

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: P242295

Luminaire Tested: **S122DR-S485D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242295  
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-S485D835-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2061.0 lumens  
Efficiency: N/A  
Efficacy: 109.6 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

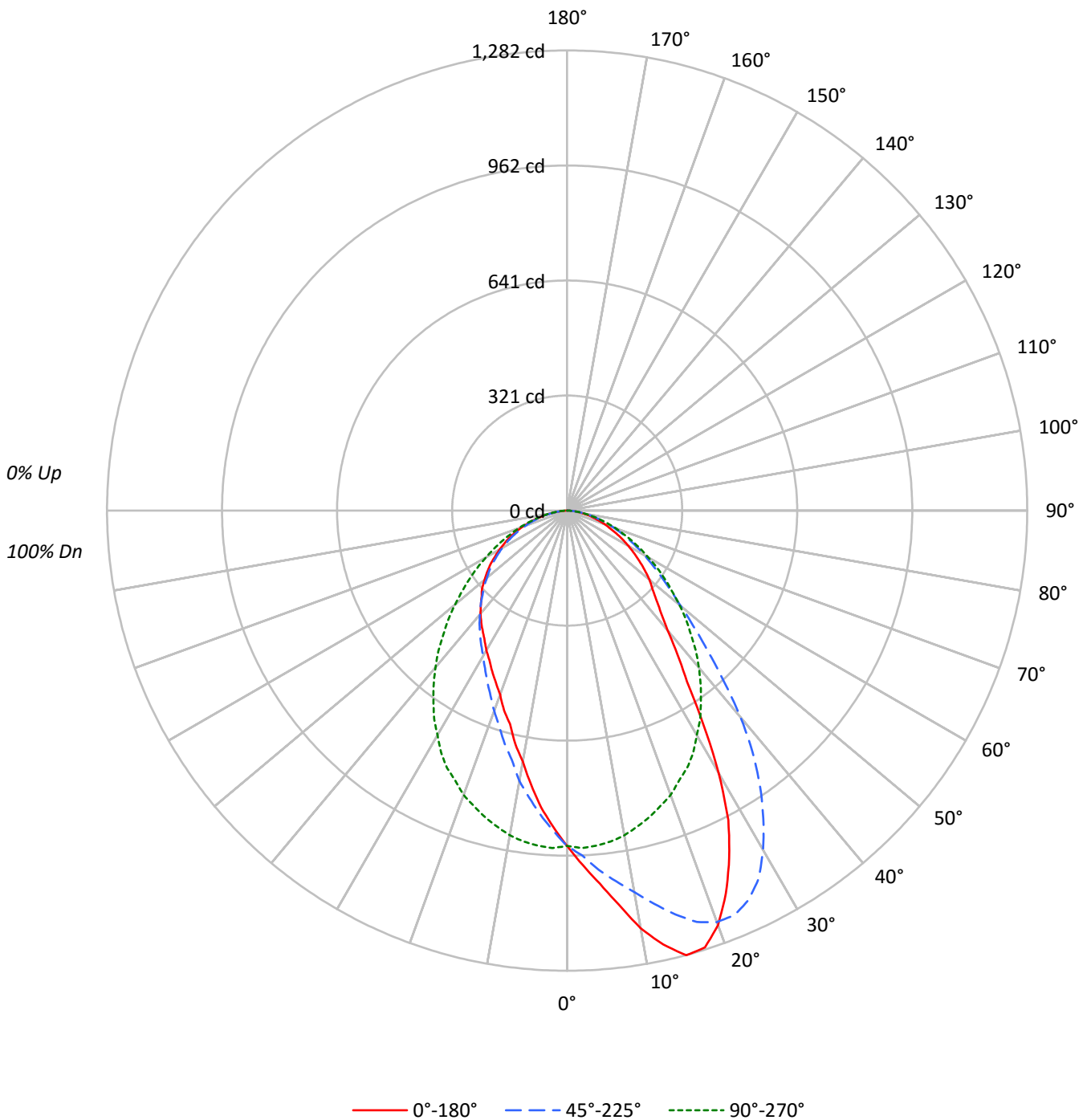
Input Watts (W): 18.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	17796	17796	17796
5°	19950	17912	15872
10°	22862	17765	13736
15°	25290	17438	12135
20°	24906	17090	11063
25°	22456	16624	10384
30°	18559	15882	9886
35°	13526	15103	9534
40°	10804	14185	9339
45°	9439	13124	9073
50°	8875	12096	8896
55°	8179	11052	8657
60°	7497	9943	8290
65°	6828	8951	7928
70°	6198	7981	7396
75°	5498	6896	6550
80°	4728	5715	5276
85°	4240	4240	3147



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	89.0	4.3
10°-20°	259.0	12.6
20°-30°	375.9	18.2
30°-40°	396.3	19.2
40°-50°	350.6	17.0
50°-60°	279.9	13.6
60°-70°	190.1	9.2
70°-80°	97.3	4.7
80°-90°	23.0	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°	723.9	35.1
0°-40°	1120.1	54.3
0°-60°	1750.6	84.9
0°-90°	2061.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2061.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	934	934	934	934	934	
5°	1043	1004	937	851	830	104
15°	1282	1165	884	672	615	355
25°	1068	1196	791	526	494	485
35°	582	937	650	422	410	377
45°	350	555	487	334	337	275
55°	246	319	333	251	261	221
65°	152	189	199	166	176	150
75°	75	92	94	84	89	80
85°	19	21	19	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°	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3
2.5°	988.1	988.5	989.2	983.4	982.7	982.7	977.7	973.4	968.4	961.5	962.3
5°	1043.4	1047.4	1048.8	1044.5	1038.0	1037.3	1031.2	1021.1	1011.8	1004.3	998.9
7.5°	1107.3	1108.8	1105.9	1100.9	1096.5	1088.3	1078.2	1068.5	1054.2	1041.3	1031.9
10°	1182.0	1184.2	1178.1	1169.8	1163.0	1152.9	1136.4	1119.5	1099.1	1079.3	1063.5
12.5°	1238.7	1244.8	1236.6	1237.3	1224.4	1209.7	1189.2	1182.7	1151.8	1122.4	1105.2
15°	1282.5	1282.2	1282.9	1276.1	1267.5	1265.3	1244.5	1221.9	1181.3	1165.1	1137.1
17.5°	1276.1	1281.1	1284.0	1281.8	1280.4	1277.2	1268.2	1251.3	1229.0	1201.8	1168.4
20°	1228.7	1235.9	1236.9	1245.2	1249.9	1256.0	1258.5	1254.5	1242.0	1220.1	1192.1
22.5°	1155.4	1156.2	1160.1	1174.1	1185.6	1203.2	1212.5	1230.1	1227.2	1219.3	1197.1
25°	1068.5	1065.0	1077.5	1084.0	1107.3	1131.7	1149.3	1168.7	1186.0	1196.4	1189.5
27.5°	972.3	964.8	983.8	1000.7	1017.2	1040.9	1067.5	1099.1	1123.1	1155.8	1163.7
30°	843.8	847.0	865.0	883.3	912.0	949.3	980.2	1015.8	1054.2	1091.9	1118.1
32.5°	705.2	719.9	729.6	760.1	784.5	827.3	876.1	922.8	973.0	1017.2	1061.4
35°	581.7	596.0	611.8	632.3	667.8	709.1	753.3	813.3	878.6	937.1	985.2
37.5°	503.4	500.9	510.6	525.7	556.2	591.7	644.1	705.2	783.5	848.4	913.1
40°	434.5	433.0	439.5	453.1	475.0	499.4	544.0	596.0	667.5	751.5	832.3
42.5°	387.1	388.5	391.4	400.0	413.3	432.3	462.8	505.2	569.1	647.0	735.3
45°	350.4	352.9	356.9	361.6	370.2	386.7	405.4	437.0	488.7	554.7	640.2
47.5°	321.7	322.4	326.7	331.0	336.1	346.1	362.6	382.8	422.2	478.6	555.1
50°	299.5	296.9	299.8	303.0	308.4	314.9	324.9	343.6	368.0	411.5	472.9
52.5°	272.2	272.9	275.4	276.1	280.8	287.2	296.2	307.7	329.3	360.8	408.6
55°	246.3	248.1	249.5	251.7	256.0	260.7	267.9	276.5	293.7	319.2	356.5
57.5°	221.9	222.6	223.7	228.4	230.9	235.2	242.4	250.3	261.7	281.5	310.9
60°	196.8	196.8	199.6	201.4	205.0	209.3	214.7	222.3	232.3	247.7	270.4
62.5°	173.8	173.4	174.1	177.4	179.9	183.8	189.2	195.3	204.7	217.9	235.5
65°	151.5	150.8	153.0	153.7	156.5	160.5	164.8	171.6	179.2	189.2	205.7
67.5°	129.3	130.3	131.8	133.2	134.6	139.3	142.2	147.2	153.7	162.3	173.8
70°	111.3	111.3	111.3	112.4	114.5	116.7	119.6	123.5	129.6	136.8	146.9
72.5°	91.2	92.6	94.1	93.0	95.9	96.9	100.5	102.3	108.1	112.0	120.6
75°	74.7	74.7	74.7	76.5	77.6	78.6	80.8	82.9	85.8	91.6	96.2
77.5°	58.9	58.5	58.9	59.2	60.7	62.1	62.8	64.6	67.5	70.4	74.7
80°	43.1	43.8	44.2	44.9	44.9	45.6	46.0	48.5	50.3	52.1	54.6
82.5°	30.9	30.9	30.9	30.9	31.2	31.6	32.7	33.0	33.4	34.8	36.6
85°	19.4	19.0	19.0	19.7	19.4	19.4	20.1	20.8	20.8	21.2	22.3
87.5°	9.3	9.3	9.7	9.3	9.3	9.7	9.7	9.3	9.7	10.1	10.4
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°	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3
2.5°	964.8	961.9	960.1	953.6	947.9	942.2	940.4	941.1	933.2	925.6	922.4
5°	996.0	988.8	982.0	972.3	960.8	948.3	941.8	936.8	924.2	910.6	902.7
7.5°	1024.4	1015.0	1002.8	985.6	969.8	951.1	939.6	929.9	912.4	894.0	882.9
10°	1049.9	1035.9	1019.0	996.7	976.3	952.2	935.3	918.5	896.9	873.9	859.6
12.5°	1071.8	1051.7	1035.2	1005.0	979.9	948.3	927.4	901.9	879.0	850.6	836.6
15°	1109.1	1074.3	1042.7	1010.4	980.6	938.6	916.3	884.3	854.5	820.8	804.6
17.5°	1136.8	1099.1	1050.2	1011.1	978.1	933.2	901.2	863.2	829.4	792.1	770.5
20°	1159.7	1114.9	1061.4	1012.5	970.9	917.7	882.2	843.1	801.8	758.3	734.6
22.5°	1173.4	1125.6	1072.9	1007.1	956.5	905.2	858.1	814.3	772.3	724.6	699.4
25°	1174.1	1131.0	1075.0	1004.6	945.0	886.5	832.6	791.0	740.4	696.6	660.3
27.5°	1162.3	1128.1	1073.9	999.6	931.7	864.6	806.1	760.5	707.0	659.6	623.3
30°	1136.0	1118.1	1065.7	991.0	915.2	841.6	775.6	722.1	668.9	620.8	583.5
32.5°	1095.5	1095.1	1050.6	978.8	897.6	812.5	743.6	689.4	629.1	582.0	546.8
35°	1039.8	1057.1	1028.0	959.4	874.7	785.2	711.3	649.5	588.5	543.2	509.9
37.5°	969.1	1008.9	997.5	933.5	845.2	756.2	675.7	611.1	552.6	505.9	473.2
40°	895.5	950.1	958.0	903.0	813.6	721.3	634.8	570.5	513.8	472.2	439.1
42.5°	816.5	882.6	907.7	866.4	779.1	684.7	598.2	531.0	475.0	434.8	406.4
45°	726.4	810.7	849.9	824.7	740.0	643.8	554.7	487.2	436.2	398.2	375.6
47.5°	644.9	736.4	786.3	774.5	698.0	602.5	514.5	448.8	398.2	367.3	346.1
50°	557.3	652.0	715.6	718.5	652.0	557.6	469.3	408.2	362.6	334.3	317.8
52.5°	481.1	570.5	641.3	659.6	600.7	510.9	428.7	368.0	329.3	303.8	289.4
55°	416.9	493.3	570.2	598.2	549.7	463.5	386.3	332.8	295.1	277.2	264.3
57.5°	355.8	423.0	495.9	525.3	494.4	418.7	344.0	296.9	265.0	248.8	238.8
60°	309.5	359.8	423.0	459.9	434.1	368.4	305.2	261.0	235.9	221.9	212.6
62.5°	266.4	309.5	360.5	393.5	382.4	321.4	266.4	228.7	207.9	195.0	188.9
65°	226.9	262.1	303.4	334.6	325.3	278.3	231.9	198.6	181.3	170.9	165.5
67.5°	193.2	220.1	249.5	278.3	270.4	235.5	196.4	169.5	156.2	146.9	143.6
70°	161.6	181.0	206.5	228.4	222.3	195.0	165.5	143.3	132.1	124.6	121.4
72.5°	131.4	146.5	164.4	181.3	177.7	156.2	132.8	117.4	109.5	102.7	100.2
75°	103.8	116.0	127.8	139.7	138.6	121.0	106.6	93.7	86.9	81.5	80.4
77.5°	81.1	88.7	97.3	104.8	103.0	91.6	79.7	71.8	66.4	62.8	62.5
80°	58.5	62.5	68.2	73.2	70.7	66.4	57.4	52.1	48.5	44.9	43.4
82.5°	38.4	42.4	45.2	47.4	45.6	41.7	37.0	33.8	32.0	29.8	29.4
85°	22.3	24.4	25.9	26.6	25.9	23.3	20.8	19.4	17.6	16.5	16.2
87.5°	10.8	10.8	10.8	11.5	10.4	10.4	9.0	7.9	7.5	7.2	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°	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3	934.3
2.5°	918.8	916.7	909.1	905.2	898.7	892.6	888.7	890.5	891.9	891.2	890.1
5°	895.5	888.7	878.2	869.3	862.8	851.0	845.9	843.4	841.3	838.7	836.2
7.5°	869.6	859.9	845.2	833.7	822.2	807.2	799.6	795.3	790.6	785.2	780.2
10°	841.6	826.5	810.7	792.8	778.4	765.1	753.3	745.4	738.2	731.4	726.4
12.5°	812.2	794.2	773.8	747.5	731.4	710.9	711.6	696.2	684.0	680.4	674.3
15°	780.6	756.2	731.4	702.3	689.7	672.5	661.7	651.0	641.3	634.4	632.7
17.5°	746.1	713.4	689.4	667.8	647.4	629.8	620.4	611.8	603.6	593.5	593.2
20°	705.5	678.3	651.3	633.0	611.8	593.9	581.7	573.0	566.2	560.8	556.2
22.5°	667.1	636.6	612.5	592.1	571.3	557.6	548.6	540.4	535.0	528.9	524.6
25°	625.5	602.1	575.2	552.6	535.3	526.0	518.1	510.9	507.3	503.4	498.4
27.5°	589.9	564.1	537.5	519.9	504.1	495.9	489.7	484.4	481.1	478.6	475.4
30°	551.9	525.7	505.9	488.7	476.1	467.8	464.3	461.4	457.4	456.0	454.6
32.5°	515.2	492.3	476.1	461.7	449.9	445.2	442.0	439.5	436.6	435.2	431.9
35°	481.1	461.4	444.9	436.6	426.9	422.2	419.7	416.1	413.3	411.8	411.5
37.5°	448.5	430.5	419.4	408.2	403.6	401.1	397.5	395.0	393.9	393.5	393.2
40°	416.9	402.9	393.2	384.5	382.8	378.4	375.6	373.4	373.4	373.8	373.4
42.5°	388.1	375.9	367.7	360.5	358.3	356.2	353.3	353.7	354.4	355.8	354.4
45°	359.1	350.1	344.0	340.4	336.4	333.9	333.6	334.6	335.0	335.4	336.4
47.5°	331.8	326.0	320.3	316.0	314.2	313.8	313.1	314.9	316.7	317.0	318.8
50°	308.1	301.2	296.6	294.1	292.6	291.9	292.6	294.8	296.2	298.0	299.1
52.5°	281.5	277.2	274.3	272.5	272.2	272.9	272.9	275.4	277.9	278.3	278.6
55°	257.4	253.9	253.1	249.9	251.3	251.0	252.8	254.2	256.4	258.5	258.9
57.5°	233.0	229.8	227.6	228.0	228.4	229.8	231.2	233.7	236.3	238.8	238.8
60°	208.6	207.2	206.1	206.1	206.8	209.0	210.8	213.3	214.7	216.2	217.2
62.5°	186.3	184.9	183.8	184.6	186.7	187.8	189.9	191.0	192.5	193.9	194.2
65°	162.7	161.9	163.0	163.7	164.1	165.9	168.4	169.5	170.9	171.6	174.1
67.5°	141.1	141.1	140.7	141.8	144.0	144.3	146.9	149.7	149.7	151.2	153.0
70°	119.2	119.9	120.6	121.4	123.2	123.9	125.7	126.7	128.2	129.3	130.3
72.5°	99.1	99.1	99.8	99.5	100.9	102.7	104.1	105.2	106.6	108.1	109.2
75°	79.4	79.4	80.1	80.4	82.2	84.0	83.7	84.4	85.8	87.2	88.0
77.5°	61.4	60.7	61.4	61.8	62.5	63.9	64.3	65.3	67.1	66.8	67.5
80°	44.2	43.1	44.2	44.5	44.5	46.3	46.3	47.0	48.1	47.0	48.1
82.5°	28.4	28.0	28.7	28.7	29.4	29.1	29.8	29.8	30.9	30.5	30.9
85°	15.8	15.4	15.8	15.4	15.8	16.2	16.2	15.8	15.8	16.5	15.4
87.5°	6.1	5.7	5.4	5.4	5.0	4.7	4.3	4.3	4.3	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: P242295

CATALOG NUMBER: S122DR-S485D835-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	934.3	934.3	934.3	934.3
2.5°	886.5	885.8	885.8	882.6
5°	831.2	830.1	828.3	830.1
7.5°	778.8	774.1	773.4	769.8
10°	720.3	717.4	717.0	710.2
12.5°	675.7	667.8	669.6	666.4
15°	623.0	623.0	621.5	615.4
17.5°	585.3	584.9	581.7	583.8
20°	552.2	550.1	545.8	545.8
22.5°	521.0	521.3	516.7	518.5
25°	498.0	495.1	493.0	494.1
27.5°	474.3	473.2	472.9	469.6
30°	454.2	450.6	451.3	449.5
32.5°	431.2	430.5	429.4	428.0
35°	410.8	411.1	409.3	410.0
37.5°	392.4	393.9	392.8	392.8
40°	374.5	374.5	374.5	375.6
42.5°	357.3	356.5	355.8	355.5
45°	337.2	338.2	338.6	336.8
47.5°	319.6	319.9	319.6	321.7
50°	300.9	300.2	300.9	300.2
52.5°	281.1	281.5	280.8	280.8
55°	260.3	261.0	260.7	260.7
57.5°	239.1	239.5	240.2	238.4
60°	216.9	218.7	218.3	217.6
62.5°	196.4	196.8	196.8	196.8
65°	175.2	175.9	174.9	175.9
67.5°	152.2	152.6	153.3	153.7
70°	131.1	130.7	131.8	132.8
72.5°	108.8	109.9	109.2	109.9
75°	87.2	88.3	88.0	89.0
77.5°	66.8	67.1	67.1	67.5
80°	48.1	47.4	46.7	48.1
82.5°	29.8	30.5	29.8	29.4
85°	15.4	15.1	14.4	14.4
87.5°	3.6	3.2	3.2	2.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)