

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: P332641-840

Luminaire Tested: **SA4XXDIP-C1020D590U840-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332641-840
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: SA4XXDIP-C1020D590U840-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

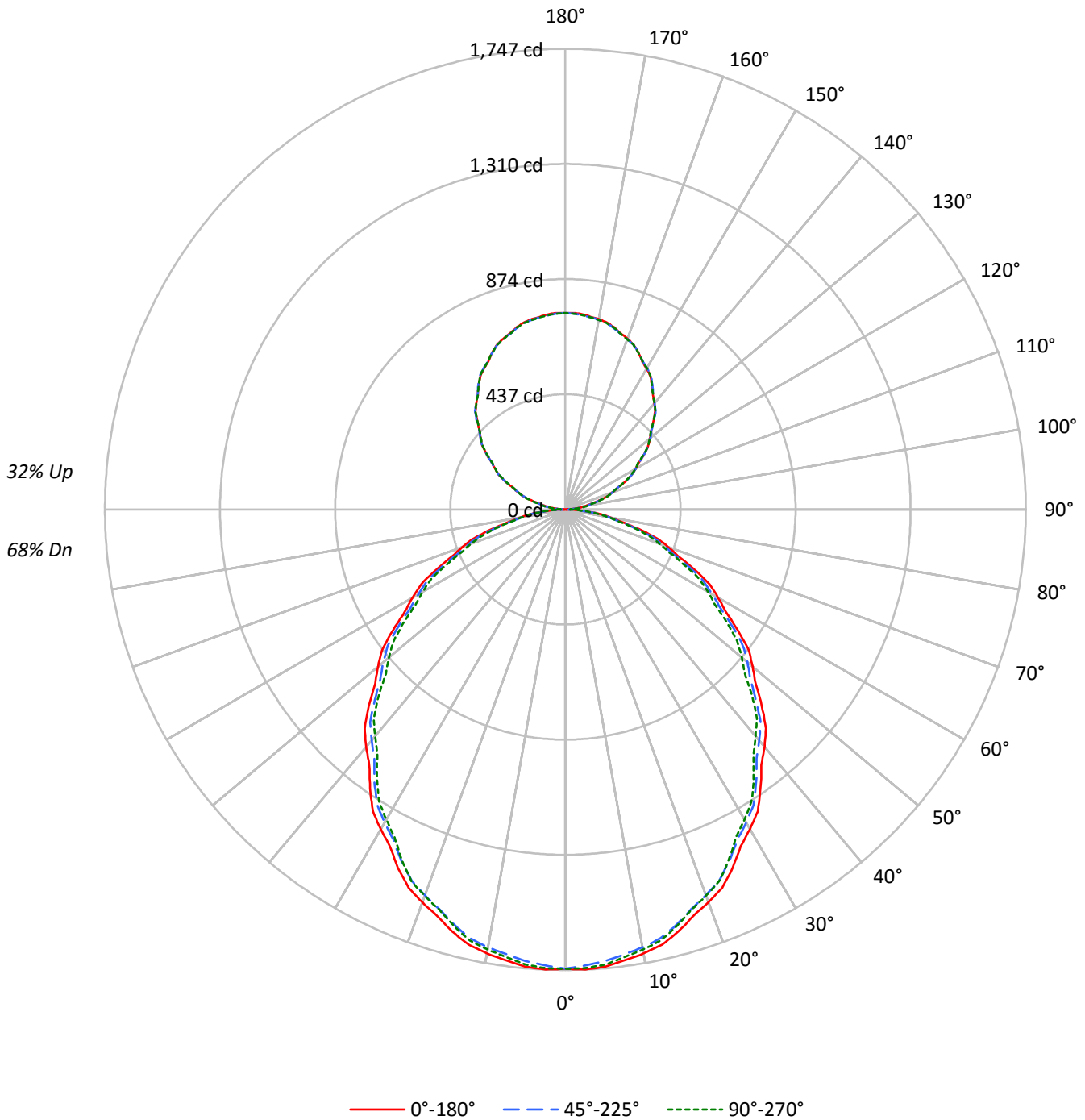
Lumens per Lamp: N/A
Luminaire Lumens: 6540.0 lumens
Efficiency: N/A
Efficacy: 134.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 48.8
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



TEST NUMBER: P332641-840
CATALOG NUMBER: SA4XXDIP-C1020D590U840-4F0-1E-UDD-F1

Luminous Intensity Polar Plot





TEST NUMBER: P332641-840

CATALOG NUMBER: SA4XXDIP-C1020D590U840-4F0-1E-UDD-F1

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	112	112	112	112	105	105	105	105	94	94	94	83	83	83	73	73	73	68
1	102	97	93	90	96	92	89	85	82	79	77	73	71	69	64	63	62	58
2	93	85	79	73	87	81	75	70	72	68	64	64	61	58	57	54	52	48
3	85	75	67	61	80	71	64	59	63	58	54	57	52	49	50	47	44	41
4	78	66	58	52	73	63	56	50	56	51	46	51	46	42	45	41	38	35
5	71	59	51	45	67	56	49	43	51	44	40	45	40	36	41	36	33	30
6	66	53	45	39	62	51	43	37	46	39	35	41	36	32	37	33	29	27
7	61	48	40	34	57	46	38	33	42	35	31	37	32	28	34	29	26	24
8	57	44	36	30	53	42	34	29	38	32	27	34	29	25	31	27	23	21
9	53	40	32	27	50	38	31	26	35	29	25	32	27	23	29	24	21	19
10	49	37	29	25	47	35	28	24	32	26	22	29	24	21	27	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14067	14067	14067
5°	14109	13940	14041
10°	14021	13827	13896
15°	13852	13630	13665
20°	13626	13387	13399
25°	13370	13109	13071
30°	13055	12781	12665
35°	12728	12439	12275
40°	12390	12052	11830
45°	12036	11669	11445
50°	11645	11328	10977
55°	11222	10888	10534
60°	10798	10393	10077
65°	10323	9922	9522
70°	9788	9293	8932
75°	8971	8537	8319
80°	7987	7657	7466
85°	6984	6725	6595



TEST NUMBER: P332641-840

CATALOG NUMBER: SA4XXDIP-C1020D590U840-4F0-1E-UDD-F1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	164.1	2.5
10°-20°	462.4	7.1
20°-30°	680.5	10.4
30°-40°	791.1	12.1
40°-50°	791.2	12.1
50°-60°	692.1	10.6
60°-70°	514.0	7.9
70°-80°	292.0	4.5
80°-90°	86.5	1.3
90°-100°	49.1	0.8
100°-110°	145.5	2.2
110°-120°	247.0	3.8
120°-130°	325.7	5.0
130°-140°	365.7	5.6
140°-150°	359.4	5.5
150°-160°	302.3	4.6
160°-170°	201.1	3.1
170°-180°	70.4	1.1
0°-30°	1307.0	20.0
0°-40°	2098.1	32.1
0°-60°	3581.3	54.8
0°-90°	4473.8	68.4
90°-120°	441.6	6.8
90°-150°	1492.4	22.8
90°-180°	2066.0	31.6
0°-180°	6540.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1742	1742	1742	1742	1742	
5°	1741	1735	1720	1735	1733	165
15°	1657	1651	1631	1638	1635	467
25°	1501	1491	1472	1473	1467	690
35°	1292	1281	1262	1253	1246	807
45°	1054	1044	1022	1007	1002	812
55°	797	792	774	757	748	714
65°	540	533	519	506	498	535
75°	288	281	274	268	267	306
85°	75	75	73	72	71	83
90°	2	8	13	16	17	6
95°	34	40	44	45	46	38
105°	134	135	137	139	141	142
115°	251	251	250	249	249	248
125°	366	366	365	364	363	326
135°	472	475	475	474	472	365
145°	573	575	576	575	574	358
155°	657	657	656	658	656	302
165°	715	713	712	715	713	201
175°	744	741	740	744	740	71
180°	745	745	745	745	745	



TEST NUMBER: P332641-840

CATALOG NUMBER: SA4XXDIP-C1020D590U840-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5
2.5°	1747.0	1746.3	1745.5	1744.7	1744.0	1742.2	1739.5	1736.8	1734.0	1731.3	1733.8
5°	1741.1	1739.9	1738.7	1737.4	1736.2	1733.8	1730.4	1727.0	1723.6	1720.2	1723.6
7.5°	1725.0	1723.6	1722.4	1721.2	1720.0	1717.5	1713.6	1709.9	1706.1	1702.3	1705.1
10°	1710.4	1709.2	1707.9	1706.7	1705.5	1702.8	1698.8	1694.8	1690.7	1686.7	1689.1
12.5°	1691.4	1690.2	1688.9	1687.7	1686.5	1683.6	1679.4	1675.2	1670.8	1666.6	1669.3
15°	1657.4	1656.1	1654.9	1653.7	1652.3	1649.4	1644.8	1640.1	1635.5	1630.8	1632.6
17.5°	1616.3	1614.8	1613.2	1611.6	1610.1	1607.1	1602.7	1598.3	1593.9	1589.5	1590.6
20°	1586.1	1584.6	1583.1	1581.4	1579.9	1576.8	1572.2	1567.5	1562.9	1558.2	1559.1
22.5°	1553.8	1551.7	1549.6	1547.6	1545.6	1542.2	1537.5	1532.9	1528.2	1523.6	1525.3
25°	1501.0	1498.8	1496.6	1494.4	1492.3	1489.0	1484.7	1480.4	1476.0	1471.7	1472.0
27.5°	1440.7	1438.5	1436.1	1433.9	1431.7	1428.6	1424.5	1420.5	1416.4	1412.4	1411.7
30°	1400.5	1398.0	1395.4	1393.0	1390.5	1387.3	1383.2	1379.2	1375.1	1371.1	1369.9
32.5°	1358.0	1355.7	1353.5	1351.3	1349.1	1345.7	1341.5	1337.3	1332.9	1328.7	1327.2
35°	1291.5	1289.4	1287.2	1285.1	1282.8	1279.6	1275.3	1270.9	1266.6	1262.2	1260.0
37.5°	1221.4	1219.4	1217.5	1215.5	1213.5	1210.2	1205.5	1200.8	1196.2	1191.5	1189.2
40°	1175.7	1173.2	1170.6	1168.2	1165.7	1162.2	1157.5	1152.9	1148.2	1143.6	1140.4
42.5°	1126.5	1125.0	1123.5	1122.1	1120.5	1117.2	1112.1	1106.9	1101.8	1096.6	1093.0
45°	1054.2	1052.0	1049.9	1047.6	1045.5	1041.9	1036.9	1032.0	1027.0	1022.1	1018.7
47.5°	978.5	977.0	975.5	974.0	972.5	969.5	964.9	960.3	955.7	951.1	947.3
50°	927.2	925.8	924.6	923.4	922.1	919.4	915.0	910.7	906.4	902.0	897.7
52.5°	876.9	875.4	873.8	872.4	870.9	867.9	863.2	858.7	854.0	849.5	845.7
55°	797.3	796.3	795.4	794.5	793.6	790.9	786.6	782.2	777.9	773.6	769.8
57.5°	721.3	720.2	719.2	718.1	717.1	714.4	710.1	705.9	701.6	697.3	693.8
60°	668.8	667.2	665.7	664.2	662.6	659.8	655.8	651.8	647.7	643.7	640.9
62.5°	617.4	616.1	614.8	613.5	612.2	609.5	605.1	600.9	596.5	592.3	589.8
65°	540.4	538.8	537.2	535.7	534.1	531.8	528.7	525.6	522.5	519.4	516.3
67.5°	462.7	461.3	459.9	458.5	457.0	454.8	451.8	448.9	445.9	442.9	439.9
70°	414.7	412.5	410.3	408.2	406.0	403.6	401.2	398.7	396.3	393.7	391.2
72.5°	363.3	361.1	359.0	356.8	354.7	352.5	350.5	348.6	346.6	344.6	342.6
75°	287.6	286.1	284.5	283.0	281.4	279.8	278.3	276.8	275.2	273.7	272.5
77.5°	215.3	214.6	213.9	213.3	212.6	211.6	210.2	208.8	207.4	206.1	205.7
80°	171.8	170.8	169.9	169.0	168.0	167.2	166.6	166.0	165.4	164.7	164.1
82.5°	129.3	128.9	128.5	127.9	127.5	127.2	127.1	127.0	126.9	126.7	126.4
85°	75.4	75.4	75.4	75.4	75.4	75.1	74.4	73.8	73.2	72.6	72.6
87.5°	29.4	29.4	29.5	29.5	29.5	29.5	29.5	29.4	29.4	29.4	29.5
90°	1.7	3.1	4.5	6.0	7.4	8.6	9.6	10.6	11.6	12.6	13.4
92.5°	12.3	13.9	15.6	17.2	18.8	19.9	20.7	21.4	22.1	22.8	23.2
95°	34.5	35.7	36.9	38.0	39.2	40.2	41.1	42.0	42.9	43.7	44.1
97.5°	60.4	61.3	62.2	63.1	64.0	65.0	66.0	67.2	68.2	69.3	69.7
100°	80.6	81.2	81.7	82.2	82.7	83.5	84.6	85.8	86.9	88.2	88.4
102.5°	101.8	102.0	102.2	102.4	102.6	103.3	104.3	105.3	106.4	107.4	107.9
105°	134.2	134.3	134.4	134.6	134.7	135.0	135.5	136.0	136.5	137.0	137.4
107.5°	168.1	168.3	168.4	168.6	168.8	169.0	169.0	169.1	169.2	169.3	169.6
110°	191.3	191.5	191.8	192.0	192.3	192.3	192.2	192.1	192.0	191.8	191.6



TEST NUMBER: P332641-840

CATALOG NUMBER: SA4XXDIP-C1020D590U840-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	215.2	215.2	215.3	215.3	215.4	215.3	215.1	214.8	214.6	214.4	214.3
115°	251.2	251.2	251.2	251.2	251.2	251.0	250.7	250.4	250.2	249.9	249.8
117.5°	285.0	285.1	285.2	285.3	285.4	285.4	285.2	285.0	284.8	284.7	284.2
120°	307.6	308.1	308.6	309.1	309.6	309.7	309.3	308.9	308.5	308.1	307.5
122.5°	331.0	331.2	331.4	331.6	331.8	331.9	331.7	331.5	331.3	331.2	330.7
125°	365.8	365.8	365.8	365.8	365.8	365.7	365.6	365.5	365.3	365.2	364.9
127.5°	397.2	397.6	398.0	398.4	398.7	398.8	398.6	398.4	398.2	398.0	397.8
130°	419.3	419.7	420.1	420.5	420.8	421.0	421.0	421.0	421.0	421.0	420.8
132.5°	441.9	442.2	442.4	442.7	443.0	443.1	443.0	442.9	442.8	442.7	442.4
135°	471.7	472.5	473.2	474.0	474.8	475.1	475.1	475.1	475.1	475.1	474.9
137.5°	504.2	504.5	504.9	505.2	505.6	505.9	506.1	506.3	506.5	506.8	506.4
140°	525.8	526.1	526.3	526.6	526.8	527.0	527.0	527.0	527.0	527.0	526.8
142.5°	545.6	545.9	546.2	546.4	546.7	546.7	546.6	546.5	546.4	546.3	546.3
145°	573.1	573.6	574.1	574.6	575.1	575.4	575.6	575.7	575.8	575.9	575.8
147.5°	600.3	600.9	601.5	602.1	602.8	603.0	602.9	602.8	602.7	602.6	602.5
150°	616.8	617.4	617.9	618.4	618.9	619.1	619.1	619.1	619.1	619.1	619.1
152.5°	632.6	632.9	633.2	633.5	633.8	634.0	634.1	634.2	634.3	634.4	634.7
155°	656.6	656.6	656.6	656.6	656.6	656.5	656.4	656.3	656.2	656.0	656.5
157.5°	676.9	676.6	676.4	676.2	676.0	675.8	675.8	675.8	675.8	675.7	676.1
160°	688.8	688.7	688.6	688.5	688.3	688.2	688.1	688.0	687.8	687.7	688.1
162.5°	699.9	699.6	699.2	698.9	698.6	698.3	698.2	698.1	698.0	697.8	698.5
165°	714.8	714.4	714.0	713.7	713.3	713.0	712.7	712.5	712.2	712.0	712.7
167.5°	726.2	725.7	725.1	724.6	724.1	723.8	723.8	723.9	723.9	723.9	724.7
170°	732.7	732.1	731.3	730.7	730.0	729.8	729.9	730.0	730.2	730.3	731.1
172.5°	737.2	736.7	736.2	735.7	735.1	734.9	734.9	734.9	734.9	735.0	735.8
175°	743.6	743.0	742.4	741.6	741.0	740.6	740.5	740.4	740.2	740.1	741.0
177.5°	745.7	745.2	744.7	744.2	743.6	743.4	743.4	743.4	743.4	743.4	744.1
180°	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8



TEST NUMBER: P332641-840

CATALOG NUMBER: SA4XXDIP-C1020D590U840-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5	1742.5
2.5°	1736.3	1738.8	1741.3	1742.4	1742.1	1741.9	1741.6	1741.4
5°	1727.0	1730.4	1733.8	1735.3	1734.6	1733.9	1733.3	1732.7
7.5°	1707.8	1710.5	1713.2	1714.4	1714.0	1713.6	1713.2	1712.9
10°	1691.6	1694.1	1696.6	1697.5	1696.9	1696.3	1695.7	1695.1
12.5°	1672.0	1674.8	1677.5	1678.4	1677.6	1676.7	1675.8	1675.0
15°	1634.6	1636.4	1638.3	1638.7	1637.8	1636.9	1636.0	1635.0
17.5°	1591.9	1593.1	1594.2	1594.5	1593.9	1593.3	1592.7	1592.0
20°	1560.0	1561.0	1562.0	1562.1	1561.5	1560.8	1560.2	1559.6
22.5°	1526.9	1528.6	1530.2	1530.6	1529.4	1528.3	1527.2	1526.1
25°	1472.3	1472.6	1472.9	1472.4	1471.2	1470.0	1468.6	1467.4
27.5°	1411.0	1410.2	1409.5	1408.4	1406.7	1405.2	1403.6	1402.1
30°	1368.7	1367.4	1366.1	1364.7	1363.2	1361.6	1360.1	1358.6
32.5°	1325.6	1324.2	1322.7	1321.2	1319.6	1318.1	1316.6	1314.9
35°	1257.9	1255.7	1253.5	1251.6	1250.1	1248.6	1247.0	1245.5
37.5°	1186.8	1184.5	1182.1	1179.9	1177.9	1175.8	1173.8	1171.7
40°	1137.3	1134.2	1131.1	1128.8	1127.2	1125.7	1124.2	1122.6
42.5°	1089.4	1085.8	1082.2	1079.8	1078.8	1077.7	1076.7	1075.7
45°	1015.2	1011.8	1008.4	1006.2	1005.3	1004.4	1003.4	1002.5
47.5°	943.4	939.6	935.7	932.6	930.3	927.9	925.5	923.2
50°	893.3	889.0	884.6	881.5	879.6	877.8	876.0	874.0
52.5°	841.8	837.9	834.0	831.0	828.6	826.3	823.9	821.5
55°	766.1	762.3	758.6	755.9	754.0	752.1	750.2	748.4
57.5°	690.2	686.7	683.2	680.4	678.6	676.9	675.1	673.3
60°	638.1	635.3	632.5	630.4	628.7	627.2	625.7	624.1
62.5°	587.2	584.6	582.1	580.1	578.6	576.9	575.4	573.9
65°	513.2	510.1	507.0	504.6	503.1	501.6	500.0	498.5
67.5°	437.0	433.9	431.0	429.3	428.8	428.4	428.0	427.6
70°	388.8	386.3	383.8	382.1	381.2	380.2	379.3	378.4
72.5°	340.6	338.6	336.7	335.2	334.3	333.4	332.4	331.4
75°	271.1	269.9	268.7	267.9	267.6	267.3	267.0	266.7
77.5°	205.3	205.0	204.6	204.0	203.2	202.4	201.6	200.8
80°	163.5	162.9	162.3	161.8	161.5	161.2	160.9	160.6
82.5°	126.0	125.6	125.3	124.9	124.6	124.3	124.0	123.7
85°	72.6	72.6	72.6	72.4	72.1	71.8	71.5	71.2
87.5°	29.7	29.8	30.0	30.1	30.1	30.2	30.2	30.3
90°	14.2	14.9	15.8	16.3	16.6	16.8	17.1	17.3
92.5°	23.7	24.2	24.6	24.9	25.1	25.2	25.4	25.5
95°	44.5	44.9	45.3	45.5	45.5	45.5	45.5	45.5
97.5°	70.2	70.6	71.1	71.3	71.3	71.3	71.3	71.3
100°	88.7	88.9	89.2	89.3	89.3	89.3	89.3	89.3
102.5°	108.2	108.6	108.9	109.2	109.3	109.4	109.5	109.6
105°	137.8	138.3	138.7	139.0	139.4	139.8	140.2	140.6
107.5°	170.0	170.3	170.7	170.9	170.8	170.8	170.8	170.8
110°	191.3	191.1	190.8	190.9	191.3	191.6	192.0	192.4



TEST NUMBER: P332641-840

CATALOG NUMBER: SA4XXDIP-C1020D590U840-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	214.3	214.2	214.2	214.2	214.3	214.3	214.4	214.5
115°	249.7	249.6	249.4	249.3	249.2	249.0	248.9	248.8
117.5°	283.8	283.4	282.9	282.6	282.3	282.1	281.8	281.6
120°	306.9	306.2	305.6	305.4	305.7	305.9	306.2	306.4
122.5°	330.3	329.9	329.4	329.0	328.5	328.1	327.6	327.2
125°	364.7	364.4	364.2	363.9	363.7	363.3	363.1	362.8
127.5°	397.5	397.3	397.0	396.8	396.6	396.4	396.2	396.0
130°	420.5	420.3	420.0	419.6	419.1	418.6	418.1	417.6
132.5°	442.2	441.9	441.7	441.4	441.2	441.0	440.8	440.6
135°	474.6	474.4	474.1	473.8	473.4	473.0	472.7	472.3
137.5°	506.0	505.7	505.4	505.2	505.3	505.4	505.5	505.6
140°	526.7	526.6	526.5	526.3	526.2	526.1	526.0	525.8
142.5°	546.3	546.3	546.2	546.2	546.2	546.2	546.1	546.1
145°	575.7	575.6	575.4	575.2	574.8	574.4	574.0	573.7
147.5°	602.4	602.3	602.2	602.1	602.0	601.8	601.7	601.6
150°	619.1	619.1	619.1	619.1	618.9	618.8	618.7	618.6
152.5°	635.0	635.3	635.6	635.6	635.3	634.9	634.6	634.3
155°	657.0	657.5	658.1	658.1	657.5	657.0	656.5	656.0
157.5°	676.5	676.9	677.3	677.2	676.8	676.4	675.9	675.5
160°	688.5	688.8	689.2	689.1	688.5	687.8	687.2	686.6
162.5°	699.2	699.9	700.6	700.6	700.0	699.3	698.7	698.1
165°	713.5	714.2	715.0	715.1	714.6	714.1	713.6	713.1
167.5°	725.4	726.2	727.0	726.9	726.2	725.4	724.6	723.8
170°	731.8	732.7	733.4	733.4	732.5	731.5	730.6	729.7
172.5°	736.7	737.6	738.4	738.4	737.5	736.6	735.7	734.9
175°	741.9	742.9	743.7	743.7	742.9	741.9	741.0	740.1
177.5°	744.8	745.5	746.2	746.2	745.4	744.6	743.7	742.9
180°	744.8	744.8	744.8	744.8	744.8	744.8	744.8	744.8

(END OF REPORT)