

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: P331414-935

Luminaire Tested: **SA2XXDIP-C865D1080U935-4F0-1E-UDD-D**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331414-935  
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-C865D1080U935-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

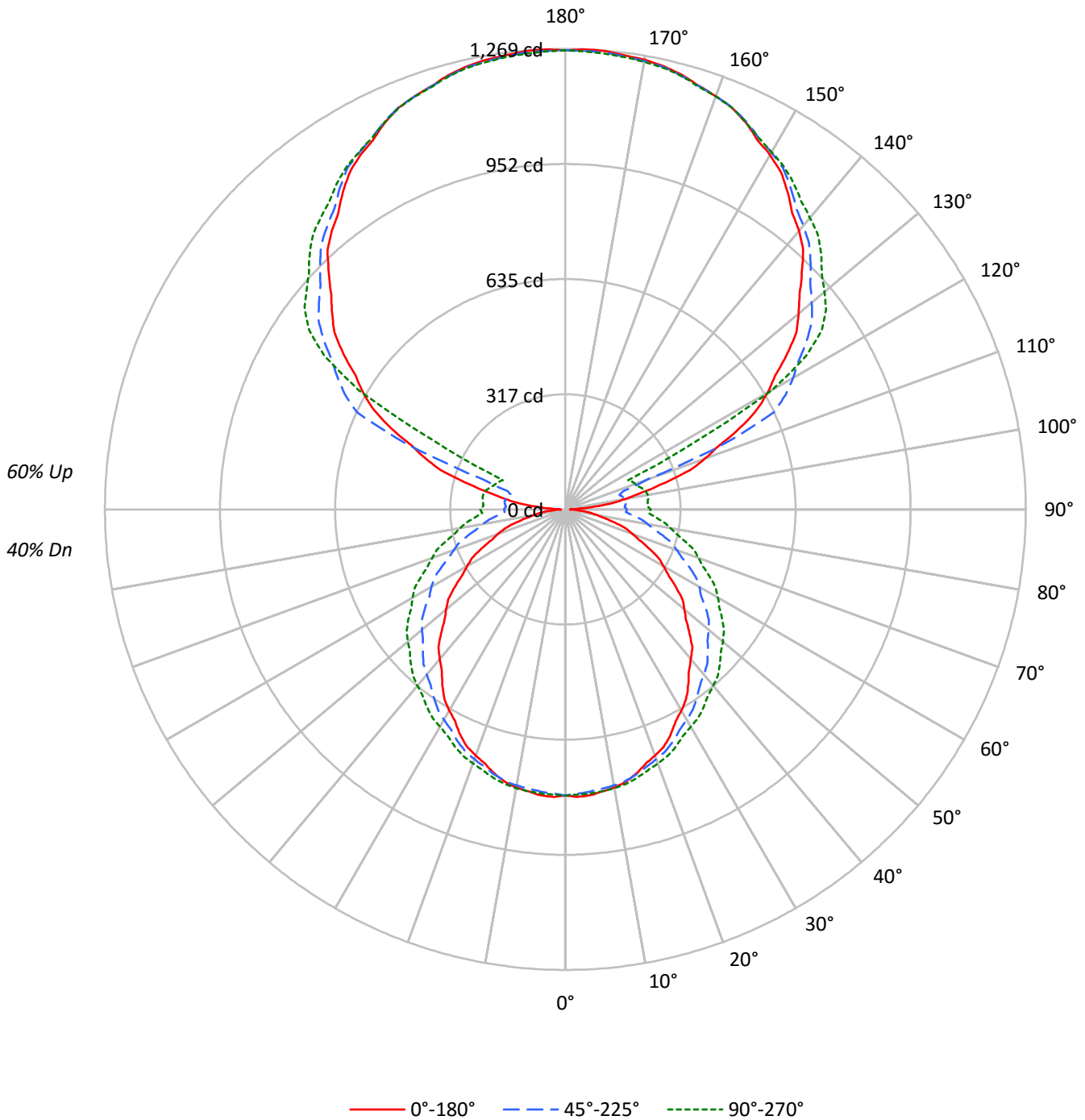
Lumens per Lamp: N/A  
Luminaire Lumens: 6717.5 lumens  
Efficiency: N/A  
Efficacy: 102.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

Input Watts (W): 65.4  
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: P331414-935  
CATALOG NUMBER: SA2XXDIP-C865D1080U935-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P331414-935

CATALOG NUMBER: SA2XXDIP-C865D1080U935-4F0-1E-UDD-D

**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	0	
RCR																						
0	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	40				
1	94	90	85	81	85	81	78	74	66	64	61	52	50	49	39	38	37	31				
2	85	77	71	65	77	70	65	60	57	53	50	45	42	40	34	32	30	25				
3	78	68	60	54	70	62	55	50	50	45	41	40	36	33	30	27	25	21				
4	71	60	51	45	64	54	47	42	44	39	35	35	31	28	26	24	21	17				
5	65	53	45	38	58	48	41	35	39	34	30	31	27	24	24	21	18	15				
6	59	47	39	33	54	43	36	31	35	30	26	28	24	21	21	18	16	13				
7	55	42	34	29	50	39	32	27	32	26	22	25	21	18	19	16	14	11				
8	51	38	31	25	46	35	28	23	29	24	20	23	19	16	18	15	13	10				
9	47	35	27	22	43	32	25	21	26	21	18	21	17	14	16	13	11	9				
10	44	32	25	20	40	29	23	18	24	19	16	20	16	13	15	12	10	8				

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

	0°	45°	90°
0°	12728	12728	12728
5°	12790	12252	12205
10°	12710	11890	11756
15°	12535	11506	11284
20°	12312	11097	10828
25°	12095	10701	10415
30°	11786	10293	10000
35°	11474	9900	9708
40°	11147	9566	9415
45°	10835	9267	9165
50°	10500	8995	8920
55°	10150	8703	8668
60°	9721	8403	8403
65°	9278	8047	8088
70°	8774	7666	7748
75°	8132	7293	7435
80°	7126	6912	7117
85°	6164	6582	6872



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	74.7	1.1
10°-20°	214.2	3.2
20°-30°	324.6	4.8
30°-40°	395.4	5.9
40°-50°	425.3	6.3
50°-60°	413.1	6.1
60°-70°	360.7	5.4
70°-80°	277.7	4.1
80°-90°	189.5	2.8
90°-100°	170.6	2.5
100°-110°	248.5	3.7
110°-120°	475.5	7.1
120°-130°	717.3	10.7
130°-140°	740.6	11.0
140°-150°	677.4	10.1
150°-160°	542.6	8.1
160°-170°	349.7	5.2
170°-180°	120.4	1.8
0°-30°	613.5	9.1
0°-40°	1008.9	15.0
0°-60°	1847.2	27.5
0°-90°	2675.0	39.8
90°-120°	894.6	13.3
90°-150°	3029.9	45.1
90°-180°	4042.0	60.2
0°-180°	6717.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	788	788	788	788	788	
5°	791	787	780	787	786	75
15°	754	756	756	766	766	212
25°	686	694	704	717	721	315
35°	591	610	632	656	665	369
45°	484	516	555	589	602	374
55°	371	413	472	512	528	332
65°	254	310	377	422	439	252
75°	140	205	278	325	342	149
85°	41	112	185	231	249	44
90°	12	89	169	217	235	10
95°	69	95	167	213	228	80
105°	284	331	154	202	220	304
115°	531	562	633	262	190	522
125°	746	761	812	848	862	666
135°	922	937	956	988	997	712
145°	1068	1068	1083	1095	1097	668
155°	1176	1169	1179	1184	1177	542
165°	1239	1234	1237	1242	1237	350
175°	1268	1262	1263	1269	1260	121
180°	1265	1265	1265	1265	1265	



TEST NUMBER: P331414-935

CATALOG NUMBER: SA2XXDIP-C865D1080U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3
2.5°	792.9	792.3	791.7	791.1	790.5	789.5	788.0	786.6	785.1	783.8	784.8
5°	790.6	789.9	789.1	788.3	787.6	786.4	784.9	783.3	781.9	780.3	781.9
7.5°	783.5	783.0	782.5	782.0	781.5	780.7	779.5	778.3	777.1	776.0	777.8
10°	778.1	777.6	777.1	776.5	776.0	775.4	774.6	773.9	773.1	772.3	774.4
12.5°	768.9	769.0	769.1	769.2	769.3	769.0	768.5	767.9	767.4	766.8	768.9
15°	754.1	754.6	755.1	755.6	756.0	756.3	756.3	756.3	756.3	756.3	758.6
17.5°	734.9	735.9	737.0	738.0	739.1	740.0	740.9	741.7	742.5	743.3	745.7
20°	722.0	723.3	724.6	725.9	727.1	728.3	729.3	730.3	731.3	732.4	735.1
22.5°	708.3	709.8	711.3	712.7	714.2	715.7	717.1	718.5	720.0	721.3	724.2
25°	685.5	687.3	689.1	690.9	692.6	694.7	696.9	699.2	701.5	703.8	706.8
27.5°	658.1	661.0	663.8	666.8	669.7	672.4	675.1	677.9	680.5	683.2	687.1
30°	639.8	643.1	646.4	649.7	653.0	656.3	659.6	662.9	666.2	669.5	673.6
32.5°	619.7	623.4	627.1	630.9	634.6	638.3	642.2	646.2	650.1	653.9	658.7
35°	590.6	595.0	599.3	603.6	608.0	612.5	617.3	622.2	627.0	631.8	637.4
37.5°	559.1	564.1	569.1	574.0	579.0	584.6	590.9	597.2	603.4	609.7	615.9
40°	538.1	543.7	549.3	554.9	560.4	566.7	573.5	580.4	587.3	594.1	600.7
42.5°	518.0	523.6	529.2	534.8	540.4	547.1	554.9	562.8	570.7	578.6	585.7
45°	484.4	491.3	498.1	505.0	511.9	519.7	528.6	537.5	546.4	555.3	563.1
47.5°	451.3	458.7	466.2	473.7	481.1	490.1	500.5	510.9	521.3	531.8	539.9
50°	428.4	436.3	444.2	452.0	459.9	469.6	481.0	492.4	503.9	515.3	523.9
52.5°	406.5	414.7	423.1	431.4	439.6	449.8	461.8	473.8	485.9	497.9	506.7
55°	371.3	380.5	389.6	398.7	407.9	419.0	432.2	445.5	458.7	471.8	481.0
57.5°	336.6	346.9	357.2	367.5	377.8	389.7	403.1	416.6	430.1	443.5	453.4
60°	311.9	322.8	333.7	344.7	355.6	368.2	382.7	397.2	411.6	426.2	435.8
62.5°	290.0	301.3	312.6	323.9	335.3	348.2	362.7	377.1	391.6	406.0	416.3
65°	253.7	266.0	278.5	290.9	303.4	317.1	332.1	347.1	362.1	377.0	387.4
67.5°	220.2	233.2	246.2	259.2	272.2	286.5	301.8	317.1	332.4	347.8	358.3
70°	196.5	209.7	222.9	236.1	249.3	263.8	279.6	295.2	311.0	326.7	337.7
72.5°	174.6	188.2	201.8	215.4	229.0	243.7	259.8	275.7	291.6	307.5	318.3
75°	140.5	154.7	168.9	183.2	197.4	212.7	228.9	245.1	261.4	277.6	288.5
77.5°	107.6	122.5	137.4	152.2	167.1	182.8	199.3	215.9	232.3	248.8	259.7
80°	85.7	101.2	116.7	132.2	147.7	163.6	180.1	196.7	213.1	229.6	240.3
82.5°	67.4	82.7	98.0	113.2	128.5	144.6	161.3	178.0	194.7	211.4	222.1
85°	41.2	56.9	72.6	88.3	104.1	120.1	136.3	152.6	168.8	185.1	195.8
87.5°	22.6	38.1	53.7	69.3	84.9	101.0	117.5	134.1	150.7	167.3	177.8
90°	12.3	29.3	46.2	63.2	80.2	97.6	115.5	133.4	151.3	169.1	180.3
92.5°	29.0	42.5	56.1	69.5	83.0	98.0	114.4	130.9	147.4	163.8	174.3
95°	68.6	73.9	79.0	84.3	89.5	100.5	117.1	133.8	150.4	167.1	177.7
97.5°	126.1	117.8	109.4	101.2	92.8	97.6	115.5	133.5	151.4	169.4	179.5
100°	170.0	151.5	133.0	114.6	96.1	95.7	113.4	131.0	148.8	166.4	177.5
102.5°	217.4	220.1	222.7	225.5	228.2	222.0	206.8	191.7	176.6	161.5	172.8
105°	284.0	297.4	310.9	324.3	337.9	323.4	281.0	238.8	196.4	154.1	165.2
107.5°	361.2	372.0	382.8	393.6	404.4	382.9	328.9	274.9	221.0	167.0	173.3
110°	410.0	419.4	428.8	438.1	447.5	429.0	382.6	336.2	289.9	243.6	231.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	456.9	464.9	473.0	481.0	489.1	491.8	489.0	486.4	483.7	481.0	414.9
115°	530.9	537.1	543.4	549.6	555.9	567.2	583.8	600.3	616.7	633.3	546.7
117.5°	595.8	601.5	607.2	612.9	618.5	628.4	642.5	656.6	670.6	684.7	669.4
120°	644.1	648.2	652.3	656.3	660.4	669.3	683.1	697.0	710.8	724.6	734.2
122.5°	685.1	688.7	692.3	695.9	699.6	708.2	721.7	735.2	748.8	762.3	770.7
125°	746.4	749.1	751.7	754.3	757.0	764.3	776.3	788.2	800.3	812.3	820.5
127.5°	803.0	805.6	808.3	811.0	813.6	819.8	829.1	838.6	848.1	857.5	865.8
130°	838.9	841.9	844.8	847.8	850.8	856.2	863.7	871.2	878.8	886.4	894.8
132.5°	875.5	878.0	880.5	883.0	885.5	889.9	896.3	902.7	909.0	915.3	923.2
135°	921.9	925.1	928.4	931.7	935.0	938.7	943.1	947.4	951.8	956.2	963.5
137.5°	970.1	972.3	974.5	976.7	979.0	981.7	984.9	988.1	991.3	994.5	1001.1
140°	1001.5	1002.9	1004.3	1005.6	1007.0	1009.1	1011.8	1014.6	1017.4	1020.1	1026.0
142.5°	1027.9	1029.2	1030.4	1031.6	1032.8	1034.7	1037.3	1040.0	1042.7	1045.3	1050.2
145°	1068.2	1067.9	1067.7	1067.6	1067.3	1068.9	1072.4	1075.8	1079.3	1082.8	1085.7
147.5°	1104.2	1103.5	1102.7	1101.9	1101.1	1102.4	1105.9	1109.2	1112.7	1116.1	1117.3
150°	1127.7	1126.2	1124.8	1123.3	1122.0	1122.8	1126.1	1129.4	1132.6	1135.8	1137.1
152.5°	1147.4	1145.8	1144.2	1142.6	1141.1	1141.8	1144.9	1148.0	1151.1	1154.2	1155.4
155°	1176.1	1174.3	1172.5	1170.6	1168.8	1169.2	1171.6	1174.0	1176.5	1178.9	1180.1
157.5°	1198.7	1197.1	1195.6	1194.0	1192.5	1192.6	1194.3	1195.9	1197.7	1199.4	1200.8
160°	1211.9	1210.7	1209.4	1208.2	1206.9	1206.9	1208.2	1209.4	1210.7	1211.9	1213.1
162.5°	1223.6	1222.4	1221.1	1219.9	1218.7	1218.6	1219.6	1220.7	1221.8	1222.8	1224.2
165°	1239.3	1238.0	1236.8	1235.6	1234.4	1234.1	1234.7	1235.4	1236.0	1236.6	1237.9
167.5°	1251.0	1249.8	1248.5	1247.3	1246.1	1245.8	1246.4	1246.9	1247.5	1248.1	1249.5
170°	1257.6	1256.4	1255.2	1254.0	1252.8	1252.3	1252.8	1253.1	1253.5	1254.0	1255.3
172.5°	1262.0	1260.8	1259.6	1258.4	1257.1	1256.7	1257.1	1257.5	1257.9	1258.4	1259.7
175°	1267.7	1266.3	1264.8	1263.4	1262.0	1261.5	1261.9	1262.3	1262.7	1263.1	1264.6
177.5°	1268.6	1267.5	1266.3	1265.2	1264.0	1263.5	1263.7	1263.9	1264.0	1264.2	1265.3
180°	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	788.3	788.3	788.3	788.3	788.3	788.3	788.3	788.3
2.5°	785.7	786.8	787.8	788.2	787.7	787.3	786.9	786.5
5°	783.3	784.9	786.4	787.0	786.8	786.5	786.3	786.0
7.5°	779.6	781.4	783.3	784.1	783.9	783.6	783.3	783.1
10°	776.4	778.4	780.5	781.4	781.1	780.8	780.6	780.3
12.5°	770.9	772.9	775.0	775.8	775.6	775.3	775.1	774.8
15°	760.9	763.2	765.5	766.5	766.2	765.9	765.7	765.5
17.5°	748.1	750.4	752.9	754.1	754.1	754.1	754.1	754.1
20°	738.0	740.7	743.5	744.9	744.9	744.9	744.9	744.9
22.5°	726.9	729.8	732.5	734.2	734.5	734.9	735.4	735.8
25°	709.9	712.9	716.0	717.9	718.6	719.4	720.1	720.9
27.5°	691.0	694.8	698.6	700.9	701.5	702.0	702.6	703.1
30°	677.6	681.7	685.8	688.2	688.9	689.7	690.4	691.2
32.5°	663.3	668.0	672.6	675.7	677.0	678.4	679.8	681.1
35°	643.0	648.6	654.2	657.8	659.6	661.4	663.1	665.0
37.5°	622.0	628.2	634.4	638.4	640.3	642.2	644.1	646.0
40°	607.3	613.9	620.5	624.9	627.2	629.5	631.8	634.1
42.5°	593.0	600.2	607.4	612.2	614.4	616.7	619.0	621.3
45°	571.0	578.9	586.8	591.9	594.5	597.0	599.6	602.1
47.5°	548.2	556.4	564.6	570.2	572.9	575.8	578.5	581.3
50°	532.5	541.1	549.8	555.5	558.3	561.1	563.9	566.7
52.5°	515.6	524.4	533.2	539.2	542.2	545.2	548.1	551.1
55°	490.2	499.3	508.4	514.6	517.9	521.2	524.5	527.8
57.5°	463.2	473.0	482.9	489.6	492.8	496.2	499.6	502.9
60°	445.5	455.1	464.8	471.3	474.9	478.5	482.0	485.6
62.5°	426.5	436.8	447.0	453.9	457.2	460.5	463.9	467.3
65°	397.9	408.3	418.7	425.5	428.8	432.1	435.4	438.7
67.5°	368.8	379.3	389.9	396.8	400.3	403.7	407.2	410.6
70°	348.6	359.5	370.4	377.4	380.5	383.5	386.6	389.6
72.5°	329.0	339.7	350.4	357.6	361.3	364.9	368.6	372.2
75°	299.5	310.4	321.3	328.4	331.7	335.0	338.3	341.6
77.5°	270.6	281.5	292.3	299.5	303.1	306.6	310.2	313.7
80°	251.0	261.7	272.3	279.4	282.9	286.5	290.1	293.6
82.5°	232.7	243.3	254.0	261.1	264.4	267.7	271.0	274.4
85°	206.4	217.1	227.7	234.9	238.4	241.9	245.5	249.1
87.5°	188.4	199.0	209.5	216.5	219.8	223.1	226.4	229.8
90°	191.5	202.6	213.8	221.1	224.5	228.0	231.4	235.0
92.5°	184.8	195.3	205.8	212.7	215.9	219.2	222.5	225.8
95°	188.4	199.1	209.7	216.5	219.4	222.2	225.1	227.9
97.5°	189.8	199.9	210.2	216.9	220.2	223.3	226.6	229.9
100°	188.5	199.5	210.5	217.6	220.8	224.0	227.2	230.4
102.5°	184.1	195.4	206.7	214.0	217.4	220.8	224.1	227.5
105°	176.3	187.4	198.5	206.0	209.6	213.2	216.8	220.3
107.5°	179.5	185.8	192.1	197.0	200.6	204.2	207.8	211.4
110°	219.1	206.9	194.8	190.5	194.0	197.6	201.2	204.8





TEST NUMBER: P331414-935

CATALOG NUMBER: SA2XXDIP-C865D1080U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	348.9	282.8	216.7	185.4	188.8	192.3	195.7	199.1
115°	460.2	373.6	287.1	237.9	226.0	214.1	202.3	190.5
117.5°	654.2	638.9	623.6	593.2	547.7	502.1	456.6	411.1
120°	743.7	753.3	762.8	755.3	730.6	705.9	681.2	656.6
122.5°	779.0	787.4	795.8	798.5	795.6	792.6	789.7	786.8
125°	828.8	837.1	845.3	850.9	853.9	856.8	859.6	862.5
127.5°	874.3	882.6	891.0	896.3	898.7	901.0	903.4	905.8
130°	903.1	911.4	919.7	924.8	926.6	928.5	930.3	932.1
132.5°	930.9	938.7	946.6	951.4	953.2	955.0	956.8	958.6
135°	970.9	978.4	985.7	990.2	991.8	993.4	995.1	996.7
137.5°	1007.8	1014.4	1021.1	1024.9	1026.0	1027.0	1028.0	1029.1
140°	1031.8	1037.8	1043.6	1046.9	1047.3	1047.8	1048.4	1048.9
142.5°	1055.2	1060.1	1065.0	1067.6	1067.9	1068.2	1068.5	1068.8
145°	1088.6	1091.6	1094.6	1096.1	1096.4	1096.7	1096.9	1097.2
147.5°	1118.6	1119.9	1121.1	1121.6	1121.4	1121.2	1120.9	1120.7
150°	1138.3	1139.5	1140.7	1140.8	1139.8	1138.8	1137.8	1136.8
152.5°	1156.6	1157.9	1159.1	1159.0	1157.6	1156.3	1154.9	1153.7
155°	1181.3	1182.6	1183.8	1183.5	1181.9	1180.3	1178.7	1177.1
157.5°	1202.1	1203.5	1204.9	1204.8	1203.2	1201.6	1200.1	1198.4
160°	1214.3	1215.5	1216.7	1216.6	1215.2	1213.8	1212.4	1210.9
162.5°	1225.5	1226.9	1228.4	1228.1	1226.4	1224.7	1222.9	1221.2
165°	1239.4	1240.8	1242.3	1242.3	1240.8	1239.4	1237.9	1236.6
167.5°	1250.9	1252.3	1253.8	1253.5	1251.7	1249.9	1248.1	1246.2
170°	1256.8	1258.2	1259.6	1259.4	1257.6	1255.8	1254.0	1252.1
172.5°	1261.2	1262.6	1264.0	1263.9	1262.0	1260.2	1258.4	1256.5
175°	1265.9	1267.4	1268.8	1268.5	1266.4	1264.4	1262.4	1260.3
177.5°	1266.4	1267.6	1268.8	1268.6	1267.1	1265.7	1264.2	1262.7
180°	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9

(END OF REPORT)