

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: P332971-927

Luminaire Tested: **SA4XXRDIP-C1020D810U927-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332971-927
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: SA4XXRDIP-C1020D810U927-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 810 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5529.0 lumens
Efficiency: N/A
Efficacy: 101.6 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

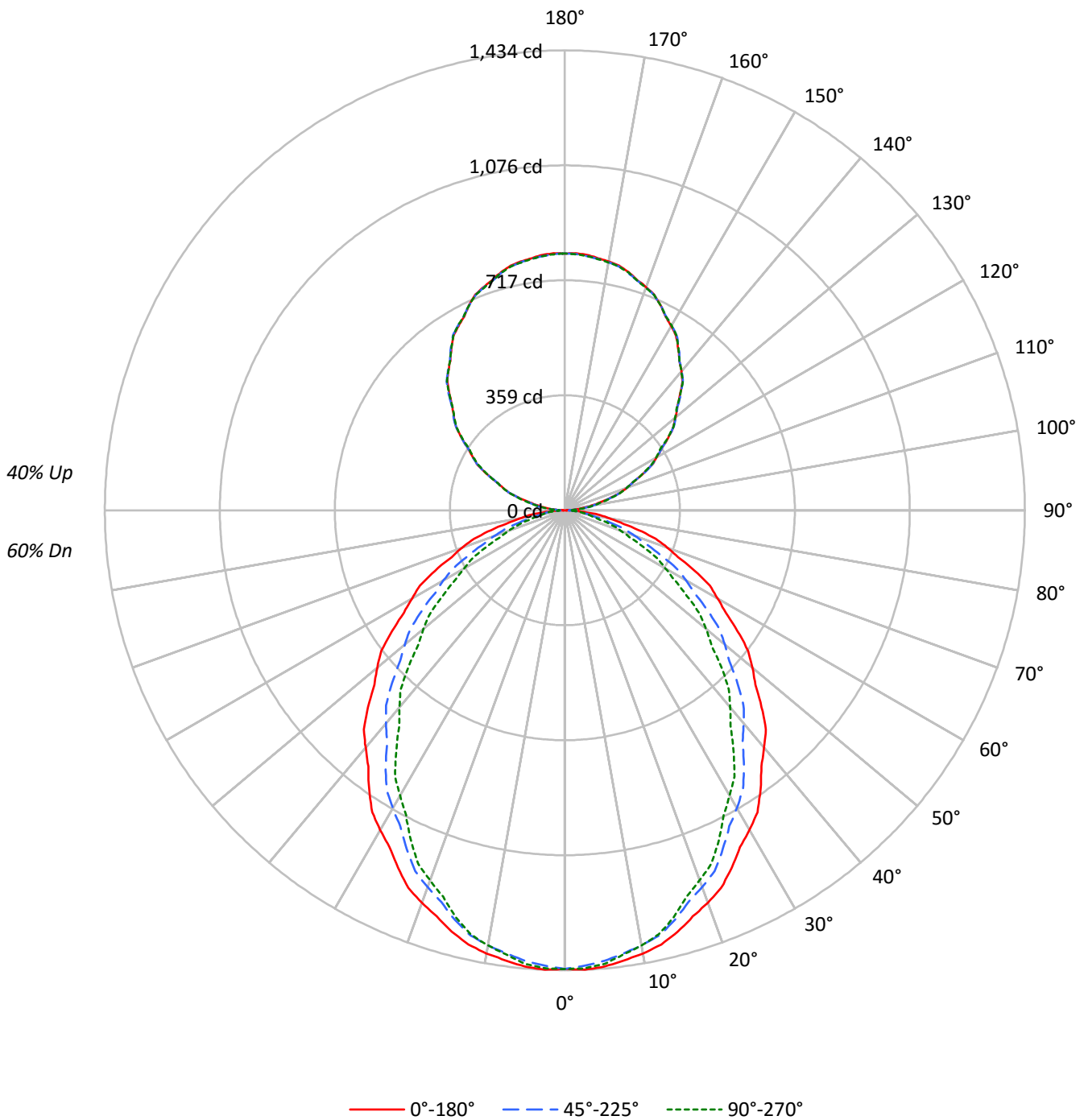
Input Watts (W): 54.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	89	89	89	76	76	76	65	65	65	60				
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56	51				
2	92	84	78	73	85	79	74	69	69	65	62	60	57	54	52	49	47	43				
3	84	74	67	61	78	70	63	58	61	56	52	53	49	46	46	43	41	37				
4	77	66	58	52	72	62	55	50	55	49	45	48	43	40	41	38	35	32				
5	71	59	51	45	66	56	48	43	49	43	39	43	38	35	37	34	31	28				
6	65	53	45	39	61	50	43	37	44	38	34	39	34	31	34	30	27	25				
7	60	48	40	35	56	45	38	33	40	34	30	36	31	27	31	27	24	22				
8	56	44	36	31	52	41	34	29	37	31	27	33	28	24	29	25	22	20				
9	52	40	33	27	49	38	31	26	34	28	24	30	25	22	26	23	20	18				
10	49	37	30	25	46	35	28	24	31	26	22	28	23	20	25	21	18	16				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11548	11548	11548
5°	11574	11432	11503
10°	11501	11294	11294
15°	11369	11058	10975
20°	11188	10746	10548
25°	10956	10381	10117
30°	10730	9996	9577
35°	10481	9596	9034
40°	10181	9141	8450
45°	9903	8691	7854
50°	9588	8171	7222
55°	9250	7631	6536
60°	8879	7038	5837
65°	8537	6298	5146
70°	8039	5481	4369
75°	7414	4545	3553
80°	6467	3464	3259
85°	5483	3149	2946



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	134.4	2.4
10°-20°	374.7	6.8
20°-30°	541.1	9.8
30°-40°	613.3	11.1
40°-50°	592.3	10.7
50°-60°	492.5	8.9
60°-70°	340.1	6.2
70°-80°	172.4	3.1
80°-90°	46.6	0.8
90°-100°	52.8	1.0
100°-110°	156.5	2.8
110°-120°	265.6	4.8
120°-130°	350.2	6.3
130°-140°	393.3	7.1
140°-150°	386.4	7.0
150°-160°	325.0	5.9
160°-170°	216.2	3.9
170°-180°	75.7	1.4
0°-30°	1050.1	19.0
0°-40°	1663.5	30.1
0°-60°	2748.2	49.7
0°-90°	3307.3	59.8
90°-120°	474.9	8.6
90°-150°	1604.7	29.0
90°-180°	2222.0	40.2
0°-180°	5529.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1430	1430	1430	1430	1430	
5°	1428	1423	1411	1421	1420	135
15°	1360	1349	1323	1321	1313	383
25°	1230	1209	1165	1147	1136	566
35°	1064	1027	974	937	917	664
45°	867	826	761	709	688	669
55°	657	612	542	487	464	588
65°	447	398	330	284	269	441
75°	238	197	146	122	114	251
85°	59	38	34	32	32	67
90°	2	9	14	17	19	5
95°	37	43	47	49	49	41
105°	144	145	147	149	151	153
115°	270	270	269	268	268	266
125°	393	393	393	391	390	350
135°	507	511	511	510	508	392
145°	616	619	619	619	617	386
155°	706	706	705	708	705	325
165°	769	767	766	769	767	217
175°	800	797	796	800	796	76
180°	801	801	801	801	801	



TEST NUMBER: P332971-927

CATALOG NUMBER: SA4XXRDIP-C1020D810U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4
2.5°	1433.9	1433.1	1432.3	1431.6	1430.8	1429.3	1427.2	1425.1	1422.9	1420.8	1422.9
5°	1428.2	1427.3	1426.3	1425.3	1424.3	1422.4	1419.5	1416.6	1413.6	1410.7	1413.2
7.5°	1415.3	1414.3	1413.3	1412.2	1411.2	1408.8	1405.0	1401.2	1397.4	1393.6	1395.2
10°	1403.0	1401.8	1400.6	1399.4	1398.2	1395.3	1391.0	1386.6	1382.2	1377.8	1378.8
12.5°	1387.3	1385.8	1384.4	1383.1	1381.6	1378.3	1373.2	1368.0	1362.9	1357.7	1358.3
15°	1360.3	1358.1	1356.0	1353.8	1351.5	1347.4	1341.3	1335.2	1329.2	1323.1	1322.6
17.5°	1327.7	1324.5	1321.4	1318.2	1315.0	1309.8	1302.5	1295.2	1287.9	1280.6	1279.2
20°	1302.3	1299.1	1295.9	1292.8	1289.6	1283.9	1275.7	1267.3	1259.1	1250.8	1248.9
22.5°	1274.2	1270.7	1267.1	1263.6	1260.0	1253.8	1245.0	1236.1	1227.2	1218.4	1215.4
25°	1230.0	1225.6	1221.2	1216.9	1212.4	1205.3	1195.3	1185.3	1175.4	1165.4	1161.3
27.5°	1183.5	1178.1	1172.6	1167.0	1161.6	1153.5	1142.8	1132.2	1121.5	1110.8	1105.7
30°	1151.1	1145.0	1139.0	1132.9	1126.8	1118.0	1106.6	1095.1	1083.7	1072.3	1066.2
32.5°	1117.0	1110.1	1103.2	1096.4	1089.5	1080.1	1068.3	1056.5	1044.7	1032.8	1025.8
35°	1063.5	1055.7	1047.9	1040.1	1032.4	1022.4	1010.2	998.1	985.9	973.7	965.4
37.5°	1006.3	998.3	990.3	982.2	974.2	963.5	950.0	936.5	923.0	909.5	900.2
40°	966.1	958.0	950.0	941.9	933.9	923.0	909.1	895.2	881.3	867.4	857.2
42.5°	927.5	919.1	910.6	902.2	893.8	882.3	867.9	853.4	839.0	824.5	814.1
45°	867.4	858.5	849.5	840.4	831.4	819.6	805.0	790.4	775.8	761.2	749.3
47.5°	805.5	796.1	786.9	777.6	768.3	756.1	740.8	725.6	710.4	695.3	682.9
50°	763.4	753.9	744.4	734.9	725.4	712.9	697.4	681.8	666.1	650.6	638.4
52.5°	720.5	711.1	701.9	692.6	683.3	670.7	654.7	638.7	622.7	606.8	594.5
55°	657.2	647.5	637.7	628.0	618.2	605.5	589.6	573.8	558.0	542.2	529.5
57.5°	594.5	584.4	574.3	564.1	554.1	541.1	525.6	510.0	494.4	478.9	466.0
60°	549.9	540.1	530.4	520.6	510.9	498.2	482.7	467.1	451.5	435.9	423.3
62.5°	509.5	499.4	489.3	479.1	469.1	456.0	440.0	424.1	408.1	392.1	380.4
65°	446.9	436.4	426.0	415.5	405.0	392.0	376.4	360.8	345.2	329.7	319.2
67.5°	381.8	371.8	361.8	351.7	341.7	329.5	315.0	300.6	286.1	271.6	262.6
70°	340.6	330.4	320.2	310.0	299.8	287.7	273.9	259.9	246.1	232.2	224.2
72.5°	296.8	287.6	278.3	269.1	259.8	248.7	235.6	222.4	209.4	196.3	189.4
75°	237.7	228.7	219.7	210.6	201.7	191.4	180.0	168.6	157.1	145.7	140.1
77.5°	177.7	170.0	162.4	154.7	147.1	138.6	129.4	120.2	110.9	101.6	98.4
80°	139.1	132.1	125.0	118.0	110.9	103.7	96.4	89.1	81.8	74.5	73.8
82.5°	105.8	99.3	92.8	86.3	79.9	74.5	70.4	66.2	62.0	57.8	57.3
85°	59.2	54.3	49.4	44.5	39.7	36.8	36.1	35.4	34.7	34.0	33.4
87.5°	20.5	19.3	18.0	16.8	15.5	14.9	14.9	15.0	15.0	15.0	15.0
90°	1.8	3.4	4.9	6.4	7.9	9.2	10.3	11.4	12.5	13.6	14.4
92.5°	13.2	15.0	16.7	18.5	20.2	21.5	22.2	23.0	23.8	24.6	25.0
95°	37.2	38.4	39.6	40.9	42.1	43.3	44.2	45.2	46.1	47.1	47.5
97.5°	64.9	65.9	66.9	67.9	68.8	69.9	71.1	72.2	73.3	74.5	74.9
100°	86.7	87.2	87.8	88.3	88.9	89.8	91.0	92.3	93.5	94.7	95.1
102.5°	109.5	109.7	110.0	110.2	110.4	111.1	112.2	113.3	114.5	115.6	116.0
105°	144.3	144.4	144.6	144.7	144.9	145.2	145.8	146.3	146.9	147.4	147.8
107.5°	180.9	181.0	181.2	181.3	181.5	181.6	181.7	181.8	181.9	182.0	182.4
110°	205.7	205.9	206.1	206.4	206.7	206.8	206.7	206.5	206.4	206.2	206.0



TEST NUMBER: P332971-927

CATALOG NUMBER: SA4XXRDIP-C1020D810U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	231.4	231.4	231.5	231.6	231.6	231.5	231.2	231.0	230.8	230.5	230.4
115°	270.1	270.1	270.1	270.1	270.1	269.9	269.6	269.3	269.0	268.8	268.6
117.5°	306.4	306.6	306.7	306.7	306.9	306.8	306.7	306.4	306.3	306.1	305.6
120°	330.7	331.3	331.8	332.4	333.0	333.0	332.6	332.2	331.8	331.4	330.7
122.5°	356.0	356.2	356.4	356.6	356.9	356.9	356.7	356.5	356.3	356.1	355.6
125°	393.2	393.2	393.2	393.2	393.2	393.2	393.1	392.9	392.8	392.7	392.4
127.5°	427.1	427.5	427.9	428.3	428.7	428.8	428.6	428.4	428.2	427.9	427.7
130°	450.8	451.3	451.7	452.1	452.5	452.7	452.7	452.7	452.7	452.7	452.4
132.5°	475.2	475.5	475.8	476.0	476.3	476.4	476.3	476.3	476.1	476.0	475.7
135°	507.2	508.0	508.9	509.7	510.6	511.0	511.0	511.0	511.0	511.0	510.6
137.5°	542.2	542.6	542.9	543.3	543.7	544.0	544.2	544.5	544.6	544.9	544.5
140°	565.5	565.7	566.0	566.3	566.6	566.6	566.6	566.6	566.6	566.6	566.6
142.5°	586.8	587.0	587.3	587.6	587.9	588.0	587.8	587.7	587.6	587.5	587.5
145°	616.2	616.8	617.3	617.9	618.5	618.8	618.9	619.0	619.2	619.3	619.2
147.5°	645.5	646.1	646.7	647.5	648.1	648.4	648.2	648.2	648.0	647.9	647.8
150°	663.3	663.8	664.4	665.0	665.5	665.7	665.7	665.7	665.7	665.7	665.7
152.5°	680.2	680.5	680.8	681.1	681.4	681.7	681.8	681.9	682.0	682.1	682.5
155°	706.0	706.0	706.0	706.0	706.0	705.9	705.8	705.7	705.5	705.4	705.9
157.5°	727.9	727.5	727.3	727.1	726.8	726.7	726.7	726.7	726.6	726.6	727.0
160°	740.7	740.5	740.5	740.3	740.1	740.0	739.9	739.7	739.6	739.5	739.9
162.5°	752.6	752.3	751.9	751.5	751.1	750.9	750.8	750.7	750.5	750.4	751.1
165°	768.6	768.2	767.8	767.3	766.9	766.6	766.3	766.0	765.7	765.5	766.3
167.5°	780.9	780.2	779.7	779.1	778.6	778.2	778.2	778.3	778.3	778.3	779.2
170°	787.7	787.1	786.4	785.7	785.1	784.7	784.9	785.1	785.1	785.3	786.1
172.5°	792.7	792.2	791.5	791.0	790.4	790.1	790.2	790.2	790.2	790.3	791.2
175°	799.5	798.8	798.1	797.5	796.8	796.4	796.2	796.1	796.0	795.8	796.8
177.5°	801.8	801.2	800.7	800.1	799.5	799.3	799.3	799.3	799.3	799.3	800.0
180°	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7



TEST NUMBER: P332971-927

CATALOG NUMBER: SA4XXRDIP-C1020D810U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4	1430.4
2.5°	1425.1	1427.2	1429.3	1430.4	1430.1	1430.0	1429.7	1429.6
5°	1415.6	1418.0	1420.5	1421.4	1420.9	1420.5	1420.0	1419.5
7.5°	1396.8	1398.3	1399.9	1400.3	1399.5	1398.7	1397.9	1397.1
10°	1379.8	1380.8	1381.7	1381.7	1380.8	1379.8	1378.8	1377.8
12.5°	1358.8	1359.5	1360.0	1359.6	1358.3	1356.9	1355.6	1354.2
15°	1322.2	1321.6	1321.1	1320.0	1318.3	1316.6	1314.9	1313.2
17.5°	1277.9	1276.5	1275.2	1273.2	1270.6	1268.0	1265.4	1262.8
20°	1246.9	1245.0	1243.0	1240.5	1237.3	1234.1	1231.0	1227.8
22.5°	1212.5	1209.6	1206.7	1204.0	1201.3	1198.8	1196.2	1193.7
25°	1157.1	1152.9	1148.8	1145.5	1143.1	1140.7	1138.2	1135.8
27.5°	1100.6	1095.5	1090.4	1086.1	1082.6	1079.0	1075.5	1072.1
30°	1060.1	1054.0	1047.9	1042.9	1039.0	1035.1	1031.3	1027.4
32.5°	1018.7	1011.7	1004.6	999.3	995.5	991.8	988.2	984.4
35°	957.1	948.9	940.6	934.3	929.9	925.5	921.1	916.7
37.5°	891.0	881.8	872.5	865.7	861.3	856.9	852.5	848.2
40°	847.0	836.8	826.6	819.3	814.9	810.5	806.1	801.8
42.5°	803.7	793.3	782.8	775.4	770.8	766.2	761.6	757.1
45°	737.4	725.4	713.5	705.4	701.0	696.6	692.2	687.9
47.5°	670.6	658.2	645.8	637.2	632.4	627.6	622.7	618.0
50°	626.2	614.1	601.9	593.5	588.9	584.2	579.6	575.0
52.5°	582.0	569.7	557.3	548.7	543.9	539.1	534.2	529.5
55°	516.8	504.2	491.5	482.9	478.2	473.6	469.1	464.4
57.5°	453.1	440.3	427.5	419.3	415.7	412.3	408.8	405.3
60°	410.6	397.9	385.3	377.0	373.1	369.2	365.4	361.5
62.5°	368.8	357.0	345.4	337.9	334.9	331.8	328.6	325.5
65°	308.7	298.3	287.8	281.1	278.2	275.3	272.4	269.4
67.5°	253.6	244.6	235.6	229.5	226.2	223.1	219.8	216.7
70°	216.1	208.1	200.1	194.8	192.4	190.0	187.5	185.1
72.5°	182.5	175.7	168.8	164.3	162.0	159.8	157.6	155.3
75°	134.5	128.9	123.3	119.8	118.3	116.8	115.3	113.9
77.5°	95.1	91.9	88.6	86.7	86.3	85.9	85.4	85.0
80°	73.0	72.3	71.5	71.1	70.8	70.6	70.3	70.1
82.5°	56.7	56.2	55.7	55.3	55.1	54.8	54.6	54.3
85°	33.0	32.5	32.0	31.8	31.8	31.8	31.8	31.8
87.5°	15.0	14.9	14.9	15.0	15.2	15.4	15.8	16.0
90°	15.3	16.1	17.0	17.5	17.7	18.1	18.3	18.6
92.5°	25.5	26.0	26.5	26.9	27.0	27.2	27.3	27.5
95°	47.9	48.3	48.7	49.0	49.0	49.0	49.0	49.0
97.5°	75.4	75.9	76.4	76.7	76.7	76.7	76.7	76.7
100°	95.3	95.6	95.9	96.0	96.0	96.0	96.0	96.0
102.5°	116.4	116.7	117.1	117.3	117.5	117.6	117.7	117.8
105°	148.2	148.6	149.0	149.5	149.9	150.3	150.7	151.1
107.5°	182.8	183.1	183.5	183.7	183.6	183.6	183.6	183.5
110°	205.7	205.4	205.1	205.2	205.7	206.0	206.4	206.8



TEST NUMBER: P332971-927

CATALOG NUMBER: SA4XXRDIP-C1020D810U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	230.4	230.4	230.3	230.3	230.4	230.4	230.5	230.6
115°	268.5	268.4	268.2	268.1	268.0	267.8	267.7	267.5
117.5°	305.1	304.7	304.2	303.8	303.6	303.2	303.0	302.7
120°	329.9	329.2	328.6	328.4	328.7	328.9	329.2	329.5
122.5°	355.1	354.7	354.3	353.8	353.2	352.8	352.3	351.8
125°	392.1	391.8	391.6	391.3	391.0	390.7	390.5	390.1
127.5°	427.4	427.1	426.8	426.6	426.4	426.2	426.0	425.7
130°	452.2	451.9	451.6	451.2	450.7	450.1	449.6	449.0
132.5°	475.5	475.2	474.9	474.7	474.4	474.2	474.0	473.8
135°	510.4	510.1	509.8	509.5	509.1	508.7	508.3	507.9
137.5°	544.2	543.8	543.4	543.3	543.4	543.4	543.5	543.7
140°	566.4	566.3	566.1	566.0	565.9	565.7	565.5	565.5
142.5°	587.4	587.4	587.4	587.3	587.3	587.3	587.2	587.2
145°	619.0	618.9	618.8	618.5	618.1	617.7	617.3	616.9
147.5°	647.7	647.6	647.5	647.4	647.2	647.1	647.0	646.8
150°	665.7	665.7	665.7	665.7	665.6	665.4	665.3	665.1
152.5°	682.8	683.1	683.4	683.4	683.1	682.7	682.4	682.0
155°	706.5	707.0	707.6	707.6	707.0	706.5	705.9	705.4
157.5°	727.4	727.9	728.3	728.2	727.8	727.3	726.8	726.4
160°	740.3	740.7	741.1	741.0	740.3	739.6	738.9	738.2
162.5°	751.9	752.6	753.4	753.4	752.7	752.0	751.3	750.6
165°	767.1	767.9	768.8	768.9	768.3	767.8	767.2	766.8
167.5°	780.0	780.9	781.6	781.6	780.8	779.9	779.1	778.2
170°	787.0	787.7	788.6	788.5	787.6	786.6	785.6	784.7
172.5°	792.1	793.1	794.0	794.0	793.1	792.0	791.1	790.1
175°	797.7	798.7	799.7	799.7	798.7	797.7	796.8	795.8
177.5°	800.8	801.6	802.4	802.3	801.5	800.6	799.7	798.8
180°	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7

(END OF REPORT)