

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: P331744-840

Luminaire Tested: **SA2XXRDIP-C1005D530U840-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331744-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C1005D530U840-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 530 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

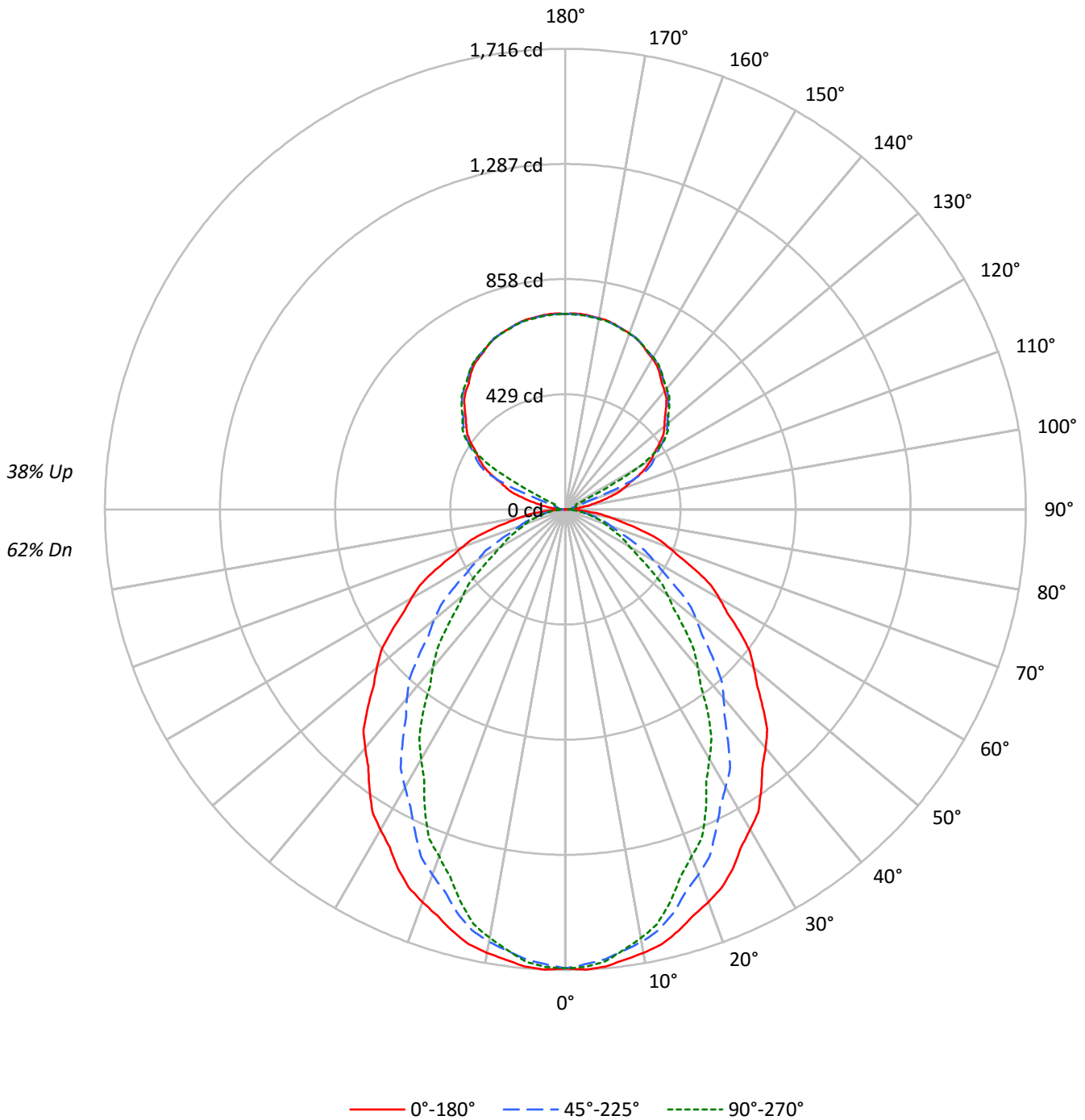
Lumens per Lamp: N/A
Luminaire Lumens: 5653.6 lumens
Efficiency: N/A
Efficacy: 102.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Direct

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



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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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	62				
1	101	97	93	90	95	91	88	85	80	78	75	70	68	66	60	59	58	54				
2	93	85	79	74	87	80	75	71	71	67	63	62	59	56	54	52	50	46				
3	85	76	68	63	79	71	65	60	63	58	54	55	52	48	48	46	43	40				
4	78	67	60	54	73	64	57	51	56	51	47	50	46	42	44	40	38	34				
5	72	60	52	47	67	57	50	45	51	45	41	45	40	37	40	36	33	30				
6	66	55	47	41	62	52	44	39	46	40	36	41	36	33	36	32	30	27				
7	62	49	42	36	58	47	40	35	42	36	32	37	33	29	33	29	27	24				
8	57	45	37	32	54	43	36	31	39	33	29	34	30	26	31	27	24	22				
9	54	41	34	29	50	39	33	28	36	30	26	32	27	24	28	25	22	20				
10	50	38	31	26	47	36	30	25	33	27	23	30	25	22	26	23	20	18				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	27611	27611	27611
5°	27716	27266	27417
10°	27506	26820	26591
15°	27189	26024	25275
20°	26751	24890	23639
25°	26302	23599	22057
30°	25682	22275	20025
35°	25074	20834	18242
40°	24464	19344	16179
45°	23749	17671	14312
50°	23016	15978	12479
55°	22261	14159	10716
60°	21390	12245	8896
65°	20397	10288	8103
70°	19218	8478	7449
75°	17767	7723	6949
80°	15676	6908	6332
85°	12338	5446	5446



TEST NUMBER: P331744-840

CATALOG NUMBER: SA2XXRDIP-C1005D530U840-4F0-1E-UDD-F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	160.1	2.8
10°-20°	439.5	7.8
20°-30°	617.2	10.9
30°-40°	673.0	11.9
40°-50°	618.8	10.9
50°-60°	486.0	8.6
60°-70°	316.9	5.6
70°-80°	163.4	2.9
80°-90°	44.2	0.8
90°-100°	24.3	0.4
100°-110°	89.1	1.6
110°-120°	238.2	4.2
120°-130°	393.1	7.0
130°-140°	418.1	7.4
140°-150°	388.6	6.9
150°-160°	312.4	5.5
160°-170°	201.3	3.6
170°-180°	69.3	1.2
0°-30°	1216.8	21.5
0°-40°	1889.8	33.4
0°-60°	2994.7	53.0
0°-90°	3519.1	62.2
90°-120°	351.5	6.2
90°-150°	1551.4	27.4
90°-180°	2134.0	37.7
0°-180°	5653.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1710	1710	1710	1710	1710	
5°	1710	1702	1682	1695	1692	162
15°	1627	1608	1557	1528	1512	458
25°	1476	1424	1325	1264	1238	679
35°	1272	1190	1057	963	926	796
45°	1040	933	774	668	627	803
55°	791	668	503	414	381	706
65°	534	408	269	219	212	529
75°	285	180	124	114	111	301
85°	67	36	29	29	29	78
90°	0	6	10	13	14	4
95°	34	18	21	23	23	42
105°	160	167	32	38	40	171
115°	303	312	325	93	43	298
125°	428	436	445	449	451	382
135°	530	538	543	548	548	409
145°	615	615	624	627	624	385
155°	677	673	679	682	678	312
165°	714	711	712	715	712	202
175°	730	726	727	730	726	69
180°	728	728	728	728	728	



TEST NUMBER: P331744-840
 CATALOG NUMBER: SA2XXRDIP-C1005D530U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1710.1	1710.1	1710.1	1710.1	1710.1	1710.1	1710.1	1710.1	1710.1	1710.1	1710.1
2.5°	1716.4	1715.0	1713.5	1712.2	1710.8	1708.6	1705.6	1702.6	1699.6	1696.6	1699.3
5°	1710.1	1708.4	1706.7	1705.0	1703.2	1700.2	1695.7	1691.2	1686.8	1682.3	1685.4
7.5°	1692.5	1690.4	1688.3	1686.1	1683.9	1680.3	1675.1	1669.8	1664.7	1659.4	1660.3
10°	1677.7	1675.3	1672.8	1670.4	1668.0	1663.3	1656.5	1649.6	1642.7	1635.9	1634.9
12.5°	1659.1	1656.1	1653.1	1650.2	1647.3	1641.3	1632.5	1623.8	1615.0	1606.2	1604.3
15°	1626.6	1622.8	1619.0	1615.2	1611.4	1603.7	1592.1	1580.3	1568.6	1556.9	1550.4
17.5°	1586.6	1580.8	1575.1	1569.3	1563.6	1553.2	1538.1	1523.2	1508.1	1493.2	1485.4
20°	1556.9	1550.0	1543.2	1536.3	1529.4	1517.4	1500.2	1483.0	1465.8	1448.6	1440.0
22.5°	1524.7	1517.0	1509.3	1501.7	1493.9	1480.4	1461.0	1441.6	1422.2	1402.8	1391.7
25°	1476.4	1465.4	1454.4	1443.4	1432.4	1415.6	1392.9	1370.2	1347.5	1324.7	1310.7
27.5°	1418.3	1406.3	1394.3	1382.4	1370.4	1351.6	1326.1	1300.4	1274.9	1249.3	1232.8
30°	1377.5	1364.3	1351.3	1338.2	1325.1	1304.8	1277.3	1249.8	1222.3	1194.8	1177.2
32.5°	1337.8	1322.5	1307.3	1292.0	1276.7	1255.1	1227.0	1198.9	1170.8	1142.8	1122.8
35°	1272.1	1254.7	1237.1	1219.5	1202.0	1178.1	1147.8	1117.6	1087.3	1057.0	1035.4
37.5°	1206.6	1187.3	1168.0	1148.7	1129.5	1103.8	1071.5	1039.3	1006.9	974.7	950.9
40°	1160.7	1140.1	1119.4	1098.8	1078.2	1051.2	1017.8	984.5	951.1	917.8	893.3
42.5°	1113.7	1092.0	1070.3	1048.4	1026.7	998.7	964.2	929.7	895.2	860.8	835.6
45°	1040.1	1016.9	993.9	970.9	947.9	918.3	882.1	846.1	809.9	773.9	749.4
47.5°	968.2	943.8	919.4	894.9	870.5	839.7	802.4	765.1	727.8	690.5	666.3
50°	916.3	891.8	867.4	842.9	818.5	787.4	749.6	711.8	673.9	636.1	612.4
52.5°	865.5	839.9	814.5	788.9	763.4	732.2	695.1	658.1	621.1	584.1	561.2
55°	790.8	764.1	737.2	710.3	683.6	651.6	614.4	577.2	540.2	503.0	482.3
57.5°	714.4	686.9	659.3	631.9	604.3	572.7	537.0	501.3	465.6	429.9	411.0
60°	662.4	634.9	607.3	579.9	552.3	520.9	485.4	450.0	414.5	379.2	361.6
62.5°	611.7	584.1	556.6	529.1	501.6	470.9	437.2	403.3	369.6	335.9	319.1
65°	533.9	506.0	478.3	450.4	422.5	393.1	362.1	331.2	300.2	269.3	257.6
67.5°	459.0	431.4	403.7	376.1	348.4	320.6	292.9	265.0	237.1	209.2	203.9
70°	407.1	380.2	353.4	326.6	299.7	274.5	250.7	227.0	203.3	179.6	176.1
72.5°	357.5	331.7	306.1	280.3	254.6	232.2	213.2	194.1	175.0	156.0	153.1
75°	284.8	260.6	236.6	212.6	188.4	170.6	158.9	147.2	135.5	123.8	121.4
77.5°	213.3	192.2	171.1	150.0	128.8	115.4	109.8	104.1	98.5	92.9	91.5
80°	168.6	151.2	133.6	116.0	98.6	88.1	84.6	81.2	77.8	74.3	72.9
82.5°	127.8	114.1	100.5	86.7	73.1	65.0	62.7	60.4	58.1	55.7	54.9
85°	66.6	59.3	52.1	44.8	37.7	33.5	32.5	31.5	30.4	29.4	29.4
87.5°	19.9	18.0	16.1	14.0	12.1	11.3	11.4	11.6	11.8	12.0	11.8
90°	0.5	1.8	3.1	4.3	5.7	6.8	7.8	8.7	9.6	10.5	11.1
92.5°	10.6	10.5	10.4	10.3	10.2	10.4	10.8	11.3	11.7	12.2	12.5
95°	34.2	30.4	26.6	22.6	18.8	17.3	18.1	18.9	19.7	20.6	21.1
97.5°	68.0	57.1	46.3	35.3	24.4	19.9	21.8	23.7	25.7	27.5	28.0
100°	93.3	77.3	61.2	45.1	29.1	22.1	24.0	26.1	28.1	30.0	31.0
102.5°	121.1	117.8	114.3	110.9	107.6	97.5	80.9	64.2	47.6	30.9	32.1
105°	160.2	163.7	167.2	170.8	174.3	160.1	128.1	96.1	64.1	32.1	33.4
107.5°	204.8	207.6	210.5	213.3	216.1	198.3	160.1	121.7	83.3	45.0	43.7
110°	233.5	235.9	238.4	240.9	243.3	227.6	193.8	160.0	126.0	92.2	80.5



TEST NUMBER: P331744-840

CATALOG NUMBER: SA2XXRDIP-C1005D530U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	260.4	262.7	264.8	267.0	269.1	266.1	257.7	249.3	241.0	232.7	189.9
115°	303.1	305.0	307.0	309.0	311.0	313.5	316.4	319.3	322.2	325.2	270.9
117.5°	341.1	343.4	345.6	347.8	350.0	352.1	354.2	356.2	358.2	360.1	347.1
120°	368.9	370.6	372.4	374.2	376.0	377.9	380.0	382.1	384.2	386.3	387.7
122.5°	392.5	394.4	396.3	398.1	399.9	402.0	404.2	406.6	408.9	411.2	412.0
125°	428.5	430.0	431.5	433.0	434.5	436.5	438.7	440.9	443.1	445.4	446.2
127.5°	461.0	462.7	464.4	466.1	467.8	469.5	471.1	472.8	474.4	476.2	477.3
130°	481.7	483.5	485.4	487.4	489.2	490.8	492.1	493.3	494.6	495.9	497.3
132.5°	502.8	504.3	505.9	507.6	509.2	510.6	511.9	513.2	514.4	515.7	516.8
135°	530.2	532.1	533.9	535.8	537.7	539.2	540.2	541.3	542.3	543.3	544.5
137.5°	558.0	559.2	560.5	561.8	563.1	564.4	565.6	566.8	567.9	569.2	570.4
140°	576.0	576.9	577.9	578.9	579.8	580.9	582.2	583.5	584.7	586.0	587.1
142.5°	591.2	592.1	592.9	593.7	594.6	595.7	597.2	598.6	600.2	601.7	602.6
145°	615.0	614.9	614.8	614.7	614.6	615.5	617.5	619.5	621.5	623.5	624.3
147.5°	635.8	635.3	634.9	634.5	634.0	634.8	636.7	638.7	640.7	642.7	643.3
150°	649.2	648.4	647.6	646.8	646.0	646.5	648.4	650.3	652.2	654.0	654.7
152.5°	660.7	659.7	658.8	657.9	657.0	657.4	659.2	661.1	662.8	664.6	665.3
155°	677.2	676.2	675.1	674.1	673.0	673.2	674.6	676.0	677.4	678.8	679.5
157.5°	690.1	689.3	688.4	687.5	686.6	686.7	687.6	688.6	689.6	690.6	691.4
160°	697.8	697.1	696.4	695.7	695.0	695.0	695.7	696.4	697.1	697.8	698.5
162.5°	704.5	703.8	703.1	702.4	701.8	701.7	702.3	702.9	703.5	704.1	704.9
165°	713.6	712.9	712.2	711.4	710.7	710.6	710.9	711.2	711.7	712.0	712.9
167.5°	720.3	719.6	718.9	718.2	717.5	717.3	717.6	718.0	718.3	718.6	719.4
170°	724.1	723.5	722.8	722.1	721.3	721.0	721.3	721.5	721.8	722.1	722.9
172.5°	726.7	726.0	725.3	724.6	723.9	723.6	723.9	724.1	724.3	724.6	725.4
175°	729.9	729.1	728.3	727.5	726.6	726.4	726.6	726.8	727.0	727.3	728.1
177.5°	730.4	729.8	729.1	728.5	727.8	727.5	727.6	727.7	727.8	727.9	728.6
180°	728.3	728.3	728.3	728.3	728.3	728.3	728.3	728.3	728.3	728.3	728.3



TEST NUMBER: P331744-840

CATALOG NUMBER: SA2XXRDIP-C1005D530U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1710.1	1710.1	1710.1	1710.1	1710.1	1710.1	1710.1	1710.1
2.5°	1702.0	1704.8	1707.6	1708.6	1708.1	1707.6	1707.0	1706.5
5°	1688.5	1691.6	1694.7	1695.7	1694.7	1693.6	1692.6	1691.6
7.5°	1661.1	1662.0	1662.9	1662.5	1660.7	1658.9	1657.2	1655.4
10°	1633.8	1632.7	1631.7	1630.2	1628.1	1626.1	1624.0	1621.9
12.5°	1602.5	1600.5	1598.7	1596.1	1592.7	1589.2	1585.8	1582.4
15°	1543.9	1537.3	1530.8	1525.8	1522.4	1518.9	1515.5	1512.1
17.5°	1477.6	1469.9	1462.1	1455.2	1449.4	1443.4	1437.4	1431.6
20°	1431.4	1422.8	1414.2	1406.1	1398.6	1391.0	1383.4	1375.8
22.5°	1380.7	1369.6	1358.5	1350.1	1344.5	1338.9	1333.2	1327.6
25°	1296.6	1282.5	1268.4	1258.8	1253.5	1248.4	1243.2	1238.1
27.5°	1216.4	1199.9	1183.5	1171.1	1163.0	1154.8	1146.6	1138.4
30°	1159.7	1142.2	1124.6	1111.3	1102.0	1092.7	1083.4	1074.1
32.5°	1102.8	1082.8	1062.7	1048.3	1039.7	1030.9	1022.1	1013.4
35°	1013.7	992.1	970.4	955.7	948.2	940.6	933.0	925.5
37.5°	927.0	903.1	879.2	862.9	854.3	845.7	837.0	828.3
40°	868.9	844.4	820.1	803.4	794.5	785.5	776.6	767.6
42.5°	810.3	785.1	759.8	742.9	734.2	725.5	716.9	708.2
45°	725.0	700.5	676.1	659.8	651.6	643.3	635.0	626.8
47.5°	642.0	617.7	593.4	577.5	570.1	562.6	555.0	547.5
50°	588.7	564.9	541.2	525.6	518.5	511.2	504.0	496.8
52.5°	538.3	515.3	492.5	477.7	471.0	464.3	457.7	451.0
55°	461.7	441.1	420.4	406.9	400.3	393.7	387.3	380.7
57.5°	392.1	373.1	354.3	342.0	336.6	331.0	325.6	320.0
60°	344.1	326.6	309.0	297.5	292.0	286.5	280.9	275.5
62.5°	302.5	285.7	269.0	258.9	255.7	252.4	249.0	245.8
65°	245.9	234.2	222.5	216.1	215.1	214.1	213.1	212.1
67.5°	198.5	193.2	187.7	184.5	183.5	182.4	181.3	180.2
70°	172.7	169.3	165.8	163.4	162.0	160.6	159.3	157.8
72.5°	150.3	147.3	144.4	142.6	141.8	141.0	140.1	139.3
75°	119.0	116.6	114.2	112.8	112.5	112.1	111.8	111.4
77.5°	90.1	88.8	87.4	86.3	85.8	85.3	84.7	84.2
80°	71.5	70.2	68.8	68.1	68.1	68.1	68.1	68.1
82.5°	54.0	53.2	52.4	52.0	52.0	52.0	52.0	52.0
85°	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
87.5°	11.7	11.5	11.4	11.3	11.4	11.4	11.5	11.5
90°	11.7	12.3	12.9	13.3	13.5	13.7	14.0	14.2
92.5°	12.8	13.1	13.4	13.6	13.8	13.9	14.1	14.2
95°	21.7	22.3	22.9	23.1	23.0	22.9	22.8	22.6
97.5°	28.5	28.9	29.4	29.7	29.8	30.0	30.1	30.3
100°	31.9	32.8	33.8	34.3	34.6	34.8	35.0	35.3
102.5°	33.3	34.5	35.7	36.6	36.9	37.2	37.5	37.9
105°	34.7	36.1	37.3	38.2	38.7	39.1	39.6	40.1
107.5°	42.4	41.1	39.8	39.4	39.8	40.3	40.7	41.2
110°	68.8	57.1	45.3	39.8	40.2	40.7	41.2	41.6



TEST NUMBER: P331744-840

CATALOG NUMBER: SA2XXRDIP-C1005D530U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	147.1	104.4	61.7	40.6	40.9	41.3	41.7	42.0
115°	216.7	162.5	108.3	77.0	68.5	60.1	51.6	43.2
117.5°	334.0	320.8	307.7	287.3	259.5	231.9	204.2	176.4
120°	389.1	390.5	391.9	384.8	368.9	353.1	337.3	321.4
122.5°	412.8	413.7	414.5	413.4	410.4	407.3	404.2	401.1
125°	447.0	447.8	448.6	449.2	449.6	449.9	450.3	450.6
127.5°	478.5	479.7	480.9	481.5	481.6	481.7	481.7	481.8
130°	498.5	499.8	501.1	501.7	501.5	501.4	501.3	501.2
132.5°	518.0	519.1	520.2	520.6	520.5	520.4	520.3	520.2
135°	545.7	546.8	548.1	548.6	548.3	548.1	547.9	547.5
137.5°	571.5	572.6	573.8	574.1	573.7	573.3	573.0	572.6
140°	588.1	589.2	590.3	590.5	589.9	589.4	588.8	588.1
142.5°	603.6	604.5	605.5	605.7	605.1	604.5	603.9	603.3
145°	625.1	625.9	626.7	626.8	626.3	625.7	625.1	624.5
147.5°	643.9	644.5	645.1	645.1	644.7	644.2	643.7	643.2
150°	655.4	656.1	656.8	656.9	656.3	655.7	655.1	654.6
152.5°	666.0	666.7	667.4	667.3	666.6	665.8	665.0	664.3
155°	680.2	681.0	681.7	681.5	680.5	679.6	678.7	677.7
157.5°	692.2	693.0	693.8	693.8	692.8	691.9	690.9	690.0
160°	699.1	699.8	700.5	700.5	699.7	698.9	698.0	697.2
162.5°	705.7	706.5	707.3	707.2	706.2	705.2	704.2	703.2
165°	713.7	714.5	715.3	715.3	714.5	713.7	712.9	712.0
167.5°	720.2	721.1	722.0	721.9	720.7	719.7	718.6	717.6
170°	723.7	724.5	725.3	725.2	724.1	723.1	722.1	720.9
172.5°	726.2	727.0	727.8	727.7	726.7	725.6	724.6	723.5
175°	728.9	729.7	730.5	730.4	729.2	728.0	726.9	725.7
177.5°	729.2	729.9	730.5	730.4	729.6	728.7	727.9	727.1
180°	728.3	728.3	728.3	728.3	728.3	728.3	728.3	728.3

(END OF REPORT)