

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: P331280-930

Luminaire Tested: **SA2XXDIP-C290D1080U930-4F0-1E-UDD-D1**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331280-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C290D1080U930-4F0-1E-UDD-D1  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4117.4 lumens  
Efficiency: N/A  
Efficacy: 97.6 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

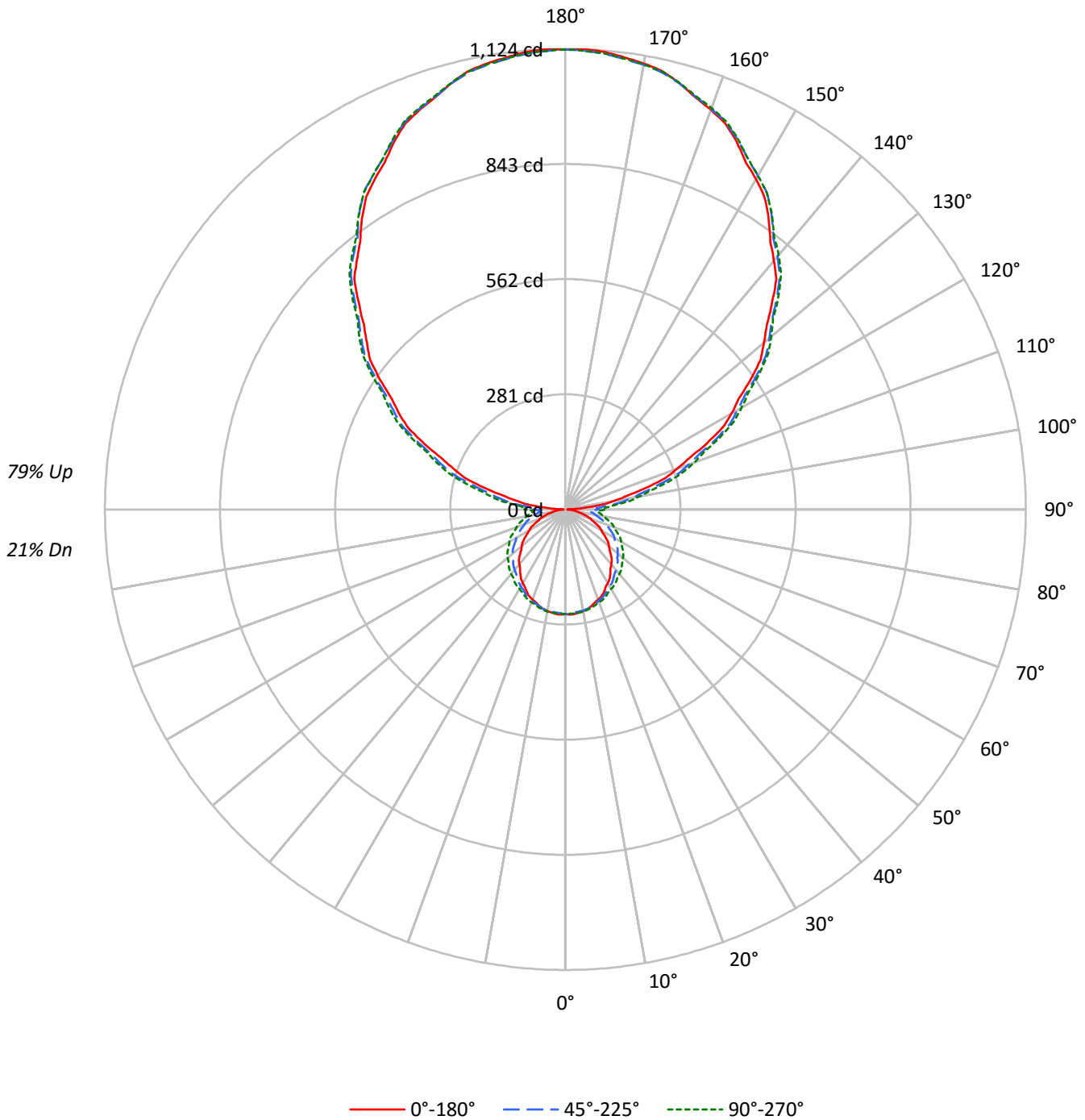
Input Watts (W): 42.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331280-930

CATALOG NUMBER: SA2XXDIP-C290D1080U930-4F0-1E-UDD-D1

### Luminous Intensity Polar Plot





TEST NUMBER: P331280-930

CATALOG NUMBER: SA2XXDIP-C290D1080U930-4F0-1E-UDD-D1

**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	100	100	100	100	89	89	89	89	67	67	67	48	48	48	30	30	30	21
1	91	86	82	79	80	76	73	70	58	56	54	41	39	38	25	24	24	16
2	82	75	69	64	72	66	61	57	50	47	44	35	33	31	22	20	19	13
3	75	66	58	53	66	58	52	47	44	40	36	31	28	26	19	17	16	11
4	68	58	50	44	60	51	45	40	39	34	31	27	24	22	17	15	14	9
5	62	51	43	37	55	45	39	34	35	30	26	24	21	19	15	13	12	8
6	57	46	38	32	50	41	34	29	31	26	23	22	19	16	14	12	10	7
7	53	41	33	28	46	36	30	25	28	23	20	20	17	14	12	10	9	6
8	49	37	29	24	43	33	26	22	25	21	17	18	15	13	11	9	8	5
9	45	34	26	21	40	30	24	19	23	18	15	16	13	11	10	9	7	5
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	10	8	6	4

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

	0°	45°	90°
0°	4127	4127	4127
5°	4146	3973	3957
10°	4121	3855	3812
15°	4063	3730	3659
20°	3992	3597	3511
25°	3922	3468	3376
30°	3821	3336	3241
35°	3720	3209	3148
40°	3615	3101	3051
45°	3512	3004	2971
50°	3404	2917	2891
55°	3289	2822	2810
60°	3151	2723	2724
65°	3006	2608	2622
70°	2844	2485	2512
75°	2639	2365	2410
80°	2312	2240	2305
85°	2005	2134	2226



TEST NUMBER: P331280-930

CATALOG NUMBER: SA2XXDIP-C290D1080U930-4F0-1E-UDD-D1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	24.2	0.6
10°-20°	69.4	1.7
20°-30°	105.2	2.6
30°-40°	128.2	3.1
40°-50°	137.9	3.3
50°-60°	133.9	3.3
60°-70°	116.9	2.8
70°-80°	90.0	2.2
80°-90°	64.9	1.6
90°-100°	112.7	2.7
100°-110°	251.2	6.1
110°-120°	397.6	9.7
120°-130°	507.7	12.3
130°-140°	561.9	13.6
140°-150°	547.2	13.3
150°-160°	458.3	11.1
160°-170°	304.0	7.4
170°-180°	106.2	2.6
0°-30°	198.9	4.8
0°-40°	327.1	7.9
0°-60°	598.8	14.5
0°-90°	870.7	21.1
90°-120°	761.6	18.5
90°-150°	2378.3	57.8
90°-180°	3247.0	78.9
0°-180°	4117.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	256	256	256	256	256	
5°	256	255	253	255	255	24
15°	244	245	245	248	248	69
25°	222	225	228	232	234	102
35°	192	198	205	213	216	120
45°	157	167	180	191	195	121
55°	120	134	153	166	171	108
65°	82	101	122	137	142	82
75°	46	66	90	105	111	48
85°	13	36	60	75	81	14
90°	5	38	82	95	100	5
95°	52	79	103	117	120	59
105°	206	219	240	254	259	217
115°	380	390	405	414	416	376
125°	552	560	570	576	579	493
135°	714	724	730	736	736	551
145°	866	872	878	881	879	541
155°	990	992	995	1000	997	455
165°	1077	1076	1076	1082	1078	304
175°	1120	1118	1116	1122	1117	106
180°	1122	1122	1122	1122	1122	



TEST NUMBER: P331280-930

CATALOG NUMBER: SA2XXDIP-C290D1080U930-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6
2.5°	257.1	256.8	256.7	256.4	256.2	255.9	255.4	255.0	254.5	254.0	254.4
5°	256.3	256.1	255.8	255.6	255.3	254.9	254.5	254.0	253.5	253.0	253.5
7.5°	254.0	253.8	253.6	253.5	253.3	253.1	252.7	252.3	251.9	251.5	252.2
10°	252.3	252.1	251.9	251.8	251.6	251.4	251.1	250.9	250.6	250.4	251.0
12.5°	249.2	249.3	249.3	249.4	249.4	249.3	249.2	249.0	248.7	248.6	249.2
15°	244.4	244.6	244.8	244.9	245.1	245.2	245.2	245.2	245.2	245.2	245.9
17.5°	238.2	238.6	238.9	239.3	239.6	239.9	240.2	240.4	240.7	241.0	241.7
20°	234.1	234.5	234.9	235.3	235.7	236.1	236.4	236.8	237.1	237.4	238.3
22.5°	229.7	230.1	230.6	231.1	231.5	232.0	232.4	232.9	233.4	233.8	234.7
25°	222.3	222.8	223.4	224.0	224.5	225.2	225.9	226.7	227.4	228.1	229.1
27.5°	213.4	214.3	215.2	216.1	217.1	218.0	218.8	219.7	220.6	221.5	222.7
30°	207.4	208.5	209.5	210.6	211.7	212.8	213.9	214.9	216.0	217.0	218.3
32.5°	200.9	202.1	203.3	204.5	205.7	206.9	208.2	209.5	210.8	212.0	213.5
35°	191.5	192.9	194.3	195.7	197.1	198.5	200.2	201.7	203.3	204.8	206.6
37.5°	181.2	182.9	184.5	186.1	187.7	189.6	191.6	193.6	195.6	197.6	199.7
40°	174.5	176.3	178.1	179.9	181.6	183.7	185.9	188.2	190.4	192.6	194.7
42.5°	168.0	169.7	171.5	173.3	175.2	177.3	179.9	182.5	185.0	187.5	189.9
45°	157.0	159.2	161.5	163.7	165.9	168.4	171.4	174.2	177.1	180.0	182.5
47.5°	146.3	148.7	151.2	153.5	156.0	158.9	162.2	165.6	169.0	172.4	175.0
50°	138.9	141.5	144.0	146.5	149.1	152.2	156.0	159.6	163.3	167.1	169.8
52.5°	131.8	134.4	137.1	139.8	142.5	145.8	149.7	153.6	157.5	161.4	164.3
55°	120.3	123.4	126.3	129.2	132.2	135.8	140.1	144.4	148.7	153.0	156.0
57.5°	109.1	112.4	115.8	119.1	122.5	126.3	130.7	135.0	139.4	143.8	147.0
60°	101.1	104.7	108.2	111.7	115.3	119.4	124.1	128.7	133.5	138.1	141.3
62.5°	94.0	97.7	101.3	105.0	108.7	112.8	117.6	122.2	126.9	131.7	134.9
65°	82.2	86.3	90.3	94.3	98.3	102.8	107.6	112.5	117.4	122.2	125.6
67.5°	71.4	75.7	79.8	84.1	88.3	92.9	97.8	102.8	107.8	112.8	116.2
70°	63.7	68.0	72.2	76.6	80.8	85.5	90.6	95.7	100.9	105.9	109.5
72.5°	56.6	61.0	65.4	69.8	74.3	79.0	84.2	89.4	94.6	99.7	103.2
75°	45.6	50.1	54.8	59.4	64.0	68.9	74.2	79.5	84.7	90.0	93.5
77.5°	34.9	39.7	44.5	49.3	54.2	59.3	64.7	70.0	75.3	80.6	84.2
80°	27.8	32.8	37.8	42.8	47.9	53.1	58.4	63.8	69.1	74.4	77.9
82.5°	21.9	26.8	31.8	36.7	41.7	46.9	52.3	57.7	63.1	68.5	72.0
85°	13.4	18.4	23.6	28.6	33.8	38.9	44.2	49.5	54.7	60.0	63.4
87.5°	7.4	12.9	18.3	23.6	29.1	34.9	41.1	47.3	53.5	59.7	62.9
90°	4.6	12.0	19.2	26.6	33.8	42.5	52.3	62.2	72.2	82.0	84.9
92.5°	20.3	26.6	32.9	39.1	45.4	51.7	57.8	64.0	70.2	76.3	79.7
95°	52.2	58.2	64.2	70.1	76.1	81.8	87.2	92.5	97.8	103.2	106.3
97.5°	92.5	97.8	103.1	108.4	113.7	119.1	124.7	130.2	135.7	141.3	144.4
100°	122.9	127.6	132.3	137.1	141.8	146.8	152.0	157.3	162.5	167.7	170.8
102.5°	154.4	158.5	162.7	166.8	170.9	175.6	180.9	186.1	191.4	196.7	199.8
105°	205.5	208.5	211.5	214.5	217.5	221.4	226.1	230.8	235.5	240.2	243.5
107.5°	257.3	260.2	262.9	265.8	268.6	272.1	276.2	280.3	284.4	288.5	291.4
110°	290.3	293.3	296.1	299.1	302.0	305.4	309.5	313.5	317.6	321.6	324.2



TEST NUMBER: P331280-930

CATALOG NUMBER: SA2XXDIP-C290D1080U930-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	326.7	329.3	332.0	334.6	337.3	340.5	344.1	347.8	351.4	355.1	357.3
115°	380.3	382.5	384.7	386.8	389.0	391.7	395.0	398.3	401.5	404.8	407.1
117.5°	433.3	435.6	437.9	440.2	442.5	444.7	446.9	449.2	451.4	453.7	455.6
120°	469.0	471.0	473.0	475.0	477.0	478.8	480.5	482.0	483.6	485.3	487.5
122.5°	501.5	503.7	505.8	508.0	510.1	512.2	514.0	516.0	517.9	519.8	521.5
125°	552.0	553.8	555.7	557.6	559.5	561.4	563.5	565.4	567.4	569.5	571.0
127.5°	601.4	603.6	606.0	608.3	610.7	612.5	613.8	615.2	616.5	617.9	619.2
130°	632.4	635.0	637.7	640.3	643.0	645.0	646.3	647.6	648.9	650.2	651.8
132.5°	667.2	669.4	671.6	673.7	675.9	677.7	679.1	680.4	681.9	683.3	684.3
135°	713.5	715.8	718.1	720.4	722.8	724.6	725.8	727.0	728.2	729.5	731.0
137.5°	762.5	764.4	766.3	768.2	770.1	771.4	772.3	773.2	774.2	775.1	776.4
140°	792.1	793.9	795.7	797.5	799.3	800.9	802.1	803.3	804.5	805.8	807.1
142.5°	822.4	824.2	826.1	827.9	829.6	831.0	831.7	832.4	833.2	833.9	835.1
145°	865.6	867.1	868.5	870.0	871.5	872.9	874.1	875.4	876.6	877.9	878.6
147.5°	904.4	906.2	907.9	909.7	911.5	912.8	913.6	914.5	915.3	916.2	916.7
150°	930.9	932.2	933.4	934.7	936.0	937.0	937.9	938.7	939.6	940.4	941.0
152.5°	954.4	955.7	956.9	958.2	959.4	960.6	961.6	962.6	963.7	964.7	965.5
155°	989.7	990.3	990.9	991.6	992.2	992.8	993.4	994.1	994.7	995.3	996.4
157.5°	1019.8	1020.2	1020.6	1021.0	1021.5	1021.8	1022.2	1022.6	1023.0	1023.4	1024.8
160°	1038.0	1038.4	1038.8	1039.2	1039.7	1039.9	1040.2	1040.4	1040.6	1040.8	1042.0
162.5°	1054.6	1054.7	1054.8	1054.8	1055.0	1055.1	1055.3	1055.5	1055.7	1056.0	1057.4
165°	1076.8	1076.6	1076.4	1076.1	1076.0	1075.9	1075.9	1075.9	1075.9	1075.9	1077.3
167.5°	1095.4	1094.7	1094.1	1093.5	1092.8	1092.5	1092.4	1092.4	1092.3	1092.3	1093.8
170°	1105.2	1104.6	1103.9	1103.3	1102.7	1102.3	1102.0	1101.8	1101.6	1101.4	1102.9
172.5°	1112.0	1111.4	1110.8	1110.1	1109.5	1109.1	1108.9	1108.6	1108.4	1108.2	1109.7
175°	1120.4	1119.7	1119.1	1118.4	1117.9	1117.3	1116.9	1116.5	1116.1	1115.6	1117.1
177.5°	1123.7	1123.2	1122.7	1122.3	1121.8	1121.3	1121.0	1120.6	1120.3	1120.0	1121.0
180°	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3



TEST NUMBER: P331280-930

CATALOG NUMBER: SA2XXDIP-C290D1080U930-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6
2.5°	254.7	255.0	255.4	255.5	255.4	255.2	255.1	254.9
5°	254.0	254.5	254.9	255.1	255.0	254.9	254.9	254.8
7.5°	252.7	253.3	254.0	254.2	254.1	254.0	254.0	253.9
10°	251.7	252.3	253.0	253.3	253.2	253.2	253.1	253.0
12.5°	249.9	250.5	251.2	251.5	251.4	251.4	251.3	251.2
15°	246.6	247.4	248.2	248.5	248.4	248.3	248.3	248.2
17.5°	242.6	243.3	244.0	244.4	244.4	244.4	244.4	244.4
20°	239.2	240.1	241.0	241.5	241.5	241.5	241.5	241.5
22.5°	235.7	236.6	237.5	238.0	238.1	238.2	238.4	238.6
25°	230.2	231.1	232.1	232.7	232.9	233.2	233.4	233.7
27.5°	224.0	225.3	226.5	227.2	227.4	227.6	227.7	228.0
30°	219.6	221.0	222.3	223.1	223.3	223.6	223.8	224.0
32.5°	215.0	216.5	218.1	219.1	219.5	220.0	220.4	220.8
35°	208.5	210.3	212.1	213.3	213.9	214.4	215.0	215.6
37.5°	201.6	203.7	205.7	207.0	207.6	208.2	208.8	209.4
40°	196.9	199.0	201.1	202.6	203.3	204.1	204.8	205.5
42.5°	192.2	194.5	196.9	198.4	199.2	199.9	200.6	201.4
45°	185.1	187.7	190.2	191.9	192.7	193.6	194.4	195.2
47.5°	177.7	180.3	183.0	184.8	185.7	186.6	187.5	188.4
50°	172.6	175.5	178.2	180.1	181.0	181.9	182.8	183.7
52.5°	167.1	170.0	172.8	174.8	175.8	176.8	177.7	178.6
55°	158.9	161.8	164.9	166.8	167.9	169.0	170.1	171.1
57.5°	150.2	153.4	156.5	158.7	159.8	160.9	161.9	163.1
60°	144.4	147.6	150.7	152.8	153.9	155.1	156.3	157.4
62.5°	138.3	141.6	145.0	147.2	148.2	149.3	150.4	151.5
65°	129.0	132.3	135.7	137.9	139.0	140.1	141.1	142.2
67.5°	119.5	122.9	126.4	128.7	129.7	130.9	132.0	133.1
70°	113.0	116.5	120.1	122.4	123.4	124.3	125.3	126.3
72.5°	106.6	110.1	113.6	115.9	117.1	118.3	119.5	120.7
75°	97.1	100.6	104.2	106.5	107.5	108.6	109.7	110.7
77.5°	87.7	91.2	94.7	97.1	98.2	99.4	100.5	101.7
80°	81.4	84.8	88.3	90.6	91.7	92.9	94.0	95.1
82.5°	75.4	78.9	82.3	84.6	85.7	86.8	87.9	88.9
85°	66.9	70.4	73.9	76.1	77.3	78.4	79.6	80.7
87.5°	66.2	69.5	72.7	74.9	76.1	77.1	78.3	79.3
90°	87.8	90.7	93.5	95.6	96.8	97.9	99.1	100.4
92.5°	83.0	86.3	89.6	91.7	92.8	93.8	94.8	95.9
95°	109.5	112.6	115.7	117.6	118.1	118.7	119.3	119.8
97.5°	147.4	150.4	153.5	155.5	156.4	157.4	158.2	159.2
100°	173.8	176.8	179.9	181.8	182.5	183.2	183.8	184.6
102.5°	203.0	206.2	209.3	211.2	211.9	212.6	213.3	214.0
105°	246.8	250.1	253.4	255.5	256.4	257.3	258.2	259.1
107.5°	294.3	297.3	300.2	301.7	301.6	301.5	301.5	301.4
110°	326.9	329.5	332.1	333.5	333.9	334.1	334.4	334.7





TEST NUMBER: P331280-930

CATALOG NUMBER: SA2XXDIP-C290D1080U930-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	359.4	361.5	363.6	364.9	365.3	365.8	366.2	366.6
115°	409.4	411.6	413.8	415.2	415.4	415.6	416.0	416.2
117.5°	457.5	459.5	461.4	462.5	462.7	462.9	463.1	463.3
120°	489.8	492.2	494.5	495.8	496.0	496.3	496.6	496.8
122.5°	523.3	525.1	526.8	527.8	528.1	528.4	528.7	529.0
125°	572.7	574.2	575.8	576.9	577.4	578.0	578.5	579.0
127.5°	620.5	621.7	623.1	623.7	623.8	623.9	623.9	623.9
130°	653.4	654.9	656.5	657.1	657.0	656.8	656.6	656.4
132.5°	685.3	686.2	687.2	687.7	687.7	687.7	687.7	687.7
135°	732.5	734.1	735.6	736.4	736.4	736.4	736.5	736.5
137.5°	777.8	779.1	780.5	781.0	780.7	780.4	780.2	779.9
140°	808.4	809.7	811.0	811.5	811.1	810.8	810.4	810.1
142.5°	836.3	837.6	838.8	839.2	838.8	838.4	838.0	837.6
145°	879.3	880.0	880.7	880.8	880.4	880.0	879.5	879.1
147.5°	917.2	917.8	918.3	918.3	917.6	917.0	916.4	915.8
150°	941.7	942.3	943.0	943.0	942.3	941.7	941.0	940.4
152.5°	966.3	967.0	967.8	967.8	967.0	966.3	965.5	964.7
155°	997.4	998.5	999.6	999.7	999.1	998.5	997.8	997.2
157.5°	1026.2	1027.7	1029.1	1029.3	1028.3	1027.3	1026.3	1025.2
160°	1043.3	1044.6	1045.9	1046.0	1045.2	1044.4	1043.5	1042.7
162.5°	1058.8	1060.2	1061.7	1061.8	1060.9	1059.9	1058.8	1057.9
165°	1078.8	1080.3	1081.7	1081.9	1080.9	1079.9	1078.8	1077.7
167.5°	1095.3	1096.7	1098.2	1098.4	1097.3	1096.2	1095.1	1094.1
170°	1104.3	1105.8	1107.3	1107.4	1106.1	1104.9	1103.6	1102.4
172.5°	1111.2	1112.6	1114.1	1114.2	1113.0	1111.7	1110.4	1109.1
175°	1118.6	1120.1	1121.5	1121.6	1120.4	1119.1	1117.9	1116.6
177.5°	1122.0	1123.0	1124.0	1124.0	1123.0	1122.0	1121.0	1120.0
180°	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3

(END OF REPORT)