

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: P242310

Luminaire Tested: **S122DR-S485D935-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P242310  
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-S485D935-X4F0-XX-UDD-A-W  
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1774.5 lumens  
Efficiency: N/A  
Efficacy: 94.4 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

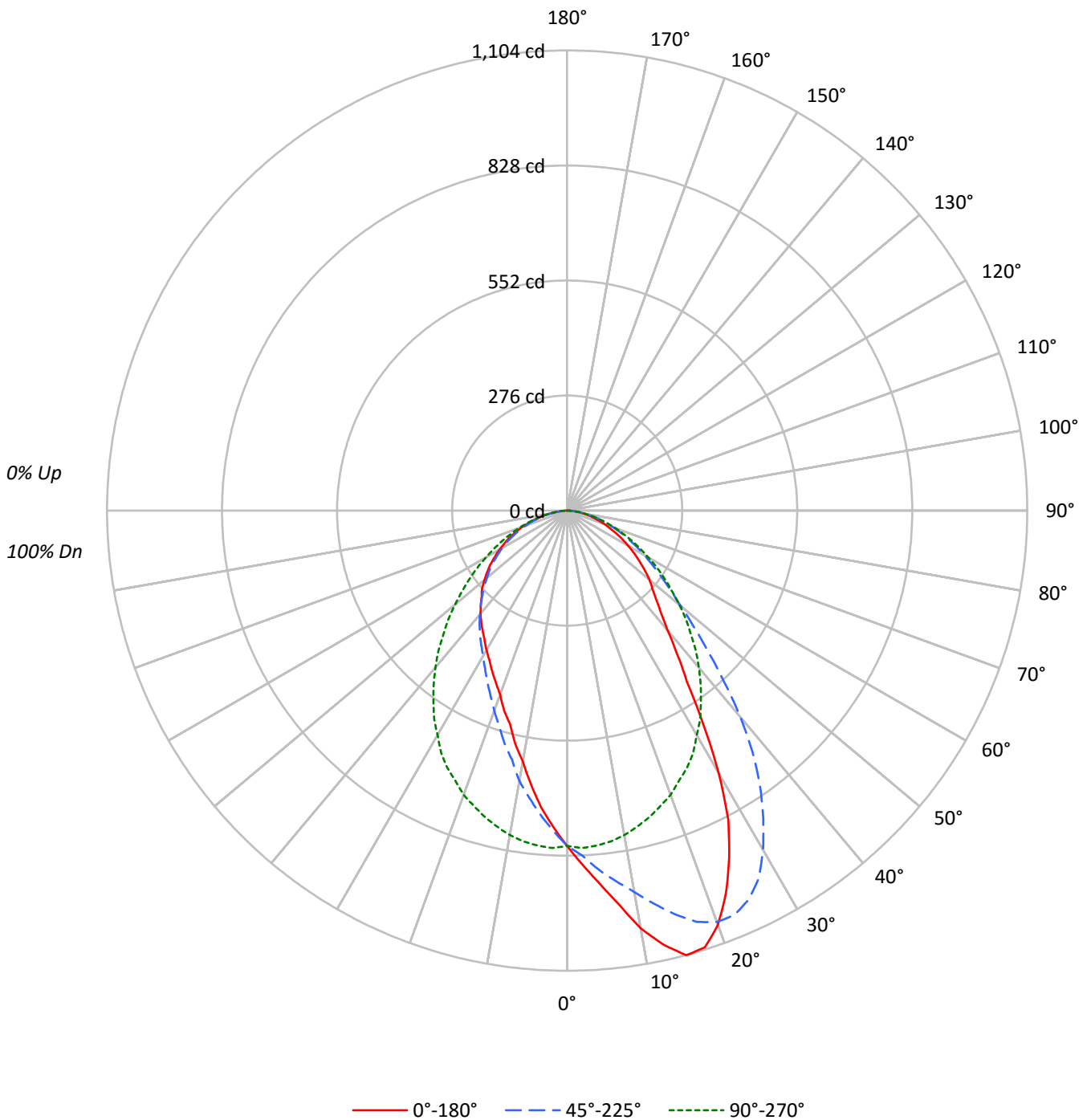
Input Watts (W): 18.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P242310

CATALOG NUMBER: S122DR-S485D935-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot





TEST NUMBER: P242310

CATALOG NUMBER: S122DR-S485D935-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°	15322	15322	15322
5°	17178	15423	13665
10°	19684	15295	11827
15°	21776	15015	10449
20°	21444	14714	9525
25°	19335	14312	8941
30°	15979	13674	8512
35°	11645	13003	8208
40°	9302	12214	8041
45°	8127	11300	7812
50°	7639	10416	7657
55°	7044	9518	7452
60°	6453	8560	7135
65°	5882	7707	6828
70°	5335	6867	6371
75°	4732	5939	5645
80°	4070	4914	4541
85°	3650	3650	2710



TEST NUMBER: P242310

CATALOG NUMBER: S122DR-S485D935-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	76.6	4.3
10°-20°	223.0	12.6
20°-30°	323.7	18.2
30°-40°	341.2	19.2
40°-50°	301.9	17.0
50°-60°	241.0	13.6
60°-70°	163.7	9.2
70°-80°	83.8	4.7
80°-90°	19.8	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°	623.3	35.1
0°-40°	964.4	54.3
0°-60°	1507.3	84.9
0°-90°	1774.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1774.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	804	804	804	804	804	
5°	898	865	807	733	715	89
15°	1104	1003	761	579	530	306
25°	920	1030	681	453	425	417
35°	501	807	559	364	353	324
45°	302	478	420	288	290	237
55°	212	275	287	216	224	190
65°	130	163	171	143	152	130
75°	64	79	81	72	77	69
85°	17	18	17	14	12	19
90°	0	0	0	0	0	



TEST NUMBER: P242310

CATALOG NUMBER: S122DR-S485D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4
2.5°	850.8	851.1	851.7	846.7	846.1	846.1	841.8	838.1	833.8	827.9	828.5
5°	898.4	901.8	903.0	899.3	893.7	893.1	887.9	879.2	871.2	864.7	860.0
7.5°	953.4	954.6	952.2	947.8	944.1	937.0	928.4	920.0	907.6	896.5	888.5
10°	1017.7	1019.6	1014.3	1007.2	1001.3	992.7	978.4	963.9	946.3	929.3	915.7
12.5°	1066.5	1071.8	1064.7	1065.3	1054.2	1041.5	1023.9	1018.3	991.7	966.4	951.5
15°	1104.3	1104.0	1104.6	1098.7	1091.3	1089.4	1071.5	1052.0	1017.1	1003.2	979.1
17.5°	1098.7	1103.0	1105.5	1103.6	1102.4	1099.6	1091.9	1077.4	1058.2	1034.7	1006.0
20°	1057.9	1064.1	1065.0	1072.1	1076.1	1081.4	1083.6	1080.2	1069.3	1050.5	1026.4
22.5°	994.8	995.4	998.8	1010.9	1020.8	1035.9	1044.0	1059.1	1056.7	1049.9	1030.7
25°	920.0	916.9	927.7	933.3	953.4	974.4	989.6	1006.3	1021.1	1030.1	1024.2
27.5°	837.2	830.7	847.1	861.6	875.8	896.2	919.1	946.3	967.0	995.1	1001.9
30°	726.5	729.3	744.7	760.5	785.2	817.4	844.0	874.6	907.6	940.1	962.7
32.5°	607.2	619.8	628.2	654.5	675.5	712.3	754.3	794.5	837.8	875.8	913.8
35°	500.8	513.2	526.8	544.4	575.0	610.6	648.6	700.2	756.5	806.9	848.3
37.5°	433.4	431.3	439.6	452.6	478.9	509.5	554.6	607.2	674.6	730.5	786.2
40°	374.1	372.8	378.4	390.1	409.0	430.0	468.4	513.2	574.7	647.0	716.6
42.5°	333.3	334.5	337.0	344.4	355.8	372.2	398.5	435.0	490.0	557.1	633.1
45°	301.7	303.9	307.3	311.3	318.7	332.9	349.0	376.2	420.7	477.6	551.2
47.5°	277.0	277.6	281.3	285.0	289.4	298.0	312.2	329.5	363.6	412.1	477.9
50°	257.8	255.7	258.1	260.9	265.6	271.1	279.8	295.9	316.9	354.3	407.1
52.5°	234.3	235.0	237.1	237.7	241.8	247.3	255.0	264.9	283.5	310.7	351.8
55°	212.1	213.6	214.9	216.7	220.4	224.4	230.6	238.0	252.9	274.8	307.0
57.5°	191.1	191.7	192.6	196.6	198.8	202.5	208.7	215.5	225.4	242.4	267.7
60°	169.4	169.4	171.9	173.4	176.5	180.2	184.9	191.4	200.0	213.3	232.8
62.5°	149.6	149.3	149.9	152.7	154.9	158.3	162.9	168.2	176.2	187.7	202.8
65°	130.5	129.8	131.7	132.3	134.8	138.2	141.9	147.8	154.3	162.9	177.1
67.5°	111.3	112.2	113.5	114.7	115.9	119.9	122.4	126.7	132.3	139.7	149.6
70°	95.8	95.8	95.8	96.8	98.6	100.5	102.9	106.3	111.6	117.8	126.4
72.5°	78.5	79.8	81.0	80.1	82.5	83.5	86.6	88.1	93.1	96.5	103.9
75°	64.3	64.3	64.3	65.8	66.8	67.7	69.6	71.4	73.9	78.8	82.9
77.5°	50.7	50.4	50.7	51.0	52.2	53.5	54.1	55.6	58.1	60.6	64.3
80°	37.1	37.7	38.0	38.6	38.6	39.3	39.6	41.7	43.3	44.8	47.0
82.5°	26.6	26.6	26.6	26.6	26.9	27.2	28.1	28.4	28.8	30.0	31.5
85°	16.7	16.4	16.4	17.0	16.7	16.7	17.3	17.9	17.9	18.2	19.2
87.5°	8.0	8.0	8.3	8.0	8.0	8.3	8.3	8.0	8.3	8.7	9.0
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: P242310

CATALOG NUMBER: S122DR-S485D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4
2.5°	830.7	828.2	826.7	821.1	816.1	811.2	809.7	810.3	803.5	797.0	794.2
5°	857.6	851.4	845.5	837.2	827.3	816.5	810.9	806.6	795.7	784.0	777.2
7.5°	882.0	874.0	863.4	848.6	835.0	818.9	809.0	800.7	785.5	769.8	760.2
10°	903.9	891.9	877.4	858.2	840.6	819.9	805.3	790.8	772.2	752.5	740.1
12.5°	922.8	905.5	891.3	865.3	843.7	816.5	798.5	776.6	756.8	732.4	720.3
15°	954.9	925.0	897.8	869.9	844.3	808.1	788.9	761.4	735.8	706.7	692.8
17.5°	978.8	946.3	904.2	870.6	842.1	803.5	776.0	743.2	714.1	682.0	663.4
20°	998.5	959.9	913.8	871.8	835.9	790.2	759.6	725.9	690.3	652.9	632.5
22.5°	1010.3	969.2	923.7	867.2	823.6	779.4	738.9	701.1	665.0	623.9	602.2
25°	1010.9	973.8	925.6	865.0	813.7	763.3	716.9	681.0	637.5	599.7	568.5
27.5°	1000.7	971.3	924.7	860.7	802.2	744.4	694.0	654.8	608.7	567.9	536.7
30°	978.1	962.7	917.5	853.2	788.0	724.6	667.8	621.7	575.9	534.5	502.4
32.5°	943.2	942.9	904.6	842.7	772.9	699.6	640.2	593.6	541.6	501.1	470.8
35°	895.3	910.1	885.1	826.0	753.1	676.1	612.4	559.2	506.7	467.7	439.0
37.5°	834.4	868.7	858.8	803.8	727.7	651.1	581.8	526.2	475.8	435.6	407.5
40°	771.0	818.0	824.8	777.5	700.5	621.1	546.6	491.2	442.4	406.5	378.1
42.5°	703.0	759.9	781.5	746.0	670.8	589.5	515.0	457.2	409.0	374.4	350.0
45°	625.4	698.0	731.7	710.1	637.1	554.3	477.6	419.5	375.6	342.8	323.4
47.5°	555.2	634.1	677.0	666.8	601.0	518.7	443.0	386.4	342.8	316.3	298.0
50°	479.8	561.4	616.1	618.6	561.4	480.1	404.1	351.5	312.2	287.8	273.6
52.5°	414.3	491.2	552.1	567.9	517.2	439.9	369.1	316.9	283.5	261.5	249.2
55°	358.9	424.8	490.9	515.0	473.3	399.1	332.6	286.6	254.1	238.7	227.5
57.5°	306.4	364.2	426.9	452.3	425.7	360.5	296.2	255.7	228.1	214.2	205.6
60°	266.5	309.8	364.2	396.0	373.8	317.2	262.8	224.7	203.1	191.1	183.0
62.5°	229.4	266.5	310.4	338.8	329.2	276.7	229.4	196.9	179.0	167.9	162.6
65°	195.4	225.7	261.2	288.1	280.1	239.6	199.7	171.0	156.1	147.2	142.5
67.5°	166.3	189.5	214.9	239.6	232.8	202.8	169.1	145.9	134.5	126.4	123.7
70°	139.1	155.8	177.8	196.6	191.4	167.9	142.5	123.3	113.8	107.3	104.5
72.5°	113.1	126.1	141.6	156.1	153.0	134.5	114.4	101.1	94.3	88.4	86.3
75°	89.3	99.9	110.1	120.3	119.3	104.2	91.8	80.7	74.8	70.2	69.2
77.5°	69.9	76.4	83.8	90.3	88.7	78.8	68.6	61.8	57.2	54.1	53.8
80°	50.4	53.8	58.7	63.1	60.9	57.2	49.5	44.8	41.7	38.6	37.4
82.5°	33.1	36.5	39.0	40.8	39.3	35.9	31.8	29.1	27.5	25.7	25.3
85°	19.2	21.0	22.3	22.9	22.3	20.1	17.9	16.7	15.1	14.2	13.9
87.5°	9.3	9.3	9.3	9.9	9.0	9.0	7.7	6.8	6.5	6.2	5.6
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: P242310

CATALOG NUMBER: S122DR-S485D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4	804.4
2.5°	791.1	789.2	782.8	779.4	773.8	768.5	765.1	766.7	767.9	767.3	766.4
5°	771.0	765.1	756.2	748.4	742.9	732.7	728.3	726.2	724.3	722.2	720.0
7.5°	748.7	740.4	727.7	717.8	707.9	695.0	688.5	684.8	680.7	676.1	671.8
10°	724.6	711.7	698.0	682.6	670.2	658.8	648.6	641.8	635.6	629.7	625.4
12.5°	699.3	683.8	666.2	643.6	629.7	612.1	612.7	599.4	588.9	585.8	580.6
15°	672.1	651.1	629.7	604.7	593.9	579.0	569.8	560.5	552.1	546.3	544.7
17.5°	642.4	614.3	593.6	575.0	557.4	542.2	534.2	526.8	519.7	511.0	510.7
20°	607.5	584.0	560.8	545.0	526.8	511.3	500.8	493.4	487.5	482.9	478.9
22.5°	574.4	548.1	527.4	509.8	491.8	480.1	472.4	465.3	460.6	455.4	451.7
25°	538.5	518.4	495.3	475.8	460.9	452.9	446.1	439.9	436.8	433.4	429.1
27.5°	507.9	485.7	462.8	447.6	434.0	426.9	421.7	417.0	414.3	412.1	409.3
30°	475.2	452.6	435.6	420.7	409.9	402.8	399.7	397.3	393.9	392.6	391.4
32.5°	443.6	423.8	409.9	397.6	387.4	383.3	380.6	378.4	375.9	374.7	371.9
35°	414.3	397.3	383.0	375.9	367.6	363.6	361.4	358.3	355.8	354.6	354.3
37.5°	386.1	370.7	361.1	351.5	347.5	345.3	342.2	340.1	339.1	338.8	338.5
40°	358.9	346.9	338.5	331.1	329.5	325.8	323.4	321.5	321.5	321.8	321.5
42.5°	334.2	323.7	316.6	310.4	308.5	306.7	304.2	304.5	305.1	306.4	305.1
45°	309.1	301.4	296.2	293.1	289.7	287.5	287.2	288.1	288.4	288.7	289.7
47.5°	285.6	280.7	275.8	272.0	270.5	270.2	269.6	271.1	272.7	273.0	274.5
50°	265.2	259.4	255.4	253.2	252.0	251.3	252.0	253.8	255.0	256.6	257.5
52.5°	242.4	238.7	236.2	234.6	234.3	235.0	235.0	237.1	239.3	239.6	239.9
55°	221.7	218.6	217.9	215.2	216.4	216.1	217.6	218.9	220.7	222.6	222.9
57.5°	200.6	197.9	196.0	196.3	196.6	197.9	199.1	201.3	203.4	205.6	205.6
60°	179.6	178.4	177.4	177.4	178.1	179.9	181.5	183.6	184.9	186.1	187.0
62.5°	160.4	159.2	158.3	158.9	160.8	161.7	163.5	164.5	165.7	166.9	167.2
65°	140.0	139.4	140.4	141.0	141.3	142.8	145.0	145.9	147.2	147.8	149.9
67.5°	121.5	121.5	121.2	122.1	124.0	124.3	126.4	128.9	128.9	130.2	131.7
70°	102.6	103.3	103.9	104.5	106.0	106.7	108.2	109.1	110.4	111.3	112.2
72.5°	85.3	85.3	85.9	85.6	86.9	88.4	89.7	90.6	91.8	93.1	94.0
75°	68.3	68.3	68.9	69.2	70.8	72.3	72.0	72.6	73.9	75.1	75.7
77.5°	52.9	52.2	52.9	53.2	53.8	55.0	55.3	56.3	57.8	57.5	58.1
80°	38.0	37.1	38.0	38.3	38.3	39.9	39.9	40.5	41.4	40.5	41.4
82.5°	24.4	24.1	24.7	24.7	25.3	25.0	25.7	25.7	26.6	26.3	26.6
85°	13.6	13.3	13.6	13.3	13.6	13.9	13.9	13.6	13.6	14.2	13.3
87.5°	5.3	4.9	4.6	4.6	4.3	4.0	3.7	3.7	3.7	3.1	3.1
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: P242310

CATALOG NUMBER: S122DR-S485D935-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	804.4	804.4	804.4	804.4
2.5°	763.3	762.7	762.7	759.9
5°	715.7	714.7	713.2	714.7
7.5°	670.5	666.5	665.9	662.8
10°	620.1	617.7	617.4	611.5
12.5°	581.8	575.0	576.6	573.8
15°	536.4	536.4	535.1	529.9
17.5°	503.9	503.6	500.8	502.7
20°	475.5	473.6	469.9	469.9
22.5°	448.6	448.9	444.9	446.4
25°	428.8	426.3	424.5	425.4
27.5°	408.4	407.5	407.1	404.4
30°	391.1	388.0	388.6	387.0
32.5°	371.3	370.7	369.7	368.5
35°	353.7	354.0	352.4	353.0
37.5°	337.9	339.1	338.2	338.2
40°	322.4	322.4	322.4	323.4
42.5°	307.6	307.0	306.4	306.1
45°	290.3	291.2	291.5	290.0
47.5°	275.1	275.4	275.1	277.0
50°	259.1	258.4	259.1	258.4
52.5°	242.1	242.4	241.8	241.8
55°	224.1	224.7	224.4	224.4
57.5°	205.9	206.2	206.8	205.3
60°	186.7	188.3	188.0	187.3
62.5°	169.1	169.4	169.4	169.4
65°	150.9	151.5	150.6	151.5
67.5°	131.1	131.4	132.0	132.3
70°	112.8	112.5	113.5	114.4
72.5°	93.7	94.6	94.0	94.6
75°	75.1	76.0	75.7	76.7
77.5°	57.5	57.8	57.8	58.1
80°	41.4	40.8	40.2	41.4
82.5°	25.7	26.3	25.7	25.3
85°	13.3	13.0	12.4	12.4
87.5°	3.1	2.8	2.8	2.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)