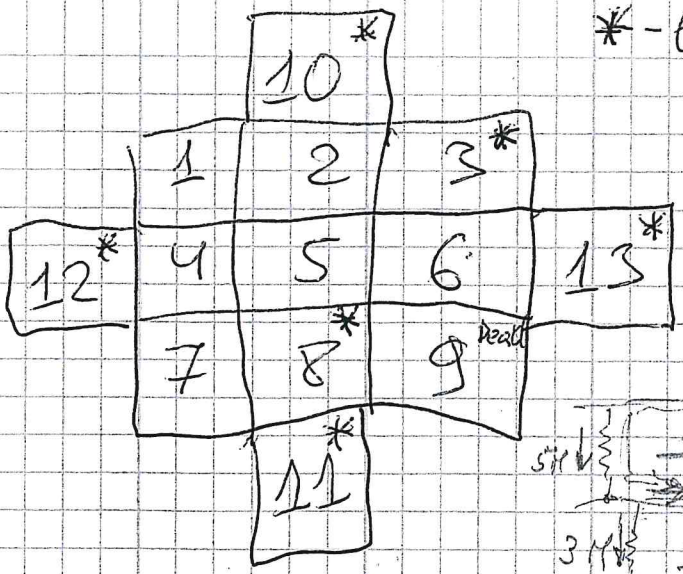
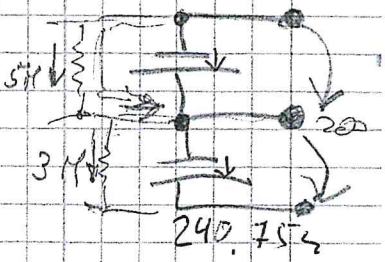
10-3+6

* - low stat





ds

ch 8 - double peak - repaired

ch 3 - repaired

2, 3, 1, 4, 5, 6*, 7, 8?, 9, 10, 11*, 12, 13

6

V_{PC}	I_{PC}
-50	-0,1510
-40	-0,1300
-30	-0,1310
-20	-0,1330
-10	-0,1390
5	-0,1790

? QDC (ch-8) = 0.05 pC

0,20 pC

Run	B	Q_{SPE}	λ
22	0	3.41	0.06
23	-0.5	0.96	0.057
24	-1.0	0.35	0.045
25	-1.5	~0.11	0.015 → 25 mV ohs
		MCP=925V	
26	-1.5	0.32	0.049
unstable		MCP=~~975V~~ → 950 V	
27	-1.5	0.58	0.048
		MCP=875V	
28	-1.5	0.91	0.051
		Sat. March 23	
	B=0, MCP-875V, PC=100V		
29	0	3.95	λ=0.074 ; σ_t=120 ps
		PC=50V	
30	0	3.52	λ=0.063 ; σ_t≈115 ps
		MCP=900V	
31	0	5.10	λ=0.052

		~~925V~~		
32	-1.0T	0.91		λ=0.055
33	975V	-1.0T		HV-trip
34	975V	-1.0T	Q=1.60	λ=0.059
35	875V	+0.5T	Q=0.91	λ=0.056
36	925V	+0.5T		
37	925V	+1.0T		
38	975V	+1.0T	Q=1.63	λ=0.057
39	875V	+1.0T	Q=0.32	λ=0.045
40	PC 100V 875V	+1.0T	Q=0.56	λ=0.056
41	S+D	+1.5T		λ=0.014
42	925V	+1.5T	Q=0.32	λ=0.045
43	975V	+1.5T		
44	PC 100V 875V	+1.5T	Q=0.12	λ=0.022
45	~~925V~~ ~~-0.5T~~ 925 PC=100V	+1.5T	Q=	λ=0.05(
46	PC=150V 875V	+1.5T	Q=0.13	λ=0.027

Run	MCP V	B	same sign of current
47	925V	-0.5T	

Rotated $\theta = +23°$ RC low

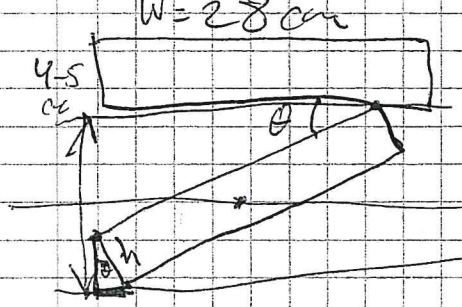
48	STD	0	$\lambda = 0.060$ $Q = 3.03$	PC ⊏ θ=+	
49	STD	-0.5T	$Q = 0.79$		$\lambda = 0.039$
50	925V	-0.5T	$Q = 1.78$ pC		$\lambda = 0.044$
51	STD	-1.0T	$Q = 0.1$ pC	$\lambda = 0.009$	8.2 ± 1
52	925V	-1.0T	$Q = 0.52$ pC	$\lambda = 0.035$	17
53	975V	-1.0T	$Q = 1.88$	$\lambda = 0.059$	±23 ±13 0
54	975V	-1.5T	$Q = 0.41$	$\lambda = 0.03$	5 16 ± 10
55	925V	-1.5T	$Q \sim 0.1$	$\lambda = 0.004$	1.2TB
56	STD	-1.5T		$\lambda = 0$	
57	875/150 PC	-1.5T		$\lambda = 0$	
58	875/200	-1.5T		$\lambda = 0.00004$	
59	925/150	-1.5T	$Q \sim 0.1$	$\lambda = 0.009$	
60	925/200	-1.5T	$Q \sim 0.1$	$\lambda = 0.012$	
61	925/400 gaps	-1.5T		$\lambda = 0.006$	
62	~~975~~ 200/400 MCP+	-1.5T		$\lambda = 0.005$	

$\frac{150V}{0.14cm} \sim 1 \frac{kV}{cm}$

PC
MCP
1.4 mm

1.480	positive I
−1.483	negative I

Bore = 17 cm → 21 cm outside



$H = W \cdot \sin\theta + h \cdot \cos\theta$

$H = 28\text{cm} \cdot \sin 23 + 4\text{cm} \cdot \cos 20$

10.94 + 3.76

14.7 cm

35°

$H = 21\text{cm} = 28\text{cm} \sin 55^\circ + 4\text{cm} \cos 35^\circ$

16.1 + 3.3 cm

19.4 cm

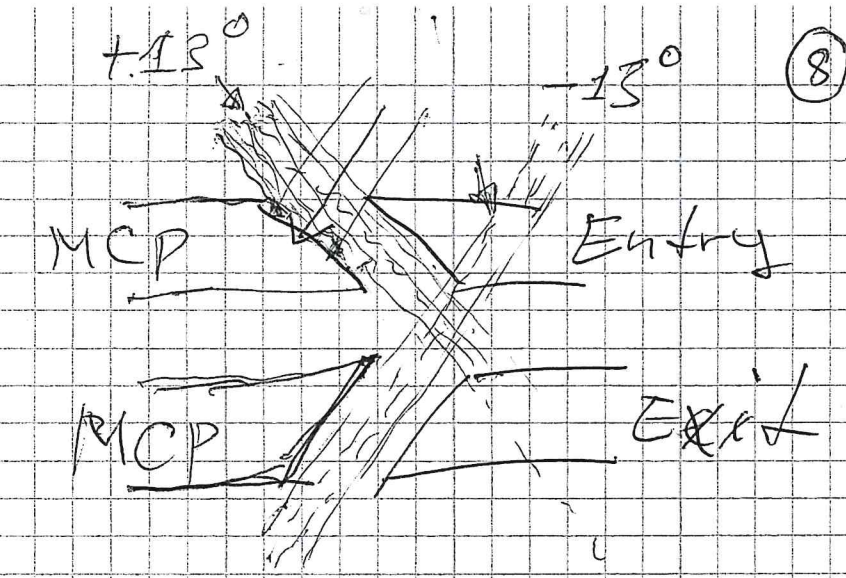
Run @ = +25°

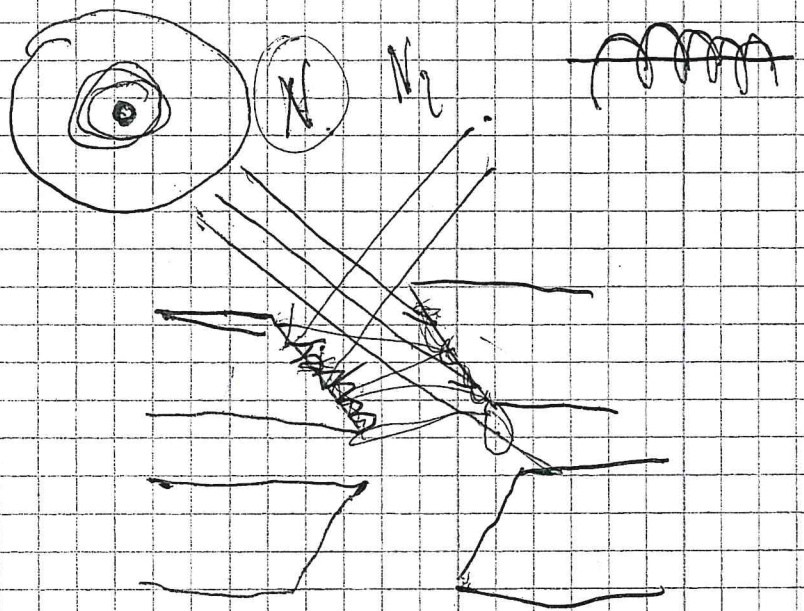
Run				
63	STD	+0.5T	Q = 0.88	λ = 0.039
64	925V	+0.5T	Q = 1.99	λ = 0.042
65	STD	+1.0T		
66	925V	+1.0T		
67	975V	+1.0T		
68	975V	+1.5T	Q = 0.50	λ = 0.032
69	925V	+1.5T		
70	STD	+1.5T		
*71	975/150 PC V	+1.5T	Q = 0.56	λ = 0.0495
72	975	−1.5	Q = 0.41	λ = 0.030 R = 1.48 Compr. 54
73	975/150 PC	−1.5	Q = 0.45	λ = 0.046
74	975/200 Pc	−1.5T	Q = 0.48	λ = 0.050

inclination -23° ($\pm 0.1^{\circ}$) (7)

75	STD	0	Q = 3,33 pC	λ = 0.058
76	STD	-0,5T	Q = 0.76	λ = 0.056
77	925V	- 0.5T	Q = ~~1.68~~ pC	λ = 0,062
78	~~925~~ V	- 1.0T	Q = 0,76 pC	λ = 0,056
~~79~~	975V	- 1.0T	(*) Trips	
79	875 STD	- 1.0T		
80	STD	- 1.5T	Q =	$\lambda = 10^{-4}$ ~~1.474~~
81	~~92~~5V	- 1.5T	Q = 0,25 pC	λ = 0.034
82	975	- 1.5T	Q = 0.65	λ = 0.053
83	~~950~~ 950/150 pC	- 1.5T		
84	950/150 pC	- 1.5T	Q = 0.50	λ = 0,063
85	950/50 pC	- 1.0T	Q = 1.14	λ = 0.059

*Unstable at 975





Inclination = -13°

86	STD	0T	Q = 3.41	λ = 0.059
87	STD	-0.5T	Q = 0.69	λ = 0.058
88	925	-0.5T	Q = 1.643	λ = 0.065
89	925	-1.0T	Q = 0.645	λ = 0.060
90	950	-1.0T	Q = 0.905	λ = 0.063
91	STD	-1.0T	Q = 0,20	λ = 0,035
92	STD	-1.5T	Q =	λ =
93	925	-1.5T	Q = 0,1	λ = 0,024
94	950	-1.5T	Q = 0,29 pC	λ = 0.043
95	975	-1.5T	Q = 0.47	λ = 0.056
96	975/1.50 pC	-1.5T	Q = ~~0.61~~	λ = 0,065 ~~λ = 0.024~~
97	950/1.50 pC	-1.5T		

1T → 0.37T outside (10)

B↑↓ θ = 23°

	0	0.5/925	1.0/975	1.5/975	1.5/150 (925)
↑	48	50	53	54	73
↓		64	67	68	71

B↑↓ θ = −13°

	0	0.5/925	1.0/950	1.5/950	1.5/150 (950)
↑	86/187	88/203	90/201	94/200	97/195
↓	187	189	191	195	197 (975)

B↑↓ θ = 0°

	0	0.5/925	1.0/975	1.5/975	1.5/150 (975)
↑	22	152	34	28	153
↓	30	36	38	95	154

Inclination +15° ±1° (11)

98	STD	0T	Q_s = 3.57	λ = 0.066
99	STD	−0.5T	Q = 0.98	λ = 0.052
100	925	−0.5T	Q = 0.78	λ = 0.053
101	925V	−1.0T		
102	975V	−1.0T	Q = 1.60 pC	λ = 0.051
103	STD	−1.0T	Q = 0.24 pC	λ = 0.035
104	STD	−1.5T	Q ~ 0.1 pC	λ = 0.0025
105	925V	−1.5T	Q = 0.21 pC	λ = 0.0316
106	975V	−1.5T	Q = 0.75 pC	λ = 0.045
107	150 pC/975V	−1.5T	Q = 0.81 pC	λ = 0.057
108	150 pC/975V/300 gap	−1.5T	Q = 0.96 pC	λ = 0.0596
109	STD	−1.5T		λ = 0.0023

Inclination −15°

110	STD	0T	Q=3,37pC	λ=0,057
111	STD	−0.5T	Q=0,68pC	λ=0,055
112	925V	−0.5T	Q=1.59pC	λ=0.062
113	925V	−1.0T	Q=0,67pC	λ=0,056
114	~~975~~ 950V	−1,0T	Q=0.989pC	λ=0.059
115	STD	−1.0T	Q=0.16	λ=0,029
116	STD	−1,5T		λ=0,0003
117	925V	−1,5T	Q~0,1	λ=0.018
118	975V	−1,5T	Q=0,502	λ=0,046
119	150/975V	−1,5T	Q=0.605	λ=0,055
120	950V	−1,5T	Q=0.215	λ=0.035

Inclination −10°

121	STD	B=0	Q=3.37pC	λ=0.059
122	STD	−0.5T	Q=0.73pC	λ=0.062
123	925V	−0.5T	Q=1.48pC	λ=0.063
124	925V	−1.0T	Q=0.75	λ=0.061
125	950V	−1.0T	Q=1.05pC	λ=0.063
126	STD	−1.0T	Q=0.23pC	λ=0.047
127	STD	−1.5T	Q=0.1pC	λ=0.0054
128	925	−1.5T	Q=0.214	λ=0.045
129	950	−1.5T	Q=0.40	λ=0.056
130	975	−1.5T	Q=0.69pC	λ=0.060
131	975,150pC	−1.5T	Q=0.77pC	λ=0.073

Missing: B-up (EB)

① $\theta = 0°$; $B = 0,5\,T$, 925V | $+1,5\,T$ / 975 / 150V

② $\theta = 0°$, $B = 1,0\,T$, 950V

③ $\theta = 0°$, $B = -1,5\,T$, 950V / (3a) 150V PC

④ $\theta = +25°$, $B = 1\,T$, 950V

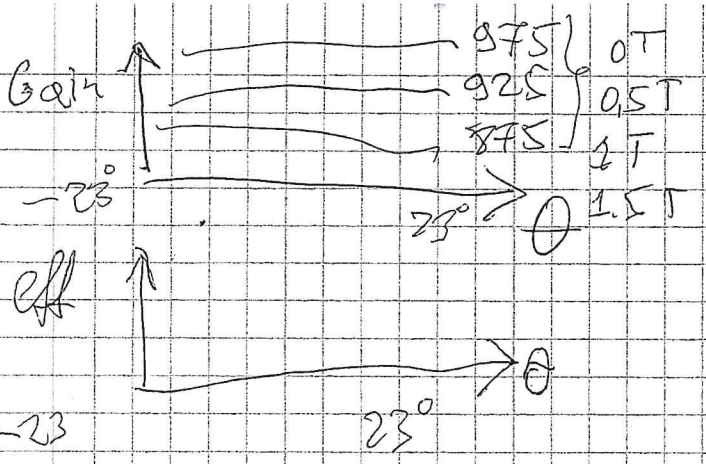
⑤ $\theta = +23°$, $B = -1,5\,T$, 950V

⑥ $\theta = +13°$, $B = -1\,T$, 950V

⑦ $\theta = +15°$, $B = -1,5\,T$, 950V

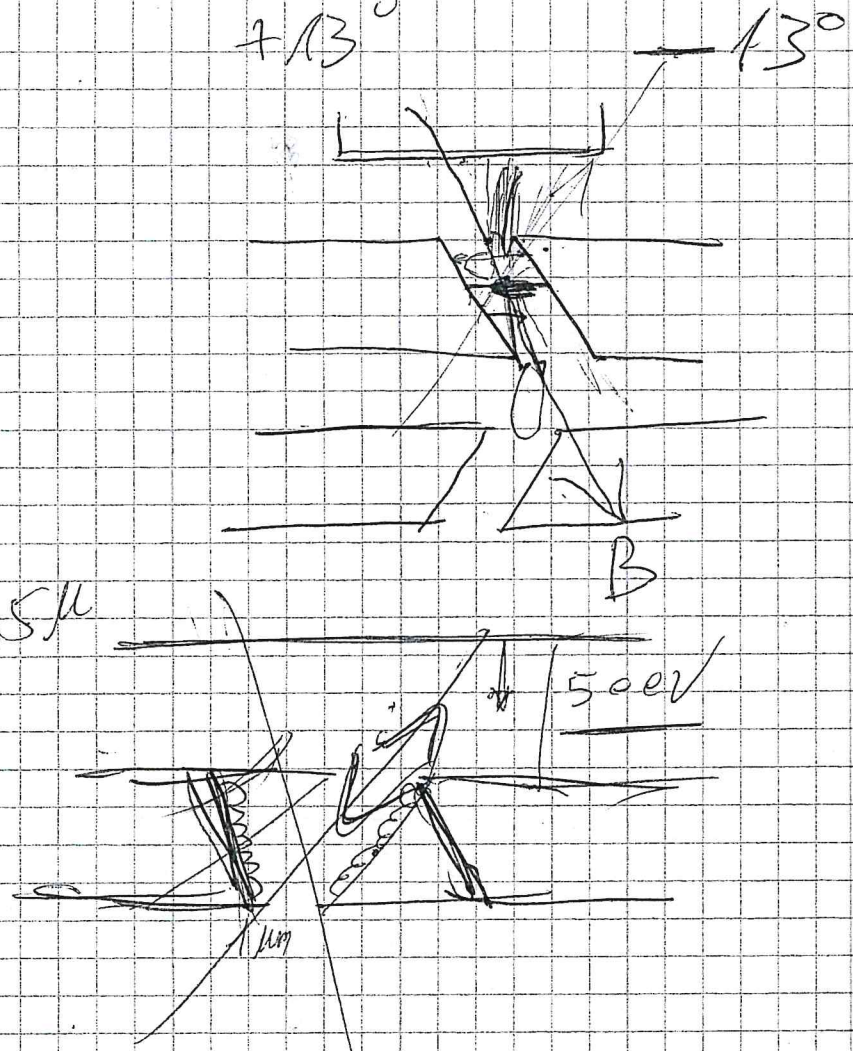
Inclination +15°

132	STD	B=0	Q=3,66pC	λ=0,061
133	STD	−0,5T	Q=0,96pC	λ=0,045
134	925	−0,5T	Q=2,16pC	λ=0,049
135	925V	−1,0T	Q=0,74pC	λ=0,043
136	975V	−1,0T	Q=1,52pC	λ=0,047
137	STD	−1,0T	Q=0,29pC	λ=0,027
138	STD	−1,5T		
139	925V	−1,5T	Q=0,16pC	λ=0,023
140	975V	−1,5T	Q=0,61pC	λ=0,042
141	150V PC / 975V	−1,5T	Q=0,68pC	λ=0,057



Inclination +10° ✓ (16)

142	STD	B=0	Q=3,53pC	λ=0,0585
143	STD	-0,5T	Q=0,96pC	λ=0,047
144	925V	-0,5T	Q=2,22pC	λ=0,053
145	925V	-1,0T	Q=0,85pC	λ=0,0[illegible]48
146	975V	-1,0T	Q=1,64pC	λ=0,052
147	STD	-1,0T	Q=0,25pC	λ=0,035
148	STD	-1,5T		
149	925V	-1,5T		
150	975V	-1,5T	Q=0,75pC	λ=0,046
151	150V/975V	-1,5T	Q=~~0.82pC~~ pC	λ=~~0.062~~

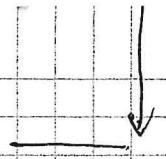


Inclination 0°

152	925V	-0.5T	Q=2.06pC	λ=0,0
153	975V/150V pc	-1.5T	Q=1.04pC	λ=0,06
154	975V/150V pc	+1.5T		

Inclination -20° ✓ B=0,496

155	STD	B=0	Q=3.56pC	λ=0.056
156	STD	-0,5T	Q=0.857pC	λ=0.06
157	925V	-0,5T	Q=1.893pC	λ=0.0
158	925V	-1,0T	Q=0.477pC	B=0.99 λ=0.05
159	950V	-1,0T	Q=1.12pC	λ=0.062
160	STD	-1,0T		
161	STD	-1.5T		λ=
162	925V	-1.5T	Q=0.23pC	λ=0.03
163	950V	-1.5T	Q=0.41pC	λ=0.05
164	975V	-1.5T	Q=0.66pC	λ=0.05
165	975V/150V	-1.5T		



Inclination -27.5° (18) (*) TBL

166	STD	B=0	Q=3.56 pC	λ=0.062
167	STD	−0.5T	Q=0.97pC	λ=0.055
168	925	−0.5T	Q=2.08pC	λ=0.059
169	925	−1.0T	Q=0.78	λ=0.053 (B=0.996 T)
170	950	−1.0T	Q=1.13pC	λ=0.054
171	STD	−1.0T		
172	STD	−1.5T		
173	925	−1.5T		
174	950	−1.5T	Q=0.38pC	λ=0.043
175	975	−1.5T	Q=0.63pC	λ=0.048
176	150/975$_V$	−1.5T	Q=0.72pC	λ=0.056

Inclination +27° ✓

177	STD	B=0	Q=3,44pC	λ=0,052
178	STD	-0,5T	Q=0.81pC	λ=0,031
179	925	-0.5T	Q=1.98pC	λ=0.035
180	925	-1.0T	Q=0.433pC	λ=0.025
181	975	-1,0T	Q=1.16pC	λ=0.032
182	STD	-1,0T	Q=0.1pC	λ=0.002
183	STD	-1,5T	Q=0	λ=0
184	925	-1.5T	Q=0.1pC	λ=$5 \cdot 10^{-4}$
185	975	-1.5T	Q=0.33pC	λ=0,02
186	150/975 pC	-1.5T	Q=0,37pC	λ=0,034

Short Run 204 – test detached fiber connector
σ = 140 ps
laser intensity = 2.5

Short Run 205 – test with fiber bent at the beginning at 180°
σ = 114 ps

9:40 BRU
16:52 ZYR

out:
-27.5 – ok
-10. -23 ok
-13 ~~xx~~
-20 ok +15 – Done ~~Running~~
-15. +23 – ok
0. +27 – running
+10.
+13.

$N_{PE} = 100$ @3.2kV
$1_{PE} = 0.16$ pC

1.66 pC
1.17 pC

$10^6 \to 10^5$
~10 PE

3.2mm SiO_2

16 ps/PE ×10 → 50 ps

5ps → 50 ps/PE

Inclination – 13° ✓

187	STD	B=0	Q=3.45 pC	λ=0.055 B=0.494
188	STD	+0.5 T		
189	925V	+0.5 T	Q=1.59 pC	λ=0.05 B=0.992
190	925V	+1.0 T		
191	950V (975V – TRIPS!)	+1.0 T	Q=0.94 pC	λ=0.0
192	875V	+1.0 T		
193	STD	+1.5 T		
194	925V	+1.5 T		
195	950V	+1.5 T	Q=0.18 pC	λ=0.0
196	975V	+1.5 T	Q=0.46 pC	λ=0.04
197	150/975	+1.5 T		
198	975V	invert B −1.5 T	Q=0.53 pC	B=1.48 λ=0.04
199	150/975	−1.5 T	Q=0.60 pC	λ=0.05
200	950V	−1.5 T		
201	950V	−1.0 T	Q=0.96 pC	λ=0.05
202	925V	−1.0 T	Q=0.67 pC	λ=0.05
203	925V	−0.5 T	Q=1.62 pC	λ=0.05

18.35 Slight instability for PC
Recovered by itself.

Run 205 –

Run 206 – MCP=800V
N_{PE} = 22

Timing with 22PE
laser intensity = 2.5
MCP = 775 V

207	775V	B=0	θ=0
208	925V too high	-1.5T	θ=0
209	875V ok	-1.5T	θ=0
210	875V low	-1.5T	θ=-27°
211	975V too high	-1.5T	θ=-27°
212	925V	-1.5T	θ=-27°
213	925V	-1.5T	θ=+27°
214	975V ok	-1.5T	θ=+27°

-15°: 975/150 ⇒ exp very large!?

-13°

0° - OK

27(03) Inclination +27° | 1.45

215 STD B=0 Q_{SOL} = ~~3.60~~ pC χ=0.047

216 STD +0.5T B_H=0.500

217 925V +0.5T

218 925V -0.5T

219 STD +1.0T B=1.007

220 925V +1.0T

221 975V +1.0T

222 975V +1.5T B_H=1.505

223 150/975 +1.5T

224 925V +1.5T

225 STD +1.5T

226 975V -1.5T Q=0.33pC λ=0.018

Hamamatsu MCP

SPE

- 2800 V → 250 ps
- 3100 V → 150 ps

Many PE

- 3100 V → 38 ps

detached → 150 ps
FC/PC connector

Inclination -27°

227	STD	B=0
228	STD	after MCP-test B=0
229	STD	+0.5T Q=0.826 pC λ=0.041
230	925	+0.5T
231	950	+1.0T
232	925	+1.5T
233	950	+1.5T
234	975	+1.5T
235	975/1500 C	+1.5T
236	875	+1.5T
237	875	+1.0T

Inclination = -13°

238	STD	0T
239	STD	-0.5T Q=0.72 pC λ=0.038
240	950	-0.5T Q=1.71 pC λ=0.042
241	950	-1.0T
242	875V	-1.0T
243	950V	-1.0T
244	950V	-1.5T
245	925V	-1.5T
246	875V	-1.5T

247	875	−1.5T
248	875/150	−1.5T
249	875	+1.5T
250	875/150	+1.5T
251	950	+1.0T
252	925	+1.0T
252	925	+0.5T
253	875	0T

HP = 1.4983T

HP = 1.007T

HP = 0.502T

Q = 1.61pC x = 0.045

Azimuthal Rotation. SMA - UP!

+18.5 When PC-HV is downwards!

254	STD	0T
255	STD	−0.5T
256	925	−0.5T
257	STD	−1.0T
258	925	−1.0T
259	975	−1.0T
260	875	−1.5T
261	925	−1.5T
262	975	−1.5T
263	975/150	−1.5T

269	925	+0,5 T
265	975	+1,0 T
266	975	+1.5 T
267	150/975	+1.5 T

SMA-down

Azimuthal inclination -18°

268	STD	B=0
269	STD	-0,5 T
270	925V	-0.5 T
271	925V	-1 T
272	975V	-1T
273	STD	-1T
274	STD	-1.5T
275	925V	-1,5T
276	975V	-1.5T
277	150/975	-1.5T

278	925V	+0.5T
279	975V	+1.0T
280	975V	+1.5T
281	10 PC /975V	+1.5T

End