

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: P242311

Luminaire Tested: **S122DR-S675D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242311  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-19)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DR-S675D935-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2471.4 lumens  
Efficiency: N/A  
Efficacy: 93.6 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.23  
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')  
CIE Type: Direct

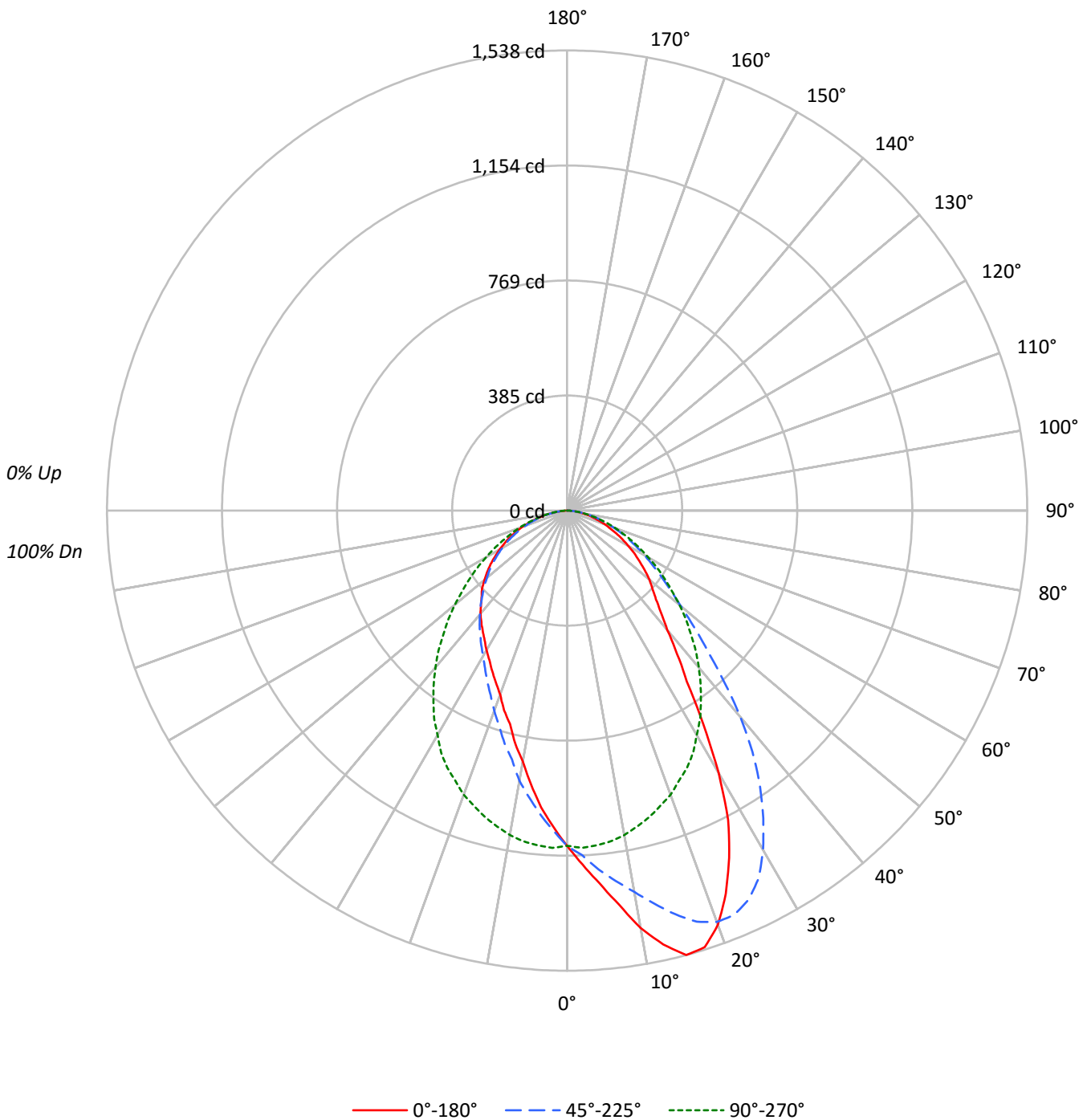
Input Watts (W): 26.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P242311

CATALOG NUMBER: S122DR-S675D935-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot





TEST NUMBER: P242311

CATALOG NUMBER: S122DR-S675D935-X4F0-XX-UDD-A-W

**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	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	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74					74			
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	74	69	66	64					64			
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	58	55					55			
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49					49			
6	74	61	53	47	72	60	52	46	58	51	46	57	51	46	55	50	45	43					43			
7	69	56	48	42	67	55	47	42	54	46	41	52	46	41	51	45	41	39					39			
8	64	51	43	38	63	51	43	38	49	42	37	48	42	37	47	41	37	35					35			
9	60	47	39	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32					32			
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29					29			

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

	0°	90°	180°
0°	21339	21339	21339
5°	23924	21478	19033
10°	27415	21301	16471
15°	30327	20911	14553
20°	29864	20491	13265
25°	26929	19934	12450
30°	22254	19043	11855
35°	16219	18112	11433
40°	12955	17010	11199
45°	11319	15740	10880
50°	10641	14505	10665
55°	9810	13254	10381
60°	8987	11924	9939
65°	8189	10731	9510
70°	7435	9568	8872
75°	6594	8272	7860
80°	5671	6845	6329
85°	5070	5070	3759



TEST NUMBER: P242311

CATALOG NUMBER: S122DR-S675D935-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	106.7	4.3
10°-20°	310.6	12.6
20°-30°	450.7	18.2
30°-40°	475.2	19.2
40°-50°	420.4	17.0
50°-60°	335.6	13.6
60°-70°	228.0	9.2
70°-80°	116.7	4.7
80°-90°	27.6	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°	868.0	35.1
0°-40°	1343.2	54.3
0°-60°	2099.2	84.9
0°-90°	2471.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2471.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1120	1120	1120	1120	1120	
5°	1251	1204	1123	1020	995	124
15°	1538	1397	1060	806	738	426
25°	1281	1435	948	631	592	581
35°	698	1124	779	506	492	452
45°	420	665	584	400	404	329
55°	295	383	399	301	313	265
65°	182	227	238	199	211	180
75°	90	110	112	101	107	95
85°	23	25	23	19	17	26
90°	0	0	0	0	0	



TEST NUMBER: P242311

CATALOG NUMBER: S122DR-S675D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3
2.5°	1184.9	1185.3	1186.2	1179.3	1178.4	1178.4	1172.4	1167.2	1161.2	1153.0	1153.9
5°	1251.2	1255.9	1257.6	1252.5	1244.7	1243.9	1236.5	1224.5	1213.3	1204.2	1197.8
7.5°	1327.8	1329.5	1326.1	1320.1	1314.9	1305.0	1292.9	1281.3	1264.1	1248.6	1237.4
10°	1417.4	1419.9	1412.6	1402.7	1394.5	1382.5	1362.7	1342.4	1317.9	1294.2	1275.3
12.5°	1485.4	1492.7	1482.8	1483.7	1468.2	1450.5	1426.0	1418.2	1381.2	1345.9	1325.2
15°	1537.9	1537.5	1538.3	1530.2	1519.8	1517.3	1492.3	1465.2	1416.5	1397.1	1363.5
17.5°	1530.2	1536.2	1539.6	1537.1	1535.3	1531.5	1520.7	1500.5	1473.8	1441.0	1401.0
20°	1473.3	1481.9	1483.2	1493.1	1498.7	1506.1	1509.1	1504.3	1489.3	1463.0	1429.4
22.5°	1385.5	1386.4	1391.1	1407.9	1421.7	1442.8	1454.0	1475.1	1471.6	1462.1	1435.4
25°	1281.3	1277.0	1292.1	1299.8	1327.8	1357.1	1378.2	1401.4	1422.1	1434.6	1426.4
27.5°	1165.9	1156.9	1179.7	1199.9	1219.7	1248.2	1280.0	1317.9	1346.8	1385.9	1395.4
30°	1011.8	1015.7	1037.2	1059.1	1093.6	1138.4	1175.4	1218.0	1264.1	1309.3	1340.7
32.5°	845.6	863.2	874.9	911.5	940.7	992.0	1050.5	1106.5	1166.8	1219.7	1272.7
35°	697.5	714.7	733.7	758.2	800.8	850.3	903.3	975.2	1053.6	1123.7	1181.4
37.5°	603.6	600.6	612.2	630.3	666.9	709.5	772.4	845.6	939.5	1017.4	1094.9
40°	521.0	519.2	527.0	543.4	569.6	598.9	652.3	714.7	800.4	901.1	998.0
42.5°	464.1	465.9	469.3	479.6	495.6	518.4	555.0	605.8	682.4	775.8	881.8
45°	420.2	423.2	428.0	433.6	443.9	463.7	486.1	524.0	586.0	665.2	767.7
47.5°	385.8	386.6	391.8	397.0	403.0	415.0	434.9	459.0	506.3	573.9	665.6
50°	359.1	356.1	359.5	363.4	369.8	377.6	389.6	412.0	441.3	493.4	567.0
52.5°	326.4	327.2	330.2	331.1	336.7	344.4	355.2	369.0	394.8	432.7	490.0
55°	295.4	297.5	299.2	301.8	307.0	312.6	321.2	331.5	352.2	382.8	427.5
57.5°	266.1	266.9	268.2	273.8	276.8	282.0	290.6	300.1	313.9	337.5	372.9
60°	235.9	235.9	239.4	241.5	245.8	251.0	257.5	266.5	278.6	297.1	324.2
62.5°	208.4	208.0	208.8	212.7	215.7	220.4	226.9	234.2	245.4	261.3	282.4
65°	181.7	180.8	183.4	184.3	187.7	192.5	197.6	205.8	214.8	226.9	246.7
67.5°	155.0	156.3	158.0	159.7	161.5	167.1	170.5	176.5	184.3	194.6	208.4
70°	133.5	133.5	133.5	134.8	137.3	139.9	143.4	148.1	155.4	164.0	176.1
72.5°	109.4	111.1	112.8	111.5	115.0	116.2	120.6	122.7	129.6	134.3	144.7
75°	89.6	89.6	89.6	91.7	93.0	94.3	96.9	99.5	102.9	109.8	115.4
77.5°	70.6	70.2	70.6	71.0	72.8	74.5	75.3	77.5	80.9	84.4	89.6
80°	51.7	52.5	53.0	53.8	53.8	54.7	55.1	58.1	60.3	62.4	65.4
82.5°	37.0	37.0	37.0	37.0	37.5	37.9	39.2	39.6	40.0	41.8	43.9
85°	23.2	22.8	22.8	23.7	23.2	23.2	24.1	25.0	25.0	25.4	26.7
87.5°	11.2	11.2	11.6	11.2	11.2	11.6	11.6	11.2	11.6	12.1	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



TEST NUMBER: P242311

CATALOG NUMBER: S122DR-S675D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3
2.5°	1156.9	1153.4	1151.3	1143.5	1136.6	1129.8	1127.6	1128.5	1119.0	1110.0	1106.1
5°	1194.3	1185.7	1177.5	1165.9	1152.1	1137.1	1129.3	1123.3	1108.2	1091.9	1082.4
7.5°	1228.4	1217.2	1202.5	1181.9	1162.9	1140.5	1126.7	1115.1	1094.0	1072.1	1058.7
10°	1258.9	1242.1	1221.9	1195.2	1170.7	1141.8	1121.6	1101.3	1075.5	1048.0	1030.7
12.5°	1285.2	1261.1	1241.3	1205.1	1175.0	1137.1	1112.1	1081.5	1054.0	1020.0	1003.2
15°	1330.0	1288.2	1250.3	1211.6	1175.8	1125.5	1098.8	1060.4	1024.7	984.2	964.9
17.5°	1363.1	1317.9	1259.4	1212.4	1172.8	1119.0	1080.7	1035.0	994.6	949.8	924.0
20°	1390.7	1336.9	1272.7	1214.1	1164.2	1100.5	1057.9	1010.9	961.4	909.3	880.9
22.5°	1407.0	1349.8	1286.5	1207.7	1147.0	1085.4	1029.0	976.5	926.1	868.8	838.7
25°	1407.9	1356.2	1289.1	1204.7	1133.2	1063.0	998.4	948.5	887.8	835.3	791.8
27.5°	1393.7	1352.8	1287.8	1198.6	1117.3	1036.8	966.6	911.9	847.7	790.9	747.4
30°	1362.3	1340.7	1277.9	1188.3	1097.5	1009.2	930.0	865.8	802.1	744.4	699.6
32.5°	1313.6	1313.2	1259.8	1173.7	1076.4	974.3	891.7	826.7	754.3	697.9	655.7
35°	1246.9	1267.5	1232.7	1150.4	1048.8	941.6	852.9	778.9	705.7	651.4	611.4
37.5°	1162.0	1209.8	1196.1	1119.4	1013.5	906.7	810.3	732.8	662.6	606.6	567.5
40°	1073.8	1139.2	1148.7	1082.8	975.6	865.0	761.2	684.1	616.1	566.2	526.6
42.5°	979.1	1058.3	1088.4	1038.9	934.3	821.1	717.3	636.8	569.6	521.4	487.4
45°	871.0	972.2	1019.1	989.0	887.4	772.0	665.2	584.3	523.1	477.5	450.4
47.5°	773.3	883.1	942.9	928.7	837.0	722.5	617.0	538.2	477.5	440.5	415.0
50°	668.2	781.9	858.1	861.5	781.9	668.6	562.7	489.5	434.9	400.8	381.0
52.5°	576.9	684.1	769.0	790.9	720.3	612.7	514.1	441.3	394.8	364.2	347.0
55°	499.9	591.6	683.7	717.3	659.2	555.8	463.3	399.1	353.9	332.4	316.9
57.5°	426.7	507.2	594.6	629.9	592.9	502.0	412.5	356.1	317.7	298.4	286.3
60°	371.1	431.4	507.2	551.5	520.5	441.7	366.0	313.0	282.9	266.1	254.9
62.5°	319.5	371.1	432.3	471.9	458.5	385.3	319.5	274.3	249.3	233.8	226.5
65°	272.1	314.3	363.8	401.3	390.1	333.7	278.1	238.1	217.4	204.9	198.5
67.5°	231.6	263.9	299.2	333.7	324.2	282.4	235.5	203.2	187.3	176.1	172.2
70°	193.7	217.0	247.6	273.8	266.5	233.8	198.5	171.8	158.4	149.4	145.5
72.5°	157.6	175.7	197.2	217.4	213.1	187.3	159.3	140.8	131.3	123.1	120.1
75°	124.4	139.1	153.3	167.5	166.2	145.1	127.9	112.4	104.2	97.7	96.4
77.5°	97.3	106.3	116.7	125.7	123.6	109.8	95.6	86.1	79.7	75.3	74.9
80°	70.2	74.9	81.8	87.8	84.8	79.7	68.9	62.4	58.1	53.8	52.1
82.5°	46.1	50.8	54.2	56.8	54.7	49.9	44.3	40.5	38.3	35.7	35.3
85°	26.7	29.3	31.0	31.9	31.0	28.0	25.0	23.2	21.1	19.8	19.4
87.5°	12.9	12.9	12.9	13.8	12.5	12.5	10.8	9.5	9.0	8.6	7.7
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: P242311

CATALOG NUMBER: S122DR-S675D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3	1120.3
2.5°	1101.8	1099.2	1090.1	1085.4	1077.7	1070.3	1065.6	1067.8	1069.5	1068.6	1067.3
5°	1073.8	1065.6	1053.1	1042.4	1034.6	1020.4	1014.4	1011.4	1008.8	1005.8	1002.7
7.5°	1042.8	1031.2	1013.5	999.7	986.0	967.9	958.8	953.7	948.1	941.6	935.6
10°	1009.2	991.1	972.2	950.7	933.4	917.5	903.3	893.8	885.2	877.0	871.0
12.5°	973.9	952.4	927.8	896.4	877.0	852.5	853.3	834.8	820.2	815.9	808.6
15°	936.0	906.7	877.0	842.2	827.1	806.4	793.5	780.6	769.0	760.8	758.6
17.5°	894.7	855.5	826.7	800.8	776.3	755.2	744.0	733.7	723.8	711.7	711.3
20°	846.0	813.3	781.0	759.1	733.7	712.1	697.5	687.2	679.0	672.5	666.9
22.5°	800.0	763.4	734.5	710.0	685.0	668.6	657.9	648.0	641.5	634.2	629.0
25°	750.0	722.0	689.7	662.6	641.9	630.8	621.3	612.7	608.4	603.6	597.6
27.5°	707.4	676.4	644.5	623.4	604.5	594.6	587.3	580.8	576.9	573.9	570.0
30°	661.8	630.3	606.6	586.0	570.9	561.0	556.7	553.3	548.5	546.8	545.1
32.5°	617.8	590.3	570.9	553.7	539.5	533.9	530.0	527.0	523.5	521.8	517.9
35°	576.9	553.3	533.4	523.5	511.9	506.3	503.3	499.0	495.6	493.8	493.4
37.5°	537.8	516.2	502.9	489.5	483.9	480.9	476.6	473.6	472.3	471.9	471.5
40°	499.9	483.1	471.5	461.1	459.0	453.8	450.4	447.8	447.8	448.2	447.8
42.5°	465.4	450.8	440.9	432.3	429.7	427.1	423.7	424.1	425.0	426.7	425.0
45°	430.5	419.8	412.5	408.2	403.4	400.4	400.0	401.3	401.7	402.1	403.4
47.5°	397.8	390.9	384.0	378.9	376.7	376.3	375.4	377.6	379.7	380.2	382.3
50°	369.4	361.2	355.6	352.6	350.9	350.0	350.9	353.5	355.2	357.4	358.6
52.5°	337.5	332.4	328.9	326.8	326.4	327.2	327.2	330.2	333.2	333.7	334.1
55°	308.7	304.4	303.5	299.7	301.4	301.0	303.1	304.8	307.4	310.0	310.4
57.5°	279.4	275.6	273.0	273.4	273.8	275.6	277.3	280.3	283.3	286.3	286.3
60°	250.1	248.4	247.1	247.1	248.0	250.6	252.7	255.7	257.5	259.2	260.5
62.5°	223.5	221.7	220.4	221.3	223.9	225.2	227.8	229.1	230.8	232.5	232.9
65°	195.0	194.2	195.5	196.3	196.8	198.9	201.9	203.2	204.9	205.8	208.8
67.5°	169.2	169.2	168.8	170.1	172.6	173.1	176.1	179.5	179.5	181.3	183.4
70°	142.9	143.8	144.7	145.5	147.7	148.5	150.7	152.0	153.7	155.0	156.3
72.5°	118.8	118.8	119.7	119.3	121.0	123.1	124.9	126.2	127.9	129.6	130.9
75°	95.2	95.2	96.0	96.4	98.6	100.7	100.3	101.2	102.9	104.6	105.5
77.5°	73.6	72.8	73.6	74.1	74.9	76.6	77.1	78.4	80.5	80.1	80.9
80°	53.0	51.7	53.0	53.4	53.4	55.5	55.5	56.4	57.7	56.4	57.7
82.5°	34.0	33.6	34.4	34.4	35.3	34.9	35.7	35.7	37.0	36.6	37.0
85°	18.9	18.5	18.9	18.5	18.9	19.4	19.4	18.9	18.9	19.8	18.5
87.5°	7.3	6.9	6.5	6.5	6.0	5.6	5.2	5.2	5.2	4.3	4.3
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: P242311

CATALOG NUMBER: S122DR-S675D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1120.3	1120.3	1120.3	1120.3
2.5°	1063.0	1062.2	1062.2	1058.3
5°	996.7	995.4	993.3	995.4
7.5°	933.9	928.3	927.4	923.1
10°	863.7	860.2	859.8	851.6
12.5°	810.3	800.8	803.0	799.1
15°	747.0	747.0	745.3	738.0
17.5°	701.8	701.4	697.5	700.1
20°	662.2	659.6	654.4	654.4
22.5°	624.7	625.2	619.6	621.7
25°	597.2	593.7	591.1	592.4
27.5°	568.8	567.5	567.0	563.2
30°	544.6	540.3	541.2	539.0
32.5°	517.1	516.2	514.9	513.2
35°	492.5	493.0	490.8	491.7
37.5°	470.6	472.3	471.0	471.0
40°	449.1	449.1	449.1	450.4
42.5°	428.4	427.5	426.7	426.2
45°	404.3	405.6	406.0	403.9
47.5°	383.2	383.6	383.2	385.8
50°	360.8	359.9	360.8	359.9
52.5°	337.1	337.5	336.7	336.7
55°	312.1	313.0	312.6	312.6
57.5°	286.7	287.2	288.0	285.9
60°	260.1	262.2	261.8	260.9
62.5°	235.5	235.9	235.9	235.9
65°	210.1	211.0	209.7	211.0
67.5°	182.6	183.0	183.8	184.3
70°	157.2	156.7	158.0	159.3
72.5°	130.5	131.7	130.9	131.7
75°	104.6	105.9	105.5	106.8
77.5°	80.1	80.5	80.5	80.9
80°	57.7	56.8	56.0	57.7
82.5°	35.7	36.6	35.7	35.3
85°	18.5	18.1	17.2	17.2
87.5°	4.3	3.9	3.9	3.4
90°	0.0	0.0	0.0	0.0

(END OF REPORT)