

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: P332970-927

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

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332970-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
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-F  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 810 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5869.0 lumens  
Efficiency: N/A  
Efficacy: 107.9 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

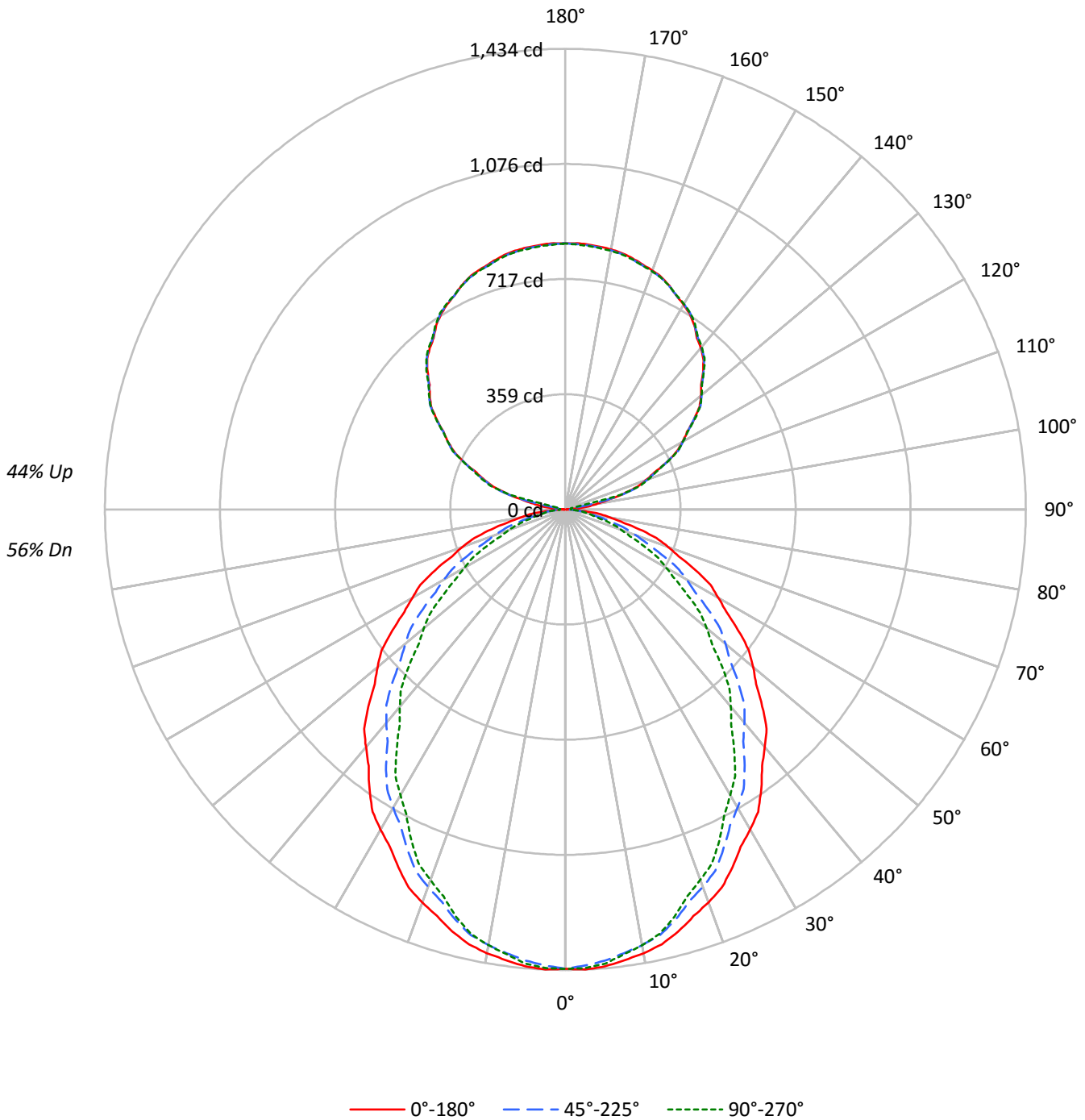
Input Watts (W): 54.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	56
1	100	95	91	88	92	89	86	83	77	74	72	66	64	62	55	54	53	48
2	91	84	77	72	84	78	73	68	68	64	60	58	55	52	49	47	45	41
3	83	74	66	61	77	69	62	57	60	55	51	51	48	45	44	41	39	35
4	76	65	58	52	71	61	54	49	53	48	44	46	42	38	39	36	34	30
5	70	58	50	44	65	55	48	42	48	42	38	41	37	34	35	32	29	26
6	65	53	44	39	60	49	42	37	43	37	33	38	33	30	32	29	26	23
7	60	48	40	34	56	45	38	32	39	34	29	34	30	26	30	26	23	21
8	56	43	36	30	52	41	34	29	36	30	26	31	27	24	27	24	21	19
9	52	40	32	27	48	37	31	26	33	27	24	29	24	21	25	22	19	17
10	48	36	29	24	45	34	28	23	30	25	21	27	22	19	23	20	17	15

**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	2.3
10°-20°	374.7	6.4
20°-30°	541.1	9.2
30°-40°	613.3	10.5
40°-50°	592.3	10.1
50°-60°	492.5	8.4
60°-70°	340.1	5.8
70°-80°	172.4	2.9
80°-90°	46.6	0.8
90°-100°	28.3	0.5
100°-110°	180.6	3.1
110°-120°	345.5	5.9
120°-130°	438.6	7.5
130°-140°	469.2	8.0
140°-150°	438.8	7.5
150°-160°	353.8	6.0
160°-170°	228.2	3.9
170°-180°	78.7	1.3
0°-30°	1050.1	17.9
0°-40°	1663.5	28.3
0°-60°	2748.2	46.8
0°-90°	3307.3	56.4
90°-120°	554.4	9.4
90°-150°	1901.0	32.4
90°-180°	2562.0	43.7
0°-180°	5869.0	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	4
95°	34	14	14	17	18	44
105°	186	190	193	197	176	195
115°	348	350	349	351	351	342
125°	489	492	491	492	493	437
135°	607	607	609	610	611	467
145°	700	702	702	702	704	437
155°	768	768	766	768	767	354
165°	810	807	806	811	806	229
175°	828	825	825	830	823	79
180°	828	828	828	828	828	



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**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°	7.8	7.9	8.0	8.1	8.2	8.7	9.8	10.9	12.0	13.2	13.9
95°	34.1	29.4	24.7	20.0	15.4	13.1	13.2	13.4	13.5	13.6	14.4
97.5°	72.3	75.3	78.2	81.1	84.1	77.8	62.4	47.1	31.7	16.3	16.4
100°	101.6	104.1	106.5	109.0	111.5	103.2	84.2	65.3	46.3	27.3	24.9
102.5°	134.3	136.1	137.9	139.7	141.6	141.2	138.7	136.3	133.8	131.3	106.1
105°	186.4	187.3	188.1	188.9	189.7	190.5	191.2	191.9	192.6	193.2	194.5
107.5°	234.9	235.3	235.7	236.1	236.5	237.2	238.1	239.1	240.0	241.0	241.5
110°	267.6	268.0	268.4	268.8	269.3	269.8	270.7	271.5	272.4	273.1	273.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	299.3	300.0	300.8	301.5	302.3	302.9	303.2	303.6	304.0	304.4	304.4
115°	348.1	348.5	349.0	349.4	349.7	349.9	349.7	349.6	349.5	349.4	349.6
117.5°	392.1	392.6	393.2	393.7	394.3	394.7	395.0	395.3	395.6	395.9	395.9
120°	421.8	422.4	422.9	423.5	424.0	424.2	424.1	424.0	423.8	423.7	424.0
122.5°	449.6	449.9	450.2	450.5	450.9	451.1	451.3	451.5	451.7	451.9	452.1
125°	489.3	489.9	490.4	491.0	491.5	491.6	491.4	491.2	490.8	490.6	491.0
127.5°	527.0	527.1	527.3	527.4	527.5	527.9	528.5	529.2	529.8	530.4	530.4
130°	551.3	551.4	551.5	551.7	551.8	552.1	552.5	552.9	553.3	553.7	553.9
132.5°	573.5	573.8	574.1	574.3	574.6	575.0	575.4	576.0	576.5	577.0	577.2
135°	607.0	606.9	606.7	606.6	606.5	606.7	607.2	607.8	608.3	608.9	609.1
137.5°	636.6	636.7	636.8	636.8	636.8	637.2	637.8	638.4	639.0	639.6	639.9
140°	655.9	656.2	656.5	656.8	657.0	657.4	657.6	657.9	658.1	658.4	658.9
142.5°	673.3	673.8	674.3	674.8	675.3	675.6	675.7	676.0	676.1	676.3	676.6
145°	699.9	700.4	700.8	701.2	701.6	701.8	701.8	701.8	701.8	701.8	702.0
147.5°	721.1	721.9	722.6	723.4	724.2	724.5	724.4	724.2	724.1	724.0	724.1
150°	736.5	737.0	737.6	738.2	738.6	738.9	738.7	738.6	738.5	738.3	738.3
152.5°	749.3	749.8	750.2	750.7	751.1	751.2	751.0	750.8	750.4	750.2	750.4
155°	767.5	767.5	767.7	767.9	768.0	767.9	767.5	767.0	766.6	766.2	766.8
157.5°	782.7	782.6	782.5	782.4	782.4	782.0	781.6	781.2	780.7	780.2	780.9
160°	791.6	791.2	790.8	790.4	790.0	789.6	789.6	789.4	789.3	789.1	790.0
162.5°	799.5	799.0	798.4	798.0	797.4	797.1	796.9	796.9	796.7	796.5	797.4
165°	809.5	808.9	808.2	807.5	806.8	806.4	806.4	806.4	806.4	806.4	807.6
167.5°	817.5	816.7	816.0	815.3	814.6	814.2	814.1	814.0	814.0	813.9	815.1
170°	822.0	821.1	820.3	819.4	818.6	818.3	818.4	818.6	818.7	818.9	819.9
172.5°	824.9	824.1	823.2	822.4	821.7	821.3	821.4	821.6	821.7	821.8	822.9
175°	828.1	827.3	826.5	825.7	824.8	824.5	824.7	824.7	824.9	825.1	826.2
177.5°	829.7	828.9	828.1	827.3	826.6	826.2	826.5	826.7	827.0	827.1	828.0
180°	828.1	828.1	828.1	828.1	828.1	828.1	828.1	828.1	828.1	828.1	828.1



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**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°	14.8	15.6	16.4	16.9	17.0	17.0	17.0	17.1
95°	15.3	16.1	17.0	17.4	17.6	17.7	17.8	18.0
97.5°	16.6	16.6	16.7	16.8	17.0	17.0	17.2	17.3
100°	22.6	20.2	17.9	16.8	17.0	17.0	17.2	17.3
102.5°	80.8	55.6	30.3	17.7	17.7	17.7	17.8	17.8
105°	195.7	196.9	198.2	196.4	191.4	186.4	181.5	176.5
107.5°	242.2	242.7	243.4	243.9	244.5	244.9	245.5	246.1
110°	273.7	274.0	274.3	274.6	275.0	275.4	275.8	276.2





TEST NUMBER: P332970-927

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

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	304.3	304.2	304.1	304.4	304.9	305.5	305.9	306.5
115°	349.9	350.1	350.5	350.6	350.6	350.6	350.6	350.6
117.5°	395.8	395.8	395.7	395.6	395.6	395.5	395.5	395.5
120°	424.2	424.5	424.8	424.8	424.5	424.2	424.0	423.7
122.5°	452.3	452.4	452.6	452.5	452.3	451.9	451.7	451.4
125°	491.4	491.8	492.2	492.5	492.7	492.7	492.9	493.1
127.5°	530.3	530.2	530.1	530.0	529.9	529.8	529.7	529.6
130°	554.1	554.1	554.3	554.4	554.4	554.4	554.4	554.4
132.5°	577.3	577.4	577.6	577.6	577.5	577.3	577.3	577.2
135°	609.4	609.7	610.0	610.2	610.5	610.8	611.1	611.3
137.5°	640.2	640.5	640.8	640.9	640.8	640.7	640.6	640.6
140°	659.3	659.7	660.0	660.4	660.5	660.6	660.8	660.9
142.5°	676.8	677.2	677.5	677.6	677.6	677.7	677.7	677.7
145°	702.0	702.2	702.3	702.5	702.8	703.1	703.4	703.6
147.5°	724.2	724.3	724.4	724.5	724.7	724.8	724.9	725.1
150°	738.3	738.3	738.3	738.4	738.6	738.6	738.8	738.9
152.5°	750.7	750.9	751.1	751.1	751.1	751.0	750.9	750.8
155°	767.3	767.9	768.4	768.5	768.0	767.6	767.2	766.8
157.5°	781.6	782.4	783.1	783.1	782.4	781.6	780.9	780.2
160°	790.8	791.6	792.4	792.4	791.6	790.8	790.0	789.1
162.5°	798.2	799.0	799.9	799.8	798.8	797.9	797.0	796.1
165°	808.7	809.8	810.9	810.8	809.5	808.3	807.1	805.8
167.5°	816.3	817.5	818.7	818.6	817.3	815.9	814.5	813.2
170°	821.0	822.1	823.2	823.1	821.7	820.4	819.0	817.6
172.5°	824.0	825.1	826.2	826.0	824.6	823.1	821.6	820.1
175°	827.5	828.8	830.0	829.8	828.1	826.5	824.8	823.2
177.5°	828.9	829.8	830.7	830.4	829.1	827.8	826.5	825.1
180°	828.1	828.1	828.1	828.1	828.1	828.1	828.1	828.1

(END OF REPORT)