

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: P242286

Luminaire Tested: **S122DR-S675D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242286  
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-S675D927-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2273.9 lumens  
Efficiency: N/A  
Efficacy: 86.1 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

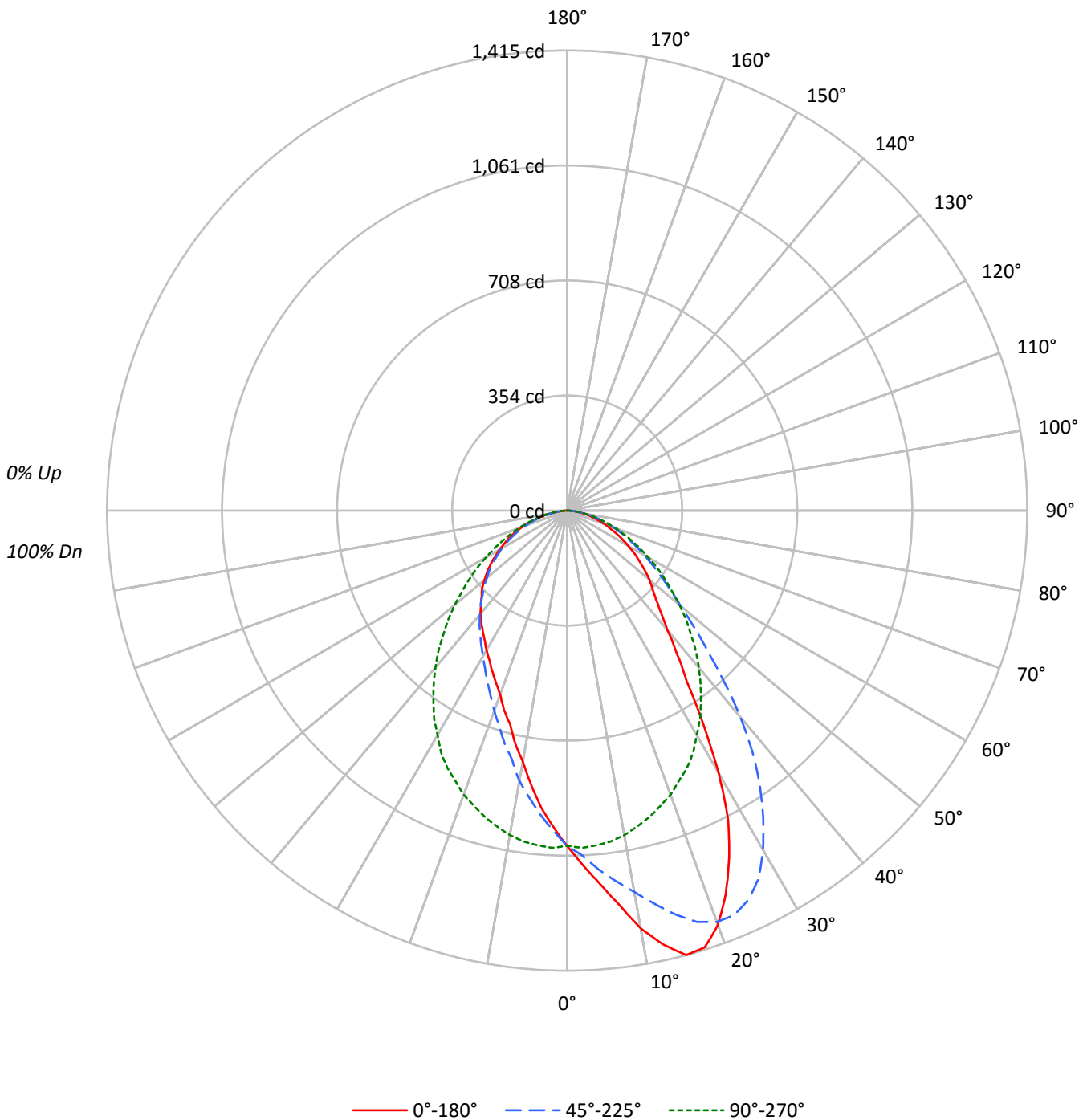
Input Watts (W): 26.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

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

	0°	90°	180°
0°	19632	19632	19632
5°	22011	19761	17512
10°	25223	19599	15156
15°	27903	19240	13390
20°	27478	18853	12205
25°	24777	18341	11456
30°	20475	17521	10909
35°	14921	16663	10520
40°	11918	15653	10304
45°	10414	14482	10010
50°	9791	13347	9814
55°	9023	12194	9551
60°	8271	10971	9147
65°	7536	9875	8748
70°	6839	8805	8164
75°	6064	7610	7227
80°	5210	6296	5825
85°	4677	4677	3453



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	98.2	4.3
10°-20°	285.7	12.6
20°-30°	414.7	18.2
30°-40°	437.2	19.2
40°-50°	386.8	17.0
50°-60°	308.8	13.6
60°-70°	209.8	9.2
70°-80°	107.3	4.7
80°-90°	25.4	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°	798.6	35.1
0°-40°	1235.8	54.3
0°-60°	1931.4	84.9
0°-90°	2273.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2273.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1031	1031	1031	1031	1031	
5°	1151	1108	1034	939	916	115
15°	1415	1286	976	742	679	392
25°	1179	1320	873	580	545	535
35°	642	1034	717	466	452	415
45°	387	612	538	368	372	303
55°	272	352	367	277	288	244
65°	167	209	219	183	194	166
75°	82	101	103	93	98	88
85°	21	23	21	18	16	24
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°	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7
2.5°	1090.2	1090.6	1091.4	1085.0	1084.2	1084.2	1078.7	1073.9	1068.4	1060.9	1061.6
5°	1151.2	1155.5	1157.1	1152.4	1145.2	1144.4	1137.7	1126.6	1116.3	1108.0	1102.0
7.5°	1221.7	1223.3	1220.1	1214.6	1209.8	1200.7	1189.6	1178.9	1163.1	1148.8	1138.5
10°	1304.1	1306.5	1299.7	1290.6	1283.1	1272.0	1253.8	1235.2	1212.6	1190.8	1173.4
12.5°	1366.7	1373.4	1364.3	1365.1	1350.8	1334.6	1312.0	1304.9	1270.8	1238.3	1219.3
15°	1415.0	1414.6	1415.4	1407.9	1398.4	1396.0	1373.0	1348.0	1303.3	1285.5	1254.6
17.5°	1407.9	1413.4	1416.6	1414.2	1412.6	1409.1	1399.2	1380.5	1356.0	1325.9	1289.0
20°	1355.6	1363.5	1364.7	1373.8	1378.9	1385.7	1388.5	1384.1	1370.2	1346.1	1315.2
22.5°	1274.8	1275.6	1279.9	1295.4	1308.0	1327.5	1337.7	1357.2	1354.0	1345.3	1320.7
25°	1178.9	1174.9	1188.8	1195.9	1221.7	1248.6	1268.0	1289.4	1308.4	1319.9	1312.4
27.5°	1072.7	1064.4	1085.4	1104.0	1122.3	1148.4	1177.7	1212.6	1239.1	1275.2	1283.9
30°	930.9	934.5	954.3	974.5	1006.2	1047.4	1081.5	1120.7	1163.1	1204.6	1233.6
32.5°	778.0	794.3	804.9	838.6	865.6	912.7	966.6	1018.1	1073.5	1122.3	1171.0
35°	641.7	657.6	675.0	697.6	736.8	782.4	831.1	897.2	969.3	1033.9	1087.0
37.5°	555.4	552.6	563.3	579.9	613.6	652.8	710.7	778.0	864.4	936.1	1007.4
40°	479.3	477.7	484.9	499.9	524.1	551.0	600.1	657.6	736.4	829.1	918.2
42.5°	427.0	428.6	431.8	441.3	456.0	476.9	510.6	557.4	627.9	713.8	811.3
45°	386.6	389.4	393.8	398.9	408.4	426.6	447.2	482.1	539.1	612.0	706.3
47.5°	354.9	355.7	360.5	365.2	370.8	381.9	400.1	422.3	465.9	528.0	612.4
50°	330.4	327.6	330.8	334.3	340.3	347.4	358.5	379.1	406.0	454.0	521.7
52.5°	300.3	301.1	303.8	304.6	309.8	316.9	326.8	339.5	363.3	398.1	450.8
55°	271.7	273.7	275.3	277.7	282.4	287.6	295.5	305.0	324.0	352.2	393.4
57.5°	244.8	245.6	246.8	251.9	254.7	259.5	267.4	276.1	288.8	310.6	343.1
60°	217.1	217.1	220.3	222.2	226.2	230.9	236.9	245.2	256.3	273.3	298.3
62.5°	191.7	191.3	192.1	195.7	198.5	202.8	208.8	215.5	225.8	240.5	259.9
65°	167.2	166.4	168.8	169.5	172.7	177.1	181.8	189.4	197.7	208.8	227.0
67.5°	142.6	143.8	145.4	147.0	148.6	153.7	156.9	162.4	169.5	179.1	191.7
70°	122.8	122.8	122.8	124.0	126.4	128.7	131.9	136.3	143.0	150.9	162.0
72.5°	100.6	102.2	103.8	102.6	105.8	107.0	110.9	112.9	119.2	123.6	133.1
75°	82.4	82.4	82.4	84.4	85.6	86.8	89.1	91.5	94.7	101.0	106.2
77.5°	65.0	64.6	65.0	65.4	66.9	68.5	69.3	71.3	74.5	77.6	82.4
80°	47.5	48.3	48.7	49.5	49.5	50.3	50.7	53.5	55.5	57.4	60.2
82.5°	34.1	34.1	34.1	34.1	34.5	34.9	36.0	36.4	36.8	38.4	40.4
85°	21.4	21.0	21.0	21.8	21.4	21.4	22.2	23.0	23.0	23.4	24.6
87.5°	10.3	10.3	10.7	10.3	10.3	10.7	10.7	10.3	10.7	11.1	11.5
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°	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7
2.5°	1064.4	1061.2	1059.3	1052.1	1045.8	1039.5	1037.5	1038.3	1029.6	1021.2	1017.7
5°	1098.9	1091.0	1083.4	1072.7	1060.1	1046.2	1039.1	1033.5	1019.7	1004.6	995.9
7.5°	1130.2	1119.9	1106.4	1087.4	1070.0	1049.4	1036.7	1026.0	1006.6	986.4	974.1
10°	1158.3	1142.9	1124.2	1099.7	1077.1	1050.6	1031.9	1013.3	989.5	964.2	948.3
12.5°	1182.5	1160.3	1142.1	1108.8	1081.1	1046.2	1023.2	995.1	969.7	938.4	923.0
15°	1223.7	1185.2	1150.4	1114.7	1081.8	1035.5	1010.9	975.7	942.8	905.6	887.7
17.5°	1254.2	1212.6	1158.7	1115.5	1079.1	1029.6	994.3	952.3	915.1	873.9	850.1
20°	1279.5	1230.0	1171.0	1117.1	1071.2	1012.5	973.3	930.1	884.6	836.6	810.5
22.5°	1294.6	1241.9	1183.7	1111.2	1055.3	998.7	946.8	898.4	852.1	799.4	771.7
25°	1295.4	1247.8	1186.0	1108.4	1042.6	978.1	918.6	872.7	816.8	768.5	728.5
27.5°	1282.3	1244.7	1184.8	1102.8	1028.0	953.9	889.3	839.0	780.0	727.7	687.7
30°	1253.4	1233.6	1175.7	1093.3	1009.7	928.5	855.7	796.6	738.0	684.9	643.7
32.5°	1208.6	1208.2	1159.1	1079.9	990.3	896.5	820.4	760.6	694.0	642.1	603.3
35°	1147.2	1166.2	1134.1	1058.5	965.0	866.3	784.7	716.6	649.3	599.4	562.5
37.5°	1069.2	1113.1	1100.5	1030.0	932.5	834.3	745.5	674.2	609.7	558.2	522.1
40°	988.0	1048.2	1056.9	996.3	897.6	795.8	700.4	629.5	566.9	520.9	484.5
42.5°	900.8	973.7	1001.4	955.9	859.6	755.4	660.0	585.9	524.1	479.7	448.4
45°	801.4	894.5	937.7	909.9	816.4	710.3	612.0	537.6	481.3	439.3	414.4
47.5°	711.5	812.5	867.5	854.5	770.1	664.7	567.7	495.2	439.3	405.2	381.9
50°	614.8	719.4	789.5	792.7	719.4	615.2	517.7	450.4	400.1	368.8	350.6
52.5°	530.8	629.5	707.5	727.7	662.7	563.7	473.0	406.0	363.3	335.1	319.3
55°	459.9	544.3	629.1	660.0	606.5	511.4	426.2	367.2	325.6	305.8	291.6
57.5°	392.6	466.6	547.1	579.5	545.5	461.9	379.5	327.6	292.3	274.5	263.4
60°	341.5	396.9	466.6	507.4	478.9	406.4	336.7	288.0	260.3	244.8	234.5
62.5°	293.9	341.5	397.7	434.2	421.9	354.5	293.9	252.3	229.4	215.1	208.4
65°	250.4	289.2	334.7	369.2	358.9	307.0	255.9	219.1	200.0	188.6	182.6
67.5°	213.1	242.8	275.3	307.0	298.3	259.9	216.7	187.0	172.3	162.0	158.5
70°	178.3	199.7	227.8	251.9	245.2	215.1	182.6	158.1	145.8	137.5	133.9
72.5°	145.0	161.6	181.4	200.0	196.1	172.3	146.6	129.5	120.8	113.3	110.5
75°	114.5	128.0	141.0	154.1	152.9	133.5	117.7	103.4	95.9	89.9	88.7
77.5°	89.5	97.8	107.4	115.7	113.7	101.0	87.9	79.2	73.3	69.3	68.9
80°	64.6	68.9	75.3	80.8	78.0	73.3	63.4	57.4	53.5	49.5	47.9
82.5°	42.4	46.7	49.9	52.3	50.3	46.0	40.8	37.2	35.3	32.9	32.5
85°	24.6	26.9	28.5	29.3	28.5	25.7	23.0	21.4	19.4	18.2	17.8
87.5°	11.9	11.9	11.9	12.7	11.5	11.5	9.9	8.7	8.3	7.9	7.1
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°	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7	1030.7
2.5°	1013.7	1011.3	1003.0	998.7	991.5	984.8	980.4	982.4	984.0	983.2	982.0
5°	988.0	980.4	968.9	959.0	951.9	938.8	933.3	930.5	928.1	925.4	922.6
7.5°	959.4	948.7	932.5	919.8	907.2	890.5	882.2	877.4	872.3	866.3	860.8
10°	928.5	911.9	894.5	874.7	858.8	844.2	831.1	822.4	814.5	806.9	801.4
12.5°	896.1	876.3	853.7	824.8	806.9	784.3	785.1	768.1	754.6	750.7	743.9
15°	861.2	834.3	806.9	774.8	761.0	742.0	730.1	718.2	707.5	700.0	698.0
17.5°	823.2	787.1	760.6	736.8	714.2	694.8	684.5	675.0	665.9	654.8	654.4
20°	778.4	748.3	718.6	698.4	675.0	655.2	641.7	632.2	624.7	618.8	613.6
22.5°	736.0	702.3	675.8	653.2	630.3	615.2	605.3	596.2	590.2	583.5	578.8
25°	690.1	664.3	634.6	609.7	590.6	580.3	571.6	563.7	559.7	555.4	549.8
27.5°	650.9	622.3	593.0	573.6	556.2	547.1	540.3	534.4	530.8	528.0	524.5
30°	608.9	579.9	558.2	539.1	525.3	516.2	512.2	509.0	504.7	503.1	501.5
32.5°	568.5	543.1	525.3	509.4	496.4	491.2	487.6	484.9	481.7	480.1	476.6
35°	530.8	509.0	490.8	481.7	471.0	465.9	463.1	459.1	456.0	454.4	454.0
37.5°	494.8	475.0	462.7	450.4	445.3	442.5	438.5	435.7	434.6	434.2	433.8
40°	459.9	444.5	433.8	424.3	422.3	417.5	414.4	412.0	412.0	412.4	412.0
42.5°	428.2	414.8	405.6	397.7	395.3	393.0	389.8	390.2	391.0	392.6	391.0
45°	396.1	386.2	379.5	375.5	371.2	368.4	368.0	369.2	369.6	370.0	371.2
47.5°	366.0	359.7	353.4	348.6	346.6	346.2	345.4	347.4	349.4	349.8	351.8
50°	339.9	332.4	327.2	324.4	322.9	322.1	322.9	325.2	326.8	328.8	330.0
52.5°	310.6	305.8	302.6	300.7	300.3	301.1	301.1	303.8	306.6	307.0	307.4
55°	284.0	280.1	279.3	275.7	277.3	276.9	278.9	280.5	282.8	285.2	285.6
57.5°	257.1	253.5	251.1	251.5	251.9	253.5	255.1	257.9	260.7	263.4	263.4
60°	230.2	228.6	227.4	227.4	228.2	230.6	232.5	235.3	236.9	238.5	239.7
62.5°	205.6	204.0	202.8	203.6	206.0	207.2	209.6	210.7	212.3	213.9	214.3
65°	179.4	178.7	179.8	180.6	181.0	183.0	185.8	187.0	188.6	189.4	192.1
67.5°	155.7	155.7	155.3	156.5	158.9	159.2	162.0	165.2	165.2	166.8	168.8
70°	131.5	132.3	133.1	133.9	135.9	136.7	138.6	139.8	141.4	142.6	143.8
72.5°	109.3	109.3	110.1	109.7	111.3	113.3	114.9	116.1	117.7	119.2	120.4
75°	87.5	87.5	88.3	88.7	90.7	92.7	92.3	93.1	94.7	96.3	97.1
77.5°	67.7	66.9	67.7	68.1	68.9	70.5	70.9	72.1	74.1	73.7	74.5
80°	48.7	47.5	48.7	49.1	49.1	51.1	51.1	51.9	53.1	51.9	53.1
82.5°	31.3	30.9	31.7	31.7	32.5	32.1	32.9	32.9	34.1	33.7	34.1
85°	17.4	17.0	17.4	17.0	17.4	17.8	17.8	17.4	17.4	18.2	17.0
87.5°	6.7	6.3	5.9	5.9	5.5	5.1	4.8	4.8	4.8	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: P242286

CATALOG NUMBER: S122DR-S675D927-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	1030.7	1030.7	1030.7	1030.7
2.5°	978.1	977.3	977.3	973.7
5°	917.1	915.9	913.9	915.9
7.5°	859.2	854.1	853.3	849.3
10°	794.6	791.5	791.1	783.6
12.5°	745.5	736.8	738.8	735.2
15°	687.3	687.3	685.7	679.0
17.5°	645.7	645.3	641.7	644.1
20°	609.3	606.9	602.1	602.1
22.5°	574.8	575.2	570.0	572.0
25°	549.4	546.3	543.9	545.1
27.5°	523.3	522.1	521.7	518.1
30°	501.1	497.2	497.9	496.0
32.5°	475.8	475.0	473.8	472.2
35°	453.2	453.6	451.6	452.4
37.5°	433.0	434.6	433.4	433.4
40°	413.2	413.2	413.2	414.4
42.5°	394.2	393.4	392.6	392.2
45°	372.0	373.2	373.6	371.6
47.5°	352.6	353.0	352.6	354.9
50°	332.0	331.2	332.0	331.2
52.5°	310.2	310.6	309.8	309.8
55°	287.2	288.0	287.6	287.6
57.5°	263.8	264.2	265.0	263.0
60°	239.3	241.2	240.9	240.1
62.5°	216.7	217.1	217.1	217.1
65°	193.3	194.1	192.9	194.1
67.5°	168.0	168.4	169.1	169.5
70°	144.6	144.2	145.4	146.6
72.5°	120.0	121.2	120.4	121.2
75°	96.3	97.4	97.1	98.2
77.5°	73.7	74.1	74.1	74.5
80°	53.1	52.3	51.5	53.1
82.5°	32.9	33.7	32.9	32.5
85°	17.0	16.6	15.8	15.8
87.5°	4.0	3.6	3.6	3.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)