

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: P331738-940

Luminaire Tested: **SA2XXRDIP-C1005D330U940-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331738-940
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-C1005D330U940-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 330 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4274.5 lumens
Efficiency: N/A
Efficacy: 85.8 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

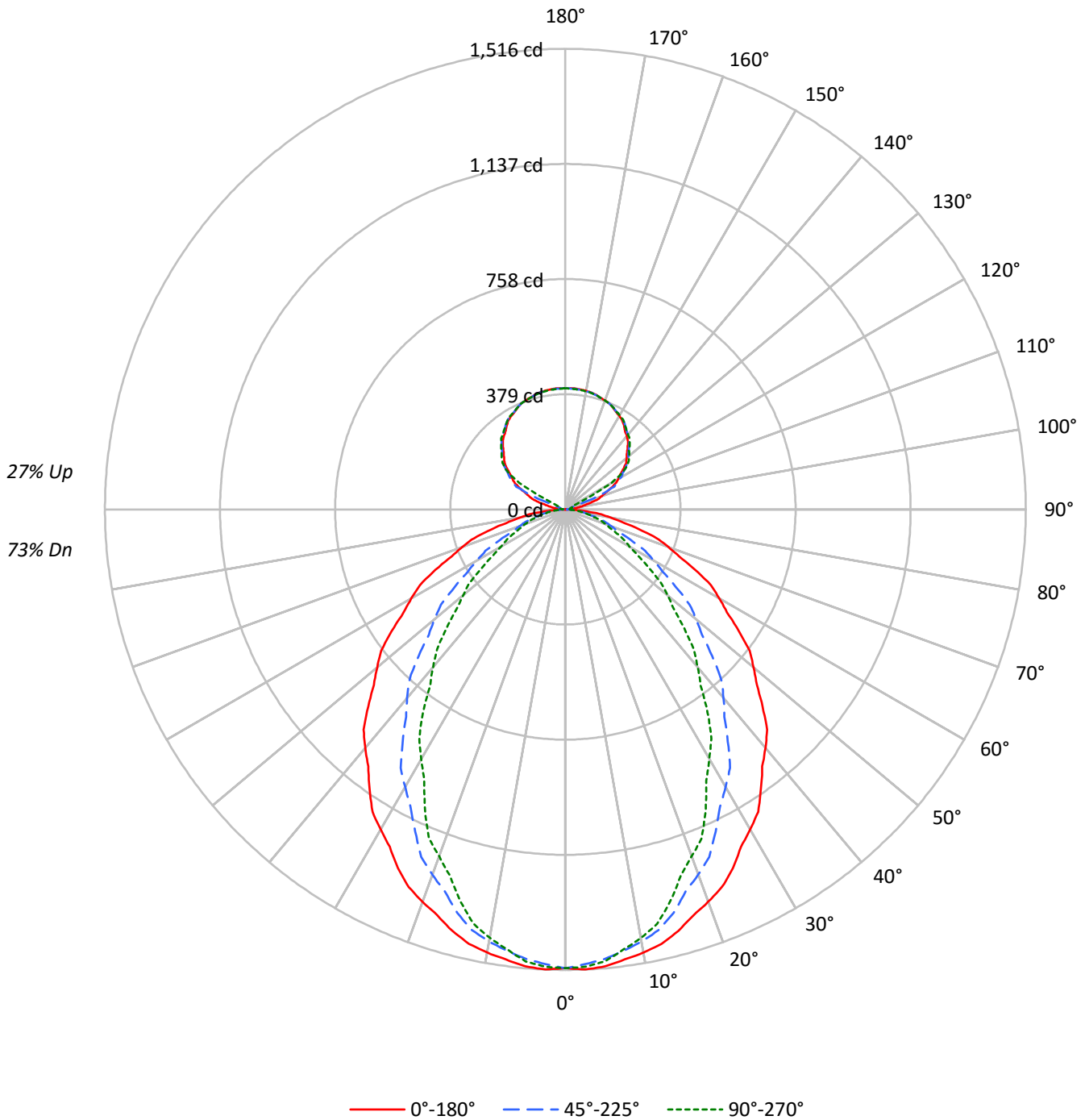
Input Watts (W): 49.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	113	113	113	113	107	107	107	107	96	96	96	86	86	86	77	77	77	77	77	77	73	
1	104	99	96	92	98	94	91	88	85	83	80	77	75	73	69	68	66	66	66	66	63	
2	95	88	82	77	90	83	78	74	76	71	68	68	65	62	62	59	57	57	57	57	54	
3	87	78	70	65	82	74	68	62	67	62	58	61	57	54	55	52	49	49	49	49	46	
4	80	69	61	55	76	66	59	54	60	55	50	55	50	47	50	46	43	43	43	43	40	
5	74	62	54	48	70	60	52	47	55	48	44	50	45	41	45	41	38	38	38	38	35	
6	68	56	48	42	65	54	47	41	49	43	39	45	40	36	41	37	34	34	34	34	31	
7	64	51	43	38	60	49	42	37	45	39	35	42	36	32	38	34	30	30	30	30	28	
8	59	47	39	34	56	45	38	33	41	35	31	38	33	29	35	31	28	28	28	28	25	
9	55	43	35	30	53	41	34	30	38	32	28	35	30	27	33	28	25	25	25	25	23	
10	52	40	32	28	49	38	31	27	35	30	26	33	28	24	30	26	23	23	23	23	21	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	24380	24380	24380
5°	24473	24076	24209
10°	24287	23682	23481
15°	24008	22980	22318
20°	23622	21978	20874
25°	23225	20838	19475
30°	22676	19669	17682
35°	22141	18398	16109
40°	21602	17081	14286
45°	20970	15602	12638
50°	20321	14109	11017
55°	19657	12504	9464
60°	18887	10811	7857
65°	18010	9085	7156
70°	16966	7482	6581
75°	15689	6818	6138
80°	13845	6100	5588
85°	10893	4798	4798



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	141.3	3.3
10°-20°	388.1	9.1
20°-30°	545.0	12.8
30°-40°	594.3	13.9
40°-50°	546.4	12.8
50°-60°	429.2	10.0
60°-70°	279.8	6.5
70°-80°	144.3	3.4
80°-90°	38.4	0.9
90°-100°	13.3	0.3
100°-110°	48.7	1.1
110°-120°	130.3	3.0
120°-130°	215.1	5.0
130°-140°	228.7	5.4
140°-150°	212.6	5.0
150°-160°	170.9	4.0
160°-170°	110.1	2.6
170°-180°	37.9	0.9
0°-30°	1074.4	25.1
0°-40°	1668.7	39.0
0°-60°	2644.3	61.9
0°-90°	3106.8	72.7
90°-120°	192.3	4.5
90°-150°	848.7	19.9
90°-180°	1168.0	27.3
0°-180°	4274.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1510	1510	1510	1510	1510	
5°	1510	1503	1486	1497	1494	143
15°	1436	1419	1375	1350	1335	404
25°	1304	1257	1170	1116	1093	599
35°	1123	1051	933	850	817	703
45°	918	824	683	590	554	709
55°	698	589	444	365	336	624
65°	471	360	238	194	187	467
75°	252	158	109	100	98	266
85°	59	31	26	26	26	69
90°	0	3	6	7	8	3
95°	19	10	11	13	12	23
105°	88	91	18	21	22	94
115°	166	171	178	51	24	163
125°	234	238	244	246	246	209
135°	290	295	297	300	300	224
145°	336	336	341	343	342	210
155°	370	368	371	373	371	171
165°	390	389	390	391	390	110
175°	399	397	398	400	397	38
180°	398	398	398	398	398	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0
2.5°	1515.6	1514.3	1513.1	1511.9	1510.6	1508.7	1506.0	1503.4	1500.7	1498.1	1500.5
5°	1510.0	1508.5	1507.0	1505.5	1504.0	1501.3	1497.3	1493.3	1489.4	1485.5	1488.2
7.5°	1494.5	1492.6	1490.8	1488.8	1486.9	1483.7	1479.1	1474.4	1469.9	1465.3	1466.1
10°	1481.4	1479.3	1477.1	1475.0	1472.8	1468.7	1462.7	1456.6	1450.5	1444.5	1443.6
12.5°	1465.0	1462.3	1459.7	1457.1	1454.6	1449.3	1441.5	1433.8	1426.0	1418.3	1416.6
15°	1436.3	1432.9	1429.6	1426.2	1422.9	1416.0	1405.8	1395.4	1385.1	1374.8	1369.0
17.5°	1401.0	1395.9	1390.8	1385.7	1380.6	1371.5	1358.2	1345.0	1331.7	1318.5	1311.6
20°	1374.8	1368.7	1362.6	1356.6	1350.5	1339.9	1324.6	1309.5	1294.3	1279.1	1271.5
22.5°	1346.3	1339.5	1332.8	1326.0	1319.1	1307.2	1290.0	1272.9	1255.8	1238.7	1228.9
25°	1303.7	1294.0	1284.2	1274.5	1264.8	1250.0	1229.9	1209.9	1189.8	1169.7	1157.4
27.5°	1252.3	1241.8	1231.2	1220.7	1210.1	1193.5	1170.9	1148.3	1125.7	1103.1	1088.6
30°	1216.3	1204.7	1193.2	1181.6	1170.1	1152.2	1127.8	1103.6	1079.3	1055.0	1039.5
32.5°	1181.2	1167.8	1154.3	1140.9	1127.3	1108.2	1083.4	1058.6	1033.8	1009.1	991.4
35°	1123.3	1107.9	1092.3	1076.8	1061.4	1040.3	1013.5	986.9	960.1	933.4	914.3
37.5°	1065.4	1048.4	1031.4	1014.3	997.4	974.6	946.1	917.7	889.1	860.7	839.6
40°	1024.9	1006.7	988.5	970.3	952.1	928.2	898.8	869.3	839.8	810.4	788.8
42.5°	983.4	964.2	945.0	925.8	906.6	881.8	851.4	820.9	790.5	760.1	737.8
45°	918.4	898.0	877.6	857.3	837.0	810.8	778.9	747.1	715.2	683.3	661.7
47.5°	854.9	833.4	811.8	790.2	768.7	741.5	708.6	675.6	642.7	609.8	588.4
50°	809.0	787.5	765.9	744.3	722.7	695.3	661.9	628.5	595.0	561.7	540.7
52.5°	764.2	741.6	719.2	696.6	674.0	646.5	613.8	581.1	548.4	515.8	495.5
55°	698.3	674.7	650.9	627.2	603.6	575.3	542.5	509.7	477.0	444.2	425.9
57.5°	630.8	606.5	582.2	557.9	533.6	505.7	474.2	442.6	411.2	379.6	362.9
60°	584.9	560.6	536.3	512.0	487.7	459.9	428.6	397.3	366.0	334.8	319.3
62.5°	540.1	515.8	491.5	467.2	442.9	415.8	386.0	356.1	326.4	296.6	281.8
65°	471.4	446.8	422.3	397.7	373.1	347.1	319.8	292.5	265.1	237.8	227.5
67.5°	405.3	380.9	356.5	332.1	307.6	283.1	258.6	234.0	209.4	184.8	180.0
70°	359.4	335.7	312.0	288.4	264.7	242.4	221.4	200.5	179.5	158.5	155.5
72.5°	315.7	292.9	270.3	247.5	224.8	205.0	188.2	171.4	154.5	137.8	135.2
75°	251.5	230.2	208.9	187.7	166.4	150.6	140.3	130.0	119.7	109.3	107.2
77.5°	188.3	169.7	151.1	132.4	113.7	101.9	96.9	91.9	86.9	82.0	80.8
80°	148.9	133.5	118.0	102.5	87.0	77.8	74.7	71.7	68.7	65.6	64.4
82.5°	112.9	100.8	88.7	76.6	64.6	57.4	55.4	53.3	51.3	49.2	48.5
85°	58.8	52.3	46.0	39.6	33.3	29.6	28.7	27.8	26.8	25.9	25.9
87.5°	17.6	15.8	13.9	12.1	10.3	9.5	9.6	9.7	9.8	9.9	9.7
90°	0.3	1.0	1.7	2.4	3.1	3.7	4.2	4.7	5.3	5.8	6.1
92.5°	5.8	5.8	5.7	5.6	5.5	5.7	5.9	6.2	6.4	6.7	6.9
95°	18.7	16.6	14.5	12.4	10.3	9.5	9.9	10.3	10.8	11.2	11.6
97.5°	37.2	31.2	25.2	19.4	13.4	10.9	11.9	12.9	14.0	15.1	15.3
100°	51.0	42.3	33.4	24.7	16.0	12.0	13.2	14.3	15.3	16.4	16.9
102.5°	66.3	64.4	62.5	60.7	58.9	53.3	44.2	35.1	26.0	16.9	17.6
105°	87.7	89.5	91.5	93.5	95.3	87.6	70.1	52.6	35.0	17.6	18.3
107.5°	112.0	113.6	115.1	116.7	118.2	108.5	87.6	66.6	45.6	24.6	23.9
110°	127.7	129.0	130.5	131.8	133.1	124.5	106.0	87.5	68.9	50.5	44.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	142.5	143.7	144.9	146.1	147.2	145.5	141.0	136.4	131.8	127.2	103.9
115°	165.8	166.8	168.0	169.1	170.1	171.5	173.1	174.7	176.3	177.9	148.2
117.5°	186.6	187.8	189.0	190.3	191.5	192.6	193.8	194.8	195.9	197.1	189.8
120°	201.8	202.8	203.8	204.7	205.6	206.7	207.9	209.0	210.2	211.3	212.1
122.5°	214.7	215.8	216.8	217.8	218.8	219.9	221.1	222.4	223.7	225.0	225.4
125°	234.4	235.2	236.0	236.9	237.7	238.8	240.0	241.2	242.4	243.6	244.1
127.5°	252.2	253.2	254.0	255.0	255.9	256.8	257.7	258.7	259.6	260.5	261.1
130°	263.5	264.6	265.6	266.6	267.6	268.5	269.2	269.9	270.6	271.3	272.0
132.5°	275.1	275.9	276.8	277.7	278.6	279.3	280.0	280.7	281.4	282.1	282.8
135°	290.1	291.1	292.1	293.1	294.2	295.0	295.5	296.1	296.7	297.3	297.9
137.5°	305.2	305.9	306.7	307.4	308.1	308.8	309.4	310.0	310.8	311.4	312.0
140°	315.1	315.7	316.1	316.6	317.2	317.8	318.5	319.2	319.9	320.6	321.2
142.5°	323.4	323.9	324.3	324.9	325.3	325.9	326.7	327.5	328.3	329.1	329.7
145°	336.4	336.4	336.4	336.3	336.2	336.7	337.8	338.9	340.0	341.1	341.5
147.5°	347.9	347.6	347.3	347.1	346.9	347.2	348.3	349.5	350.5	351.6	351.9
150°	355.2	354.7	354.3	353.8	353.4	353.7	354.7	355.8	356.8	357.8	358.2
152.5°	361.4	361.0	360.4	359.9	359.4	359.6	360.6	361.6	362.6	363.6	363.9
155°	370.5	369.9	369.3	368.7	368.2	368.3	369.1	369.8	370.6	371.3	371.8
157.5°	377.6	377.1	376.6	376.1	375.6	375.7	376.2	376.7	377.3	377.8	378.3
160°	381.7	381.4	380.9	380.6	380.2	380.2	380.6	380.9	381.4	381.7	382.1
162.5°	385.4	385.0	384.7	384.2	383.9	383.9	384.1	384.5	384.9	385.2	385.7
165°	390.4	390.0	389.6	389.2	388.9	388.8	389.0	389.1	389.3	389.5	389.9
167.5°	394.0	393.7	393.3	392.9	392.5	392.4	392.6	392.8	393.0	393.2	393.6
170°	396.2	395.7	395.4	395.0	394.6	394.5	394.6	394.8	394.8	395.0	395.5
172.5°	397.5	397.2	396.7	396.4	396.0	395.8	396.0	396.1	396.3	396.4	396.8
175°	399.3	398.9	398.4	398.0	397.5	397.3	397.5	397.6	397.8	397.9	398.3
177.5°	399.6	399.2	398.9	398.5	398.1	398.1	398.1	398.1	398.1	398.2	398.6
180°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0
2.5°	1502.9	1505.3	1507.8	1508.7	1508.2	1507.8	1507.3	1506.8
5°	1490.9	1493.7	1496.4	1497.3	1496.4	1495.5	1494.6	1493.7
7.5°	1466.8	1467.6	1468.4	1468.0	1466.4	1464.8	1463.3	1461.7
10°	1442.6	1441.7	1440.8	1439.5	1437.6	1435.8	1434.0	1432.2
12.5°	1415.0	1413.3	1411.7	1409.3	1406.3	1403.3	1400.3	1397.2
15°	1363.2	1357.5	1351.7	1347.3	1344.3	1341.2	1338.2	1335.2
17.5°	1304.8	1297.9	1291.0	1285.0	1279.8	1274.5	1269.3	1264.1
20°	1263.9	1256.3	1248.8	1241.6	1234.9	1228.2	1221.6	1214.9
22.5°	1219.1	1209.3	1199.5	1192.1	1187.2	1182.2	1177.2	1172.2
25°	1144.9	1132.5	1120.0	1111.5	1106.9	1102.3	1097.8	1093.2
27.5°	1074.1	1059.5	1045.0	1034.1	1026.9	1019.7	1012.4	1005.2
30°	1024.0	1008.5	993.0	981.2	973.0	964.8	956.6	948.4
32.5°	973.7	956.1	938.3	925.7	918.0	910.3	902.5	894.8
35°	895.1	876.0	856.8	843.9	837.2	830.5	823.9	817.3
37.5°	818.5	797.5	776.3	762.0	754.4	746.7	739.0	731.4
40°	767.2	745.6	724.2	709.4	701.5	693.6	685.7	677.8
42.5°	715.5	693.2	670.9	655.9	648.3	640.6	633.0	625.4
45°	640.2	618.6	597.0	582.6	575.3	568.0	560.7	553.5
47.5°	566.9	545.5	524.0	510.0	503.4	496.8	490.1	483.5
50°	519.8	498.8	477.9	464.1	457.8	451.4	445.1	438.6
52.5°	475.3	455.0	434.9	421.8	415.9	410.0	404.1	398.2
55°	407.7	389.5	371.2	359.3	353.5	347.7	342.0	336.2
57.5°	346.3	329.5	312.8	302.0	297.2	292.3	287.5	282.6
60°	303.8	288.4	272.9	262.7	257.8	253.0	248.1	243.3
62.5°	267.1	252.3	237.6	228.6	225.8	222.8	219.9	217.0
65°	217.1	206.8	196.4	190.8	189.9	189.0	188.2	187.3
67.5°	175.3	170.6	165.8	162.9	162.0	161.0	160.1	159.1
70°	152.5	149.5	146.4	144.3	143.0	141.8	140.6	139.4
72.5°	132.7	130.1	127.5	125.9	125.2	124.5	123.7	123.0
75°	105.0	103.0	100.9	99.6	99.3	99.0	98.7	98.4
77.5°	79.5	78.4	77.1	76.2	75.8	75.3	74.8	74.4
80°	63.1	62.0	60.7	60.1	60.1	60.1	60.1	60.1
82.5°	47.7	47.0	46.3	45.9	45.9	45.9	45.9	45.9
85°	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9
87.5°	9.5	9.4	9.2	9.1	9.1	9.2	9.2	9.2
90°	6.4	6.7	7.0	7.3	7.4	7.5	7.7	7.8
92.5°	7.0	7.2	7.3	7.5	7.6	7.7	7.7	7.8
95°	11.9	12.2	12.5	12.7	12.6	12.5	12.5	12.4
97.5°	15.6	15.8	16.1	16.2	16.3	16.4	16.5	16.6
100°	17.5	18.0	18.5	18.8	18.9	19.1	19.2	19.4
102.5°	18.2	18.9	19.5	20.0	20.2	20.3	20.5	20.7
105°	19.0	19.7	20.4	20.9	21.1	21.4	21.7	21.9
107.5°	23.2	22.5	21.8	21.5	21.8	22.0	22.3	22.6
110°	37.6	31.2	24.8	21.8	22.0	22.3	22.6	22.7



TEST NUMBER: P331738-940

CATALOG NUMBER: SA2XXRDIP-C1005D330U940-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	80.5	57.2	33.8	22.2	22.4	22.6	22.8	23.0
115°	118.6	88.9	59.2	42.1	37.5	32.9	28.3	23.6
117.5°	182.7	175.5	168.4	157.2	142.0	126.9	111.7	96.6
120°	212.9	213.7	214.4	210.4	201.8	193.1	184.5	175.8
122.5°	225.9	226.3	226.8	226.1	224.5	222.8	221.1	219.5
125°	244.5	245.0	245.4	245.8	245.9	246.1	246.3	246.5
127.5°	261.8	262.4	263.1	263.4	263.5	263.5	263.5	263.6
130°	272.7	273.4	274.1	274.5	274.4	274.3	274.3	274.2
132.5°	283.4	283.9	284.5	284.8	284.7	284.7	284.6	284.5
135°	298.5	299.2	299.8	300.1	300.0	299.8	299.7	299.5
137.5°	312.6	313.3	313.9	314.1	313.9	313.7	313.4	313.3
140°	321.7	322.4	322.9	323.1	322.7	322.4	322.1	321.7
142.5°	330.2	330.7	331.3	331.4	331.0	330.7	330.4	330.0
145°	342.0	342.4	342.9	343.0	342.6	342.3	342.0	341.6
147.5°	352.2	352.6	352.9	352.9	352.7	352.4	352.1	351.9
150°	358.6	358.9	359.4	359.4	359.1	358.7	358.4	358.1
152.5°	364.4	364.7	365.1	365.1	364.6	364.3	363.8	363.4
155°	372.1	372.5	372.9	372.8	372.3	371.8	371.3	370.8
157.5°	378.7	379.2	379.5	379.5	379.0	378.5	378.0	377.6
160°	382.5	382.9	383.3	383.3	382.8	382.4	381.9	381.5
162.5°	386.0	386.5	386.9	386.9	386.3	385.8	385.2	384.7
165°	390.4	390.8	391.3	391.3	390.8	390.4	389.9	389.5
167.5°	394.0	394.5	394.9	394.8	394.3	393.7	393.2	392.5
170°	395.9	396.4	396.8	396.7	396.2	395.6	395.0	394.4
172.5°	397.3	397.7	398.1	398.1	397.5	397.0	396.4	395.8
175°	398.8	399.2	399.7	399.6	399.0	398.3	397.6	397.0
177.5°	399.0	399.3	399.7	399.6	399.1	398.7	398.2	397.8
180°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4

(END OF REPORT)