

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: P332972-930

Luminaire Tested: **SA4XXRDIP-C1020D810U930-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332972-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXRDIP-C1020D810U930-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 810 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

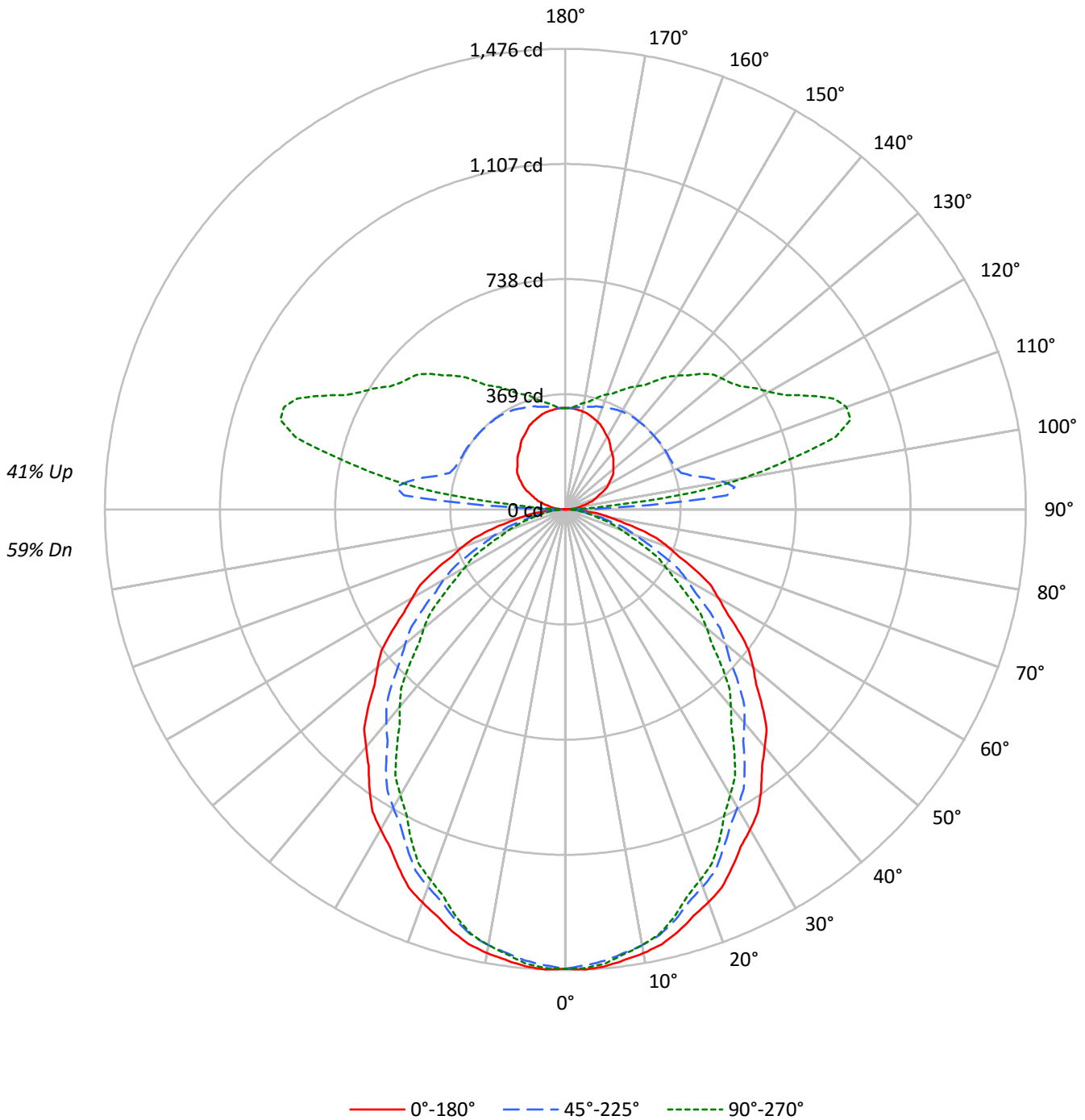
Lumens per Lamp: N/A
Luminaire Lumens: 5763.1 lumens
Efficiency: N/A
Efficacy: 105.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

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	50	30	10	0	
RCR																						
0	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59				
1	100	96	92	89	93	90	86	83	78	76	73	67	66	64	57	56	55	50				
2	91	84	78	73	85	79	73	69	69	65	61	60	57	54	51	49	47	43				
3	84	74	67	61	78	70	63	58	61	56	52	53	49	46	45	43	40	37				
4	77	66	58	52	71	62	55	49	54	49	44	47	43	40	41	38	35	32				
5	71	59	51	45	66	55	48	43	49	43	39	43	38	35	37	33	31	28				
6	65	53	45	39	61	50	43	37	44	38	34	39	34	30	34	30	27	24				
7	60	48	40	34	56	45	38	33	40	34	30	35	31	27	31	27	24	22				
8	56	44	36	31	52	41	34	29	37	31	27	32	28	24	28	25	22	19				
9	52	40	32	27	49	38	31	26	34	28	24	30	25	22	26	22	20	18				
10	49	37	30	25	46	35	28	24	31	26	22	28	23	20	24	21	18	16				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11885	11885	11885
5°	11912	11766	11839
10°	11837	11625	11625
15°	11701	11381	11295
20°	11515	11059	10856
25°	11276	10684	10413
30°	11044	10288	9857
35°	10787	9876	9298
40°	10478	9409	8696
45°	10193	8944	8082
50°	9868	8410	7433
55°	9520	7854	6726
60°	9137	7245	6006
65°	8785	6481	5297
70°	8275	5641	4497
75°	7629	4676	3656
80°	6657	3561	3357
85°	5641	3242	3029



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.3	2.4
10°-20°	385.6	6.7
20°-30°	556.9	9.7
30°-40°	631.2	11.0
40°-50°	609.5	10.6
50°-60°	506.9	8.8
60°-70°	350.0	6.1
70°-80°	177.4	3.1
80°-90°	47.3	0.8
90°-100°	234.4	4.1
100°-110°	487.8	8.5
110°-120°	436.9	7.6
120°-130°	367.5	6.4
130°-140°	306.4	5.3
140°-150°	234.1	4.1
150°-160°	164.6	2.9
160°-170°	96.8	1.7
170°-180°	31.5	0.5
0°-30°	1080.8	18.8
0°-40°	1712.0	29.7
0°-60°	2828.4	49.1
0°-90°	3403.1	59.1
90°-120°	1159.1	20.1
90°-150°	2067.1	35.9
90°-180°	2360.0	41.0
0°-180°	5763.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1472	1472	1472	1472	1472	
5°	1470	1465	1452	1462	1461	139
15°	1400	1389	1362	1359	1352	394
25°	1266	1244	1199	1181	1169	583
35°	1094	1057	1002	965	944	684
45°	893	850	783	730	708	688
55°	676	630	558	501	478	605
65°	460	410	339	293	277	454
75°	245	202	150	125	117	258
85°	61	39	35	33	33	68
90°	1	5	12	13	13	4
95°	21	66	520	257	156	24
105°	75	108	418	900	897	80
115°	131	165	373	716	861	130
125°	183	217	371	610	687	163
135°	217	259	368	541	615	168
145°	250	287	366	456	502	157
155°	285	308	356	403	420	131
165°	310	320	341	361	367	88
175°	324	324	327	332	330	31
180°	324	324	324	324	324	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2
2.5°	1475.8	1475.0	1474.1	1473.4	1472.6	1471.0	1468.8	1466.6	1464.4	1462.2	1464.4
5°	1469.9	1468.9	1467.9	1466.9	1465.9	1463.9	1460.9	1457.9	1454.9	1451.9	1454.4
7.5°	1456.6	1455.6	1454.5	1453.4	1452.4	1449.9	1446.0	1442.1	1438.2	1434.3	1435.9
10°	1444.0	1442.8	1441.4	1440.2	1439.0	1436.1	1431.6	1427.1	1422.5	1418.1	1419.0
12.5°	1427.8	1426.3	1424.8	1423.4	1422.0	1418.5	1413.2	1407.9	1402.6	1397.3	1397.9
15°	1400.0	1397.7	1395.5	1393.3	1391.0	1386.7	1380.5	1374.2	1368.0	1361.7	1361.2
17.5°	1366.4	1363.2	1359.9	1356.7	1353.4	1348.0	1340.5	1333.0	1325.5	1317.9	1316.5
20°	1340.3	1337.0	1333.7	1330.5	1327.2	1321.4	1312.9	1304.3	1295.8	1287.3	1285.3
22.5°	1311.4	1307.7	1304.1	1300.5	1296.8	1290.4	1281.3	1272.2	1263.1	1253.9	1250.9
25°	1265.9	1261.3	1256.9	1252.4	1247.8	1240.5	1230.2	1219.9	1209.7	1199.4	1195.1
27.5°	1218.1	1212.4	1206.8	1201.1	1195.5	1187.2	1176.2	1165.2	1154.2	1143.2	1138.0
30°	1184.7	1178.4	1172.2	1166.0	1159.7	1150.6	1138.9	1127.1	1115.3	1103.6	1097.3
32.5°	1149.6	1142.5	1135.4	1128.4	1121.3	1111.7	1099.5	1087.4	1075.1	1063.0	1055.7
35°	1094.5	1086.5	1078.5	1070.5	1062.5	1052.2	1039.7	1027.2	1014.6	1002.1	993.6
37.5°	1035.7	1027.4	1019.2	1010.9	1002.7	991.6	977.7	963.8	949.9	936.0	926.5
40°	994.3	985.9	977.7	969.4	961.2	949.9	935.6	921.3	907.0	892.8	882.2
42.5°	954.6	945.9	937.2	928.5	919.9	908.1	893.2	878.3	863.5	848.6	837.9
45°	892.8	883.5	874.2	865.0	855.7	843.5	828.5	813.5	798.4	783.4	771.2
47.5°	829.0	819.4	809.8	800.3	790.7	778.1	762.5	746.8	731.2	715.6	702.9
50°	785.7	775.9	766.1	756.4	746.6	733.7	717.7	701.6	685.6	669.6	657.0
52.5°	741.5	731.9	722.4	712.8	703.2	690.2	673.8	657.4	640.9	624.5	611.8
55°	676.4	666.3	656.3	646.3	636.3	623.1	606.8	590.5	574.3	558.0	544.9
57.5°	611.9	601.4	591.0	580.6	570.2	556.9	541.0	524.9	508.8	492.8	479.6
60°	565.9	555.9	545.8	535.8	525.8	512.7	496.8	480.7	464.6	448.7	435.6
62.5°	524.4	514.0	503.5	493.1	482.7	469.3	452.8	436.4	420.0	403.6	391.5
65°	459.9	449.1	438.4	427.6	416.9	403.4	387.4	371.4	355.3	339.3	328.6
67.5°	393.0	382.6	372.3	362.0	351.6	339.1	324.2	309.3	294.4	279.6	270.3
70°	350.6	340.1	329.5	319.0	308.5	296.1	281.8	267.5	253.2	239.0	230.7
72.5°	305.5	296.0	286.4	277.0	267.4	255.9	242.5	228.9	215.5	202.0	194.9
75°	244.6	235.4	226.1	216.8	207.6	197.0	185.2	173.5	161.7	149.9	144.1
77.5°	182.9	175.0	167.1	159.2	151.4	142.7	133.1	123.7	114.1	104.6	101.3
80°	143.2	135.9	128.7	121.4	114.1	106.7	99.2	91.7	84.1	76.6	75.9
82.5°	108.9	102.2	95.6	88.9	82.3	76.7	72.5	68.2	63.8	59.5	58.9
85°	60.9	55.8	50.9	45.8	40.8	37.9	37.2	36.4	35.7	35.0	34.4
87.5°	20.9	19.5	18.3	16.8	15.3	14.4	15.0	14.8	14.8	14.9	14.6
90°	0.7	1.9	3.8	4.5	5.1	5.1	8.9	8.9	10.2	11.5	10.8
92.5°	7.3	10.6	16.6	24.4	33.7	46.9	79.3	128.7	177.0	202.2	168.4
95°	21.0	22.9	29.4	37.6	52.9	79.7	135.2	239.7	392.1	519.6	534.3
97.5°	37.7	37.7	43.2	50.9	64.0	86.4	129.1	215.5	367.0	547.2	671.2
100°	48.4	48.4	52.9	60.6	72.6	93.1	130.7	202.8	332.8	512.6	675.7
102.5°	58.6	59.7	63.6	70.8	82.3	101.7	135.7	199.2	309.8	469.2	637.5
105°	74.6	76.5	79.7	87.3	98.8	117.3	147.9	200.8	290.1	418.2	568.0
107.5°	92.2	93.4	96.6	104.8	115.8	134.0	162.1	210.3	286.5	389.6	511.9
110°	104.0	105.2	108.4	116.0	127.5	144.7	172.8	217.4	287.5	379.9	483.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	115.1	116.4	120.1	127.3	138.7	156.0	183.0	225.0	290.6	375.4	468.1
115°	131.3	133.2	137.7	144.1	156.2	173.4	198.9	237.2	296.4	372.9	453.2
117.5°	148.1	149.9	153.9	160.9	172.3	190.1	214.3	249.5	302.7	372.3	446.6
120°	159.4	160.6	165.1	172.1	183.0	200.8	225.0	258.2	307.3	372.3	443.0
122.5°	169.6	170.9	175.3	181.8	193.6	211.0	235.2	266.4	311.9	371.8	439.0
125°	183.0	185.5	189.3	196.3	208.5	226.3	249.2	278.6	318.8	371.0	432.2
127.5°	194.9	196.9	201.5	209.5	222.1	240.1	262.3	289.2	324.2	369.7	423.1
130°	201.5	204.0	209.1	218.7	230.8	249.2	270.9	295.8	328.3	369.1	417.6
132.5°	208.1	210.1	216.8	225.8	239.0	256.4	278.1	302.4	331.9	368.6	412.5
135°	217.4	220.0	226.3	237.2	250.5	267.1	288.1	311.1	337.2	367.9	404.8
137.5°	226.7	229.1	236.1	246.5	260.3	276.1	295.8	317.2	340.4	367.7	398.2
140°	233.3	235.2	242.2	253.1	266.4	281.8	300.9	321.3	343.0	367.2	394.6
142.5°	240.4	242.4	248.9	259.2	272.1	286.9	305.5	324.3	345.0	367.2	391.6
145°	250.5	252.4	258.9	267.7	279.9	293.9	310.5	327.7	346.2	365.9	386.3
147.5°	261.9	262.5	268.2	277.3	287.4	300.0	315.6	330.6	346.8	363.6	381.6
150°	269.0	269.7	274.8	282.4	292.0	304.1	318.1	332.2	346.8	362.1	378.1
152.5°	275.7	275.8	280.9	288.0	296.6	307.7	320.2	333.1	345.8	359.5	374.0
155°	284.9	285.6	289.4	295.8	302.8	312.3	323.2	334.0	344.2	355.7	367.9
157.5°	294.0	294.0	297.6	302.6	308.7	316.2	325.4	334.0	342.6	351.8	361.6
160°	299.6	299.6	302.1	306.6	311.8	318.8	326.4	334.0	341.0	348.7	357.0
162.5°	304.8	304.2	306.2	310.2	314.8	320.2	327.4	334.0	339.6	345.7	352.9
165°	310.5	310.5	311.8	315.0	318.1	322.0	327.7	332.8	336.6	341.0	346.2
167.5°	316.2	315.6	316.2	318.6	320.4	323.3	327.6	331.3	333.5	336.5	340.1
170°	318.8	318.1	318.8	320.7	322.0	323.8	327.0	330.2	331.5	333.4	336.0
172.5°	321.3	320.7	320.8	322.2	322.9	324.3	326.5	329.2	329.5	330.4	332.4
175°	323.8	323.2	323.2	323.8	324.5	324.5	325.8	327.7	327.0	327.0	328.3
177.5°	325.0	324.5	324.0	324.5	324.5	324.5	325.0	326.0	325.0	325.0	325.5
180°	324.5	324.5	324.5	324.5	324.5	324.5	324.5	324.5	324.5	324.5	324.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2	1472.2
2.5°	1466.6	1468.8	1471.0	1472.1	1471.9	1471.7	1471.5	1471.3
5°	1456.9	1459.4	1461.9	1462.9	1462.4	1461.9	1461.4	1460.9
7.5°	1437.5	1439.1	1440.7	1441.1	1440.3	1439.5	1438.7	1437.9
10°	1420.1	1421.1	1422.0	1422.0	1421.1	1420.1	1419.0	1418.1
12.5°	1398.5	1399.1	1399.7	1399.3	1397.9	1396.5	1395.1	1393.8
15°	1360.7	1360.2	1359.7	1358.5	1356.8	1355.0	1353.3	1351.5
17.5°	1315.2	1313.8	1312.4	1310.3	1307.7	1305.0	1302.4	1299.7
20°	1283.3	1281.3	1279.3	1276.7	1273.4	1270.2	1266.9	1263.6
22.5°	1247.9	1244.9	1241.9	1239.1	1236.4	1233.8	1231.1	1228.5
25°	1190.8	1186.6	1182.3	1178.9	1176.5	1173.9	1171.4	1169.0
27.5°	1132.7	1127.5	1122.2	1117.8	1114.2	1110.5	1106.9	1103.3
30°	1091.0	1084.8	1078.5	1073.3	1069.3	1065.4	1061.4	1057.4
32.5°	1048.5	1041.2	1034.0	1028.4	1024.6	1020.8	1017.0	1013.2
35°	985.0	976.6	968.0	961.6	957.0	952.5	948.0	943.5
37.5°	917.0	907.5	898.0	891.0	886.5	881.9	877.4	872.9
40°	871.7	861.2	850.7	843.2	838.7	834.1	829.6	825.2
42.5°	827.1	816.4	805.7	798.0	793.3	788.6	783.8	779.2
45°	758.9	746.6	734.3	725.9	721.5	716.9	712.4	707.9
47.5°	690.2	677.4	664.6	655.8	650.9	645.9	640.9	636.0
50°	644.5	632.0	619.5	610.8	606.1	601.3	596.6	591.8
52.5°	599.0	586.3	573.6	564.8	559.8	554.8	549.8	544.9
55°	531.9	518.9	505.9	497.0	492.2	487.5	482.7	477.9
57.5°	466.4	453.1	439.9	431.5	427.9	424.3	420.7	417.1
60°	422.6	409.5	396.6	388.0	384.0	380.0	376.0	372.0
62.5°	379.5	367.5	355.5	347.8	344.6	341.4	338.2	335.0
65°	317.7	307.0	296.2	289.3	286.3	283.3	280.3	277.3
67.5°	261.0	251.8	242.5	236.2	232.8	229.6	226.2	223.0
70°	222.4	214.2	205.9	200.5	198.0	195.5	193.0	190.5
72.5°	187.8	180.8	173.7	169.1	166.7	164.4	162.2	159.9
75°	138.4	132.6	126.9	123.3	121.7	120.3	118.7	117.2
77.5°	97.9	94.6	91.2	89.3	88.8	88.4	87.9	87.5
80°	75.2	74.4	73.6	73.1	72.9	72.6	72.4	72.2
82.5°	58.4	57.9	57.3	56.9	56.7	56.4	56.2	55.9
85°	33.9	33.4	32.9	32.7	32.7	32.7	32.7	32.7
87.5°	14.5	14.4	14.3	14.3	14.7	15.0	15.1	15.3
90°	11.5	12.1	12.7	12.7	13.4	14.0	13.4	13.4
92.5°	125.2	94.2	75.0	62.2	54.7	51.3	49.1	49.1
95°	472.4	373.6	288.1	226.3	195.1	175.3	163.9	155.6
97.5°	697.9	661.2	598.8	532.3	486.6	448.2	429.0	415.8
100°	768.8	781.5	750.3	703.2	647.7	608.8	589.7	584.6
102.5°	765.2	828.5	837.6	817.9	783.9	755.7	735.6	731.5
105°	714.0	824.3	887.4	913.5	914.8	909.7	900.8	897.0
107.5°	641.2	758.6	847.5	904.3	935.9	950.4	956.8	958.4
110°	597.4	707.6	800.1	870.2	915.4	942.2	953.7	959.4



TEST NUMBER: P332972-930

CATALOG NUMBER: SA4XXRDIP-C1020D810U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	565.2	662.8	750.1	820.2	871.6	904.0	920.1	929.4
115°	533.0	611.4	685.9	747.1	797.5	835.8	856.1	861.3
117.5°	517.1	582.0	640.7	692.6	735.6	767.7	788.3	792.3
120°	510.0	569.3	620.3	665.5	701.9	729.9	746.5	753.5
122.5°	503.9	561.1	607.6	647.2	677.9	701.9	715.9	722.9
125°	493.4	548.3	592.2	627.3	652.8	671.3	683.4	687.2
127.5°	480.7	533.0	576.9	610.3	635.9	652.3	662.5	666.3
130°	470.5	520.8	564.2	597.9	624.1	640.1	650.3	654.1
132.5°	459.7	507.0	549.4	583.2	608.8	626.8	636.5	640.3
135°	445.0	486.4	525.3	557.2	582.7	600.5	610.7	614.6
137.5°	431.6	466.7	499.5	528.2	552.0	569.6	578.0	582.7
140°	424.0	453.9	482.6	509.4	531.7	545.7	554.6	559.7
142.5°	416.8	443.2	467.8	491.0	510.8	523.7	531.7	535.2
145°	406.8	428.4	447.5	465.4	481.4	492.1	498.6	501.7
147.5°	398.4	415.6	431.0	445.0	456.7	466.0	470.8	472.0
150°	393.3	408.0	420.8	432.2	442.5	450.7	454.5	455.2
152.5°	387.8	400.3	412.1	421.5	430.2	436.9	439.2	439.9
155°	379.3	389.6	399.1	406.8	413.1	418.2	420.1	420.1
157.5°	370.2	378.8	386.9	393.0	397.8	401.6	402.8	402.8
160°	364.7	371.7	378.7	383.8	387.6	391.4	392.1	392.1
162.5°	359.1	365.0	370.6	375.1	377.9	381.7	382.4	381.9
165°	351.2	355.1	359.5	362.7	365.3	367.9	367.2	366.6
167.5°	343.7	346.7	350.3	352.1	353.4	355.1	355.0	354.4
170°	339.2	341.0	343.6	345.5	346.8	347.4	346.8	346.8
172.5°	335.1	336.5	338.0	339.4	340.1	340.8	340.1	339.2
175°	329.6	330.2	331.5	331.5	331.5	332.8	331.5	330.2
177.5°	326.0	326.5	326.5	327.0	326.5	327.0	326.0	325.0
180°	324.5	324.5	324.5	324.5	324.5	324.5	324.5	324.5

(END OF REPORT)