

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: P331762-930

Luminaire Tested: **SA2XXRDIP-C1005D1080U930-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331762-930
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: SA2XXRDIP-C1005D1080U930-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6352.8 lumens
Efficiency: N/A
Efficacy: 88.6 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

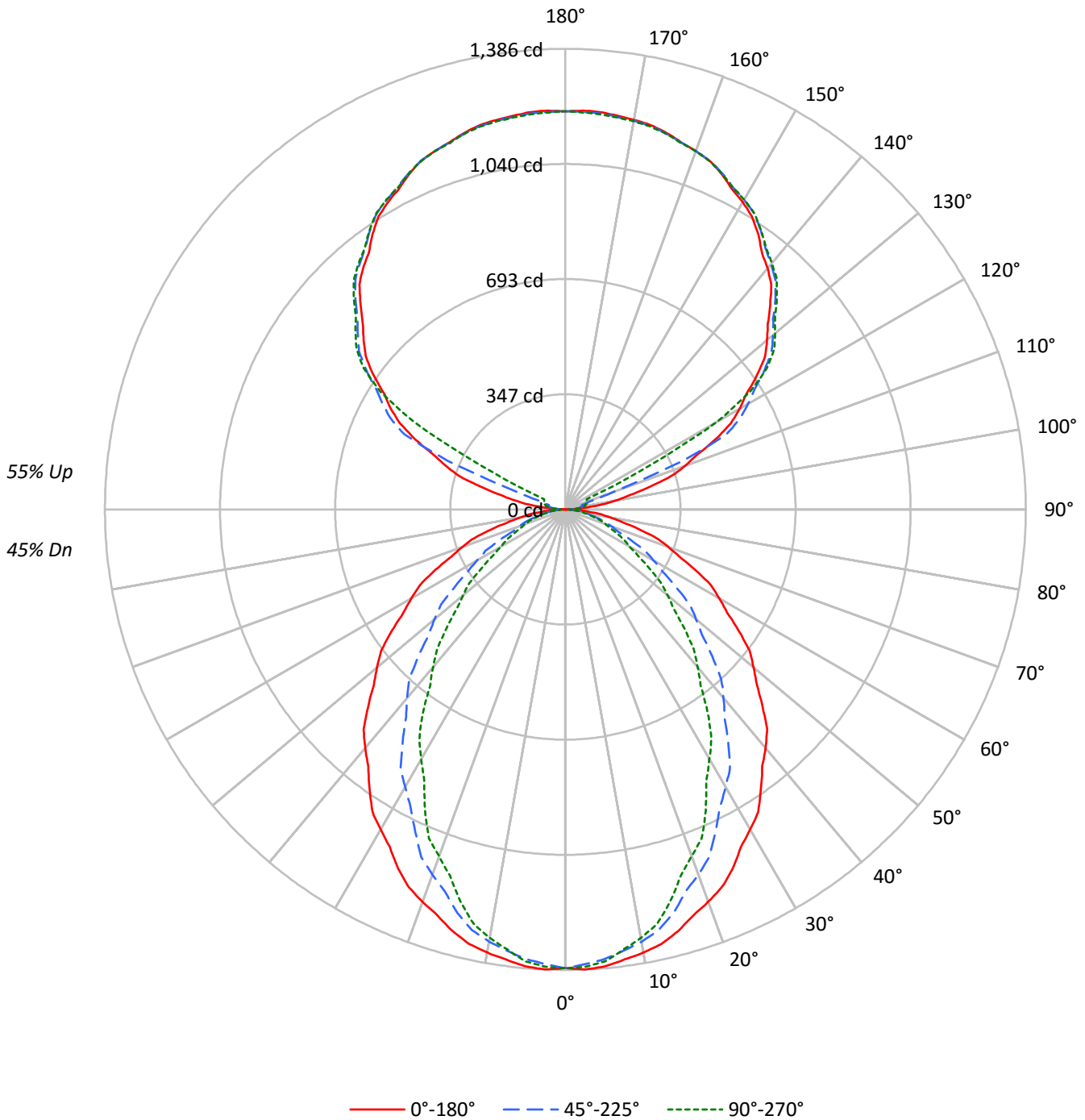
Input Watts (W): 71.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	45
1	97	93	89	86	89	85	82	79	71	69	67	58	57	55	46	45	44	39
2	89	82	76	71	81	75	70	66	63	59	56	51	49	47	41	39	38	33
3	81	72	65	59	74	66	60	55	56	51	48	46	43	40	37	35	33	28
4	74	64	56	51	68	59	52	47	50	45	41	41	38	35	33	31	29	25
5	68	57	49	44	63	53	46	41	45	40	36	37	33	30	30	27	25	22
6	63	51	44	38	58	48	41	36	40	35	31	34	30	27	27	25	22	19
7	58	47	39	33	54	43	36	32	37	31	28	31	27	24	25	22	20	17
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18	16
9	51	39	31	27	46	36	30	25	31	26	22	26	22	19	21	19	16	14
10	47	36	29	24	43	33	27	23	28	23	20	24	20	17	20	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	22291	22291	22291
5°	22376	22013	22135
10°	22207	21653	21469
15°	21951	21010	20404
20°	21596	20094	19086
25°	21235	19053	17808
30°	20734	17984	16168
35°	20243	16821	14728
40°	19751	15616	13061
45°	19173	14266	11556
50°	18580	12901	10073
55°	17973	11431	8653
60°	17270	9884	7182
65°	16466	8306	6541
70°	15512	6845	6014
75°	14342	6238	5608
80°	12664	5579	5114
85°	9948	4390	4390



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	129.2	2.0
10°-20°	354.8	5.6
20°-30°	498.3	7.8
30°-40°	543.4	8.6
40°-50°	499.6	7.9
50°-60°	392.4	6.2
60°-70°	255.8	4.0
70°-80°	131.9	2.1
80°-90°	37.2	0.6
90°-100°	40.0	0.6
100°-110°	146.5	2.3
110°-120°	391.7	6.2
120°-130°	646.5	10.2
130°-140°	687.6	10.8
140°-150°	639.1	10.1
150°-160°	513.8	8.1
160°-170°	331.1	5.2
170°-180°	114.0	1.8
0°-30°	982.4	15.5
0°-40°	1525.7	24.0
0°-60°	2417.7	38.1
0°-90°	2842.6	44.7
90°-120°	578.1	9.1
90°-150°	2551.3	40.2
90°-180°	3510.0	55.3
0°-180°	6352.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1381	1381	1381	1381	1381	
5°	1381	1374	1358	1369	1366	131
15°	1313	1298	1257	1234	1221	370
25°	1192	1150	1070	1020	1000	548
35°	1027	961	853	778	747	642
45°	840	753	625	539	506	648
55°	638	539	406	334	307	570
65°	431	329	217	177	171	427
75°	230	145	100	92	90	243
85°	54	29	24	24	24	63
90°	1	10	17	22	23	5
95°	56	30	34	38	37	69
105°	264	275	53	62	66	282
115°	498	513	535	152	71	491
125°	705	716	732	738	741	628
135°	872	885	894	902	900	673
145°	1012	1011	1025	1031	1027	632
155°	1114	1107	1116	1121	1115	513
165°	1174	1169	1171	1176	1171	331
175°	1200	1195	1196	1201	1193	114
180°	1198	1198	1198	1198	1198	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6
2.5°	1385.7	1384.5	1383.4	1382.3	1381.2	1379.4	1377.0	1374.6	1372.1	1369.7	1371.9
5°	1380.6	1379.2	1377.9	1376.5	1375.1	1372.6	1369.0	1365.4	1361.8	1358.2	1360.7
7.5°	1366.4	1364.7	1363.0	1361.2	1359.5	1356.6	1352.3	1348.1	1343.9	1339.7	1340.4
10°	1354.5	1352.5	1350.5	1348.6	1346.6	1342.9	1337.3	1331.8	1326.2	1320.7	1319.9
12.5°	1339.5	1337.0	1334.6	1332.3	1329.9	1325.1	1318.0	1310.9	1303.8	1296.7	1295.2
15°	1313.2	1310.1	1307.1	1304.0	1301.0	1294.7	1285.3	1275.9	1266.4	1256.9	1251.7
17.5°	1280.9	1276.3	1271.6	1267.0	1262.3	1253.9	1241.8	1229.7	1217.6	1205.5	1199.2
20°	1256.9	1251.4	1245.9	1240.3	1234.8	1225.1	1211.1	1197.3	1183.4	1169.5	1162.5
22.5°	1230.9	1224.7	1218.5	1212.4	1206.1	1195.1	1179.5	1163.8	1148.2	1132.5	1123.6
25°	1192.0	1183.1	1174.2	1165.3	1156.4	1142.9	1124.5	1106.2	1087.9	1069.5	1058.2
27.5°	1145.0	1135.4	1125.7	1116.1	1106.4	1091.2	1070.6	1049.9	1029.2	1008.6	995.3
30°	1112.1	1101.5	1091.0	1080.4	1069.8	1053.4	1031.2	1009.0	986.8	964.6	950.4
32.5°	1080.0	1067.7	1055.4	1043.1	1030.7	1013.3	990.6	967.9	945.3	922.6	906.4
35°	1027.0	1012.9	998.7	984.6	970.5	951.1	926.7	902.3	877.8	853.4	835.9
37.5°	974.1	958.5	943.0	927.4	911.9	891.1	865.0	839.0	812.9	786.9	767.7
40°	937.1	920.5	903.8	887.1	870.5	848.6	821.7	794.8	767.8	740.9	721.2
42.5°	899.1	881.6	864.1	846.4	828.9	806.2	778.4	750.6	722.8	695.0	674.6
45°	839.7	821.0	802.4	783.8	765.2	741.4	712.2	683.1	653.9	624.8	605.0
47.5°	781.6	762.0	742.2	722.5	702.8	677.9	647.8	617.7	587.6	557.5	537.9
50°	739.7	720.0	700.3	680.5	660.8	635.7	605.2	574.6	544.0	513.6	494.4
52.5°	698.7	678.1	657.5	636.9	616.3	591.1	561.2	531.3	501.4	471.6	453.1
55°	638.5	616.9	595.2	573.5	551.9	526.0	496.0	466.0	436.1	406.1	389.4
57.5°	576.7	554.6	532.3	510.1	487.9	462.4	433.6	404.7	375.9	347.1	331.8
60°	534.8	512.6	490.3	468.1	445.9	420.5	391.9	363.3	334.7	306.1	292.0
62.5°	493.8	471.6	449.4	427.1	405.0	380.2	352.9	325.6	298.4	271.2	257.6
65°	431.0	408.5	386.1	363.6	341.1	317.4	292.4	267.4	242.4	217.4	208.0
67.5°	370.6	348.3	326.0	303.6	281.3	258.9	236.4	213.9	191.4	168.9	164.6
70°	328.6	307.0	285.3	263.7	242.0	221.6	202.4	183.3	164.1	145.0	142.2
72.5°	288.6	267.8	247.1	226.3	205.5	187.4	172.1	156.7	141.3	126.0	123.6
75°	229.9	210.4	191.0	171.6	152.1	137.7	128.2	118.9	109.4	100.0	98.0
77.5°	172.2	155.2	138.1	121.1	104.0	93.2	88.6	84.1	79.5	75.0	73.9
80°	136.2	122.1	107.9	93.7	79.6	71.1	68.3	65.6	62.8	60.0	58.9
82.5°	103.2	92.1	81.1	70.0	59.0	52.5	50.6	48.8	46.9	45.0	44.4
85°	53.7	47.9	42.1	36.2	30.4	27.1	26.3	25.4	24.5	23.7	23.7
87.5°	16.1	14.8	13.5	12.1	10.8	10.2	10.5	10.8	11.2	11.5	11.4
90°	0.9	3.0	5.1	7.3	9.4	11.2	12.7	14.3	15.8	17.4	18.3
92.5°	17.5	17.3	17.1	17.0	16.7	17.0	17.8	18.6	19.3	20.1	20.6
95°	56.3	50.0	43.6	37.3	30.9	28.4	29.8	31.1	32.4	33.8	34.7
97.5°	111.8	93.9	76.0	58.0	40.2	32.8	35.9	39.0	42.2	45.2	46.0
100°	153.4	127.0	100.6	74.3	47.9	36.3	39.5	42.9	46.1	49.4	51.0
102.5°	199.2	193.6	188.0	182.4	176.8	160.4	133.0	105.6	78.2	50.8	52.8
105°	263.5	269.3	275.0	280.8	286.6	263.2	210.6	158.0	105.4	52.8	55.0
107.5°	336.8	341.4	346.1	350.7	355.5	326.3	263.2	200.2	137.1	74.0	71.8
110°	383.9	388.0	392.1	396.1	400.1	374.3	318.6	263.0	207.3	151.6	132.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	428.4	431.9	435.5	439.0	442.6	437.6	423.8	410.1	396.3	382.5	312.3
115°	498.4	501.7	504.9	508.2	511.4	515.5	520.3	525.1	529.9	534.8	445.6
117.5°	560.9	564.6	568.3	571.9	575.6	579.0	582.4	585.7	589.0	592.3	570.7
120°	606.7	609.6	612.5	615.4	618.2	621.4	624.9	628.4	631.9	635.3	637.6
122.5°	645.6	648.6	651.6	654.7	657.7	661.1	664.9	668.6	672.5	676.2	677.6
125°	704.7	707.1	709.6	712.2	714.6	717.7	721.4	725.0	728.7	732.4	733.7
127.5°	758.2	761.0	763.8	766.5	769.3	772.0	774.8	777.5	780.2	783.0	785.0
130°	792.1	795.2	798.3	801.4	804.5	807.1	809.2	811.3	813.4	815.5	817.7
132.5°	826.8	829.5	832.1	834.7	837.3	839.7	841.8	843.9	846.0	848.2	849.9
135°	871.9	875.0	878.1	881.2	884.2	886.6	888.4	890.1	891.9	893.6	895.5
137.5°	917.5	919.7	921.8	924.0	926.1	928.1	930.2	932.1	934.1	936.0	937.9
140°	947.3	948.8	950.4	951.9	953.5	955.3	957.4	959.5	961.6	963.8	965.5
142.5°	972.2	973.6	975.0	976.4	977.8	979.7	982.1	984.6	987.0	989.4	991.0
145°	1011.5	1011.2	1011.1	1010.9	1010.6	1012.2	1015.5	1018.7	1022.1	1025.3	1026.6
147.5°	1045.6	1044.9	1044.2	1043.4	1042.7	1043.9	1047.2	1050.4	1053.6	1056.9	1057.9
150°	1067.8	1066.4	1065.1	1063.7	1062.4	1063.2	1066.3	1069.4	1072.5	1075.5	1076.8
152.5°	1086.5	1085.0	1083.5	1082.0	1080.5	1081.2	1084.1	1087.0	1090.0	1092.9	1094.1
155°	1113.7	1112.0	1110.3	1108.5	1106.8	1107.1	1109.4	1111.7	1114.0	1116.3	1117.4
157.5°	1135.1	1133.6	1132.1	1130.7	1129.2	1129.3	1130.9	1132.5	1134.1	1135.7	1137.0
160°	1147.5	1146.4	1145.2	1144.0	1142.9	1142.9	1144.0	1145.2	1146.4	1147.5	1148.7
162.5°	1158.6	1157.5	1156.3	1155.1	1154.0	1153.9	1154.9	1155.9	1156.9	1157.9	1159.2
165°	1173.5	1172.3	1171.2	1170.0	1168.9	1168.6	1169.1	1169.8	1170.4	1170.9	1172.2
167.5°	1184.6	1183.5	1182.3	1181.1	1180.0	1179.7	1180.2	1180.7	1181.3	1181.9	1183.2
170°	1190.8	1189.7	1188.5	1187.4	1186.3	1185.9	1186.3	1186.6	1187.0	1187.4	1188.7
172.5°	1195.0	1193.8	1192.7	1191.6	1190.4	1190.0	1190.4	1190.7	1191.2	1191.6	1192.9
175°	1200.4	1199.1	1197.7	1196.4	1195.0	1194.5	1194.9	1195.3	1195.6	1196.0	1197.4
177.5°	1201.3	1200.2	1199.1	1198.0	1196.9	1196.5	1196.6	1196.8	1196.9	1197.1	1198.2
180°	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6
2.5°	1374.1	1376.3	1378.6	1379.4	1379.0	1378.6	1378.1	1377.7
5°	1363.2	1365.7	1368.2	1369.0	1368.2	1367.3	1366.5	1365.7
7.5°	1341.1	1341.8	1342.6	1342.2	1340.8	1339.3	1337.9	1336.4
10°	1319.0	1318.2	1317.4	1316.1	1314.4	1312.8	1311.1	1309.5
12.5°	1293.7	1292.2	1290.7	1288.6	1285.8	1283.0	1280.3	1277.5
15°	1246.4	1241.1	1235.8	1231.8	1229.1	1226.3	1223.5	1220.7
17.5°	1192.9	1186.7	1180.4	1174.8	1170.1	1165.3	1160.5	1155.8
20°	1155.6	1148.7	1141.7	1135.2	1129.1	1123.0	1116.9	1110.8
22.5°	1114.7	1105.7	1096.7	1090.0	1085.5	1080.9	1076.4	1071.8
25°	1046.8	1035.4	1024.0	1016.3	1012.0	1007.9	1003.7	999.6
27.5°	982.0	968.7	955.4	945.5	938.9	932.3	925.7	919.1
30°	936.3	922.1	907.9	897.2	889.7	882.2	874.7	867.2
32.5°	890.3	874.2	857.9	846.4	839.4	832.3	825.2	818.2
35°	818.4	801.0	783.4	771.6	765.5	759.4	753.3	747.2
37.5°	748.4	729.1	709.8	696.7	689.7	682.7	675.7	668.7
40°	701.5	681.8	662.1	648.7	641.4	634.1	627.0	619.7
42.5°	654.2	633.8	613.4	599.7	592.7	585.7	578.8	571.8
45°	585.3	565.6	545.8	532.7	526.0	519.3	512.7	506.1
47.5°	518.3	498.7	479.1	466.3	460.2	454.2	448.1	442.1
50°	475.2	456.1	436.9	424.4	418.6	412.7	406.9	401.0
52.5°	434.6	416.0	397.6	385.6	380.3	374.9	369.5	364.1
55°	372.8	356.1	339.4	328.5	323.2	317.9	312.7	307.4
57.5°	316.6	301.3	286.0	276.1	271.7	267.3	262.9	258.4
60°	277.8	263.7	249.5	240.2	235.7	231.3	226.8	222.4
62.5°	244.2	230.6	217.2	209.0	206.4	203.7	201.1	198.4
65°	198.5	189.1	179.6	174.5	173.7	172.8	172.0	171.2
67.5°	160.3	156.0	151.6	149.0	148.1	147.2	146.3	145.4
70°	139.4	136.6	133.9	131.9	130.8	129.6	128.6	127.4
72.5°	121.3	119.0	116.6	115.1	114.5	113.8	113.1	112.4
75°	96.0	94.2	92.2	91.1	90.8	90.5	90.3	89.9
77.5°	72.7	71.7	70.5	69.7	69.3	68.9	68.4	68.0
80°	57.7	56.7	55.5	55.0	55.0	55.0	55.0	55.0
82.5°	43.6	43.0	42.3	42.0	42.0	42.0	42.0	42.0
85°	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
87.5°	11.4	11.4	11.3	11.3	11.4	11.5	11.6	11.7
90°	19.2	20.2	21.2	21.9	22.3	22.7	23.0	23.4
92.5°	21.1	21.6	22.1	22.5	22.7	22.9	23.2	23.4
95°	35.7	36.7	37.7	38.1	37.8	37.7	37.4	37.3
97.5°	46.8	47.5	48.3	48.8	49.1	49.3	49.5	49.7
100°	52.5	54.1	55.6	56.5	56.9	57.3	57.7	58.0
102.5°	54.8	56.8	58.8	60.1	60.6	61.1	61.7	62.2
105°	57.1	59.2	61.3	62.8	63.6	64.3	65.1	65.9
107.5°	69.7	67.5	65.4	64.7	65.5	66.2	67.0	67.8
110°	113.2	93.9	74.6	65.4	66.1	66.9	67.7	68.5



TEST NUMBER: P331762-930

CATALOG NUMBER: SA2XXRDIP-C1005D1080U930-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	242.1	171.8	101.5	66.7	67.3	67.9	68.6	69.1
115°	356.4	267.3	178.1	126.5	112.7	98.8	85.0	71.1
117.5°	549.2	527.6	506.1	472.5	426.9	381.3	335.7	290.2
120°	639.9	642.2	644.6	632.7	606.7	580.7	554.6	528.7
122.5°	679.0	680.4	681.8	679.9	674.9	669.8	664.8	659.7
125°	735.1	736.4	737.8	738.7	739.3	739.9	740.5	741.0
127.5°	786.9	788.9	790.8	791.9	792.0	792.1	792.2	792.3
130°	819.8	821.9	824.0	825.0	824.8	824.6	824.4	824.3
132.5°	851.7	853.6	855.4	856.2	856.0	855.8	855.7	855.4
135°	897.4	899.4	901.2	902.0	901.6	901.2	900.9	900.5
137.5°	939.8	941.7	943.5	944.2	943.5	942.9	942.2	941.6
140°	967.3	969.0	970.7	971.1	970.1	969.1	968.2	967.3
142.5°	992.5	994.2	995.7	996.1	995.1	994.1	993.2	992.2
145°	1028.0	1029.3	1030.7	1030.9	1030.0	1029.0	1028.0	1027.0
147.5°	1058.8	1059.9	1060.9	1060.9	1060.1	1059.3	1058.5	1057.7
150°	1077.9	1079.0	1080.2	1080.3	1079.3	1078.4	1077.4	1076.4
152.5°	1095.2	1096.4	1097.6	1097.5	1096.2	1094.9	1093.6	1092.4
155°	1118.6	1119.8	1121.0	1120.7	1119.2	1117.7	1116.1	1114.6
157.5°	1138.3	1139.6	1140.9	1140.8	1139.4	1137.8	1136.4	1134.8
160°	1149.8	1151.0	1152.1	1152.0	1150.7	1149.3	1148.0	1146.6
162.5°	1160.5	1161.8	1163.2	1162.9	1161.3	1159.7	1158.0	1156.3
165°	1173.6	1174.9	1176.3	1176.3	1174.9	1173.6	1172.2	1170.9
167.5°	1184.5	1185.9	1187.2	1187.0	1185.3	1183.6	1181.9	1180.1
170°	1190.1	1191.4	1192.8	1192.5	1190.8	1189.1	1187.4	1185.6
172.5°	1194.3	1195.6	1196.9	1196.8	1195.0	1193.3	1191.6	1189.8
175°	1198.7	1200.1	1201.4	1201.2	1199.2	1197.3	1195.4	1193.4
177.5°	1199.2	1200.3	1201.4	1201.3	1199.9	1198.5	1197.1	1195.7
180°	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8

(END OF REPORT)