

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: P331427-940

Luminaire Tested: **SA2XXDIP-C1005D330U940-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331427-940
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-C1005D330U940-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 330 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4661.2 lumens
Efficiency: N/A
Efficacy: 93.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Direct

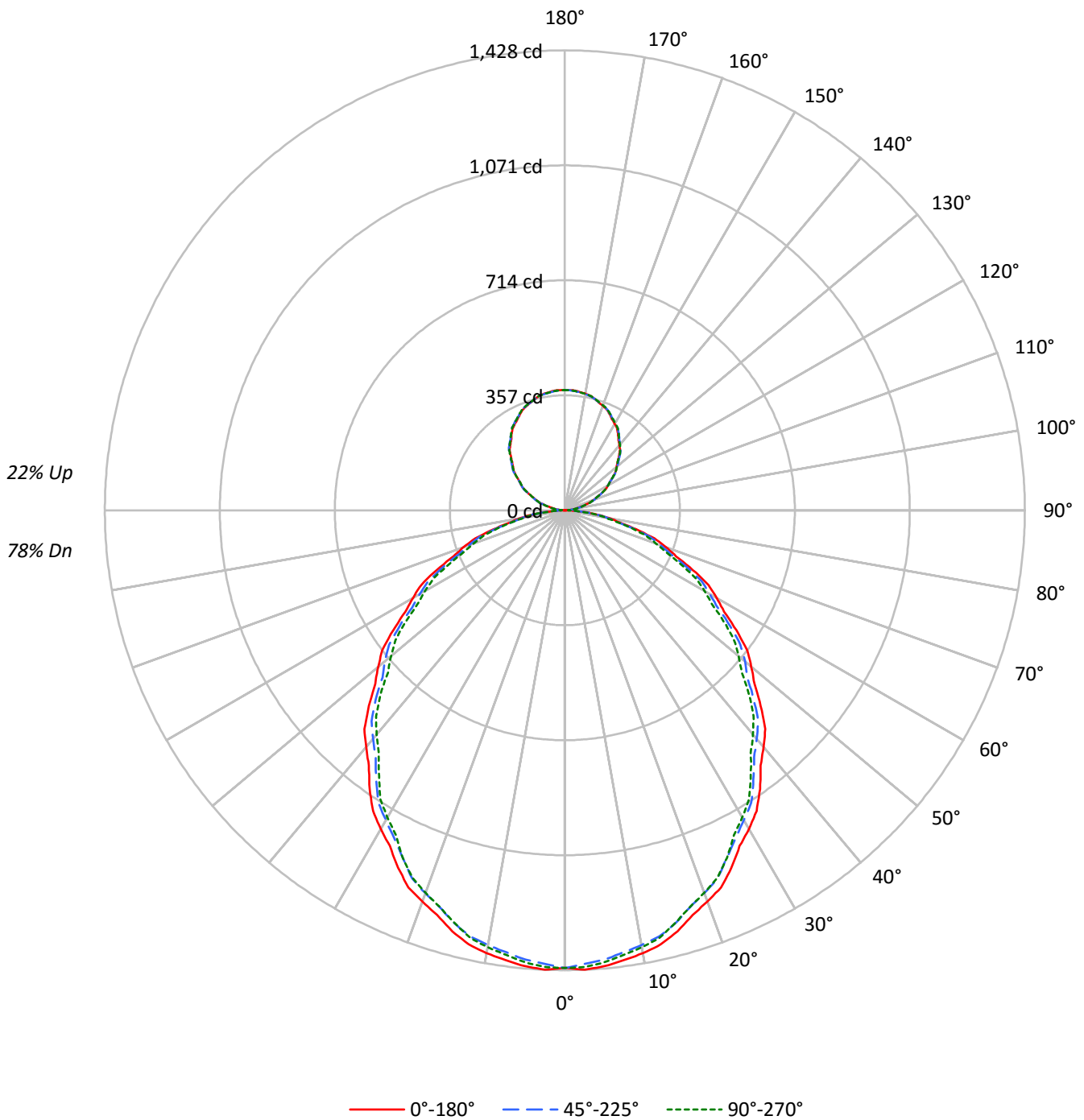
Input Watts (W): 49.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	114	114	114	114	108	108	108	108	99	99	99	90	90	90	81	81	81	78
1	104	99	95	92	99	95	91	88	87	84	81	79	77	75	72	70	69	65
2	95	87	80	75	90	83	77	72	76	71	67	69	66	63	63	61	58	55
3	86	76	69	63	82	73	66	61	67	61	57	61	57	53	56	53	49	46
4	79	68	60	53	75	65	57	52	60	53	49	55	50	46	50	46	43	40
5	73	61	52	46	69	58	50	45	54	47	42	49	44	40	45	41	37	35
6	67	55	46	40	64	52	45	39	48	42	37	45	39	35	41	37	33	30
7	62	49	41	35	59	48	40	34	44	37	33	41	35	31	38	33	29	27
8	58	45	37	31	55	43	36	31	40	34	29	37	32	28	35	30	26	24
9	54	41	33	28	52	40	33	28	37	31	26	34	29	25	32	27	24	22
10	51	38	31	25	48	37	30	25	34	28	24	32	27	23	30	25	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	22946	22946	22946
5°	23034	22702	22835
10°	22897	22471	22584
15°	22614	22181	22158
20°	22213	21742	21720
25°	21814	21205	21205
30°	21300	20713	20534
35°	20820	20120	19825
40°	20219	19530	19153
45°	19628	18941	18472
50°	18982	18331	17678
55°	18311	17619	16963
60°	17563	16769	16152
65°	16756	15924	15194
70°	15739	14903	14195
75°	14323	13724	13381
80°	12710	12329	11688
85°	10374	9874	8855



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.6	2.9
10°-20°	376.0	8.1
20°-30°	552.7	11.9
30°-40°	642.0	13.8
40°-50°	641.3	13.8
50°-60°	559.3	12.0
60°-70°	413.6	8.9
70°-80°	234.2	5.0
80°-90°	64.5	1.4
90°-100°	23.7	0.5
100°-110°	73.5	1.6
110°-120°	125.6	2.7
120°-130°	165.1	3.5
130°-140°	185.4	4.0
140°-150°	181.8	3.9
150°-160°	152.4	3.3
160°-170°	101.1	2.2
170°-180°	35.3	0.8
0°-30°	1062.4	22.8
0°-40°	1704.4	36.6
0°-60°	2905.1	62.3
0°-90°	3617.3	77.6
90°-120°	222.7	4.8
90°-150°	755.0	16.2
90°-180°	1044.0	22.4
0°-180°	4661.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1421	1421	1421	1421	1421	
5°	1421	1415	1401	1411	1409	135
15°	1353	1344	1327	1332	1326	381
25°	1224	1213	1190	1193	1190	563
35°	1056	1042	1021	1013	1006	659
45°	860	849	830	815	809	663
55°	650	642	626	610	603	581
65°	439	430	417	405	398	434
75°	230	227	220	212	214	245
85°	56	55	53	49	48	64
90°	0	4	11	10	11	4
95°	16	19	20	20	20	19
105°	68	69	69	70	70	72
115°	126	128	127	127	126	125
125°	183	186	185	184	184	164
135°	237	241	241	241	240	183
145°	288	290	292	292	291	180
155°	329	330	331	333	332	151
165°	358	358	358	360	359	101
175°	373	372	371	373	371	35
180°	373	373	373	373	373	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1421.2	1421.2	1421.2	1421.2	1421.2	1421.2	1421.2	1421.2	1421.2	1421.2	1421.2
2.5°	1427.8	1426.6	1425.4	1424.2	1422.9	1421.0	1418.4	1415.7	1413.0	1410.3	1412.7
5°	1421.2	1420.0	1418.8	1417.6	1416.4	1414.1	1410.8	1407.4	1404.1	1400.7	1403.2
7.5°	1408.6	1406.8	1404.9	1403.0	1401.1	1398.5	1395.1	1391.7	1388.3	1384.9	1387.3
10°	1396.6	1394.5	1392.4	1390.3	1388.1	1385.3	1381.6	1378.0	1374.3	1370.6	1373.1
12.5°	1380.3	1378.3	1376.4	1374.6	1372.7	1369.9	1366.3	1362.6	1359.1	1355.4	1357.1
15°	1352.9	1351.1	1349.2	1347.5	1345.6	1342.7	1338.8	1334.8	1330.9	1327.0	1328.2
17.5°	1317.9	1316.1	1314.3	1312.4	1310.6	1307.7	1303.7	1299.7	1295.7	1291.7	1293.1
20°	1292.8	1290.9	1289.1	1287.3	1285.5	1282.5	1278.2	1274.0	1269.7	1265.4	1266.3
22.5°	1267.7	1265.1	1262.6	1260.0	1257.4	1254.2	1250.2	1246.2	1242.2	1238.1	1238.3
25°	1224.5	1222.0	1219.6	1217.2	1214.8	1210.9	1205.8	1200.6	1195.4	1190.3	1190.9
27.5°	1175.3	1173.0	1170.9	1168.7	1166.5	1163.4	1159.3	1155.2	1151.2	1147.1	1146.2
30°	1142.5	1140.1	1137.6	1135.1	1132.7	1129.3	1124.7	1120.2	1115.6	1111.0	1110.1
32.5°	1107.5	1105.5	1103.6	1101.6	1099.7	1096.4	1091.5	1086.7	1081.9	1077.1	1075.5
35°	1056.3	1053.3	1050.3	1047.2	1044.2	1040.3	1035.4	1030.6	1025.7	1020.8	1019.0
37.5°	998.7	996.0	993.4	990.7	988.0	984.3	979.4	974.6	969.6	964.8	962.5
40°	959.3	956.9	954.5	952.1	949.6	946.0	941.1	936.3	931.4	926.6	923.8
42.5°	921.0	918.6	916.2	913.8	911.3	907.7	902.9	898.0	893.1	888.2	885.3
45°	859.6	857.5	855.3	853.2	851.0	847.7	843.2	838.7	834.1	829.5	826.2
47.5°	798.3	796.4	794.3	792.4	790.3	786.9	782.2	777.5	772.8	768.0	764.5
50°	755.7	754.2	752.7	751.2	749.7	746.7	742.5	738.2	734.0	729.8	725.5
52.5°	714.2	712.2	710.2	708.2	706.1	703.1	699.1	695.1	691.2	687.2	683.6
55°	650.5	648.6	646.8	645.1	643.2	640.4	636.9	633.2	629.5	625.9	622.2
57.5°	586.6	585.1	583.6	582.2	580.7	578.0	574.0	570.0	566.0	562.0	558.4
60°	543.9	542.7	541.4	540.3	539.0	536.3	532.1	527.8	523.5	519.3	515.9
62.5°	502.4	500.4	498.5	496.5	494.5	492.0	488.7	485.4	482.1	478.8	475.7
65°	438.6	436.8	435.1	433.2	431.4	428.9	425.9	422.8	419.8	416.8	414.1
67.5°	373.9	372.5	371.0	369.5	368.1	366.0	363.2	360.5	357.8	355.1	352.9
70°	333.4	332.3	331.0	329.8	328.6	326.6	323.9	321.1	318.4	315.7	313.5
72.5°	291.9	290.7	289.4	288.3	287.0	285.5	283.8	282.0	280.3	278.5	276.3
75°	229.6	229.0	228.4	227.7	227.1	226.0	224.5	223.0	221.5	220.0	218.2
77.5°	173.8	172.8	171.7	170.8	169.7	168.9	168.3	167.6	167.0	166.5	165.5
80°	136.7	136.3	136.1	135.7	135.5	135.0	134.4	133.8	133.1	132.6	131.6
82.5°	101.7	101.7	101.6	101.5	101.4	101.2	100.9	100.5	100.1	99.8	98.6
85°	56.0	55.7	55.5	55.1	54.8	54.5	54.2	53.9	53.6	53.3	52.3
87.5°	19.7	19.4	19.1	18.8	18.5	18.2	18.0	17.8	17.7	17.5	16.8
90°	0.4	1.2	2.0	2.9	3.7	4.9	6.4	7.9	9.5	11.1	10.9
92.5°	5.6	6.2	6.9	7.5	8.1	8.6	8.9	9.3	9.6	10.0	10.1
95°	16.4	17.1	17.7	18.5	19.2	19.6	19.7	19.9	20.1	20.2	20.2
97.5°	30.0	30.6	31.1	31.7	32.4	32.8	33.1	33.3	33.6	33.9	33.9
100°	40.0	40.6	41.1	41.7	42.3	42.6	42.8	43.1	43.2	43.5	43.5
102.5°	50.6	51.0	51.5	51.9	52.3	52.8	53.0	53.2	53.5	53.8	53.9
105°	67.8	67.9	68.1	68.4	68.6	68.8	68.9	69.0	69.2	69.3	69.5
107.5°	85.0	85.3	85.6	86.0	86.2	86.4	86.4	86.4	86.4	86.4	86.4
110°	96.1	96.5	96.9	97.4	97.7	98.0	98.0	98.0	98.0	98.0	98.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	108.2	108.6	109.1	109.4	109.9	110.0	109.9	109.9	109.9	109.9	109.7
115°	126.0	126.4	126.9	127.2	127.7	127.9	127.7	127.5	127.4	127.2	127.2
117.5°	143.7	144.4	144.9	145.4	146.1	146.2	145.7	145.3	144.9	144.5	144.4
120°	155.6	156.2	156.8	157.3	157.8	157.8	157.3	156.8	156.2	155.6	155.6
122.5°	166.5	167.1	167.8	168.4	169.2	169.3	168.9	168.5	168.1	167.7	167.6
125°	183.3	184.0	184.6	185.2	185.8	186.1	185.8	185.7	185.5	185.2	185.0
127.5°	199.8	200.6	201.4	202.2	203.0	203.2	203.0	202.8	202.5	202.2	202.0
130°	210.2	211.1	212.0	212.9	213.7	214.2	214.0	213.9	213.7	213.6	213.5
132.5°	221.8	222.5	223.2	223.9	224.7	225.1	225.1	225.2	225.2	225.2	224.9
135°	237.2	238.0	238.8	239.5	240.3	240.8	240.9	241.0	241.2	241.3	241.2
137.5°	253.5	254.1	254.8	255.5	256.1	256.5	256.6	256.8	257.0	257.2	257.2
140°	263.4	264.0	264.7	265.3	265.9	266.4	266.7	267.1	267.4	267.8	267.8
142.5°	273.5	274.1	274.7	275.4	276.0	276.4	276.6	276.9	277.1	277.3	277.4
145°	287.9	288.5	288.9	289.4	289.9	290.3	290.8	291.2	291.6	292.0	292.1
147.5°	300.9	301.5	302.0	302.6	303.2	303.6	303.9	304.3	304.5	304.8	305.0
150°	309.7	310.1	310.5	310.9	311.4	311.7	312.0	312.3	312.5	312.8	313.1
152.5°	317.5	317.9	318.3	318.8	319.1	319.6	319.9	320.2	320.6	320.9	321.2
155°	329.2	329.4	329.7	329.8	330.0	330.3	330.5	330.6	330.9	331.1	331.4
157.5°	339.2	339.4	339.5	339.7	339.8	339.9	340.1	340.2	340.3	340.5	340.9
160°	345.3	345.4	345.5	345.7	345.8	346.0	346.0	346.1	346.2	346.3	346.6
162.5°	350.8	350.9	350.9	350.9	351.0	351.0	351.1	351.2	351.2	351.2	351.8
165°	358.2	358.1	358.0	358.0	357.9	357.8	357.8	357.8	357.8	357.8	358.4
167.5°	364.4	364.2	364.0	363.7	363.6	363.5	363.4	363.4	363.4	363.4	363.8
170°	367.7	367.5	367.2	367.0	366.8	366.7	366.6	366.5	366.5	366.4	366.8
172.5°	369.9	369.7	369.5	369.3	369.1	368.9	368.9	368.8	368.7	368.6	369.2
175°	372.7	372.5	372.3	372.0	371.8	371.7	371.6	371.4	371.2	371.1	371.6
177.5°	373.8	373.6	373.4	373.4	373.2	373.0	372.9	372.8	372.6	372.6	372.9
180°	373.4	373.4	373.4	373.4	373.4	373.4	373.4	373.4	373.4	373.4	373.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1421.2	1421.2	1421.2	1421.2	1421.2	1421.2	1421.2	1421.2
2.5°	1415.1	1417.6	1420.0	1421.0	1420.5	1420.0	1419.5	1419.1
5°	1405.6	1408.0	1410.4	1411.4	1410.8	1410.2	1409.5	1408.9
7.5°	1389.7	1392.1	1394.6	1395.5	1394.8	1394.2	1393.5	1392.9
10°	1375.6	1378.0	1380.4	1381.2	1380.3	1379.3	1378.4	1377.5
12.5°	1358.8	1360.5	1362.2	1362.7	1362.0	1361.4	1360.7	1360.0
15°	1329.4	1330.6	1331.8	1331.7	1330.2	1328.6	1327.1	1325.6
17.5°	1294.5	1295.9	1297.3	1297.3	1295.7	1294.3	1292.9	1291.4
20°	1267.3	1268.2	1269.1	1268.9	1267.7	1266.5	1265.3	1264.1
22.5°	1238.5	1238.7	1238.9	1238.6	1237.9	1237.2	1236.4	1235.6
25°	1191.5	1192.1	1192.8	1192.8	1192.1	1191.5	1190.9	1190.3
27.5°	1145.3	1144.3	1143.4	1142.3	1140.9	1139.3	1137.9	1136.5
30°	1109.2	1108.3	1107.4	1106.3	1105.1	1103.8	1102.7	1101.4
32.5°	1073.9	1072.2	1070.6	1069.2	1067.9	1066.8	1065.5	1064.3
35°	1017.2	1015.4	1013.5	1011.9	1010.4	1008.9	1007.3	1005.8
37.5°	960.3	958.1	955.8	954.0	952.5	951.0	949.6	948.2
40°	921.0	918.4	915.6	913.6	912.4	911.2	910.0	908.7
42.5°	882.3	879.3	876.4	874.1	872.4	870.7	869.0	867.2
45°	822.9	819.5	816.2	813.9	812.6	811.5	810.2	809.0
47.5°	761.0	757.4	753.9	751.3	749.5	747.8	746.0	744.2
50°	721.2	717.0	712.7	709.9	708.4	706.9	705.3	703.8
52.5°	680.1	676.5	673.1	670.3	668.2	666.3	664.2	662.3
55°	618.6	614.9	611.4	608.8	607.3	605.7	604.2	602.6
57.5°	554.7	551.2	547.6	545.2	544.1	543.0	541.8	540.6
60°	512.6	509.3	506.0	503.8	502.9	502.0	501.1	500.2
62.5°	472.7	469.6	466.5	464.3	463.2	462.0	460.8	459.7
65°	411.3	408.6	405.9	403.8	402.3	400.7	399.2	397.7
67.5°	350.8	348.7	346.5	344.8	343.7	342.4	341.3	340.0
70°	311.4	309.3	307.2	305.5	304.3	303.1	301.8	300.7
72.5°	274.3	272.2	270.0	268.5	267.5	266.5	265.6	264.6
75°	216.4	214.5	212.8	212.1	212.8	213.3	213.9	214.5
77.5°	164.6	163.7	162.8	161.9	161.0	160.2	159.3	158.5
80°	130.7	129.8	128.9	128.1	127.5	127.0	126.4	125.7
82.5°	97.5	96.3	95.1	94.5	94.3	94.3	94.2	94.0
85°	51.5	50.6	49.7	49.0	48.8	48.4	48.2	47.8
87.5°	16.0	15.2	14.4	14.0	13.7	13.6	13.3	13.1
90°	10.8	10.6	10.4	10.4	10.5	10.6	10.6	10.7
92.5°	10.1	10.1	10.2	10.2	10.2	10.2	10.2	10.2
95°	20.2	20.2	20.2	20.1	20.0	19.8	19.7	19.5
97.5°	33.9	33.9	33.9	33.9	33.9	33.9	33.9	33.8
100°	43.5	43.5	43.5	43.4	43.3	43.3	43.2	43.2
102.5°	53.9	53.9	54.0	54.0	53.9	53.9	53.9	53.8
105°	69.6	69.7	69.9	69.9	69.9	69.9	69.9	69.9
107.5°	86.5	86.6	86.6	86.5	86.1	85.9	85.5	85.2
110°	98.0	98.0	98.0	97.9	97.6	97.5	97.3	97.0



TEST NUMBER: P331427-940

CATALOG NUMBER: SA2XXDIP-C1005D330U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	109.5	109.3	109.1	109.0	108.9	108.7	108.5	108.3
115°	127.2	127.1	127.0	126.9	126.6	126.4	126.3	126.0
117.5°	144.2	144.0	143.8	143.7	143.5	143.3	143.0	142.9
120°	155.6	155.6	155.6	155.5	155.3	155.1	154.9	154.7
122.5°	167.4	167.2	167.0	166.9	166.7	166.6	166.4	166.3
125°	184.9	184.6	184.4	184.2	184.2	184.1	184.0	184.0
127.5°	201.8	201.5	201.3	201.0	200.8	200.5	200.4	200.1
130°	213.3	213.2	213.0	212.9	212.6	212.2	212.0	211.7
132.5°	224.5	224.3	224.0	223.7	223.5	223.3	223.0	222.8
135°	241.2	241.1	241.0	240.9	240.7	240.5	240.3	240.0
137.5°	257.1	257.0	257.0	256.8	256.5	256.3	256.0	255.7
140°	267.8	267.8	267.8	267.6	267.3	267.1	266.8	266.5
142.5°	277.5	277.5	277.6	277.5	277.2	276.9	276.6	276.3
145°	292.2	292.2	292.3	292.2	291.9	291.7	291.4	291.1
147.5°	305.1	305.2	305.4	305.3	305.1	304.8	304.5	304.3
150°	313.3	313.4	313.7	313.7	313.4	313.3	313.1	312.8
152.5°	321.5	321.7	322.0	322.0	321.7	321.5	321.2	320.9
155°	331.8	332.2	332.5	332.6	332.3	332.2	332.0	331.7
157.5°	341.3	341.9	342.3	342.4	342.1	341.7	341.4	341.1
160°	347.1	347.5	347.9	347.9	347.7	347.4	347.1	346.9
162.5°	352.2	352.7	353.2	353.2	352.9	352.6	352.2	351.9
165°	358.8	359.4	359.8	359.9	359.5	359.2	358.8	358.6
167.5°	364.4	364.8	365.3	365.4	365.1	364.6	364.3	363.9
170°	367.4	367.8	368.4	368.4	368.0	367.6	367.1	366.7
172.5°	369.6	370.1	370.6	370.7	370.2	369.8	369.4	369.0
175°	372.1	372.6	373.1	373.1	372.7	372.3	371.8	371.4
177.5°	373.3	373.5	373.9	373.9	373.5	373.3	372.9	372.6
180°	373.4	373.4	373.4	373.4	373.4	373.4	373.4	373.4

(END OF REPORT)