

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: P331740-940

Luminaire Tested: **SA2XXRDIP-C1005D330U940-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331740-940
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: SA2XXRDIP-C1005D330U940-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 330 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4247.4 lumens
Efficiency: N/A
Efficacy: 85.3 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

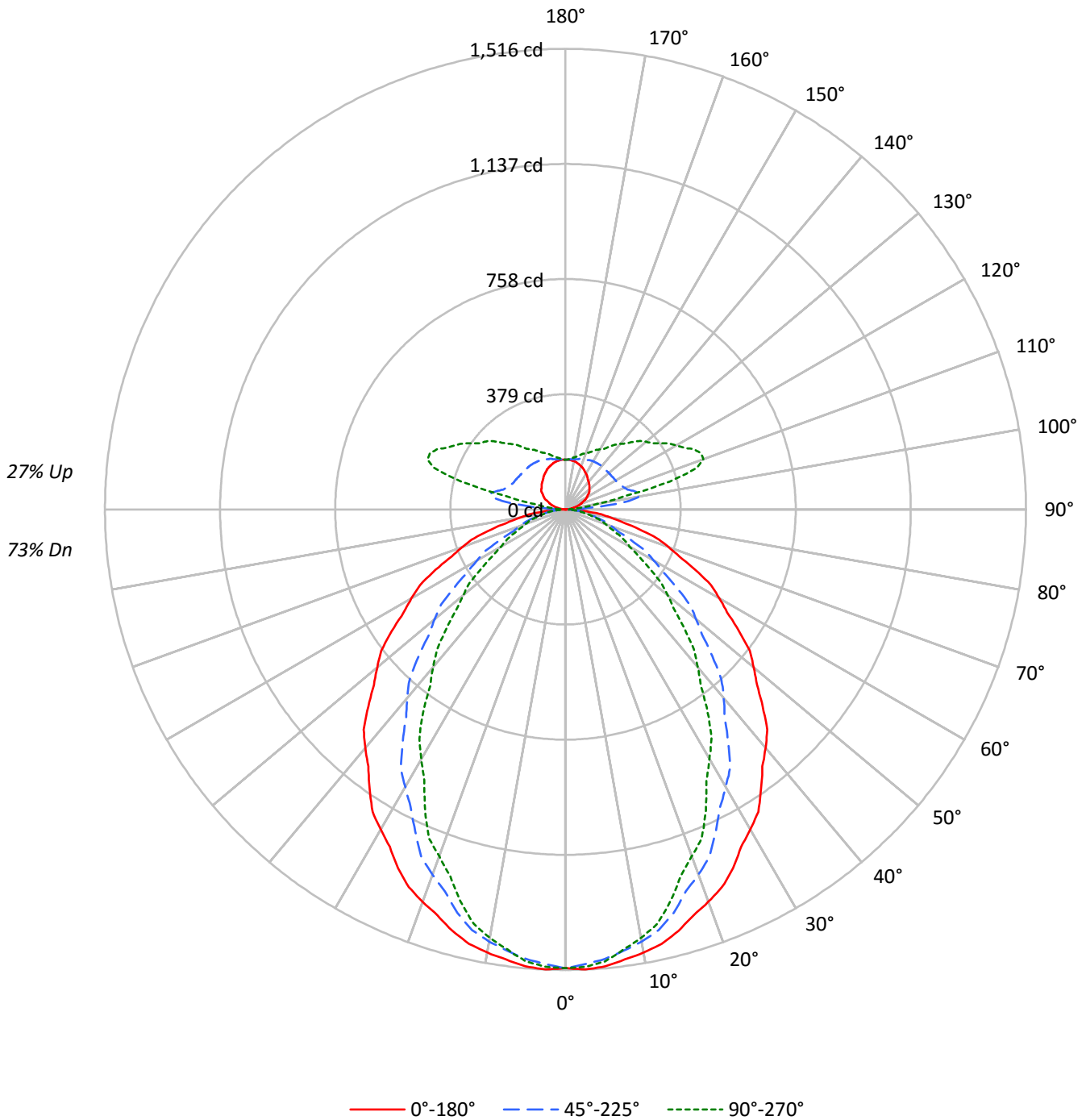
Input Watts (W): 49.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	95	91	88	86	83	81	77	75	74	70	68	67	67	67	67	63	
2	95	88	82	77	90	84	78	74	76	72	68	69	65	63	62	60	57	57	57	57	54	
3	87	78	71	65	83	74	68	62	68	62	58	61	57	54	56	52	50	50	50	50	47	
4	80	69	62	56	76	66	59	54	61	55	50	55	51	47	50	46	43	43	43	43	41	
5	74	62	54	48	70	60	52	47	55	49	44	50	45	41	46	42	38	38	38	38	36	
6	68	56	48	42	65	54	47	41	50	43	39	46	40	36	42	37	34	34	34	34	32	
7	64	51	43	38	60	49	42	37	45	39	35	42	36	33	38	34	31	31	31	31	28	
8	59	47	39	34	56	45	38	33	42	35	31	38	33	29	35	31	28	28	28	28	26	
9	55	43	36	30	53	41	34	30	38	32	28	36	30	27	33	28	25	25	25	25	23	
10	52	40	32	28	49	38	32	27	36	30	26	33	28	24	31	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	14.0
40°-50°	546.4	12.9
50°-60°	429.2	10.1
60°-70°	279.8	6.6
70°-80°	144.3	3.4
80°-90°	38.9	0.9
90°-100°	65.5	1.5
100°-110°	222.3	5.2
110°-120°	236.2	5.6
120°-130°	194.4	4.6
130°-140°	156.1	3.7
140°-150°	118.0	2.8
150°-160°	82.9	2.0
160°-170°	48.8	1.1
170°-180°	15.9	0.4
0°-30°	1074.4	25.3
0°-40°	1668.7	39.3
0°-60°	2644.3	62.3
0°-90°	3107.3	73.2
90°-120°	524.0	12.3
90°-150°	992.5	23.4
90°-180°	1140.0	26.8
0°-180°	4247.4	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	4	11	10	10	3
95°	11	27	124	47	36	12
105°	38	58	233	417	355	41
115°	68	86	195	403	467	67
125°	94	112	188	327	379	84
135°	111	132	186	274	314	86
145°	127	146	185	229	251	79
155°	144	155	179	203	211	66
165°	157	162	172	182	185	44
175°	164	164	165	167	167	16
180°	164	164	164	164	164	



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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	14.1	12.3	10.4	9.7	10.0	10.4	10.8	10.9	10.6
90°	0.4	1.2	2.5	3.1	3.7	4.7	6.3	8.5	10.4	10.7	10.4
92.5°	3.8	5.5	7.8	9.2	11.3	14.3	21.4	31.5	40.4	40.9	34.6
95°	11.1	12.3	15.4	18.3	23.3	30.9	45.4	72.8	109.3	123.5	108.1
97.5°	17.9	19.6	23.0	27.3	33.1	41.6	59.8	98.1	158.8	210.8	221.1
100°	24.3	25.2	28.0	33.1	39.4	48.2	64.9	103.3	171.4	248.9	294.3
102.5°	30.1	30.8	33.6	38.6	45.2	54.0	69.5	103.6	166.6	250.1	321.5
105°	38.4	39.7	41.9	46.6	53.6	62.4	77.2	105.2	157.2	233.4	317.3
107.5°	47.5	48.5	50.6	55.0	61.9	70.8	85.2	109.6	152.6	215.5	289.6
110°	53.6	54.8	56.7	60.8	67.4	76.6	90.4	113.1	151.6	207.0	272.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	59.1	60.4	62.5	66.3	72.7	82.1	95.5	116.9	151.8	201.4	260.1
115°	67.8	69.3	71.2	75.0	81.3	89.8	103.3	122.5	153.1	195.4	245.1
117.5°	76.7	77.9	79.8	83.2	89.3	98.1	110.6	128.6	155.4	192.3	235.7
120°	82.2	83.5	85.4	88.2	94.5	103.3	115.7	132.7	156.9	190.6	230.6
122.5°	87.6	88.5	90.4	93.5	99.8	108.9	120.4	136.2	158.6	189.6	226.3
125°	94.5	95.5	97.4	101.1	107.5	116.3	127.6	141.8	161.3	187.8	220.3
127.5°	100.0	101.3	104.0	108.2	114.1	123.2	134.3	147.0	164.0	186.7	214.5
130°	103.3	104.6	107.7	112.2	118.5	127.2	138.3	150.3	166.0	186.2	210.8
132.5°	106.4	107.9	111.3	115.9	122.5	131.3	141.9	153.6	168.1	185.9	207.8
135°	110.9	112.2	115.9	120.6	128.0	136.7	146.9	157.8	170.5	185.6	203.5
137.5°	115.2	116.7	120.5	125.6	132.7	140.9	150.9	161.1	172.6	185.5	200.5
140°	118.5	119.8	123.5	128.6	135.5	143.7	153.1	162.9	173.6	185.3	198.8
142.5°	121.7	122.8	126.3	131.3	138.0	145.7	154.9	164.4	174.3	185.3	197.1
145°	126.6	128.0	131.1	135.8	142.1	149.0	157.6	166.4	175.1	184.6	194.7
147.5°	132.0	132.9	135.9	140.3	145.5	151.7	159.7	167.5	175.4	183.5	192.3
150°	135.5	136.4	138.9	143.0	147.8	153.5	160.7	167.9	175.1	182.7	190.3
152.5°	139.0	139.5	142.0	145.5	150.1	155.2	161.7	168.2	174.7	181.5	188.5
155°	144.0	144.3	146.2	149.6	153.1	157.8	163.2	168.5	173.9	179.2	185.3
157.5°	148.1	148.5	150.0	153.0	155.8	159.7	164.3	168.5	172.5	177.0	182.2
160°	150.9	151.2	152.5	155.0	157.6	161.0	164.8	168.5	171.7	175.5	179.9
162.5°	153.7	153.5	154.8	156.8	159.1	161.8	165.1	168.3	170.9	174.2	177.9
165°	156.9	156.6	157.2	159.1	160.7	162.6	165.4	167.6	169.5	171.7	174.5
167.5°	159.5	159.2	159.7	161.0	162.1	163.3	165.3	167.2	168.1	169.5	171.3
170°	161.3	160.7	161.0	161.9	162.6	163.5	165.1	166.7	167.3	168.3	169.5
172.5°	162.3	161.9	161.8	162.7	163.1	163.8	164.9	165.9	166.3	166.7	167.7
175°	163.5	163.2	162.9	163.5	163.5	163.8	164.4	165.1	164.8	165.1	165.4
177.5°	164.1	163.5	163.4	163.8	163.8	163.8	164.1	164.6	164.1	163.8	164.1
180°	163.8	163.8	163.8	163.8	163.8	163.8	163.8	163.8	163.8	163.8	163.8



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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°	10.3	9.9	9.8	9.7	9.7	9.7	9.7	9.7
90°	10.1	9.5	10.1	10.4	10.4	10.4	10.4	10.4
92.5°	27.5	23.5	21.0	19.0	18.7	17.7	17.9	17.5
95°	82.6	63.3	50.1	43.2	39.1	36.6	35.6	35.9
97.5°	192.6	157.6	123.5	100.8	85.7	77.9	73.4	70.7
100°	287.7	248.6	205.5	167.3	141.2	127.6	118.5	112.8
102.5°	349.9	341.1	309.5	269.1	240.7	217.6	206.2	198.5
105°	382.8	418.4	422.5	412.1	392.5	373.0	359.4	355.1
107.5°	359.1	412.8	445.5	460.7	463.2	462.2	459.4	453.6
110°	338.7	395.1	435.4	461.3	474.8	480.8	483.7	483.3



TEST NUMBER: P331740-940

CATALOG NUMBER: SA2XXRDIP-C1005D330U940-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	320.0	374.2	417.2	446.9	465.7	475.7	481.1	482.8
115°	297.1	345.6	386.9	419.4	441.8	456.2	464.4	467.3
117.5°	279.8	322.4	359.9	390.3	413.1	428.5	437.0	439.4
120°	271.3	310.3	343.8	372.4	394.5	409.3	418.4	421.6
122.5°	264.5	300.2	331.9	357.8	377.6	392.2	400.3	402.9
125°	254.6	287.0	314.8	338.4	356.7	368.6	376.5	379.1
127.5°	244.8	274.2	300.3	322.1	338.0	349.3	356.1	358.1
130°	238.5	265.6	290.5	311.3	326.7	337.4	343.8	346.3
132.5°	232.5	257.5	280.4	300.0	315.1	325.8	331.6	333.9
135°	224.0	244.8	265.6	283.2	296.8	307.2	312.9	314.1
137.5°	217.3	234.7	251.2	266.5	278.9	287.8	292.8	294.7
140°	212.9	228.1	242.6	256.5	266.5	274.7	279.5	281.3
142.5°	209.5	222.3	234.8	246.4	255.9	263.4	267.6	268.0
145°	204.5	214.9	224.6	233.8	241.3	246.7	249.9	250.7
147.5°	200.6	208.8	216.4	223.1	229.3	233.6	235.8	236.4
150°	197.9	204.8	211.4	217.0	221.8	225.6	227.5	227.8
152.5°	195.1	201.5	207.1	212.0	215.8	219.0	220.4	220.5
155°	191.3	196.3	201.0	204.5	207.9	210.2	211.4	210.8
157.5°	186.8	191.0	194.9	197.7	200.1	202.0	202.5	202.5
160°	184.0	187.4	190.9	193.1	195.4	196.9	197.2	197.2
162.5°	181.2	184.2	187.2	188.9	191.1	192.2	192.4	192.2
165°	177.1	179.2	181.5	182.7	184.0	185.3	185.3	184.9
167.5°	173.1	174.8	176.3	177.5	178.0	178.7	178.6	178.3
170°	171.1	172.0	173.3	173.9	174.2	175.1	174.9	174.2
172.5°	168.8	169.5	170.5	170.9	171.2	171.7	171.3	170.9
175°	166.4	166.7	167.0	167.3	167.3	167.6	167.3	166.7
177.5°	164.6	164.6	164.9	164.9	164.9	164.9	164.6	164.1
180°	163.8	163.8	163.8	163.8	163.8	163.8	163.8	163.8

(END OF REPORT)