

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: P332685-830

Luminaire Tested: **SA4XXDIP-C1195D590U830-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332685-830
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: SA4XXDIP-C1195D590U830-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

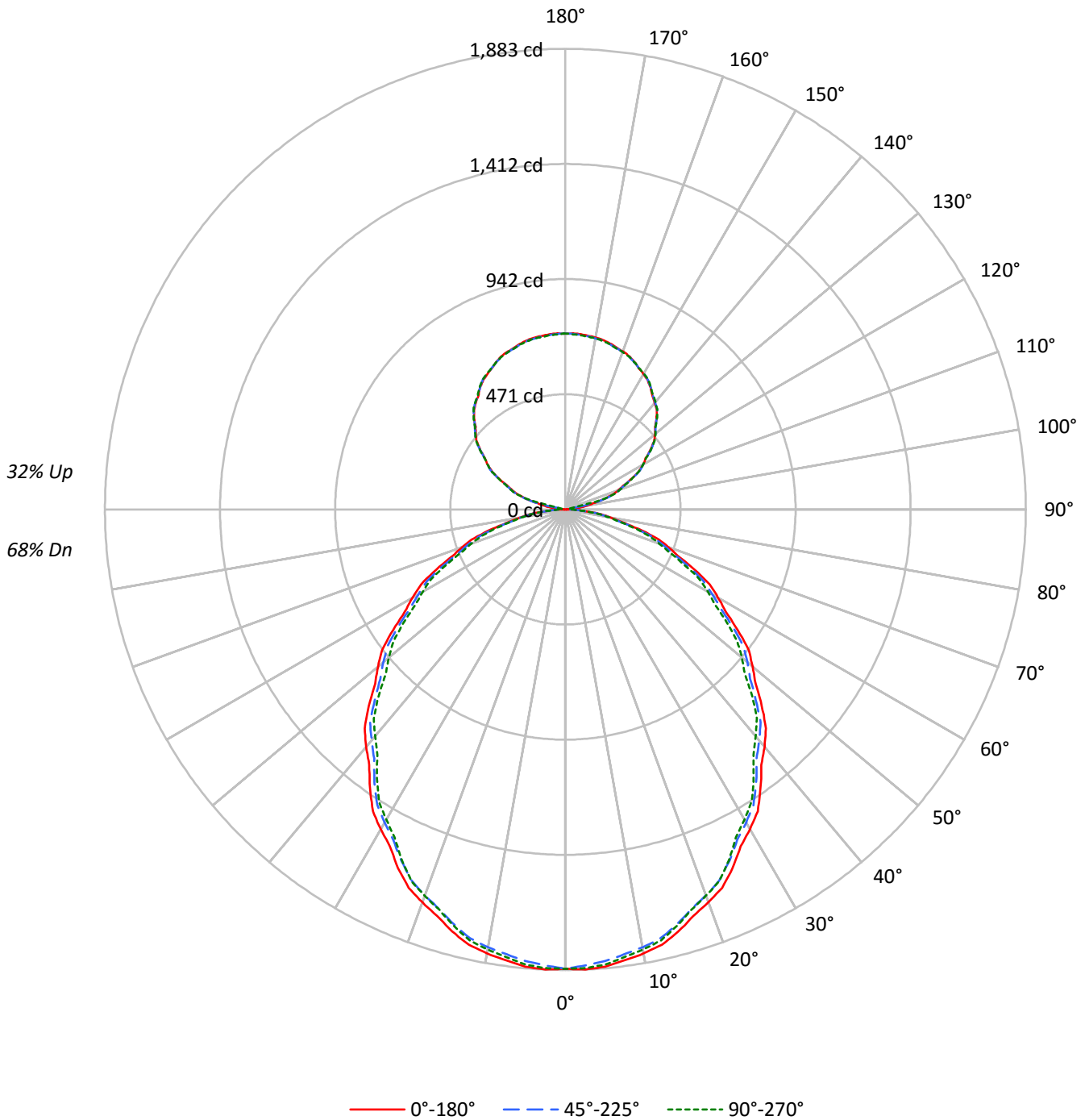
Lumens per Lamp: N/A
Luminaire Lumens: 7045.7 lumens
Efficiency: N/A
Efficacy: 127.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 55.1
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: P332685-830
CATALOG NUMBER: SA4XXDIP-C1195D590U830-4F0-1E-UDD-F

Luminous Intensity Polar Plot





TEST NUMBER: P332685-830

CATALOG NUMBER: SA4XXDIP-C1195D590U830-4F0-1E-UDD-F

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									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	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	68	68	68	68	68	68	68	68	68	68	68																
	1	102	97	93	90	96	92	89	85	82	79	77	73	71	69	65	63	62	58	58	58	58	58	58	58	58	58	58	58	58																
	2	93	85	79	73	87	81	75	70	72	68	64	64	61	58	57	54	52	48	48	48	48	48	48	48	48	48	48	48	48																
	3	85	75	67	61	80	71	64	59	64	58	54	57	52	49	50	47	44	41	41	41	41	41	41	41	41	41	41	41	41																
	4	78	66	58	52	73	63	56	50	56	51	46	51	46	42	45	41	38	35	35	35	35	35	35	35	35	35	35	35	35																
	5	71	59	51	45	67	56	49	43	51	44	40	45	40	36	41	36	33	30	30	30	30	30	30	30	30	30	30	30	30																
	6	66	53	45	39	62	51	43	37	46	39	35	41	36	32	37	33	29	27	27	27	27	27	27	27	27	27	27	27	27																
	7	61	48	40	34	57	46	38	33	42	35	31	37	32	28	34	29	26	24	24	24	24	24	24	24	24	24	24	24	24																
	8	57	44	36	30	53	42	34	29	38	32	27	34	29	25	31	27	23	21	21	21	21	21	21	21	21	21	21	21	21																
	9	53	40	32	27	50	38	31	26	35	29	25	32	27	23	29	24	21	19	19	19	19	19	19	19	19	19	19	19	19																
	10	49	37	29	25	47	35	28	24	32	26	22	29	24	21	27	22	19	17	17	17	17	17	17	17	17	17	17	17	17																

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15163	15163	15163
5°	15209	15027	15135
10°	15114	14905	14978
15°	14931	14692	14730
20°	14689	14430	14442
25°	14412	14130	14091
30°	14072	13778	13651
35°	13720	13409	13232
40°	13354	12991	12752
45°	12973	12578	12337
50°	12552	12210	11833
55°	12096	11736	11354
60°	11641	11202	10863
65°	11127	10695	10264
70°	10551	10017	9626
75°	9669	9201	8968
80°	8605	8257	8047
85°	7521	7243	7104



TEST NUMBER: P332685-830

CATALOG NUMBER: SA4XXDIP-C1195D590U830-4F0-1E-UDD-F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	176.9	2.5
10°-20°	498.4	7.1
20°-30°	733.6	10.4
30°-40°	852.8	12.1
40°-50°	852.8	12.1
50°-60°	746.0	10.6
60°-70°	554.0	7.9
70°-80°	314.7	4.5
80°-90°	92.9	1.3
90°-100°	24.6	0.3
100°-110°	156.8	2.2
110°-120°	299.9	4.3
120°-130°	380.7	5.4
130°-140°	407.3	5.8
140°-150°	380.9	5.4
150°-160°	307.1	4.4
160°-170°	198.1	2.8
170°-180°	68.3	1.0
0°-30°	1408.8	20.0
0°-40°	2261.6	32.1
0°-60°	3860.5	54.8
0°-90°	4822.1	68.4
90°-120°	481.2	6.8
90°-150°	1650.1	23.4
90°-180°	2224.0	31.6
0°-180°	7045.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1878	1878	1878	1878	1878	
5°	1877	1870	1854	1870	1868	178
15°	1786	1780	1758	1766	1762	503
25°	1618	1607	1586	1587	1582	744
35°	1392	1381	1361	1350	1343	870
45°	1136	1125	1102	1086	1081	876
55°	859	854	834	816	807	769
65°	582	575	560	545	537	577
75°	310	302	295	289	288	329
85°	81	81	78	78	77	89
90°	2	7	12	15	16	6
95°	30	12	12	15	16	38
105°	162	165	168	171	153	169
115°	302	304	303	304	304	297
125°	425	427	426	427	428	379
135°	527	526	528	530	531	406
145°	608	609	609	610	611	380
155°	666	667	665	667	666	307
165°	703	700	700	704	700	198
175°	719	716	716	720	714	68
180°	719	719	719	719	719	



TEST NUMBER: P332685-830

CATALOG NUMBER: SA4XXDIP-C1195D590U830-4F0-1E-UDD-F

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3
2.5°	1883.1	1882.4	1881.5	1880.7	1879.9	1878.0	1875.1	1872.2	1869.3	1866.3	1869.0
5°	1876.8	1875.5	1874.2	1872.8	1871.5	1869.0	1865.3	1861.6	1857.9	1854.3	1857.9
7.5°	1859.4	1858.0	1856.7	1855.3	1854.0	1851.3	1847.2	1843.1	1839.1	1834.9	1838.0
10°	1843.7	1842.4	1841.1	1839.7	1838.3	1835.5	1831.2	1826.8	1822.5	1818.2	1820.8
12.5°	1823.3	1821.9	1820.5	1819.2	1817.9	1814.9	1810.3	1805.7	1801.1	1796.5	1799.4
15°	1786.5	1785.2	1783.9	1782.5	1781.1	1778.0	1772.9	1767.9	1762.9	1757.9	1759.9
17.5°	1742.3	1740.6	1738.9	1737.3	1735.6	1732.4	1727.6	1722.9	1718.2	1713.4	1714.7
20°	1709.8	1708.1	1706.4	1704.8	1703.1	1699.7	1694.7	1689.7	1684.7	1679.6	1680.6
22.5°	1674.8	1672.6	1670.5	1668.2	1666.0	1662.4	1657.4	1652.4	1647.4	1642.3	1644.2
25°	1618.0	1615.6	1613.3	1610.9	1608.5	1605.1	1600.3	1595.7	1591.0	1586.3	1586.7
27.5°	1552.9	1550.5	1548.1	1545.7	1543.3	1539.9	1535.6	1531.3	1526.9	1522.5	1521.7
30°	1509.6	1506.9	1504.2	1501.6	1498.9	1495.3	1491.0	1486.7	1482.3	1478.0	1476.7
32.5°	1463.9	1461.4	1459.1	1456.6	1454.2	1450.7	1446.0	1441.4	1436.8	1432.2	1430.6
35°	1392.2	1389.9	1387.5	1385.2	1382.8	1379.3	1374.6	1370.0	1365.3	1360.6	1358.2
37.5°	1316.6	1314.5	1312.4	1310.2	1308.1	1304.5	1299.5	1294.5	1289.4	1284.4	1281.9
40°	1267.2	1264.6	1261.9	1259.2	1256.6	1252.7	1247.7	1242.6	1237.7	1232.7	1229.3
42.5°	1214.3	1212.7	1211.1	1209.5	1207.9	1204.3	1198.7	1193.2	1187.6	1182.0	1178.2
45°	1136.3	1134.0	1131.6	1129.3	1127.0	1123.1	1117.8	1112.4	1107.0	1101.7	1098.1
47.5°	1054.7	1053.1	1051.5	1049.9	1048.3	1045.1	1040.1	1035.2	1030.2	1025.3	1021.2
50°	999.4	998.1	996.6	995.3	994.0	991.0	986.3	981.7	976.9	972.2	967.6
52.5°	945.2	943.6	942.0	940.4	938.8	935.5	930.6	925.6	920.7	915.7	911.5
55°	859.4	858.4	857.4	856.4	855.4	852.5	847.8	843.2	838.5	833.8	829.8
57.5°	777.5	776.4	775.2	774.1	773.0	770.1	765.4	760.8	756.2	751.6	747.8
60°	721.0	719.3	717.6	716.0	714.3	711.2	706.9	702.6	698.1	693.8	690.8
62.5°	665.5	664.1	662.7	661.3	660.0	657.0	652.3	647.7	643.1	638.5	635.7
65°	582.5	580.8	579.1	577.4	575.8	573.3	570.0	566.6	563.3	559.9	556.6
67.5°	498.8	497.3	495.7	494.2	492.7	490.2	487.0	483.8	480.6	477.4	474.2
70°	447.0	444.7	442.3	440.0	437.6	435.2	432.4	429.8	427.1	424.4	421.8
72.5°	391.6	389.3	386.9	384.6	382.3	380.0	377.9	375.7	373.6	371.5	369.3
75°	310.0	308.4	306.7	305.0	303.3	301.7	300.0	298.3	296.7	295.0	293.7
77.5°	232.1	231.3	230.6	229.9	229.1	228.0	226.6	225.1	223.7	222.2	221.8
80°	185.1	184.1	183.1	182.1	181.2	180.3	179.6	178.9	178.2	177.6	176.9
82.5°	139.4	138.9	138.5	138.0	137.5	137.2	137.0	137.0	136.8	136.7	136.3
85°	81.2	81.2	81.2	81.2	81.2	81.0	80.3	79.6	78.9	78.2	78.2
87.5°	31.7	31.7	31.6	31.6	31.6	31.6	31.5	31.4	31.3	31.3	31.4
90°	1.6	2.9	4.2	5.6	6.9	8.0	9.0	9.9	10.8	11.8	12.5
92.5°	6.8	6.9	6.9	7.0	7.1	7.5	8.6	9.5	10.5	11.4	12.2
95°	29.6	25.5	21.5	17.3	13.3	11.3	11.5	11.6	11.7	11.8	12.5
97.5°	62.8	65.3	67.9	70.4	73.0	67.5	54.2	40.9	27.5	14.2	14.2
100°	88.1	90.3	92.5	94.6	96.8	89.6	73.1	56.6	40.2	23.7	21.6
102.5°	116.6	118.1	119.7	121.3	122.9	122.6	120.5	118.3	116.1	114.0	92.1
105°	161.8	162.6	163.2	164.0	164.7	165.3	166.0	166.5	167.1	167.8	168.8
107.5°	203.9	204.2	204.6	204.9	205.3	205.9	206.7	207.5	208.3	209.2	209.7
110°	232.2	232.6	233.0	233.4	233.7	234.2	235.0	235.6	236.4	237.1	237.3



TEST NUMBER: P332685-830

CATALOG NUMBER: SA4XXDIP-C1195D590U830-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	259.8	260.4	261.1	261.7	262.4	262.9	263.2	263.5	263.9	264.2	264.2
115°	302.2	302.6	302.8	303.2	303.6	303.7	303.6	303.5	303.3	303.2	303.5
117.5°	340.4	340.8	341.3	341.8	342.2	342.6	342.9	343.2	343.4	343.7	343.7
120°	366.2	366.6	367.1	367.6	368.1	368.3	368.2	368.0	367.9	367.8	368.0
122.5°	390.2	390.5	390.8	391.1	391.3	391.6	391.8	391.9	392.1	392.3	392.4
125°	424.7	425.2	425.7	426.2	426.7	426.8	426.5	426.3	426.0	425.8	426.2
127.5°	457.4	457.5	457.7	457.8	457.9	458.3	458.8	459.3	459.9	460.4	460.3
130°	478.5	478.6	478.7	478.9	479.0	479.2	479.6	479.9	480.3	480.7	480.8
132.5°	497.9	498.0	498.3	498.5	498.7	499.1	499.5	499.9	500.4	500.9	501.0
135°	526.9	526.8	526.7	526.5	526.4	526.6	527.1	527.5	528.0	528.5	528.8
137.5°	552.6	552.6	552.7	552.7	552.8	553.1	553.6	554.1	554.7	555.2	555.4
140°	569.4	569.6	569.9	570.0	570.3	570.5	570.8	571.1	571.3	571.6	571.8
142.5°	584.5	584.8	585.3	585.7	586.2	586.4	586.5	586.7	586.8	587.0	587.3
145°	607.6	607.9	608.2	608.6	609.0	609.2	609.2	609.2	609.2	609.2	609.3
147.5°	625.9	626.6	627.3	627.9	628.6	628.9	628.8	628.7	628.5	628.4	628.5
150°	639.2	639.7	640.3	640.7	641.2	641.4	641.2	641.1	641.0	640.8	640.8
152.5°	650.4	650.8	651.2	651.6	652.0	652.1	651.9	651.7	651.4	651.2	651.4
155°	666.2	666.3	666.4	666.5	666.7	666.5	666.2	665.8	665.4	665.1	665.5
157.5°	679.4	679.3	679.2	679.2	679.1	678.8	678.4	678.1	677.6	677.2	677.9
160°	687.1	686.7	686.4	686.1	685.7	685.4	685.3	685.2	685.0	684.9	685.7
162.5°	694.0	693.5	693.1	692.7	692.2	691.9	691.7	691.6	691.5	691.4	692.1
165°	702.7	702.1	701.5	700.9	700.3	700.0	700.0	700.0	700.0	700.0	701.0
167.5°	709.5	709.0	708.3	707.8	707.1	706.7	706.7	706.6	706.5	706.4	707.6
170°	713.5	712.8	712.0	711.3	710.6	710.3	710.4	710.5	710.7	710.8	711.7
172.5°	716.0	715.3	714.6	713.9	713.2	712.8	713.0	713.1	713.2	713.3	714.4
175°	718.9	718.1	717.4	716.7	716.0	715.7	715.8	716.0	716.0	716.1	717.2
177.5°	720.1	719.4	718.8	718.1	717.5	717.2	717.4	717.6	717.7	717.9	718.8
180°	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9



TEST NUMBER: P332685-830

CATALOG NUMBER: SA4XXDIP-C1195D590U830-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3	1878.3
2.5°	1871.6	1874.3	1877.0	1878.2	1877.9	1877.6	1877.4	1877.1
5°	1861.6	1865.3	1869.0	1870.5	1869.8	1869.2	1868.5	1867.7
7.5°	1840.9	1843.8	1846.7	1848.0	1847.7	1847.2	1846.8	1846.4
10°	1823.4	1826.2	1828.8	1829.9	1829.2	1828.5	1827.8	1827.1
12.5°	1802.3	1805.3	1808.3	1809.2	1808.3	1807.3	1806.4	1805.4
15°	1761.9	1764.0	1765.9	1766.4	1765.5	1764.4	1763.4	1762.5
17.5°	1715.9	1717.2	1718.4	1718.7	1718.1	1717.4	1716.7	1716.1
20°	1681.7	1682.6	1683.7	1683.9	1683.2	1682.5	1681.9	1681.1
22.5°	1646.0	1647.8	1649.5	1649.8	1648.7	1647.5	1646.2	1645.0
25°	1587.1	1587.3	1587.7	1587.1	1585.8	1584.5	1583.2	1581.9
27.5°	1520.9	1520.1	1519.3	1518.1	1516.4	1514.8	1513.1	1511.4
30°	1475.3	1473.9	1472.6	1471.1	1469.4	1467.8	1466.1	1464.4
32.5°	1429.0	1427.4	1425.8	1424.2	1422.5	1420.8	1419.2	1417.5
35°	1355.9	1353.6	1351.2	1349.2	1347.6	1345.9	1344.2	1342.6
37.5°	1279.3	1276.8	1274.2	1271.9	1269.7	1267.4	1265.3	1263.0
40°	1226.0	1222.6	1219.3	1216.7	1215.1	1213.4	1211.7	1210.0
42.5°	1174.3	1170.4	1166.6	1164.0	1162.9	1161.8	1160.6	1159.5
45°	1094.4	1090.7	1087.0	1084.7	1083.6	1082.6	1081.7	1080.6
47.5°	1017.0	1012.9	1008.7	1005.3	1002.8	1000.2	997.7	995.1
50°	962.9	958.2	953.6	950.2	948.2	946.2	944.1	942.2
52.5°	907.4	903.2	899.1	895.8	893.2	890.7	888.2	885.6
55°	825.8	821.8	817.7	814.7	812.8	810.8	808.7	806.7
57.5°	744.0	740.2	736.4	733.5	731.6	729.6	727.6	725.8
60°	687.8	684.9	681.8	679.5	677.8	676.1	674.5	672.8
62.5°	632.9	630.2	627.5	625.3	623.6	621.9	620.3	618.6
65°	553.2	549.9	546.5	544.0	542.3	540.6	538.9	537.3
67.5°	471.0	467.8	464.6	462.7	462.2	461.8	461.3	460.8
70°	419.1	416.4	413.7	411.9	410.9	409.9	408.9	407.8
72.5°	367.2	365.0	362.9	361.3	360.3	359.3	358.3	357.3
75°	292.3	291.0	289.6	288.8	288.5	288.1	287.8	287.5
77.5°	221.3	220.9	220.6	219.9	219.0	218.2	217.3	216.4
80°	176.3	175.6	174.9	174.5	174.1	173.7	173.4	173.1
82.5°	135.8	135.4	135.1	134.7	134.3	134.0	133.7	133.4
85°	78.2	78.2	78.2	78.1	77.8	77.4	77.1	76.7
87.5°	31.6	31.7	31.9	32.0	32.0	32.0	32.0	32.1
90°	13.3	13.9	14.7	15.2	15.5	15.6	15.9	16.1
92.5°	12.8	13.6	14.2	14.6	14.7	14.7	14.8	14.8
95°	13.3	13.9	14.7	15.1	15.3	15.4	15.5	15.6
97.5°	14.3	14.4	14.5	14.6	14.7	14.8	14.9	15.1
100°	19.6	17.5	15.6	14.6	14.7	14.8	14.9	15.1
102.5°	70.1	48.3	26.3	15.4	15.5	15.5	15.5	15.5
105°	169.9	171.0	172.0	170.4	166.2	161.8	157.5	153.3
107.5°	210.2	210.8	211.2	211.7	212.2	212.6	213.1	213.6
110°	237.6	237.8	238.1	238.4	238.7	239.0	239.4	239.8



TEST NUMBER: P332685-830

CATALOG NUMBER: SA4XXDIP-C1195D590U830-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	264.1	264.1	264.0	264.2	264.7	265.1	265.6	266.0
115°	303.7	304.0	304.2	304.3	304.3	304.3	304.3	304.3
117.5°	343.6	343.6	343.5	343.5	343.4	343.4	343.3	343.3
120°	368.3	368.4	368.7	368.7	368.4	368.3	368.0	367.8
122.5°	392.6	392.7	392.9	392.8	392.6	392.3	392.1	391.8
125°	426.5	426.9	427.3	427.5	427.6	427.7	427.8	428.0
127.5°	460.3	460.2	460.1	460.1	460.0	459.9	459.8	459.7
130°	480.9	481.0	481.2	481.2	481.2	481.2	481.2	481.2
132.5°	501.1	501.2	501.3	501.3	501.2	501.1	501.1	501.0
135°	529.0	529.2	529.4	529.7	529.9	530.2	530.5	530.7
137.5°	555.7	556.0	556.2	556.3	556.3	556.2	556.1	556.0
140°	572.2	572.6	573.0	573.2	573.3	573.4	573.5	573.6
142.5°	587.5	587.8	588.1	588.2	588.2	588.2	588.2	588.3
145°	609.4	609.5	609.6	609.8	610.0	610.3	610.6	610.8
147.5°	628.6	628.7	628.8	628.9	629.1	629.1	629.2	629.3
150°	640.8	640.8	640.8	640.9	641.0	641.2	641.3	641.4
152.5°	651.6	651.8	652.0	652.1	652.0	651.9	651.8	651.8
155°	666.0	666.5	666.9	667.0	666.7	666.3	666.0	665.6
157.5°	678.4	679.1	679.7	679.7	679.1	678.4	677.9	677.2
160°	686.4	687.1	687.9	687.9	687.1	686.4	685.7	684.9
162.5°	692.9	693.5	694.3	694.3	693.4	692.6	691.8	691.0
165°	701.9	702.9	703.9	703.8	702.7	701.6	700.6	699.5
167.5°	708.6	709.6	710.7	710.6	709.5	708.2	707.0	705.9
170°	712.7	713.6	714.6	714.4	713.3	712.1	710.9	709.7
172.5°	715.3	716.2	717.2	717.0	715.8	714.4	713.1	711.8
175°	718.3	719.3	720.5	720.3	718.9	717.4	716.0	714.5
177.5°	719.5	720.3	721.0	720.9	719.7	718.6	717.4	716.2
180°	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9

(END OF REPORT)