

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: P242300

Luminaire Tested: **S122DR-S485D840-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242300
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-S485D840-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2081.4 lumens
Efficiency: N/A
Efficacy: 110.7 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

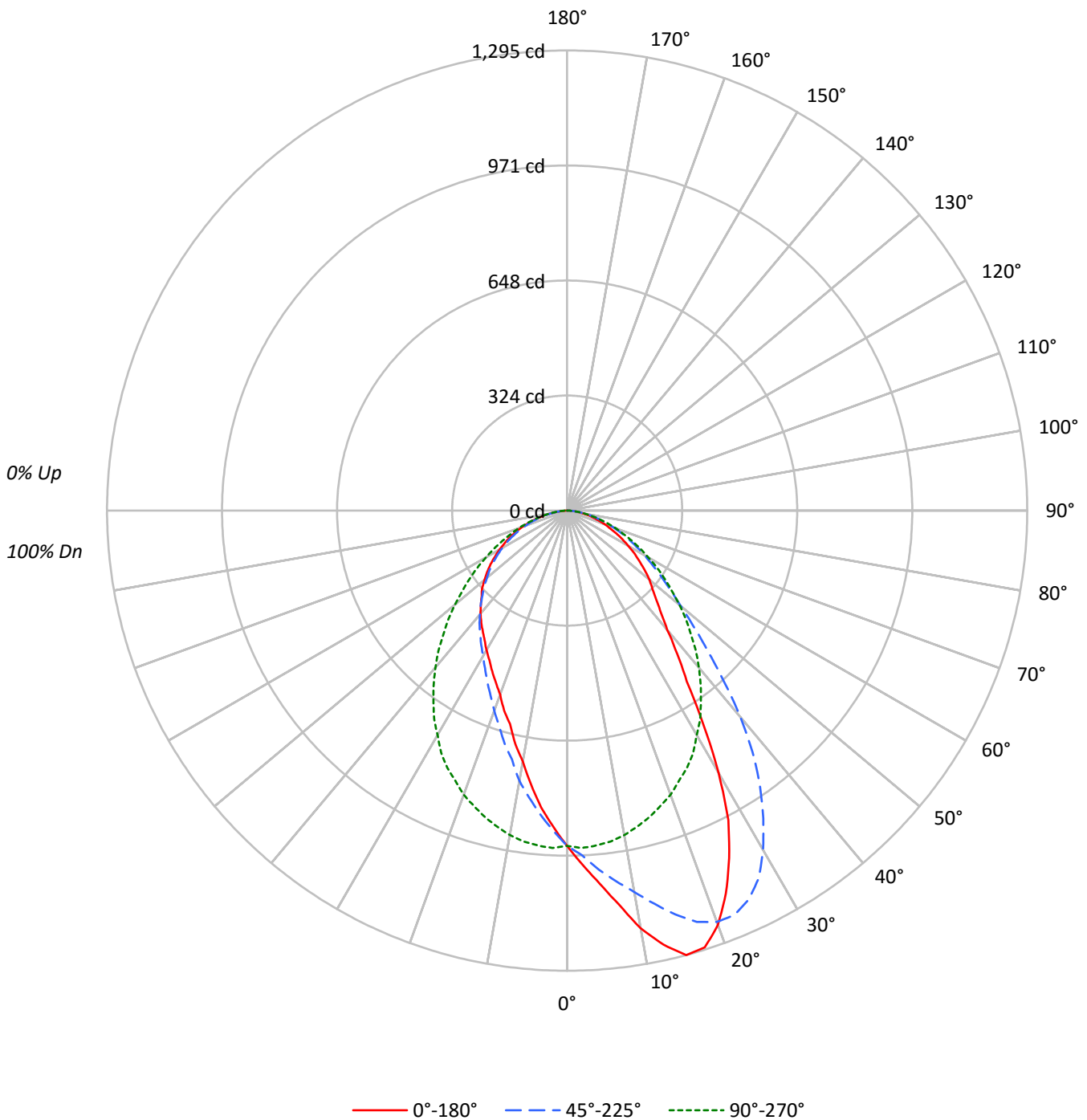
Input Watts (W): 18.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	17972	17972	17972
5°	20147	18088	16029
10°	23088	17939	13872
15°	25541	17612	12256
20°	25151	17258	11171
25°	22679	16788	10485
30°	18741	16038	9985
35°	13659	15252	9629
40°	10908	14327	9431
45°	9533	13253	9161
50°	8961	12218	8982
55°	8259	11161	8741
60°	7570	10042	8370
65°	6896	9037	8009
70°	6260	8059	7474
75°	5549	6962	6616
80°	4772	5770	5331
85°	4284	4284	3169



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	89.9	4.3
10°-20°	261.6	12.6
20°-30°	379.6	18.2
30°-40°	400.2	19.2
40°-50°	354.1	17.0
50°-60°	282.6	13.6
60°-70°	192.0	9.2
70°-80°	98.3	4.7
80°-90°	23.2	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°	731.0	35.1
0°-40°	1131.2	54.3
0°-60°	1767.9	84.9
0°-90°	2081.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2081.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	944	944	944	944	944	
5°	1054	1014	946	859	838	105
15°	1295	1177	893	679	622	359
25°	1079	1208	799	531	499	489
35°	587	946	656	426	414	380
45°	354	560	492	337	340	277
55°	249	322	336	254	263	223
65°	153	191	200	168	178	152
75°	75	92	95	85	90	80
85°	20	21	20	16	14	22
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°	943.5	943.5	943.5	943.5	943.5	943.5	943.5	943.5	943.5	943.5	943.5
2.5°	997.9	998.2	999.0	993.1	992.4	992.4	987.3	983.0	977.9	971.0	971.8
5°	1053.7	1057.7	1059.1	1054.8	1048.3	1047.5	1041.4	1031.2	1021.8	1014.2	1008.7
7.5°	1118.2	1119.7	1116.8	1111.7	1107.4	1099.0	1088.9	1079.1	1064.6	1051.5	1042.1
10°	1193.7	1195.8	1189.7	1181.3	1174.4	1164.3	1147.6	1130.6	1109.9	1090.0	1074.0
12.5°	1251.0	1257.1	1248.8	1249.5	1236.5	1221.6	1200.9	1194.4	1163.2	1133.5	1116.1
15°	1295.2	1294.8	1295.6	1288.7	1280.0	1277.8	1256.8	1233.9	1192.9	1176.6	1148.3
17.5°	1288.7	1293.7	1296.6	1294.5	1293.0	1289.8	1280.7	1263.6	1241.2	1213.6	1179.9
20°	1240.8	1248.1	1249.1	1257.5	1262.2	1268.4	1270.9	1266.9	1254.2	1232.1	1203.8
22.5°	1166.8	1167.6	1171.5	1185.7	1197.3	1215.1	1224.5	1242.3	1239.4	1231.4	1208.9
25°	1079.1	1075.5	1088.1	1094.7	1118.2	1142.9	1160.7	1180.2	1197.7	1208.2	1201.3
27.5°	981.9	974.3	993.5	1010.6	1027.2	1051.2	1078.0	1109.9	1134.2	1167.2	1175.2
30°	852.1	855.4	873.5	892.0	921.0	958.7	989.9	1025.8	1064.6	1102.7	1129.1
32.5°	712.1	727.0	736.8	767.6	792.3	835.4	884.7	931.9	982.6	1027.2	1071.8
35°	587.4	601.9	617.9	638.5	674.4	716.1	760.7	821.3	887.3	946.4	995.0
37.5°	508.4	505.8	515.6	530.8	561.7	597.6	650.5	712.1	791.2	856.8	922.1
40°	438.7	437.3	443.8	457.6	479.7	504.4	549.3	601.9	674.1	758.9	840.5
42.5°	390.9	392.3	395.2	403.9	417.3	436.6	467.4	510.2	574.7	653.4	742.6
45°	353.9	356.4	360.4	365.1	373.8	390.5	409.4	441.3	493.5	560.2	646.5
47.5°	324.9	325.6	330.0	334.3	339.4	349.5	366.2	386.5	426.4	483.3	560.6
50°	302.4	299.9	302.8	306.0	311.5	318.0	328.1	347.0	371.7	415.5	477.5
52.5°	274.8	275.6	278.1	278.8	283.5	290.1	299.1	310.7	332.5	364.4	412.6
55°	248.7	250.6	252.0	254.2	258.5	263.2	270.5	279.2	296.6	322.3	360.1
57.5°	224.1	224.8	225.9	230.6	233.1	237.5	244.8	252.7	264.3	284.3	314.0
60°	198.7	198.7	201.6	203.4	207.0	211.4	216.8	224.4	234.6	250.2	273.0
62.5°	175.5	175.1	175.9	179.1	181.7	185.6	191.1	197.3	206.7	220.1	237.9
65°	153.0	152.3	154.5	155.2	158.1	162.1	166.4	173.3	180.9	191.1	207.8
67.5°	130.5	131.6	133.1	134.5	136.0	140.7	143.6	148.7	155.2	163.9	175.5
70°	112.4	112.4	112.4	113.5	115.7	117.8	120.7	124.7	130.9	138.1	148.3
72.5°	92.1	93.5	95.0	93.9	96.8	97.9	101.5	103.3	109.1	113.1	121.8
75°	75.4	75.4	75.4	77.2	78.3	79.4	81.6	83.8	86.7	92.5	97.2
77.5°	59.5	59.1	59.5	59.8	61.3	62.7	63.5	65.3	68.2	71.1	75.4
80°	43.5	44.2	44.6	45.3	45.3	46.0	46.4	49.0	50.8	52.6	55.1
82.5°	31.2	31.2	31.2	31.2	31.5	31.9	33.0	33.4	33.7	35.2	37.0
85°	19.6	19.2	19.2	19.9	19.6	19.6	20.3	21.0	21.0	21.4	22.5
87.5°	9.4	9.4	9.8	9.4	9.4	9.8	9.8	9.4	9.8	10.2	10.5
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°	943.5	943.5	943.5	943.5	943.5	943.5	943.5	943.5	943.5	943.5	943.5
2.5°	974.3	971.4	969.6	963.1	957.3	951.5	949.6	950.4	942.4	934.8	931.5
5°	1005.8	998.6	991.7	981.9	970.3	957.6	951.1	946.0	933.3	919.5	911.6
7.5°	1034.5	1025.1	1012.7	995.3	979.4	960.5	948.9	939.1	921.4	902.9	891.6
10°	1060.2	1046.1	1029.0	1006.6	985.9	961.6	944.6	927.5	905.8	882.6	868.1
12.5°	1082.3	1062.0	1045.4	1014.9	989.5	957.6	936.6	910.8	887.6	859.0	844.8
15°	1120.1	1084.9	1053.0	1020.3	990.2	947.8	925.3	893.1	863.0	828.9	812.6
17.5°	1148.0	1109.9	1060.6	1021.1	987.7	942.4	910.1	871.7	837.6	799.9	778.1
20°	1171.2	1125.9	1071.8	1022.5	980.5	926.8	890.9	851.4	809.7	765.8	741.9
22.5°	1185.0	1136.7	1083.4	1017.1	966.0	914.1	866.6	822.4	779.9	731.7	706.3
25°	1185.7	1142.2	1085.6	1014.5	954.4	895.2	840.9	798.8	747.7	703.4	666.8
27.5°	1173.7	1139.3	1084.5	1009.5	940.9	873.1	814.0	768.0	714.0	666.1	629.5
30°	1147.3	1129.1	1076.2	1000.8	924.3	849.9	783.2	729.2	675.5	626.9	589.2
32.5°	1106.3	1105.9	1061.0	988.4	906.5	820.6	750.9	696.2	635.3	587.8	552.2
35°	1050.1	1067.5	1038.1	968.9	883.3	793.0	718.3	655.9	594.3	548.6	514.9
37.5°	978.6	1018.9	1007.3	942.7	853.5	763.6	682.4	617.1	558.0	510.9	477.9
40°	904.3	959.4	967.4	911.9	821.6	728.5	641.1	576.2	518.9	476.8	443.5
42.5°	824.5	891.3	916.6	874.9	786.8	691.5	604.1	536.3	479.7	439.1	410.5
45°	733.5	818.7	858.3	832.9	747.3	650.1	560.2	492.0	440.6	402.1	379.3
47.5°	651.2	743.7	794.1	782.1	704.9	608.4	519.6	453.2	402.1	370.9	349.5
50°	562.7	658.5	722.7	725.6	658.5	563.1	473.9	412.3	366.2	337.6	320.9
52.5°	485.9	576.2	647.6	666.1	606.6	516.0	432.9	371.7	332.5	306.8	292.3
55°	421.0	498.2	575.8	604.1	555.1	468.1	390.2	336.1	298.1	279.9	266.9
57.5°	359.3	427.1	500.7	530.5	499.3	422.8	347.4	299.9	267.6	251.3	241.1
60°	312.6	363.3	427.1	464.5	438.4	372.0	308.2	263.6	238.2	224.1	214.7
62.5°	269.0	312.6	364.0	397.4	386.2	324.5	269.0	231.0	209.9	196.9	190.7
65°	229.2	264.7	306.4	337.9	328.5	281.0	234.2	200.5	183.1	172.6	167.2
67.5°	195.1	222.3	252.0	281.0	273.0	237.9	198.3	171.1	157.7	148.3	145.0
70°	163.2	182.7	208.5	230.6	224.4	196.9	167.2	144.7	133.4	125.8	122.6
72.5°	132.7	147.9	166.1	183.1	179.5	157.7	134.2	118.6	110.6	103.7	101.2
75°	104.8	117.1	129.1	141.0	140.0	122.2	107.7	94.6	87.7	82.3	81.2
77.5°	81.9	89.6	98.3	105.9	104.1	92.5	80.5	72.5	67.1	63.5	63.1
80°	59.1	63.1	68.9	74.0	71.4	67.1	58.0	52.6	49.0	45.3	43.9
82.5°	38.8	42.8	45.7	47.9	46.0	42.1	37.3	34.1	32.3	30.1	29.7
85°	22.5	24.7	26.1	26.8	26.1	23.6	21.0	19.6	17.8	16.7	16.3
87.5°	10.9	10.9	10.9	11.6	10.5	10.5	9.1	8.0	7.6	7.3	6.5
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	943.5	943.5	943.5	943.5	943.5	943.5	943.5	943.5	943.5	943.5	943.5
2.5°	927.9	925.7	918.1	914.1	907.6	901.4	897.4	899.2	900.7	900.0	898.9
5°	904.3	897.4	886.9	877.8	871.3	859.4	854.3	851.7	849.6	847.0	844.5
7.5°	878.2	868.4	853.5	841.9	830.3	815.1	807.5	803.1	798.4	793.0	787.9
10°	849.9	834.7	818.7	800.6	786.1	772.7	760.7	752.7	745.5	738.6	733.5
12.5°	820.2	802.1	781.4	754.9	738.6	717.9	718.7	703.1	690.7	687.1	681.0
15°	788.3	763.6	738.6	709.2	696.5	679.1	668.3	657.4	647.6	640.7	638.9
17.5°	753.5	720.5	696.2	674.4	653.8	636.0	626.6	617.9	609.5	599.4	599.0
20°	712.5	684.9	657.7	639.3	617.9	599.7	587.4	578.7	571.8	566.4	561.7
22.5°	673.7	642.9	618.6	597.9	576.9	563.1	554.0	545.7	540.3	534.1	529.8
25°	631.6	608.1	580.9	558.0	540.6	531.2	523.2	516.0	512.3	508.4	503.3
27.5°	595.7	569.6	542.8	525.0	509.1	500.7	494.6	489.1	485.9	483.3	480.1
30°	557.3	530.8	510.9	493.5	480.8	472.5	468.8	465.9	461.9	460.5	459.0
32.5°	520.3	497.1	480.8	466.3	454.3	449.6	446.4	443.8	440.9	439.5	436.2
35°	485.9	465.9	449.3	440.9	431.1	426.4	423.9	420.2	417.3	415.9	415.5
37.5°	452.9	434.8	423.5	412.3	407.6	405.0	401.4	398.9	397.8	397.4	397.0
40°	421.0	406.8	397.0	388.3	386.5	382.2	379.3	377.1	377.1	377.5	377.1
42.5°	392.0	379.6	371.3	364.0	361.9	359.7	356.8	357.2	357.9	359.3	357.9
45°	362.6	353.5	347.4	343.7	339.8	337.2	336.9	337.9	338.3	338.7	339.8
47.5°	335.0	329.2	323.4	319.1	317.3	316.9	316.2	318.0	319.8	320.2	322.0
50°	311.1	304.2	299.5	297.0	295.5	294.8	295.5	297.7	299.1	301.0	302.0
52.5°	284.3	279.9	277.0	275.2	274.8	275.6	275.6	278.1	280.6	281.0	281.4
55°	260.0	256.4	255.6	252.4	253.8	253.5	255.3	256.7	258.9	261.1	261.4
57.5°	235.3	232.1	229.9	230.2	230.6	232.1	233.5	236.0	238.6	241.1	241.1
60°	210.7	209.2	208.1	208.1	208.9	211.0	212.8	215.4	216.8	218.3	219.4
62.5°	188.2	186.7	185.6	186.4	188.5	189.6	191.8	192.9	194.4	195.8	196.2
65°	164.3	163.5	164.6	165.3	165.7	167.5	170.1	171.1	172.6	173.3	175.9
67.5°	142.5	142.5	142.1	143.2	145.4	145.8	148.3	151.2	151.2	152.7	154.5
70°	120.4	121.1	121.8	122.6	124.4	125.1	126.9	128.0	129.4	130.5	131.6
72.5°	100.1	100.1	100.8	100.4	101.9	103.7	105.2	106.2	107.7	109.1	110.2
75°	80.1	80.1	80.9	81.2	83.0	84.8	84.5	85.2	86.7	88.1	88.8
77.5°	62.0	61.3	62.0	62.4	63.1	64.5	64.9	66.0	67.8	67.4	68.2
80°	44.6	43.5	44.6	45.0	45.0	46.8	46.8	47.5	48.6	47.5	48.6
82.5°	28.6	28.3	29.0	29.0	29.7	29.4	30.1	30.1	31.2	30.8	31.2
85°	16.0	15.6	16.0	15.6	16.0	16.3	16.3	16.0	16.0	16.7	15.6
87.5°	6.2	5.8	5.4	5.4	5.1	4.7	4.4	4.4	4.4	3.6	3.6
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: P242300

CATALOG NUMBER: S122DR-S485D840-X4F0-XX-UDD-A-W

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	943.5	943.5	943.5	943.5
2.5°	895.2	894.5	894.5	891.3
5°	839.4	838.3	836.5	838.3
7.5°	786.5	781.8	781.0	777.4
10°	727.4	724.5	724.1	717.2
12.5°	682.4	674.4	676.2	673.0
15°	629.1	629.1	627.7	621.5
17.5°	591.0	590.7	587.4	589.6
20°	557.7	555.5	551.1	551.1
22.5°	526.1	526.5	521.8	523.6
25°	502.9	500.0	497.8	498.9
27.5°	479.0	477.9	477.5	474.3
30°	458.7	455.1	455.8	454.0
32.5°	435.5	434.8	433.7	432.2
35°	414.8	415.2	413.4	414.1
37.5°	396.3	397.8	396.7	396.7
40°	378.2	378.2	378.2	379.3
42.5°	360.8	360.1	359.3	359.0
45°	340.5	341.6	341.9	340.1
47.5°	322.7	323.1	322.7	324.9
50°	303.9	303.1	303.9	303.1
52.5°	283.9	284.3	283.5	283.5
55°	262.9	263.6	263.2	263.2
57.5°	241.5	241.9	242.6	240.8
60°	219.0	220.8	220.5	219.7
62.5°	198.3	198.7	198.7	198.7
65°	176.9	177.7	176.6	177.7
67.5°	153.7	154.1	154.8	155.2
70°	132.3	132.0	133.1	134.2
72.5°	109.9	111.0	110.2	111.0
75°	88.1	89.2	88.8	89.9
77.5°	67.4	67.8	67.8	68.2
80°	48.6	47.9	47.1	48.6
82.5°	30.1	30.8	30.1	29.7
85°	15.6	15.2	14.5	14.5
87.5°	3.6	3.3	3.3	2.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)