

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: P332977-830

Luminaire Tested: **SA4XXRDIP-C1020D1035U830-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332977-830  
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-C1020D1035U830-4F0-1E-UDD-F1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1035 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7310.7 lumens  
Efficiency: N/A  
Efficacy: 120.8 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

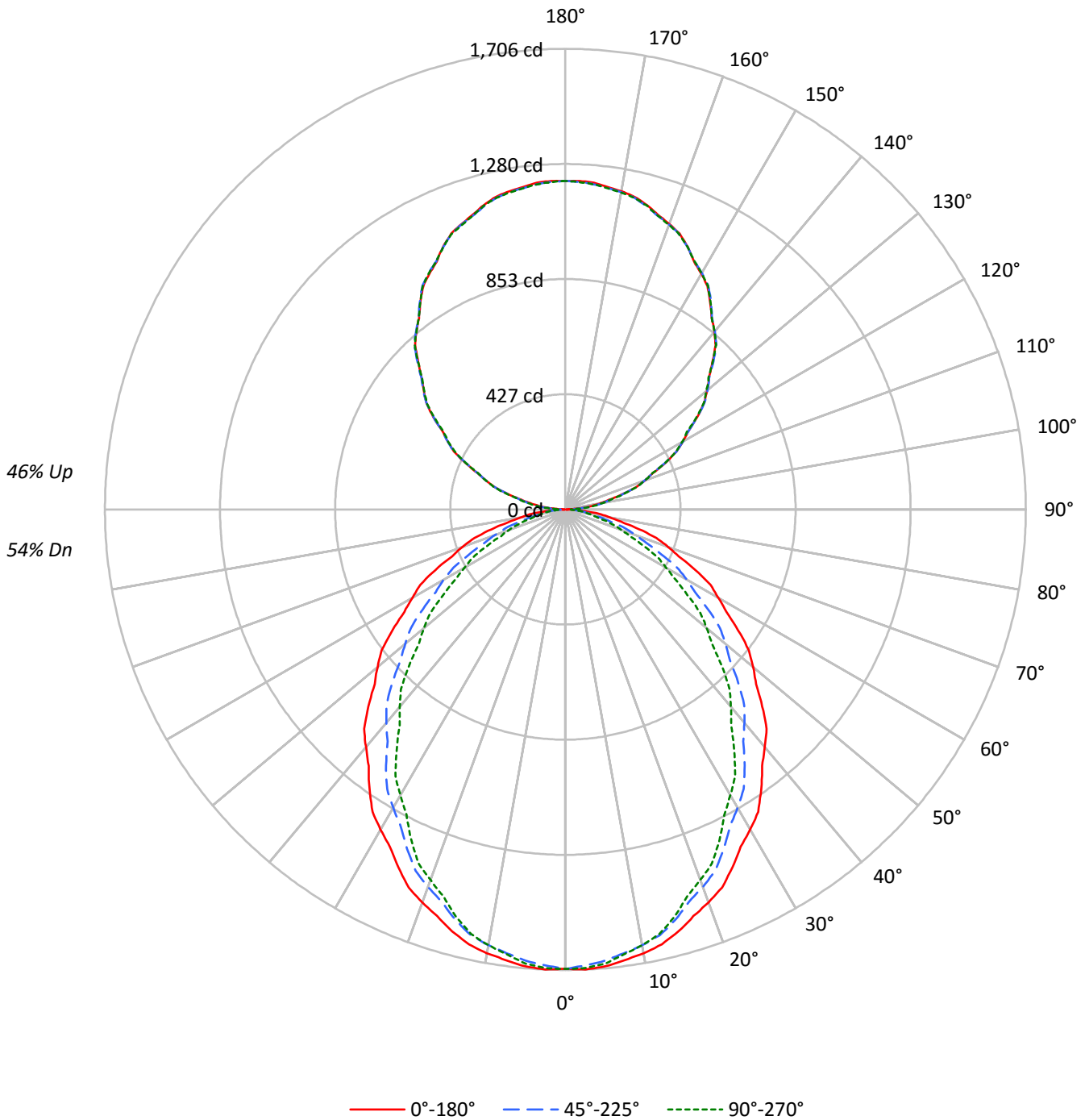
Input Watts (W): 60.5  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	60	60	60	54				54
1	99	95	91	87	92	88	85	82	75	73	71	64	62	61	53	52	51	46				46
2	90	83	77	72	84	77	72	68	66	62	59	56	54	51	47	45	43	39				39
3	83	73	66	60	76	68	62	57	59	54	50	50	46	43	42	39	37	33				33
4	76	65	57	51	70	61	54	48	52	47	43	45	41	37	38	35	32	29				29
5	70	58	50	44	64	54	47	42	47	41	37	40	36	33	34	31	28	25				25
6	64	52	44	38	59	49	42	36	42	37	33	37	32	29	31	28	25	22				22
7	59	47	39	34	55	44	37	32	39	33	29	33	29	26	28	25	22	20				20
8	55	43	35	30	51	40	33	28	35	30	26	31	26	23	26	23	20	18				18
9	51	39	32	27	48	37	30	26	32	27	23	28	24	21	24	21	18	16				16
10	48	36	29	24	45	34	27	23	30	25	21	26	22	19	22	19	17	15				15

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	13739	13739	13739
5°	13771	13602	13686
10°	13684	13439	13439
15°	13527	13157	13059
20°	13311	12785	12550
25°	13036	12351	12038
30°	12767	11893	11395
35°	12471	11417	10749
40°	12113	10877	10053
45°	11783	10340	9344
50°	11408	9722	8593
55°	11005	9080	7776
60°	10563	8375	6944
65°	10157	7494	6124
70°	9567	6522	5200
75°	8821	5405	4226
80°	7694	4119	3877
85°	6521	3742	3501



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	159.9	2.2
10°-20°	445.8	6.1
20°-30°	643.8	8.8
30°-40°	729.7	10.0
40°-50°	704.7	9.6
50°-60°	586.0	8.0
60°-70°	404.6	5.5
70°-80°	205.1	2.8
80°-90°	56.3	0.8
90°-100°	80.2	1.1
100°-110°	237.7	3.3
110°-120°	403.4	5.5
120°-130°	531.9	7.3
130°-140°	597.4	8.2
140°-150°	587.0	8.0
150°-160°	493.7	6.8
160°-170°	328.5	4.5
170°-180°	115.0	1.6
0°-30°	1249.5	17.1
0°-40°	1979.2	27.1
0°-60°	3269.8	44.7
0°-90°	3935.8	53.8
90°-120°	721.3	9.9
90°-150°	2437.7	33.3
90°-180°	3375.0	46.2
0°-180°	7310.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1702	1702	1702	1702	1702	
5°	1699	1694	1678	1691	1689	161
15°	1618	1606	1574	1571	1562	456
25°	1464	1438	1387	1365	1351	674
35°	1265	1222	1158	1115	1091	790
45°	1032	982	906	844	818	795
55°	782	728	645	580	552	699
65°	532	474	392	338	321	525
75°	283	234	173	145	136	299
85°	70	46	40	38	38	79
90°	3	13	21	26	28	7
95°	56	65	72	74	74	63
105°	219	220	224	227	230	233
115°	410	410	408	407	406	404
125°	597	597	596	595	593	532
135°	770	776	776	774	772	596
145°	936	940	941	940	937	586
155°	1072	1072	1072	1075	1072	493
165°	1168	1165	1163	1168	1165	329
175°	1215	1210	1209	1215	1209	115
180°	1216	1216	1216	1216	1216	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9
2.5°	1706.1	1705.2	1704.2	1703.4	1702.4	1700.6	1698.1	1695.5	1693.0	1690.5	1693.0
5°	1699.3	1698.2	1697.0	1695.8	1694.7	1692.3	1688.9	1685.5	1682.0	1678.5	1681.4
7.5°	1683.9	1682.7	1681.5	1680.3	1679.0	1676.2	1671.7	1667.2	1662.6	1658.1	1660.0
10°	1669.3	1667.9	1666.4	1665.0	1663.6	1660.2	1655.0	1649.8	1644.5	1639.4	1640.5
12.5°	1650.6	1648.9	1647.2	1645.6	1643.9	1639.9	1633.8	1627.7	1621.6	1615.4	1616.1
15°	1618.5	1615.9	1613.4	1610.7	1608.1	1603.2	1595.9	1588.7	1581.5	1574.2	1573.7
17.5°	1579.7	1575.9	1572.2	1568.4	1564.6	1558.4	1549.7	1541.1	1532.4	1523.6	1522.0
20°	1549.4	1545.7	1541.9	1538.1	1534.4	1527.6	1517.8	1507.9	1498.1	1488.2	1485.9
22.5°	1516.1	1511.8	1507.6	1503.4	1499.2	1491.8	1481.3	1470.7	1460.2	1449.6	1446.1
25°	1463.5	1458.2	1453.0	1447.8	1442.6	1434.1	1422.2	1410.3	1398.5	1386.6	1381.7
27.5°	1408.2	1401.7	1395.2	1388.6	1382.1	1372.4	1359.7	1347.1	1334.4	1321.6	1315.6
30°	1369.6	1362.4	1355.2	1347.9	1340.7	1330.2	1316.6	1303.0	1289.4	1275.8	1268.6
32.5°	1329.0	1320.8	1312.6	1304.5	1296.3	1285.2	1271.1	1257.1	1242.9	1228.9	1220.5
35°	1265.4	1256.1	1246.8	1237.6	1228.3	1216.4	1201.9	1187.5	1173.0	1158.5	1148.7
37.5°	1197.3	1187.8	1178.3	1168.7	1159.1	1146.3	1130.3	1114.3	1098.2	1082.1	1071.1
40°	1149.4	1139.8	1130.3	1120.7	1111.2	1098.2	1081.7	1065.1	1048.6	1032.1	1019.9
42.5°	1103.5	1093.5	1083.5	1073.5	1063.5	1049.8	1032.6	1015.4	998.2	981.0	968.7
45°	1032.1	1021.4	1010.7	999.9	989.2	975.2	957.8	940.5	923.0	905.7	891.6
47.5°	958.4	947.3	936.2	925.2	914.1	899.6	881.5	863.4	845.3	827.3	812.6
50°	908.3	897.0	885.7	874.4	863.1	848.2	829.7	811.2	792.6	774.1	759.6
52.5°	857.2	846.1	835.1	824.1	812.9	798.0	778.9	760.0	740.9	722.0	707.3
55°	781.9	770.3	758.7	747.2	735.6	720.4	701.5	682.7	663.9	645.1	630.0
57.5°	707.4	695.3	683.2	671.2	659.2	643.9	625.4	606.8	588.2	569.8	554.5
60°	654.2	642.6	631.0	619.4	607.8	592.8	574.3	555.7	537.2	518.7	503.6
62.5°	606.2	594.2	582.1	570.0	558.1	542.5	523.5	504.5	485.5	466.6	452.6
65°	531.7	519.2	506.8	494.4	481.9	466.4	447.9	429.3	410.8	392.3	379.8
67.5°	454.3	442.3	430.5	418.5	406.5	392.0	374.8	357.6	340.4	323.2	312.5
70°	405.3	393.1	381.0	368.8	356.7	342.3	325.8	309.2	292.8	276.3	266.7
72.5°	353.2	342.1	331.1	320.2	309.2	295.9	280.3	264.7	249.1	233.6	225.4
75°	282.8	272.1	261.4	250.6	240.0	227.7	214.1	200.6	186.9	173.3	166.6
77.5°	211.4	202.3	193.2	184.1	175.0	164.9	153.9	143.0	132.0	120.9	117.1
80°	165.5	157.1	148.7	140.3	132.0	123.4	114.7	106.0	97.3	88.6	87.8
82.5°	125.9	118.2	110.5	102.7	95.1	88.7	83.8	78.8	73.8	68.8	68.1
85°	70.4	64.6	58.8	53.0	47.2	43.8	43.0	42.1	41.3	40.4	39.8
87.5°	24.5	23.2	21.8	20.4	18.9	18.3	18.4	18.6	18.7	18.8	18.8
90°	2.8	5.1	7.4	9.7	12.1	14.0	15.6	17.3	19.0	20.7	22.0
92.5°	20.2	22.8	25.4	28.0	30.6	32.6	33.7	34.9	36.1	37.2	38.0
95°	56.5	58.3	60.2	62.1	64.0	65.6	67.1	68.6	70.0	71.5	72.1
97.5°	98.6	100.1	101.6	103.1	104.6	106.2	107.9	109.6	111.4	113.1	113.9
100°	131.7	132.5	133.4	134.2	135.1	136.4	138.3	140.2	142.0	143.9	144.4
102.5°	166.4	166.6	167.0	167.3	167.7	168.7	170.4	172.1	173.8	175.6	176.2
105°	219.2	219.4	219.6	219.8	220.1	220.6	221.4	222.3	223.1	223.9	224.5
107.5°	274.8	274.9	275.2	275.5	275.7	275.9	276.1	276.2	276.3	276.4	277.0
110°	312.4	312.7	313.2	313.6	314.1	314.1	313.9	313.7	313.5	313.3	312.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	351.5	351.6	351.7	351.8	351.9	351.7	351.3	350.9	350.5	350.2	350.1
115°	410.2	410.2	410.2	410.2	410.2	410.0	409.5	409.2	408.7	408.3	408.1
117.5°	465.5	465.7	465.8	466.0	466.2	466.1	465.8	465.5	465.2	465.0	464.2
120°	502.4	503.2	504.1	504.9	505.8	505.9	505.2	504.5	504.0	503.3	502.3
122.5°	540.7	541.1	541.4	541.8	542.1	542.2	541.9	541.5	541.2	540.9	540.3
125°	597.4	597.4	597.4	597.4	597.4	597.3	597.1	596.9	596.6	596.4	596.1
127.5°	648.8	649.4	650.0	650.6	651.3	651.4	651.1	650.7	650.4	650.1	649.7
130°	684.9	685.5	686.2	686.7	687.4	687.7	687.7	687.7	687.7	687.7	687.3
132.5°	721.8	722.3	722.6	723.1	723.6	723.8	723.6	723.4	723.2	723.1	722.6
135°	770.5	771.8	773.0	774.3	775.5	776.2	776.2	776.2	776.2	776.2	775.7
137.5°	823.6	824.2	824.7	825.3	826.0	826.3	826.7	827.1	827.4	827.7	827.2
140°	858.9	859.3	859.8	860.2	860.6	860.8	860.8	860.8	860.8	860.8	860.6
142.5°	891.3	891.7	892.1	892.6	893.0	893.1	893.0	892.8	892.6	892.4	892.4
145°	936.0	936.9	937.7	938.6	939.4	939.9	940.2	940.4	940.6	940.8	940.6
147.5°	980.5	981.5	982.5	983.5	984.5	985.0	984.8	984.6	984.4	984.3	984.1
150°	1007.6	1008.4	1009.3	1010.1	1011.0	1011.3	1011.3	1011.3	1011.3	1011.3	1011.3
152.5°	1033.2	1033.7	1034.2	1034.7	1035.2	1035.5	1035.7	1035.9	1036.0	1036.1	1036.7
155°	1072.5	1072.5	1072.5	1072.5	1072.5	1072.4	1072.1	1072.0	1071.8	1071.6	1072.4
157.5°	1105.6	1105.2	1104.8	1104.5	1104.1	1103.9	1103.8	1103.8	1103.8	1103.7	1104.4
160°	1125.2	1124.9	1124.7	1124.5	1124.4	1124.2	1123.9	1123.7	1123.5	1123.3	1123.9
162.5°	1143.2	1142.7	1142.2	1141.6	1141.0	1140.7	1140.5	1140.3	1140.1	1139.8	1140.9
165°	1167.5	1166.9	1166.3	1165.6	1165.0	1164.5	1164.0	1163.7	1163.2	1162.8	1164.0
167.5°	1186.2	1185.2	1184.4	1183.6	1182.6	1182.2	1182.2	1182.3	1182.3	1182.4	1183.6
170°	1196.7	1195.6	1194.6	1193.5	1192.5	1192.0	1192.3	1192.5	1192.7	1192.9	1194.2
172.5°	1204.2	1203.3	1202.5	1201.6	1200.7	1200.2	1200.3	1200.3	1200.4	1200.4	1201.8
175°	1214.6	1213.5	1212.5	1211.4	1210.4	1209.8	1209.6	1209.3	1209.1	1208.9	1210.4
177.5°	1218.0	1217.1	1216.3	1215.4	1214.6	1214.2	1214.2	1214.2	1214.2	1214.2	1215.3
180°	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9	1701.9
2.5°	1695.5	1698.1	1700.6	1701.9	1701.6	1701.4	1701.1	1700.9
5°	1684.2	1687.2	1690.1	1691.2	1690.6	1690.1	1689.5	1688.9
7.5°	1661.9	1663.7	1665.6	1666.0	1665.1	1664.2	1663.2	1662.3
10°	1641.7	1642.9	1644.0	1644.0	1642.9	1641.7	1640.5	1639.4
12.5°	1616.7	1617.5	1618.2	1617.7	1616.1	1614.5	1612.9	1611.3
15°	1573.1	1572.4	1571.9	1570.6	1568.6	1566.5	1564.5	1562.5
17.5°	1520.4	1518.8	1517.2	1514.9	1511.7	1508.7	1505.6	1502.5
20°	1483.6	1481.3	1478.9	1475.9	1472.2	1468.4	1464.6	1460.8
22.5°	1442.7	1439.2	1435.8	1432.5	1429.4	1426.3	1423.2	1420.2
25°	1376.7	1371.8	1366.9	1362.9	1360.1	1357.2	1354.2	1351.4
27.5°	1309.5	1303.4	1297.3	1292.2	1288.1	1283.8	1279.7	1275.5
30°	1261.3	1254.1	1246.8	1240.9	1236.2	1231.6	1227.0	1222.4
32.5°	1212.1	1203.7	1195.3	1188.9	1184.5	1180.1	1175.7	1171.3
35°	1138.8	1129.0	1119.1	1111.6	1106.4	1101.2	1096.0	1090.7
37.5°	1060.2	1049.1	1038.1	1030.0	1024.8	1019.5	1014.4	1009.2
40°	1007.8	995.6	983.4	974.8	969.6	964.3	959.1	953.9
42.5°	956.2	943.9	931.4	922.6	917.1	911.6	906.2	900.8
45°	877.3	863.1	848.9	839.2	834.1	828.8	823.6	818.4
47.5°	797.9	783.2	768.4	758.2	752.4	746.7	740.9	735.3
50°	745.1	730.7	716.1	706.2	700.7	695.1	689.7	684.2
52.5°	692.5	677.8	663.1	652.9	647.1	641.4	635.7	630.0
55°	614.9	599.9	584.8	574.6	569.0	563.5	558.1	552.5
57.5°	539.1	523.9	508.6	498.9	494.6	490.5	486.4	482.2
60°	488.5	473.4	458.5	448.6	443.9	439.3	434.7	430.1
62.5°	438.8	424.8	410.9	402.1	398.4	394.7	391.0	387.3
65°	367.3	354.9	342.4	334.5	331.0	327.5	324.0	320.6
67.5°	301.7	291.1	280.3	273.1	269.2	265.4	261.6	257.8
70°	257.1	247.6	238.1	231.8	228.9	226.0	223.1	220.3
72.5°	217.2	209.1	200.9	195.5	192.7	190.1	187.5	184.8
75°	160.0	153.4	146.7	142.5	140.7	139.0	137.2	135.5
77.5°	113.2	109.3	105.4	103.2	102.6	102.2	101.6	101.1
80°	86.9	86.1	85.1	84.5	84.3	84.0	83.7	83.4
82.5°	67.5	66.9	66.3	65.8	65.5	65.2	64.9	64.7
85°	39.2	38.6	38.1	37.8	37.8	37.8	37.8	37.8
87.5°	18.8	18.8	18.9	18.9	19.3	19.6	19.9	20.3
90°	23.2	24.5	25.7	26.6	27.0	27.4	27.8	28.2
92.5°	38.7	39.5	40.2	40.8	41.0	41.3	41.6	41.8
95°	72.8	73.4	74.0	74.4	74.4	74.4	74.4	74.4
97.5°	114.6	115.4	116.1	116.5	116.5	116.5	116.5	116.5
100°	144.8	145.2	145.6	145.8	145.8	145.8	145.8	145.8
102.5°	176.7	177.3	177.9	178.2	178.4	178.6	178.8	178.9
105°	225.2	225.8	226.4	227.1	227.6	228.3	228.9	229.5
107.5°	277.6	278.1	278.7	279.0	279.0	278.9	278.9	278.8
110°	312.5	312.0	311.6	311.7	312.4	312.9	313.6	314.2





TEST NUMBER: P332977-830  
CATALOG NUMBER: SA4XXRDIP-C1020D1035U830-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	350.0	349.9	349.9	349.9	350.0	350.1	350.2	350.3
115°	407.8	407.6	407.5	407.3	407.1	406.8	406.6	406.4
117.5°	463.5	462.8	462.1	461.6	461.1	460.7	460.2	459.9
120°	501.2	500.2	499.2	498.8	499.3	499.6	500.1	500.5
122.5°	539.5	538.9	538.1	537.3	536.6	535.8	535.1	534.3
125°	595.6	595.2	594.7	594.4	594.0	593.5	593.1	592.7
127.5°	649.2	648.8	648.4	648.0	647.7	647.3	647.1	646.7
130°	686.9	686.5	686.1	685.4	684.6	683.7	682.9	682.0
132.5°	722.3	721.8	721.4	721.0	720.7	720.4	720.0	719.7
135°	775.3	774.9	774.5	773.9	773.4	772.7	772.0	771.5
137.5°	826.6	826.0	825.6	825.3	825.5	825.6	825.7	825.9
140°	860.4	860.2	860.0	859.8	859.6	859.3	859.1	858.9
142.5°	892.3	892.3	892.3	892.2	892.2	892.1	892.1	892.0
145°	940.4	940.2	939.9	939.5	938.9	938.3	937.6	937.0
147.5°	983.9	983.7	983.5	983.4	983.2	983.0	982.8	982.6
150°	1011.3	1011.3	1011.3	1011.3	1011.1	1010.8	1010.6	1010.4
152.5°	1037.2	1037.6	1038.2	1038.2	1037.6	1037.1	1036.5	1035.9
155°	1073.3	1074.0	1074.9	1074.9	1074.0	1073.3	1072.4	1071.6
157.5°	1104.9	1105.6	1106.3	1106.2	1105.5	1104.8	1104.1	1103.3
160°	1124.5	1125.2	1125.8	1125.6	1124.5	1123.5	1122.5	1121.4
162.5°	1142.1	1143.2	1144.3	1144.4	1143.4	1142.4	1141.3	1140.2
165°	1165.4	1166.6	1167.8	1168.0	1167.2	1166.4	1165.5	1164.7
167.5°	1184.9	1186.2	1187.4	1187.4	1186.1	1184.8	1183.5	1182.2
170°	1195.4	1196.7	1198.0	1197.8	1196.4	1194.9	1193.4	1191.9
172.5°	1203.2	1204.7	1206.2	1206.1	1204.7	1203.2	1201.7	1200.2
175°	1211.8	1213.3	1214.7	1214.7	1213.3	1211.8	1210.4	1208.9
177.5°	1216.5	1217.7	1218.9	1218.8	1217.5	1216.1	1214.7	1213.4
180°	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4	1216.4

(END OF REPORT)