

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: P242316

Luminaire Tested: **S122DR-S675D940-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242316  
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-S675D940-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2559.6 lumens  
Efficiency: N/A  
Efficacy: 97.0 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

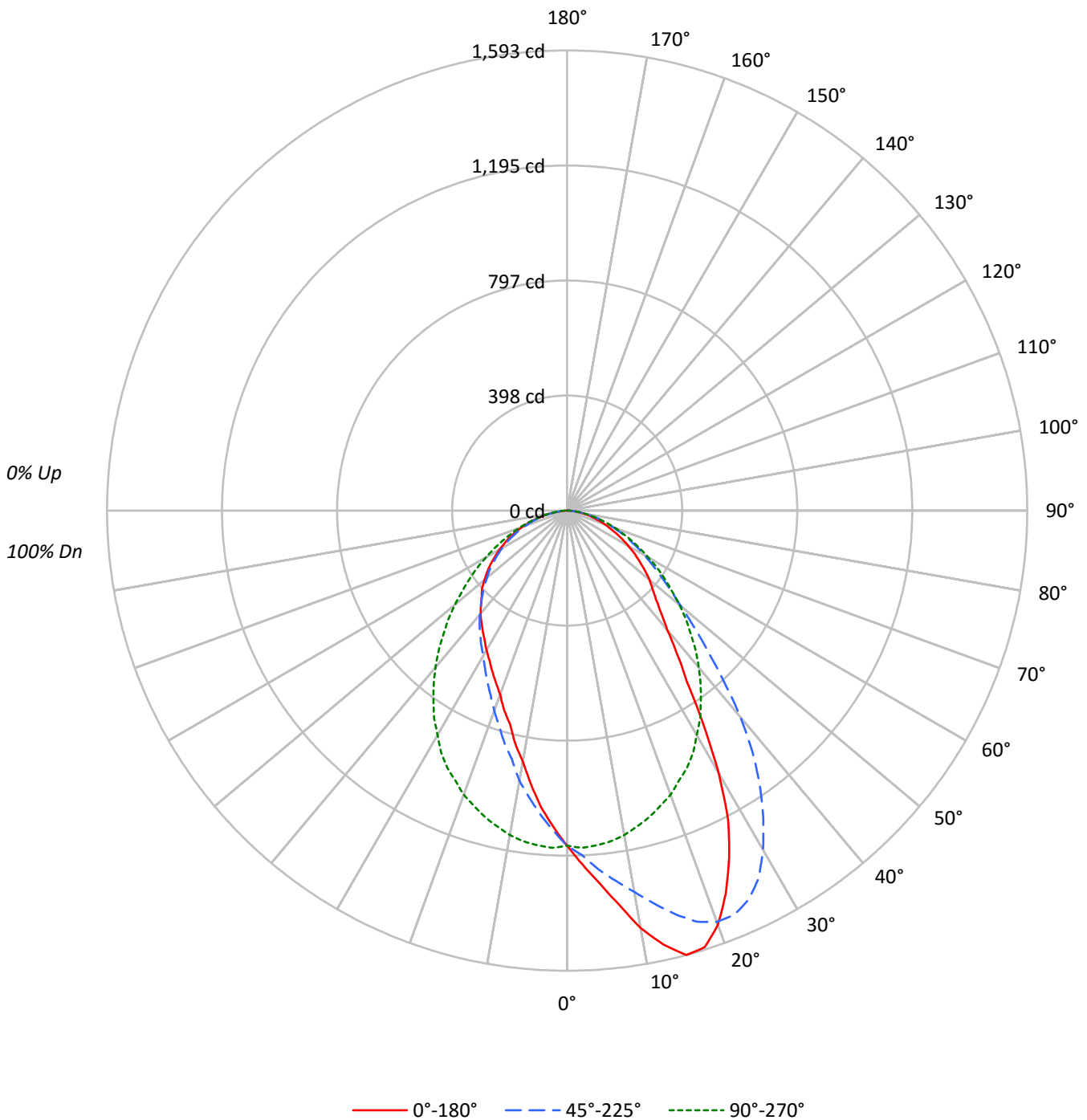
Input Watts (W): 26.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P242316

CATALOG NUMBER: S122DR-S675D940-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot





TEST NUMBER: P242316

CATALOG NUMBER: S122DR-S675D940-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°	22099	22099	22099
5°	24776	22245	19711
10°	28391	22061	17059
15°	31409	21658	15072
20°	30930	21223	13739
25°	27889	20645	12896
30°	23048	19722	12279
35°	16798	18756	11840
40°	13415	17617	11597
45°	11723	16300	11268
50°	11021	15024	11047
55°	10159	13728	10750
60°	9311	12351	10293
65°	8482	11114	9848
70°	7697	9908	9189
75°	6822	8566	8140
80°	5868	7097	6560
85°	5267	5267	3890



TEST NUMBER: P242316

CATALOG NUMBER: S122DR-S675D940-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	110.5	4.3
10°-20°	321.6	12.6
20°-30°	466.8	18.2
30°-40°	492.1	19.2
40°-50°	435.4	17.0
50°-60°	347.6	13.6
60°-70°	236.1	9.2
70°-80°	120.8	4.7
80°-90°	28.6	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°	899.0	35.1
0°-40°	1391.1	54.3
0°-60°	2174.1	84.9
0°-90°	2559.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2559.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1160	1160	1160	1160	1160	
5°	1296	1247	1163	1057	1031	129
15°	1593	1447	1098	835	764	441
25°	1327	1486	982	653	614	602
35°	722	1164	807	524	509	468
45°	435	689	605	415	418	341
55°	306	396	413	312	324	274
65°	188	235	247	206	218	187
75°	93	114	116	104	111	99
85°	24	26	24	20	18	27
90°	0	0	0	0	0	



TEST NUMBER: P242316

CATALOG NUMBER: S122DR-S675D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2
2.5°	1227.1	1227.6	1228.5	1221.3	1220.4	1220.4	1214.2	1208.8	1202.6	1194.1	1195.0
5°	1295.8	1300.7	1302.5	1297.1	1289.1	1288.2	1280.6	1268.2	1256.6	1247.2	1240.5
7.5°	1375.2	1377.0	1373.4	1367.1	1361.8	1351.5	1339.1	1327.0	1309.2	1293.1	1281.5
10°	1467.9	1470.6	1463.0	1452.8	1444.3	1431.8	1411.3	1390.3	1364.9	1340.4	1320.8
12.5°	1538.4	1546.0	1535.7	1536.6	1520.5	1502.3	1476.8	1468.8	1430.5	1393.9	1372.5
15°	1592.8	1592.3	1593.2	1584.7	1574.0	1571.4	1545.5	1517.4	1467.0	1447.0	1412.2
17.5°	1584.7	1591.0	1594.6	1591.9	1590.1	1586.1	1574.9	1554.0	1526.3	1492.4	1451.0
20°	1525.9	1534.8	1536.1	1546.4	1552.2	1559.8	1562.9	1558.0	1542.4	1515.2	1480.4
22.5°	1434.9	1435.8	1440.7	1458.1	1472.4	1494.2	1505.8	1527.7	1524.1	1514.3	1486.6
25°	1327.0	1322.6	1338.2	1346.2	1375.2	1405.5	1427.3	1451.4	1472.8	1485.8	1477.3
27.5°	1207.5	1198.1	1221.8	1242.7	1263.3	1292.7	1325.7	1364.9	1394.8	1435.4	1445.2
30°	1047.9	1051.9	1074.2	1096.9	1132.6	1179.0	1217.3	1261.5	1309.2	1356.0	1388.5
32.5°	875.8	894.0	906.1	944.0	974.3	1027.4	1088.0	1146.0	1208.4	1263.3	1318.1
35°	722.4	740.2	759.8	785.2	829.4	880.7	935.5	1010.0	1091.1	1163.8	1223.6
37.5°	625.2	622.0	634.1	652.8	690.7	734.9	800.0	875.8	973.0	1053.7	1133.9
40°	539.5	537.8	545.8	562.7	589.9	620.3	675.5	740.2	828.9	933.3	1033.6
42.5°	480.7	482.5	486.0	496.7	513.2	536.9	574.8	627.4	706.8	803.5	913.2
45°	435.2	438.3	443.2	449.0	459.7	480.2	503.4	542.7	606.9	688.9	795.0
47.5°	399.5	400.4	405.8	411.1	417.4	429.9	450.4	475.3	524.4	594.4	689.4
50°	371.9	368.8	372.3	376.3	383.0	391.1	403.5	426.7	457.1	511.0	587.3
52.5°	338.0	338.9	342.0	342.9	348.7	356.7	367.9	382.1	408.9	448.1	507.4
55°	305.9	308.1	309.9	312.6	317.9	323.7	332.6	343.3	364.8	396.4	442.8
57.5°	275.6	276.5	277.8	283.6	286.7	292.1	301.0	310.8	325.1	349.6	386.2
60°	244.4	244.4	247.9	250.2	254.6	260.0	266.7	276.0	288.5	307.7	335.8
62.5°	215.8	215.4	216.3	220.3	223.4	228.3	235.0	242.6	254.2	270.7	292.5
65°	188.2	187.3	190.0	190.8	194.4	199.3	204.7	213.1	222.5	235.0	255.5
67.5°	160.5	161.9	163.6	165.4	167.2	173.0	176.6	182.8	190.8	201.5	215.8
70°	138.2	138.2	138.2	139.6	142.2	144.9	148.5	153.4	161.0	169.9	182.4
72.5°	113.3	115.0	116.8	115.5	119.1	120.4	124.9	127.1	134.2	139.1	149.8
75°	92.7	92.7	92.7	95.0	96.3	97.7	100.3	103.0	106.6	113.7	119.5
77.5°	73.1	72.7	73.1	73.6	75.4	77.1	78.0	80.3	83.8	87.4	92.7
80°	53.5	54.4	54.8	55.7	55.7	56.6	57.1	60.2	62.4	64.7	67.8
82.5°	38.3	38.3	38.3	38.3	38.8	39.2	40.6	41.0	41.5	43.3	45.5
85°	24.1	23.6	23.6	24.5	24.1	24.1	25.0	25.9	25.9	26.3	27.6
87.5°	11.6	11.6	12.0	11.6	11.6	12.0	12.0	11.6	12.0	12.5	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



TEST NUMBER: P242316

CATALOG NUMBER: S122DR-S675D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2
2.5°	1198.1	1194.6	1192.4	1184.3	1177.2	1170.1	1167.8	1168.7	1158.9	1149.5	1145.5
5°	1236.9	1228.0	1219.6	1207.5	1193.2	1177.6	1169.6	1163.4	1147.8	1130.8	1121.0
7.5°	1272.2	1260.6	1245.4	1224.0	1204.4	1181.2	1166.9	1154.9	1133.0	1110.3	1096.5
10°	1303.8	1286.4	1265.5	1237.8	1212.4	1182.5	1161.6	1140.6	1113.9	1085.3	1067.5
12.5°	1331.0	1306.1	1285.5	1248.1	1216.9	1177.6	1151.8	1120.1	1091.6	1056.3	1039.0
15°	1377.4	1334.1	1294.9	1254.8	1217.8	1165.6	1138.0	1098.3	1061.3	1019.3	999.3
17.5°	1411.7	1364.9	1304.3	1255.7	1214.6	1158.9	1119.2	1072.0	1030.0	983.7	956.9
20°	1440.3	1384.5	1318.1	1257.5	1205.7	1139.7	1095.6	1047.0	995.7	941.8	912.3
22.5°	1457.2	1397.9	1332.4	1250.8	1187.9	1124.1	1065.7	1011.3	959.1	899.8	868.6
25°	1458.1	1404.6	1335.0	1247.6	1173.6	1100.9	1034.1	982.3	919.5	865.1	820.0
27.5°	1443.4	1401.0	1333.7	1241.4	1157.1	1073.7	1001.1	944.4	878.0	819.1	774.1
30°	1410.8	1388.5	1323.4	1230.7	1136.6	1045.2	963.2	896.7	830.7	771.0	724.6
32.5°	1360.5	1360.0	1304.7	1215.5	1114.8	1009.1	923.5	856.1	781.2	722.8	679.1
35°	1291.3	1312.7	1276.6	1191.5	1086.2	975.2	883.3	806.6	730.8	674.7	633.2
37.5°	1203.5	1253.0	1238.7	1159.4	1049.7	939.1	839.2	758.9	686.2	628.3	587.7
40°	1112.1	1179.9	1189.7	1121.5	1010.4	895.8	788.4	708.5	638.1	586.4	545.3
42.5°	1014.0	1096.0	1127.2	1076.0	967.6	850.3	742.9	659.5	589.9	540.0	504.8
45°	902.1	1006.9	1055.5	1024.2	919.0	799.5	688.9	605.1	541.8	494.5	466.4
47.5°	800.8	914.6	976.5	961.8	866.8	748.2	639.0	557.4	494.5	456.2	429.9
50°	692.0	809.8	888.7	892.3	809.8	692.5	582.8	507.0	450.4	415.1	394.6
52.5°	597.5	708.5	796.4	819.1	746.0	634.5	532.4	457.1	408.9	377.2	359.4
55°	517.7	612.7	708.1	742.9	682.7	575.7	479.8	413.4	366.5	344.2	328.2
57.5°	441.9	525.3	615.8	652.4	614.0	519.9	427.2	368.8	329.1	309.0	296.5
60°	384.4	446.8	525.3	571.2	539.1	457.5	379.0	324.2	293.0	275.6	264.0
62.5°	330.9	384.4	447.7	488.7	474.9	399.1	330.9	284.0	258.2	242.1	234.5
65°	281.8	325.5	376.8	415.6	404.0	345.6	288.1	246.6	225.2	212.3	205.6
67.5°	239.9	273.3	309.9	345.6	335.8	292.5	243.9	210.5	194.0	182.4	178.4
70°	200.7	224.7	256.4	283.6	276.0	242.1	205.6	177.9	164.1	154.7	150.7
72.5°	163.2	181.9	204.2	225.2	220.7	194.0	165.0	145.8	136.0	127.5	124.4
75°	128.9	144.0	158.7	173.5	172.1	150.3	132.4	116.4	107.9	101.2	99.9
77.5°	100.8	110.1	120.8	130.2	128.0	113.7	99.0	89.2	82.5	78.0	77.6
80°	72.7	77.6	84.7	91.0	87.8	82.5	71.3	64.7	60.2	55.7	54.0
82.5°	47.7	52.6	56.2	58.9	56.6	51.7	45.9	41.9	39.7	37.0	36.6
85°	27.6	30.3	32.1	33.0	32.1	29.0	25.9	24.1	21.8	20.5	20.1
87.5°	13.4	13.4	13.4	14.3	12.9	12.9	11.1	9.8	9.4	8.9	8.0
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: P242316

CATALOG NUMBER: S122DR-S675D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2	1160.2
2.5°	1141.1	1138.4	1129.0	1124.1	1116.1	1108.5	1103.6	1105.8	1107.6	1106.7	1105.4
5°	1112.1	1103.6	1090.7	1079.5	1071.5	1056.8	1050.6	1047.4	1044.8	1041.6	1038.5
7.5°	1080.0	1067.9	1049.7	1035.4	1021.1	1002.4	993.0	987.7	981.9	975.2	969.0
10°	1045.2	1026.5	1006.9	984.6	966.7	950.2	935.5	925.7	916.8	908.3	902.1
12.5°	1008.6	986.3	960.9	928.4	908.3	882.9	883.8	864.6	849.4	845.0	837.4
15°	969.4	939.1	908.3	872.2	856.6	835.2	821.8	808.4	796.4	787.9	785.7
17.5°	926.6	886.0	856.1	829.4	804.0	782.1	770.5	759.8	749.6	737.1	736.6
20°	876.2	842.3	808.9	786.1	759.8	737.5	722.4	711.7	703.2	696.5	690.7
22.5°	828.5	790.6	760.7	735.3	709.4	692.5	681.3	671.1	664.4	656.8	651.5
25°	776.8	747.8	714.3	686.2	664.8	653.3	643.4	634.5	630.1	625.2	618.9
27.5°	732.6	700.5	667.5	645.7	626.1	615.8	608.2	601.5	597.5	594.4	590.4
30°	685.4	652.8	628.3	606.9	591.3	581.0	576.6	573.0	568.1	566.3	564.5
32.5°	639.9	611.3	591.3	573.4	558.7	552.9	548.9	545.8	542.2	540.4	536.4
35°	597.5	573.0	552.5	542.2	530.2	524.4	521.3	516.8	513.2	511.5	511.0
37.5°	556.9	534.6	520.8	507.0	501.2	498.1	493.6	490.5	489.2	488.7	488.3
40°	517.7	500.3	488.3	477.6	475.3	470.0	466.4	463.7	463.7	464.2	463.7
42.5°	482.0	466.9	456.6	447.7	445.0	442.3	438.8	439.2	440.1	441.9	440.1
45°	445.9	434.8	427.2	422.7	417.8	414.7	414.2	415.6	416.0	416.5	417.8
47.5°	412.0	404.9	397.7	392.4	390.2	389.7	388.8	391.1	393.3	393.7	396.0
50°	382.6	374.1	368.3	365.2	363.4	362.5	363.4	366.1	367.9	370.1	371.4
52.5°	349.6	344.2	340.7	338.4	338.0	338.9	338.9	342.0	345.1	345.6	346.0
55°	319.7	315.3	314.4	310.4	312.1	311.7	313.9	315.7	318.4	321.1	321.5
57.5°	289.4	285.4	282.7	283.1	283.6	285.4	287.2	290.3	293.4	296.5	296.5
60°	259.1	257.3	255.9	255.9	256.8	259.5	261.7	264.9	266.7	268.4	269.8
62.5°	231.4	229.6	228.3	229.2	231.9	233.2	235.9	237.2	239.0	240.8	241.2
65°	202.0	201.1	202.4	203.3	203.8	206.0	209.1	210.5	212.3	213.1	216.3
67.5°	175.2	175.2	174.8	176.1	178.8	179.3	182.4	185.9	185.9	187.7	190.0
70°	148.0	148.9	149.8	150.7	152.9	153.8	156.1	157.4	159.2	160.5	161.9
72.5°	123.1	123.1	124.0	123.5	125.3	127.5	129.3	130.7	132.4	134.2	135.6
75°	98.5	98.5	99.4	99.9	102.1	104.3	103.9	104.8	106.6	108.4	109.2
77.5°	76.2	75.4	76.2	76.7	77.6	79.4	79.8	81.2	83.4	82.9	83.8
80°	54.8	53.5	54.8	55.3	55.3	57.5	57.5	58.4	59.8	58.4	59.8
82.5°	35.2	34.8	35.7	35.7	36.6	36.1	37.0	37.0	38.3	37.9	38.3
85°	19.6	19.2	19.6	19.2	19.6	20.1	20.1	19.6	19.6	20.5	19.2
87.5°	7.6	7.1	6.7	6.7	6.2	5.8	5.4	5.4	5.4	4.5	4.5
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: P242316

CATALOG NUMBER: S122DR-S675D940-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1160.2	1160.2	1160.2	1160.2
2.5°	1100.9	1100.0	1100.0	1096.0
5°	1032.3	1030.9	1028.7	1030.9
7.5°	967.2	961.4	960.5	956.0
10°	894.5	890.9	890.5	882.0
12.5°	839.2	829.4	831.6	827.6
15°	773.6	773.6	771.9	764.3
17.5°	726.8	726.4	722.4	725.0
20°	685.8	683.1	677.8	677.8
22.5°	647.0	647.5	641.7	643.9
25°	618.5	614.9	612.2	613.6
27.5°	589.0	587.7	587.3	583.2
30°	564.1	559.6	560.5	558.3
32.5°	535.5	534.6	533.3	531.5
35°	510.1	510.6	508.3	509.2
37.5°	487.4	489.2	487.8	487.8
40°	465.1	465.1	465.1	466.4
42.5°	443.7	442.8	441.9	441.4
45°	418.7	420.0	420.5	418.3
47.5°	396.9	397.3	396.9	399.5
50°	373.7	372.8	373.7	372.8
52.5°	349.1	349.6	348.7	348.7
55°	323.3	324.2	323.7	323.7
57.5°	297.0	297.4	298.3	296.1
60°	269.3	271.6	271.1	270.2
62.5°	243.9	244.4	244.4	244.4
65°	217.6	218.5	217.2	218.5
67.5°	189.1	189.5	190.4	190.8
70°	162.8	162.3	163.6	165.0
72.5°	135.1	136.4	135.6	136.4
75°	108.4	109.7	109.2	110.6
77.5°	82.9	83.4	83.4	83.8
80°	59.8	58.9	58.0	59.8
82.5°	37.0	37.9	37.0	36.6
85°	19.2	18.7	17.8	17.8
87.5°	4.5	4.0	4.0	3.6
90°	0.0	0.0	0.0	0.0

(END OF REPORT)