

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: P243166

Luminaire Tested: **S122DR-H675D930-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243166
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-H675D930-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2282.3 lumens
Efficiency: N/A
Efficacy: 96.7 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

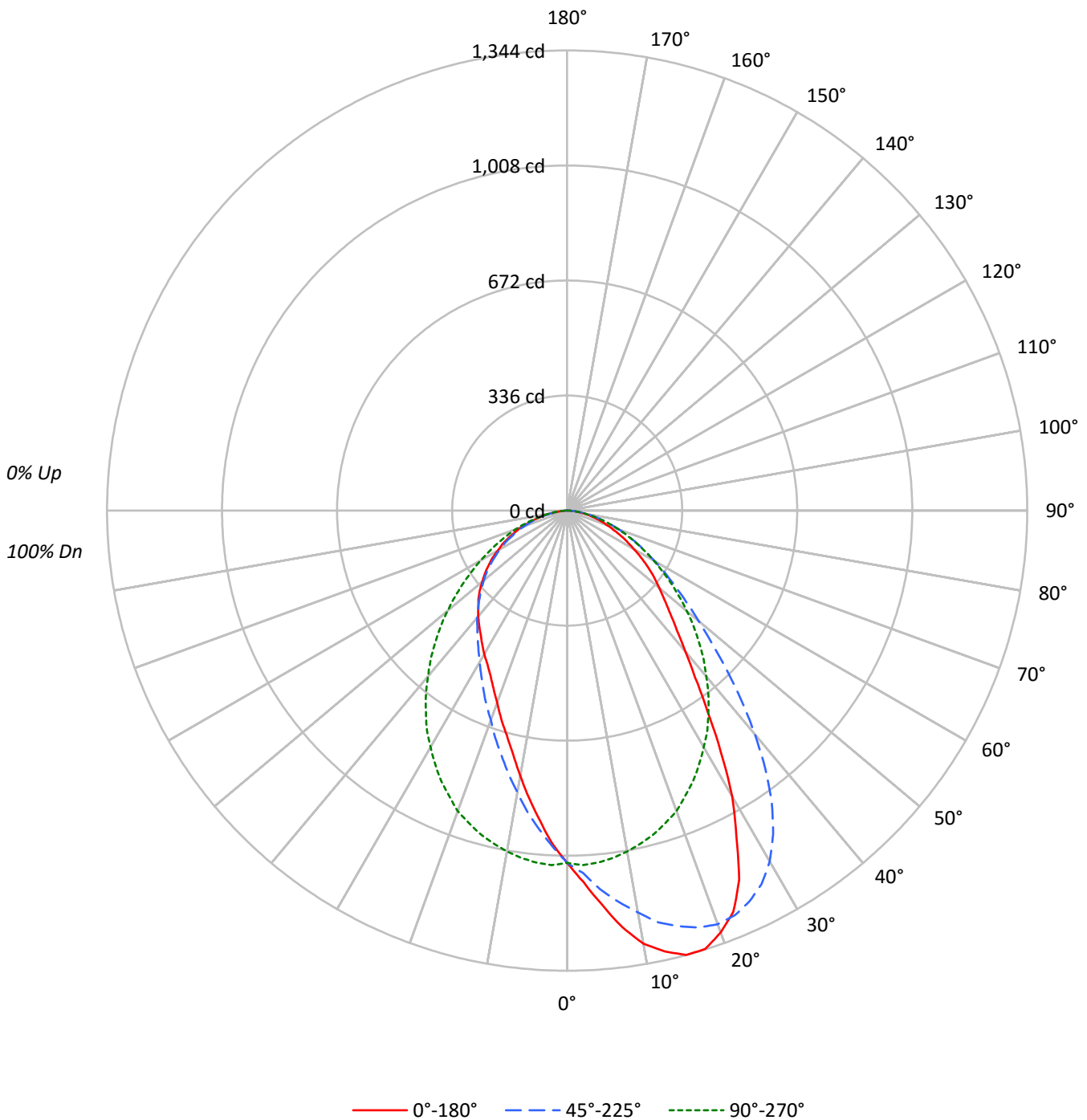
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	19592	19592	19592
5°	22069	19732	17381
10°	24842	19554	15212
15°	26497	19292	13407
20°	26574	18942	12099
25°	24993	18312	11152
30°	21216	17549	10650
35°	16589	16731	10250
40°	13328	15722	10053
45°	11465	14684	9865
50°	10401	13513	9589
55°	9581	12314	9328
60°	8613	11093	8903
65°	7757	9970	8473
70°	6911	8861	7931
75°	6219	7617	6947
80°	5430	6143	5430
85°	4655	4568	2994



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	98.0	4.3
10°-20°	281.7	12.3
20°-30°	409.6	17.9
30°-40°	439.4	19.3
40°-50°	393.8	17.3
50°-60°	313.9	13.8
60°-70°	212.4	9.3
70°-80°	108.3	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°	789.2	34.6
0°-40°	1228.6	53.8
0°-60°	1936.3	84.8
0°-90°	2282.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2282.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1029	1029	1029	1029	1029	
5°	1154	1110	1032	934	909	114
15°	1344	1257	978	740	680	376
25°	1189	1260	871	579	531	535
35°	713	1042	720	456	441	452
45°	426	659	545	362	366	333
55°	288	383	371	273	281	258
65°	172	223	221	179	188	171
75°	84	105	104	89	94	90
85°	21	24	21	16	14	25
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°	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6
2.5°	1085.7	1089.1	1086.0	1084.9	1082.6	1081.9	1075.8	1070.8	1067.8	1059.4	1060.2
5°	1154.2	1161.8	1157.6	1157.2	1148.8	1143.5	1138.2	1130.6	1119.2	1110.0	1102.8
7.5°	1226.5	1222.7	1221.6	1217.4	1211.3	1203.7	1191.9	1180.8	1166.4	1153.0	1143.1
10°	1284.4	1283.2	1285.1	1274.5	1270.7	1258.9	1248.6	1231.5	1212.8	1191.9	1178.9
12.5°	1318.6	1322.1	1324.7	1320.5	1311.4	1308.0	1290.8	1266.9	1260.4	1231.8	1216.2
15°	1343.7	1345.3	1345.7	1341.1	1336.5	1327.8	1317.5	1302.3	1281.3	1256.6	1244.8
17.5°	1342.2	1341.8	1344.1	1341.5	1338.8	1336.1	1328.1	1316.3	1300.0	1276.8	1257.0
20°	1311.0	1317.9	1323.2	1324.3	1324.0	1325.5	1321.7	1314.1	1302.3	1285.5	1263.0
22.5°	1268.4	1265.7	1277.1	1276.4	1281.3	1292.7	1297.7	1294.6	1290.1	1279.4	1261.5
25°	1189.2	1191.9	1199.9	1208.2	1227.6	1234.5	1249.3	1260.8	1262.3	1259.6	1248.6
27.5°	1070.4	1089.5	1093.7	1104.7	1131.7	1154.2	1184.2	1202.1	1227.6	1229.9	1225.0
30°	964.6	963.8	970.3	990.1	1014.9	1048.7	1087.6	1133.6	1162.9	1183.1	1190.3
32.5°	834.4	837.5	854.2	878.6	903.7	937.6	982.5	1038.8	1078.0	1119.9	1143.5
35°	713.4	722.9	738.9	755.6	783.0	829.5	879.3	926.2	986.3	1042.3	1080.3
37.5°	613.6	626.6	638.8	654.7	681.4	717.2	762.1	824.1	883.9	951.3	1007.2
40°	536.0	540.9	549.3	564.9	582.8	618.6	663.9	710.3	775.0	852.3	925.8
42.5°	475.1	473.9	483.1	493.0	509.3	536.0	575.6	622.0	686.3	754.9	829.1
45°	425.6	426.0	429.8	440.0	453.0	468.2	498.7	542.4	591.2	659.3	738.1
47.5°	385.2	386.4	392.1	399.3	406.9	421.0	441.2	469.7	515.4	572.5	646.4
50°	351.0	352.9	356.7	362.0	367.7	377.6	392.8	415.3	451.5	499.8	566.8
52.5°	320.5	321.3	322.4	327.4	331.9	341.1	352.5	370.0	398.6	438.9	491.1
55°	288.5	287.8	290.4	294.6	298.8	305.3	317.1	331.2	351.4	383.3	426.3
57.5°	255.8	256.9	258.9	261.1	268.7	275.6	284.4	297.3	313.3	338.4	374.2
60°	226.1	226.1	228.4	231.4	236.4	241.0	249.3	261.1	275.2	294.6	324.7
62.5°	197.2	198.7	201.0	202.5	207.1	212.8	219.3	228.4	241.3	256.9	279.4
65°	172.1	171.3	173.6	176.6	180.1	183.9	191.1	198.7	208.6	222.7	241.3
67.5°	146.2	148.5	149.2	150.7	153.4	158.4	161.8	169.8	177.8	190.3	205.9
70°	124.1	125.6	126.8	128.7	130.9	133.2	136.7	143.1	151.1	159.9	170.9
72.5°	104.3	105.4	104.3	106.2	107.3	109.6	114.2	117.2	123.3	130.9	140.8
75°	84.5	85.3	84.9	86.8	87.2	89.5	91.7	94.4	101.3	105.4	112.3
77.5°	66.2	67.0	67.4	68.1	68.9	70.0	71.2	73.8	77.7	81.5	86.8
80°	49.5	49.5	50.6	51.0	51.4	52.2	54.1	54.8	57.5	58.6	62.8
82.5°	34.3	34.6	35.0	35.0	35.4	36.2	36.5	38.1	38.8	40.7	42.6
85°	21.3	21.7	21.7	21.7	22.8	22.5	22.5	23.2	24.4	24.4	25.1
87.5°	10.7	11.0	11.0	11.0	11.4	11.4	11.4	11.4	11.4	12.2	11.8
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°	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6
2.5°	1059.8	1059.4	1057.9	1051.0	1045.7	1038.8	1037.7	1036.6	1027.0	1016.8	1013.7
5°	1097.1	1090.2	1080.7	1069.3	1057.9	1045.3	1038.1	1032.0	1017.5	1001.5	992.4
7.5°	1133.6	1120.3	1105.5	1087.6	1068.5	1048.4	1035.4	1023.2	1003.4	982.5	969.9
10°	1164.8	1146.9	1126.4	1102.8	1076.5	1049.1	1030.1	1011.0	985.9	960.4	943.7
12.5°	1190.7	1167.9	1140.9	1108.9	1084.9	1047.2	1020.6	995.4	967.7	934.5	916.3
15°	1210.5	1188.1	1151.5	1119.2	1087.6	1037.3	1005.0	978.3	941.0	908.6	879.7
17.5°	1234.5	1202.5	1166.4	1119.9	1084.9	1027.4	990.9	956.2	915.9	877.8	845.8
20°	1245.2	1211.7	1172.8	1121.1	1076.5	1016.8	968.0	934.5	885.8	842.0	805.9
22.5°	1246.7	1214.7	1172.4	1117.6	1062.1	1001.1	945.2	901.4	852.7	806.2	765.5
25°	1240.2	1209.8	1166.0	1111.5	1046.1	984.4	922.0	871.3	815.0	767.0	725.5
27.5°	1222.7	1198.0	1156.5	1098.2	1029.7	958.5	890.4	835.2	779.6	725.2	685.6
30°	1194.5	1178.2	1142.4	1080.7	1008.8	930.3	862.2	797.9	737.7	686.7	644.1
32.5°	1158.4	1150.4	1120.7	1059.8	987.4	899.5	828.3	762.1	696.6	648.3	604.5
35°	1112.3	1116.5	1091.4	1036.2	960.4	868.3	788.7	719.5	655.5	604.1	563.8
37.5°	1052.5	1073.1	1057.1	1005.3	925.8	836.7	747.2	677.6	610.6	561.1	525.7
40°	985.5	1021.7	1014.1	970.7	888.5	799.8	707.3	632.3	566.8	520.0	486.1
42.5°	906.7	959.3	967.7	928.4	851.5	753.7	662.4	590.0	526.8	480.8	448.4
45°	818.4	883.5	911.7	880.9	808.5	709.2	616.3	545.1	482.7	443.5	416.4
47.5°	729.7	808.2	846.2	831.4	758.3	661.6	570.6	501.0	442.0	407.7	382.2
50°	642.2	726.3	781.9	772.0	708.8	616.3	524.6	456.0	402.0	370.4	348.7
52.5°	565.3	644.8	705.4	710.3	653.6	564.5	475.8	412.3	366.2	337.7	319.4
55°	489.5	563.4	629.6	641.8	595.7	510.1	430.9	370.8	328.9	305.3	290.4
57.5°	421.8	488.8	554.6	575.9	538.6	461.4	382.6	329.7	293.5	275.2	262.3
60°	364.3	424.8	481.5	503.2	477.7	407.3	338.4	291.2	261.1	244.8	234.5
62.5°	314.0	360.9	411.1	435.1	418.0	356.7	296.5	254.7	230.3	216.2	208.2
65°	268.7	304.9	344.5	372.3	353.3	307.6	257.3	221.2	200.6	187.7	182.0
67.5°	226.9	256.9	288.5	310.6	301.1	259.6	217.4	189.2	172.1	162.2	156.8
70°	188.8	211.3	236.8	253.9	247.1	215.1	181.6	159.1	144.7	137.8	133.2
72.5°	154.9	169.4	188.8	202.9	195.7	173.2	149.2	131.3	120.7	112.7	109.3
75°	123.0	135.5	149.2	158.7	153.0	136.3	117.2	103.5	96.3	91.4	89.1
77.5°	93.3	103.2	112.7	117.2	114.6	102.4	89.5	78.8	72.7	69.7	67.0
80°	67.0	72.7	79.2	83.4	81.8	73.5	64.3	56.0	53.3	49.5	48.7
82.5°	44.9	49.5	51.0	52.9	51.8	48.0	41.5	36.5	34.3	32.4	32.0
85°	26.6	27.8	29.7	29.7	28.5	25.9	22.5	20.9	18.7	18.3	17.1
87.5°	11.8	11.8	11.8	11.8	11.8	11.0	9.5	8.8	8.0	7.6	7.2
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°	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6	1028.6
2.5°	1011.0	1007.2	1001.9	995.8	990.5	982.1	979.5	979.5	981.4	979.1	977.2
5°	984.8	977.2	969.6	957.8	947.9	934.5	930.7	926.9	926.5	922.7	917.8
7.5°	956.6	945.2	929.6	912.8	902.2	887.7	879.7	877.4	870.2	863.3	855.4
10°	923.9	906.4	887.7	871.7	855.0	836.3	826.8	820.3	813.1	804.7	799.0
12.5°	884.3	864.5	847.4	828.7	814.6	788.4	785.3	776.9	762.5	749.9	745.3
15°	859.9	825.3	805.9	788.7	767.4	740.4	730.5	721.4	707.7	699.7	693.2
17.5°	816.9	785.7	761.3	738.5	717.9	697.0	682.2	674.5	663.5	656.6	650.2
20°	777.7	743.8	718.3	691.7	670.4	651.3	638.8	629.2	623.5	616.7	610.2
22.5°	738.1	702.7	678.3	651.3	626.2	614.8	599.9	591.9	584.3	579.0	572.1
25°	692.0	663.9	633.4	612.5	590.4	578.6	564.5	556.9	550.8	544.7	541.3
27.5°	650.9	622.4	594.2	573.3	554.6	543.2	534.5	527.2	519.6	515.0	512.4
30°	608.3	582.0	557.3	537.1	522.7	510.1	504.8	497.9	492.2	490.3	486.1
32.5°	570.2	540.9	521.1	502.9	490.7	481.9	478.1	470.9	469.7	467.8	465.6
35°	532.2	507.0	488.0	472.4	462.1	455.7	450.7	448.8	446.9	445.0	443.1
37.5°	494.5	474.7	456.8	444.2	435.9	430.9	429.8	426.0	425.6	422.9	422.9
40°	460.6	440.4	427.9	418.0	411.1	408.8	405.8	405.0	403.9	403.1	404.6
42.5°	426.7	413.0	402.4	392.1	386.8	384.9	384.1	382.9	382.2	384.5	385.2
45°	395.1	383.3	374.2	367.0	363.9	361.6	361.6	362.8	362.4	363.5	363.5
47.5°	365.8	355.2	347.5	344.9	341.1	340.3	340.7	340.3	342.2	343.7	345.3
50°	338.0	328.5	322.4	319.8	319.0	317.9	319.4	320.1	321.3	322.8	323.6
52.5°	307.2	302.6	298.8	296.2	295.8	296.2	295.8	298.4	299.6	301.9	301.5
55°	280.9	277.5	274.8	271.8	271.4	272.6	273.3	275.6	277.1	279.0	278.6
57.5°	256.2	253.5	250.5	249.7	249.3	249.7	253.1	252.8	255.0	256.6	257.3
60°	229.2	227.3	224.6	224.6	225.7	226.5	227.6	229.5	231.8	231.4	234.1
62.5°	204.4	202.1	201.4	202.5	202.1	204.0	205.2	205.2	208.2	209.4	210.1
65°	179.7	178.9	177.8	177.8	178.9	179.3	181.2	182.3	183.5	185.8	187.7
67.5°	156.5	154.6	154.6	153.8	155.3	156.5	157.6	159.1	159.9	162.5	163.7
70°	132.1	131.3	130.9	131.7	131.7	132.9	134.8	136.7	138.2	138.6	140.8
72.5°	108.5	108.5	108.5	109.6	110.4	111.5	111.9	113.4	115.7	116.1	117.2
75°	87.2	87.6	87.2	87.6	87.9	89.1	89.8	91.4	92.9	93.3	94.0
77.5°	67.4	66.6	65.9	67.0	67.8	70.0	69.7	70.4	71.9	71.2	71.9
80°	47.2	48.3	46.8	49.1	49.1	48.7	49.5	50.6	50.2	51.0	50.2
82.5°	32.0	30.8	30.8	32.0	32.4	31.2	32.0	32.4	32.7	32.0	31.6
85°	17.5	17.1	17.9	16.7	17.1	16.4	16.4	15.6	16.4	15.6	14.8
87.5°	6.5	6.1	6.5	5.3	4.9	4.6	4.2	4.2	3.4	3.4	3.4
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: P243166

CATALOG NUMBER: S122DR-H675D930-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1028.6	1028.6	1028.6	1028.6
2.5°	979.8	975.6	973.7	975.3
5°	912.5	913.6	906.7	909.0
7.5°	854.2	849.3	850.8	848.1
10°	792.5	789.9	785.7	786.5
12.5°	751.1	733.2	732.0	728.6
15°	692.8	682.9	680.6	679.9
17.5°	646.4	638.0	641.0	638.8
20°	604.5	604.9	599.9	596.9
22.5°	567.6	566.8	564.9	561.9
25°	536.4	536.4	531.8	530.6
27.5°	507.8	508.6	504.8	504.8
30°	486.5	483.8	483.4	484.2
32.5°	465.2	462.1	462.5	462.1
35°	442.3	443.1	442.0	440.8
37.5°	422.9	422.9	422.9	421.8
40°	403.9	404.6	403.5	404.3
42.5°	384.9	385.2	385.2	383.7
45°	365.8	365.4	364.7	366.2
47.5°	346.0	346.0	345.6	346.4
50°	324.3	325.1	323.9	323.6
52.5°	302.2	302.6	302.2	303.0
55°	279.8	279.8	280.2	280.9
57.5°	256.6	259.2	257.3	258.9
60°	233.7	234.1	234.5	233.7
62.5°	212.0	211.6	212.0	213.2
65°	188.4	189.2	188.8	188.0
67.5°	165.2	164.4	165.6	164.4
70°	140.5	142.0	140.8	142.4
72.5°	118.0	117.6	118.4	116.5
75°	94.4	94.4	94.8	94.4
77.5°	72.3	71.6	71.2	70.0
80°	49.9	49.9	48.3	49.5
82.5°	30.5	30.8	31.2	28.9
85°	14.5	14.5	14.1	13.7
87.5°	3.0	3.0	3.4	3.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)