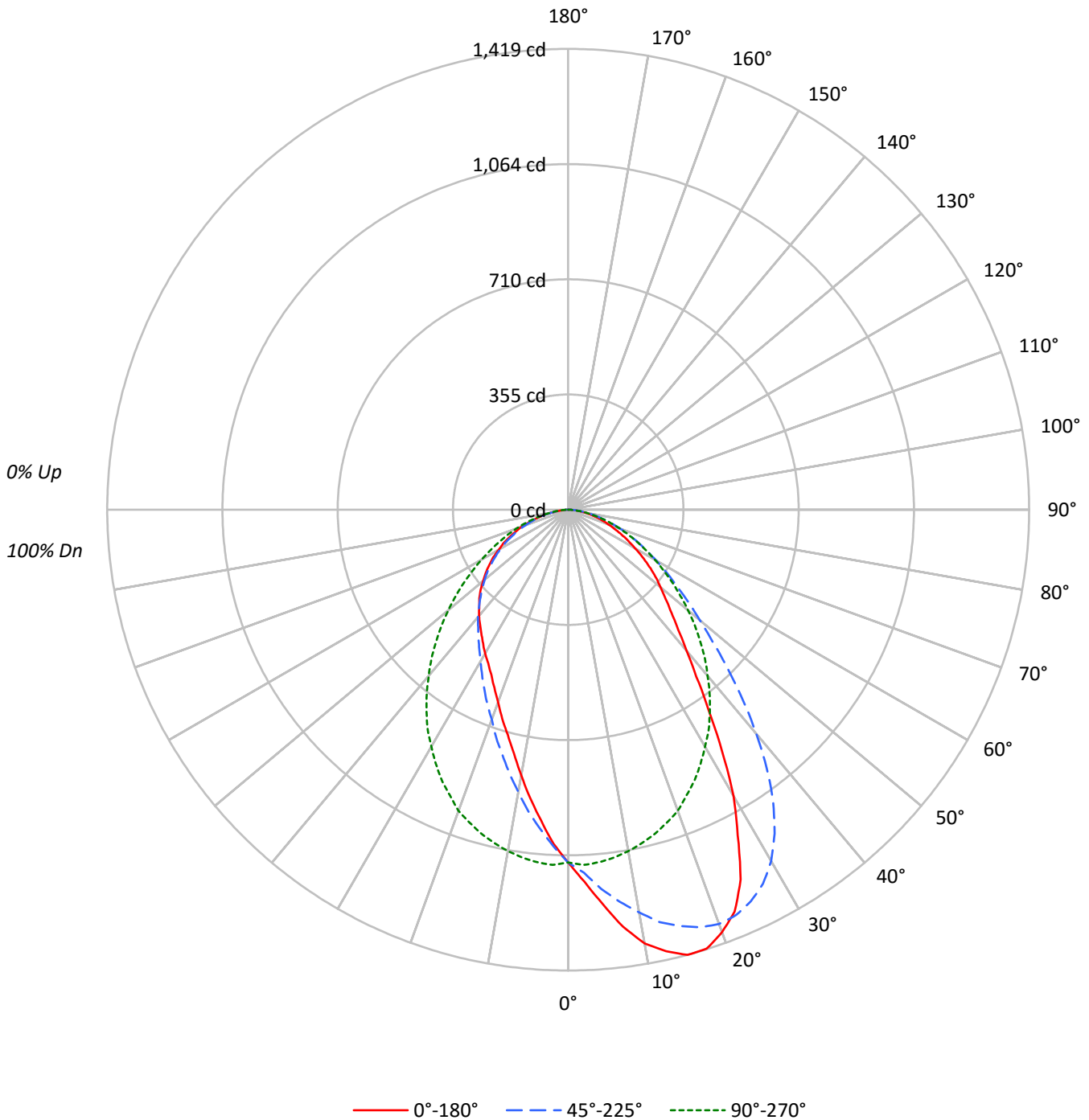
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	20690	20690	20690
5°	23306	20837	18356
10°	26235	20651	16063
15°	27984	20372	14159
20°	28064	20005	12776
25°	26395	19340	11778
30°	22406	18532	11246
35°	17519	17668	10824
40°	14074	16602	10615
45°	12106	15508	10417
50°	10982	14271	10126
55°	10119	13005	9853
60°	9097	11714	9402
65°	8189	10529	8951
70°	7301	9356	8370
75°	6565	8044	7337
80°	5737	6483	5737
85°	4917	4830	3169



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.5	4.3
10°-20°	297.4	12.3
20°-30°	432.6	17.9
30°-40°	464.0	19.3
40°-50°	415.9	17.3
50°-60°	331.5	13.8
60°-70°	224.3	9.3
70°-80°	114.4	4.7
80°-90°	26.8	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°	833.5	34.6
0°-40°	1297.5	53.8
0°-60°	2044.9	84.8
0°-90°	2410.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2410.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1086	1086	1086	1086	1086	
5°	1219	1172	1090	987	960	121
15°	1419	1327	1033	782	718	397
25°	1256	1330	920	611	560	565
35°	753	1101	760	481	466	477
45°	449	696	576	382	387	352
55°	305	405	392	288	297	272
65°	182	235	234	189	199	180
75°	89	111	109	94	100	95
85°	22	26	22	17	14	26
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°	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2
2.5°	1146.5	1150.1	1146.9	1145.7	1143.3	1142.5	1136.1	1130.8	1127.6	1118.8	1119.6
5°	1218.9	1226.9	1222.5	1222.1	1213.2	1207.6	1202.0	1193.9	1181.9	1172.2	1164.6
7.5°	1295.3	1291.2	1290.0	1285.6	1279.2	1271.1	1258.7	1247.0	1231.7	1217.7	1207.2
10°	1356.4	1355.2	1357.2	1345.9	1341.9	1329.4	1318.6	1300.5	1280.8	1258.7	1245.0
12.5°	1392.5	1396.2	1399.0	1394.5	1384.9	1381.3	1363.2	1337.9	1331.0	1300.9	1284.4
15°	1419.1	1420.7	1421.1	1416.3	1411.4	1402.2	1391.3	1375.3	1353.1	1327.0	1314.6
17.5°	1417.5	1417.1	1419.5	1416.7	1413.8	1411.0	1402.6	1390.1	1372.8	1348.3	1327.4
20°	1384.5	1391.7	1397.4	1398.6	1398.2	1399.8	1395.8	1387.7	1375.3	1357.6	1333.8
22.5°	1339.5	1336.7	1348.7	1347.9	1353.1	1365.2	1370.4	1367.2	1362.4	1351.1	1332.2
25°	1255.9	1258.7	1267.1	1276.0	1296.5	1303.7	1319.4	1331.4	1333.0	1330.2	1318.6
27.5°	1130.4	1150.5	1155.0	1166.6	1195.2	1218.9	1250.6	1269.5	1296.5	1298.9	1293.6
30°	1018.7	1017.9	1024.7	1045.6	1071.7	1107.5	1148.5	1197.2	1228.1	1249.4	1257.1
32.5°	881.2	884.4	902.1	927.8	954.4	990.1	1037.6	1097.1	1138.5	1182.7	1207.6
35°	753.4	763.4	780.3	798.0	826.9	876.0	928.6	978.1	1041.6	1100.7	1140.9
37.5°	648.0	661.7	674.6	691.4	719.6	757.4	804.8	870.3	933.5	1004.6	1063.7
40°	566.0	571.2	580.1	596.6	615.5	653.3	701.1	750.1	818.5	900.1	977.7
42.5°	501.7	500.5	510.1	520.6	537.9	566.0	607.8	656.9	724.8	797.2	875.6
45°	449.4	449.8	453.9	464.7	478.4	494.5	526.6	572.9	624.3	696.3	779.5
47.5°	406.8	408.0	414.1	421.7	429.7	444.6	465.9	496.1	544.3	604.6	682.6
50°	370.6	372.7	376.7	382.3	388.3	398.8	414.9	438.6	476.8	527.8	598.6
52.5°	338.5	339.3	340.5	345.7	350.5	360.2	372.3	390.7	420.9	463.5	518.6
55°	304.7	303.9	306.7	311.2	315.6	322.4	334.9	349.7	371.0	404.8	450.2
57.5°	270.1	271.4	273.4	275.8	283.8	291.1	300.3	314.0	330.8	357.4	395.2
60°	238.8	238.8	241.2	244.4	249.6	254.5	263.3	275.8	290.6	311.2	342.9
62.5°	208.2	209.8	212.3	213.9	218.7	224.7	231.6	241.2	254.9	271.4	295.1
65°	181.7	180.9	183.3	186.5	190.1	194.2	201.8	209.8	220.3	235.2	254.9
67.5°	154.4	156.8	157.6	159.2	162.0	167.2	170.9	179.3	187.7	201.0	217.5
70°	131.1	132.7	133.9	135.9	138.3	140.7	144.3	151.2	159.6	168.8	180.5
72.5°	110.1	111.4	110.1	112.2	113.4	115.8	120.6	123.8	130.2	138.3	148.7
75°	89.2	90.0	89.6	91.7	92.1	94.5	96.9	99.7	106.9	111.4	118.6
77.5°	69.9	70.8	71.2	72.0	72.8	74.0	75.2	78.0	82.0	86.0	91.7
80°	52.3	52.3	53.5	53.9	54.3	55.1	57.1	57.9	60.7	61.9	66.3
82.5°	36.2	36.6	37.0	37.0	37.4	38.2	38.6	40.2	41.0	43.0	45.0
85°	22.5	22.9	22.9	22.9	24.1	23.7	23.7	24.5	25.7	25.7	26.5
87.5°	11.3	11.7	11.7	11.7	12.1	12.1	12.1	12.1	12.1	12.9	12.5
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°	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2
2.5°	1119.2	1118.8	1117.2	1109.9	1104.3	1097.1	1095.9	1094.7	1084.6	1073.8	1070.5
5°	1158.6	1151.3	1141.3	1129.2	1117.2	1103.9	1096.3	1089.8	1074.6	1057.7	1048.0
7.5°	1197.2	1183.1	1167.4	1148.5	1128.4	1107.1	1093.4	1080.6	1059.7	1037.6	1024.3
10°	1230.1	1211.2	1189.5	1164.6	1136.9	1107.9	1087.8	1067.7	1041.2	1014.3	996.6
12.5°	1257.5	1233.3	1204.8	1171.0	1145.7	1105.9	1077.8	1051.2	1021.9	986.9	967.6
15°	1278.4	1254.7	1216.1	1181.9	1148.5	1095.5	1061.3	1033.1	993.8	959.6	929.0
17.5°	1303.7	1269.9	1231.7	1182.7	1145.7	1085.0	1046.4	1009.8	967.2	927.0	893.3
20°	1315.0	1279.6	1238.6	1183.9	1136.9	1073.8	1022.3	986.9	935.5	889.2	851.0
22.5°	1316.6	1282.8	1238.2	1180.3	1121.6	1057.3	998.2	951.9	900.5	851.4	808.4
25°	1309.7	1277.6	1231.3	1173.8	1104.7	1039.6	973.7	920.2	860.7	810.0	766.2
27.5°	1291.2	1265.1	1221.3	1159.8	1087.4	1012.2	940.3	882.0	823.3	765.8	724.0
30°	1261.5	1244.2	1206.4	1141.3	1065.3	982.5	910.5	842.6	779.1	725.2	680.2
32.5°	1223.3	1214.9	1183.5	1119.2	1042.8	949.9	874.8	804.8	735.7	684.6	638.4
35°	1174.7	1179.1	1152.5	1094.3	1014.3	917.0	833.0	759.8	692.2	638.0	595.4
37.5°	1111.5	1133.2	1116.4	1061.7	977.7	883.6	789.1	715.6	644.8	592.6	555.2
40°	1040.8	1079.0	1070.9	1025.1	938.3	844.6	746.9	667.7	598.6	549.1	513.4
42.5°	957.6	1013.0	1021.9	980.5	899.3	796.0	699.5	623.1	556.4	507.7	473.6
45°	864.3	933.0	962.8	930.2	853.9	748.9	650.8	575.7	509.7	468.3	439.8
47.5°	770.6	853.5	893.7	878.0	800.8	698.7	602.6	529.0	466.7	430.5	403.6
50°	678.2	767.0	825.7	815.3	748.5	650.8	554.0	481.6	424.5	391.1	368.2
52.5°	597.0	681.0	744.9	750.1	690.2	596.2	502.5	435.4	386.7	356.6	337.3
55°	517.0	595.0	664.9	677.8	629.1	538.7	455.1	391.6	347.3	322.4	306.7
57.5°	445.4	516.2	585.7	608.2	568.8	487.2	404.0	348.1	309.9	290.6	277.0
60°	384.7	448.6	508.5	531.4	504.5	430.1	357.4	307.5	275.8	258.5	247.6
62.5°	331.7	381.1	434.2	459.5	441.4	376.7	313.2	268.9	243.2	228.3	219.9
65°	283.8	322.0	363.8	393.2	373.1	324.8	271.8	233.6	211.9	198.2	192.2
67.5°	239.6	271.4	304.7	328.0	318.0	274.2	229.5	199.8	181.7	171.3	165.6
70°	199.4	223.1	250.0	268.1	260.9	227.1	191.8	168.0	152.8	145.5	140.7
72.5°	163.6	178.9	199.4	214.3	206.6	182.9	157.6	138.7	127.4	119.0	115.4
75°	129.8	143.1	157.6	167.6	161.6	143.9	123.8	109.3	101.7	96.5	94.1
77.5°	98.5	108.9	119.0	123.8	121.0	108.1	94.5	83.2	76.8	73.6	70.8
80°	70.8	76.8	83.6	88.0	86.4	77.6	67.9	59.1	56.3	52.3	51.5
82.5°	47.4	52.3	53.9	55.9	54.7	50.7	43.8	38.6	36.2	34.2	33.8
85°	28.1	29.3	31.4	31.4	30.2	27.3	23.7	22.1	19.7	19.3	18.1
87.5°	12.5	12.5	12.5	12.5	12.5	11.7	10.1	9.2	8.4	8.0	7.6
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2	1086.2
2.5°	1067.7	1063.7	1058.1	1051.6	1046.0	1037.2	1034.4	1034.4	1036.4	1034.0	1031.9
5°	1040.0	1031.9	1023.9	1011.4	1001.0	986.9	982.9	978.9	978.5	974.5	969.2
7.5°	1010.2	998.2	981.7	964.0	952.7	937.5	929.0	926.6	919.0	911.7	903.3
10°	975.7	957.2	937.5	920.6	902.9	883.2	873.2	866.3	858.7	849.8	843.8
12.5°	933.9	912.9	894.9	875.2	860.3	832.5	829.3	820.5	805.2	791.9	787.1
15°	908.1	871.5	851.0	833.0	810.4	781.9	771.4	761.8	747.3	738.9	732.0
17.5°	862.7	829.7	804.0	779.9	758.2	736.1	720.4	712.3	700.7	693.5	686.6
20°	821.3	785.5	758.6	730.4	707.9	687.8	674.6	664.5	658.5	651.2	644.4
22.5°	779.5	742.1	716.4	687.8	661.3	649.2	633.6	625.1	617.1	611.4	604.2
25°	730.8	701.1	668.9	646.8	623.5	611.0	596.2	588.1	581.7	575.3	571.6
27.5°	687.4	657.3	627.5	605.4	585.7	573.7	564.4	556.8	548.7	543.9	541.1
30°	642.4	614.7	588.5	567.2	552.0	538.7	533.1	525.8	519.8	517.8	513.4
32.5°	602.2	571.2	550.3	531.0	518.2	508.9	504.9	497.3	496.1	494.1	491.6
35°	562.0	535.5	515.4	498.9	488.0	481.2	476.0	474.0	472.0	469.9	467.9
37.5°	522.2	501.3	482.4	469.1	460.3	455.1	453.9	449.8	449.4	446.6	446.6
40°	486.4	465.1	451.9	441.4	434.2	431.8	428.5	427.7	426.5	425.7	427.3
42.5°	450.6	436.2	424.9	414.1	408.4	406.4	405.6	404.4	403.6	406.0	406.8
45°	417.3	404.8	395.2	387.5	384.3	381.9	381.9	383.1	382.7	383.9	383.9
47.5°	386.3	375.1	367.0	364.2	360.2	359.4	359.8	359.4	361.4	363.0	364.6
50°	357.0	346.9	340.5	337.7	336.9	335.7	337.3	338.1	339.3	340.9	341.7
52.5°	324.4	319.6	315.6	312.8	312.4	312.8	312.4	315.2	316.4	318.8	318.4
55°	296.7	293.1	290.2	287.0	286.6	287.8	288.6	291.1	292.7	294.7	294.3
57.5°	270.5	267.7	264.5	263.7	263.3	263.7	267.3	266.9	269.3	271.0	271.8
60°	242.0	240.0	237.2	237.2	238.4	239.2	240.4	242.4	244.8	244.4	247.2
62.5°	215.9	213.5	212.7	213.9	213.5	215.5	216.7	216.7	219.9	221.1	221.9
65°	189.7	188.9	187.7	187.7	188.9	189.3	191.4	192.6	193.8	196.2	198.2
67.5°	165.2	163.2	163.2	162.4	164.0	165.2	166.4	168.0	168.8	171.7	172.9
70°	139.5	138.7	138.3	139.1	139.1	140.3	142.3	144.3	145.9	146.3	148.7
72.5°	114.6	114.6	114.6	115.8	116.6	117.8	118.2	119.8	122.2	122.6	123.8
75°	92.1	92.5	92.1	92.5	92.9	94.1	94.9	96.5	98.1	98.5	99.3
77.5°	71.2	70.4	69.5	70.8	71.6	74.0	73.6	74.4	76.0	75.2	76.0
80°	49.8	51.1	49.4	51.9	51.9	51.5	52.3	53.5	53.1	53.9	53.1
82.5°	33.8	32.6	32.6	33.8	34.2	33.0	33.8	34.2	34.6	33.8	33.4
85°	18.5	18.1	18.9	17.7	18.1	17.3	17.3	16.5	17.3	16.5	15.7
87.5°	6.8	6.4	6.8	5.6	5.2	4.8	4.4	4.4	3.6	3.6	3.6
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: P243171

CATALOG NUMBER: S122DR-H675D935-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1086.2	1086.2	1086.2	1086.2
2.5°	1034.8	1030.3	1028.3	1029.9
5°	963.6	964.8	957.6	960.0
7.5°	902.1	896.9	898.5	895.7
10°	837.0	834.2	829.7	830.5
12.5°	793.2	774.3	773.1	769.4
15°	731.6	721.2	718.8	718.0
17.5°	682.6	673.8	677.0	674.6
20°	638.4	638.8	633.6	630.3
22.5°	599.4	598.6	596.6	593.4
25°	566.4	566.4	561.6	560.4
27.5°	536.3	537.1	533.1	533.1
30°	513.8	510.9	510.5	511.3
32.5°	491.2	488.0	488.4	488.0
35°	467.1	467.9	466.7	465.5
37.5°	446.6	446.6	446.6	445.4
40°	426.5	427.3	426.1	426.9
42.5°	406.4	406.8	406.8	405.2
45°	386.3	385.9	385.1	386.7
47.5°	365.4	365.4	365.0	365.8
50°	342.5	343.3	342.1	341.7
52.5°	319.2	319.6	319.2	320.0
55°	295.5	295.5	295.9	296.7
57.5°	271.0	273.8	271.8	273.4
60°	246.8	247.2	247.6	246.8
62.5°	223.9	223.5	223.9	225.1
65°	199.0	199.8	199.4	198.6
67.5°	174.5	173.7	174.9	173.7
70°	148.3	149.9	148.7	150.3
72.5°	124.6	124.2	125.0	123.0
75°	99.7	99.7	100.1	99.7
77.5°	76.4	75.6	75.2	74.0
80°	52.7	52.7	51.1	52.3
82.5°	32.2	32.6	33.0	30.6
85°	15.3	15.3	14.9	14.5
87.5°	3.2	3.2	3.6	4.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)