

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: P331446-840

Luminaire Tested: **SA2XXDIP-C1005D725U840-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331446-840
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-C1005D725U840-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 725 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

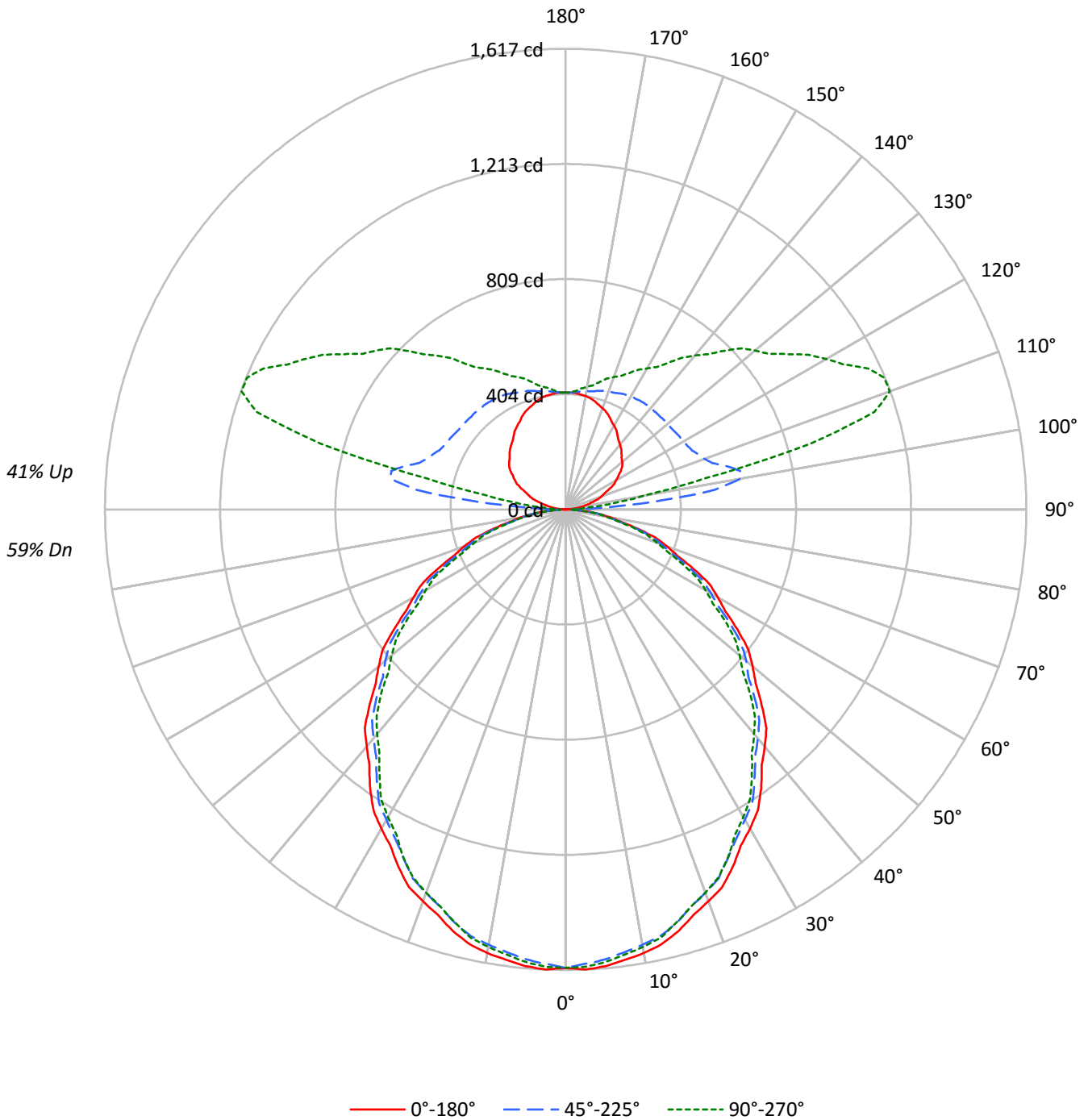
Lumens per Lamp: N/A
Luminaire Lumens: 6955.1 lumens
Efficiency: N/A
Efficacy: 114.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 60.7
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									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	109	109	109	109	109	109	109	102	102	102	102	102	102	88	88	88	76	76	76	64	64	64	59	59	59	59	59	59	59																
	1	100	95	91	88	93	89	86	83	77	75	73	67	65	63	57	56	54	50	48	46	42	42	42	42	42	42	42	42	42																
	2	91	83	77	72	85	78	72	68	68	64	60	59	56	53	50	48	46	42	42	42	42	42	42	42	42	42	42	42	42																
	3	83	73	66	60	77	69	62	57	60	55	51	52	48	45	44	41	39	35	35	35	35	35	35	35	35	35	35	35	35																
	4	76	65	57	51	71	61	54	48	53	48	43	46	42	38	40	36	34	30	30	30	30	30	30	30	30	30	30	30	30																
	5	70	58	50	44	65	54	47	41	48	42	37	42	37	33	36	32	29	26	26	26	26	26	26	26	26	26	26	26	26																
	6	64	52	44	38	60	49	41	36	43	37	33	38	33	29	32	29	26	23	23	23	23	23	23	23	23	23	23	23	23																
	7	59	47	39	33	55	44	37	32	39	33	29	34	29	26	30	26	23	20	20	20	20	20	20	20	20	20	20	20	20																
	8	55	43	35	29	51	40	33	28	36	30	26	31	27	23	27	23	21	18	18	18	18	18	18	18	18	18	18	18	18																
	9	51	39	31	26	48	37	30	25	33	27	23	29	24	21	25	21	19	17	17	17	17	17	17	17	17	17	17	17	17																
	10	48	36	29	24	45	34	27	23	30	25	21	27	22	19	23	20	17	15	15	15	15	15	15	15	15	15	15	15	15																

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	2.2
10°-20°	425.9	6.1
20°-30°	626.0	9.0
30°-40°	727.1	10.5
40°-50°	726.3	10.4
50°-60°	633.4	9.1
60°-70°	468.3	6.7
70°-80°	265.3	3.8
80°-90°	75.0	1.1
90°-100°	164.1	2.4
100°-110°	557.0	8.0
110°-120°	591.7	8.5
120°-130°	487.1	7.0
130°-140°	391.2	5.6
140°-150°	295.6	4.2
150°-160°	207.7	3.0
160°-170°	122.3	1.8
170°-180°	39.8	0.6
0°-30°	1203.2	17.3
0°-40°	1930.3	27.8
0°-60°	3290.0	47.3
0°-90°	4098.6	58.9
90°-120°	1312.8	18.9
90°-150°	2486.7	35.8
90°-180°	2856.0	41.1
0°-180°	6955.1	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	11	27	26	26	5
95°	28	68	309	117	90	29
105°	96	145	585	1046	890	102
115°	170	214	490	1010	1171	168
125°	237	280	470	818	950	210
135°	278	332	465	688	787	215
145°	317	365	463	574	628	199
155°	361	390	449	508	528	166
165°	393	405	430	456	463	111
175°	410	410	414	419	418	39
180°	410	410	410	410	410	



TEST NUMBER: P331446-840

CATALOG NUMBER: SA2XXDIP-C1005D725U840-4F0-1E-UDD-F4

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°	22.4	22.3	22.4	22.2	22.0	21.9	22.1	22.7	23.1	22.7	21.7
90°	0.8	3.1	6.4	7.9	9.5	11.8	15.8	21.3	26.1	26.9	26.1
92.5°	9.6	13.9	19.6	23.0	28.4	35.9	53.7	78.8	101.2	102.6	86.6
95°	27.7	30.8	38.7	45.7	58.4	77.4	113.7	182.4	274.0	309.4	270.7
97.5°	45.0	49.3	57.7	68.4	82.9	104.3	150.0	245.7	397.9	528.3	554.2
100°	60.8	63.1	70.3	82.9	98.7	120.8	162.6	258.9	429.4	623.6	737.3
102.5°	75.3	77.1	84.1	96.7	113.2	135.3	174.0	259.5	417.5	626.8	805.5
105°	96.3	99.5	105.0	116.8	134.2	156.3	193.4	263.7	393.9	584.9	795.0
107.5°	119.1	121.6	126.9	137.8	155.0	177.3	213.3	274.6	382.2	540.1	725.6
110°	134.2	137.3	142.1	152.4	169.0	191.9	226.5	283.4	379.7	518.7	682.1



TEST NUMBER: P331446-840

CATALOG NUMBER: SA2XXDIP-C1005D725U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	148.0	151.3	156.6	166.2	182.2	205.7	239.2	292.9	380.3	504.7	651.8
115°	169.8	173.7	178.4	187.8	203.7	225.0	258.9	307.1	383.6	489.5	614.2
117.5°	192.2	195.3	200.1	208.4	223.6	245.7	277.1	322.2	389.3	482.0	590.5
120°	206.0	209.2	213.9	221.1	236.8	258.9	289.7	332.3	393.1	477.6	577.8
122.5°	219.3	221.9	226.5	234.3	250.0	272.9	301.7	341.2	397.6	475.0	567.1
125°	236.8	239.2	243.9	253.4	269.2	291.2	319.7	355.3	404.1	470.5	551.8
127.5°	250.7	253.9	260.5	270.9	286.1	308.8	336.5	368.3	411.0	467.8	537.6
130°	258.9	262.1	269.9	281.0	296.8	318.9	346.6	376.6	416.1	466.6	528.2
132.5°	266.5	270.3	278.8	290.5	306.9	329.0	355.4	384.8	421.1	466.0	520.6
135°	277.9	281.0	290.5	302.4	320.5	342.6	367.9	395.5	427.1	464.9	510.0
137.5°	288.6	292.4	301.8	314.5	332.5	353.0	378.0	403.7	432.4	464.8	502.5
140°	296.8	299.9	309.4	322.0	339.4	360.0	383.6	408.1	434.9	464.1	498.2
142.5°	305.0	307.6	316.4	329.0	345.8	365.1	388.1	411.9	436.9	464.1	493.7
145°	317.3	320.5	328.4	340.2	356.0	373.3	394.8	416.8	438.9	462.6	487.9
147.5°	330.6	333.0	340.5	351.4	364.6	380.0	400.1	419.5	439.6	459.8	481.9
150°	339.4	341.8	348.1	358.4	370.2	384.5	402.6	420.7	438.9	457.9	476.8
152.5°	348.3	349.4	355.7	364.7	375.9	388.9	405.2	421.4	437.7	454.7	472.4
155°	360.7	361.5	366.3	375.0	383.6	395.5	408.9	422.3	435.8	449.2	464.1
157.5°	371.2	371.9	375.8	383.3	390.3	400.2	411.6	422.3	432.1	443.5	456.5
160°	378.1	378.9	382.0	388.4	394.8	403.3	412.8	422.3	430.2	439.7	450.8
162.5°	385.1	384.6	387.8	392.8	398.5	405.3	413.5	421.7	428.4	436.6	445.7
165°	393.1	392.3	393.9	398.7	402.6	407.4	414.4	420.0	424.7	430.2	437.4
167.5°	399.8	398.8	400.2	403.2	406.1	409.1	414.2	418.9	421.1	424.7	429.1
170°	404.1	402.6	403.3	405.8	407.4	409.7	413.6	417.6	419.2	421.5	424.7
172.5°	406.7	405.8	405.3	407.7	408.6	410.3	413.0	415.7	416.7	417.8	420.3
175°	409.7	408.9	408.1	409.7	409.7	410.5	412.0	413.6	412.8	413.6	414.4
177.5°	411.1	409.9	409.2	410.5	410.5	410.5	411.1	412.4	411.1	410.5	411.1
180°	410.5	410.5	410.5	410.5	410.5	410.5	410.5	410.5	410.5	410.5	410.5



TEST NUMBER: P331446-840

CATALOG NUMBER: SA2XXDIP-C1005D725U840-4F0-1E-UDD-F4

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°	20.7	19.6	19.1	18.7	18.4	18.2	17.9	17.6
90°	25.2	23.7	25.2	26.1	26.1	26.1	26.1	26.1
92.5°	68.9	59.1	52.4	47.6	46.9	44.3	45.0	43.7
95°	206.8	158.6	125.5	108.2	97.9	91.6	89.2	90.0
97.5°	482.6	394.9	309.4	252.5	214.7	195.3	183.8	177.1
100°	720.7	622.9	514.7	419.2	353.7	319.7	296.8	282.6
102.5°	876.8	854.6	775.5	674.3	603.1	545.1	516.5	497.4
105°	959.2	1048.3	1058.6	1032.6	983.6	934.6	900.7	889.7
107.5°	899.8	1034.1	1116.2	1154.5	1160.6	1157.9	1151.1	1136.4
110°	848.6	990.0	1091.0	1155.7	1189.6	1204.7	1211.7	1210.9



TEST NUMBER: P331446-840

CATALOG NUMBER: SA2XXDIP-C1005D725U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	801.9	937.5	1045.5	1119.7	1166.9	1192.0	1205.5	1209.7
115°	744.4	866.0	969.4	1050.7	1106.7	1143.1	1163.6	1170.7
117.5°	701.1	807.9	901.7	978.0	1035.1	1073.5	1095.1	1101.1
120°	679.6	777.6	861.2	933.1	988.4	1025.4	1048.3	1056.2
122.5°	662.7	752.3	831.5	896.5	946.0	982.5	1002.9	1009.5
125°	637.8	719.1	788.6	847.8	893.6	923.6	943.3	949.7
127.5°	613.4	686.9	752.5	807.1	847.1	875.1	892.2	897.3
130°	597.5	665.5	727.8	779.9	818.6	845.5	861.2	867.6
132.5°	582.4	645.3	702.6	751.5	789.6	816.4	830.9	836.6
135°	561.3	613.4	665.5	709.6	743.7	769.7	783.9	787.1
137.5°	544.4	587.9	629.3	667.8	698.8	721.2	733.7	738.4
140°	533.6	571.6	607.8	642.6	667.8	688.3	700.2	705.0
142.5°	524.8	557.0	588.2	617.3	641.4	659.9	670.6	671.5
145°	512.3	538.4	562.9	585.7	604.7	618.1	626.0	628.3
147.5°	502.7	523.2	542.3	559.1	574.7	585.4	590.8	592.2
150°	495.7	513.1	529.7	543.9	555.7	565.2	570.0	570.8
152.5°	488.8	504.9	519.0	531.3	540.6	548.8	552.3	552.4
155°	479.2	491.8	503.6	512.3	521.0	526.5	529.7	528.2
157.5°	468.0	478.6	488.5	495.2	501.4	506.0	507.5	507.5
160°	461.0	469.7	478.4	483.9	489.5	493.4	494.1	494.1
162.5°	454.0	461.5	468.9	473.2	478.7	481.4	482.2	481.5
165°	443.6	449.2	454.7	457.9	461.0	464.1	464.1	463.4
167.5°	433.7	438.0	441.7	444.6	446.1	447.8	447.6	446.7
170°	428.7	431.0	434.1	435.8	436.6	438.9	438.1	436.6
172.5°	422.9	424.7	427.3	428.2	429.0	430.1	429.3	428.4
175°	416.8	417.6	418.4	419.2	419.2	420.0	419.2	417.6
177.5°	412.4	412.4	413.0	413.0	413.0	413.0	412.4	411.1
180°	410.5	410.5	410.5	410.5	410.5	410.5	410.5	410.5

(END OF REPORT)