

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: P331740-930

Luminaire Tested: **SA2XXRDIP-C1005D330U930-4F0-1E-UDD-F4**

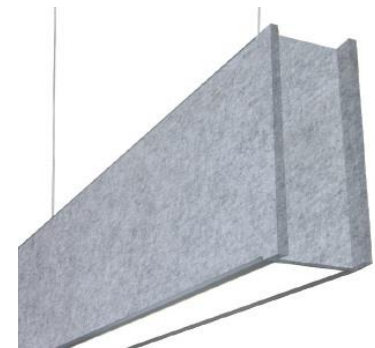
Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331740-930  
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-C1005D330U930-4F0-1E-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**

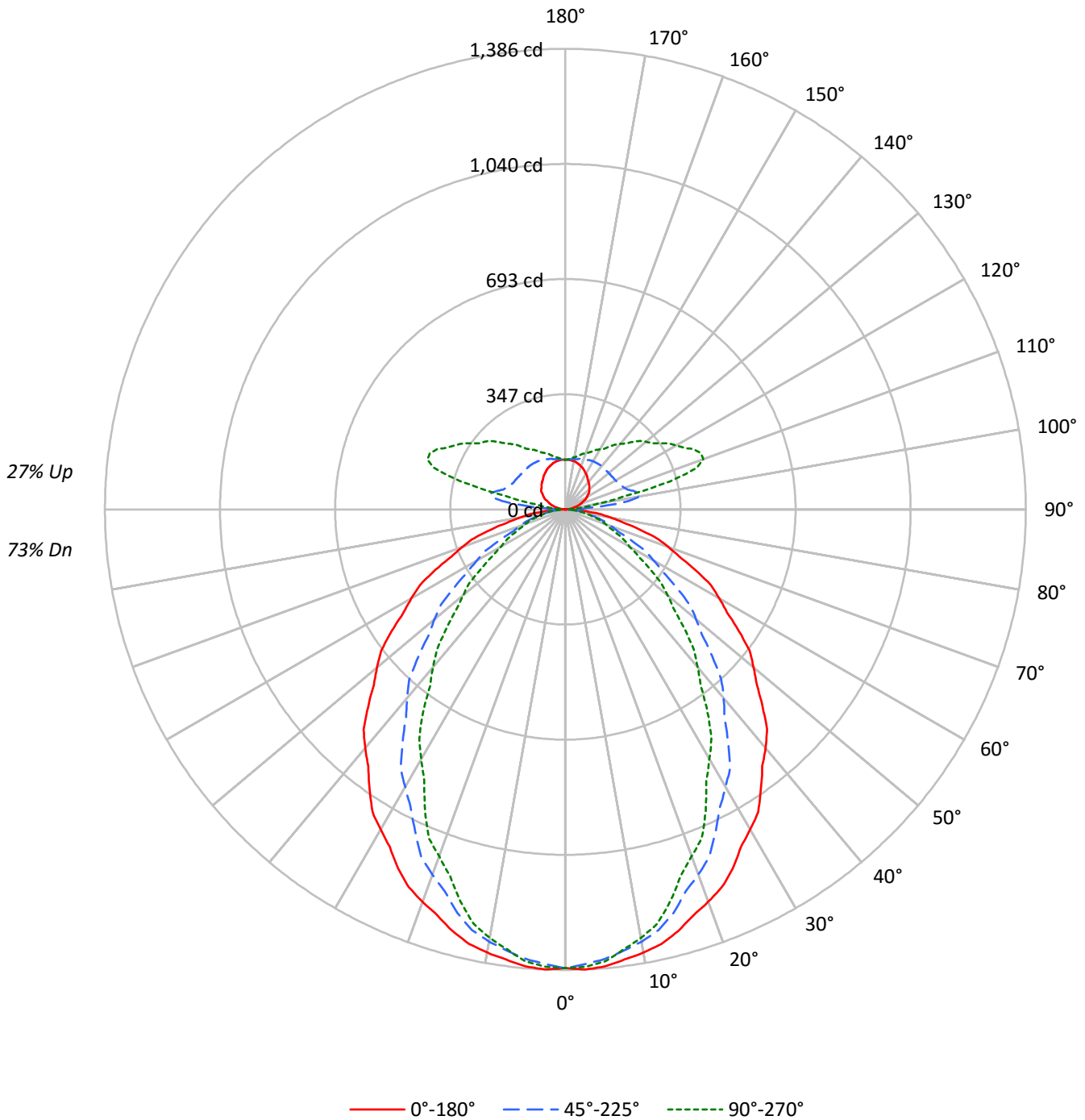
Lumens per Lamp: N/A  
Luminaire Lumens: 3883.4 lumens  
Efficiency: N/A  
Efficacy: 78.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Direct  
  
Input Watts (W): 49.8  
Input Voltage (V): 120  
Input Current (Ain): 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°	22291	22291	22291
5°	22376	22013	22135
10°	22207	21653	21469
15°	21951	21010	20404
20°	21596	20094	19086
25°	21235	19053	17808
30°	20734	17984	16168
35°	20243	16821	14728
40°	19751	15616	13061
45°	19173	14266	11556
50°	18580	12901	10073
55°	17973	11431	8653
60°	17270	9884	7182
65°	16466	8306	6541
70°	15512	6845	6014
75°	14342	6238	5608
80°	12664	5579	5114
85°	9948	4390	4390



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	129.2	3.3
10°-20°	354.8	9.1
20°-30°	498.3	12.8
30°-40°	543.4	14.0
40°-50°	499.6	12.9
50°-60°	392.4	10.1
60°-70°	255.8	6.6
70°-80°	131.9	3.4
80°-90°	35.6	0.9
90°-100°	59.9	1.5
100°-110°	203.2	5.2
110°-120°	215.9	5.6
120°-130°	177.7	4.6
130°-140°	142.7	3.7
140°-150°	107.9	2.8
150°-160°	75.8	2.0
160°-170°	44.6	1.1
170°-180°	14.5	0.4
0°-30°	982.4	25.3
0°-40°	1525.7	39.3
0°-60°	2417.7	62.3
0°-90°	2841.0	73.2
90°-120°	479.1	12.3
90°-150°	907.4	23.4
90°-180°	1042.0	26.8
0°-180°	3883.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1381	1381	1381	1381	1381	
5°	1381	1374	1358	1369	1366	131
15°	1313	1298	1257	1234	1221	370
25°	1192	1150	1070	1020	1000	548
35°	1027	961	853	778	747	642
45°	840	753	625	539	506	648
55°	638	539	406	334	307	570
65°	431	329	217	177	171	427
75°	230	145	100	92	90	243
85°	54	29	24	24	24	63
90°	0	4	10	9	10	3
95°	10	25	113	43	33	11
105°	35	53	213	382	325	37
115°	62	78	179	369	427	61
125°	86	102	172	299	347	77
135°	101	121	170	251	287	78
145°	116	133	169	210	229	73
155°	132	142	164	185	193	61
165°	144	148	157	166	169	40
175°	150	150	151	153	152	14
180°	150	150	150	150	150	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6
2.5°	1385.7	1384.5	1383.4	1382.3	1381.2	1379.4	1377.0	1374.6	1372.1	1369.7	1371.9
5°	1380.6	1379.2	1377.9	1376.5	1375.1	1372.6	1369.0	1365.4	1361.8	1358.2	1360.7
7.5°	1366.4	1364.7	1363.0	1361.2	1359.5	1356.6	1352.3	1348.1	1343.9	1339.7	1340.4
10°	1354.5	1352.5	1350.5	1348.6	1346.6	1342.9	1337.3	1331.8	1326.2	1320.7	1319.9
12.5°	1339.5	1337.0	1334.6	1332.3	1329.9	1325.1	1318.0	1310.9	1303.8	1296.7	1295.2
15°	1313.2	1310.1	1307.1	1304.0	1301.0	1294.7	1285.3	1275.9	1266.4	1256.9	1251.7
17.5°	1280.9	1276.3	1271.6	1267.0	1262.3	1253.9	1241.8	1229.7	1217.6	1205.5	1199.2
20°	1256.9	1251.4	1245.9	1240.3	1234.8	1225.1	1211.1	1197.3	1183.4	1169.5	1162.5
22.5°	1230.9	1224.7	1218.5	1212.4	1206.1	1195.1	1179.5	1163.8	1148.2	1132.5	1123.6
25°	1192.0	1183.1	1174.2	1165.3	1156.4	1142.9	1124.5	1106.2	1087.9	1069.5	1058.2
27.5°	1145.0	1135.4	1125.7	1116.1	1106.4	1091.2	1070.6	1049.9	1029.2	1008.6	995.3
30°	1112.1	1101.5	1091.0	1080.4	1069.8	1053.4	1031.2	1009.0	986.8	964.6	950.4
32.5°	1080.0	1067.7	1055.4	1043.1	1030.7	1013.3	990.6	967.9	945.3	922.6	906.4
35°	1027.0	1012.9	998.7	984.6	970.5	951.1	926.7	902.3	877.8	853.4	835.9
37.5°	974.1	958.5	943.0	927.4	911.9	891.1	865.0	839.0	812.9	786.9	767.7
40°	937.1	920.5	903.8	887.1	870.5	848.6	821.7	794.8	767.8	740.9	721.2
42.5°	899.1	881.6	864.1	846.4	828.9	806.2	778.4	750.6	722.8	695.0	674.6
45°	839.7	821.0	802.4	783.8	765.2	741.4	712.2	683.1	653.9	624.8	605.0
47.5°	781.6	762.0	742.2	722.5	702.8	677.9	647.8	617.7	587.6	557.5	537.9
50°	739.7	720.0	700.3	680.5	660.8	635.7	605.2	574.6	544.0	513.6	494.4
52.5°	698.7	678.1	657.5	636.9	616.3	591.1	561.2	531.3	501.4	471.6	453.1
55°	638.5	616.9	595.2	573.5	551.9	526.0	496.0	466.0	436.1	406.1	389.4
57.5°	576.7	554.6	532.3	510.1	487.9	462.4	433.6	404.7	375.9	347.1	331.8
60°	534.8	512.6	490.3	468.1	445.9	420.5	391.9	363.3	334.7	306.1	292.0
62.5°	493.8	471.6	449.4	427.1	405.0	380.2	352.9	325.6	298.4	271.2	257.6
65°	431.0	408.5	386.1	363.6	341.1	317.4	292.4	267.4	242.4	217.4	208.0
67.5°	370.6	348.3	326.0	303.6	281.3	258.9	236.4	213.9	191.4	168.9	164.6
70°	328.6	307.0	285.3	263.7	242.0	221.6	202.4	183.3	164.1	145.0	142.2
72.5°	288.6	267.8	247.1	226.3	205.5	187.4	172.1	156.7	141.3	126.0	123.6
75°	229.9	210.4	191.0	171.6	152.1	137.7	128.2	118.9	109.4	100.0	98.0
77.5°	172.2	155.2	138.1	121.1	104.0	93.2	88.6	84.1	79.5	75.0	73.9
80°	136.2	122.1	107.9	93.7	79.6	71.1	68.3	65.6	62.8	60.0	58.9
82.5°	103.2	92.1	81.1	70.0	59.0	52.5	50.6	48.8	46.9	45.0	44.4
85°	53.7	47.9	42.1	36.2	30.4	27.1	26.3	25.4	24.5	23.7	23.7
87.5°	16.1	14.4	12.9	11.3	9.5	8.9	9.1	9.5	9.9	9.9	9.7
90°	0.3	1.1	2.3	2.9	3.4	4.3	5.8	7.7	9.5	9.8	9.5
92.5°	3.5	5.1	7.2	8.4	10.4	13.0	19.6	28.8	36.9	37.4	31.6
95°	10.1	11.3	14.1	16.7	21.3	28.2	41.5	66.5	100.0	112.9	98.8
97.5°	16.4	17.9	21.0	24.9	30.2	38.1	54.7	89.7	145.2	192.7	202.2
100°	22.2	23.1	25.6	30.2	36.0	44.1	59.4	94.5	156.7	227.6	269.0
102.5°	27.5	28.1	30.7	35.3	41.3	49.4	63.5	94.7	152.3	228.7	293.9
105°	35.1	36.3	38.3	42.6	49.0	57.1	70.6	96.2	143.7	213.4	290.1
107.5°	43.5	44.4	46.3	50.3	56.6	64.7	77.9	100.2	139.5	197.1	264.8
110°	49.0	50.1	51.9	55.6	61.6	70.0	82.7	103.4	138.6	189.2	248.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	54.1	55.2	57.2	60.7	66.4	75.1	87.3	106.9	138.8	184.2	237.8
115°	62.0	63.3	65.1	68.6	74.4	82.1	94.5	112.0	140.0	178.6	224.1
117.5°	70.1	71.3	73.0	76.1	81.6	89.7	101.1	117.6	142.1	175.9	215.5
120°	75.2	76.3	78.1	80.6	86.4	94.5	105.7	121.3	143.5	174.3	210.8
122.5°	80.1	81.0	82.7	85.5	91.2	99.5	110.1	124.5	145.0	173.3	206.9
125°	86.4	87.3	89.0	92.5	98.2	106.3	116.7	129.6	147.5	171.7	201.4
127.5°	91.5	92.6	95.1	98.9	104.4	112.7	122.8	134.4	149.9	170.7	196.2
130°	94.5	95.6	98.5	102.6	108.4	116.3	126.5	137.4	151.8	170.2	192.7
132.5°	97.3	98.7	101.7	106.0	112.0	120.1	129.7	140.4	153.7	170.0	190.0
135°	101.4	102.6	106.0	110.3	117.0	125.0	134.3	144.3	155.9	169.7	186.1
137.5°	105.3	106.7	110.1	114.8	121.3	128.8	137.9	147.3	157.8	169.6	183.4
140°	108.4	109.5	112.9	117.6	123.8	131.3	140.0	149.0	158.7	169.4	181.7
142.5°	111.3	112.3	115.4	120.1	126.2	133.2	141.6	150.3	159.4	169.4	180.2
145°	115.8	117.0	119.8	124.2	130.0	136.2	144.1	152.1	160.1	168.8	178.1
147.5°	120.7	121.5	124.3	128.2	133.1	138.7	146.0	153.1	160.4	167.8	175.9
150°	123.8	124.7	127.0	130.8	135.1	140.3	146.9	153.5	160.1	167.1	174.0
152.5°	127.1	127.5	129.8	133.1	137.2	141.9	147.8	153.8	159.7	165.9	172.4
155°	131.7	131.9	133.6	136.8	140.0	144.3	149.2	154.1	159.0	163.9	169.4
157.5°	135.4	135.7	137.1	139.9	142.4	146.0	150.2	154.1	157.7	161.8	166.6
160°	137.9	138.3	139.4	141.7	144.1	147.2	150.7	154.1	157.0	160.5	164.4
162.5°	140.6	140.3	141.5	143.3	145.4	147.9	150.9	153.8	156.3	159.3	162.7
165°	143.5	143.2	143.7	145.4	146.9	148.6	151.2	153.3	155.0	157.0	159.6
167.5°	145.9	145.5	146.0	147.2	148.2	149.3	151.2	152.9	153.7	155.0	156.6
170°	147.5	146.9	147.2	148.1	148.6	149.5	150.9	152.4	153.0	153.8	155.0
172.5°	148.4	148.1	147.9	148.8	149.1	149.8	150.7	151.7	152.1	152.5	153.4
175°	149.5	149.2	149.0	149.5	149.5	149.8	150.3	150.9	150.7	150.9	151.2
177.5°	150.0	149.5	149.4	149.8	149.8	149.8	150.0	150.5	150.0	149.8	150.0
180°	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6	1380.6
2.5°	1374.1	1376.3	1378.6	1379.4	1379.0	1378.6	1378.1	1377.7
5°	1363.2	1365.7	1368.2	1369.0	1368.2	1367.3	1366.5	1365.7
7.5°	1341.1	1341.8	1342.6	1342.2	1340.8	1339.3	1337.9	1336.4
10°	1319.0	1318.2	1317.4	1316.1	1314.4	1312.8	1311.1	1309.5
12.5°	1293.7	1292.2	1290.7	1288.6	1285.8	1283.0	1280.3	1277.5
15°	1246.4	1241.1	1235.8	1231.8	1229.1	1226.3	1223.5	1220.7
17.5°	1192.9	1186.7	1180.4	1174.8	1170.1	1165.3	1160.5	1155.8
20°	1155.6	1148.7	1141.7	1135.2	1129.1	1123.0	1116.9	1110.8
22.5°	1114.7	1105.7	1096.7	1090.0	1085.5	1080.9	1076.4	1071.8
25°	1046.8	1035.4	1024.0	1016.3	1012.0	1007.9	1003.7	999.6
27.5°	982.0	968.7	955.4	945.5	938.9	932.3	925.7	919.1
30°	936.3	922.1	907.9	897.2	889.7	882.2	874.7	867.2
32.5°	890.3	874.2	857.9	846.4	839.4	832.3	825.2	818.2
35°	818.4	801.0	783.4	771.6	765.5	759.4	753.3	747.2
37.5°	748.4	729.1	709.8	696.7	689.7	682.7	675.7	668.7
40°	701.5	681.8	662.1	648.7	641.4	634.1	627.0	619.7
42.5°	654.2	633.8	613.4	599.7	592.7	585.7	578.8	571.8
45°	585.3	565.6	545.8	532.7	526.0	519.3	512.7	506.1
47.5°	518.3	498.7	479.1	466.3	460.2	454.2	448.1	442.1
50°	475.2	456.1	436.9	424.4	418.6	412.7	406.9	401.0
52.5°	434.6	416.0	397.6	385.6	380.3	374.9	369.5	364.1
55°	372.8	356.1	339.4	328.5	323.2	317.9	312.7	307.4
57.5°	316.6	301.3	286.0	276.1	271.7	267.3	262.9	258.4
60°	277.8	263.7	249.5	240.2	235.7	231.3	226.8	222.4
62.5°	244.2	230.6	217.2	209.0	206.4	203.7	201.1	198.4
65°	198.5	189.1	179.6	174.5	173.7	172.8	172.0	171.2
67.5°	160.3	156.0	151.6	149.0	148.1	147.2	146.3	145.4
70°	139.4	136.6	133.9	131.9	130.8	129.6	128.6	127.4
72.5°	121.3	119.0	116.6	115.1	114.5	113.8	113.1	112.4
75°	96.0	94.2	92.2	91.1	90.8	90.5	90.3	89.9
77.5°	72.7	71.7	70.5	69.7	69.3	68.9	68.4	68.0
80°	57.7	56.7	55.5	55.0	55.0	55.0	55.0	55.0
82.5°	43.6	43.0	42.3	42.0	42.0	42.0	42.0	42.0
85°	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
87.5°	9.4	9.0	9.0	8.9	8.9	8.9	8.9	8.9
90°	9.2	8.6	9.2	9.5	9.5	9.5	9.5	9.5
92.5°	25.1	21.5	19.2	17.4	17.1	16.2	16.4	16.0
95°	75.5	57.9	45.8	39.5	35.7	33.4	32.5	32.9
97.5°	176.1	144.1	112.9	92.1	78.4	71.3	67.1	64.7
100°	263.0	227.3	187.8	153.0	129.1	116.7	108.4	103.1
102.5°	319.9	311.9	283.0	246.1	220.0	198.9	188.5	181.5
105°	350.0	382.5	386.3	376.8	358.9	341.0	328.6	324.7
107.5°	328.3	377.4	407.3	421.3	423.5	422.6	420.0	414.7
110°	309.7	361.3	398.1	421.8	434.1	439.6	442.2	441.9





TEST NUMBER: P331740-930

CATALOG NUMBER: SA2XXRDIP-C1005D330U930-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	292.6	342.1	381.5	408.6	425.8	435.0	439.9	441.4
115°	271.7	316.0	353.8	383.4	403.9	417.1	424.6	427.2
117.5°	255.8	294.8	329.1	356.9	377.7	391.8	399.6	401.8
120°	248.0	283.7	314.3	340.5	360.7	374.2	382.5	385.5
122.5°	241.8	274.5	303.5	327.1	345.2	358.6	366.0	368.4
125°	232.8	262.4	287.8	309.4	326.1	337.0	344.2	346.6
127.5°	223.8	250.7	274.6	294.5	309.1	319.4	325.5	327.4
130°	218.1	242.9	265.6	284.6	298.7	308.5	314.3	316.6
132.5°	212.5	235.5	256.4	274.3	288.1	297.9	303.2	305.3
135°	204.8	223.8	242.9	258.9	271.3	280.9	286.1	287.2
137.5°	198.7	214.6	229.7	243.7	255.0	263.2	267.7	269.5
140°	194.7	208.6	221.8	234.5	243.7	251.2	255.5	257.2
142.5°	191.5	203.3	214.7	225.3	234.0	240.8	244.7	245.0
145°	186.9	196.5	205.4	213.8	220.6	225.6	228.4	229.3
147.5°	183.4	190.9	197.9	204.0	209.7	213.6	215.6	216.1
150°	180.9	187.3	193.3	198.4	202.8	206.3	208.0	208.3
152.5°	178.4	184.3	189.4	193.9	197.3	200.2	201.5	201.6
155°	174.9	179.4	183.8	186.9	190.1	192.2	193.3	192.7
157.5°	170.8	174.6	178.2	180.8	183.0	184.7	185.2	185.2
160°	168.2	171.4	174.6	176.6	178.6	180.0	180.3	180.3
162.5°	165.7	168.4	171.1	172.7	174.7	175.7	175.9	175.7
165°	161.9	163.9	165.9	167.1	168.2	169.4	169.4	169.1
167.5°	158.2	159.8	161.2	162.2	162.7	163.4	163.3	163.0
170°	156.5	157.3	158.4	159.0	159.3	160.1	159.9	159.3
172.5°	154.3	155.0	155.9	156.2	156.5	156.9	156.6	156.3
175°	152.1	152.4	152.7	153.0	153.0	153.3	153.0	152.4
177.5°	150.5	150.5	150.7	150.7	150.7	150.7	150.5	150.0
180°	149.8	149.8	149.8	149.8	149.8	149.8	149.8	149.8

(END OF REPORT)