

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: P331279-830

Luminaire Tested: **SA2XXDIP-C290D1080U830-4F0-1E-UDD-D**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331279-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C290D1080U830-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

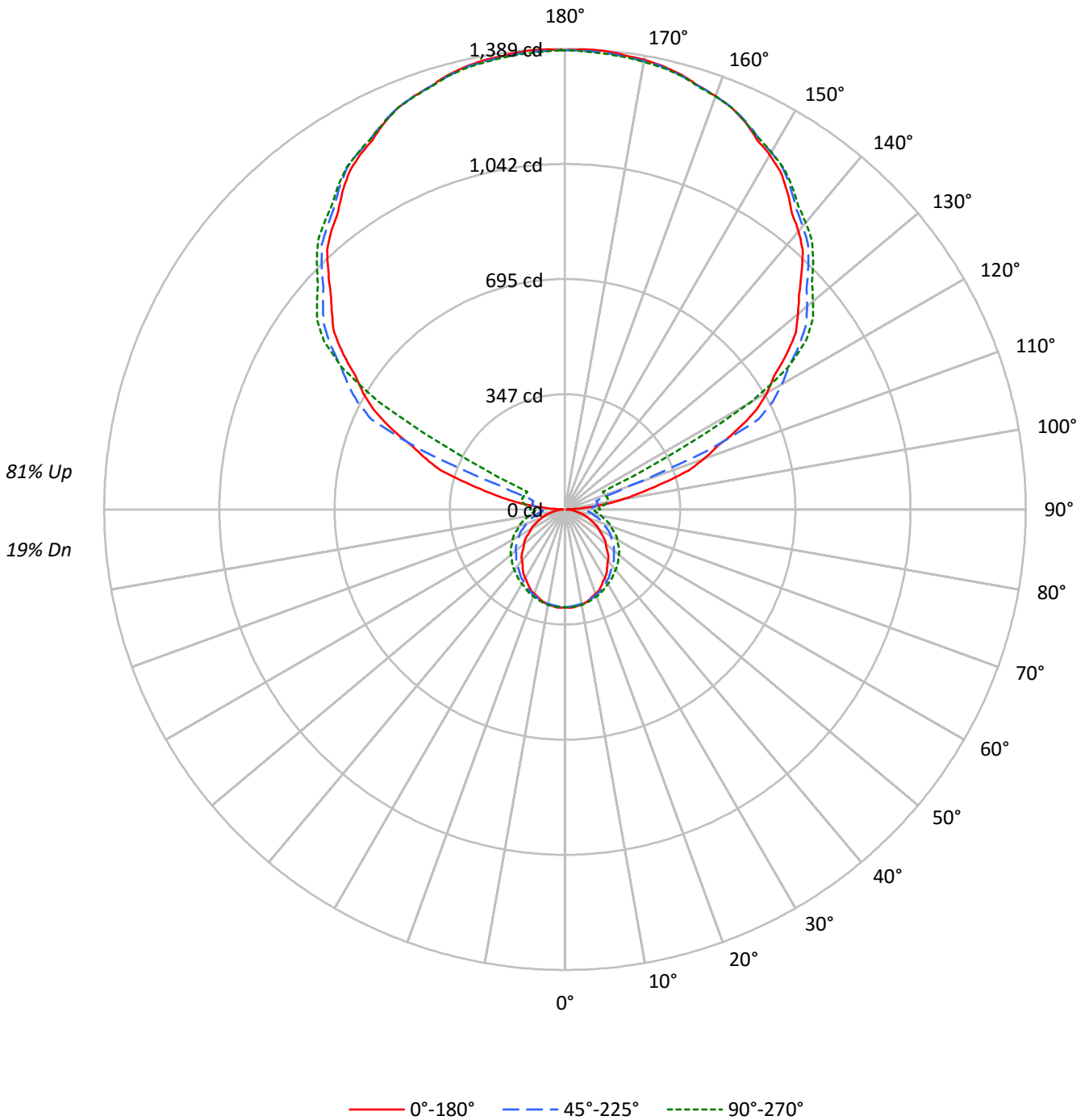
Lumens per Lamp: N/A  
Luminaire Lumens: 5188.5 lumens  
Efficiency: N/A  
Efficacy: 122.9 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

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: P331279-830  
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### Luminous Intensity Polar Plot





TEST NUMBER: P331279-830

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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	88	88	88	88	66	66	66	46	46	46	28	28	28	19
1	90	86	82	78	79	76	73	70	57	55	53	40	38	37	24	23	22	15
2	82	75	69	64	72	66	61	57	50	46	43	34	32	31	21	19	18	12
3	75	65	58	53	65	58	52	47	43	39	36	30	28	25	18	17	15	10
4	68	58	50	44	60	51	44	39	38	34	30	27	24	22	16	14	13	8
5	62	51	43	37	55	45	38	33	34	29	26	24	21	18	14	13	11	7
6	57	45	38	32	50	40	34	29	31	26	22	21	18	16	13	11	10	6
7	53	41	33	28	46	36	30	25	27	23	19	19	16	14	12	10	9	6
8	49	37	29	24	43	33	26	22	25	20	17	18	14	12	11	9	8	5
9	45	33	26	21	40	30	23	19	23	18	15	16	13	11	10	8	7	4
10	42	30	23	19	37	27	21	17	21	16	13	15	12	10	9	7	6	4

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

	0°	45°	90°
0°	4771	4771	4771
5°	4794	4593	4573
10°	4763	4457	4407
15°	4698	4312	4229
20°	4614	4159	4059
25°	4533	4009	3902
30°	4418	3857	3747
35°	4301	3711	3638
40°	4178	3584	3528
45°	4060	3473	3434
50°	3936	3371	3343
55°	3802	3261	3248
60°	3643	3149	3150
65°	3474	3016	3031
70°	3286	2872	2904
75°	3050	2735	2786
80°	2669	2592	2667
85°	2319	2468	2574



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	28.0	0.5
10°-20°	80.3	1.5
20°-30°	121.6	2.3
30°-40°	148.2	2.9
40°-50°	159.4	3.1
50°-60°	154.8	3.0
60°-70°	135.2	2.6
70°-80°	104.1	2.0
80°-90°	73.2	1.4
90°-100°	94.3	1.8
100°-110°	204.5	3.9
110°-120°	476.0	9.2
120°-130°	760.4	14.7
130°-140°	800.3	15.4
140°-150°	739.7	14.3
150°-160°	594.0	11.4
160°-170°	382.8	7.4
170°-180°	131.8	2.5
0°-30°	229.9	4.4
0°-40°	378.1	7.3
0°-60°	692.3	13.3
0°-90°	1004.8	19.4
90°-120°	774.8	14.9
90°-150°	3075.2	59.3
90°-180°	4184.0	80.6
0°-180°	5188.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	296	296	296	296	296	
5°	296	295	292	295	294	28
15°	283	283	283	287	287	80
25°	257	260	264	269	270	118
35°	221	229	237	246	249	138
45°	182	193	208	221	226	140
55°	139	155	177	192	198	124
65°	95	116	141	158	164	94
75°	53	77	104	122	128	56
85°	16	42	69	87	93	17
90°	5	41	76	98	106	6
95°	68	58	88	109	114	82
105°	307	333	98	123	133	328
115°	578	601	644	214	126	569
125°	816	830	861	879	887	727
135°	1008	1024	1038	1056	1058	779
145°	1169	1169	1185	1194	1192	731
155°	1288	1280	1290	1296	1288	593
165°	1357	1351	1354	1360	1354	383
175°	1388	1381	1383	1389	1380	132
180°	1385	1385	1385	1385	1385	



TEST NUMBER: P331279-830

CATALOG NUMBER: SA2XXDIP-C290D1080U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5
2.5°	297.2	296.9	296.7	296.4	296.2	295.9	295.3	294.8	294.3	293.7	294.1
5°	296.3	296.1	295.8	295.5	295.1	294.7	294.2	293.6	293.0	292.5	293.0
7.5°	293.6	293.4	293.2	293.0	292.8	292.6	292.1	291.7	291.2	290.8	291.5
10°	291.6	291.4	291.2	291.1	290.9	290.6	290.3	290.0	289.7	289.5	290.2
12.5°	288.1	288.2	288.2	288.3	288.3	288.2	288.0	287.9	287.6	287.4	288.1
15°	282.6	282.8	283.0	283.1	283.3	283.4	283.4	283.4	283.4	283.4	284.3
17.5°	275.4	275.8	276.2	276.6	277.0	277.4	277.7	278.0	278.2	278.6	279.5
20°	270.6	271.1	271.5	272.0	272.5	273.0	273.3	273.7	274.1	274.5	275.5
22.5°	265.5	266.0	266.6	267.1	267.7	268.2	268.7	269.3	269.8	270.3	271.4
25°	256.9	257.6	258.3	258.9	259.6	260.3	261.2	262.0	262.9	263.7	264.9
27.5°	246.7	247.7	248.8	249.9	251.0	252.0	253.0	254.0	255.1	256.1	257.5
30°	239.8	241.0	242.2	243.5	244.7	246.0	247.2	248.5	249.7	250.9	252.4
32.5°	232.2	233.7	235.0	236.4	237.8	239.2	240.7	242.1	243.6	245.1	246.9
35°	221.4	223.0	224.6	226.2	227.8	229.5	231.4	233.2	235.0	236.8	238.8
37.5°	209.5	211.4	213.3	215.2	217.0	219.1	221.5	223.8	226.1	228.5	230.8
40°	201.7	203.8	205.9	207.9	210.0	212.4	214.9	217.5	220.1	222.6	225.1
42.5°	194.2	196.2	198.3	200.4	202.6	205.0	208.0	210.9	213.9	216.8	219.5
45°	181.5	184.1	186.7	189.3	191.8	194.7	198.1	201.4	204.7	208.1	211.0
47.5°	169.1	171.9	174.7	177.5	180.3	183.7	187.6	191.4	195.4	199.3	202.4
50°	160.6	163.5	166.5	169.4	172.4	176.0	180.3	184.5	188.8	193.1	196.3
52.5°	152.3	155.4	158.5	161.6	164.8	168.5	173.1	177.6	182.1	186.6	189.9
55°	139.1	142.6	146.0	149.4	152.9	157.0	162.0	166.9	171.9	176.8	180.3
57.5°	126.1	130.0	133.8	137.7	141.6	146.0	151.1	156.1	161.2	166.3	169.9
60°	116.9	121.0	125.1	129.1	133.3	138.0	143.5	148.8	154.3	159.7	163.3
62.5°	108.7	112.9	117.2	121.4	125.6	130.4	135.9	141.3	146.8	152.2	156.0
65°	95.0	99.7	104.3	109.1	113.7	118.9	124.4	130.1	135.7	141.3	145.2
67.5°	82.6	87.5	92.3	97.2	102.1	107.4	113.1	118.9	124.6	130.4	134.3
70°	73.6	78.6	83.5	88.5	93.4	98.9	104.7	110.7	116.6	122.4	126.6
72.5°	65.4	70.5	75.6	80.7	85.9	91.3	97.4	103.3	109.3	115.3	119.3
75°	52.7	58.0	63.3	68.6	74.0	79.6	85.8	91.9	97.9	104.1	108.1
77.5°	40.3	45.9	51.5	57.0	62.7	68.5	74.7	80.9	87.1	93.2	97.4
80°	32.1	37.9	43.7	49.5	55.3	61.4	67.5	73.7	79.8	86.1	90.0
82.5°	25.3	31.0	36.8	42.4	48.2	54.2	60.4	66.7	73.0	79.2	83.2
85°	15.5	21.3	27.2	33.1	39.0	45.0	51.1	57.2	63.2	69.4	73.3
87.5°	8.6	14.8	20.9	27.1	33.3	39.5	46.0	52.4	58.9	65.3	69.5
90°	5.3	13.3	21.2	29.2	37.1	45.1	53.0	60.8	68.7	76.5	81.4
92.5°	24.2	29.1	34.0	38.9	43.8	49.7	56.5	63.2	69.9	76.7	81.0
95°	68.5	65.7	62.8	59.9	57.0	59.3	66.5	73.8	81.1	88.3	93.0
97.5°	132.2	115.6	98.8	82.1	65.3	61.5	70.6	79.6	88.8	97.8	102.3
100°	180.3	153.4	126.4	99.4	72.4	63.4	72.6	81.7	90.9	99.9	105.2
102.5°	232.9	229.7	226.4	223.2	219.9	205.1	178.6	152.1	125.6	99.2	104.9
105°	306.7	316.2	325.6	335.1	344.5	321.3	265.4	209.6	153.8	97.9	103.7
107.5°	391.4	399.0	406.6	414.2	421.8	391.5	323.4	255.2	187.0	118.9	119.6
110°	445.5	452.1	458.7	465.3	471.9	445.4	385.7	325.9	266.3	206.6	187.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	496.9	502.7	508.4	514.1	519.8	517.0	505.5	494.1	482.6	471.1	392.9
115°	577.9	582.7	587.5	592.3	597.2	604.5	614.3	624.2	634.0	643.9	543.7
117.5°	649.8	654.7	659.6	664.5	669.4	675.8	683.5	691.4	699.2	706.9	684.8
120°	702.7	706.3	710.1	713.8	717.6	723.3	731.1	739.0	746.8	754.6	759.9
122.5°	747.5	751.2	754.9	758.6	762.2	768.1	776.0	783.9	791.8	799.8	804.0
125°	815.5	818.3	821.2	824.2	827.0	832.1	839.4	846.7	853.9	861.2	865.3
127.5°	877.4	880.5	883.6	886.7	889.9	894.2	899.8	905.4	911.1	916.6	921.2
130°	916.6	920.1	923.6	927.1	930.5	934.4	939.0	943.4	947.8	952.3	957.0
132.5°	956.8	959.7	962.6	965.5	968.5	971.9	975.9	979.9	983.9	987.9	992.2
135°	1008.4	1012.0	1015.5	1019.1	1022.7	1026.0	1028.9	1031.8	1034.8	1037.7	1042.0
137.5°	1061.1	1063.6	1066.0	1068.6	1071.0	1073.6	1076.3	1078.9	1081.7	1084.3	1088.3
140°	1095.6	1097.3	1098.9	1100.6	1102.3	1104.5	1107.1	1109.7	1112.4	1115.0	1118.6
142.5°	1124.5	1126.0	1127.5	1129.0	1130.5	1132.7	1135.5	1138.3	1141.1	1144.1	1147.1
145°	1169.3	1169.0	1168.8	1168.7	1168.4	1170.2	1173.9	1177.7	1181.6	1185.3	1187.4
147.5°	1208.8	1208.0	1207.1	1206.3	1205.4	1206.8	1210.6	1214.3	1218.0	1221.8	1223.0
150°	1234.4	1232.8	1231.3	1229.7	1228.2	1229.2	1232.8	1236.3	1239.9	1243.4	1244.8
152.5°	1256.0	1254.3	1252.5	1250.8	1249.2	1249.9	1253.3	1256.7	1260.1	1263.5	1264.8
155°	1287.5	1285.5	1283.6	1281.5	1279.5	1279.9	1282.5	1285.2	1287.9	1290.5	1291.8
157.5°	1312.2	1310.5	1308.8	1307.1	1305.4	1305.5	1307.4	1309.2	1311.1	1313.0	1314.5
160°	1326.6	1325.3	1323.9	1322.6	1321.3	1321.3	1322.6	1323.9	1325.3	1326.6	1327.9
162.5°	1339.4	1338.1	1336.7	1335.4	1334.1	1334.0	1335.1	1336.3	1337.5	1338.6	1340.1
165°	1356.7	1355.3	1354.0	1352.6	1351.3	1350.9	1351.6	1352.4	1353.0	1353.7	1355.2
167.5°	1369.5	1368.2	1366.8	1365.5	1364.1	1363.8	1364.4	1365.0	1365.6	1366.3	1367.8
170°	1376.7	1375.4	1374.0	1372.7	1371.4	1370.9	1371.4	1371.8	1372.2	1372.7	1374.2
172.5°	1381.5	1380.2	1378.8	1377.5	1376.2	1375.7	1376.2	1376.6	1377.1	1377.5	1379.0
175°	1387.7	1386.2	1384.6	1383.1	1381.5	1380.9	1381.4	1381.9	1382.2	1382.7	1384.3
177.5°	1388.7	1387.5	1386.2	1385.0	1383.7	1383.2	1383.4	1383.6	1383.7	1383.9	1385.2
180°	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5
2.5°	294.5	294.8	295.2	295.4	295.2	295.0	294.9	294.7
5°	293.6	294.2	294.7	294.9	294.8	294.7	294.6	294.5
7.5°	292.2	292.8	293.6	293.9	293.8	293.7	293.6	293.5
10°	291.0	291.7	292.5	292.8	292.8	292.7	292.6	292.5
12.5°	288.9	289.6	290.4	290.8	290.7	290.6	290.5	290.4
15°	285.1	286.1	286.9	287.3	287.2	287.1	287.0	286.9
17.5°	280.4	281.3	282.1	282.6	282.6	282.6	282.6	282.6
20°	276.5	277.6	278.6	279.2	279.2	279.2	279.2	279.2
22.5°	272.5	273.5	274.6	275.1	275.3	275.4	275.6	275.8
25°	266.1	267.2	268.3	269.0	269.3	269.6	269.8	270.1
27.5°	258.9	260.4	261.8	262.7	262.9	263.1	263.3	263.5
30°	253.9	255.5	257.0	257.9	258.2	258.4	258.7	259.0
32.5°	248.5	250.3	252.1	253.3	253.7	254.3	254.8	255.2
35°	241.0	243.1	245.2	246.6	247.2	247.9	248.5	249.2
37.5°	233.1	235.4	237.8	239.3	240.0	240.7	241.4	242.0
40°	227.6	230.1	232.5	234.2	235.1	235.9	236.8	237.6
42.5°	222.3	224.9	227.6	229.4	230.3	231.1	232.0	232.8
45°	214.0	217.0	219.9	221.9	222.8	223.8	224.7	225.6
47.5°	205.5	208.5	211.6	213.7	214.7	215.7	216.8	217.8
50°	199.5	202.8	206.0	208.2	209.2	210.3	211.3	212.4
52.5°	193.2	196.5	199.8	202.1	203.2	204.3	205.5	206.5
55°	183.7	187.1	190.6	192.8	194.1	195.4	196.6	197.8
57.5°	173.6	177.3	181.0	183.4	184.7	186.0	187.2	188.5
60°	166.9	170.6	174.2	176.6	178.0	179.3	180.7	182.0
62.5°	159.9	163.7	167.6	170.1	171.4	172.6	173.9	175.1
65°	149.1	153.0	156.9	159.5	160.7	161.9	163.2	164.4
67.5°	138.2	142.1	146.1	148.7	150.0	151.3	152.6	153.9
70°	130.6	134.7	138.8	141.5	142.6	143.7	144.9	146.0
72.5°	123.3	127.3	131.3	134.0	135.3	136.8	138.2	139.5
75°	112.3	116.3	120.5	123.1	124.3	125.5	126.8	128.0
77.5°	101.4	105.5	109.5	112.3	113.6	114.9	116.2	117.5
80°	94.1	98.0	102.1	104.7	106.0	107.4	108.7	110.0
82.5°	87.2	91.2	95.2	97.8	99.1	100.4	101.6	102.8
85°	77.4	81.3	85.4	88.0	89.4	90.7	92.0	93.3
87.5°	73.5	77.7	81.7	84.5	85.8	87.1	88.4	89.6
90°	86.4	91.3	96.2	99.5	101.0	102.6	104.2	105.8
92.5°	85.3	89.6	93.9	96.8	98.2	99.6	101.0	102.5
95°	97.7	102.5	107.3	110.1	110.9	111.9	112.8	113.8
97.5°	106.7	111.1	115.5	118.4	119.8	121.2	122.5	123.9
100°	110.6	115.8	121.1	124.5	126.0	127.5	129.0	130.5
102.5°	110.7	116.4	122.2	125.9	127.5	129.2	130.9	132.6
105°	109.5	115.3	121.0	124.9	126.9	128.8	130.7	132.7
107.5°	120.3	121.0	121.7	123.0	125.0	126.9	128.8	130.7
110°	168.1	148.9	129.7	121.1	123.0	125.0	126.9	128.8





TEST NUMBER: P331279-830

CATALOG NUMBER: SA2XXDIP-C290D1080U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	314.8	236.6	158.4	120.2	122.0	123.8	125.5	127.2
115°	443.5	343.2	243.0	185.3	170.3	155.3	140.3	125.5
117.5°	662.7	640.6	618.4	581.5	529.8	478.1	426.4	374.7
120°	765.3	770.5	775.9	764.0	735.1	706.1	677.0	648.0
122.5°	808.2	812.4	816.5	816.1	811.2	806.3	801.3	796.4
125°	869.5	873.6	877.7	880.5	882.1	883.6	885.1	886.6
127.5°	926.0	930.6	935.2	938.0	939.0	939.9	940.8	941.9
130°	961.8	966.5	971.2	973.8	974.4	974.9	975.4	976.0
132.5°	996.5	1000.8	1005.1	1007.5	1008.0	1008.6	1009.1	1009.7
135°	1046.2	1050.4	1054.6	1056.9	1057.2	1057.5	1057.8	1058.2
137.5°	1092.2	1096.2	1100.0	1102.0	1101.9	1101.7	1101.6	1101.5
140°	1122.1	1125.6	1129.2	1130.7	1130.1	1129.5	1129.0	1128.5
142.5°	1150.1	1153.1	1156.2	1157.4	1156.8	1156.1	1155.6	1154.9
145°	1189.6	1191.8	1193.8	1194.6	1193.9	1193.4	1192.7	1192.0
147.5°	1224.3	1225.5	1226.7	1227.0	1226.2	1225.6	1224.8	1224.2
150°	1246.1	1247.5	1248.8	1248.9	1247.7	1246.7	1245.6	1244.4
152.5°	1266.1	1267.5	1268.9	1268.8	1267.2	1265.8	1264.3	1262.9
155°	1293.2	1294.6	1295.9	1295.6	1293.8	1292.1	1290.3	1288.5
157.5°	1316.0	1317.5	1319.0	1318.9	1317.2	1315.4	1313.7	1311.9
160°	1329.3	1330.6	1331.9	1331.8	1330.3	1328.7	1327.2	1325.6
162.5°	1341.6	1343.1	1344.7	1344.4	1342.6	1340.7	1338.7	1336.8
165°	1356.8	1358.3	1359.9	1359.9	1358.3	1356.8	1355.2	1353.7
167.5°	1369.4	1370.9	1372.5	1372.2	1370.3	1368.3	1366.3	1364.2
170°	1375.8	1377.3	1378.9	1378.7	1376.7	1374.7	1372.7	1370.6
172.5°	1380.6	1382.1	1383.7	1383.6	1381.5	1379.5	1377.5	1375.5
175°	1385.8	1387.4	1388.9	1388.6	1386.4	1384.1	1382.0	1379.7
177.5°	1386.4	1387.6	1388.9	1388.7	1387.1	1385.5	1383.9	1382.3
180°	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7	1384.7

(END OF REPORT)