

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: P331734-940

Luminaire Tested: **SA2XXRDIP-C865D1080U940-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331734-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C865D1080U940-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

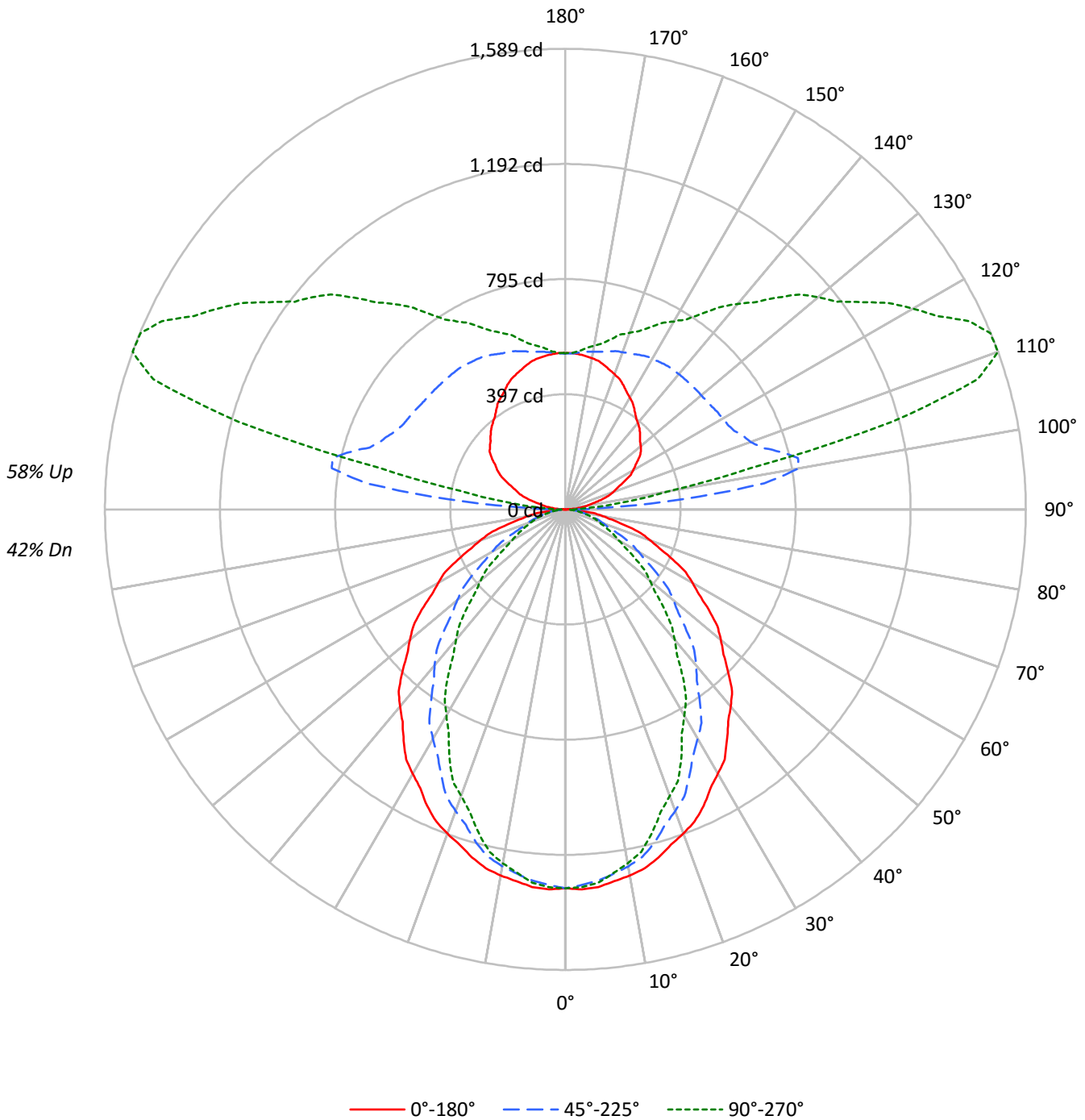
Lumens per Lamp: N/A
Luminaire Lumens: 6442.4 lumens
Efficiency: N/A
Efficacy: 98.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

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



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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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	49	49	49	42
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	44	43	42	36
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36	31
3	81	71	64	59	73	66	60	55	55	50	46	44	41	39	35	33	31	27
4	74	63	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27	23
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24	20
6	63	51	43	38	57	47	40	35	39	34	30	32	29	26	26	23	21	18
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19	16
8	54	42	34	29	49	39	32	27	33	28	24	27	23	20	22	19	17	15
9	50	38	31	26	46	35	29	25	30	25	22	25	21	18	20	17	15	13
10	47	35	28	23	43	33	26	22	28	23	19	23	19	17	19	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	21111	21111	21111
5°	21191	20846	20960
10°	21028	20505	20330
15°	20787	19896	19323
20°	20452	19029	18076
25°	20110	18045	16864
30°	19634	17031	15310
35°	19170	15930	13947
40°	18704	14790	12370
45°	18155	13511	10942
50°	17595	12215	9540
55°	17022	10826	8194
60°	16353	9361	6801
65°	15595	7866	6193
70°	14691	6477	5693
75°	13587	5908	5315
80°	11985	5281	4844
85°	9429	4168	4168



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.4	1.9
10°-20°	336.0	5.2
20°-30°	471.9	7.3
30°-40°	514.6	8.0
40°-50°	473.1	7.3
50°-60°	371.6	5.8
60°-70°	242.3	3.8
70°-80°	124.9	1.9
80°-90°	37.3	0.6
90°-100°	215.4	3.3
100°-110°	730.9	11.3
110°-120°	776.4	12.1
120°-130°	639.2	9.9
130°-140°	513.3	8.0
140°-150°	387.9	6.0
150°-160°	272.6	4.2
160°-170°	160.5	2.5
170°-180°	52.2	0.8
0°-30°	930.3	14.4
0°-40°	1444.9	22.4
0°-60°	2289.6	35.5
0°-90°	2694.0	41.8
90°-120°	1722.7	26.7
90°-150°	3263.0	50.6
90°-180°	3748.0	58.2
0°-180°	6442.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1308	1308	1308	1308	1308	
5°	1308	1301	1286	1296	1293	124
15°	1244	1229	1190	1168	1156	350
25°	1129	1089	1013	966	947	519
35°	973	910	808	736	708	608
45°	795	713	592	511	479	614
55°	605	510	385	316	291	540
65°	408	312	206	168	162	405
75°	218	137	95	87	85	230
85°	51	27	22	22	22	60
90°	1	14	35	34	34	4
95°	36	89	406	153	118	38
105°	126	191	768	1372	1167	134
115°	223	281	642	1325	1536	221
125°	311	368	617	1074	1246	276
135°	365	435	610	902	1033	282
145°	416	479	607	754	825	261
155°	473	511	589	667	693	218
165°	516	531	564	599	608	145
175°	538	538	543	550	548	51
180°	539	539	539	539	539	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5
2.5°	1312.2	1311.2	1310.1	1309.0	1308.1	1306.4	1304.0	1301.7	1299.4	1297.1	1299.2
5°	1307.5	1306.2	1304.8	1303.5	1302.3	1299.8	1296.5	1293.1	1289.6	1286.2	1288.5
7.5°	1294.0	1292.4	1290.8	1289.1	1287.5	1284.7	1280.7	1276.7	1272.6	1268.6	1269.4
10°	1282.6	1280.8	1279.0	1277.1	1275.2	1271.8	1266.5	1261.2	1256.0	1250.7	1249.9
12.5°	1268.5	1266.1	1263.9	1261.7	1259.4	1254.9	1248.1	1241.4	1234.7	1228.0	1226.5
15°	1243.6	1240.7	1237.8	1234.9	1232.0	1226.1	1217.2	1208.3	1199.3	1190.3	1185.4
17.5°	1213.1	1208.6	1204.3	1199.8	1195.4	1187.5	1176.0	1164.5	1153.1	1141.6	1135.7
20°	1190.3	1185.1	1179.8	1174.6	1169.3	1160.1	1146.9	1133.8	1120.7	1107.5	1100.9
22.5°	1165.7	1159.8	1154.0	1148.1	1142.2	1131.8	1117.0	1102.2	1087.4	1072.5	1064.0
25°	1128.8	1120.4	1112.0	1103.6	1095.2	1082.3	1064.9	1047.6	1030.2	1012.9	1002.1
27.5°	1084.3	1075.1	1066.0	1056.9	1047.8	1033.4	1013.8	994.3	974.6	955.1	942.5
30°	1053.1	1043.1	1033.1	1023.1	1013.2	997.6	976.6	955.6	934.5	913.5	900.1
32.5°	1022.8	1011.1	999.4	987.7	976.1	959.6	938.1	916.6	895.2	873.7	858.4
35°	972.6	959.2	945.8	932.4	919.0	900.7	877.5	854.4	831.3	808.2	791.6
37.5°	922.5	907.8	893.0	878.2	863.5	843.8	819.2	794.5	769.9	745.2	726.9
40°	887.4	871.6	855.9	840.1	824.3	803.7	778.2	752.7	727.2	701.7	683.0
42.5°	851.5	834.8	818.2	801.6	785.0	763.5	737.2	710.8	684.5	658.1	638.8
45°	795.1	777.5	759.9	742.3	724.7	702.0	674.5	646.8	619.2	591.7	572.9
47.5°	740.2	721.6	702.9	684.2	665.6	641.9	613.5	585.0	556.4	528.0	509.4
50°	700.5	681.8	663.2	644.4	625.8	602.0	573.1	544.1	515.2	486.3	468.1
52.5°	661.6	642.1	622.7	603.2	583.6	559.7	531.5	503.1	474.8	446.6	429.0
55°	604.7	584.2	563.7	543.1	522.6	498.1	469.8	441.3	413.0	384.6	368.8
57.5°	546.2	525.1	504.1	483.0	462.1	437.9	410.5	383.3	356.0	328.7	314.2
60°	506.4	485.4	464.4	443.4	422.3	398.2	371.1	344.0	317.0	289.9	276.5
62.5°	467.6	446.6	425.5	404.5	383.4	360.1	334.2	308.4	282.6	256.7	244.0
65°	408.2	386.9	365.6	344.3	323.1	300.5	276.9	253.2	229.5	205.9	197.0
67.5°	351.0	329.8	308.7	287.5	266.4	245.1	223.9	202.6	181.3	160.0	155.9
70°	311.2	290.7	270.2	249.7	229.2	209.8	191.7	173.5	155.4	137.2	134.6
72.5°	273.3	253.7	234.0	214.4	194.7	177.5	163.0	148.4	133.8	119.3	117.1
75°	217.8	199.3	180.9	162.5	144.1	130.5	121.5	112.5	103.6	94.7	92.8
77.5°	163.1	146.9	130.7	114.6	98.4	88.3	83.9	79.6	75.3	71.0	69.9
80°	128.9	115.6	102.2	88.7	75.3	67.3	64.6	62.1	59.4	56.8	55.7
82.5°	97.7	87.3	76.8	66.3	55.9	49.8	48.0	46.2	44.4	42.6	42.0
85°	50.9	45.4	39.9	34.3	28.8	25.7	24.9	24.1	23.3	22.5	22.5
87.5°	15.3	14.3	13.5	12.1	10.9	10.7	11.7	13.2	14.4	14.6	14.2
90°	1.1	4.1	8.3	10.3	12.4	15.5	20.7	28.0	34.2	35.2	34.2
92.5°	12.7	18.2	25.7	30.2	37.3	47.0	70.4	103.3	132.8	134.6	113.8
95°	36.3	40.4	50.7	60.1	76.7	101.5	149.2	239.2	359.4	406.1	355.3
97.5°	59.0	64.6	75.6	89.7	108.8	137.0	196.8	322.4	522.1	693.2	727.2
100°	79.7	82.8	92.2	108.8	129.5	158.5	213.4	339.7	563.5	818.3	967.5
102.5°	98.8	101.1	110.4	127.0	148.6	177.5	228.3	340.6	547.8	822.5	1057.0
105°	126.4	130.5	137.8	153.3	176.1	205.1	253.8	346.0	516.9	767.6	1043.1
107.5°	156.2	159.5	166.6	180.8	203.5	232.6	279.9	360.3	501.6	708.7	952.2
110°	176.1	180.2	186.5	199.9	221.7	251.7	297.3	371.8	498.3	680.6	895.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	194.3	198.5	205.5	218.1	239.1	269.9	313.9	384.3	499.1	662.4	855.2
115°	222.7	227.9	234.1	246.6	267.2	295.2	339.7	403.0	503.5	642.2	805.9
117.5°	252.2	256.3	262.5	273.5	293.4	322.4	363.6	422.8	510.9	632.5	774.8
120°	270.4	274.5	280.7	290.1	310.8	339.7	380.1	436.1	515.9	626.7	758.2
122.5°	287.8	291.1	297.3	307.5	328.1	358.0	395.9	447.7	521.7	623.4	744.1
125°	310.8	313.9	320.1	332.5	353.2	382.3	419.5	466.2	530.4	617.4	724.1
127.5°	329.0	333.1	341.9	355.5	375.4	405.2	441.5	483.3	539.3	613.9	705.4
130°	339.7	343.9	354.3	368.8	389.5	418.5	454.8	494.1	545.9	612.2	693.0
132.5°	349.7	354.7	365.9	381.2	402.8	431.8	466.4	504.9	552.5	611.4	683.1
135°	364.6	368.8	381.2	396.7	420.5	449.6	482.7	519.0	560.4	610.1	669.1
137.5°	378.7	383.7	396.1	412.7	436.3	463.2	496.0	529.8	567.5	609.9	659.4
140°	389.5	393.6	406.1	422.7	445.4	472.3	503.5	535.6	570.8	609.1	653.6
142.5°	400.3	403.6	415.2	431.8	453.7	479.0	509.3	540.6	573.3	609.1	647.8
145°	416.4	420.5	431.0	446.5	467.2	490.0	517.9	547.0	576.0	607.0	640.2
147.5°	433.8	436.9	446.8	461.2	478.4	498.6	525.0	550.5	576.8	603.3	632.3
150°	445.4	448.5	456.8	470.3	485.8	504.4	528.3	552.1	576.0	600.8	625.6
152.5°	457.0	458.5	466.7	478.6	493.3	510.2	531.6	552.9	574.3	596.6	619.8
155°	473.4	474.4	480.6	492.0	503.5	519.0	536.5	554.2	571.8	589.4	609.1
157.5°	487.1	488.1	493.1	503.0	512.1	525.2	540.1	554.2	567.0	581.9	599.0
160°	496.1	497.2	501.3	509.6	517.9	529.3	541.8	554.2	564.5	577.0	591.5
162.5°	505.3	504.7	508.8	515.4	522.9	531.8	542.6	553.4	562.0	572.8	584.9
165°	515.9	514.9	516.9	523.1	528.3	534.5	543.9	551.1	557.3	564.5	573.9
167.5°	524.6	523.3	525.2	529.1	532.9	536.8	543.6	549.7	552.5	557.3	563.1
170°	530.4	528.3	529.3	532.4	534.5	537.6	542.8	548.0	550.0	553.1	557.3
172.5°	533.7	532.4	531.8	534.9	536.2	538.4	542.0	545.5	546.7	548.2	551.5
175°	537.6	536.5	535.6	537.6	537.6	538.7	540.7	542.8	541.8	542.8	543.9
177.5°	539.5	537.8	537.0	538.7	538.7	538.7	539.5	541.2	539.5	538.7	539.5
180°	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5	1307.5
2.5°	1301.3	1303.4	1305.5	1306.4	1305.9	1305.5	1305.1	1304.7
5°	1290.9	1293.2	1295.7	1296.5	1295.7	1294.9	1294.1	1293.2
7.5°	1270.1	1270.7	1271.4	1271.0	1269.7	1268.4	1266.9	1265.6
10°	1249.1	1248.3	1247.5	1246.3	1244.7	1243.2	1241.6	1240.0
12.5°	1225.1	1223.7	1222.3	1220.3	1217.6	1215.0	1212.4	1209.8
15°	1180.4	1175.4	1170.4	1166.5	1164.0	1161.3	1158.7	1156.0
17.5°	1129.7	1123.7	1117.8	1112.6	1108.0	1103.6	1099.0	1094.5
20°	1094.4	1087.8	1081.2	1075.0	1069.3	1063.5	1057.7	1052.0
22.5°	1055.6	1047.1	1038.7	1032.2	1028.0	1023.6	1019.3	1015.0
25°	991.3	980.5	969.7	962.3	958.4	954.5	950.6	946.6
27.5°	930.0	917.4	904.8	895.5	889.2	882.9	876.6	870.4
30°	886.6	873.3	859.8	849.5	842.5	835.4	828.3	821.2
32.5°	843.1	827.8	812.5	801.5	794.9	788.2	781.5	774.8
35°	775.0	758.5	741.9	730.8	725.0	719.2	713.4	707.6
37.5°	708.7	690.5	672.3	659.8	653.2	646.5	639.9	633.3
40°	664.3	645.7	627.0	614.2	607.4	600.6	593.7	586.9
42.5°	619.6	600.2	580.9	567.9	561.3	554.7	548.0	541.4
45°	554.3	535.7	516.9	504.4	498.1	491.9	485.5	479.2
47.5°	490.8	472.3	453.7	441.6	435.9	430.1	424.4	418.7
50°	450.0	431.9	413.8	401.9	396.4	390.8	385.3	379.8
52.5°	411.5	394.0	376.5	365.2	360.1	355.0	349.9	344.8
55°	353.0	337.2	321.5	311.0	306.0	301.0	296.0	291.1
57.5°	299.8	285.3	270.9	261.5	257.3	253.1	248.9	244.7
60°	263.1	249.7	236.2	227.5	223.2	219.0	214.8	210.6
62.5°	231.2	218.5	205.6	198.0	195.5	193.0	190.4	187.9
65°	188.0	179.1	170.1	165.2	164.4	163.7	162.9	162.1
67.5°	151.8	147.7	143.6	141.1	140.3	139.4	138.6	137.8
70°	132.0	129.4	126.7	124.9	123.9	122.8	121.7	120.6
72.5°	114.9	112.6	110.4	109.1	108.3	107.7	107.1	106.5
75°	91.0	89.2	87.3	86.2	86.0	85.7	85.4	85.2
77.5°	68.9	67.9	66.8	66.1	65.6	65.2	64.8	64.4
80°	54.7	53.7	52.6	52.1	52.1	52.1	52.1	52.1
82.5°	41.4	40.7	40.0	39.8	39.8	39.8	39.8	39.8
85°	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
87.5°	13.8	13.2	13.4	13.5	13.5	13.5	13.5	13.5
90°	33.2	31.1	33.2	34.2	34.2	34.2	34.2	34.2
92.5°	90.3	77.5	68.8	62.3	61.5	58.2	59.0	57.4
95°	271.4	208.2	164.7	141.9	128.4	120.2	117.1	118.1
97.5°	633.3	518.2	406.1	331.3	281.8	256.3	241.1	232.5
100°	945.7	817.3	675.4	550.0	464.0	419.5	389.5	370.9
102.5°	1150.5	1121.4	1017.6	884.8	791.4	715.4	677.9	652.6
105°	1258.6	1375.6	1389.1	1355.0	1290.7	1226.5	1182.0	1167.4
107.5°	1180.7	1357.0	1464.7	1514.8	1523.0	1519.4	1510.5	1491.2
110°	1113.6	1299.0	1431.6	1516.5	1561.0	1580.7	1590.1	1589.0



TEST NUMBER: P331734-940

CATALOG NUMBER: SA2XXRDIP-C865D1080U940-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1052.2	1230.2	1371.9	1469.3	1531.2	1564.1	1581.8	1587.3
115°	976.9	1136.4	1272.0	1378.8	1452.3	1499.9	1526.9	1536.2
117.5°	920.1	1060.2	1183.2	1283.3	1358.3	1408.5	1437.0	1444.8
120°	891.9	1020.3	1130.2	1224.4	1296.9	1345.6	1375.6	1386.0
122.5°	869.5	987.2	1091.2	1176.3	1241.4	1289.2	1316.0	1324.6
125°	837.0	943.7	1034.8	1112.5	1172.6	1212.0	1237.9	1246.2
127.5°	804.9	901.4	987.4	1059.1	1111.5	1148.3	1170.7	1177.4
130°	784.2	873.3	955.1	1023.4	1074.2	1109.5	1130.2	1138.4
132.5°	764.3	846.8	921.9	986.1	1036.1	1071.3	1090.4	1097.8
135°	736.5	804.9	873.3	931.2	975.8	1010.0	1028.6	1032.8
137.5°	714.3	771.5	825.8	876.4	916.9	946.4	962.8	968.9
140°	700.3	750.0	797.6	843.2	876.4	903.3	918.8	925.1
142.5°	688.7	730.9	772.0	810.0	841.5	866.0	879.9	881.1
145°	672.3	706.5	738.6	768.7	793.4	811.1	821.4	824.6
147.5°	659.7	686.6	711.7	733.6	754.1	768.2	775.3	777.1
150°	650.5	673.3	695.1	713.7	729.2	741.7	747.9	748.9
152.5°	641.4	662.5	681.0	697.1	709.4	720.1	724.7	724.9
155°	628.7	645.3	660.8	672.3	683.7	690.9	695.1	693.0
157.5°	614.0	627.9	641.0	649.9	658.0	664.0	665.8	665.8
160°	604.9	616.4	627.8	635.0	642.2	647.4	648.5	648.5
162.5°	595.8	605.6	615.3	620.9	628.1	631.7	632.7	631.9
165°	582.2	589.4	596.6	600.8	604.9	609.1	609.1	608.1
167.5°	569.1	574.7	579.7	583.4	585.2	587.5	587.4	586.1
170°	562.5	565.6	569.7	571.8	572.8	576.0	574.9	572.8
172.5°	555.0	557.3	560.6	561.9	562.9	564.4	563.3	562.0
175°	547.0	548.0	549.0	550.0	550.0	551.1	550.0	548.0
177.5°	541.2	541.2	542.0	542.0	542.0	542.0	541.2	539.5
180°	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7

(END OF REPORT)