

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: P331461-840

Luminaire Tested: **SA2XXDIP-C1005D1080U840-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331461-840  
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-C1005D1080U840-4F0-1E-UDD-D4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1005 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

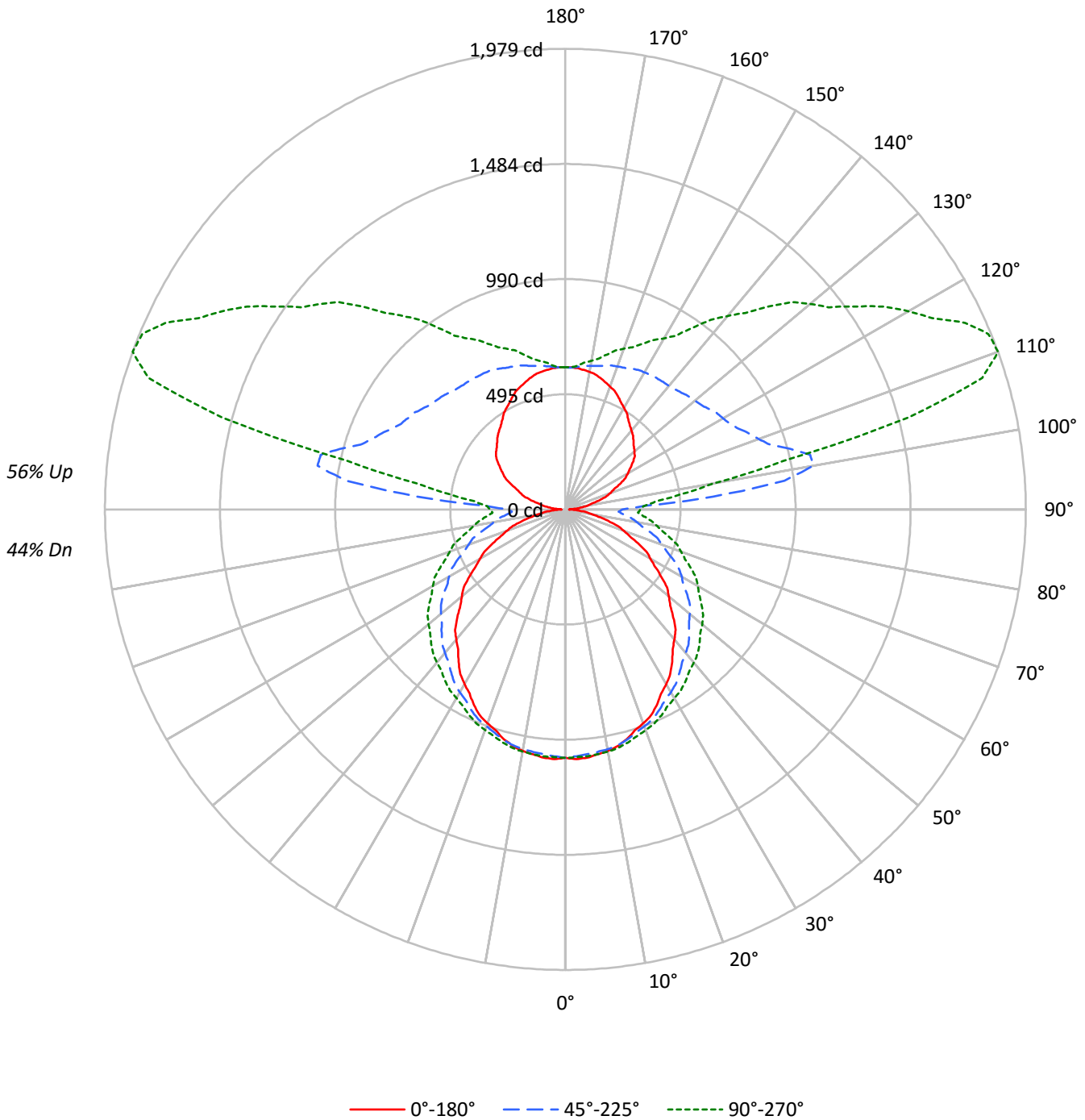
Lumens per Lamp: N/A  
Luminaire Lumens: 8324.5 lumens  
Efficiency: N/A  
Efficacy: 116.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: General Diffuse  
  
Input Watts (W): 71.7  
Input Voltage (V): 120  
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	
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	0
RCR																		
0	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	44
1	95	90	86	82	87	82	79	75	68	65	63	55	53	51	42	41	40	34
2	86	78	71	66	78	71	66	61	59	54	51	47	44	41	36	34	32	27
3	78	68	60	54	71	62	56	50	51	46	42	41	38	34	32	29	27	23
4	71	60	52	45	65	55	48	42	45	40	35	36	32	29	28	25	23	19
5	65	53	45	39	59	49	41	36	40	35	30	33	28	25	25	22	20	16
6	60	48	39	33	54	44	36	31	36	30	26	29	25	22	23	20	17	14
7	55	43	35	29	50	39	32	27	33	27	23	27	22	19	21	18	15	12
8	51	39	31	25	47	36	29	24	30	24	20	24	20	17	19	16	14	11
9	48	35	28	22	43	32	26	21	27	22	18	22	18	15	18	14	12	10
10	44	32	25	20	41	30	23	19	25	20	16	20	16	14	16	13	11	9

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	17241	17241	17241
5°	17327	16597	16534
10°	17217	16106	15925
15°	16980	15587	15284
20°	16681	15031	14669
25°	16384	14494	14107
30°	15966	13945	13546
35°	15544	13412	13150
40°	15099	12958	12754
45°	14678	12551	12415
50°	14226	12185	12082
55°	13750	11789	11742
60°	13168	11380	11382
65°	12566	10901	10957
70°	11886	10385	10497
75°	11021	9881	10071
80°	9646	9362	9643
85°	8334	8915	9308



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	101.2	1.2
10°-20°	290.2	3.5
20°-30°	439.7	5.3
30°-40°	535.6	6.4
40°-50°	576.2	6.9
50°-60°	559.5	6.7
60°-70°	488.6	5.9
70°-80°	376.1	4.5
80°-90°	257.9	3.1
90°-100°	417.8	5.0
100°-110°	954.7	11.5
110°-120°	963.2	11.6
120°-130°	770.7	9.3
130°-140°	600.9	7.2
140°-150°	442.7	5.3
150°-160°	308.7	3.7
160°-170°	181.7	2.2
170°-180°	59.1	0.7
0°-30°	831.1	10.0
0°-40°	1366.6	16.4
0°-60°	2502.3	30.1
0°-90°	3624.9	43.5
90°-120°	2335.7	28.1
90°-150°	4150.0	49.9
90°-180°	4700.0	56.5
0°-180°	8324.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1068	1068	1068	1068	1068	
5°	1071	1066	1057	1066	1065	102
15°	1022	1024	1024	1038	1037	288
25°	929	940	953	971	976	427
35°	800	827	856	889	901	500
45°	656	699	752	798	816	506
55°	503	560	639	693	715	450
65°	344	420	511	572	594	341
75°	190	278	376	440	463	201
85°	56	152	251	313	337	60
90°	17	122	244	302	324	13
95°	53	187	638	408	389	53
105°	151	270	1002	1739	1526	161
115°	258	345	820	1639	1896	256
125°	355	422	752	1309	1520	316
135°	414	495	708	1070	1232	321
145°	472	542	687	863	951	296
155°	536	579	668	755	785	247
165°	584	602	639	678	689	165
175°	609	609	615	622	621	58
180°	610	610	610	610	610	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8
2.5°	1074.1	1073.3	1072.4	1071.6	1070.8	1069.3	1067.4	1065.5	1063.6	1061.7	1063.1
5°	1071.0	1070.0	1068.9	1067.8	1066.8	1065.3	1063.3	1061.2	1059.1	1057.0	1059.1
7.5°	1061.4	1060.7	1060.0	1059.3	1058.6	1057.5	1055.9	1054.3	1052.8	1051.2	1053.6
10°	1054.0	1053.3	1052.6	1051.9	1051.2	1050.4	1049.4	1048.2	1047.2	1046.2	1048.9
12.5°	1041.6	1041.7	1041.9	1042.0	1042.1	1041.8	1041.1	1040.3	1039.6	1038.7	1041.6
15°	1021.5	1022.2	1022.8	1023.5	1024.2	1024.5	1024.5	1024.5	1024.5	1024.5	1027.6
17.5°	995.4	996.9	998.4	999.8	1001.2	1002.5	1003.6	1004.7	1005.8	1006.9	1010.2
20°	978.2	979.9	981.6	983.3	985.0	986.5	988.0	989.3	990.7	992.1	995.8
22.5°	959.6	961.5	963.5	965.5	967.6	969.5	971.4	973.3	975.2	977.1	981.0
25°	928.6	931.0	933.4	935.8	938.3	941.0	944.0	947.2	950.3	953.3	957.5
27.5°	891.4	895.3	899.3	903.2	907.2	910.9	914.5	918.2	921.8	925.5	930.7
30°	866.7	871.1	875.7	880.1	884.5	889.1	893.5	898.0	902.4	907.0	912.4
32.5°	839.4	844.4	849.5	854.5	859.5	864.6	870.0	875.3	880.6	885.9	892.2
35°	800.1	806.0	811.8	817.7	823.5	829.7	836.3	842.7	849.3	855.9	863.4
37.5°	757.4	764.2	770.9	777.6	784.4	791.9	800.4	808.9	817.4	825.9	834.2
40°	728.9	736.5	744.1	751.6	759.2	767.6	776.9	786.2	795.5	804.8	813.7
42.5°	701.8	709.2	716.8	724.4	732.0	741.0	751.7	762.4	773.1	783.8	793.5
45°	656.2	665.5	674.8	684.1	693.4	704.0	716.1	728.1	740.1	752.1	762.9
47.5°	611.4	621.5	631.6	641.7	651.8	663.9	678.0	692.1	706.2	720.2	731.4
50°	580.4	591.1	601.7	612.4	623.0	636.1	651.6	667.0	682.5	698.0	709.7
52.5°	550.7	561.9	573.1	584.3	595.5	609.3	625.5	641.9	658.1	674.5	686.4
55°	503.0	515.3	527.8	540.2	552.5	567.6	585.5	603.4	621.3	639.1	651.6
57.5°	456.0	469.9	483.8	497.9	511.8	527.9	546.1	564.3	582.6	600.8	614.1
60°	422.5	437.3	452.1	466.9	481.7	498.9	518.5	538.1	557.6	577.2	590.4
62.5°	392.8	408.1	423.4	438.8	454.1	471.6	491.2	510.8	530.5	550.1	563.9
65°	343.6	360.4	377.3	394.2	411.0	429.6	449.9	470.1	490.4	510.7	524.8
67.5°	298.4	316.0	333.6	351.2	368.8	388.0	408.8	429.6	450.3	471.1	485.3
70°	266.2	284.1	301.9	319.8	337.7	357.3	378.7	400.0	421.3	442.6	457.4
72.5°	236.5	254.9	273.4	291.8	310.2	330.2	351.8	373.4	395.1	416.7	431.1
75°	190.4	209.6	228.8	248.1	267.4	288.0	310.0	332.0	354.1	376.1	390.8
77.5°	145.8	165.9	186.1	206.2	226.4	247.6	270.0	292.4	314.7	337.1	351.8
80°	116.0	137.0	158.0	179.0	200.0	221.7	244.0	266.4	288.7	311.0	325.5
82.5°	91.3	112.0	132.7	153.4	174.1	195.8	218.4	241.1	263.7	286.3	300.7
85°	55.7	77.1	98.4	119.7	141.0	162.7	184.7	206.7	228.7	250.7	265.2
87.5°	30.6	51.8	73.2	94.2	115.1	137.1	160.3	183.9	207.3	229.6	243.4
90°	16.7	40.1	64.7	87.1	109.4	133.8	161.7	192.0	221.0	244.2	256.8
92.5°	28.6	53.4	80.5	104.2	130.8	161.7	209.3	267.8	322.3	345.7	335.5
95°	53.4	74.3	102.2	129.0	163.8	210.5	285.0	407.7	564.4	637.8	593.4
97.5°	77.7	98.5	125.2	155.5	191.5	240.5	328.1	490.1	736.1	949.8	1001.0
100°	101.2	117.4	140.7	172.2	208.3	257.2	338.6	501.0	773.7	1081.6	1263.2
102.5°	121.5	135.7	157.9	188.3	224.3	272.4	348.5	494.4	747.7	1077.5	1355.6
105°	150.9	165.5	183.7	211.3	247.1	293.9	366.9	489.2	700.6	1002.4	1326.5
107.5°	184.3	196.1	212.1	236.2	269.7	315.4	386.0	494.1	671.4	923.0	1210.3
110°	205.6	217.2	231.2	253.3	284.8	330.6	399.1	500.4	660.5	883.7	1137.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	226.3	236.7	250.4	270.5	300.0	345.9	411.7	507.5	653.5	854.4	1083.9
115°	258.4	268.0	278.9	296.7	324.0	365.3	431.2	518.3	647.5	820.2	1015.8
117.5°	290.1	297.3	306.9	321.7	346.8	388.0	449.0	530.4	644.5	796.5	967.9
120°	310.8	316.9	325.3	337.3	362.0	402.5	462.0	539.1	643.2	782.4	941.1
122.5°	330.5	334.9	342.4	354.5	378.5	419.0	474.8	546.4	643.2	771.3	917.5
125°	355.1	358.6	365.6	379.7	403.1	441.5	494.7	558.6	642.3	751.8	881.9
127.5°	375.7	380.0	389.5	404.7	426.9	464.9	514.8	571.1	643.4	736.7	848.9
130°	387.9	392.2	403.6	419.7	442.8	479.1	527.4	579.2	645.1	727.4	827.1
132.5°	399.1	404.5	416.8	433.7	457.9	493.3	538.1	587.2	646.8	719.0	808.2
135°	414.4	419.2	433.2	450.9	477.9	512.4	553.4	597.8	648.2	708.0	782.0
137.5°	430.4	436.0	450.0	468.7	495.4	526.6	565.2	605.0	649.1	698.8	761.2
140°	442.6	447.0	460.7	479.2	504.6	535.3	571.2	608.2	648.8	692.9	748.8
142.5°	454.8	458.3	471.0	489.5	514.0	542.5	576.9	612.5	649.6	690.4	738.7
145°	471.6	476.3	488.1	505.6	529.1	554.9	586.5	619.5	652.3	687.4	727.1
147.5°	491.3	494.8	506.0	522.3	541.8	564.7	594.5	623.4	653.2	683.3	716.4
150°	504.4	508.0	517.4	532.6	550.2	571.3	598.3	625.3	652.3	680.4	708.5
152.5°	517.6	519.3	528.6	542.0	558.7	577.8	602.1	626.2	650.4	675.7	702.0
155°	536.1	537.2	544.3	557.2	570.2	587.7	607.6	627.6	647.5	667.5	689.8
157.5°	551.6	552.8	558.5	569.7	580.0	594.8	611.7	627.6	642.2	659.0	678.3
160°	561.9	563.1	567.7	577.1	586.5	599.5	613.6	627.6	639.3	653.5	669.8
162.5°	572.3	571.6	576.2	583.7	592.2	602.3	614.5	626.7	636.5	648.7	662.4
165°	584.2	583.1	585.4	592.4	598.3	605.3	615.9	624.1	631.2	639.3	649.9
167.5°	594.1	592.7	594.8	599.3	603.5	607.9	615.6	622.5	625.7	631.2	637.7
170°	600.7	598.3	599.5	603.0	605.3	608.8	614.7	620.6	622.9	626.4	631.2
172.5°	604.4	603.0	602.3	605.8	607.2	609.8	613.8	617.7	619.1	620.9	624.6
175°	608.8	607.6	606.5	608.8	608.8	610.1	612.4	614.7	613.6	614.7	615.9
177.5°	611.0	609.0	608.1	610.1	610.1	610.1	611.0	612.9	611.0	610.1	611.0
180°	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8	1067.8
2.5°	1064.4	1065.8	1067.2	1067.6	1067.0	1066.5	1065.9	1065.4
5°	1061.2	1063.3	1065.3	1066.1	1065.8	1065.5	1065.1	1064.8
7.5°	1056.1	1058.6	1061.1	1062.2	1061.8	1061.5	1061.1	1060.8
10°	1051.7	1054.5	1057.2	1058.4	1058.0	1057.7	1057.4	1057.0
12.5°	1044.3	1047.0	1049.8	1051.0	1050.7	1050.3	1050.0	1049.7
15°	1030.8	1033.8	1036.9	1038.3	1037.9	1037.6	1037.2	1036.9
17.5°	1013.4	1016.6	1019.9	1021.5	1021.5	1021.5	1021.5	1021.5
20°	999.6	1003.4	1007.1	1009.1	1009.1	1009.1	1009.1	1009.1
22.5°	984.7	988.6	992.3	994.5	995.0	995.6	996.1	996.7
25°	961.6	965.7	969.9	972.4	973.5	974.5	975.5	976.5
27.5°	935.9	941.2	946.4	949.4	950.2	950.9	951.7	952.4
30°	918.0	923.4	929.0	932.2	933.2	934.2	935.3	936.3
32.5°	898.6	904.8	911.2	915.2	917.2	919.0	920.9	922.7
35°	871.0	878.6	886.2	891.1	893.5	896.0	898.4	900.7
37.5°	842.6	851.0	859.4	864.8	867.4	870.0	872.5	875.0
40°	822.6	831.6	840.5	846.6	849.7	852.7	855.9	859.0
42.5°	803.2	813.0	822.8	829.2	832.3	835.5	838.5	841.6
45°	773.5	784.2	794.8	801.8	805.3	808.7	812.1	815.6
47.5°	742.6	753.7	764.9	772.3	776.1	779.9	783.7	787.5
50°	721.3	733.1	744.8	752.6	756.3	760.0	763.9	767.6
52.5°	698.4	710.3	722.4	730.3	734.4	738.5	742.6	746.6
55°	664.0	676.3	688.7	697.1	701.6	706.1	710.5	715.0
57.5°	627.5	640.9	654.2	663.1	667.6	672.2	676.7	681.3
60°	603.4	616.5	629.5	638.5	643.3	648.1	653.0	657.7
62.5°	577.8	591.7	605.6	614.8	619.4	623.9	628.4	633.0
65°	539.0	553.0	567.1	576.4	580.9	585.3	589.9	594.3
67.5°	499.6	513.8	528.1	537.6	542.2	546.8	551.6	556.2
70°	472.2	487.0	501.8	511.2	515.3	519.5	523.6	527.8
72.5°	445.7	460.2	474.6	484.4	489.4	494.3	499.3	504.2
75°	405.7	420.4	435.3	444.8	449.3	453.8	458.3	462.7
77.5°	366.5	381.2	396.0	405.8	410.5	415.4	420.2	425.0
80°	339.9	354.5	368.9	378.5	383.3	388.1	392.9	397.8
82.5°	315.2	329.6	344.1	353.6	358.1	362.6	367.2	371.7
85°	279.6	294.1	308.5	318.1	323.0	327.8	332.5	337.4
87.5°	257.2	270.7	285.3	294.7	299.1	303.6	307.9	312.4
90°	269.3	280.7	296.9	307.0	311.1	315.2	319.3	323.5
92.5°	322.4	321.3	325.0	326.5	329.7	330.0	335.2	337.4
95°	511.5	453.0	416.8	399.6	388.5	383.1	383.8	389.1
97.5°	907.4	789.6	675.4	599.2	547.1	522.3	509.3	503.4
100°	1251.3	1118.5	970.6	836.9	743.3	696.6	666.4	649.0
102.5°	1473.9	1453.5	1348.4	1206.1	1104.1	1021.8	983.1	958.3
105°	1582.6	1727.2	1754.4	1723.6	1654.7	1585.7	1539.0	1526.4
107.5°	1480.7	1691.8	1825.4	1889.9	1902.8	1902.6	1896.3	1878.2
110°	1396.1	1617.1	1778.3	1881.9	1936.1	1962.2	1976.5	1979.1





TEST NUMBER: P331461-840

CATALOG NUMBER: SA2XXDIP-C1005D1080U840-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1318.0	1530.6	1702.0	1819.7	1893.6	1934.7	1958.4	1968.5
115°	1219.7	1410.8	1574.8	1702.6	1789.7	1847.4	1881.7	1896.0
117.5°	1142.5	1311.3	1460.9	1581.0	1669.4	1730.0	1765.6	1778.1
120°	1102.1	1257.2	1391.2	1504.6	1590.5	1649.4	1687.3	1702.7
122.5°	1068.7	1211.3	1338.5	1441.3	1518.1	1575.6	1609.0	1622.1
125°	1019.1	1149.2	1261.7	1355.9	1427.0	1474.7	1507.1	1519.6
127.5°	970.1	1087.9	1193.9	1280.8	1343.1	1388.0	1416.3	1426.8
130°	938.6	1047.7	1148.7	1231.6	1291.8	1334.5	1360.7	1372.8
132.5°	908.1	1009.5	1102.7	1180.7	1240.0	1282.6	1307.0	1318.2
135°	865.6	950.2	1034.9	1105.5	1158.7	1200.2	1224.1	1231.5
137.5°	829.7	900.8	968.6	1030.2	1078.5	1114.2	1135.0	1144.4
140°	807.2	869.0	928.4	983.8	1023.4	1056.0	1075.6	1084.8
142.5°	789.3	841.6	892.4	938.7	976.1	1005.6	1023.2	1026.3
145°	765.5	806.3	844.7	880.6	910.5	932.1	945.6	950.8
147.5°	747.6	778.4	807.1	832.4	856.5	873.3	882.1	885.0
150°	736.7	762.5	787.2	808.3	825.9	840.0	847.0	848.2
152.5°	726.4	750.3	771.2	789.5	803.3	815.6	820.7	820.9
155°	712.1	730.8	748.4	761.3	774.3	782.4	787.2	784.9
157.5°	695.4	711.1	725.9	736.0	745.2	751.9	754.1	754.1
160°	685.1	698.0	710.9	719.1	727.3	733.2	734.4	734.4
162.5°	674.8	685.8	696.8	703.2	711.3	715.4	716.5	715.6
165°	659.3	667.5	675.7	680.4	685.1	689.8	689.8	688.6
167.5°	644.5	650.9	656.5	660.8	662.8	665.4	665.2	663.8
170°	637.0	640.6	645.2	647.5	648.7	652.3	651.1	648.7
172.5°	628.5	631.2	634.9	636.3	637.5	639.1	637.9	636.5
175°	619.5	620.6	621.8	622.9	622.9	624.1	622.9	620.6
177.5°	612.9	612.9	613.8	613.8	613.8	613.8	612.9	611.0
180°	610.1	610.1	610.1	610.1	610.1	610.1	610.1	610.1

(END OF REPORT)