

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: P331702-930

Luminaire Tested: **SA2XXRDIP-C675D1080U930-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331702-930
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-C675D1080U930-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 675 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5404.6 lumens
Efficiency: N/A
Efficacy: 95.0 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-Indirect

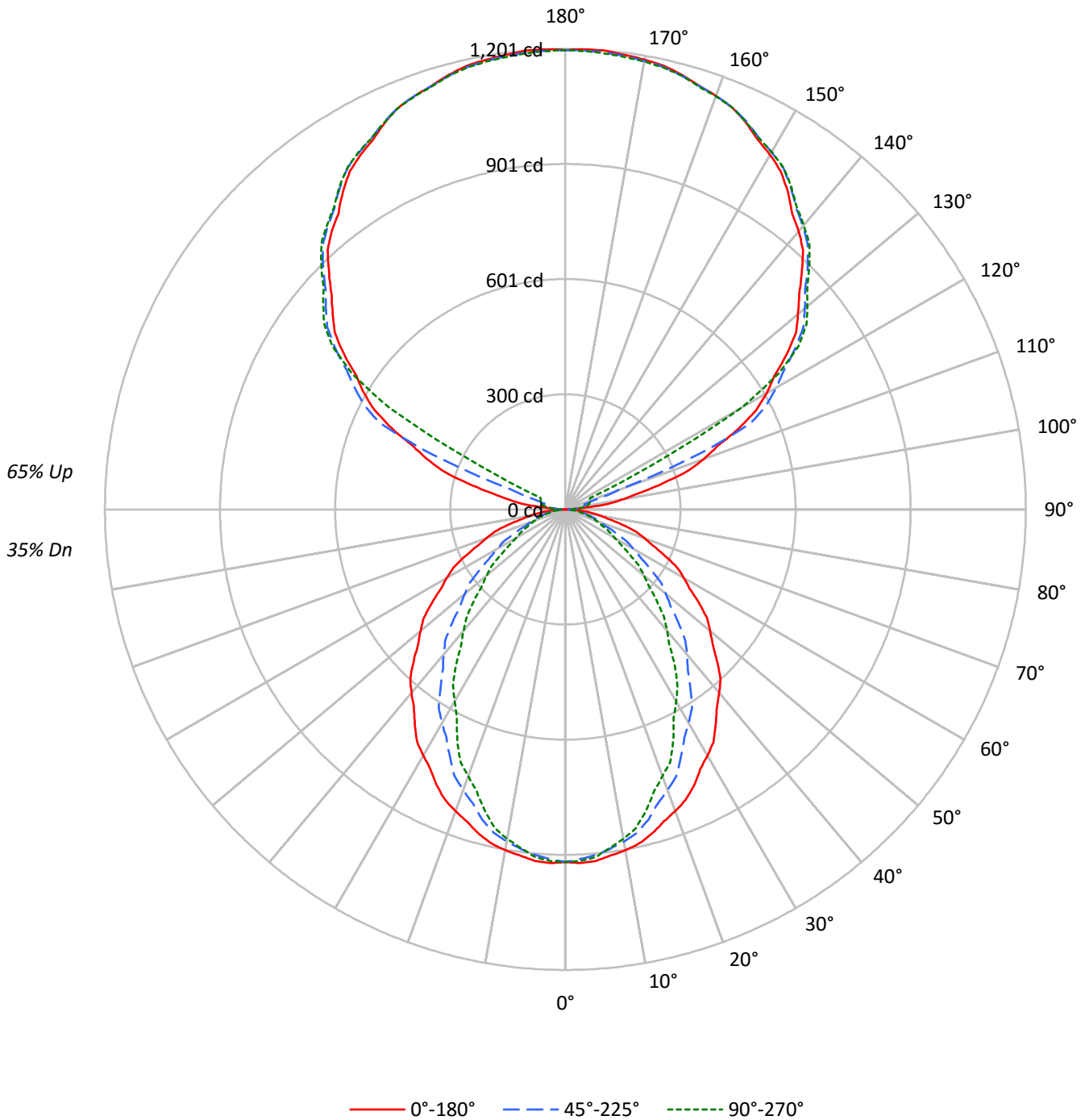
Input Watts (W): 56.9
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	42	42	42	35				
1	95	91	87	84	86	82	79	76	66	64	62	51	50	49	38	37	36	30				
2	87	80	74	69	78	72	67	63	58	55	52	46	43	41	34	32	31	26				
3	79	70	63	58	71	64	58	53	52	47	44	41	38	35	30	28	27	22				
4	72	62	55	49	65	57	50	45	46	41	38	36	33	30	27	25	23	19				
5	67	56	48	42	60	51	44	39	41	36	33	33	29	27	25	22	21	17				
6	61	50	42	37	55	46	39	34	37	32	29	30	26	23	22	20	18	15				
7	57	45	37	32	51	41	34	30	34	29	25	27	23	21	21	18	16	14				
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	19	17	15	12				
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	18	15	13	11				
10	46	34	27	23	41	31	25	21	26	21	18	21	18	15	16	14	12	10				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14849	14849	14849
5°	14906	14663	14744
10°	14791	14423	14300
15°	14621	13996	13593
20°	14387	13385	12713
25°	14145	12691	11863
30°	13811	11979	10769
35°	13484	11203	9810
40°	13156	10404	8701
45°	12771	9501	7695
50°	12376	8593	6712
55°	11972	7614	5762
60°	11502	6584	4782
65°	10968	5532	4359
70°	10334	4556	4008
75°	9551	4155	3737
80°	8433	3710	3403
85°	6632	2927	2927



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	86.1	1.6
10°-20°	236.4	4.4
20°-30°	331.9	6.1
30°-40°	361.9	6.7
40°-50°	332.8	6.2
50°-60°	261.4	4.8
60°-70°	170.4	3.2
70°-80°	87.9	1.6
80°-90°	25.7	0.5
90°-100°	40.0	0.7
100°-110°	146.5	2.7
110°-120°	391.7	7.2
120°-130°	646.5	12.0
130°-140°	687.6	12.7
140°-150°	639.1	11.8
150°-160°	513.8	9.5
160°-170°	331.1	6.1
170°-180°	114.0	2.1
0°-30°	654.4	12.1
0°-40°	1016.3	18.8
0°-60°	1610.5	29.8
0°-90°	1894.5	35.1
90°-120°	578.1	10.7
90°-150°	2551.3	47.2
90°-180°	3510.0	64.9
0°-180°	5404.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	920	920	920	920	920	
5°	920	915	905	912	910	87
15°	875	864	837	822	813	246
25°	794	766	712	680	666	365
35°	684	640	568	518	498	428
45°	559	502	416	359	337	432
55°	425	359	270	222	205	380
65°	287	219	145	118	114	285
75°	153	96	67	61	60	162
85°	36	19	16	16	16	42
90°	1	10	17	22	23	4
95°	56	30	34	38	37	69
105°	264	275	53	62	66	282
115°	498	513	535	152	71	491
125°	705	716	732	738	741	628
135°	872	885	894	902	900	673
145°	1012	1011	1025	1031	1027	632
155°	1114	1107	1116	1121	1115	513
165°	1174	1169	1171	1176	1171	331
175°	1200	1195	1196	1201	1193	114
180°	1198	1198	1198	1198	1198	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	919.7	919.7	919.7	919.7	919.7	919.7	919.7	919.7	919.7	919.7	919.7
2.5°	923.0	922.3	921.5	920.8	920.1	918.8	917.2	915.6	914.0	912.4	913.9
5°	919.7	918.8	917.9	916.9	916.0	914.4	911.9	909.5	907.1	904.7	906.4
7.5°	910.2	909.1	907.9	906.8	905.6	903.6	900.8	898.1	895.2	892.4	892.8
10°	902.2	900.9	899.6	898.3	897.0	894.5	890.8	887.1	883.5	879.7	879.2
12.5°	892.2	890.6	889.0	887.5	885.8	882.7	878.0	873.3	868.5	863.7	862.7
15°	874.7	872.7	870.7	868.6	866.6	862.4	856.1	849.9	843.6	837.3	833.8
17.5°	853.3	850.2	847.1	843.9	840.8	835.3	827.2	819.1	811.1	803.0	798.8
20°	837.3	833.6	829.9	826.2	822.5	816.0	806.7	797.5	788.3	779.0	774.4
22.5°	819.9	815.9	811.7	807.6	803.4	796.1	785.7	775.3	764.8	754.4	748.4
25°	794.0	788.1	782.2	776.2	770.4	761.2	749.1	736.9	724.6	712.4	704.8
27.5°	762.7	756.3	749.8	743.4	736.9	726.8	713.1	699.4	685.6	671.8	663.0
30°	740.8	733.7	726.7	719.7	712.7	701.7	686.9	672.1	657.3	642.5	633.1
32.5°	719.4	711.2	703.0	694.8	686.6	674.9	659.8	644.7	629.7	614.6	603.8
35°	684.1	674.7	665.3	655.8	646.5	633.6	617.3	601.0	584.7	568.4	556.8
37.5°	648.9	638.5	628.1	617.8	607.4	593.5	576.3	558.9	541.5	524.2	511.4
40°	624.2	613.1	602.0	590.9	579.8	565.3	547.4	529.5	511.5	493.6	480.5
42.5°	598.9	587.3	575.5	563.9	552.2	537.0	518.5	500.0	481.4	462.9	449.3
45°	559.3	546.9	534.5	522.1	509.7	493.8	474.4	455.0	435.5	416.1	403.0
47.5°	520.7	507.5	494.4	481.3	468.1	451.6	431.5	411.5	391.4	371.4	358.3
50°	492.7	479.6	466.4	453.3	440.2	423.5	403.1	382.8	362.4	342.1	329.3
52.5°	465.5	451.7	438.0	424.3	410.5	393.7	373.8	353.9	334.0	314.1	301.8
55°	425.3	410.9	396.5	382.0	367.6	350.4	330.4	310.5	290.5	270.5	259.4
57.5°	384.2	369.4	354.6	339.8	325.0	308.0	288.8	269.6	250.4	231.2	221.0
60°	356.2	341.4	326.6	311.9	297.0	280.1	261.1	242.0	223.0	203.9	194.4
62.5°	328.9	314.1	299.3	284.5	269.7	253.2	235.1	217.0	198.8	180.6	171.6
65°	287.1	272.1	257.1	242.2	227.2	211.4	194.8	178.1	161.4	144.8	138.5
67.5°	246.9	232.0	217.1	202.3	187.4	172.4	157.4	142.5	127.5	112.5	109.7
70°	218.9	204.5	190.0	175.6	161.2	147.6	134.9	122.1	109.3	96.5	94.7
72.5°	192.2	178.4	164.6	150.7	136.9	124.9	114.6	104.4	94.2	83.9	82.3
75°	153.1	140.2	127.3	114.3	101.3	91.7	85.4	79.2	72.9	66.6	65.3
77.5°	114.7	103.3	92.0	80.6	69.3	62.0	59.0	56.0	53.0	50.0	49.2
80°	90.7	81.3	71.8	62.5	53.0	47.4	45.5	43.6	41.8	39.9	39.2
82.5°	68.7	61.4	54.1	46.6	39.3	35.0	33.8	32.4	31.2	30.0	29.5
85°	35.8	31.9	28.0	24.1	20.2	18.0	17.4	17.0	16.4	15.8	15.8
87.5°	10.8	10.0	9.3	8.6	7.8	7.6	7.9	8.2	8.5	8.8	8.8
90°	0.9	3.0	5.1	7.3	9.4	11.2	12.7	14.3	15.8	17.4	18.3
92.5°	17.5	17.3	17.1	17.0	16.7	17.0	17.8	18.6	19.3	20.1	20.6
95°	56.3	50.0	43.6	37.3	30.9	28.4	29.8	31.1	32.4	33.8	34.7
97.5°	111.8	93.9	76.0	58.0	40.2	32.8	35.9	39.0	42.2	45.2	46.0
100°	153.4	127.0	100.6	74.3	47.9	36.3	39.5	42.9	46.1	49.4	51.0
102.5°	199.2	193.6	188.0	182.4	176.8	160.4	133.0	105.6	78.2	50.8	52.8
105°	263.5	269.3	275.0	280.8	286.6	263.2	210.6	158.0	105.4	52.8	55.0
107.5°	336.8	341.4	346.1	350.7	355.5	326.3	263.2	200.2	137.1	74.0	71.8
110°	383.9	388.0	392.1	396.1	400.1	374.3	318.6	263.0	207.3	151.6	132.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	428.4	431.9	435.5	439.0	442.6	437.6	423.8	410.1	396.3	382.5	312.3
115°	498.4	501.7	504.9	508.2	511.4	515.5	520.3	525.1	529.9	534.8	445.6
117.5°	560.9	564.6	568.3	571.9	575.6	579.0	582.4	585.7	589.0	592.3	570.7
120°	606.7	609.6	612.5	615.4	618.2	621.4	624.9	628.4	631.9	635.3	637.6
122.5°	645.6	648.6	651.6	654.7	657.7	661.1	664.9	668.6	672.5	676.2	677.6
125°	704.7	707.1	709.6	712.2	714.6	717.7	721.4	725.0	728.7	732.4	733.7
127.5°	758.2	761.0	763.8	766.5	769.3	772.0	774.8	777.5	780.2	783.0	785.0
130°	792.1	795.2	798.3	801.4	804.5	807.1	809.2	811.3	813.4	815.5	817.7
132.5°	826.8	829.5	832.1	834.7	837.3	839.7	841.8	843.9	846.0	848.2	849.9
135°	871.9	875.0	878.1	881.2	884.2	886.6	888.4	890.1	891.9	893.6	895.5
137.5°	917.5	919.7	921.8	924.0	926.1	928.1	930.2	932.1	934.1	936.0	937.9
140°	947.3	948.8	950.4	951.9	953.5	955.3	957.4	959.5	961.6	963.8	965.5
142.5°	972.2	973.6	975.0	976.4	977.8	979.7	982.1	984.6	987.0	989.4	991.0
145°	1011.5	1011.2	1011.1	1010.9	1010.6	1012.2	1015.5	1018.7	1022.1	1025.3	1026.6
147.5°	1045.6	1044.9	1044.2	1043.4	1042.7	1043.9	1047.2	1050.4	1053.6	1056.9	1057.9
150°	1067.8	1066.4	1065.1	1063.7	1062.4	1063.2	1066.3	1069.4	1072.5	1075.5	1076.8
152.5°	1086.5	1085.0	1083.5	1082.0	1080.5	1081.2	1084.1	1087.0	1090.0	1092.9	1094.1
155°	1113.7	1112.0	1110.3	1108.5	1106.8	1107.1	1109.4	1111.7	1114.0	1116.3	1117.4
157.5°	1135.1	1133.6	1132.1	1130.7	1129.2	1129.3	1130.9	1132.5	1134.1	1135.7	1137.0
160°	1147.5	1146.4	1145.2	1144.0	1142.9	1142.9	1144.0	1145.2	1146.4	1147.5	1148.7
162.5°	1158.6	1157.5	1156.3	1155.1	1154.0	1153.9	1154.9	1155.9	1156.9	1157.9	1159.2
165°	1173.5	1172.3	1171.2	1170.0	1168.9	1168.6	1169.1	1169.8	1170.4	1170.9	1172.2
167.5°	1184.6	1183.5	1182.3	1181.1	1180.0	1179.7	1180.2	1180.7	1181.3	1181.9	1183.2
170°	1190.8	1189.7	1188.5	1187.4	1186.3	1185.9	1186.3	1186.6	1187.0	1187.4	1188.7
172.5°	1195.0	1193.8	1192.7	1191.6	1190.4	1190.0	1190.4	1190.7	1191.2	1191.6	1192.9
175°	1200.4	1199.1	1197.7	1196.4	1195.0	1194.5	1194.9	1195.3	1195.6	1196.0	1197.4
177.5°	1201.3	1200.2	1199.1	1198.0	1196.9	1196.5	1196.6	1196.8	1196.9	1197.1	1198.2
180°	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	919.7	919.7	919.7	919.7	919.7	919.7	919.7	919.7
2.5°	915.3	916.8	918.3	918.8	918.6	918.3	918.0	917.7
5°	908.0	909.7	911.3	911.9	911.3	910.8	910.3	909.7
7.5°	893.3	893.8	894.3	894.1	893.1	892.2	891.2	890.2
10°	878.6	878.1	877.5	876.7	875.5	874.5	873.3	872.2
12.5°	861.8	860.8	859.7	858.3	856.5	854.7	852.8	850.9
15°	830.3	826.7	823.2	820.5	818.7	816.8	815.0	813.2
17.5°	794.7	790.4	786.3	782.6	779.4	776.2	773.1	769.9
20°	769.8	765.2	760.5	756.2	752.1	748.0	744.0	739.9
22.5°	742.5	736.5	730.6	726.1	723.0	720.0	717.0	714.0
25°	697.2	689.7	682.1	676.9	674.2	671.4	668.6	665.9
27.5°	654.1	645.3	636.5	629.8	625.4	621.0	616.6	612.2
30°	623.7	614.2	604.8	597.6	592.6	587.6	582.6	577.6
32.5°	593.0	582.3	571.5	563.8	559.1	554.4	549.7	545.0
35°	545.2	533.5	521.9	514.0	509.9	505.8	501.8	497.7
37.5°	498.5	485.7	472.9	464.1	459.4	454.8	450.1	445.5
40°	467.2	454.1	441.0	432.0	427.2	422.4	417.6	412.8
42.5°	435.8	422.2	408.6	399.5	394.8	390.2	385.6	380.8
45°	389.9	376.7	363.6	354.8	350.4	345.9	341.5	337.0
47.5°	345.3	332.2	319.1	310.6	306.6	302.6	298.5	294.5
50°	316.6	303.8	291.1	282.7	278.8	274.9	271.1	267.2
52.5°	289.5	277.1	264.8	256.9	253.3	249.7	246.1	242.6
55°	248.3	237.2	226.1	218.8	215.3	211.7	208.2	204.7
57.5°	210.8	200.7	190.5	183.9	181.0	178.1	175.0	172.1
60°	185.1	175.6	166.2	160.0	157.0	154.1	151.1	148.1
62.5°	162.7	153.6	144.6	139.3	137.5	135.7	134.0	132.2
65°	132.2	126.0	119.7	116.3	115.7	115.1	114.5	114.1
67.5°	106.7	103.9	101.0	99.2	98.7	98.1	97.5	96.9
70°	92.9	91.0	89.1	87.9	87.1	86.3	85.6	84.9
72.5°	80.8	79.2	77.7	76.7	76.2	75.8	75.3	74.9
75°	64.0	62.7	61.4	60.7	60.5	60.3	60.1	59.9
77.5°	48.4	47.7	47.0	46.5	46.1	45.9	45.6	45.2
80°	38.5	37.7	37.0	36.6	36.6	36.6	36.6	36.6
82.5°	29.1	28.6	28.2	28.0	28.0	28.0	28.0	28.0
85°	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8
87.5°	8.9	8.9	9.0	9.0	9.1	9.2	9.3	9.4
90°	19.2	20.2	21.2	21.9	22.3	22.7	23.0	23.4
92.5°	21.1	21.6	22.1	22.5	22.7	22.9	23.2	23.4
95°	35.7	36.7	37.7	38.1	37.8	37.7	37.4	37.3
97.5°	46.8	47.5	48.3	48.8	49.1	49.3	49.5	49.7
100°	52.5	54.1	55.6	56.5	56.9	57.3	57.7	58.0
102.5°	54.8	56.8	58.8	60.1	60.6	61.1	61.7	62.2
105°	57.1	59.2	61.3	62.8	63.6	64.3	65.1	65.9
107.5°	69.7	67.5	65.4	64.7	65.5	66.2	67.0	67.8
110°	113.2	93.9	74.6	65.4	66.1	66.9	67.7	68.5



TEST NUMBER: P331702-930

CATALOG NUMBER: SA2XXRDIP-C675D1080U930-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	242.1	171.8	101.5	66.7	67.3	67.9	68.6	69.1
115°	356.4	267.3	178.1	126.5	112.7	98.8	85.0	71.1
117.5°	549.2	527.6	506.1	472.5	426.9	381.3	335.7	290.2
120°	639.9	642.2	644.6	632.7	606.7	580.7	554.6	528.7
122.5°	679.0	680.4	681.8	679.9	674.9	669.8	664.8	659.7
125°	735.1	736.4	737.8	738.7	739.3	739.9	740.5	741.0
127.5°	786.9	788.9	790.8	791.9	792.0	792.1	792.2	792.3
130°	819.8	821.9	824.0	825.0	824.8	824.6	824.4	824.3
132.5°	851.7	853.6	855.4	856.2	856.0	855.8	855.7	855.4
135°	897.4	899.4	901.2	902.0	901.6	901.2	900.9	900.5
137.5°	939.8	941.7	943.5	944.2	943.5	942.9	942.2	941.6
140°	967.3	969.0	970.7	971.1	970.1	969.1	968.2	967.3
142.5°	992.5	994.2	995.7	996.1	995.1	994.1	993.2	992.2
145°	1028.0	1029.3	1030.7	1030.9	1030.0	1029.0	1028.0	1027.0
147.5°	1058.8	1059.9	1060.9	1060.9	1060.1	1059.3	1058.5	1057.7
150°	1077.9	1079.0	1080.2	1080.3	1079.3	1078.4	1077.4	1076.4
152.5°	1095.2	1096.4	1097.6	1097.5	1096.2	1094.9	1093.6	1092.4
155°	1118.6	1119.8	1121.0	1120.7	1119.2	1117.7	1116.1	1114.6
157.5°	1138.3	1139.6	1140.9	1140.8	1139.4	1137.8	1136.4	1134.8
160°	1149.8	1151.0	1152.1	1152.0	1150.7	1149.3	1148.0	1146.6
162.5°	1160.5	1161.8	1163.2	1162.9	1161.3	1159.7	1158.0	1156.3
165°	1173.6	1174.9	1176.3	1176.3	1174.9	1173.6	1172.2	1170.9
167.5°	1184.5	1185.9	1187.2	1187.0	1185.3	1183.6	1181.9	1180.1
170°	1190.1	1191.4	1192.8	1192.5	1190.8	1189.1	1187.4	1185.6
172.5°	1194.3	1195.6	1196.9	1196.8	1195.0	1193.3	1191.6	1189.8
175°	1198.7	1200.1	1201.4	1201.2	1199.2	1197.3	1195.4	1193.4
177.5°	1199.2	1200.3	1201.4	1201.3	1199.9	1198.5	1197.1	1195.7
180°	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8

(END OF REPORT)