

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: P331464-840

Luminaire Tested: **SA2XXDIP-C1005D1080U840-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331464-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C1005D1080U840-4F0-1E-UDD-F4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

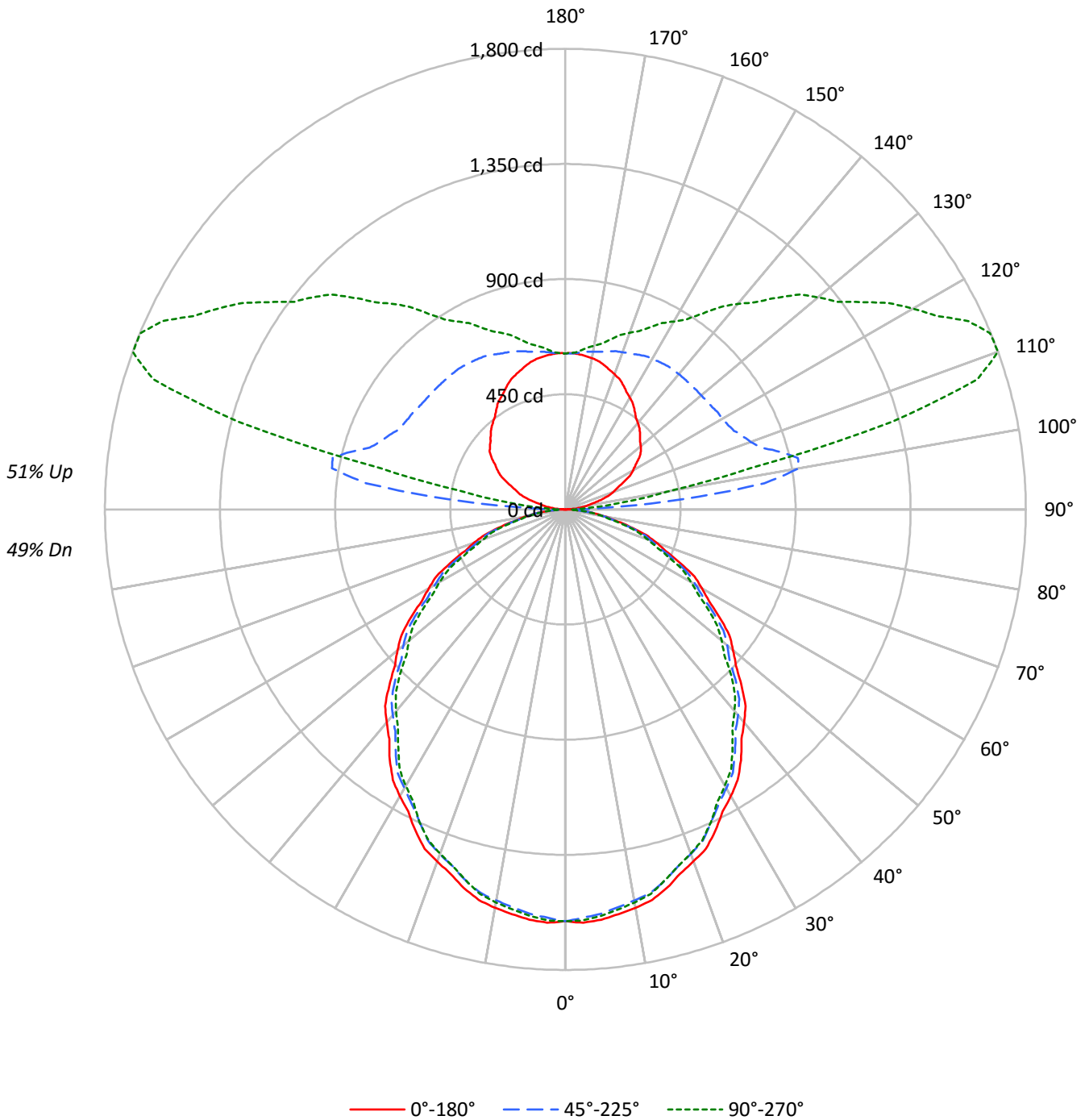
Lumens per Lamp: N/A  
Luminaire Lumens: 8345.4 lumens  
Efficiency: N/A  
Efficacy: 116.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	55	55	55	49
1	98	93	89	86	90	86	83	80	73	70	68	60	59	57	49	48	47	41
2	89	81	75	70	82	75	70	65	64	60	56	53	50	48	43	41	39	35
3	81	72	64	58	74	66	60	55	56	51	47	47	43	40	38	36	33	29
4	74	63	55	49	68	59	52	46	50	45	40	42	38	35	34	31	29	25
5	68	56	48	42	62	52	45	40	45	39	35	37	33	30	31	28	25	22
6	63	51	43	37	58	47	40	35	40	35	30	34	30	26	28	25	22	19
7	58	46	38	32	53	43	35	30	36	31	27	31	26	23	25	22	20	17
8	54	41	34	28	49	39	32	27	33	28	24	28	24	21	23	20	18	15
9	50	38	30	25	46	35	29	24	30	25	21	26	22	19	22	18	16	14
10	47	35	28	23	43	32	26	22	28	23	19	24	20	17	20	17	14	13

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

	0°	45°	90°
0°	25987	25987	25987
5°	26086	25710	25861
10°	25932	25450	25576
15°	25611	25120	25095
20°	25156	24624	24598
25°	24704	24015	24015
30°	24121	23457	23256
35°	23580	22787	22450
40°	22898	22118	21692
45°	22229	21450	20922
50°	21499	20760	20022
55°	20738	19952	19212
60°	19888	18991	18290
65°	18980	18032	17207
70°	17825	16877	16074
75°	16220	15540	15159
80°	14393	13966	13240
85°	11745	11189	10022



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	151.3	1.8
10°-20°	425.9	5.1
20°-30°	626.0	7.5
30°-40°	727.1	8.7
40°-50°	726.3	8.7
50°-60°	633.4	7.6
60°-70°	468.3	5.6
70°-80°	265.3	3.2
80°-90°	76.8	0.9
90°-100°	243.9	2.9
100°-110°	827.7	9.9
110°-120°	879.3	10.5
120°-130°	723.9	8.7
130°-140°	581.3	7.0
140°-150°	439.3	5.3
150°-160°	308.7	3.7
160°-170°	181.7	2.2
170°-180°	59.1	0.7
0°-30°	1203.2	14.4
0°-40°	1930.3	23.1
0°-60°	3290.0	39.4
0°-90°	4100.4	49.1
90°-120°	1951.0	23.4
90°-150°	3695.4	44.3
90°-180°	4245.0	50.9
0°-180°	8345.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1610	1610	1610	1610	1610	
5°	1610	1603	1586	1598	1596	153
15°	1532	1522	1503	1508	1501	431
25°	1387	1374	1348	1351	1348	638
35°	1196	1180	1156	1147	1139	747
45°	974	962	939	923	916	751
55°	737	727	709	691	682	658
65°	497	487	472	458	450	491
75°	260	257	249	241	243	278
85°	63	62	60	56	54	73
90°	1	16	40	38	39	5
95°	41	101	460	174	134	44
105°	143	216	869	1554	1322	152
115°	252	319	727	1501	1740	250
125°	352	416	699	1216	1411	312
135°	413	493	691	1022	1170	319
145°	472	542	687	854	934	296
155°	536	579	668	755	785	247
165°	584	602	639	678	689	165
175°	609	609	615	622	621	58
180°	610	610	610	610	610	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5
2.5°	1617.0	1615.6	1614.3	1612.9	1611.4	1609.3	1606.3	1603.3	1600.2	1597.2	1599.9
5°	1609.5	1608.2	1606.8	1605.4	1604.1	1601.4	1597.7	1593.9	1590.1	1586.3	1589.1
7.5°	1595.3	1593.2	1591.0	1588.9	1586.8	1583.8	1579.9	1576.1	1572.3	1568.4	1571.1
10°	1581.7	1579.3	1576.9	1574.5	1572.1	1568.8	1564.7	1560.5	1556.4	1552.3	1555.1
12.5°	1563.2	1560.9	1558.8	1556.7	1554.6	1551.5	1547.3	1543.2	1539.1	1535.0	1536.9
15°	1532.2	1530.1	1528.0	1526.0	1523.9	1520.7	1516.2	1511.7	1507.2	1502.8	1504.2
17.5°	1492.6	1490.5	1488.4	1486.3	1484.3	1481.0	1476.4	1471.9	1467.3	1462.9	1464.4
20°	1464.1	1462.0	1460.0	1457.8	1455.8	1452.4	1447.5	1442.8	1437.9	1433.1	1434.1
22.5°	1435.6	1432.7	1429.9	1426.9	1424.0	1420.4	1415.8	1411.3	1406.7	1402.2	1402.4
25°	1386.7	1383.9	1381.2	1378.5	1375.7	1371.4	1365.5	1359.7	1353.8	1348.0	1348.7
27.5°	1331.0	1328.5	1326.1	1323.5	1321.1	1317.6	1312.9	1308.3	1303.7	1299.1	1298.1
30°	1293.8	1291.1	1288.3	1285.6	1282.8	1278.9	1273.7	1268.6	1263.4	1258.2	1257.2
32.5°	1254.3	1252.0	1249.8	1247.6	1245.4	1241.6	1236.2	1230.7	1225.3	1219.8	1218.0
35°	1196.3	1192.9	1189.4	1186.0	1182.6	1178.1	1172.6	1167.1	1161.6	1156.1	1154.1
37.5°	1131.0	1128.0	1125.0	1122.0	1118.9	1114.7	1109.1	1103.7	1098.1	1092.7	1090.0
40°	1086.4	1083.7	1081.0	1078.2	1075.4	1071.4	1065.8	1060.4	1054.8	1049.4	1046.2
42.5°	1043.1	1040.4	1037.6	1034.9	1032.1	1027.9	1022.5	1016.9	1011.5	1005.9	1002.6
45°	973.5	971.1	968.7	966.2	963.8	960.1	954.9	949.8	944.6	939.4	935.6
47.5°	904.1	901.9	899.6	897.4	895.0	891.2	885.9	880.5	875.1	869.8	865.8
50°	855.9	854.1	852.4	850.7	849.0	845.7	840.9	836.1	831.2	826.5	821.6
52.5°	808.8	806.6	804.3	802.0	799.7	796.3	791.7	787.2	782.7	778.2	774.2
55°	736.7	734.6	732.6	730.5	728.4	725.3	721.2	717.1	713.0	708.8	704.7
57.5°	664.3	662.6	661.0	659.3	657.6	654.6	650.1	645.5	641.0	636.4	632.4
60°	615.9	614.6	613.2	611.9	610.5	607.3	602.6	597.7	592.9	588.1	584.3
62.5°	569.0	566.7	564.5	562.3	560.1	557.1	553.4	549.8	546.0	542.3	538.8
65°	496.8	494.7	492.7	490.6	488.6	485.7	482.3	478.9	475.4	472.0	469.0
67.5°	423.4	421.8	420.1	418.5	416.9	414.4	411.3	408.3	405.2	402.1	399.7
70°	377.6	376.3	374.9	373.5	372.1	369.9	366.8	363.7	360.6	357.5	355.1
72.5°	330.5	329.2	327.8	326.5	325.1	323.4	321.4	319.4	317.4	315.4	313.0
75°	260.0	259.3	258.6	257.9	257.2	256.0	254.3	252.6	250.9	249.1	247.1
77.5°	196.8	195.7	194.5	193.4	192.2	191.3	190.6	189.9	189.1	188.5	187.4
80°	154.8	154.4	154.1	153.7	153.4	152.9	152.2	151.5	150.8	150.2	149.1
82.5°	115.1	115.1	115.0	114.9	114.8	114.6	114.2	113.8	113.4	113.0	111.7
85°	63.4	63.1	62.8	62.4	62.1	61.7	61.4	61.0	60.7	60.4	59.3
87.5°	22.5	22.7	23.0	23.0	22.9	23.0	23.6	24.7	25.7	25.3	24.2
90°	1.2	4.6	9.4	11.7	14.0	17.6	23.4	31.7	38.7	39.9	38.7
92.5°	14.3	20.6	29.1	34.2	42.2	53.2	79.8	117.0	150.4	152.5	128.9
95°	41.1	45.7	57.5	68.1	86.8	114.9	169.0	270.9	407.1	459.9	402.4
97.5°	66.9	73.2	85.6	101.6	123.2	155.1	222.9	365.1	591.3	785.1	823.5
100°	90.3	93.8	104.4	123.2	146.6	179.5	241.7	384.8	638.1	926.8	1095.7
102.5°	111.9	114.5	125.0	143.8	168.2	201.1	258.5	385.8	620.4	931.5	1197.1
105°	143.1	147.8	156.0	173.6	199.4	232.3	287.4	391.8	585.4	869.3	1181.3
107.5°	176.9	180.7	188.6	204.8	230.5	263.5	317.0	408.0	568.0	802.6	1078.3
110°	199.4	204.1	211.2	226.4	251.1	285.1	336.7	421.1	564.3	770.7	1013.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	220.0	224.8	232.8	247.0	270.7	305.7	355.5	435.3	565.2	750.1	968.6
115°	252.3	258.1	265.1	279.2	302.7	334.4	384.8	456.4	570.2	727.3	912.7
117.5°	285.6	290.2	297.3	309.7	332.2	365.1	411.7	478.9	578.6	716.3	877.5
120°	306.2	310.8	317.9	328.5	351.9	384.8	430.5	493.9	584.2	709.7	858.7
122.5°	325.9	329.6	336.7	348.2	371.6	405.5	448.4	507.1	590.8	706.0	842.7
125°	351.9	355.5	362.5	376.6	400.0	432.9	475.1	528.0	600.7	699.2	820.0
127.5°	372.5	377.3	387.2	402.6	425.2	458.9	500.0	547.3	610.8	695.2	798.9
130°	384.8	389.5	401.2	417.7	441.1	473.9	515.0	559.6	618.2	693.3	784.9
132.5°	396.1	401.7	414.3	431.7	456.2	489.0	528.2	571.8	625.7	692.4	773.6
135°	412.9	417.7	431.7	449.3	476.3	509.2	546.6	587.7	634.7	690.9	757.8
137.5°	428.9	434.5	448.6	467.4	494.1	524.6	561.7	600.0	642.7	690.7	746.8
140°	441.1	445.8	459.9	478.7	504.4	534.9	570.2	606.5	646.4	689.8	740.2
142.5°	453.3	457.1	470.2	489.0	513.8	542.5	576.7	612.2	649.2	689.8	733.7
145°	471.6	476.3	488.1	505.6	529.1	554.9	586.5	619.5	652.3	687.4	725.0
147.5°	491.3	494.8	506.0	522.3	541.8	564.7	594.5	623.4	653.2	683.3	716.1
150°	504.4	508.0	517.4	532.6	550.2	571.3	598.3	625.3	652.3	680.4	708.5
152.5°	517.6	519.3	528.6	542.0	558.7	577.8	602.1	626.2	650.4	675.7	702.0
155°	536.1	537.2	544.3	557.2	570.2	587.7	607.6	627.6	647.5	667.5	689.8
157.5°	551.6	552.8	558.5	569.7	580.0	594.8	611.7	627.6	642.2	659.0	678.3
160°	561.9	563.1	567.7	577.1	586.5	599.5	613.6	627.6	639.3	653.5	669.8
162.5°	572.3	571.6	576.2	583.7	592.2	602.3	614.5	626.7	636.5	648.7	662.4
165°	584.2	583.1	585.4	592.4	598.3	605.3	615.9	624.1	631.2	639.3	649.9
167.5°	594.1	592.7	594.8	599.3	603.5	607.9	615.6	622.5	625.7	631.2	637.7
170°	600.7	598.3	599.5	603.0	605.3	608.8	614.7	620.6	622.9	626.4	631.2
172.5°	604.4	603.0	602.3	605.8	607.2	609.8	613.8	617.7	619.1	620.9	624.6
175°	608.8	607.6	606.5	608.8	608.8	610.1	612.4	614.7	613.6	614.7	615.9
177.5°	611.0	609.0	608.1	610.1	610.1	610.1	611.0	612.9	611.0	610.1	611.0
180°	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5
2.5°	1602.7	1605.4	1608.2	1609.3	1608.7	1608.2	1607.6	1607.1
5°	1591.9	1594.6	1597.3	1598.4	1597.7	1597.0	1596.3	1595.6
7.5°	1573.9	1576.6	1579.4	1580.4	1579.6	1578.9	1578.1	1577.4
10°	1557.8	1560.5	1563.3	1564.2	1563.2	1562.1	1561.0	1560.0
12.5°	1538.8	1540.8	1542.7	1543.3	1542.5	1541.8	1541.0	1540.2
15°	1505.5	1506.9	1508.2	1508.1	1506.4	1504.7	1503.0	1501.3
17.5°	1466.0	1467.6	1469.2	1469.2	1467.4	1465.8	1464.2	1462.5
20°	1435.2	1436.2	1437.2	1437.0	1435.7	1434.3	1433.0	1431.6
22.5°	1402.6	1402.8	1403.0	1402.7	1401.9	1401.1	1400.2	1399.4
25°	1349.4	1350.1	1350.8	1350.8	1350.1	1349.4	1348.7	1348.0
27.5°	1297.1	1296.0	1294.9	1293.6	1292.0	1290.3	1288.7	1287.1
30°	1256.2	1255.2	1254.2	1252.9	1251.5	1250.1	1248.8	1247.4
32.5°	1216.2	1214.3	1212.4	1210.8	1209.4	1208.1	1206.7	1205.3
35°	1152.0	1149.9	1147.8	1146.0	1144.3	1142.6	1140.7	1139.0
37.5°	1087.5	1085.0	1082.5	1080.4	1078.7	1077.0	1075.4	1073.8
40°	1043.1	1040.1	1036.9	1034.7	1033.3	1032.0	1030.6	1029.2
42.5°	999.3	995.8	992.5	989.9	988.0	986.0	984.1	982.1
45°	931.9	928.1	924.3	921.7	920.3	919.0	917.6	916.3
47.5°	861.8	857.8	853.8	850.8	848.8	846.9	844.9	842.8
50°	816.8	812.0	807.2	804.0	802.2	800.5	798.8	797.1
52.5°	770.2	766.2	762.2	759.1	756.8	754.6	752.2	750.0
55°	700.5	696.4	692.4	689.4	687.7	686.0	684.3	682.5
57.5°	628.2	624.2	620.2	617.4	616.2	614.9	613.6	612.3
60°	580.6	576.7	573.0	570.6	569.6	568.6	567.4	566.4
62.5°	535.3	531.8	528.3	525.8	524.5	523.2	521.9	520.6
65°	465.9	462.7	459.7	457.3	455.6	453.8	452.1	450.4
67.5°	397.3	394.9	392.4	390.5	389.2	387.8	386.5	385.1
70°	352.6	350.3	347.9	346.0	344.6	343.3	341.8	340.5
72.5°	310.6	308.2	305.8	304.1	303.0	301.8	300.7	299.6
75°	245.1	243.0	241.0	240.2	241.0	241.6	242.3	243.0
77.5°	186.4	185.4	184.4	183.4	182.4	181.5	180.5	179.6
80°	148.0	147.0	146.0	145.1	144.4	143.8	143.1	142.4
82.5°	110.4	109.1	107.8	107.0	106.8	106.7	106.6	106.4
85°	58.3	57.3	56.2	55.5	55.2	54.8	54.5	54.1
87.5°	23.2	21.9	21.5	21.2	20.9	20.7	20.4	20.1
90°	37.6	35.2	37.6	38.7	38.7	38.7	38.7	38.7
92.5°	102.3	87.8	77.9	70.6	69.7	65.9	66.9	65.0
95°	307.4	235.8	186.5	160.7	145.4	136.1	132.6	133.7
97.5°	717.2	586.8	459.9	375.2	319.1	290.2	273.1	263.3
100°	1071.1	925.6	764.9	622.9	525.5	475.1	441.1	420.0
102.5°	1302.9	1270.0	1152.5	1002.1	896.3	810.2	767.7	739.1
105°	1425.3	1557.9	1573.2	1534.5	1461.7	1389.0	1338.6	1322.1
107.5°	1337.2	1536.8	1658.8	1715.6	1724.7	1720.7	1710.6	1688.8
110°	1261.1	1471.1	1621.2	1717.5	1767.9	1790.2	1800.8	1799.6





TEST NUMBER: P331464-840

CATALOG NUMBER: SA2XXDIP-C1005D1080U840-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1191.6	1393.2	1553.7	1664.0	1734.1	1771.4	1791.4	1797.7
115°	1106.3	1287.0	1440.6	1561.5	1644.8	1698.7	1729.2	1739.8
117.5°	1042.0	1200.6	1340.0	1453.3	1538.2	1595.2	1627.4	1636.3
120°	1010.1	1155.5	1279.9	1386.6	1468.7	1523.9	1557.9	1569.6
122.5°	984.7	1118.0	1235.8	1332.2	1405.8	1460.1	1490.4	1500.2
125°	947.9	1068.7	1171.9	1259.9	1328.0	1372.6	1401.9	1411.3
127.5°	911.5	1020.9	1118.2	1199.4	1258.8	1300.5	1325.9	1333.4
130°	888.1	989.0	1081.7	1159.0	1216.6	1256.5	1279.9	1289.3
132.5°	865.6	959.0	1044.1	1116.8	1173.4	1213.3	1234.9	1243.2
135°	834.0	911.5	989.0	1054.6	1105.1	1143.8	1164.9	1169.6
137.5°	809.0	873.7	935.2	992.5	1038.4	1071.8	1090.4	1097.3
140°	793.0	849.4	903.3	954.9	992.5	1023.0	1040.6	1047.6
142.5°	779.9	827.8	874.2	917.4	953.0	980.8	996.4	997.8
145°	761.3	800.1	836.5	870.5	898.6	918.6	930.3	933.8
147.5°	747.1	777.6	806.0	830.8	854.0	870.0	878.0	880.1
150°	736.7	762.5	787.2	808.3	825.9	840.0	847.0	848.2
152.5°	726.4	750.3	771.2	789.5	803.3	815.6	820.7	820.9
155°	712.1	730.8	748.4	761.3	774.3	782.4	787.2	784.9
157.5°	695.4	711.1	725.9	736.0	745.2	751.9	754.1	754.1
160°	685.1	698.0	710.9	719.1	727.3	733.2	734.4	734.4
162.5°	674.8	685.8	696.8	703.2	711.3	715.4	716.5	715.6
165°	659.3	667.5	675.7	680.4	685.1	689.8	689.8	688.6
167.5°	644.5	650.9	656.5	660.8	662.8	665.4	665.2	663.8
170°	637.0	640.6	645.2	647.5	648.7	652.3	651.1	648.7
172.5°	628.5	631.2	634.9	636.3	637.5	639.1	637.9	636.5
175°	619.5	620.6	621.8	622.9	622.9	624.1	622.9	620.6
177.5°	612.9	612.9	613.8	613.8	613.8	613.8	612.9	611.0
180°	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1

(END OF REPORT)