

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: P243176

Luminaire Tested: **S122DR-H675D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243176  
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-H675D940-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

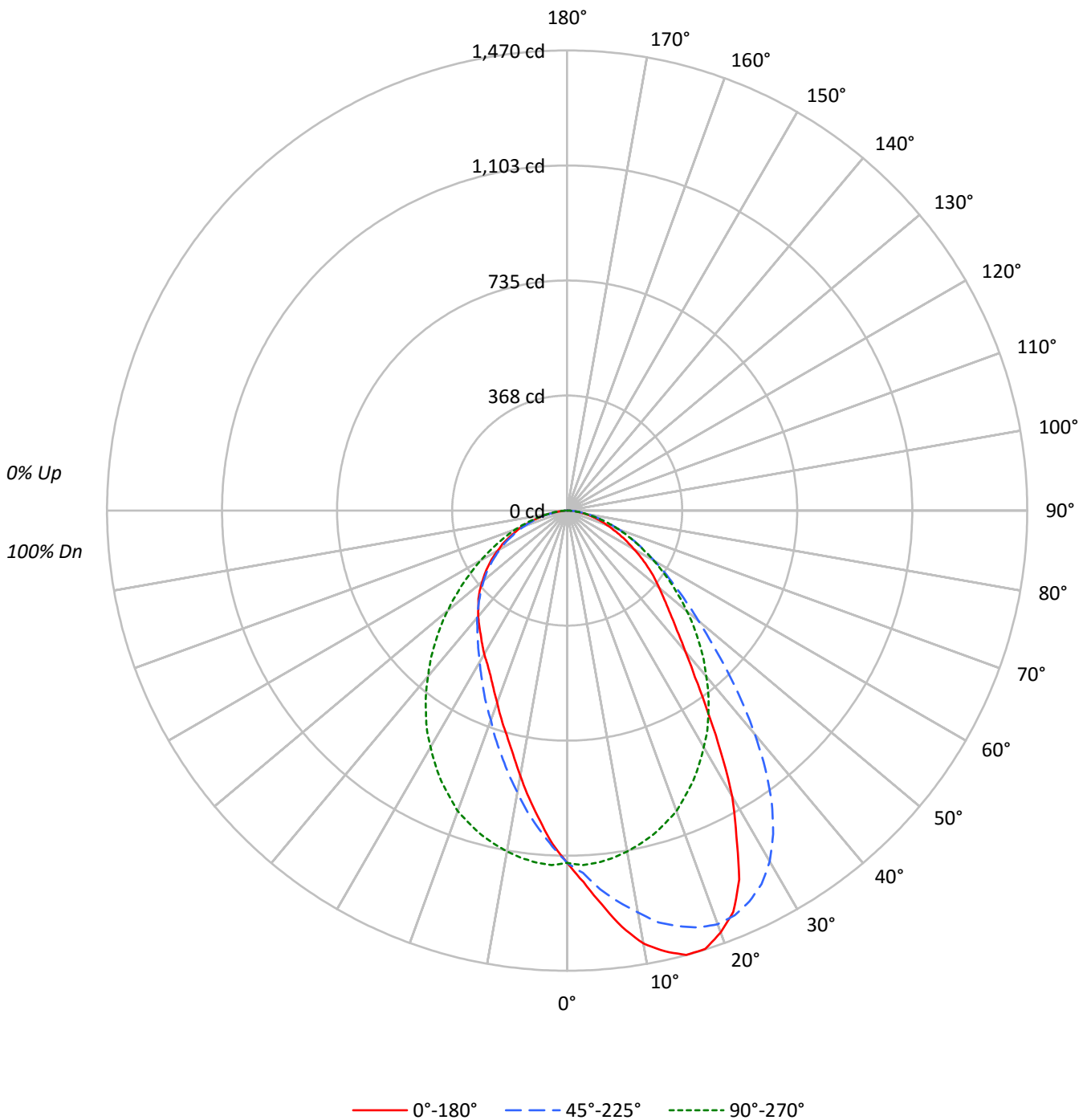
Lumens per Lamp: N/A  
Luminaire Lumens: 2496.2 lumens  
Efficiency: N/A  
Efficacy: 105.8 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24  
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.6  
Input Voltage (V): 120  
Input Current (A<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°	21429	21429	21429
5°	24136	21581	19010
10°	27169	21388	16638
15°	28982	21100	14664
20°	29065	20718	13232
25°	27337	20029	12198
30°	23204	19195	11648
35°	18142	18298	11210
40°	14576	17194	10995
45°	12539	16060	10788
50°	11376	14781	10487
55°	10481	13466	10205
60°	9421	12133	9737
65°	8482	10903	9271
70°	7557	9690	8671
75°	6800	8331	7602
80°	5934	6713	5934
85°	5092	5005	3278



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	107.2	4.3
10°-20°	308.0	12.3
20°-30°	448.0	17.9
30°-40°	480.5	19.3
40°-50°	430.7	17.3
50°-60°	343.3	13.8
60°-70°	232.3	9.3
70°-80°	118.5	4.7
80°-90°	27.8	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
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0°-30°	863.2	34.6
0°-40°	1343.7	53.8
0°-60°	2117.8	84.8
0°-90°	2496.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2496.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1125	1125	1125	1125	1125	
5°	1262	1214	1129	1022	994	125
15°	1470	1374	1070	810	744	412
25°	1301	1378	953	633	580	585
35°	780	1140	787	498	482	494
45°	466	721	596	396	400	364
55°	316	419	406	298	307	282
65°	188	244	242	196	206	187
75°	92	115	113	97	103	99
85°	23	27	23	18	15	27
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°	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0
2.5°	1187.4	1191.2	1187.8	1186.6	1184.1	1183.2	1176.6	1171.2	1167.8	1158.7	1159.5
5°	1262.3	1270.7	1266.1	1265.7	1256.5	1250.7	1244.9	1236.5	1224.0	1214.1	1206.1
7.5°	1341.5	1337.3	1336.0	1331.5	1324.8	1316.5	1303.6	1291.5	1275.7	1261.1	1250.3
10°	1404.7	1403.5	1405.6	1393.9	1389.7	1376.8	1365.6	1346.9	1326.5	1303.6	1289.4
12.5°	1442.2	1446.0	1448.9	1444.3	1434.3	1430.6	1411.8	1385.6	1378.5	1347.3	1330.2
15°	1469.7	1471.4	1471.8	1466.8	1461.8	1452.2	1441.0	1424.3	1401.4	1374.3	1361.4
17.5°	1468.0	1467.6	1470.1	1467.2	1464.3	1461.4	1452.6	1439.7	1421.8	1396.4	1374.8
20°	1433.9	1441.4	1447.2	1448.5	1448.0	1449.7	1445.5	1437.2	1424.3	1406.0	1381.4
22.5°	1387.3	1384.3	1396.8	1396.0	1401.4	1413.9	1419.3	1416.0	1411.0	1399.3	1379.8
25°	1300.7	1303.6	1312.3	1321.5	1342.7	1350.2	1366.4	1378.9	1380.6	1377.7	1365.6
27.5°	1170.8	1191.6	1196.2	1208.2	1237.8	1262.3	1295.2	1314.8	1342.7	1345.2	1339.8
30°	1055.0	1054.2	1061.3	1082.9	1110.0	1147.0	1189.5	1239.9	1271.9	1294.0	1301.9
32.5°	912.6	916.0	934.3	960.9	988.4	1025.5	1074.6	1136.2	1179.1	1224.9	1250.7
35°	780.2	790.6	808.1	826.4	856.4	907.2	961.8	1013.0	1078.7	1139.9	1181.6
37.5°	671.1	685.3	698.6	716.1	745.3	784.4	833.5	901.4	966.7	1040.4	1101.6
40°	586.2	591.6	600.8	617.9	637.4	676.6	726.1	776.9	847.7	932.2	1012.5
42.5°	519.6	518.3	528.3	539.2	557.1	586.2	629.5	680.3	750.7	825.6	906.8
45°	465.5	465.9	470.1	481.3	495.4	512.1	545.4	593.3	646.6	721.1	807.3
47.5°	421.3	422.6	428.8	436.7	445.1	460.5	482.5	513.8	563.7	626.2	706.9
50°	383.9	385.9	390.1	395.9	402.2	413.0	429.7	454.2	493.8	546.7	619.9
52.5°	350.6	351.4	352.6	358.1	363.1	373.0	385.5	404.7	435.9	480.0	537.1
55°	315.6	314.8	317.7	322.2	326.8	333.9	346.8	362.2	384.3	419.3	466.3
57.5°	279.8	281.0	283.1	285.6	293.9	301.4	311.0	325.2	342.6	370.1	409.3
60°	247.3	247.3	249.8	253.1	258.5	263.5	272.7	285.6	301.0	322.2	355.1
62.5°	215.7	217.3	219.8	221.5	226.5	232.7	239.8	249.8	264.0	281.0	305.6
65°	188.2	187.4	189.9	193.2	196.9	201.1	209.0	217.3	228.2	243.6	264.0
67.5°	159.9	162.4	163.2	164.9	167.8	173.2	176.9	185.7	194.4	208.2	225.2
70°	135.7	137.4	138.6	140.7	143.2	145.7	149.5	156.5	165.3	174.9	186.9
72.5°	114.1	115.3	114.1	116.2	117.4	119.9	124.9	128.2	134.9	143.2	154.0
75°	92.4	93.3	92.8	94.9	95.3	97.8	100.3	103.3	110.7	115.3	122.8
77.5°	72.4	73.3	73.7	74.5	75.4	76.6	77.9	80.8	84.9	89.1	94.9
80°	54.1	54.1	55.4	55.8	56.2	57.0	59.1	60.0	62.9	64.1	68.7
82.5°	37.5	37.9	38.3	38.3	38.7	39.6	40.0	41.6	42.5	44.5	46.6
85°	23.3	23.7	23.7	23.7	25.0	24.6	24.6	25.4	26.6	26.6	27.5
87.5°	11.7	12.1	12.1	12.1	12.5	12.5	12.5	12.5	12.5	13.3	12.9
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0
2.5°	1159.1	1158.7	1157.0	1149.5	1143.7	1136.2	1134.9	1133.7	1123.3	1112.0	1108.7
5°	1199.9	1192.4	1182.0	1169.5	1157.0	1143.3	1135.4	1128.7	1112.9	1095.4	1085.4
7.5°	1239.9	1225.3	1209.1	1189.5	1168.7	1146.6	1132.5	1119.1	1097.5	1074.6	1060.8
10°	1274.0	1254.4	1232.0	1206.1	1177.4	1147.4	1126.6	1105.8	1078.3	1050.4	1032.1
12.5°	1302.3	1277.3	1247.8	1212.8	1186.6	1145.4	1116.2	1088.7	1058.3	1022.1	1002.1
15°	1324.0	1299.4	1259.4	1224.0	1189.5	1134.5	1099.1	1070.0	1029.2	993.8	962.2
17.5°	1350.2	1315.2	1275.7	1224.9	1186.6	1123.7	1083.7	1045.9	1001.7	960.1	925.1
20°	1361.9	1325.2	1282.7	1226.1	1177.4	1112.0	1058.8	1022.1	968.8	920.9	881.4
22.5°	1363.5	1328.5	1282.3	1222.4	1161.6	1095.0	1033.8	985.9	932.6	881.8	837.3
25°	1356.4	1323.1	1275.3	1215.7	1144.1	1076.7	1008.4	953.0	891.4	838.9	793.5
27.5°	1337.3	1310.2	1264.8	1201.1	1126.2	1048.3	973.8	913.5	852.7	793.1	749.8
30°	1306.5	1288.6	1249.4	1182.0	1103.3	1017.5	943.0	872.7	806.9	751.1	704.5
32.5°	1266.9	1258.2	1225.7	1159.1	1080.0	983.8	906.0	833.5	761.9	709.0	661.2
35°	1216.6	1221.1	1193.7	1133.3	1050.4	949.7	862.7	786.9	716.9	660.7	616.6
37.5°	1151.2	1173.7	1156.2	1099.6	1012.5	915.1	817.3	741.1	667.8	613.7	575.0
40°	1077.9	1117.5	1109.1	1061.7	971.7	874.7	773.6	691.5	619.9	568.7	531.7
42.5°	991.7	1049.2	1058.3	1015.5	931.4	824.4	724.4	645.3	576.2	525.8	490.5
45°	895.1	966.3	997.1	963.4	884.3	775.6	674.1	596.2	527.9	485.0	455.5
47.5°	798.1	883.9	925.5	909.3	829.4	723.6	624.1	547.9	483.4	445.9	418.0
50°	702.4	794.4	855.2	844.3	775.2	674.1	573.7	498.8	439.7	405.1	381.4
52.5°	618.3	705.3	771.5	776.9	714.9	617.4	520.4	450.9	400.5	369.3	349.3
55°	535.4	616.2	688.6	702.0	651.6	557.9	471.3	405.5	359.7	333.9	317.7
57.5°	461.3	534.6	606.6	629.9	589.1	504.6	418.4	360.6	321.0	301.0	286.9
60°	398.4	464.6	526.7	550.4	522.5	445.5	370.1	318.5	285.6	267.7	256.5
62.5°	343.5	394.7	449.6	475.9	457.1	390.1	324.3	278.5	251.9	236.5	227.7
65°	293.9	333.5	376.8	407.2	386.4	336.4	281.4	241.9	219.4	205.3	199.0
67.5°	248.1	281.0	315.6	339.7	329.3	283.9	237.7	206.9	188.2	177.4	171.5
70°	206.5	231.1	259.0	277.7	270.2	235.2	198.6	174.0	158.2	150.7	145.7
72.5°	169.5	185.3	206.5	221.9	214.0	189.4	163.2	143.6	132.0	123.2	119.5
75°	134.5	148.2	163.2	173.6	167.4	149.1	128.2	113.2	105.3	99.9	97.4
77.5°	102.0	112.8	123.2	128.2	125.3	112.0	97.8	86.2	79.5	76.2	73.3
80°	73.3	79.5	86.6	91.2	89.5	80.4	70.4	61.2	58.3	54.1	53.3
82.5°	49.1	54.1	55.8	57.9	56.6	52.5	45.4	40.0	37.5	35.4	35.0
85°	29.1	30.4	32.5	32.5	31.2	28.3	24.6	22.9	20.4	20.0	18.7
87.5°	12.9	12.9	12.9	12.9	12.9	12.1	10.4	9.6	8.7	8.3	7.9
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°	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0	1125.0
2.5°	1105.8	1101.6	1095.8	1089.2	1083.3	1074.2	1071.2	1071.2	1073.3	1070.8	1068.8
5°	1077.1	1068.8	1060.4	1047.5	1036.7	1022.1	1018.0	1013.8	1013.4	1009.2	1003.8
7.5°	1046.3	1033.8	1016.7	998.4	986.7	970.9	962.2	959.7	951.8	944.3	935.5
10°	1010.5	991.3	970.9	953.4	935.1	914.7	904.3	897.2	889.3	880.1	873.9
12.5°	967.2	945.5	926.8	906.4	891.0	862.2	858.9	849.8	833.9	820.2	815.2
15°	940.5	902.6	881.4	862.7	839.3	809.8	799.0	789.0	774.0	765.2	758.2
17.5°	893.5	859.3	832.7	807.7	785.2	762.3	746.1	737.8	725.7	718.2	711.1
20°	850.6	813.5	785.6	756.5	733.2	712.4	698.6	688.2	682.0	674.5	667.4
22.5°	807.3	768.6	741.9	712.4	684.9	672.4	656.2	647.4	639.1	633.3	625.8
25°	756.9	726.1	692.8	669.9	645.7	632.8	617.4	609.1	602.4	595.8	592.0
27.5°	711.9	680.7	649.9	627.0	606.6	594.1	584.5	576.6	568.3	563.3	560.4
30°	665.3	636.6	609.5	587.5	571.6	557.9	552.1	544.6	538.3	536.2	531.7
32.5°	623.7	591.6	570.0	550.0	536.7	527.1	522.9	515.0	513.8	511.7	509.2
35°	582.0	554.6	533.8	516.7	505.4	498.4	492.9	490.9	488.8	486.7	484.6
37.5°	540.8	519.2	499.6	485.9	476.7	471.3	470.1	465.9	465.5	462.6	462.6
40°	503.8	481.7	468.0	457.1	449.6	447.2	443.8	443.0	441.7	440.9	442.6
42.5°	466.7	451.7	440.1	428.8	423.0	420.9	420.1	418.8	418.0	420.5	421.3
45°	432.2	419.3	409.3	401.4	398.0	395.5	395.5	396.8	396.4	397.6	397.6
47.5°	400.1	388.4	380.1	377.2	373.0	372.2	372.6	372.2	374.3	376.0	377.6
50°	369.7	359.3	352.6	349.7	348.9	347.6	349.3	350.1	351.4	353.1	353.9
52.5°	336.0	331.0	326.8	323.9	323.5	323.9	323.5	326.4	327.7	330.2	329.7
55°	307.3	303.5	300.6	297.3	296.9	298.1	298.9	301.4	303.1	305.2	304.8
57.5°	280.2	277.3	274.0	273.1	272.7	273.1	276.9	276.5	278.9	280.6	281.4
60°	250.6	248.6	245.6	245.6	246.9	247.7	249.0	251.1	253.6	253.1	256.1
62.5°	223.6	221.1	220.2	221.5	221.1	223.2	224.4	224.4	227.7	229.0	229.8
65°	196.5	195.7	194.4	194.4	195.7	196.1	198.2	199.4	200.7	203.2	205.3
67.5°	171.1	169.0	169.0	168.2	169.9	171.1	172.4	174.0	174.9	177.8	179.0
70°	144.5	143.6	143.2	144.1	144.1	145.3	147.4	149.5	151.1	151.5	154.0
72.5°	118.7	118.7	118.7	119.9	120.7	122.0	122.4	124.1	126.6	127.0	128.2
75°	95.3	95.8	95.3	95.8	96.2	97.4	98.3	99.9	101.6	102.0	102.8
77.5°	73.7	72.9	72.0	73.3	74.1	76.6	76.2	77.0	78.7	77.9	78.7
80°	51.6	52.9	51.2	53.7	53.7	53.3	54.1	55.4	55.0	55.8	55.0
82.5°	35.0	33.7	33.7	35.0	35.4	34.1	35.0	35.4	35.8	35.0	34.6
85°	19.2	18.7	19.6	18.3	18.7	17.9	17.9	17.1	17.9	17.1	16.2
87.5°	7.1	6.7	7.1	5.8	5.4	5.0	4.6	4.6	3.7	3.7	3.7
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: P243176

CATALOG NUMBER: S122DR-H675D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1125.0	1125.0	1125.0	1125.0
2.5°	1071.7	1067.1	1065.0	1066.7
5°	998.0	999.2	991.7	994.2
7.5°	934.3	928.9	930.5	927.6
10°	866.8	863.9	859.3	860.2
12.5°	821.4	801.9	800.6	796.9
15°	757.7	746.9	744.4	743.6
17.5°	706.9	697.8	701.1	698.6
20°	661.2	661.6	656.2	652.8
22.5°	620.8	619.9	617.9	614.5
25°	586.6	586.6	581.6	580.4
27.5°	555.4	556.2	552.1	552.1
30°	532.1	529.2	528.8	529.6
32.5°	508.8	505.4	505.9	505.4
35°	483.8	484.6	483.4	482.1
37.5°	462.6	462.6	462.6	461.3
40°	441.7	442.6	441.3	442.2
42.5°	420.9	421.3	421.3	419.7
45°	400.1	399.7	398.9	400.5
47.5°	378.5	378.5	378.0	378.9
50°	354.7	355.6	354.3	353.9
52.5°	330.6	331.0	330.6	331.4
55°	306.0	306.0	306.4	307.3
57.5°	280.6	283.5	281.4	283.1
60°	255.6	256.1	256.5	255.6
62.5°	231.9	231.5	231.9	233.2
65°	206.1	206.9	206.5	205.7
67.5°	180.7	179.9	181.1	179.9
70°	153.6	155.3	154.0	155.7
72.5°	129.1	128.6	129.5	127.4
75°	103.3	103.3	103.7	103.3
77.5°	79.1	78.3	77.9	76.6
80°	54.5	54.5	52.9	54.1
82.5°	33.3	33.7	34.1	31.6
85°	15.8	15.8	15.4	15.0
87.5°	3.3	3.3	3.7	4.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)