

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: P331280-840

Luminaire Tested: **SA2XXDIP-C290D1080U840-4F0-1E-UDD-D1**

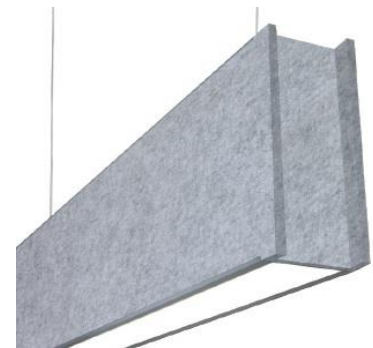
Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331280-840  
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-C290D1080U840-4F0-1E-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

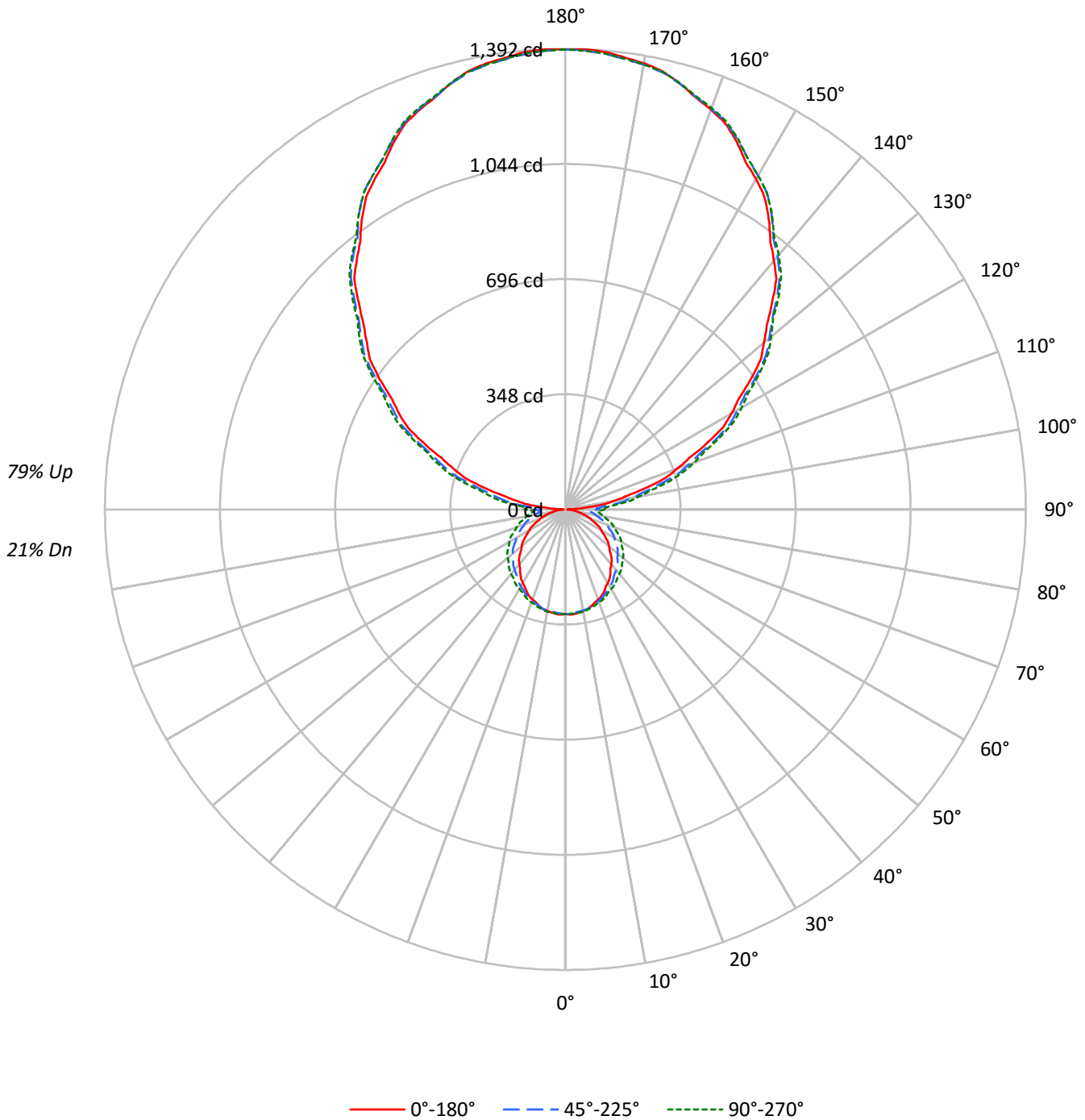
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5100.0 lumens  
Efficiency: N/A  
Efficacy: 120.9 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: P331280-840  
CATALOG NUMBER: SA2XXDIP-C290D1080U840-4F0-1E-UDD-D1

### 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	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°	5112	5112	5112
5°	5137	4921	4901
10°	5105	4774	4722
15°	5033	4621	4531
20°	4944	4456	4348
25°	4857	4297	4181
30°	4733	4133	4015
35°	4608	3975	3898
40°	4476	3840	3780
45°	4351	3721	3681
50°	4218	3612	3581
55°	4076	3496	3482
60°	3902	3373	3374
65°	3723	3232	3247
70°	3523	3079	3110
75°	3270	2929	2984
80°	2861	2776	2858
85°	2484	2642	2759



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	30.0	0.6
10°-20°	86.0	1.7
20°-30°	130.3	2.6
30°-40°	158.8	3.1
40°-50°	170.8	3.3
50°-60°	165.9	3.3
60°-70°	144.8	2.8
70°-80°	111.5	2.2
80°-90°	80.4	1.6
90°-100°	139.6	2.7
100°-110°	311.2	6.1
110°-120°	492.5	9.7
120°-130°	628.8	12.3
130°-140°	696.0	13.6
140°-150°	677.8	13.3
150°-160°	567.6	11.1
160°-170°	376.5	7.4
170°-180°	131.6	2.6
0°-30°	246.3	4.8
0°-40°	405.1	7.9
0°-60°	741.7	14.5
0°-90°	1078.4	21.1
90°-120°	943.3	18.5
90°-150°	2945.9	57.8
90°-180°	4022.0	78.9
0°-180°	5100.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	317	317	317	317	317	
5°	318	316	313	316	316	30
15°	303	304	304	308	307	85
25°	275	278	283	288	289	127
35°	237	245	254	263	267	148
45°	194	207	223	237	242	150
55°	149	166	190	205	212	133
65°	102	125	151	170	176	101
75°	56	82	112	130	137	60
85°	17	45	74	93	100	18
90°	6	47	102	117	124	6
95°	65	98	128	144	148	73
105°	254	272	298	315	321	269
115°	471	483	501	513	516	466
125°	684	694	705	714	717	611
135°	884	896	904	912	912	683
145°	1072	1080	1087	1091	1089	670
155°	1226	1229	1233	1238	1235	564
165°	1334	1333	1333	1340	1335	376
175°	1388	1384	1382	1389	1383	132
180°	1390	1390	1390	1390	1390	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6
2.5°	318.4	318.1	317.9	317.6	317.4	317.0	316.4	315.9	315.3	314.7	315.1
5°	317.5	317.2	316.9	316.6	316.2	315.8	315.2	314.6	314.0	313.4	314.0
7.5°	314.6	314.4	314.2	314.0	313.8	313.5	313.0	312.6	312.0	311.5	312.4
10°	312.5	312.3	312.0	311.8	311.6	311.3	311.0	310.7	310.4	310.1	310.9
12.5°	308.7	308.8	308.8	308.9	308.9	308.8	308.6	308.4	308.1	307.9	308.7
15°	302.8	303.0	303.2	303.4	303.6	303.7	303.7	303.7	303.7	303.7	304.6
17.5°	295.1	295.5	295.9	296.4	296.8	297.2	297.5	297.8	298.1	298.5	299.4
20°	289.9	290.4	290.9	291.4	292.0	292.5	292.9	293.3	293.7	294.1	295.2
22.5°	284.5	285.0	285.6	286.2	286.8	287.4	287.9	288.5	289.1	289.6	290.7
25°	275.3	276.0	276.7	277.4	278.1	278.9	279.8	280.7	281.7	282.6	283.8
27.5°	264.3	265.4	266.6	267.7	268.9	270.0	271.0	272.2	273.3	274.4	275.9
30°	256.9	258.2	259.5	260.8	262.2	263.6	264.9	266.2	267.5	268.8	270.4
32.5°	248.8	250.3	251.8	253.3	254.8	256.3	257.9	259.4	261.1	262.6	264.5
35°	237.2	238.9	240.7	242.4	244.1	245.9	247.9	249.8	251.8	253.7	255.9
37.5°	224.5	226.5	228.5	230.6	232.5	234.8	237.3	239.7	242.3	244.8	247.3
40°	216.1	218.3	220.6	222.8	225.0	227.5	230.2	233.1	235.8	238.5	241.2
42.5°	208.0	210.3	212.5	214.7	217.0	219.6	222.9	226.0	229.1	232.3	235.2
45°	194.5	197.2	200.1	202.8	205.5	208.6	212.3	215.8	219.3	223.0	226.1
47.5°	181.2	184.2	187.2	190.2	193.2	196.8	201.0	205.1	209.3	213.5	216.8
50°	172.1	175.2	178.3	181.5	184.7	188.5	193.2	197.7	202.3	206.9	210.4
52.5°	163.2	166.5	169.9	173.2	176.5	180.6	185.4	190.3	195.1	200.0	203.5
55°	149.1	152.8	156.4	160.1	163.8	168.2	173.6	178.8	184.2	189.5	193.2
57.5°	135.1	139.3	143.4	147.5	151.7	156.4	161.9	167.2	172.7	178.1	182.1
60°	125.2	129.7	134.0	138.4	142.8	147.8	153.7	159.5	165.3	171.1	175.0
62.5°	116.4	121.0	125.5	130.1	134.6	139.8	145.6	151.4	157.2	163.1	167.1
65°	101.8	106.8	111.8	116.8	121.8	127.3	133.3	139.4	145.4	151.4	155.6
67.5°	88.5	93.7	98.9	104.1	109.4	115.0	121.2	127.3	133.5	139.7	143.9
70°	78.9	84.2	89.5	94.8	100.1	105.9	112.2	118.6	124.9	131.2	135.6
72.5°	70.1	75.5	81.0	86.4	92.0	97.9	104.3	110.7	117.1	123.5	127.8
75°	56.5	62.1	67.9	73.5	79.3	85.3	91.9	98.5	104.9	111.5	115.8
77.5°	43.2	49.2	55.1	61.1	67.2	73.4	80.1	86.6	93.3	99.9	104.3
80°	34.4	40.6	46.9	53.0	59.3	65.7	72.3	79.0	85.5	92.2	96.4
82.5°	27.1	33.2	39.4	45.4	51.6	58.1	64.7	71.5	78.2	84.8	89.2
85°	16.6	22.8	29.2	35.4	41.8	48.2	54.7	61.3	67.8	74.3	78.6
87.5°	9.2	16.0	22.6	29.3	36.1	43.2	50.9	58.6	66.2	73.9	78.0
90°	5.8	14.8	23.8	32.9	41.9	52.6	64.8	77.1	89.4	101.6	105.1
92.5°	25.1	32.9	40.7	48.5	56.2	64.0	71.6	79.3	86.9	94.5	98.7
95°	64.6	72.1	79.5	86.8	94.2	101.3	108.0	114.5	121.2	127.8	131.7
97.5°	114.6	121.2	127.7	134.3	140.9	147.5	154.4	161.3	168.1	175.0	178.8
100°	152.2	158.0	163.9	169.8	175.6	181.8	188.2	194.8	201.3	207.7	211.6
102.5°	191.3	196.3	201.5	206.6	211.7	217.5	224.1	230.6	237.1	243.7	247.5
105°	254.5	258.2	262.0	265.7	269.4	274.3	280.0	285.9	291.8	297.5	301.6
107.5°	318.7	322.2	325.7	329.2	332.8	337.0	342.1	347.2	352.2	357.3	360.9
110°	359.6	363.2	366.8	370.4	374.1	378.3	383.3	388.3	393.3	398.3	401.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	404.7	407.9	411.2	414.4	417.8	421.7	426.3	430.8	435.3	439.8	442.5
115°	471.1	473.7	476.5	479.1	481.8	485.1	489.3	493.3	497.4	501.4	504.2
117.5°	536.7	539.6	542.4	545.2	548.1	550.9	553.6	556.4	559.2	562.0	564.3
120°	580.9	583.4	585.8	588.3	590.9	593.1	595.1	597.0	599.1	601.1	603.9
122.5°	621.2	623.9	626.5	629.2	631.9	634.4	636.7	639.1	641.5	643.9	646.0
125°	683.7	686.0	688.3	690.6	693.0	695.4	697.9	700.3	702.9	705.4	707.3
127.5°	744.9	747.7	750.6	753.5	756.4	758.6	760.3	762.0	763.7	765.4	767.0
130°	783.4	786.6	789.9	793.1	796.5	798.9	800.5	802.1	803.8	805.4	807.4
132.5°	826.5	829.2	831.8	834.5	837.2	839.4	841.1	842.8	844.7	846.4	847.6
135°	883.7	886.7	889.5	892.3	895.2	897.5	899.0	900.5	902.0	903.6	905.4
137.5°	944.5	946.8	949.2	951.5	953.8	955.5	956.6	957.8	959.0	960.1	961.7
140°	981.1	983.4	985.6	987.8	990.1	992.0	993.5	995.0	996.5	998.0	999.7
142.5°	1018.7	1020.9	1023.2	1025.4	1027.6	1029.3	1030.2	1031.1	1032.0	1032.9	1034.4
145°	1072.2	1074.0	1075.8	1077.6	1079.4	1081.2	1082.7	1084.3	1085.8	1087.4	1088.3
147.5°	1120.2	1122.5	1124.6	1126.8	1129.0	1130.6	1131.7	1132.8	1133.8	1134.8	1135.5
150°	1153.1	1154.7	1156.2	1157.8	1159.3	1160.6	1161.7	1162.8	1163.8	1164.9	1165.6
152.5°	1182.1	1183.8	1185.3	1186.9	1188.4	1189.8	1191.1	1192.3	1193.7	1194.9	1195.9
155°	1225.9	1226.6	1227.4	1228.2	1229.0	1229.7	1230.5	1231.3	1232.1	1232.8	1234.2
157.5°	1263.1	1263.6	1264.1	1264.7	1265.3	1265.7	1266.2	1266.7	1267.1	1267.6	1269.4
160°	1285.7	1286.2	1286.7	1287.2	1287.8	1288.1	1288.4	1288.7	1288.9	1289.2	1290.7
162.5°	1306.3	1306.4	1306.5	1306.6	1306.8	1306.9	1307.2	1307.4	1307.7	1308.0	1309.7
165°	1333.7	1333.5	1333.2	1332.9	1332.7	1332.6	1332.6	1332.6	1332.6	1332.6	1334.4
167.5°	1356.8	1355.9	1355.1	1354.4	1353.6	1353.2	1353.1	1353.1	1353.0	1353.0	1354.8
170°	1369.0	1368.2	1367.4	1366.5	1365.8	1365.3	1365.0	1364.7	1364.5	1364.2	1366.0
172.5°	1377.4	1376.6	1375.8	1375.0	1374.2	1373.7	1373.5	1373.2	1372.9	1372.7	1374.5
175°	1387.8	1386.9	1386.1	1385.3	1384.6	1383.9	1383.4	1382.9	1382.4	1381.8	1383.7
177.5°	1391.9	1391.3	1390.7	1390.1	1389.5	1388.9	1388.5	1388.1	1387.7	1387.3	1388.5
180°	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6
2.5°	315.5	315.9	316.3	316.5	316.3	316.1	316.0	315.8
5°	314.6	315.2	315.8	316.0	315.9	315.8	315.7	315.6
7.5°	313.1	313.8	314.6	314.9	314.8	314.7	314.6	314.5
10°	311.7	312.6	313.4	313.8	313.7	313.6	313.5	313.4
12.5°	309.5	310.3	311.1	311.5	311.4	311.3	311.2	311.1
15°	305.5	306.5	307.4	307.8	307.7	307.6	307.5	307.4
17.5°	300.4	301.3	302.3	302.8	302.8	302.8	302.8	302.8
20°	296.3	297.4	298.5	299.1	299.1	299.1	299.1	299.1
22.5°	292.0	293.1	294.2	294.8	295.0	295.1	295.3	295.5
25°	285.1	286.3	287.5	288.2	288.5	288.8	289.1	289.4
27.5°	277.4	279.0	280.5	281.4	281.7	281.9	282.1	282.4
30°	272.1	273.8	275.4	276.3	276.6	276.9	277.2	277.5
32.5°	266.3	268.2	270.1	271.4	271.9	272.5	273.0	273.5
35°	258.2	260.4	262.7	264.2	264.9	265.6	266.3	267.0
37.5°	249.7	252.3	254.8	256.4	257.1	257.9	258.6	259.3
40°	243.9	246.5	249.1	251.0	251.9	252.8	253.7	254.6
42.5°	238.1	241.0	243.9	245.8	246.7	247.6	248.5	249.4
45°	229.2	232.5	235.6	237.7	238.7	239.7	240.8	241.8
47.5°	220.2	223.4	226.7	228.9	230.0	231.2	232.3	233.4
50°	213.8	217.3	220.8	223.1	224.2	225.3	226.4	227.5
52.5°	207.0	210.6	214.1	216.5	217.7	218.9	220.2	221.3
55°	196.8	200.5	204.2	206.6	207.9	209.3	210.7	212.0
57.5°	186.0	190.0	193.9	196.5	197.9	199.2	200.6	202.0
60°	178.8	182.8	186.6	189.2	190.7	192.1	193.6	195.0
62.5°	171.3	175.4	179.6	182.3	183.6	184.9	186.3	187.6
65°	159.8	163.9	168.1	170.9	172.2	173.5	174.8	176.1
67.5°	148.0	152.3	156.5	159.4	160.7	162.1	163.5	164.9
70°	140.0	144.3	148.8	151.6	152.8	154.0	155.2	156.4
72.5°	132.1	136.4	140.7	143.6	145.0	146.5	148.0	149.5
75°	120.3	124.6	129.1	131.9	133.2	134.5	135.8	137.1
77.5°	108.7	113.0	117.3	120.3	121.7	123.1	124.5	125.9
80°	100.8	105.0	109.4	112.2	113.6	115.0	116.4	117.9
82.5°	93.4	97.8	102.0	104.8	106.1	107.6	108.9	110.2
85°	82.9	87.2	91.5	94.3	95.7	97.1	98.6	100.0
87.5°	82.0	86.0	90.1	92.8	94.2	95.5	96.9	98.3
90°	108.8	112.3	115.8	118.4	119.9	121.3	122.8	124.3
92.5°	102.8	106.8	111.0	113.6	114.9	116.2	117.4	118.8
95°	135.6	139.5	143.3	145.6	146.3	147.0	147.7	148.5
97.5°	182.6	186.3	190.2	192.6	193.7	194.9	196.0	197.2
100°	215.3	219.0	222.9	225.2	226.0	226.9	227.7	228.6
102.5°	251.5	255.4	259.2	261.7	262.5	263.4	264.2	265.1
105°	305.7	309.8	313.9	316.5	317.6	318.7	319.8	320.9
107.5°	364.6	368.2	371.8	373.7	373.5	373.4	373.4	373.3
110°	404.9	408.1	411.3	413.1	413.5	413.8	414.1	414.5





TEST NUMBER: P331280-840

CATALOG NUMBER: SA2XXDIP-C290D1080U840-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	445.1	447.8	450.4	452.0	452.5	453.1	453.6	454.1
115°	507.1	509.8	512.6	514.2	514.5	514.8	515.2	515.5
117.5°	566.7	569.2	571.5	572.9	573.1	573.4	573.6	573.9
120°	606.7	609.7	612.5	614.1	614.4	614.7	615.1	615.4
122.5°	648.2	650.4	652.5	653.8	654.1	654.5	654.9	655.3
125°	709.3	711.2	713.3	714.6	715.2	715.9	716.5	717.2
127.5°	768.6	770.1	771.7	772.5	772.6	772.7	772.7	772.8
130°	809.3	811.2	813.1	814.0	813.7	813.5	813.2	813.0
132.5°	848.8	850.0	851.2	851.8	851.8	851.8	851.8	851.8
135°	907.4	909.3	911.1	912.1	912.1	912.1	912.2	912.2
137.5°	963.4	965.0	966.7	967.3	967.0	966.6	966.3	966.0
140°	1001.3	1002.9	1004.5	1005.1	1004.7	1004.3	1003.8	1003.4
142.5°	1035.9	1037.4	1038.9	1039.5	1038.9	1038.4	1037.9	1037.4
145°	1089.1	1090.0	1090.9	1091.1	1090.6	1090.0	1089.4	1088.9
147.5°	1136.1	1136.8	1137.4	1137.4	1136.6	1135.9	1135.1	1134.4
150°	1166.4	1167.2	1168.0	1168.0	1167.2	1166.4	1165.6	1164.9
152.5°	1196.9	1197.8	1198.8	1198.8	1197.8	1196.9	1195.9	1194.9
155°	1235.5	1236.8	1238.1	1238.3	1237.6	1236.8	1236.0	1235.2
157.5°	1271.1	1272.9	1274.7	1275.0	1273.6	1272.4	1271.2	1269.9
160°	1292.3	1293.8	1295.5	1295.7	1294.6	1293.6	1292.5	1291.5
162.5°	1311.5	1313.2	1315.0	1315.2	1314.0	1312.8	1311.5	1310.3
165°	1336.3	1338.1	1339.9	1340.1	1338.9	1337.6	1336.3	1334.9
167.5°	1356.7	1358.5	1360.3	1360.5	1359.2	1357.8	1356.5	1355.1
170°	1367.9	1369.7	1371.5	1371.7	1370.1	1368.6	1367.0	1365.4
172.5°	1376.3	1378.2	1380.0	1380.1	1378.6	1377.0	1375.4	1373.8
175°	1385.5	1387.4	1389.2	1389.3	1387.8	1386.1	1384.6	1383.0
177.5°	1389.8	1391.0	1392.2	1392.2	1391.0	1389.8	1388.5	1387.3
180°	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1

(END OF REPORT)