

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: P332650-930

Luminaire Tested: **SA4XXDIP-C1020D810U930-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332650-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXDIP-C1020D810U930-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 810 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

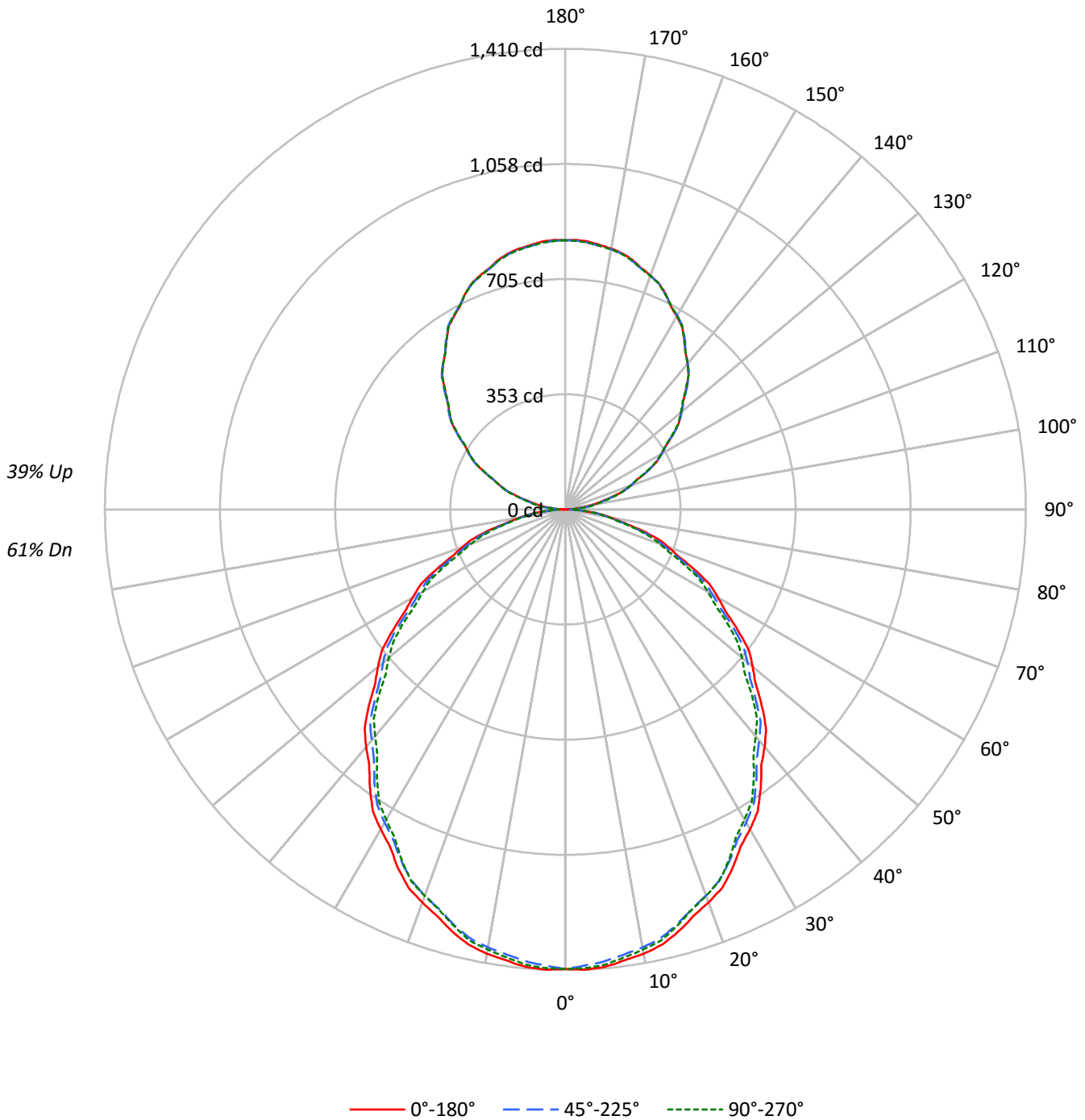
Lumens per Lamp: N/A
Luminaire Lumens: 5899.1 lumens
Efficiency: N/A
Efficacy: 108.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 54.4
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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	66	66	66	61
1	100	96	92	88	94	90	86	83	79	76	74	68	66	65	59	57	56	51
2	91	84	77	72	85	79	73	68	69	65	61	60	57	54	52	49	47	43
3	83	74	66	60	78	69	62	57	61	56	51	53	49	46	46	43	40	36
4	76	65	57	51	71	61	54	48	54	48	44	47	43	39	41	37	35	31
5	70	58	50	44	65	55	47	42	48	42	38	42	38	34	37	33	30	27
6	65	52	44	38	60	49	42	36	44	38	33	38	34	30	33	30	27	24
7	60	47	39	33	56	45	37	32	40	34	29	35	30	26	31	27	24	21
8	56	43	35	30	52	41	33	28	36	30	26	32	27	24	28	24	21	19
9	52	39	32	26	48	37	30	25	33	27	23	29	25	21	26	22	19	17
10	48	36	29	24	45	34	27	23	31	25	21	27	23	19	24	20	17	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11357	11357	11357
5°	11391	11255	11336
10°	11320	11163	11218
15°	11183	11004	11032
20°	11001	10808	10817
25°	10794	10583	10553
30°	10540	10318	10224
35°	10276	10042	9909
40°	10003	9729	9551
45°	9717	9421	9240
50°	9401	9146	8862
55°	9060	8790	8504
60°	8719	8391	8136
65°	8334	8010	7687
70°	7903	7504	7211
75°	7243	6890	6716
80°	6448	6183	6025
85°	5641	5428	5326



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	132.5	2.2
10°-20°	373.3	6.3
20°-30°	549.4	9.3
30°-40°	638.7	10.8
40°-50°	638.7	10.8
50°-60°	558.7	9.5
60°-70°	414.9	7.0
70°-80°	235.7	4.0
80°-90°	70.5	1.2
90°-100°	54.4	0.9
100°-110°	161.0	2.7
110°-120°	273.3	4.6
120°-130°	360.4	6.1
130°-140°	404.7	6.9
140°-150°	397.7	6.7
150°-160°	334.5	5.7
160°-170°	222.6	3.8
170°-180°	77.9	1.3
0°-30°	1055.2	17.9
0°-40°	1693.9	28.7
0°-60°	2891.3	49.0
0°-90°	3612.5	61.2
90°-120°	488.7	8.3
90°-150°	1651.5	28.0
90°-180°	2287.0	38.8
0°-180°	5899.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1407	1407	1407	1407	1407	
5°	1406	1401	1389	1400	1399	133
15°	1338	1333	1317	1323	1320	377
25°	1212	1204	1188	1189	1185	557
35°	1043	1034	1019	1011	1006	652
45°	851	843	825	813	809	656
55°	644	640	624	611	604	576
65°	436	430	419	408	402	432
75°	232	227	221	217	215	247
85°	61	61	59	59	58	67
90°	2	9	14	18	19	6
95°	38	44	48	50	50	43
105°	148	149	152	154	156	158
115°	278	278	277	276	275	274
125°	405	405	404	403	402	361
135°	522	526	526	524	523	404
145°	634	637	637	637	635	397
155°	727	727	726	728	726	334
165°	791	789	788	791	789	223
175°	823	820	819	823	819	78
180°	824	824	824	824	824	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8
2.5°	1410.4	1409.8	1409.2	1408.6	1408.0	1406.6	1404.4	1402.2	1400.0	1397.7	1399.8
5°	1405.7	1404.7	1403.7	1402.6	1401.7	1399.8	1397.0	1394.2	1391.6	1388.8	1391.6
7.5°	1392.6	1391.6	1390.6	1389.6	1388.6	1386.6	1383.5	1380.5	1377.4	1374.4	1376.6
10°	1380.9	1379.9	1378.8	1377.9	1376.9	1374.8	1371.5	1368.2	1365.0	1361.7	1363.7
12.5°	1365.5	1364.6	1363.5	1362.5	1361.5	1359.3	1355.8	1352.4	1348.9	1345.5	1347.7
15°	1338.1	1337.0	1336.0	1335.1	1334.0	1331.6	1327.9	1324.1	1320.4	1316.6	1318.1
17.5°	1304.9	1303.7	1302.4	1301.1	1299.9	1297.5	1293.9	1290.4	1286.8	1283.3	1284.2
20°	1280.5	1279.3	1278.1	1276.8	1275.5	1273.0	1269.3	1265.5	1261.8	1258.0	1258.7
22.5°	1254.4	1252.7	1251.1	1249.4	1247.8	1245.0	1241.3	1237.5	1233.8	1230.0	1231.4
25°	1211.8	1210.1	1208.3	1206.5	1204.8	1202.2	1198.7	1195.1	1191.6	1188.1	1188.4
27.5°	1163.1	1161.3	1159.4	1157.6	1155.8	1153.3	1150.1	1146.8	1143.5	1140.3	1139.7
30°	1130.7	1128.6	1126.6	1124.6	1122.6	1120.0	1116.7	1113.5	1110.2	1106.9	1106.0
32.5°	1096.3	1094.5	1092.7	1091.0	1089.2	1086.5	1083.0	1079.6	1076.1	1072.7	1071.5
35°	1042.7	1041.0	1039.2	1037.5	1035.7	1033.1	1029.6	1026.1	1022.5	1019.0	1017.2
37.5°	986.1	984.5	982.9	981.3	979.7	977.1	973.2	969.5	965.7	962.0	960.1
40°	949.2	947.1	945.1	943.1	941.1	938.2	934.5	930.7	927.0	923.2	920.7
42.5°	909.5	908.2	907.0	905.9	904.7	902.0	897.8	893.6	889.5	885.3	882.4
45°	851.1	849.3	847.6	845.8	844.1	841.1	837.1	833.2	829.2	825.2	822.4
47.5°	789.9	788.8	787.6	786.4	785.1	782.7	779.0	775.3	771.6	767.8	764.8
50°	748.5	747.5	746.5	745.5	744.4	742.2	738.7	735.2	731.7	728.2	724.7
52.5°	707.9	706.7	705.5	704.3	703.1	700.7	696.9	693.2	689.5	685.8	682.7
55°	643.7	642.9	642.1	641.4	640.7	638.5	635.0	631.5	628.0	624.5	621.5
57.5°	582.4	581.5	580.7	579.8	578.9	576.7	573.3	569.9	566.4	563.0	560.1
60°	540.0	538.7	537.4	536.2	534.9	532.7	529.5	526.2	522.9	519.7	517.4
62.5°	498.5	497.4	496.4	495.3	494.2	492.0	488.5	485.1	481.6	478.2	476.1
65°	436.3	435.0	433.7	432.5	431.2	429.3	426.8	424.4	421.8	419.3	416.9
67.5°	373.6	372.4	371.3	370.1	368.9	367.2	364.8	362.4	360.0	357.6	355.1
70°	334.8	333.0	331.3	329.5	327.8	325.9	323.9	321.9	319.9	317.9	315.8
72.5°	293.3	291.6	289.8	288.0	286.3	284.6	283.0	281.4	279.8	278.2	276.6
75°	232.2	231.0	229.7	228.4	227.2	225.9	224.7	223.5	222.2	220.9	220.0
77.5°	173.8	173.3	172.7	172.2	171.6	170.8	169.7	168.6	167.5	166.4	166.1
80°	138.7	137.9	137.1	136.4	135.7	135.0	134.5	134.0	133.5	133.0	132.5
82.5°	104.4	104.0	103.7	103.3	103.0	102.7	102.6	102.6	102.5	102.3	102.1
85°	60.9	60.9	60.9	60.9	60.9	60.7	60.1	59.6	59.1	58.6	58.6
87.5°	23.8	24.0	24.1	24.1	24.3	24.4	24.4	24.4	24.5	24.5	24.6
90°	1.9	3.5	5.1	6.6	8.2	9.5	10.6	11.7	12.9	14.0	14.8
92.5°	13.6	15.4	17.2	19.0	20.8	22.1	22.8	23.6	24.5	25.3	25.8
95°	38.2	39.5	40.8	42.1	43.4	44.5	45.5	46.5	47.5	48.4	48.8
97.5°	66.8	67.8	68.8	69.9	70.8	72.0	73.1	74.3	75.4	76.6	77.1
100°	89.3	89.8	90.3	90.9	91.5	92.5	93.7	95.0	96.2	97.5	97.8
102.5°	112.7	112.9	113.2	113.4	113.6	114.3	115.4	116.6	117.8	119.0	119.4
105°	148.5	148.6	148.8	149.0	149.1	149.4	150.0	150.6	151.2	151.7	152.1
107.5°	186.1	186.3	186.5	186.6	186.8	186.9	187.0	187.1	187.2	187.3	187.7
110°	211.7	211.9	212.1	212.5	212.7	212.8	212.7	212.5	212.4	212.2	212.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	238.1	238.1	238.2	238.3	238.4	238.2	238.0	237.7	237.5	237.3	237.2
115°	277.9	277.9	277.9	277.9	277.9	277.8	277.4	277.2	276.9	276.6	276.5
117.5°	315.4	315.5	315.6	315.7	315.8	315.8	315.6	315.4	315.2	315.0	314.5
120°	340.4	341.0	341.5	342.1	342.7	342.7	342.3	341.9	341.4	341.0	340.3
122.5°	366.4	366.6	366.8	367.0	367.3	367.3	367.1	366.9	366.7	366.5	366.0
125°	404.7	404.7	404.7	404.7	404.7	404.6	404.6	404.4	404.2	404.1	403.8
127.5°	439.5	439.9	440.4	440.8	441.2	441.3	441.1	440.9	440.7	440.4	440.2
130°	464.0	464.5	464.9	465.3	465.7	465.9	465.9	465.9	465.9	465.9	465.6
132.5°	489.0	489.3	489.7	489.9	490.2	490.3	490.2	490.2	490.0	489.9	489.6
135°	522.0	522.9	523.7	524.6	525.5	525.9	525.9	525.9	525.9	525.9	525.5
137.5°	558.0	558.4	558.7	559.1	559.5	559.9	560.1	560.4	560.5	560.8	560.4
140°	582.0	582.2	582.5	582.8	583.1	583.2	583.2	583.2	583.2	583.2	583.1
142.5°	603.9	604.1	604.5	604.7	605.0	605.1	605.0	604.9	604.7	604.6	604.6
145°	634.2	634.8	635.4	635.9	636.5	636.8	637.0	637.1	637.2	637.4	637.2
147.5°	664.3	665.0	665.6	666.3	667.0	667.3	667.2	667.1	666.9	666.8	666.8
150°	682.7	683.2	683.8	684.4	684.9	685.2	685.2	685.2	685.2	685.2	685.2
152.5°	700.0	700.3	700.7	701.0	701.3	701.6	701.6	701.8	701.9	702.1	702.4
155°	726.6	726.6	726.6	726.6	726.6	726.5	726.4	726.3	726.1	726.0	726.5
157.5°	749.1	748.8	748.5	748.3	748.0	747.9	747.9	747.9	747.8	747.8	748.2
160°	762.3	762.1	762.1	761.9	761.7	761.6	761.5	761.3	761.2	761.1	761.5
162.5°	774.5	774.2	773.8	773.5	773.1	772.8	772.7	772.6	772.4	772.3	773.1
165°	791.0	790.6	790.2	789.7	789.3	789.0	788.6	788.4	788.1	787.8	788.6
167.5°	803.6	803.0	802.4	801.8	801.3	801.0	801.0	801.0	801.0	801.0	801.9
170°	810.7	810.1	809.3	808.6	808.0	807.6	807.8	808.0	808.0	808.2	809.0
172.5°	815.9	815.3	814.6	814.1	813.5	813.2	813.3	813.3	813.3	813.3	814.2
175°	822.9	822.1	821.4	820.8	820.0	819.6	819.5	819.3	819.2	819.0	820.0
177.5°	825.2	824.6	824.0	823.5	822.9	822.6	822.6	822.6	822.6	822.6	823.4
180°	824.1	824.1	824.1	824.1	824.1	824.1	824.1	824.1	824.1	824.1	824.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8	1406.8
2.5°	1401.7	1403.8	1405.8	1406.7	1406.5	1406.3	1406.1	1405.9
5°	1394.2	1397.0	1399.8	1400.9	1400.4	1399.9	1399.4	1398.9
7.5°	1378.8	1381.0	1383.2	1384.1	1383.8	1383.5	1383.2	1382.9
10°	1365.7	1367.7	1369.7	1370.4	1369.9	1369.5	1369.0	1368.5
12.5°	1349.9	1352.1	1354.3	1355.0	1354.4	1353.6	1352.9	1352.3
15°	1319.6	1321.1	1322.7	1323.0	1322.3	1321.5	1320.8	1320.0
17.5°	1285.2	1286.1	1287.0	1287.3	1286.8	1286.3	1285.8	1285.2
20°	1259.5	1260.3	1261.0	1261.1	1260.6	1260.1	1259.6	1259.1
22.5°	1232.7	1234.1	1235.4	1235.7	1234.8	1233.9	1233.0	1232.1
25°	1188.6	1188.9	1189.1	1188.7	1187.7	1186.7	1185.7	1184.7
27.5°	1139.1	1138.5	1137.9	1137.0	1135.7	1134.5	1133.2	1132.0
30°	1105.0	1103.9	1102.9	1101.8	1100.6	1099.3	1098.0	1096.8
32.5°	1070.2	1069.1	1067.9	1066.7	1065.4	1064.1	1062.9	1061.6
35°	1015.5	1013.7	1012.0	1010.5	1009.3	1008.0	1006.7	1005.5
37.5°	958.1	956.3	954.4	952.6	951.0	949.3	947.6	946.0
40°	918.2	915.7	913.2	911.3	910.0	908.8	907.6	906.3
42.5°	879.5	876.6	873.7	871.8	871.0	870.1	869.3	868.5
45°	819.6	816.8	814.1	812.4	811.6	810.9	810.1	809.3
47.5°	761.7	758.6	755.5	752.9	751.1	749.1	747.2	745.3
50°	721.2	717.7	714.2	711.7	710.1	708.7	707.2	705.6
52.5°	679.6	676.5	673.4	670.9	669.0	667.1	665.2	663.2
55°	618.5	615.5	612.5	610.3	608.7	607.2	605.7	604.2
57.5°	557.3	554.4	551.5	549.3	547.9	546.5	545.0	543.6
60°	515.2	512.9	510.6	508.9	507.6	506.4	505.2	503.9
62.5°	474.1	472.0	469.9	468.3	467.1	465.8	464.6	463.3
65°	414.3	411.8	409.3	407.4	406.2	405.0	403.7	402.4
67.5°	352.8	350.3	348.0	346.6	346.2	345.8	345.5	345.2
70°	313.9	311.9	309.9	308.5	307.8	307.0	306.2	305.5
72.5°	275.0	273.4	271.8	270.6	269.9	269.1	268.4	267.6
75°	218.9	217.9	217.0	216.3	216.1	215.8	215.6	215.3
77.5°	165.8	165.5	165.2	164.7	164.0	163.4	162.7	162.1
80°	132.0	131.5	131.0	130.6	130.4	130.1	129.9	129.6
82.5°	101.7	101.4	101.2	100.9	100.6	100.4	100.1	99.9
85°	58.6	58.6	58.6	58.5	58.2	58.0	57.7	57.5
87.5°	24.8	24.9	25.1	25.3	25.3	25.4	25.4	25.4
90°	15.7	16.6	17.4	18.0	18.3	18.6	18.8	19.2
92.5°	26.3	26.7	27.3	27.6	27.8	28.0	28.1	28.3
95°	49.3	49.7	50.1	50.4	50.4	50.4	50.4	50.4
97.5°	77.6	78.1	78.7	78.9	78.9	78.9	78.9	78.9
100°	98.1	98.4	98.7	98.8	98.8	98.8	98.8	98.8
102.5°	119.8	120.1	120.5	120.7	120.9	121.0	121.2	121.2
105°	152.5	153.0	153.4	153.8	154.3	154.7	155.1	155.6
107.5°	188.1	188.4	188.8	189.1	189.0	189.0	189.0	188.9
110°	211.7	211.4	211.1	211.2	211.7	212.1	212.5	212.9



TEST NUMBER: P332650-930

CATALOG NUMBER: SA4XXDIP-C1020D810U930-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	237.1	237.1	237.0	237.0	237.1	237.2	237.3	237.3
115°	276.3	276.2	276.1	275.9	275.8	275.7	275.5	275.3
117.5°	314.1	313.6	313.1	312.7	312.4	312.1	311.9	311.5
120°	339.6	338.8	338.2	337.9	338.3	338.5	338.8	339.1
122.5°	365.5	365.1	364.6	364.1	363.5	363.1	362.6	362.1
125°	403.6	403.2	403.0	402.7	402.4	402.1	401.9	401.5
127.5°	439.9	439.6	439.3	439.0	438.8	438.6	438.4	438.1
130°	465.4	465.0	464.8	464.4	463.8	463.3	462.7	462.1
132.5°	489.3	489.0	488.8	488.5	488.3	488.0	487.8	487.6
135°	525.3	525.0	524.7	524.3	523.9	523.5	523.1	522.7
137.5°	560.0	559.7	559.3	559.1	559.2	559.3	559.4	559.5
140°	582.9	582.8	582.6	582.5	582.4	582.2	582.0	582.0
142.5°	604.5	604.5	604.5	604.5	604.5	604.5	604.4	604.4
145°	637.1	637.0	636.8	636.5	636.1	635.7	635.3	634.9
147.5°	666.6	666.5	666.3	666.3	666.1	665.9	665.9	665.7
150°	685.2	685.2	685.2	685.1	685.0	684.9	684.7	684.5
152.5°	702.7	703.0	703.4	703.4	703.0	702.6	702.3	701.9
155°	727.1	727.7	728.2	728.2	727.7	727.1	726.5	726.0
157.5°	748.6	749.1	749.5	749.4	749.0	748.5	748.0	747.5
160°	761.9	762.3	762.7	762.6	761.9	761.2	760.5	759.8
162.5°	773.8	774.5	775.3	775.3	774.6	774.0	773.2	772.5
165°	789.5	790.4	791.2	791.3	790.8	790.2	789.6	789.1
167.5°	802.7	803.6	804.5	804.5	803.6	802.7	801.8	801.0
170°	809.9	810.7	811.6	811.5	810.6	809.6	808.5	807.6
172.5°	815.2	816.2	817.2	817.2	816.2	815.1	814.2	813.2
175°	821.0	822.0	823.0	823.0	822.0	821.0	820.0	819.0
177.5°	824.2	825.0	825.8	825.7	824.8	823.9	823.0	822.1
180°	824.1	824.1	824.1	824.1	824.1	824.1	824.1	824.1

(END OF REPORT)