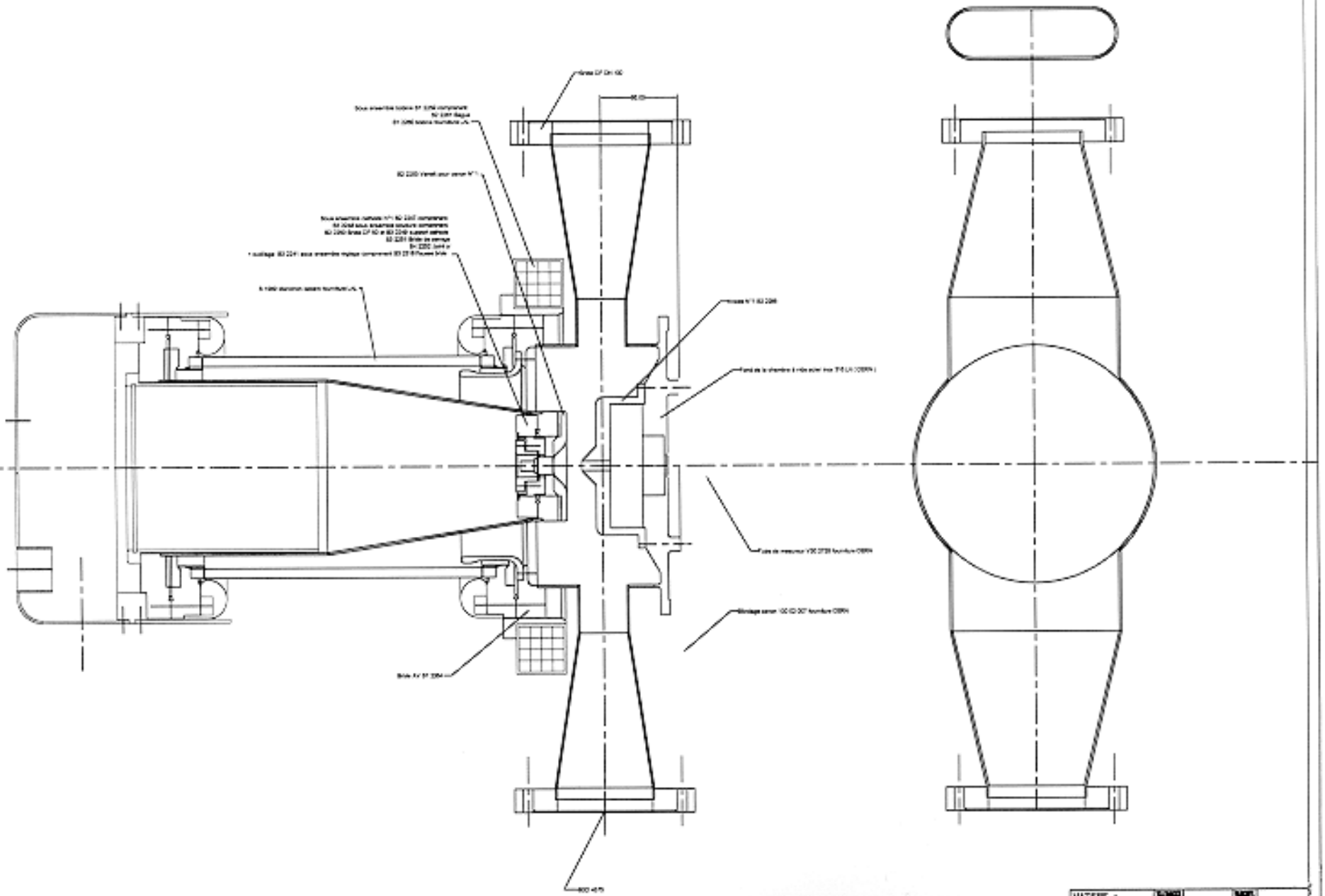
SUMMARY OF THE LAL WORK

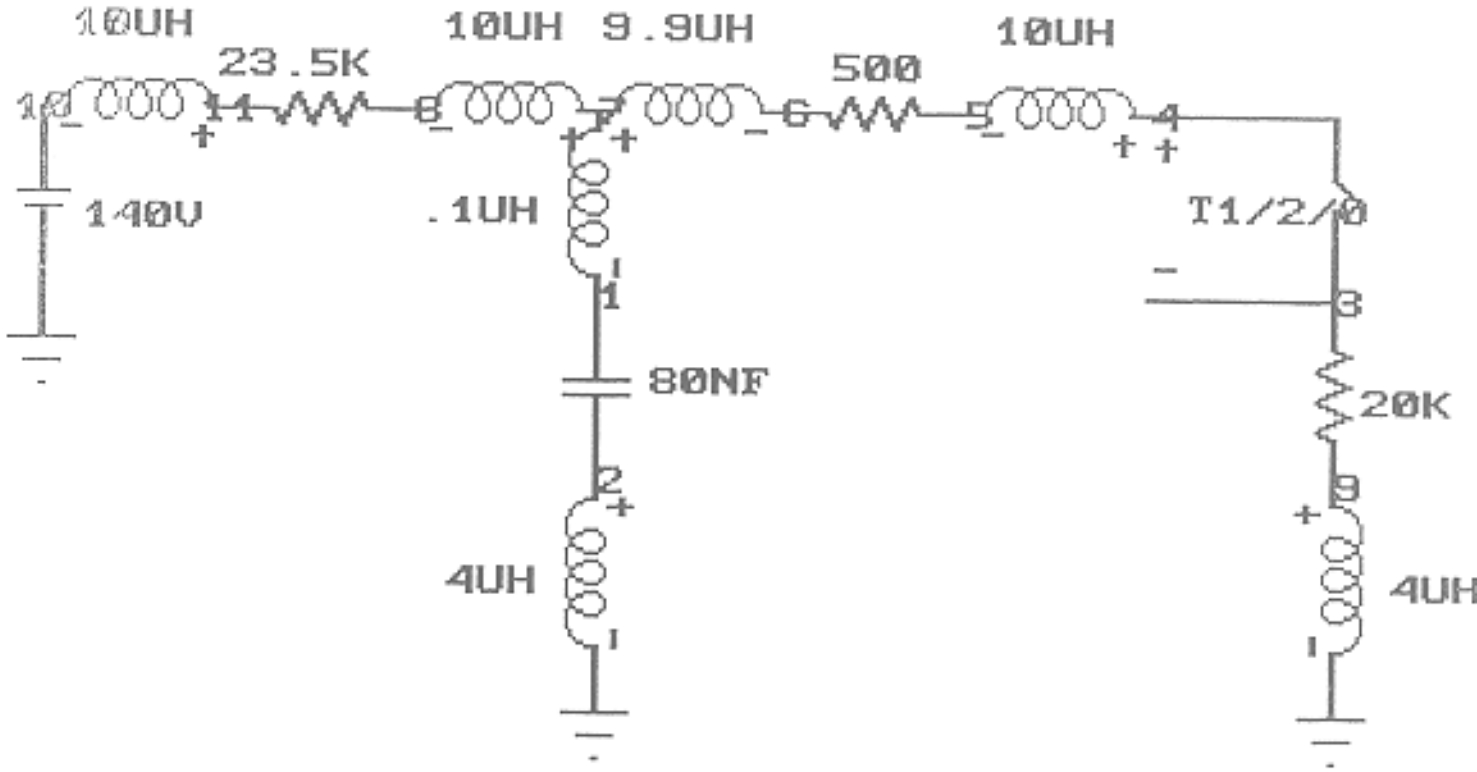
J. Le Duff



MATIERE :

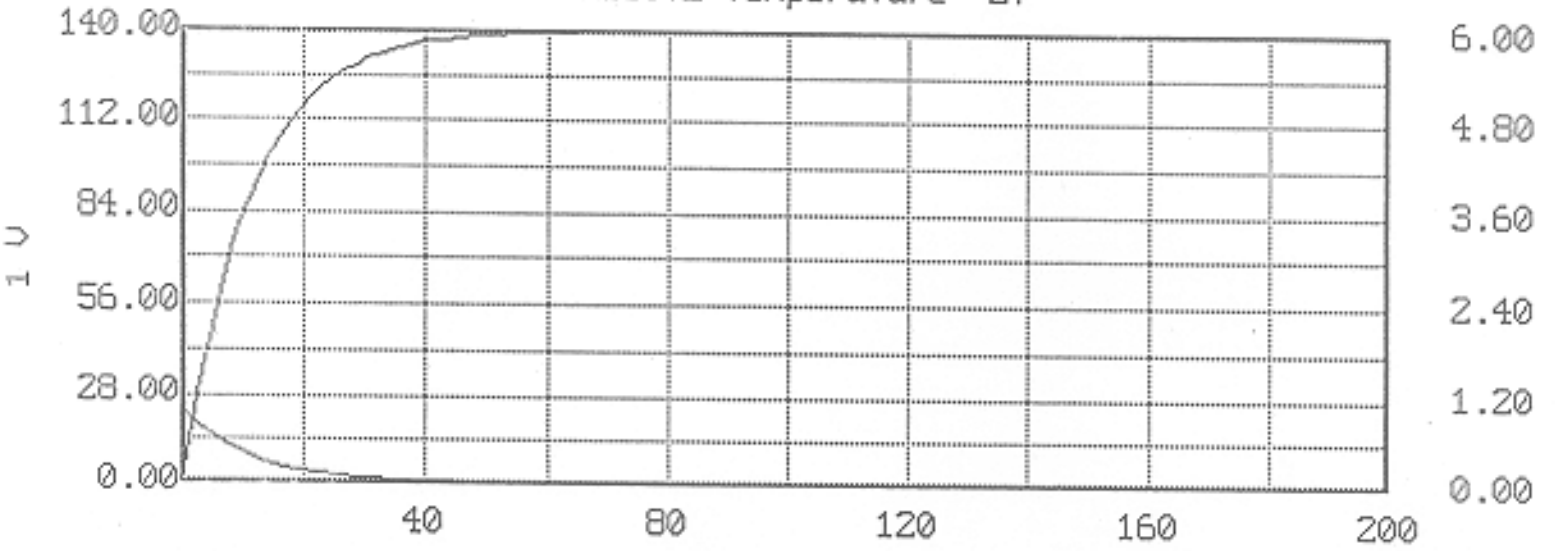
CTF3
CANON 0 type CLIO
ENSEMBLE

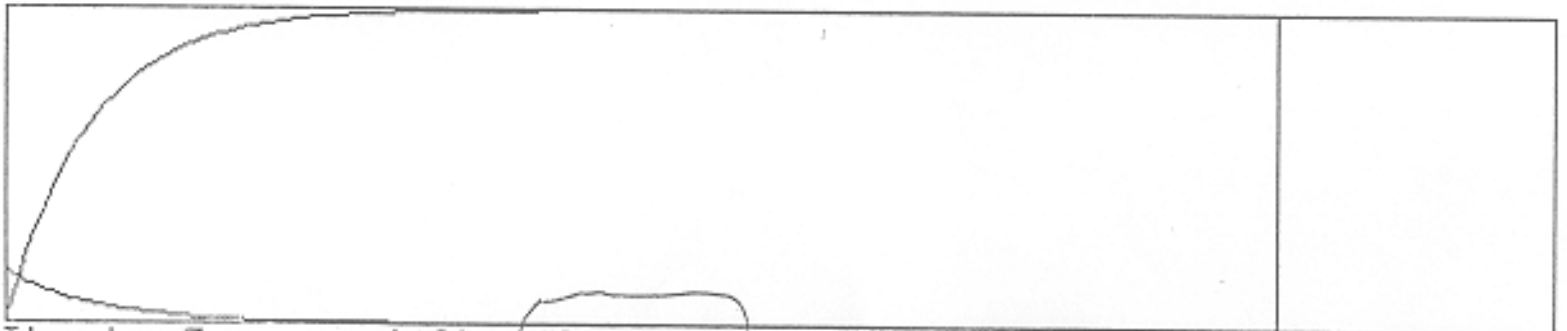
IS 0E 4574



le schéma
avec

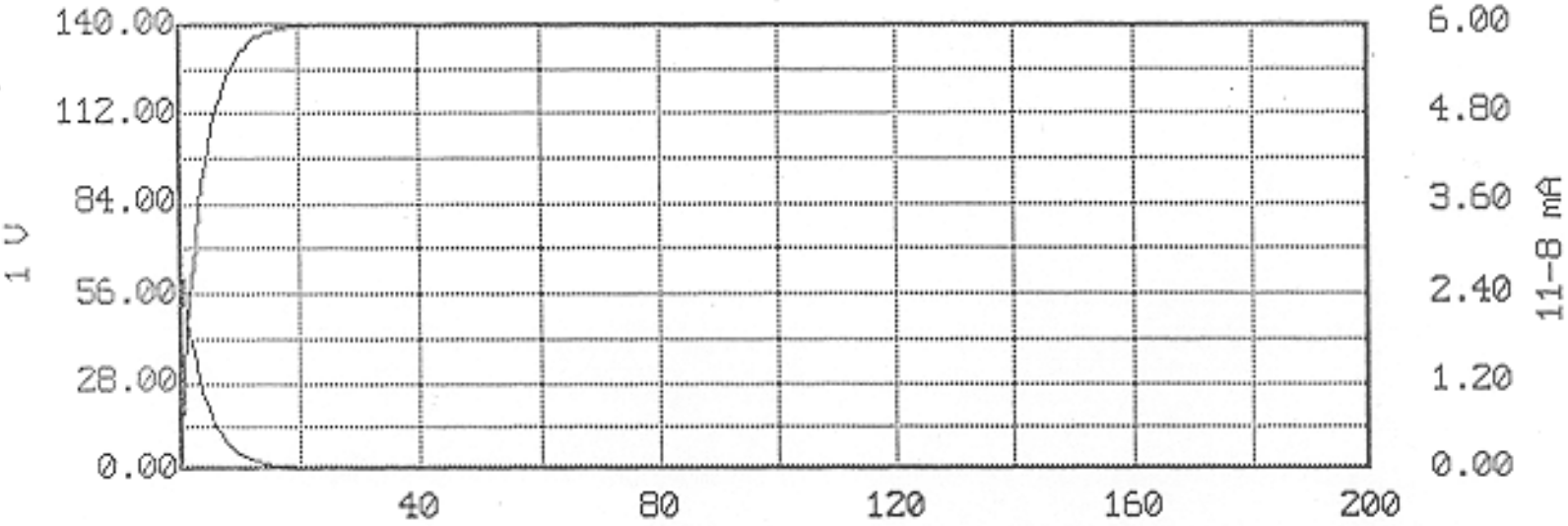
CHA150VZ Temperature= 27

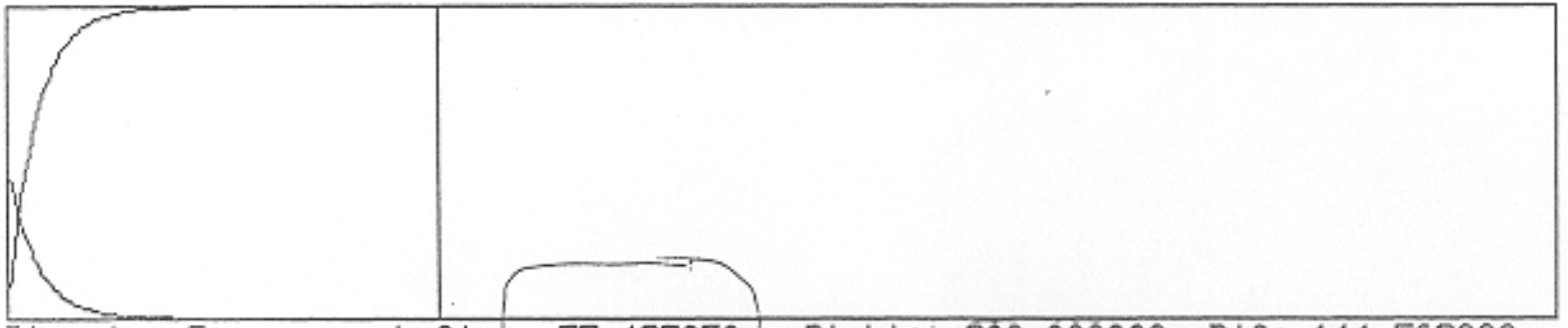




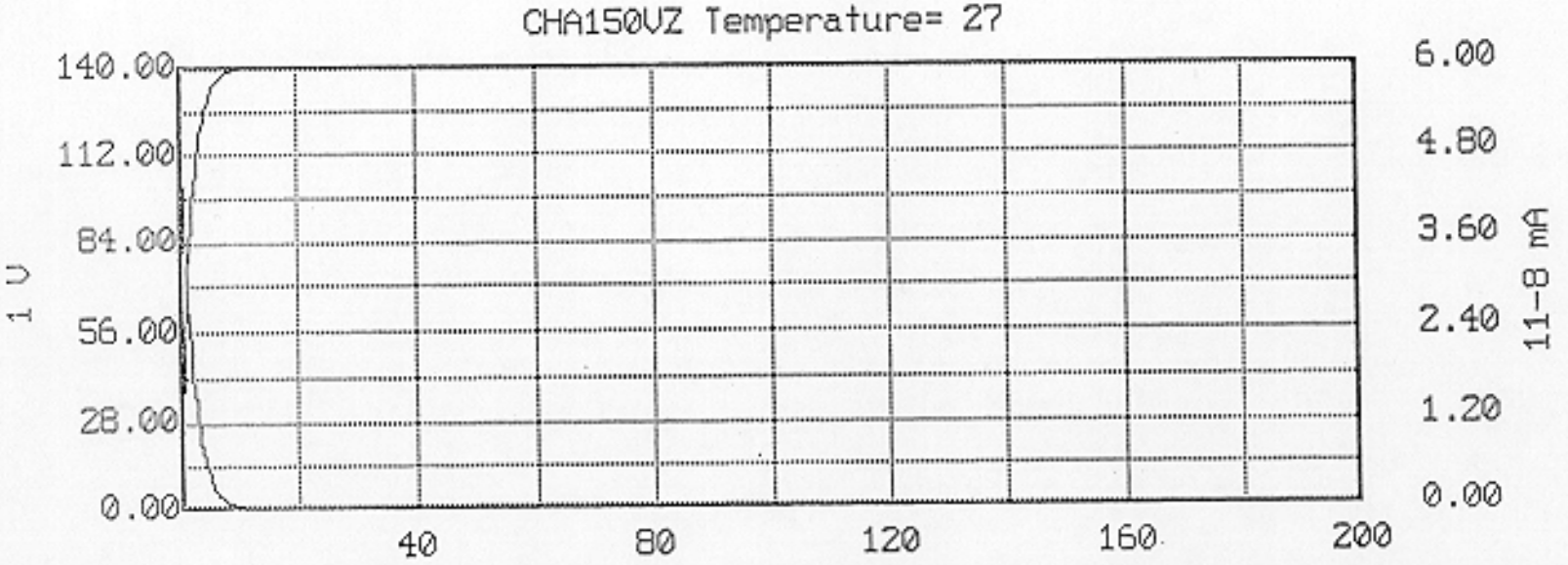
Time in mS	Left:	164.627700	Right:	200.000000	Dif:	35.372330
1 V	Left:	140.000	Right:	140.000	Dif:	0.000
11.8 mA	Left:	0.000	Right:	0.000	Dif:	0.000

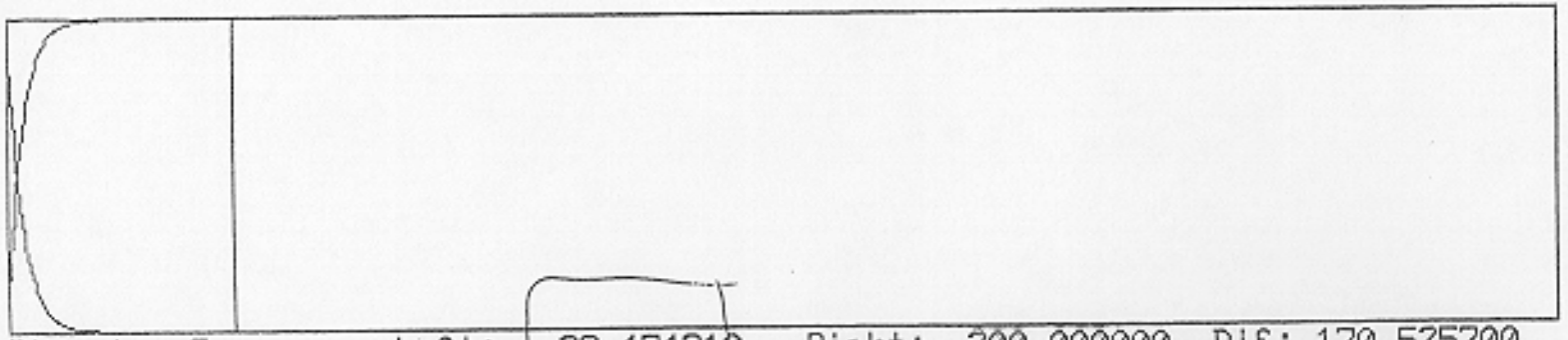
CHA150VZ Temperature= 27





Time in mS	Left:	55.437050	Right:	200.000000	Dif:	144.563000
1 V	Left:	140.000	Right:	140.000	Dif:	0.000
11-8 mA	Left:	0.000	Right:	0.000	Dif:	0.000

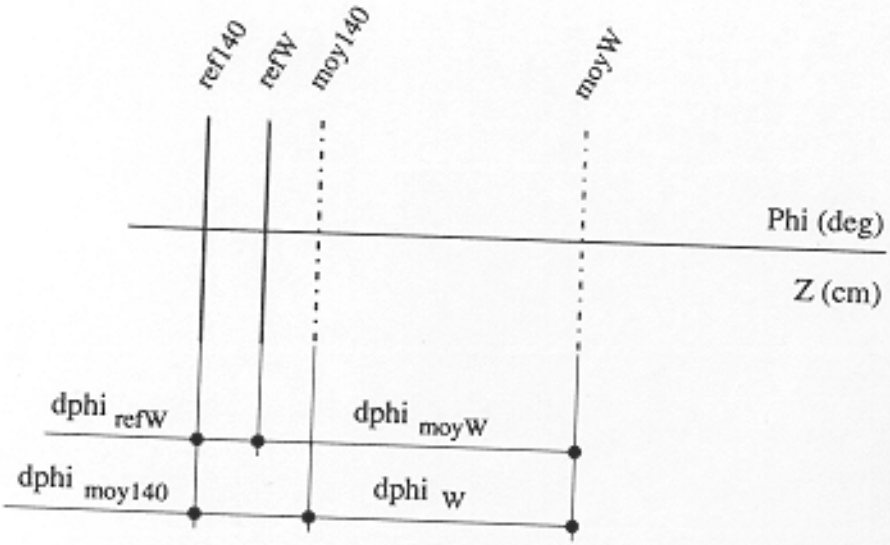




Time in mS	Left:	29.474310	Right:	200.000000	Dif:	170.525700
1 V	Left:	140.000	Right:	140.000	Dif:	0.000
11-8 mA	Left:	0.000	Right:	0.000	Dif:	0.000

Depending on W_{Gun} : position of the bunch

with respect to the bunch reference (W=140 KeV)



$$dphi_W = (dphi_{refW} + dphi_{moyW}) - dphi_{moy140}$$

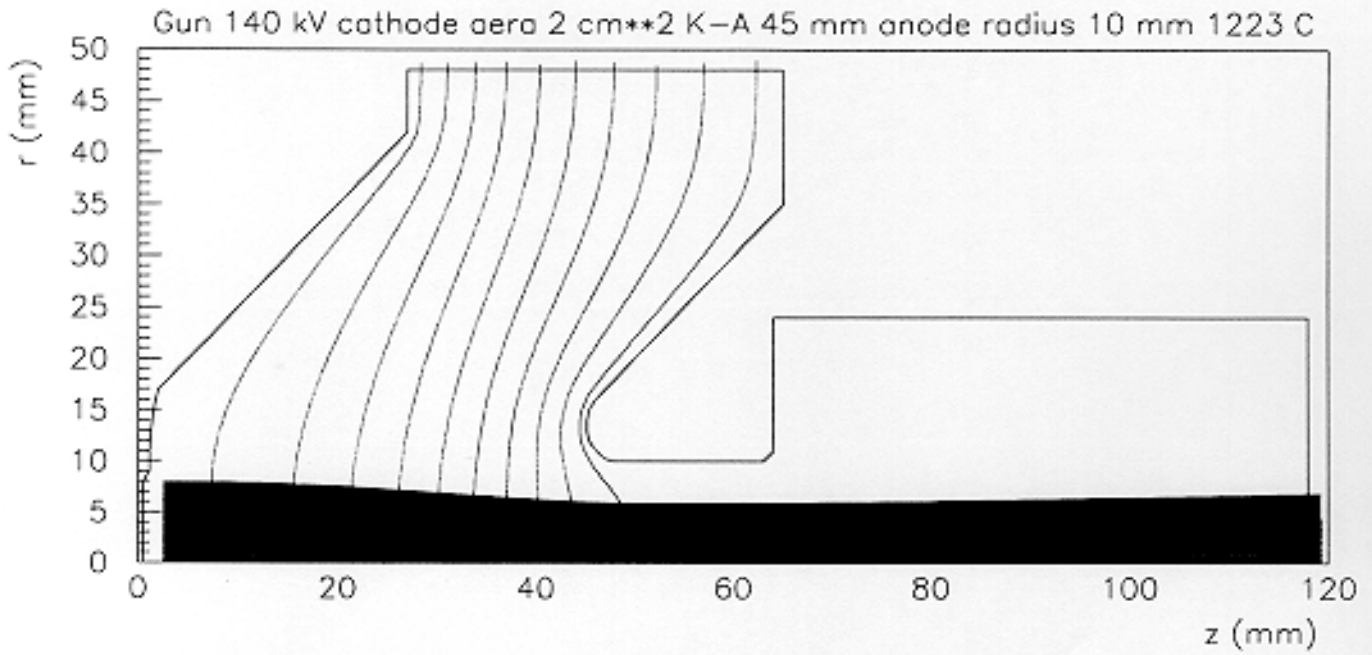
Z (cm)	W (KeV)	135	139	140	141	145
110	$dphi_{refW}$	2.7	-0.2	0.	0.2	-0.2
	$dphi_{moyW}$	26.45	7.794	4.697	0.9724	-18.02
	$dphi_W$	24.453	2.897	0.	-3.5246	-22.917
464.56	$dphi_{refW}$	1.6	0.2	0.	-0.1	-0.8
	$dphi_{moyW}$	4.662	-0.6456	-0.089	0.311	2.586
	$dphi_W$	-2.973	-0.3566	0.	0.3	1.875

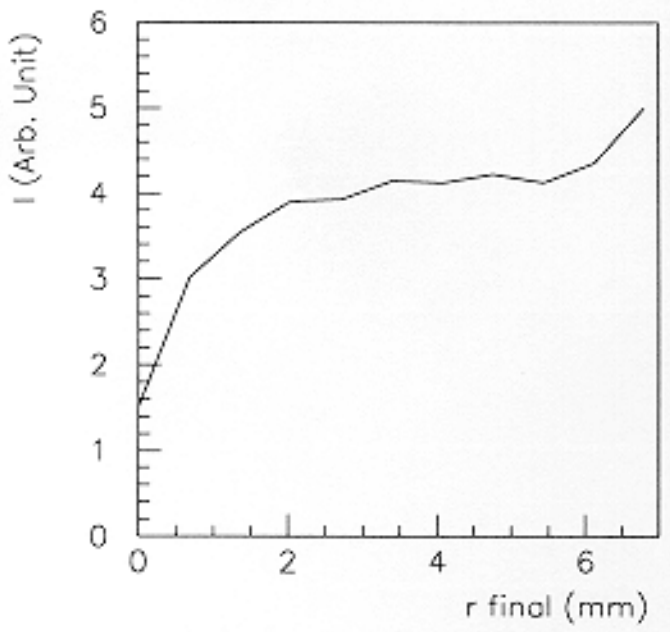
dphi* (deg)

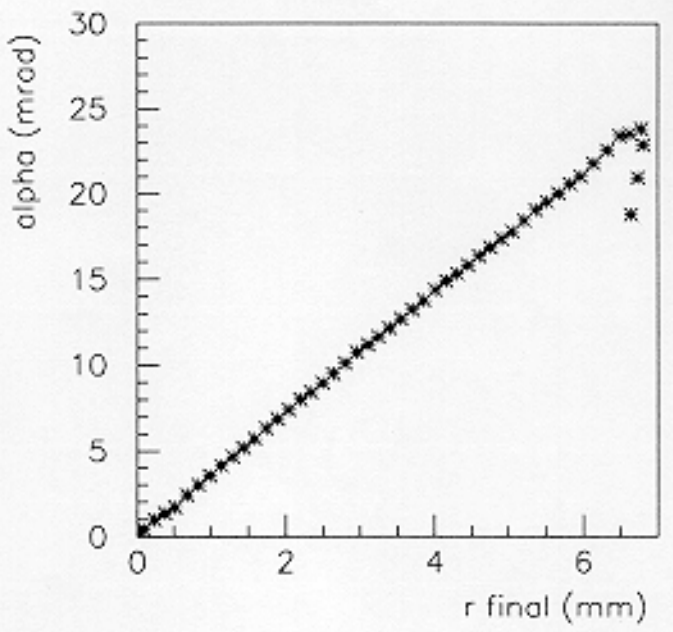
Y. Thiéry

B. Mouton
Electron gun for CTF3
cathode 2 cm^2, radius 8 mm
Tc= 1223 ^{0}K spc = 0.5
anode radius 10 mm
results in z = 120. mm

Distance K-A mm	Voltage kV	Current A	Perveance $\mu A/V^{1.5}$	Max rays used	RMS Emittance π mm mrad	RMS Emittance *normalized* π mm mrad	Maximum beam radius mm	Maximum electric field MV/m
35	140	12.23	0.233	96	15.74	12.4	10.04	12.43
40	140	8.55	0.163	96	12.56	9.87	8.06	11.17
45	140	6.30	0.120	96	11.02	8.67	6.80	10.04
35	150	12.56	0.233	96	16.06	13.1	10.01	13.32
40	150	9.47	0.163	96	12.76	10.4	8.04	11.97
45	150	6.98	0.120	96	11.18	9.15	6.79	10.76


Gun 140 kV cathode aera 2 cm**2 K-A 45 mm anode radius 10 mm 1223 C
r (mm)
z (mm)
0
5
10
15
20
25
30
35
40
45
50
0
20
40
60
80
100
120


I (Arb. Unit)
r final (mm)
0
1
2
3
4
5
6
0
2
4
6


alpha (mrad)
r final (mm)
0
5
10
15
20
25
30
0
2
4
6

B. Mouton
Electron gun for CTF3
cathode 3 cm^2, radius 10 mm
Tc= 1223 ^{0}K spc = 0.5
anode radius 12 mm
results in z = 120. mm

Distance K-A mm	Voltage kV	Current A	Perveance $\mu A/V^{1.5}$	Max rays used	RMS Emittance π mm mrad	RMS Emittance *normalized* π mm mrad	Maximum beam radius mm	Maximum electric field MV/m
35	140	20.14	0.384	100	22.54	17.7	13.75	12.27
40	140	14.29	0.272	100	17.88	14.0	11.31	10.98
45	140	10.60	0.203	100	15.24	12.0	9.66	9.87
35	150	22.32	0.384	100	22.84	18.6	13.72	13.15
40	150	15.84	0.272	100	18.08	14.7	11.29	11.77
45	150	11.78	0.203	100	15.42	12.6	9.65	10.58

2000/10/24 09.49