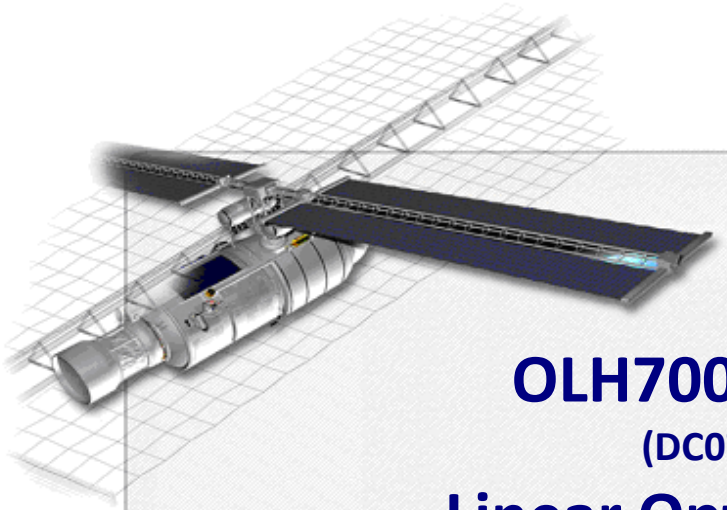
PROTONS DISPLACEMENT DAMAGE TEST REPORT



OLH7000-0010

(DC0721)

Linear Optocoupler

From

ISOLINK

TRAD/TP/OLH7000/XXX1/ESA/YP/1104		Labège, April 16th, 2012
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Issue : 0		
To: Marc POIZAT	Project/Program :	ESA Contract N°4000102571/10/NL/AF-Radiation Characterization of Laplace RH optocouplers, sensors and detectors

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1 INTRODUCTION

This report includes the test results of OLH7000-0010, an hermetic linear Optocoupler from ISOLINK to evaluate displacement damage effects under proton irradiation. During January and February 2012, TRAD characterized this device for proton sensitivity at the KVI Facility, in GRONINGEN, The Netherlands using their AGOR cyclotron.
The objectives of the test are:

- to detect and measure the degradation of device parameters as a function of proton fluence,
- to determine if device parameters are within specified limits after exposure to final level of proton fluence.

2 DOCUMENTS

2.1 Applicable Documents

AD	1.	ESA contract	N°4000102571/10/NL/AF-Radiation Characterization of Laplace RH optocouplers, sensors and detectors
AD	2.	Irradiation Test Plan	ITP-TP-OLH7000-ISO-ESA-1119, Iss.3, 08/02/2012

2.2 Reference Documents

RD	1.	Datasheet OLH7000	Hermetic Linear Optocoupler

3 DEVICE INFORMATION

3.1 Device description

The OLH7000 is a hermetic linear Optocoupler which consists of two LED in series coupled to two PIN photodiode detectors. The photodiode on the input side acts as a feedback device permitting an external feedback loop to ensure constant LED light output. A similar matching photodiode on the output side is used to drive an output circuit that is electrically isolated from the input. A fixed relationship is thus maintained between input and output. This technique compensates for the LED's nonlinear time and temperature characteristics. Each OLH7000 is mounted and coupled in a hermetic 8-pin ceramic DIP providing 1000 Vdc electrical isolation between input and output.

Type	OLH7000-0010
Manufacturer	ISOLINK
Function	Optocoupler
Package	DIP8
Date Code	0721
Sample size	46 parts (3x15 test parts + 1 control sample)

3.2 Procurement information

75 parts OLH7000-0010 were delivered by ISOLINK through the French representative EUROMIP.

3.3 External view

Figure 1: package marking

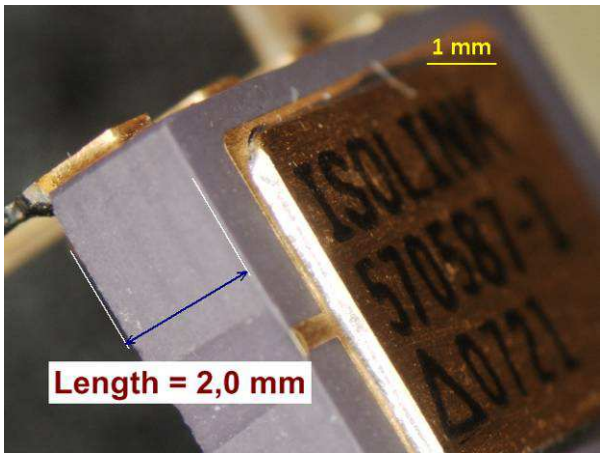


Figure 2: package view

3.4 Internal view

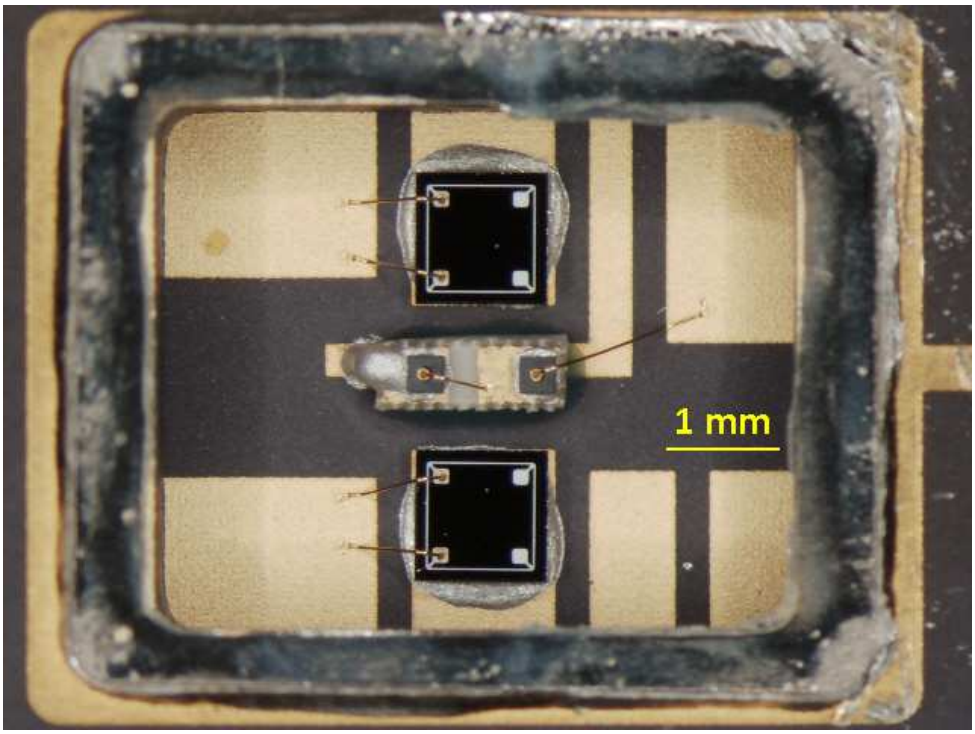


Figure 3: Internal overall view

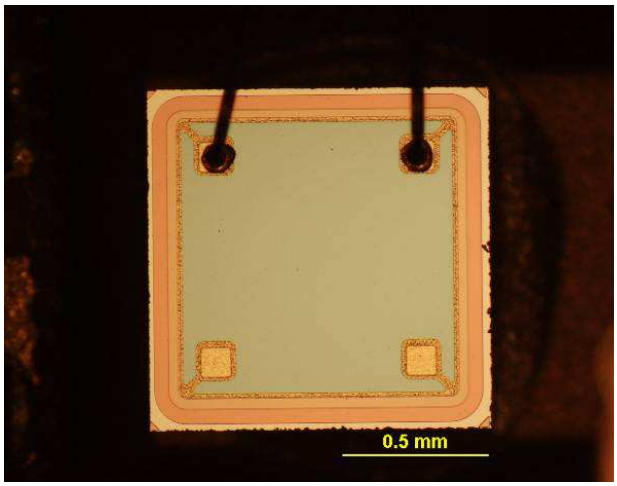


Figure 4: view of photodiode detector

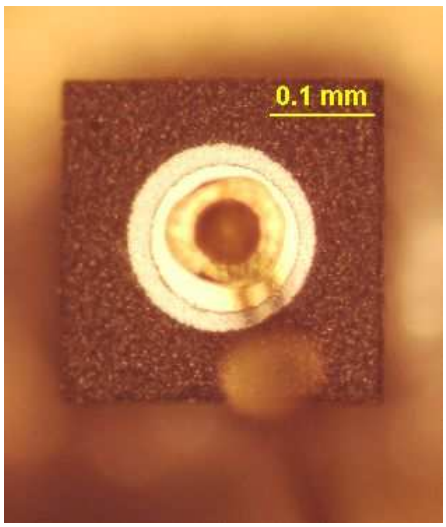


Figure 5: view of LED

3.5 Serialization

Each part is serialized to enable pre and post test identification and comparison.

Serial Number			
P1 (30MeV)	P2 (60MeV)	P3 (190MeV)	Mode
1 (Control sample)			
2	2	2	Bias 1
3	3	3	Bias 1
4	4	4	Bias 1
5	5	5	Bias 1
6	6	6	Bias 1
7	7	7	Bias 2
8	8	8	Bias 2
9	9	9	Bias 2
10	10	10	Bias 2
11	11	11	Bias 2
12	12	12	Off
13	13	13	Off
14	14	14	Off
15	15	15	Off
16	16	16	Off

4 IRRADIATION MEANS AND CONDITIONS

4.1 AGORFIRM/KVI irradiation facility (The Nederlands)

AGORFIRM is a facility that uses a dedicated beam line of the AGOR cyclotron for irradiations with protons in air. The facility is available for radiation damage studies. The standard proton beams used for irradiations produced by this cyclotron have primary energies of 90, 150 and 190 MeV.
The standard irradiation field has a diameter of 70 mm and homogeneity of better than ± 3%.

Figure 6: samples installed for irradiation

4.2 Energy and Flux measurement

The energy resolution of the beam when leaving the cyclotron is typically better than 0.25%. However, at the DUT position the resolution is in the order of a few MeV due to scattering in air, the scatter system and, when used, the energy degrader.
The proton flux at the centre of the irradiation field is measured with a 10 mm diameter scintillator detector. During the irradiation, the flux is monitored with a Beam Intensity Monitor (BIM). Before an irradiation the BIM signal (in Monitor Units) is related to the scintillator signal to obtain the flux calibration in protons cm^{-2} per MU. This calibration is conducted for every field size and every energy used during an irradiation.

4.3 Experimental conditions

An Equivalent total fluence of 1E12 #/cm² of 10 MeV protons is required [AD2] for this TNID (Total Non-Ionizing Dose) evaluation test. Considering NIEL (Non Ionizing Energy Loss) value for 10 MeV proton (7.86E-03 MeV cm^2 g^{-1}), total fluence to be reached at each energy is:

30	MeV	8,22E+11 cm^{-2}
60	MeV	1,14E+12 cm^{-2}
190	MeV	1,91E+12 cm^{-2}

Five steps were defined to determine the component degradation under 30MeV, 60MeV, 190MeV proton irradiation. The test devices have been exposed to the following proton fluence levels:

p/cm2	1,70E+10	8,50E+10	1,70E+11	1,70E+12
Energy (MeV)	30	30	30	30
p/cm2	2,30E+10	1,15E+11	2,30E+11	1,14E+12
Energy (MeV)	60	60	60	60
p/cm2	4,00E+10	2,00E+11	4,00E+11	1,91E+12
Energy (MeV)	190	190	190	190

5 ELECTRICAL TESTS

Electrical parameters to be measured in pre and post exposure tests are described in the following table. Electrical tests are performed on each part using the test set-up hereunder. All required data are recorded for each device. Test conditions and limits are given in the applicable irradiation test plan [AD2] and shown hereafter.

5.1 Test set-up

TEST BOARD	TRAD/CT1/P/OLH7000/DIL8/BR/1109
TEST PROGRAM	OLH7000_TP30MeV_XXX1_B1_V10.llb OLH7000_TP60MeV_XXX1_B1_V10.llb OLH7000_TP200MeV_XXX1_B1_V10.llb

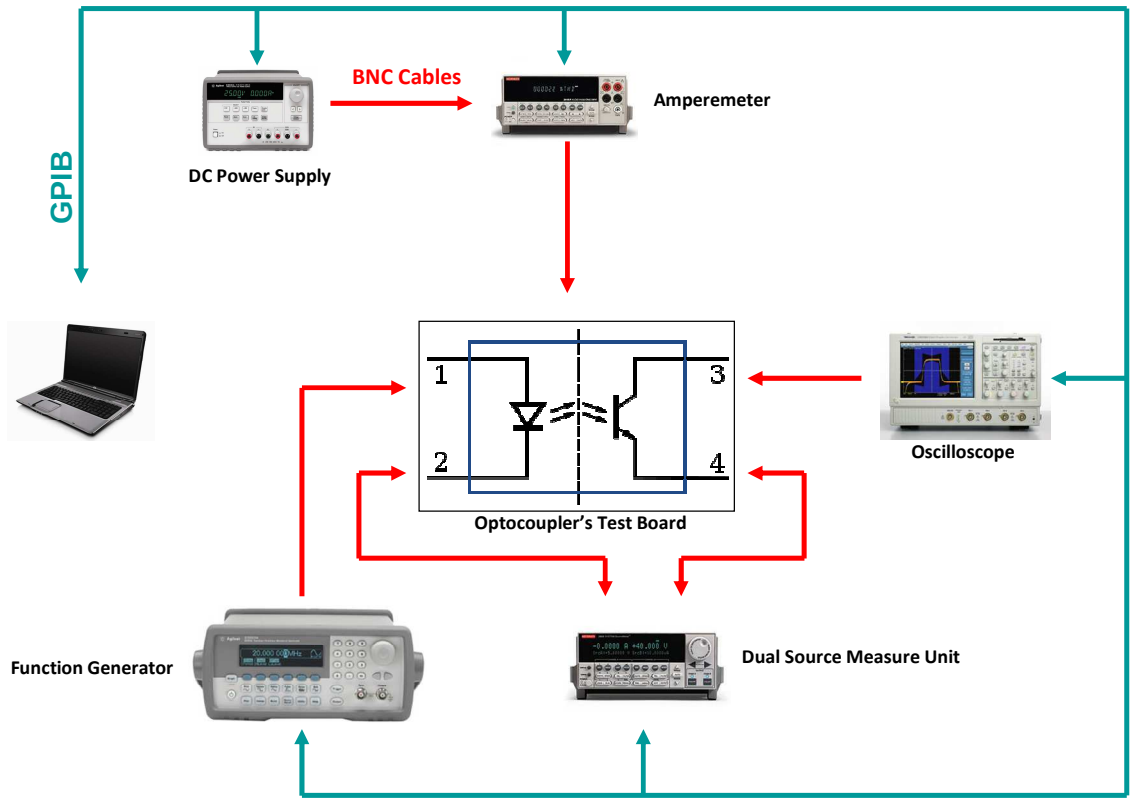


Figure 7: test principle

5.2 Test configuration

Samples were exposed to proton irradiation in three different modes - two on-modes (Figure 8 and Figure 9) and one off-mode (all terminal leads short-circuited) –

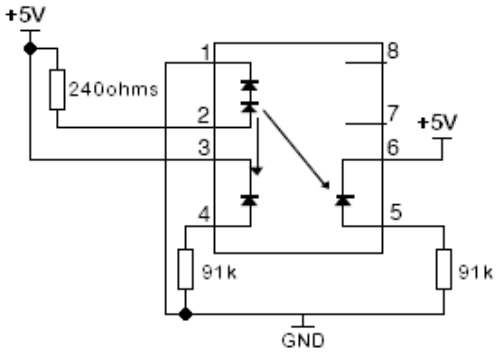


Figure 8: ON bias1

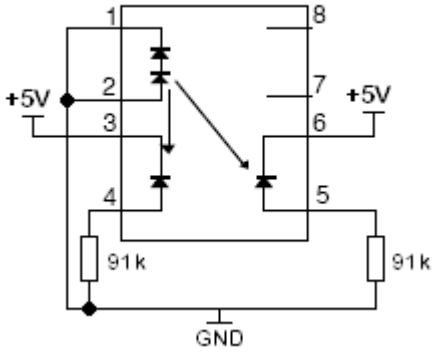


Figure 9: ON bias2

5.3 Electrical parameters

PARAMETER	SYMBOL	TEST CONDITION	MIN	MAX	UNIT	Typical value
Forward Voltage	V_F	I_F = 10 mA		3,3	V	
Reverse Voltage	V_R	I_R = 100µA	5		V	
Dark Current	I_D	V_R = 15 V, I_F = 0 mA		25	nA	
Open Circuit Voltage	V_{OC}	I_F = 10 mA			mV	500
Servo Current	I_{P1}	I_F = 10 mA, Vdet = -15 V			µA	50
Servo Current Gain	K1	I_F = 10 mA, Vdet = -15 V	0,0035	0,0065		
Forward Current Gain	K2-1	I_F = 10 mA, Vdet = -15 V	0,0035	0,0065		
	K2-2	I_F = 1 mA, Vdet = -15 V				
	K2-3	I_F = 2 mA, Vdet = -15 V				
	K2-4	I_F = 60 mA, Vdet = -15 V				
	K2-5	I_F = 10 mA, Vdet = -30 V				
Forward Current	I_{P2}	I_F = 10 mA, Vdet = -15 V			µA	50
Transfer Gain	K3	I_F = 10 mA, Vdet = -15 V	0,75	1,25		K1/K2
Frequency Response (-3db)	BW	I_F = 10 mA ± 4 mA, R_L = 50Ω			KHz	200
Rise Time	tr	I_F = 10 mA ± 4 mA, R_L = 50Ω			µs	2
Fall Time	tf	I_F = 10 mA ± 4 mA, R_L = 50Ω			µs	2

Min/ Max values are those specified in the reference data-sheet [RD1] applicable to OLH7000 type.
Test measurements are performed at 25°C ± 10°C.

See extracts from mails from ISOLINK here after concerning the OLH7000.0010 type:

"*The OLH7000.0010 is different from the standard OLH7000. The standard OLH7000's LED cannot withstand displacement damage*
radiation.

The OLH7000.0010 (570587-1) uses a different LED that is more displacement damage tolerant and this LED had higher light output and thus higher Ip1 and Ip2.
We have been supplying the OLH7000.00XX for several years to many space customers"

"*The marking 570587-1 is for the ITT OLH7000.0010. The '570587-1' is the ITT Drawing# for the SCD. The parts are tested to ensure that they meet the minimum Ip1 of 35uA and Ip2 of 35uA. The typical is around 50uA and it could be higher.*
Regardless of the initial value of K1 (Ip1) and K2 (Ip2), the most important parameter is K3 (Transfer Gain)."

6 TEST HISTORY

PARAMETERS	SYMBOLS	TEST CONDITIONS	APPLICABLE DETAIL SPECIFICATION or DATA-SHEET			
Ta = 25°C, unless otherwise specified						
			Min	Typ. Value	Max	Unit
Servo Current	I_{P1}	I_F = 10 mA, Vdet = -15 V		50		µA
Forward Current	I_{P2}	I_F = 10 mA, Vdet = -15 V		50		µA
Servo Current Gain	K1	I_F = 10 mA, Vdet = -15 V	0.0035	0.005	0.0065	
Forward Current Gain	K2-1	I_F = 10 mA, Vdet = -15 V	0.0035	0.005	0.0065	

Previous table summarizes applicable specification for IP1, IP2, K1 and K2-1 parameters.
The typical value of IP1 and IP2 should be 50 µA.
But during test, as shown in the next figure, IP1 and IP2 current on the un-irradiated device are around 100 µA.

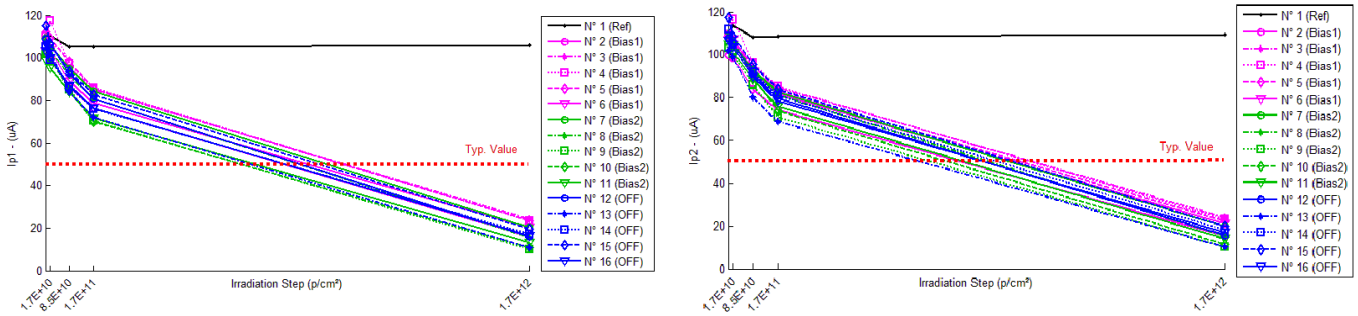


Figure 10: IP1 and IP2 parameters function of 30MeV proton fluence

Moreover,

Servo Current Gain: $K1 = \frac{IP1}{IF}$

Forward Current Gain: $K2\_1 = \frac{IP2}{IF}$

With IF=10mA

Then K1 and K2_1 (for the device OLH7000-0010) have a typical value of 0.01 instead of 0.005 as specified in the applicable datasheet [RD1].

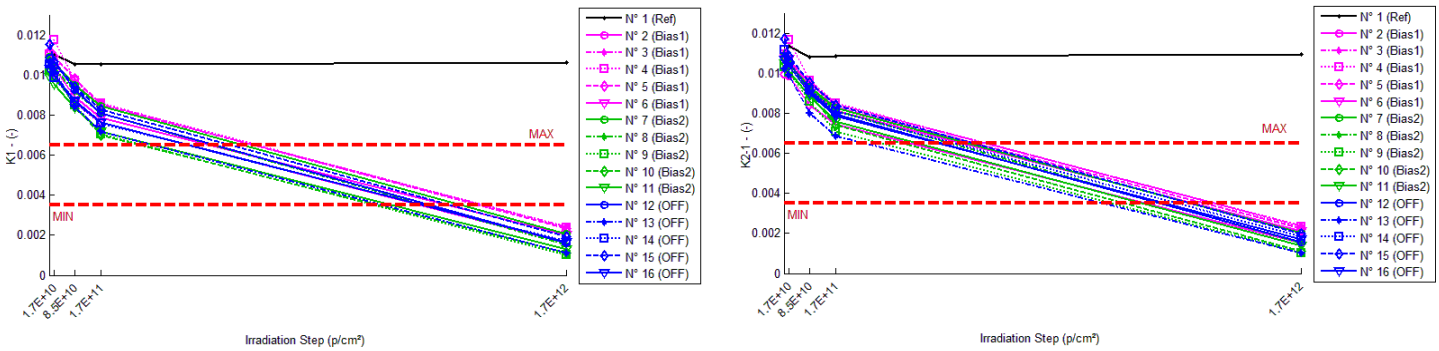


Figure 11: K1 and K2_1 parameters function of 30MeV proton fluence

As shown in Figure 8, un-irradiated devices are out of specification due to the difference between IP1 and IP2 requirement and measurement. According to information provided by ISOLINK, this is explained by the difference between OLH7000.0010 that was delivered instead of OLH7000 initially requested by TRAD.

The OLH7000.0010 (570587-1) uses a different LED that is more displacement damage tolerant. This LED had higher light output and thus higher Ip1 and Ip2.

However no dedicated specification (or datasheet) is available.

If 100 µA is considered as the typical value for IP1 and IP2, then the typical value for K1 and K2_1 is 0.01.
If the minimum and maximum value for K1 and K2_1 is evaluated as a difference of 0.0015 from the typical value, then specified values are described in the table below:

PARAMETERS	SYMBOLS	TEST CONDITIONS	APPLICABLE DATA-SHEET			
			Min	Typ. Value	Max	Unit
Servo Current	I_{P1}	I_F = 10 mA, Vdet = -15 V		100		µA
Forward Current	I_{P2}	I_F = 10 mA, Vdet = -15 V		100		µA
Servo Current Gain	K1	I_F = 10 mA, Vdet = -15 V	0.0085	0.01	0.0115	
Forward Current Gain	K2-1	I_F = 10 mA, Vdet = -15 V	0.0085	0.01	0.0115	

Results are computed considering the applicable datasheet [RD1] and the re-evaluated values for the concerned part type.

7 SUMMARY RESULTS

7.1 30 MeV proton irradiation summary results

Only the parameters with applicable test limits are shown hereunder.

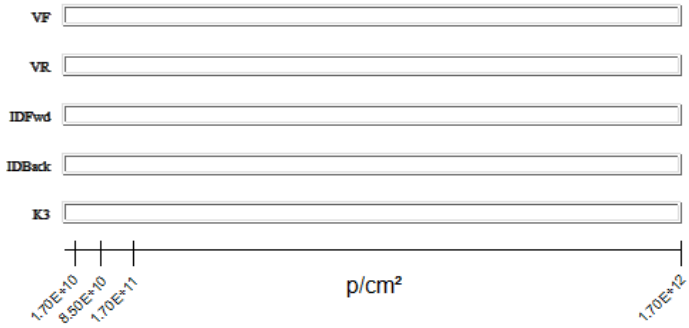


Figure 12: ON Bias 1 under 30 MeV protons

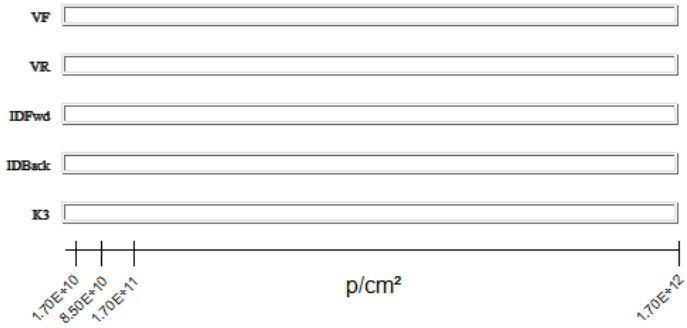


Figure 13: ON Bias 2 under 30 MeV protons

Figure 14: OFF Bias under 30 MeV protons

VF, VR, IDFwd, IDBack and K3 parameters are functional, whatever the Bias condition, at step 1.7E12.p/cm².

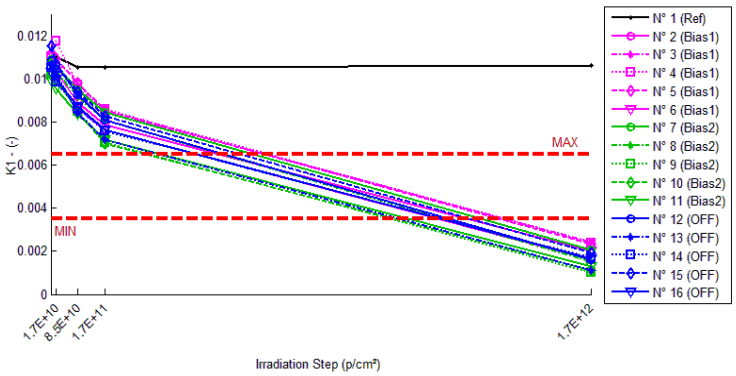
7.1.1 K1 and K2_1 case

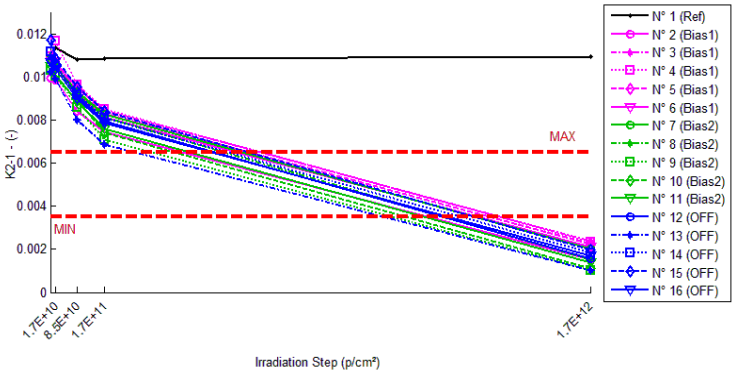
Considering the applicable datasheet

The table below describes the applicable value mentioned the applicable datasheet [RD1]

PARAMETERS	SYMBOLS	TEST CONDITIONS	APPLICABLE DATA-SHEET			
			Min	Typ. Value	Max	Unit
Servo Current Gain	K1	I_F = 10 mA, Vdet = -15 V	0.0035	0.005	0.0065	
Forward Current Gain	K2-1	I_F = 10 mA, Vdet = -15 V	0.0035	0.005	0.0065	

Results are illustrated in the following graphs.





With these conditions (MIN: 0.0035), the evolution of K1 and K2_1 parameter versus accumulated total fluence is shown in the following diagrams.

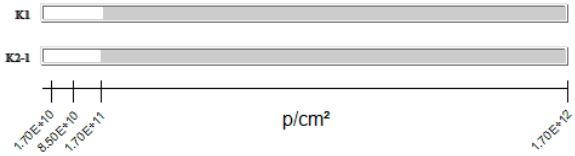


Figure 15: ON Bias 1 under 30 MeV protons

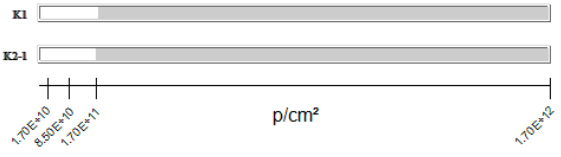


Figure 16: ON Bias 2 under 30 MeV protons

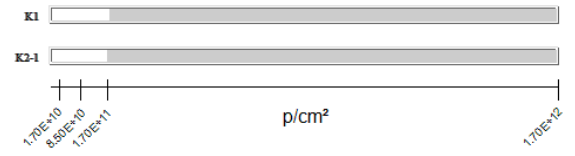
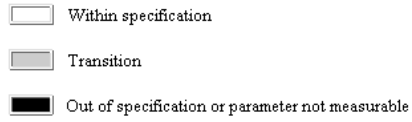


Figure 17: OFF Bias under 30 MeV protons



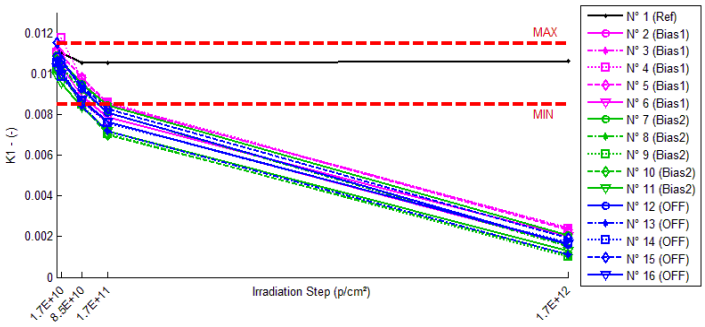
Worst case out of specification interpolation fluence (p/cm²)	Bias 1	Bias 2	OFF	Applicable dat-sheet
K1	1.22E+12	1.07E+12	1.10E+12	MIN : 0.0035
K2-1	1.19E+12	1.07E+12	1.05E+12	MIN : 0.0035

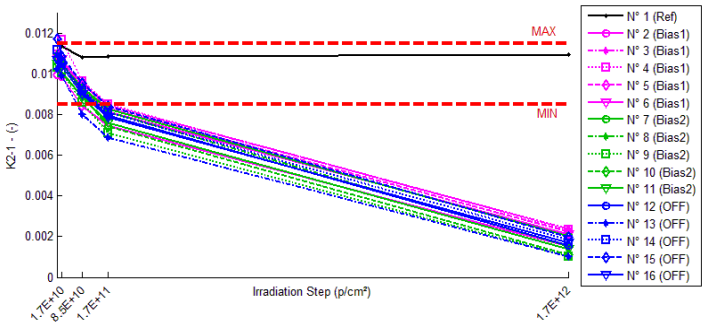
Considering re-evaluated specification

The table below describes the re-evaluated value:

PARAMETERS	SYMBOLS	TEST CONDITIONS	APPLICABLE LIMITS			
			Min	Typ. Value	Max	Unit
Servo Current Gain	K1	I_F = 10 mA, Vdet = -15 V	0.0085	0.01	0.0115	
Forward Current Gain	K2-1	I_F = 10 mA, Vdet = -15 V	0.0085	0.01	0.0115	

Results are illustrated in the following graphs:





Taking in account these re-evaluated values (MIN: 0.0085), the evolution of K1 and K2_1 parameter versus accumulated total fluence are registered in the following diagram.

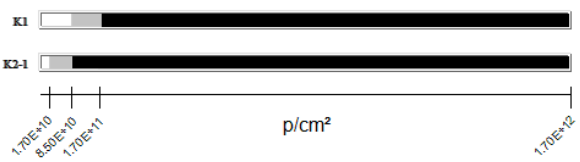


Figure 18: ON Bias 1 under 30 MeV protons

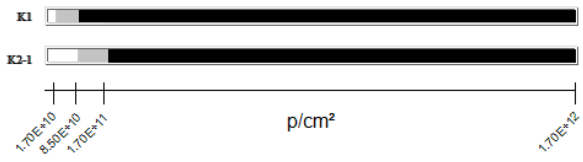


Figure 19: ON Bias 2 under 30 MeV protons

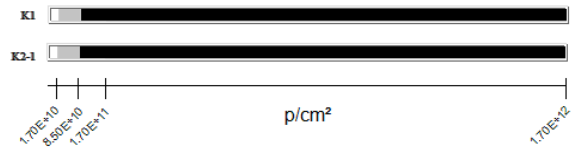
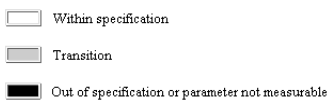


Figure 20: OFF Bias under 30 MeV protons



K1 and K2-1 parameter results are out of specification whatever the applied bias condition, as described in the following table:

Worst case out of specification interpolation fluence (p/cm²)	Bias 1	Bias 2	OFF	Applicable limit
K1	9.46E+10	6.92E+10	7.30E+10	MIN : 0.0085
K2-1	7.53E+10	8.67E+10	3.79E+10	MIN : 0.0085

7.1.2 BWFwd and BWBack case

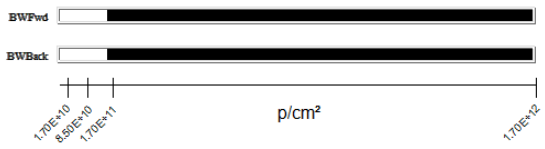


Figure 21: ON Bias 1 under 30 MeV protons

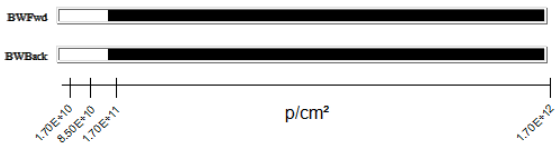


Figure 22: ON Bias 2 under 30 MeV protons

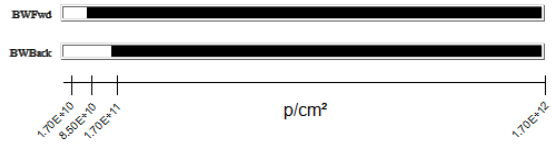
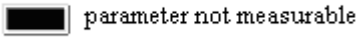


Figure 23: OFF Bias under 30 MeV protons



- BWFwd is not measurable at step 1.7E11.p/cm²
- BWBack is not measurable at step 1.7E11.p/cm²

Frequency Response measured at step 1.7 E11.p/cm² is higher than 1E3kHz (test equipment limit).

7.2 60 MeV proton irradiation summary results

Only the parameters with applicable test limits are shown hereunder.

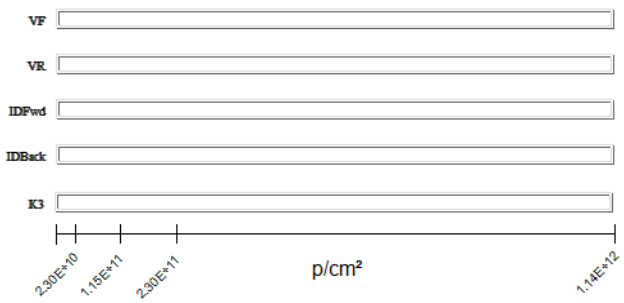


Figure 24: ON Bias 1 under 60 MeV protons

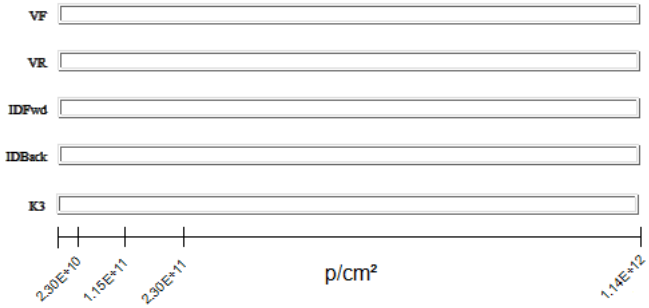
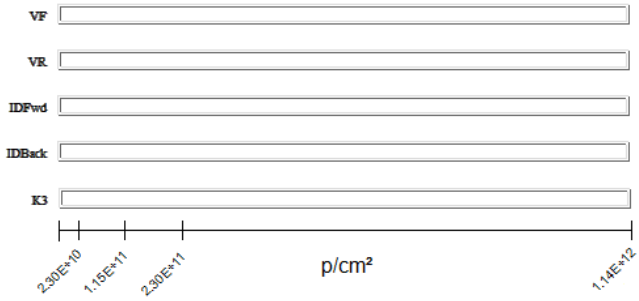


Figure 25: ON Bias 2 under 60 MeV protons



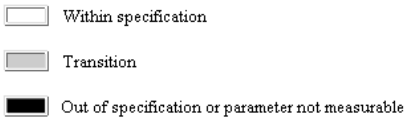


Figure 26: OFF Bias under 60 MeV protons

VF, VR, IDFwd, IDBack and K3 parameters are functional, whatever the Bias condition, at step 1.7E12.p/cm².

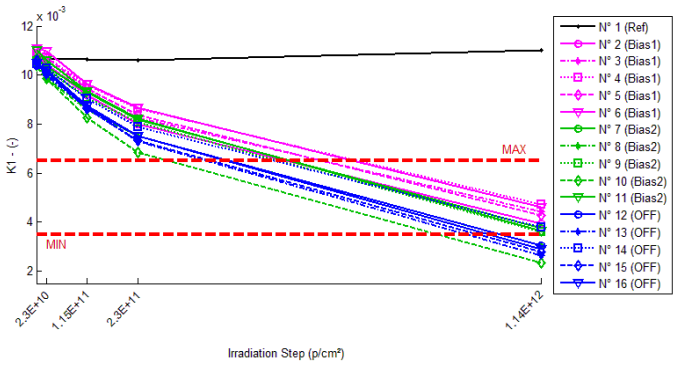
7.2.1 K1 and K2_1 case

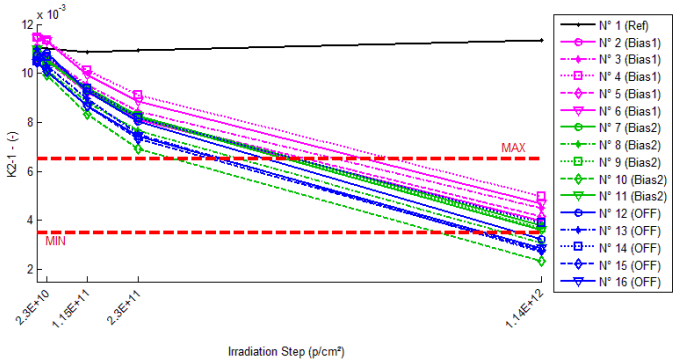
Considering the applicable datasheet

The table below describes the applicable value given by the applicable datasheet [RD1]

PARAMETERS	SYMBOLS	TEST CONDITIONS	APPLICABLE DATA-SHEET			
			Min	Typ. Value	Max	Unit
Servo Current Gain	K1	I_F = 10 mA, Vdet = -15 V	0.0035	0.005	0.0065	
Forward Current Gain	K2-1	I_F = 10 mA, Vdet = -15 V	0.0035	0.005	0.0065	

Results are illustrated in the following graphs:





With these conditions (MIN : 0.0035), the evolution of K1 and K2_1 parameter versus accumulated total fluence is registered in the following diagram.

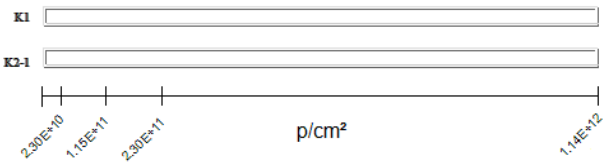


Figure 27: ON Bias 1 under 60 MeV protons

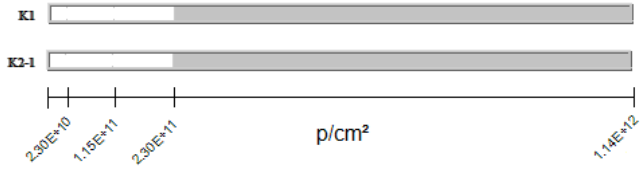


Figure 28: ON Bias 2 under 60 MeV protons

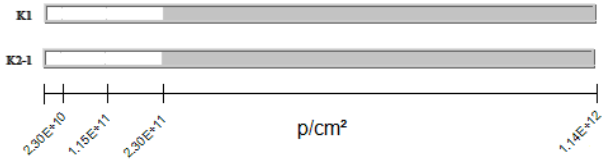
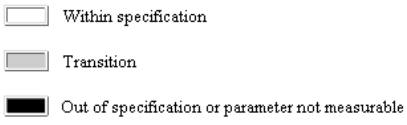


Figure 29: OFF Bias under 60 MeV protons



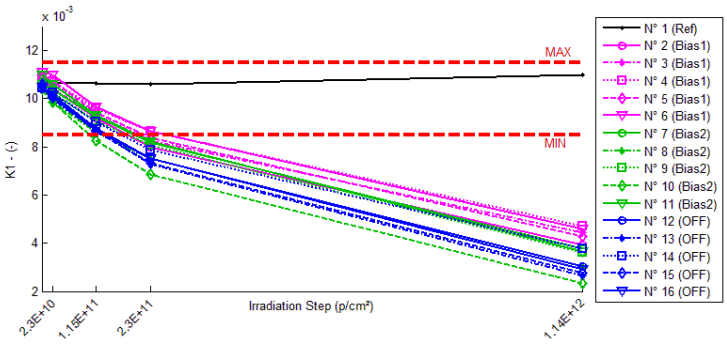
Worst case out of specification interpolation fluence (p/cm²)	Bias 1	Bias 2	OFF	Applicable data-sheet
K1	Functional at 1.14E12	9.03E+11	9.70E+11	MIN : 0.0035
K2-1	Functional at 1.14E12	9.09E+11	9.89E+11	MIN : 0.0035

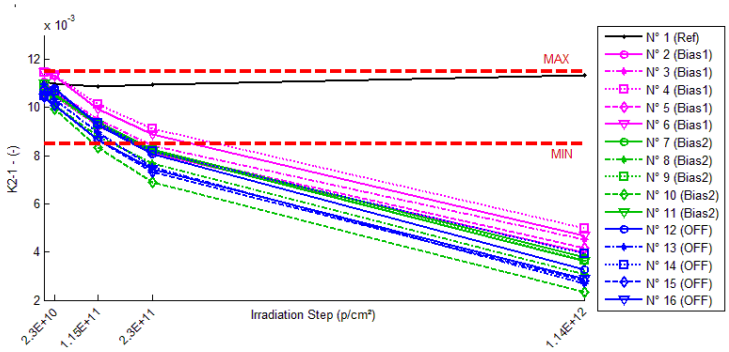
Considering re-evaluated specification

The table below describes the re-evaluated values:

PARAMETERS	SYMBOLS	TEST CONDITIONS	APPLICABLE LIMITS			
			Min	Typ. Value	Max	Unit
Servo Current Gain	K1	I_F = 10 mA, Vdet = -15 V	0.0085	0.01	0.0115	
Forward Current Gain	K2-1	I_F = 10 mA, Vdet = -15 V	0.0085	0.01	0.0115	

Results are illustrated in the following graphs:





With these conditions (MIN: 0.0085), the evolution of K1 and K2_1 parameter versus accumulated total fluence are registered in the following diagram.

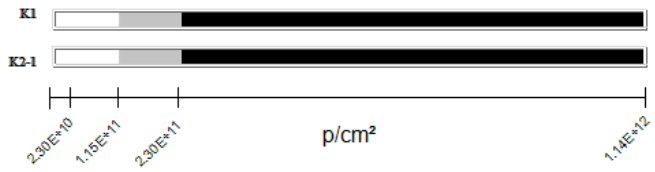


Figure 30: ON Bias 1 under 60 MeV protons

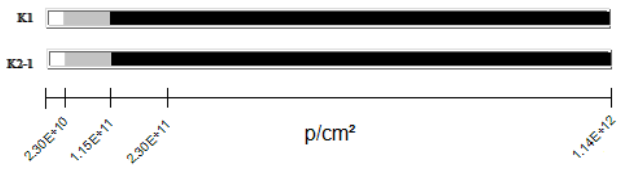


Figure 31: ON Bias 2 under 60 MeV protons

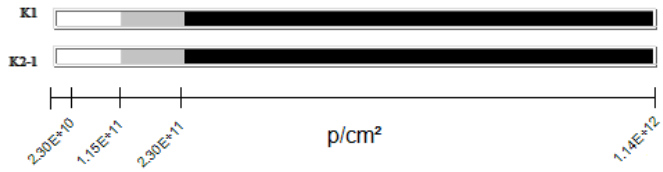
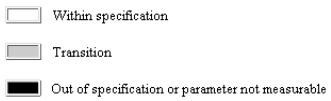


Figure 32: OFF Bias under 60 MeV protons



K1 and K2-1 parameter results are out of specification whatever the applied bias condition, as described in the following table:

Worst case out of specification interpolation fluence (p/cm²)	Bias 1	Bias 2	OFF	Applicable limit
K1	1.81E+11	1.02E+11	1.27E+11	MIN : 0.0085
K2-1	1.93E+11	1.05E+11	1.29E+11	MIN : 0.0085

7.2.2 BWFwd and BWBack case

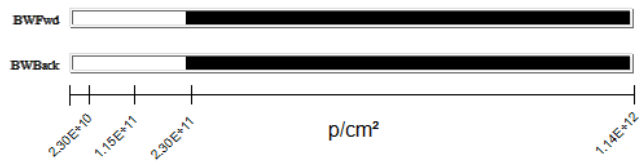


Figure 33: ON Bias 1 under 60 MeV protons

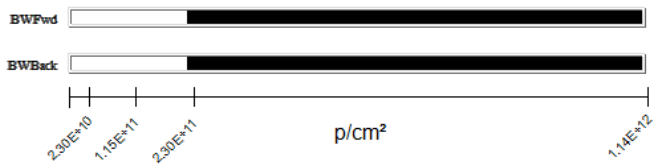


Figure 34: ON Bias 2 under 60 MeV protons

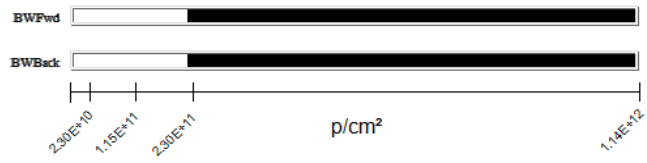
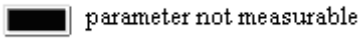


Figure 35: OFF Bias under 60 MeV protons



- The parameter BWFwd is not measurable at step 2.3E11.p/cm²
- The parameter BWBack is not measurable at step 2.3E11.p/cm²

Frequency Response measured at step 1.7 E11.p/cm² is higher than 1E3kHz (test equipment limit).

7.3 190 MeV proton irradiation summary results

Only the parameters with applicable test limits are shown hereunder.

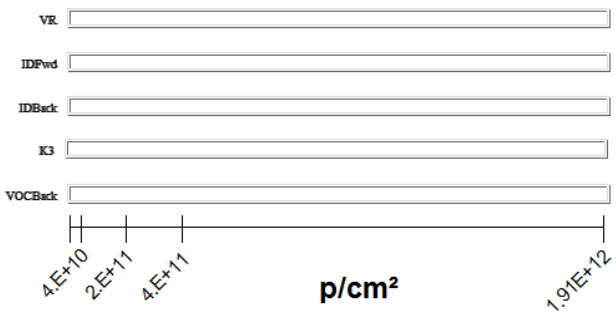


Figure 36: ON Bias 1 under 190 MeV protons

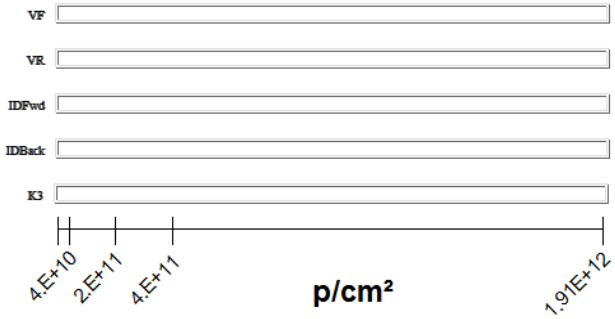
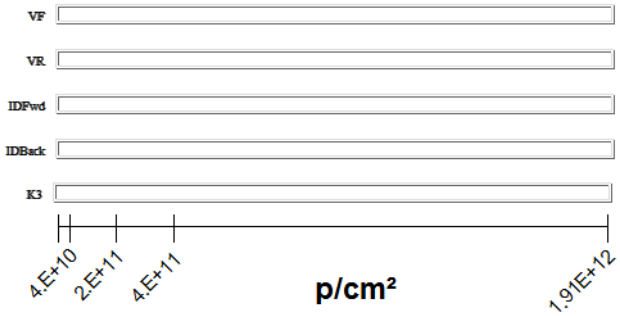


Figure 37: ON Bias 2 under 190 MeV protons



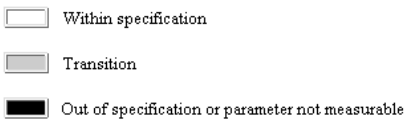


Figure 38: OFF Bias under 190 MeV protons

VF, VR, IDFwd, IDBack and K3 parameters are within the specified values, whatever the Bias condition, at step 1.7E12.p/cm².

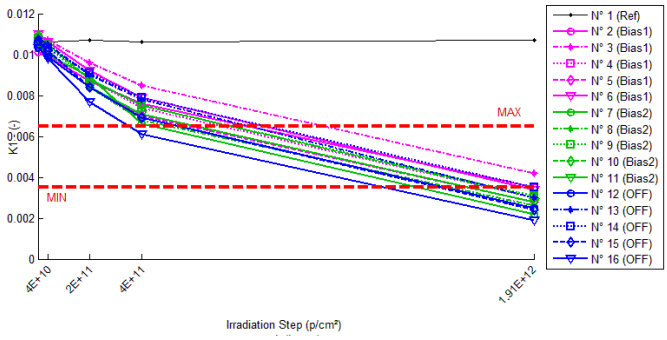
7.3.1 K1 and K2_1 case

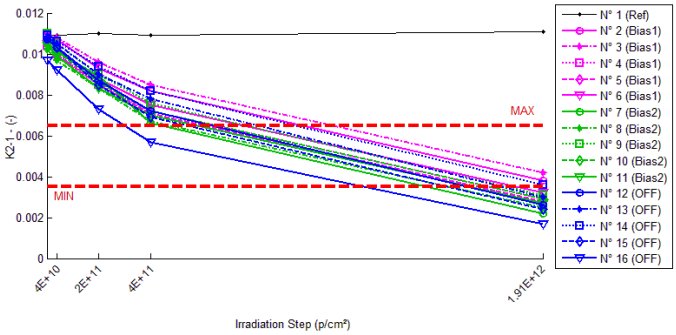
Considering the applicable datasheet

The table below describes the applicable value mentioned the applicable datasheet [RD1]

PARAMETERS	SYMBOLS	TEST CONDITIONS	APPLICABLE DATA-SHEET			
			Min	Typ. Value	Max	Unit
Servo Current Gain	K1	I_F = 10 mA, Vdet = -15 V	0.0035	0.005	0.0065	
Forward Current Gain	K2-1	I_F = 10 mA, Vdet = -15 V	0.0035	0.005	0.0065	

Results are illustrates in the following graphs.





With these conditions (MIN : 0.0035), the evolution of K1 and K2_1 parameter versus accumulated total fluence is registered in the following diagram.

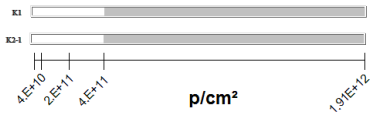


Figure 39: ON Bias 1 under 190 MeV protons

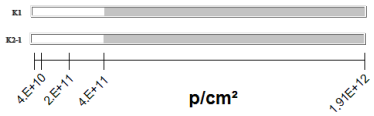


Figure 40: ON Bias 2 under 190 MeV protons

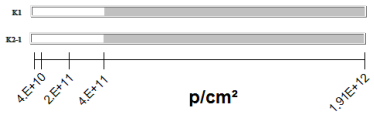
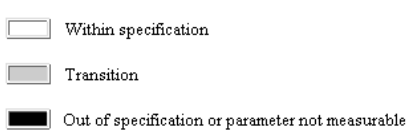


Figure 41: OFF Bias under 190 MeV protons



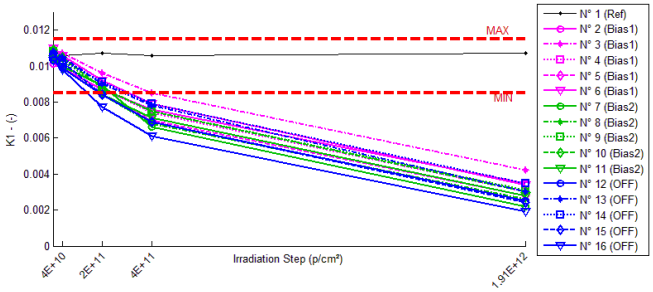
Worst case out of specification interpolation fluence (p/cm²)	Bias 1	Bias 2	OFF	Applicable data-sheet
K1	1.66E+12	1.46E+12	1.33E+12	MIN : 0.0035
K2-1	1.66E+12	1.46E+12	1.23E+12	MIN : 0.0035

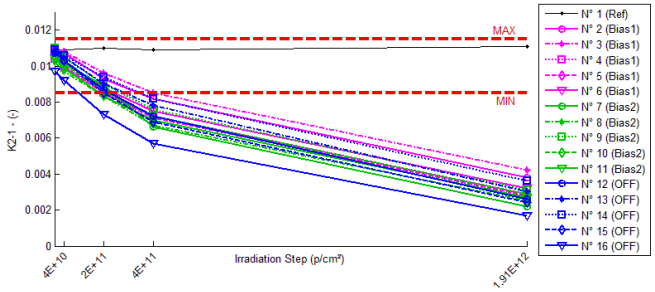
<u>Considering re-evaluated specification</u>

The table below describes the re-evaluated value:

PARAMETERS	SYMBOLS	TEST CONDITIONS	APPLICABLE LIMITS			
			Min	Typ. Value	Max	Unit
Servo Current Gain	K1	I_F = 10 mA, Vdet = -15 V	0.0085	0.01	0.0115	
Forward Current Gain	K2-1	I_F = 10 mA, Vdet = -15 V	0.0085	0.01	0.0115	

Results are illustrated in the following graphs:





With these conditions (MIN : 0.0085), the evolution of K1 and K2_1 parameter versus accumulated total fluence are registered in the following diagram.

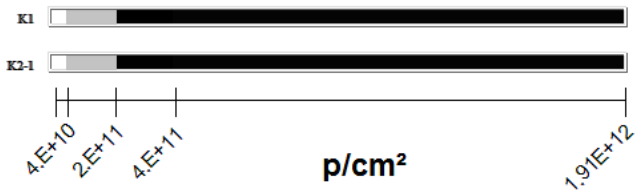


Figure 42: ON Bias 1 under 190 MeV protons

Figure 43: ON Bias 2 under 190 MeV protons

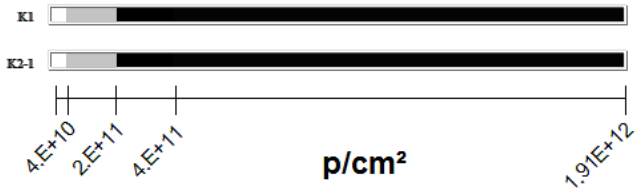
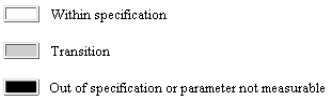


Figure 44: OFF Bias under 190 MeV protons



K1 and K2-1 parameter results are out of specification whatever the applied bias condition, as described in the following table:

Worst case out of specification interpolation fluence (p/cm²)	Bias 1	Bias 2	OFF	Applicable limit
K1	1.89E+11	1.89E+11	1.39E+11	MIN : 0.0085
K2-1	2E+11	1.77E+11	9.89E+10	MIN : 0.0085

7.3.2 BWFwd and BWBack case

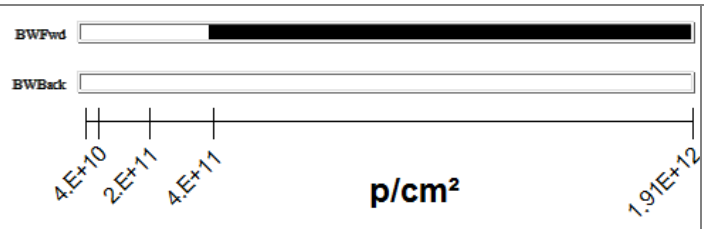


Figure 45: ON Bias 1 under 190 MeV protons

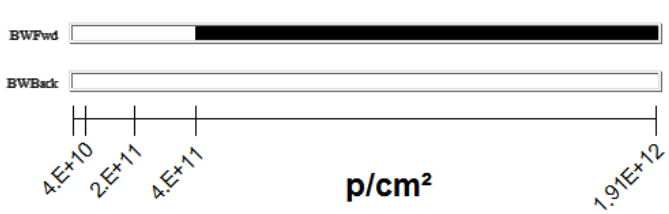


Figure 46: ON Bias 2 under 190 MeV protons

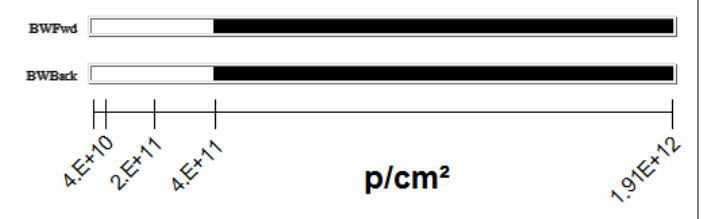
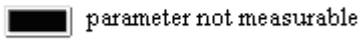


Figure 47: OFF Bias under 190 MeV protons



With ON bias 1 and ON Bias 2 condition :

- BWFwd is not measurable at step 4E11.p/cm²

For Unbiased part :

- BWFwd is not measurable at step 4E11.p/cm²
- BWBack is not measurable at step 4E11.p/cm²

Indeed Frequency Response measured at step 1.7 E11.p/cm² is higher than 1E3kHz (test equipment limit).

8 CONCLUSION

Total fluence steady-state irradiation test using protons has been applied on OLH7000.0010 type, a Hermetic Linear Optocoupler from ISOLINK**:**

- up to 1.7E+12 protons/cm², with an energy of 30 MeV
- up to 1,14E+12 protons/cm², with an energy of 60 MeV
- up to 1,91E+12 protons/cm², with an energy of 190 MeV

The results are:

- Under 30MeV proton Beam:

BWFwd and BWBack parameters are not measurable at step 1.7E11.p/cm².

- Considering the applicable datasheet [RD1]:

For the three bias conditions tested, K1 and K2-1 are out of specification at step 1.7E12p/cm².

- Considering re-evaluated specification (according to information provided by ISOLINK):
  - In ON Bias 1: K1 is out of specification at step 1.7E11.p/cm² and K2-1 is out of specification at step 8.5E10.p/cm².
  - In ON Bias 2: K1 is out of specification at step 8.5E10.p/cm² and K2-1 is out of specification at step 1.7E11.p/cm²
  - In unbiased mode: K1 is out of specification at step 8.5E10.p/cm² and K2-1 is out of specification at step 8.5E10.p/cm²

- Under 60MeV proton Beam:

BWFwd and BWBack parameters are not measurable at step 2.3E11.p/cm².

- Considering the applicable datasheet [RD1]:

For ON Bias2 condition and unbiased components, K1 and K2-1 are out of specification at step 1.14E12p/cm². K1 and K2-1 are within the specification at step 1.14E12p/cm² in ON Bias1 condition.

- Considering re-evaluated specification (according to information provided by ISOLINK):
  - In ON Bias 1: K1 and K2-1 are out of specification at step 2.3E11.p/cm².
  - In ON Bias 2: K1 and K2-1 are out of specification at step 1.15E11.p/cm².
  - For unbiased component: K1 and K2-1 are out of specification at step 2.3E11.p/cm².

- Under 190MeV proton Beam:

BWFwd and BWBack parameters are :

- In ON Bias 1: BWFwd parameter is within the specification up to the step 4E11p/cm² and BWBack parameter is functional up to total fluence.
- In ON Bias 2: BWFwd parameter is within the specification up to the step 4E11p/cm² and BWBack parameter is functional up to total fluence.
- For unbiased component: BWFwd and BWBack parameters are within the specification up to the step 4E11p/cm².

- Considering the applicable datasheet [RD1]:

For the three bias conditions tested, K1 and K2-1 are within the specification up to the step 4E11p/cm².

- Considering re-evaluated specification (according to information provided by ISOLINK):

For the three bias conditions tested, K1 and K2-1 are within the specification up to the step 4E10p/cm².

However as shown in next Figures and whatever the bias condition and energy proton irradiation, Transfer Gain K3 (K2 / K1) remains within the specification at final step irradiation.

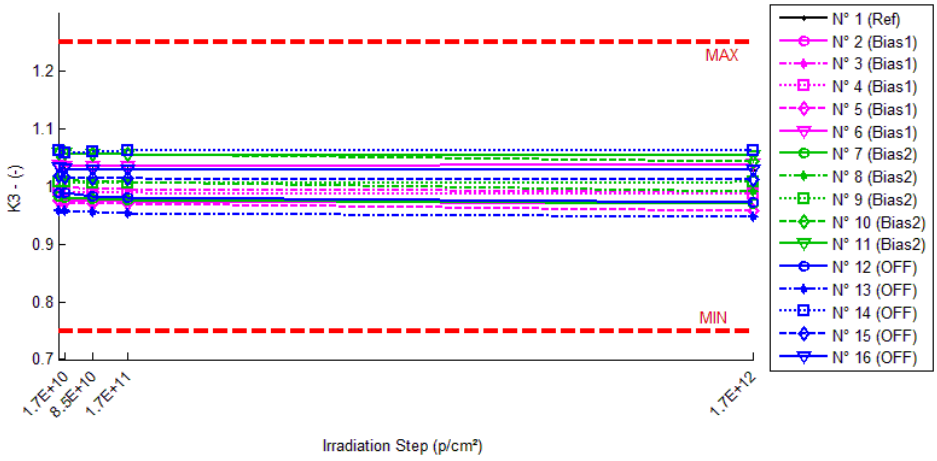


Figure 48: K3 under 30 MeV protons

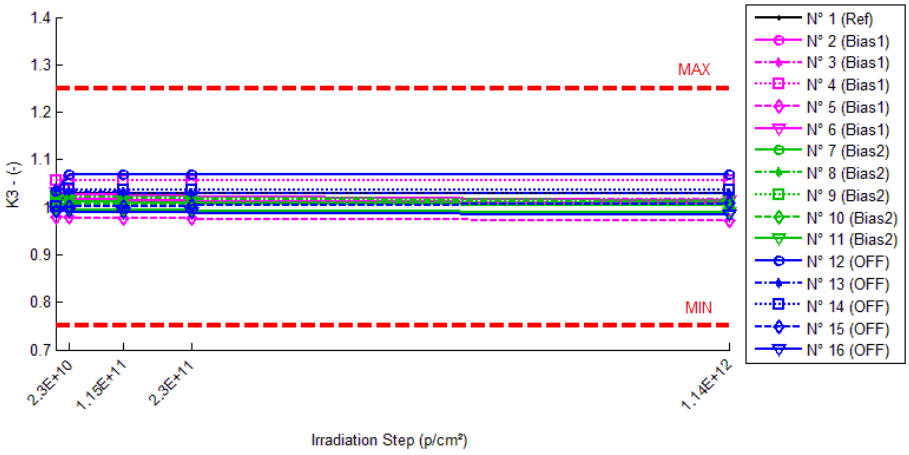


Figure 49: K3 under 60 MeV protons

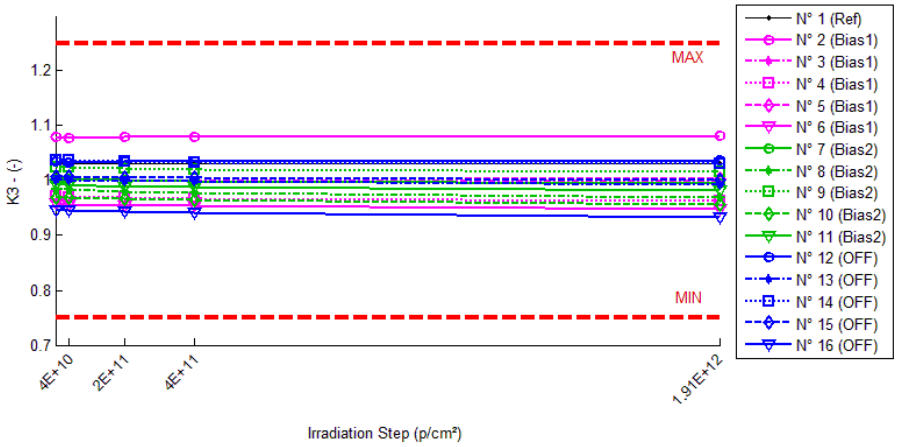


Figure 50 : K3 under 190 MeV protons

9 DETAILED TESTS RESULTS

The pre and post radiation test results are shown graphically in the following pages

- 30MeV: 9-2 to 9-43
- 60MeV: 10-2 to 10-43
- 190MeV: 11-2 to 11-43

The data is displayed in the following tables and graphs.

These graphs show parameter's shifts observed during the proton testing sequence. The control sample results are shown on each graph (black curve).

When available in the device data-sheet/specification, the maximum/minimum/typical values are also shown (red dotted line).

The tables include drift calculation between each measurement step and the "0" proton/cm² step.

For CTR values, the formula used is:

$$\text{Drift} = \frac{1}{\text{measurement } (X \text{ protons /cm}^2)} - \frac{1}{\text{measurement } (0 \text{ proton /cm}^2)}$$

For the other measurements the formula used is:

Drift value= measurement (X protons/cm²) - measurement (0 proton/cm²)

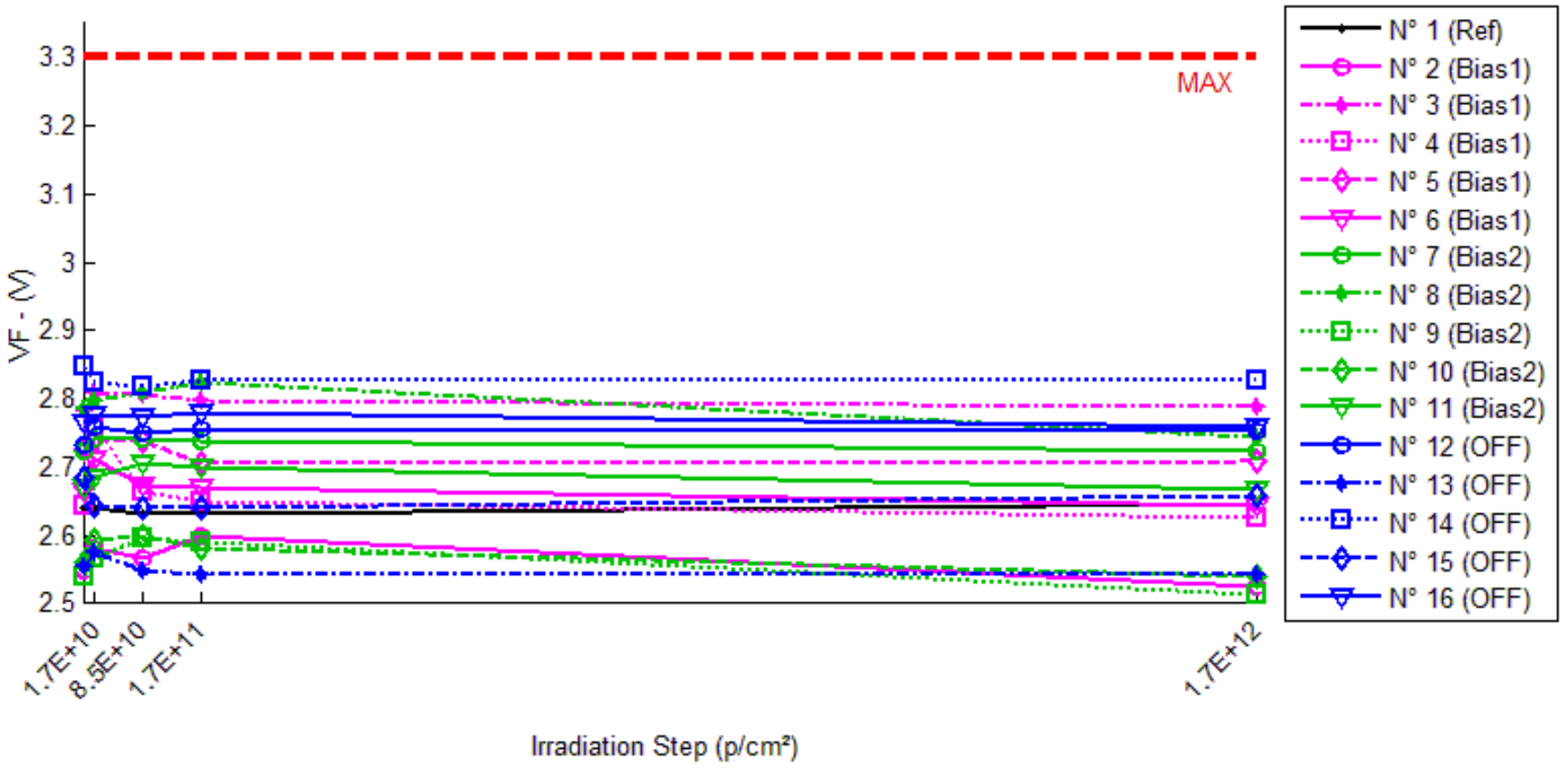
30 MeV proton / detailed results

CONTENTS

30 MeV proton / detailed results

1. VF

Ta = 25°C ; IF = 10mA



30 MeV proton / detailed results

VF . (V) **Max = 3.3**

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	2.642	2.641	2.631	2.633	2.648
N° 2 (Bias1)	2.548	2.581	2.566	2.599	2.526
N° 3 (Bias1)	2.783	2.810	2.808	2.799	2.789
N° 4 (Bias1)	2.643	2.758	2.664	2.649	2.627
N° 5 (Bias1)	2.726	2.739	2.739	2.707	2.710
N° 6 (Bias1)	2.665	2.711	2.674	2.669	2.645
N° 7 (Bias2)	2.724	2.742	2.741	2.738	2.724
N° 8 (Bias2)	2.787	2.798	2.809	2.824	2.743
N° 9 (Bias2)	2.540	2.568	2.597	2.591	2.512
N° 10 (Bias2)	2.561	2.594	2.600	2.580	2.540
N° 11 (Bias2)	2.669	2.684	2.706	2.700	2.666
N° 12 (OFF)	2.732	2.758	2.750	2.757	2.752
N° 13 (OFF)	2.554	2.577	2.548	2.542	2.542
N° 14 (OFF)	2.848	2.825	2.817	2.827	2.828
N° 15 (OFF)	2.686	2.643	2.640	2.641	2.658
N° 16 (OFF)	2.766	2.778	2.774	2.779	2.760

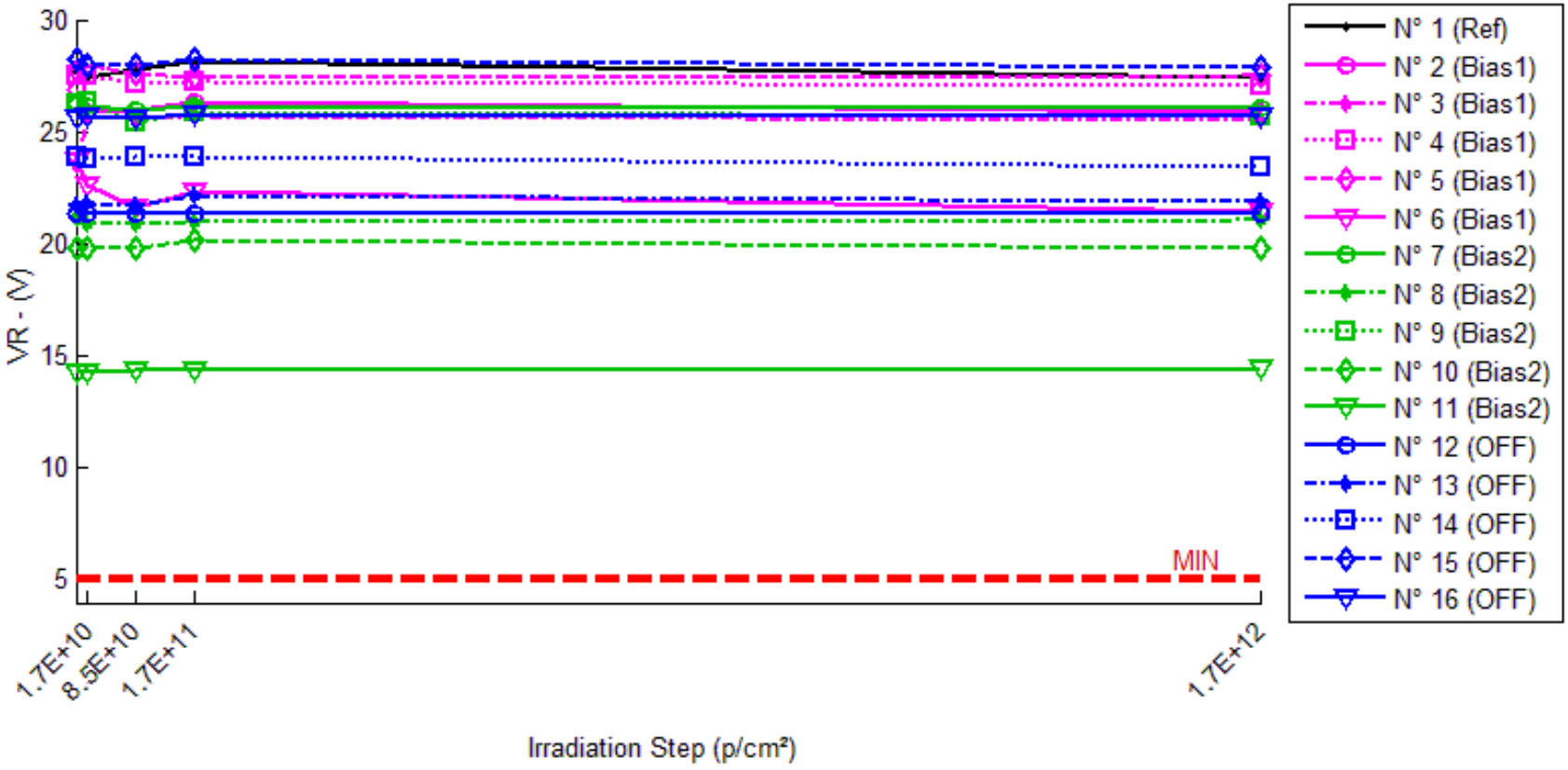
Delta [VF]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	-9.450E-4	-1.131E-2	-8.866E-3	6.380E-3
N° 2 (Bias1)	---	3.225E-2	1.796E-2	5.033E-2	-2.208E-2
N° 3 (Bias1)	---	2.724E-2	2.486E-2	1.650E-2	5.955E-3
N° 4 (Bias1)	---	1.157E-1	2.137E-2	6.307E-3	-1.567E-2
N° 5 (Bias1)	---	1.329E-2	1.320E-2	-1.921E-2	-1.575E-2
N° 6 (Bias1)	---	4.507E-2	8.388E-3	3.029E-3	-2.084E-2
N° 7 (Bias2)	---	1.751E-2	1.616E-2	1.328E-2	-7.820E-4
N° 8 (Bias2)	---	1.118E-2	2.145E-2	3.743E-2	-4.390E-2
N° 9 (Bias2)	---	2.772E-2	5.691E-2	5.095E-2	-2.803E-2
N° 10 (Bias2)	---	3.272E-2	3.872E-2	1.895E-2	-2.048E-2
N° 11 (Bias2)	---	1.472E-2	3.646E-2	3.092E-2	-3.434E-3
N° 12 (OFF)	---	2.589E-2	1.792E-2	2.522E-2	2.012E-2
N° 13 (OFF)	---	2.346E-2	-5.896E-3	-1.181E-2	-1.222E-2
N° 14 (OFF)	---	-2.270E-2	-3.148E-2	-2.133E-2	-2.009E-2
N° 15 (OFF)	---	-4.288E-2	-4.526E-2	-4.505E-2	-2.788E-2
N° 16 (OFF)	---	1.243E-2	7.954E-3	1.351E-2	-6.030E-3
Average (OFF)	---	4.670E-2	1.715E-2	1.139E-2	-1.368E-2
σ (OFF)	---	4.020E-2	6.525E-3	2.537E-2	1.135E-2
Average+3σ (OFF)	---	1.673E-1	3.673E-2	8.750E-2	2.038E-2
Average-3σ (OFF)	---	-7.389E-2	-2.419E-3	-6.472E-2	-4.774E-2
Average (Bias1)	---	2.077E-2	3.394E-2	3.031E-2	-1.933E-2
σ (Bias1)	---	9.087E-3	1.604E-2	1.497E-2	1.787E-2
Average+3σ (Bias1)	---	4.803E-2	8.206E-2	7.521E-2	3.429E-2
Average-3σ (Bias1)	---	-6.489E-3	-1.418E-2	-1.459E-2	-7.294E-2
Average (Bias2)	---	-7.596E-4	-1.135E-2	-7.892E-3	-9.221E-3
σ (Bias2)	---	3.052E-2	2.653E-2	2.798E-2	1.835E-2
Average+3σ (Bias2)	---	9.080E-2	6.822E-2	7.604E-2	4.581E-2
Average-3σ (Bias2)	---	-9.232E-2	-9.093E-2	-9.182E-2	-6.426E-2

30 MeV proton / detailed results

2. VR

Ta = 25°C ; IR = 100µA



30 MeV proton / detailed results

VR . (V) **Min = 5.0**

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	27.671	27.445	27.749	28.150	27.404
N° 2 (Bias1)	26.831	25.836	25.966	26.329	25.855
N° 3 (Bias1)	23.482	25.621	25.639	25.655	25.525
N° 4 (Bias1)	27.527	27.483	27.148	27.231	27.092
N° 5 (Bias1)	27.722	27.922	27.563	27.449	27.548
N° 6 (Bias1)	23.688	22.653	21.653	22.322	21.430
N° 7 (Bias2)	26.259	26.173	25.999	26.159	26.100
N° 8 (Bias2)	21.131	20.930	20.856	20.943	21.105
N° 9 (Bias2)	26.205	26.352	25.444	25.899	25.699
N° 10 (Bias2)	19.779	19.833	19.820	20.137	19.837
N° 11 (Bias2)	14.269	14.300	14.344	14.359	14.472
N° 12 (OFF)	21.327	21.345	21.377	21.356	21.353
N° 13 (OFF)	21.698	21.784	21.747	22.129	21.858
N° 14 (OFF)	23.862	23.828	23.895	23.885	23.475
N° 15 (OFF)	28.234	27.960	27.950	28.201	27.844
N° 16 (OFF)	25.644	25.672	25.645	25.752	25.742

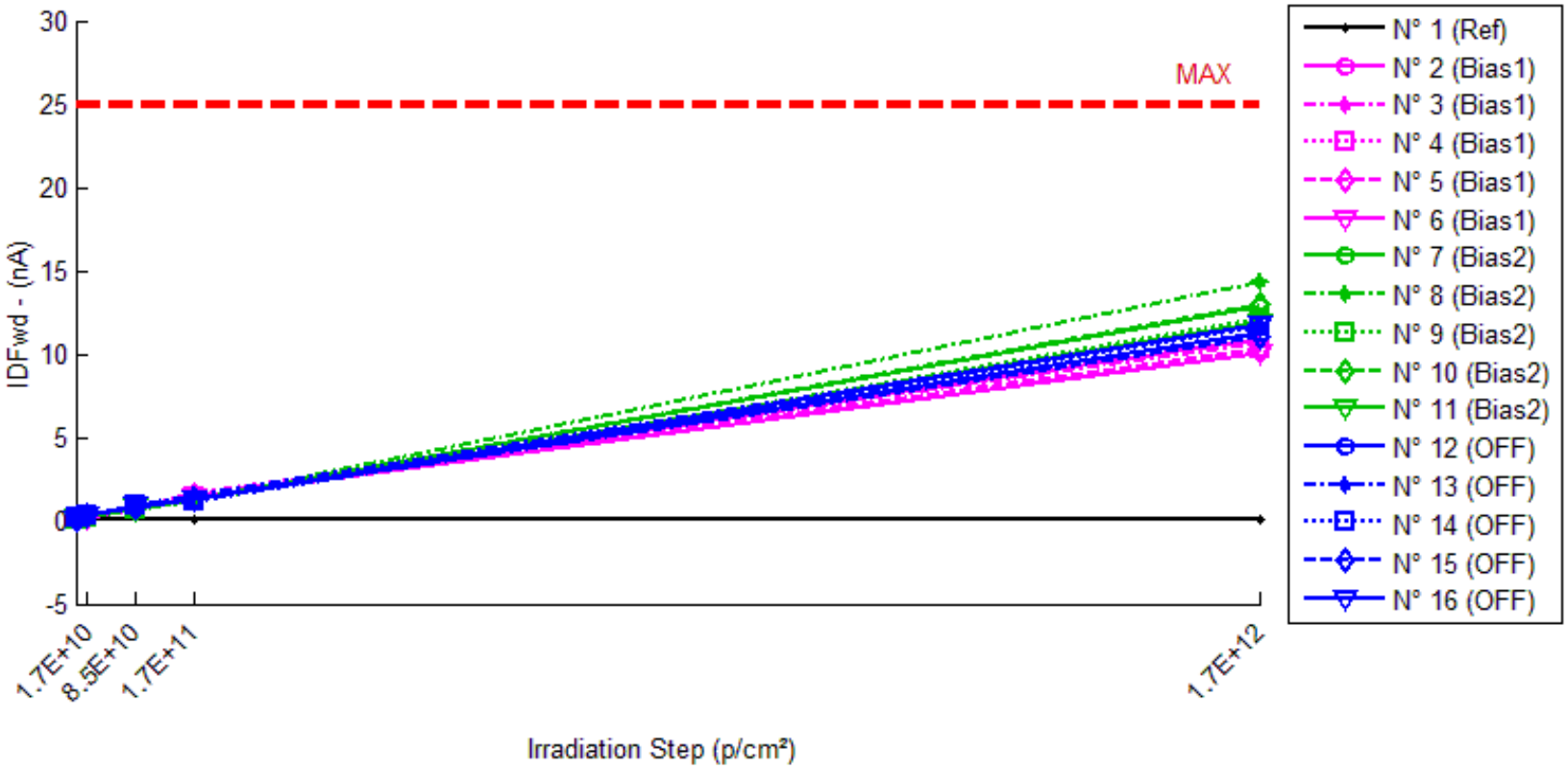
Delta [VR]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	-2.265E-1	7.784E-2	4.789E-1	-2.668E-1
N° 2 (Bias1)	---	-9.950E-1	-8.646E-1	-5.018E-1	-9.761E-1
N° 3 (Bias1)	---	2.139E+0	2.157E+0	2.173E+0	2.044E+0
N° 4 (Bias1)	---	-4.452E-2	-3.799E-1	-2.965E-1	-4.352E-1
N° 5 (Bias1)	---	2.001E-1	-1.595E-1	-2.735E-1	-1.736E-1
N° 6 (Bias1)	---	-1.035E+0	-2.035E+0	-1.366E+0	-2.258E+0
N° 7 (Bias2)	---	-8.549E-2	-2.596E-1	-9.940E-2	-1.592E-1
N° 8 (Bias2)	---	-2.009E-1	-2.741E-1	-1.877E-1	-2.600E-2
N° 9 (Bias2)	---	1.470E-1	-7.607E-1	-3.059E-1	-5.057E-1
N° 10 (Bias2)	---	5.423E-2	4.066E-2	3.583E-1	5.807E-2
N° 11 (Bias2)	---	3.047E-2	7.420E-2	8.945E-2	2.022E-1
N° 12 (OFF)	---	1.832E-2	4.983E-2	2.959E-2	2.616E-2
N° 13 (OFF)	---	8.584E-2	4.909E-2	4.311E-1	1.602E-1
N° 14 (OFF)	---	-3.354E-2	3.388E-2	2.347E-2	-3.866E-1
N° 15 (OFF)	---	-2.743E-1	-2.839E-1	-3.376E-2	-3.904E-1
N° 16 (OFF)	---	2.786E-2	8.400E-4	1.081E-1	9.777E-2
Average (OFF)	---	5.304E-2	-2.563E-1	-5.295E-2	-3.598E-1
σ (OFF)	---	1.291E+0	1.532E+0	1.322E+0	1.565E+0
Average+3σ (OFF)	---	3.926E+0	4.339E+0	3.912E+0	4.336E+0
Average-3σ (OFF)	---	-3.820E+0	-4.851E+0	-4.018E+0	-5.055E+0
Average (Bias1)	---	-1.094E-2	-2.359E-1	-2.905E-2	-8.614E-2
σ (Bias1)	---	1.347E-1	3.354E-1	2.602E-1	2.688E-1
Average+3σ (Bias1)	---	3.931E-1	7.704E-1	7.517E-1	7.202E-1
Average-3σ (Bias1)	---	-4.150E-1	-1.242E+0	-8.098E-1	-8.924E-1
Average (Bias2)	---	-3.517E-2	-3.006E-2	1.117E-1	-9.859E-2
σ (Bias2)	---	1.402E-1	1.433E-1	1.856E-1	2.689E-1
Average+3σ (Bias2)	---	3.856E-1	3.998E-1	6.684E-1	7.081E-1
Average-3σ (Bias2)	---	-4.559E-1	-4.599E-1	-4.450E-1	-9.053E-1

30 MeV proton / detailed results

3. IDFwd

Ta = 25°C ; VR = 15V ; IF = 0mA



30 MeV proton / detailed results

IDFwd . (nA) **Max = 25.0**

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	0.091	0.080	0.212	0.105	0.091
N° 2 (Bias1)	0.104	0.224	0.719	1.390	10.960
N° 3 (Bias1)	0.105	0.249	0.796	1.616	10.652
N° 4 (Bias1)	0.080	0.246	0.714	1.359	10.253
N° 5 (Bias1)	0.080	0.204	0.708	1.509	10.326
N° 6 (Bias1)	0.150	0.313	0.803	1.452	10.081
N° 7 (Bias2)	0.092	0.305	0.701	1.232	12.877
N° 8 (Bias2)	0.114	0.238	0.732	1.273	14.340
N° 9 (Bias2)	0.091	0.228	0.666	1.197	12.190
N° 10 (Bias2)	0.114	0.276	0.722	1.302	12.943
N° 11 (Bias2)	0.142	0.298	0.758	1.284	11.927
N° 12 (OFF)	0.092	0.263	0.837	1.242	11.328
N° 13 (OFF)	0.123	0.295	0.888	1.474	11.746
N° 14 (OFF)	0.124	0.288	0.868	1.201	11.669
N° 15 (OFF)	0.070	0.271	0.834	1.234	11.063
N° 16 (OFF)	0.096	0.278	0.868	1.300	11.709

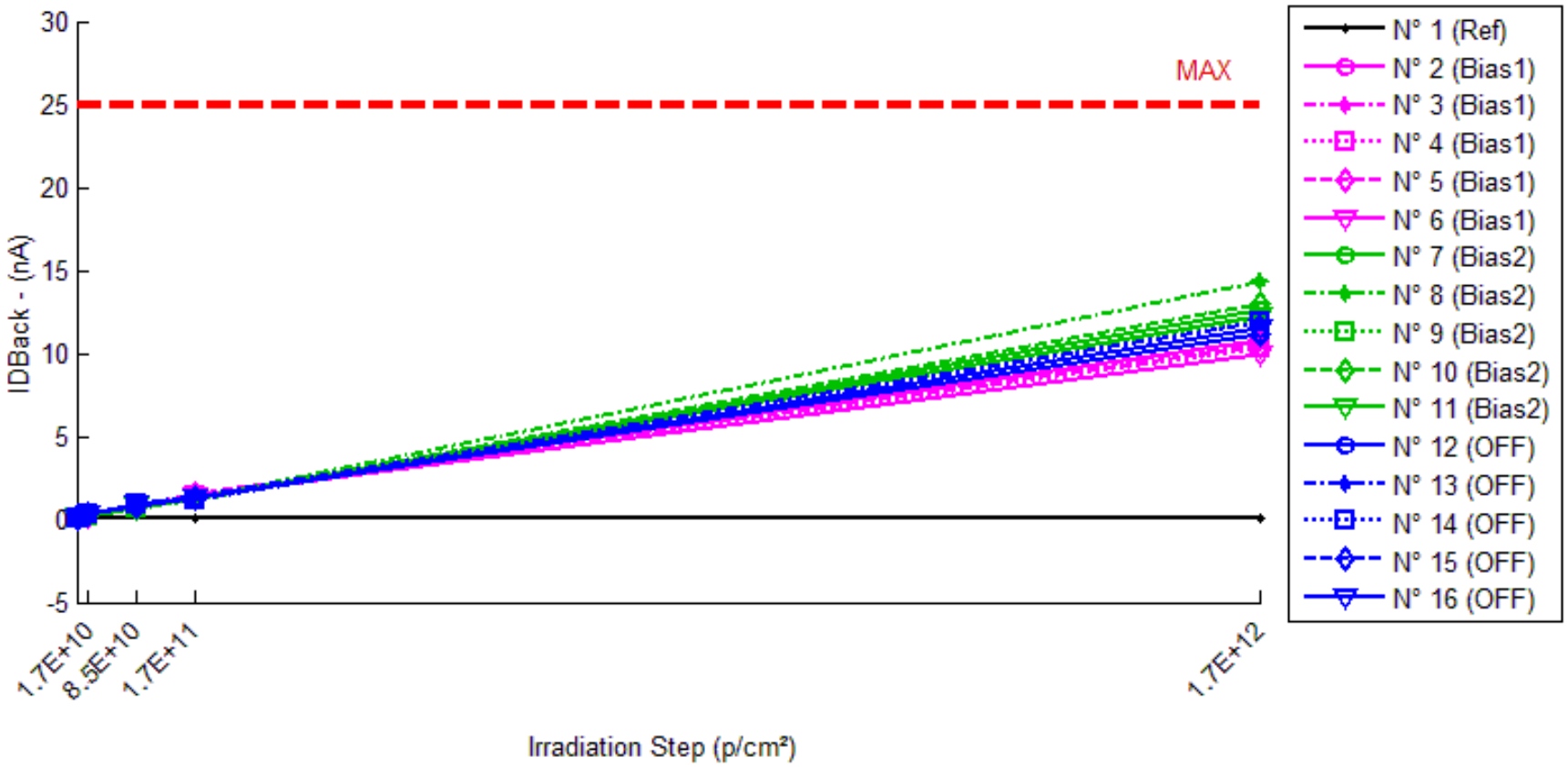
Delta [IDFwd]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	-1.056E-2	1.212E-1	1.425E-2	2.932E-4
N° 2 (Bias1)	---	1.196E-1	6.151E-1	1.286E+0	1.086E+1
N° 3 (Bias1)	---	1.437E-1	6.907E-1	1.511E+0	1.055E+1
N° 4 (Bias1)	---	1.659E-1	6.343E-1	1.279E+0	1.017E+1
N° 5 (Bias1)	---	1.245E-1	6.285E-1	1.429E+0	1.025E+1
N° 6 (Bias1)	---	1.625E-1	6.525E-1	1.301E+0	9.931E+0
N° 7 (Bias2)	---	2.130E-1	6.094E-1	1.140E+0	1.279E+1
N° 8 (Bias2)	---	1.241E-1	6.179E-1	1.159E+0	1.423E+1
N° 9 (Bias2)	---	1.366E-1	5.742E-1	1.105E+0	1.210E+1
N° 10 (Bias2)	---	1.618E-1	6.076E-1	1.187E+0	1.283E+1
N° 11 (Bias2)	---	1.559E-1	6.162E-1	1.143E+0	1.179E+1
N° 12 (OFF)	---	1.712E-1	7.455E-1	1.150E+0	1.124E+1
N° 13 (OFF)	---	1.723E-1	7.652E-1	1.352E+0	1.162E+1
N° 14 (OFF)	---	1.645E-1	7.441E-1	1.077E+0	1.155E+1
N° 15 (OFF)	---	2.006E-1	7.632E-1	1.163E+0	1.099E+1
N° 16 (OFF)	---	1.821E-1	7.723E-1	1.204E+0	1.161E+1
Average (OFF)	---	1.433E-1	6.442E-1	1.361E+0	1.035E+1
σ (OFF)	---	2.119E-2	2.926E-2	1.035E-1	3.581E-1
Average+3σ (OFF)	---	2.068E-1	7.320E-1	1.672E+0	1.142E+1
Average-3σ (OFF)	---	7.969E-2	5.564E-1	1.051E+0	9.276E+0
Average (Bias1)	---	1.583E-1	6.051E-1	1.147E+0	1.274E+1
σ (Bias1)	---	3.411E-2	1.782E-2	2.998E-2	9.409E-1
Average+3σ (Bias1)	---	2.606E-1	6.585E-1	1.237E+0	1.557E+1
Average-3σ (Bias1)	---	5.596E-2	5.516E-1	1.057E+0	9.922E+0
Average (Bias2)	---	1.781E-1	7.580E-1	1.189E+0	1.140E+1
σ (Bias2)	---	1.403E-2	1.258E-2	1.017E-1	2.782E-1
Average+3σ (Bias2)	---	2.202E-1	7.958E-1	1.494E+0	1.224E+1
Average-3σ (Bias2)	---	1.360E-1	7.203E-1	8.842E-1	1.057E+1

30 MeV proton / detailed results

4. IDBack

Ta = 25°C ; VR = 15V ; IF = 0mA



30 MeV proton / detailed results

IDBack . (nA) **Max = 25.0**

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	0.076	0.079	0.142	0.098	0.077
N° 2 (Bias1)	0.113	0.231	0.723	1.379	10.808
N° 3 (Bias1)	0.109	0.260	0.804	1.585	10.727
N° 4 (Bias1)	0.120	0.256	0.727	1.383	10.325
N° 5 (Bias1)	0.098	0.217	0.749	1.528	10.452
N° 6 (Bias1)	0.108	0.263	0.745	1.401	9.905
N° 7 (Bias2)	0.090	0.242	0.728	1.222	12.634
N° 8 (Bias2)	0.106	0.230	0.729	1.266	14.329
N° 9 (Bias2)	0.110	0.234	0.674	1.216	12.172
N° 10 (Bias2)	0.122	0.272	0.714	1.295	12.993
N° 11 (Bias2)	0.147	0.299	0.764	1.309	12.272
N° 12 (OFF)	0.103	0.270	0.831	1.228	11.213
N° 13 (OFF)	0.118	0.289	0.886	1.451	11.850
N° 14 (OFF)	0.115	0.289	0.870	1.214	11.843
N° 15 (OFF)	0.094	0.274	0.841	1.244	11.141
N° 16 (OFF)	0.103	0.284	0.854	1.287	11.574

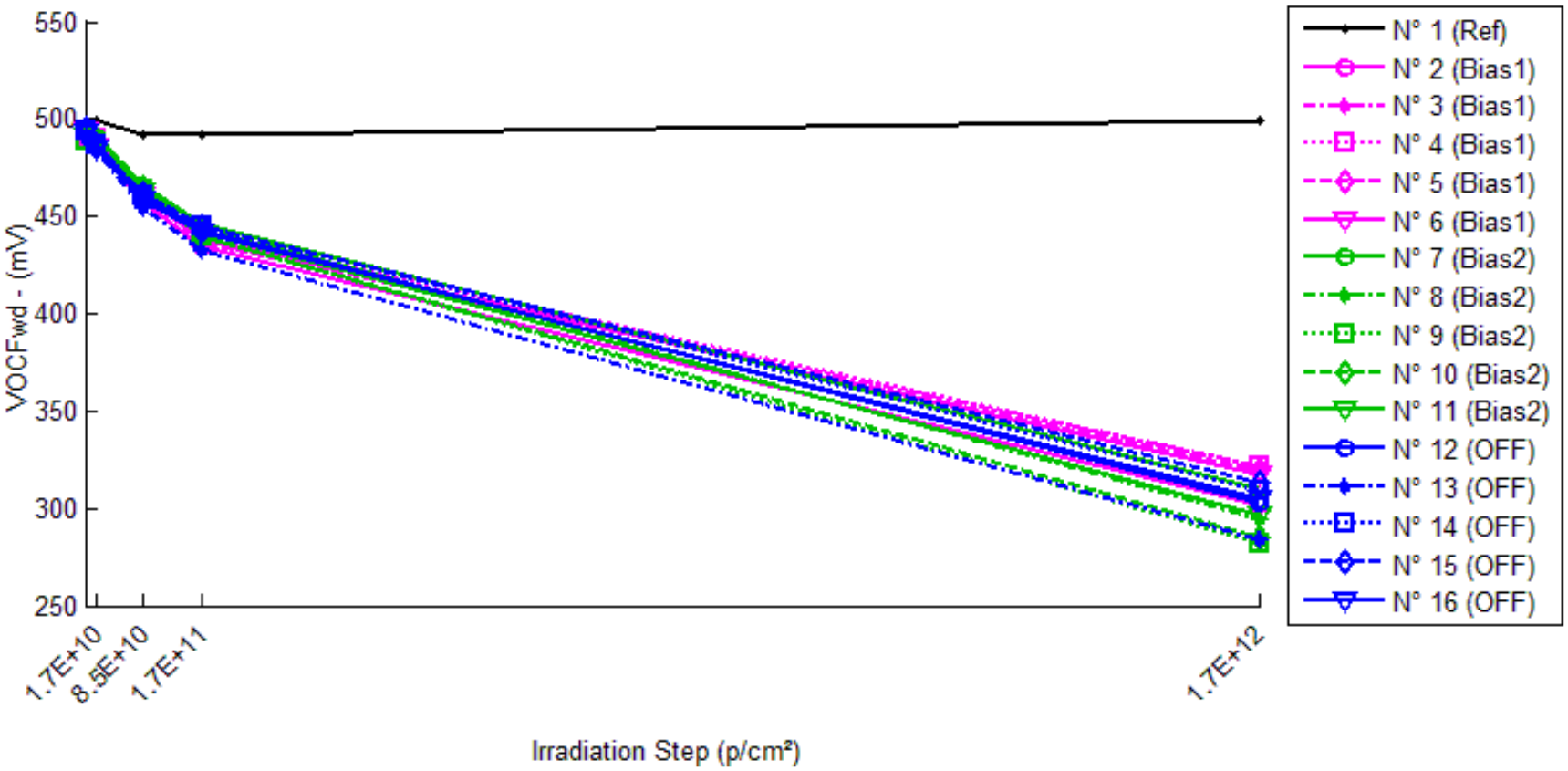
Delta [IDBack]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	2.976E-3	6.648E-2	2.209E-2	1.383E-3
N° 2 (Bias1)	---	1.180E-1	6.107E-1	1.266E+0	1.070E+1
N° 3 (Bias1)	---	1.510E-1	6.943E-1	1.476E+0	1.062E+1
N° 4 (Bias1)	---	1.360E-1	6.070E-1	1.263E+0	1.020E+1
N° 5 (Bias1)	---	1.198E-1	6.511E-1	1.430E+0	1.035E+1
N° 6 (Bias1)	---	1.554E-1	6.371E-1	1.294E+0	9.797E+0
N° 7 (Bias2)	---	1.514E-1	6.378E-1	1.132E+0	1.254E+1
N° 8 (Bias2)	---	1.241E-1	6.233E-1	1.160E+0	1.422E+1
N° 9 (Bias2)	---	1.241E-1	5.639E-1	1.106E+0	1.206E+1
N° 10 (Bias2)	---	1.498E-1	5.923E-1	1.174E+0	1.287E+1
N° 11 (Bias2)	---	1.525E-1	6.179E-1	1.163E+0	1.213E+1
N° 12 (OFF)	---	1.667E-1	7.275E-1	1.125E+0	1.111E+1
N° 13 (OFF)	---	1.701E-1	7.674E-1	1.333E+0	1.173E+1
N° 14 (OFF)	---	1.737E-1	7.549E-1	1.099E+0	1.173E+1
N° 15 (OFF)	---	1.796E-1	7.474E-1	1.150E+0	1.105E+1
N° 16 (OFF)	---	1.813E-1	7.514E-1	1.184E+0	1.147E+1
Average (OFF)	---	1.360E-1	6.400E-1	1.346E+0	1.033E+1
σ (OFF)	---	1.723E-2	3.546E-2	9.984E-2	3.595E-1
Average+3σ (OFF)	---	1.877E-1	7.464E-1	1.645E+0	1.141E+1
Average-3σ (OFF)	---	8.435E-2	5.337E-1	1.046E+0	9.256E+0
Average (Bias1)	---	1.404E-1	6.070E-1	1.147E+0	1.276E+1
σ (Bias1)	---	1.490E-2	2.920E-2	2.761E-2	8.787E-1
Average+3σ (Bias1)	---	1.851E-1	6.946E-1	1.229E+0	1.540E+1
Average-3σ (Bias1)	---	9.569E-2	5.194E-1	1.064E+0	1.013E+1
Average (Bias2)	---	1.743E-1	7.497E-1	1.178E+0	1.142E+1
σ (Bias2)	---	6.196E-3	1.452E-2	9.182E-2	3.274E-1
Average+3σ (Bias2)	---	1.929E-1	7.933E-1	1.454E+0	1.240E+1
Average-3σ (Bias2)	---	1.557E-1	7.062E-1	9.028E-1	1.044E+1

30 MeV proton / detailed results

5. VOCFwd

Ta = 25°C ; IF = 10mA



30 MeV proton / detailed results

VOCFwd . (mV)

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	495.870	499.729	491.565	491.531	499.502
N° 2 (Bias1)	489.825	485.584	457.830	434.665	301.537
N° 3 (Bias1)	491.936	487.723	461.509	437.764	321.262
N° 4 (Bias1)	491.128	490.326	463.686	440.476	321.170
N° 5 (Bias1)	493.163	487.307	462.216	436.108	319.323
N° 6 (Bias1)	494.041	485.963	460.883	438.178	317.618
N° 7 (Bias2)	493.808	491.274	465.438	446.218	309.661
N° 8 (Bias2)	495.813	492.343	465.738	445.390	294.642
N° 9 (Bias2)	489.253	486.287	463.516	440.039	282.252
N° 10 (Bias2)	493.429	487.706	464.600	440.067	285.000
N° 11 (Bias2)	491.130	484.664	462.654	441.495	296.112
N° 12 (OFF)	493.208	487.143	460.062	442.898	303.156
N° 13 (OFF)	490.195	483.631	454.026	431.973	284.298
N° 14 (OFF)	493.673	486.250	460.119	445.152	308.563
N° 15 (OFF)	495.423	487.004	461.889	444.954	313.189
N° 16 (OFF)	492.927	485.007	458.806	441.434	305.223

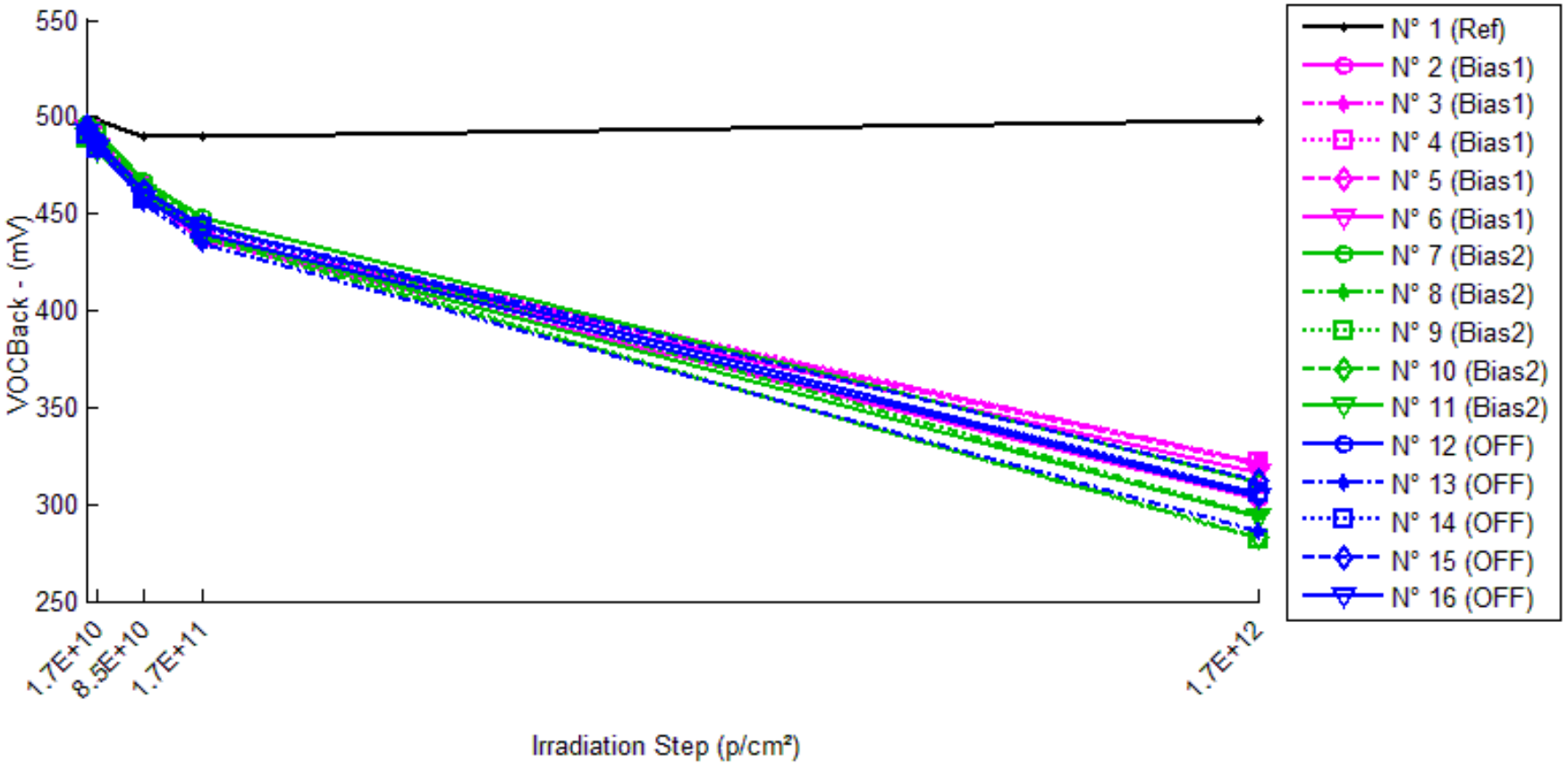
Delta [VOCFwd]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	3.858E+0	-4.305E+0	-4.339E+0	3.632E+0
N° 2 (Bias1)	---	-4.241E+0	-3.200E+1	-5.516E+1	-1.883E+2
N° 3 (Bias1)	---	-4.212E+0	-3.043E+1	-5.417E+1	-1.707E+2
N° 4 (Bias1)	---	-8.021E-1	-2.744E+1	-5.065E+1	-1.700E+2
N° 5 (Bias1)	---	-5.856E+0	-3.095E+1	-5.706E+1	-1.738E+2
N° 6 (Bias1)	---	-8.078E+0	-3.316E+1	-5.586E+1	-1.764E+2
N° 7 (Bias2)	---	-2.534E+0	-2.837E+1	-4.759E+1	-1.841E+2
N° 8 (Bias2)	---	-3.470E+0	-3.008E+1	-5.042E+1	-2.012E+2
N° 9 (Bias2)	---	-2.966E+0	-2.574E+1	-4.921E+1	-2.070E+2
N° 10 (Bias2)	---	-5.723E+0	-2.883E+1	-5.336E+1	-2.084E+2
N° 11 (Bias2)	---	-6.466E+0	-2.848E+1	-4.963E+1	-1.950E+2
N° 12 (OFF)	---	-6.065E+0	-3.315E+1	-5.031E+1	-1.901E+2
N° 13 (OFF)	---	-6.565E+0	-3.617E+1	-5.822E+1	-2.059E+2
N° 14 (OFF)	---	-7.423E+0	-3.355E+1	-4.852E+1	-1.851E+2
N° 15 (OFF)	---	-8.419E+0	-3.353E+1	-5.047E+1	-1.822E+2
N° 16 (OFF)	---	-7.919E+0	-3.412E+1	-5.149E+1	-1.877E+2
Average (OFF)	---	-4.638E+0	-3.079E+1	-5.458E+1	-1.758E+2
σ (OFF)	---	2.663E+0	2.146E+0	2.434E+0	7.426E+0
Average+3σ (OFF)	---	3.351E+0	-2.436E+1	-4.728E+1	-1.536E+2
Average-3σ (OFF)	---	-1.263E+1	-3.723E+1	-6.188E+1	-1.981E+2
Average (Bias1)	---	-4.232E+0	-2.830E+1	-5.004E+1	-1.992E+2
σ (Bias1)	---	1.752E+0	1.584E+0	2.123E+0	9.924E+0
Average+3σ (Bias1)	---	1.024E+0	-2.355E+1	-4.367E+1	-1.694E+2
Average-3σ (Bias1)	---	-9.488E+0	-3.305E+1	-5.641E+1	-2.289E+2
Average (Bias2)	---	-7.278E+0	-3.410E+1	-5.180E+1	-1.902E+2
σ (Bias2)	---	9.637E-1	1.205E+0	3.744E+0	9.247E+0
Average+3σ (Bias2)	---	-4.387E+0	-3.049E+1	-4.057E+1	-1.625E+2
Average-3σ (Bias2)	---	-1.017E+1	-3.772E+1	-6.304E+1	-2.179E+2

30 MeV proton / detailed results

6. VOCBack

Ta = 25°C ; IF = 10mA



30 MeV proton / detailed results

VOCBack . (mV)

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	494.603	498.443	490.287	490.243	498.254
N° 2 (Bias1)	490.866	486.615	459.157	436.093	303.299
N° 3 (Bias1)	492.567	488.065	461.877	438.211	321.484
N° 4 (Bias1)	491.415	490.370	463.749	440.538	321.556
N° 5 (Bias1)	494.186	488.122	463.201	437.209	320.504
N° 6 (Bias1)	493.565	485.179	459.599	436.697	316.219
N° 7 (Bias2)	496.678	493.495	467.414	448.079	311.567
N° 8 (Bias2)	494.931	491.284	464.991	444.754	294.913
N° 9 (Bias2)	489.135	485.973	463.070	439.516	281.888
N° 10 (Bias2)	491.183	485.406	462.300	437.796	283.147
N° 11 (Bias2)	489.474	482.852	460.624	439.274	292.993
N° 12 (OFF)	494.029	488.040	461.365	444.311	304.776
N° 13 (OFF)	491.988	485.339	455.912	434.266	286.119
N° 14 (OFF)	491.339	483.858	457.539	442.416	305.501
N° 15 (OFF)	494.667	486.320	461.304	444.384	312.452
N° 16 (OFF)	491.726	483.726	457.514	440.152	304.267

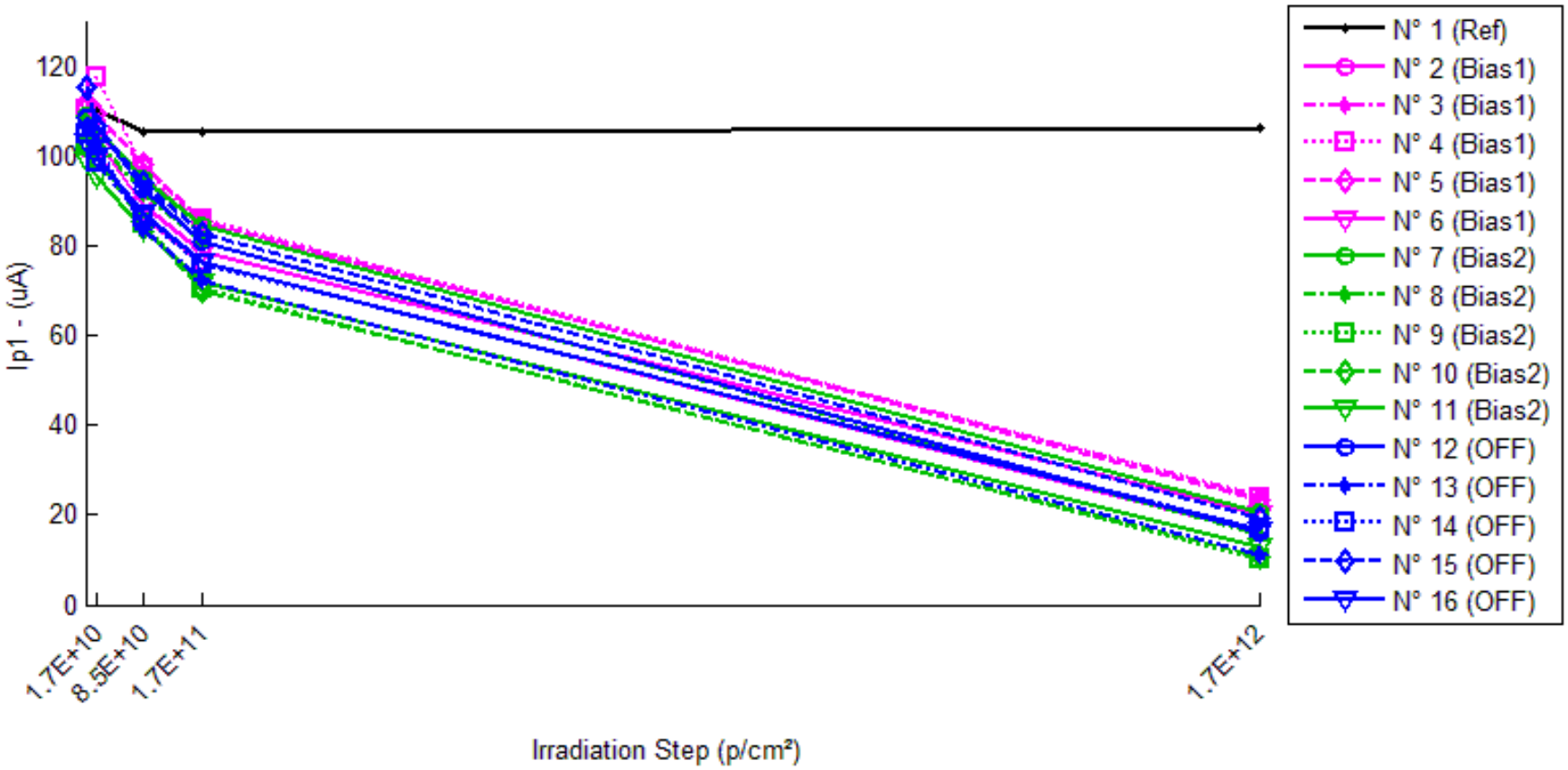
Delta [VOCBack]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	3.840E+0	-4.316E+0	-4.360E+0	3.651E+0
N° 2 (Bias1)	---	-4.252E+0	-3.171E+1	-5.477E+1	-1.876E+2
N° 3 (Bias1)	---	-4.502E+0	-3.069E+1	-5.436E+1	-1.711E+2
N° 4 (Bias1)	---	-1.045E+0	-2.767E+1	-5.088E+1	-1.699E+2
N° 5 (Bias1)	---	-6.064E+0	-3.098E+1	-5.698E+1	-1.737E+2
N° 6 (Bias1)	---	-8.386E+0	-3.397E+1	-5.687E+1	-1.773E+2
N° 7 (Bias2)	---	-3.184E+0	-2.926E+1	-4.860E+1	-1.851E+2
N° 8 (Bias2)	---	-3.647E+0	-2.994E+1	-5.018E+1	-2.000E+2
N° 9 (Bias2)	---	-3.162E+0	-2.607E+1	-4.962E+1	-2.072E+2
N° 10 (Bias2)	---	-5.776E+0	-2.888E+1	-5.339E+1	-2.080E+2
N° 11 (Bias2)	---	-6.622E+0	-2.885E+1	-5.020E+1	-1.965E+2
N° 12 (OFF)	---	-5.989E+0	-3.266E+1	-4.972E+1	-1.893E+2
N° 13 (OFF)	---	-6.649E+0	-3.608E+1	-5.772E+1	-2.059E+2
N° 14 (OFF)	---	-7.481E+0	-3.380E+1	-4.892E+1	-1.858E+2
N° 15 (OFF)	---	-8.348E+0	-3.336E+1	-5.028E+1	-1.822E+2
N° 16 (OFF)	---	-8.000E+0	-3.421E+1	-5.157E+1	-1.875E+2
Average (OFF)	---	-4.850E+0	-3.100E+1	-5.477E+1	-1.759E+2
σ (OFF)	---	2.690E+0	2.264E+0	2.480E+0	7.121E+0
Average+3σ (OFF)	---	3.219E+0	-2.421E+1	-4.733E+1	-1.545E+2
Average-3σ (OFF)	---	-1.292E+1	-3.780E+1	-6.221E+1	-1.973E+2
Average (Bias1)	---	-4.478E+0	-2.860E+1	-5.040E+1	-1.994E+2
σ (Bias1)	---	1.611E+0	1.484E+0	1.793E+0	9.344E+0
Average+3σ (Bias1)	---	3.536E-1	-2.415E+1	-4.502E+1	-1.713E+2
Average-3σ (Bias1)	---	-9.310E+0	-3.305E+1	-5.578E+1	-2.274E+2
Average (Bias2)	---	-7.293E+0	-3.402E+1	-5.164E+1	-1.901E+2
σ (Bias2)	---	9.699E-1	1.283E+0	3.533E+0	9.174E+0
Average+3σ (Bias2)	---	-4.384E+0	-3.018E+1	-4.105E+1	-1.626E+2
Average-3σ (Bias2)	---	-1.020E+1	-3.787E+1	-6.224E+1	-2.177E+2

30 MeV proton / detailed results

7. Ip1

Ta = 25°C ; IF = 10mA ; Vdet = -15V



30 MeV proton / detailed results

Ip1 . (uA)

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	105.802	110.337	105.109	105.218	106.135
N° 2 (Bias1)	101.909	100.860	86.109	76.371	15.871
N° 3 (Bias1)	107.000	105.400	95.223	85.114	24.092
N° 4 (Bias1)	110.260	117.562	97.144	85.850	23.611
N° 5 (Bias1)	112.111	109.275	98.240	85.571	23.426
N° 6 (Bias1)	102.961	103.460	89.172	78.685	20.212
N° 7 (Bias2)	109.134	106.146	94.929	84.322	20.520
N° 8 (Bias2)	108.078	103.441	91.591	80.728	15.422
N° 9 (Bias2)	102.022	99.439	85.134	70.337	10.003
N° 10 (Bias2)	101.919	99.850	84.657	69.944	10.862
N° 11 (Bias2)	98.882	95.437	83.721	71.822	13.065
N° 12 (OFF)	108.570	106.364	92.501	80.909	16.165
N° 13 (OFF)	106.323	103.115	83.782	72.034	10.949
N° 14 (OFF)	105.056	98.740	86.310	76.033	17.169
N° 15 (OFF)	115.217	106.645	93.878	82.518	19.348
N° 16 (OFF)	103.086	100.063	87.062	76.219	16.501

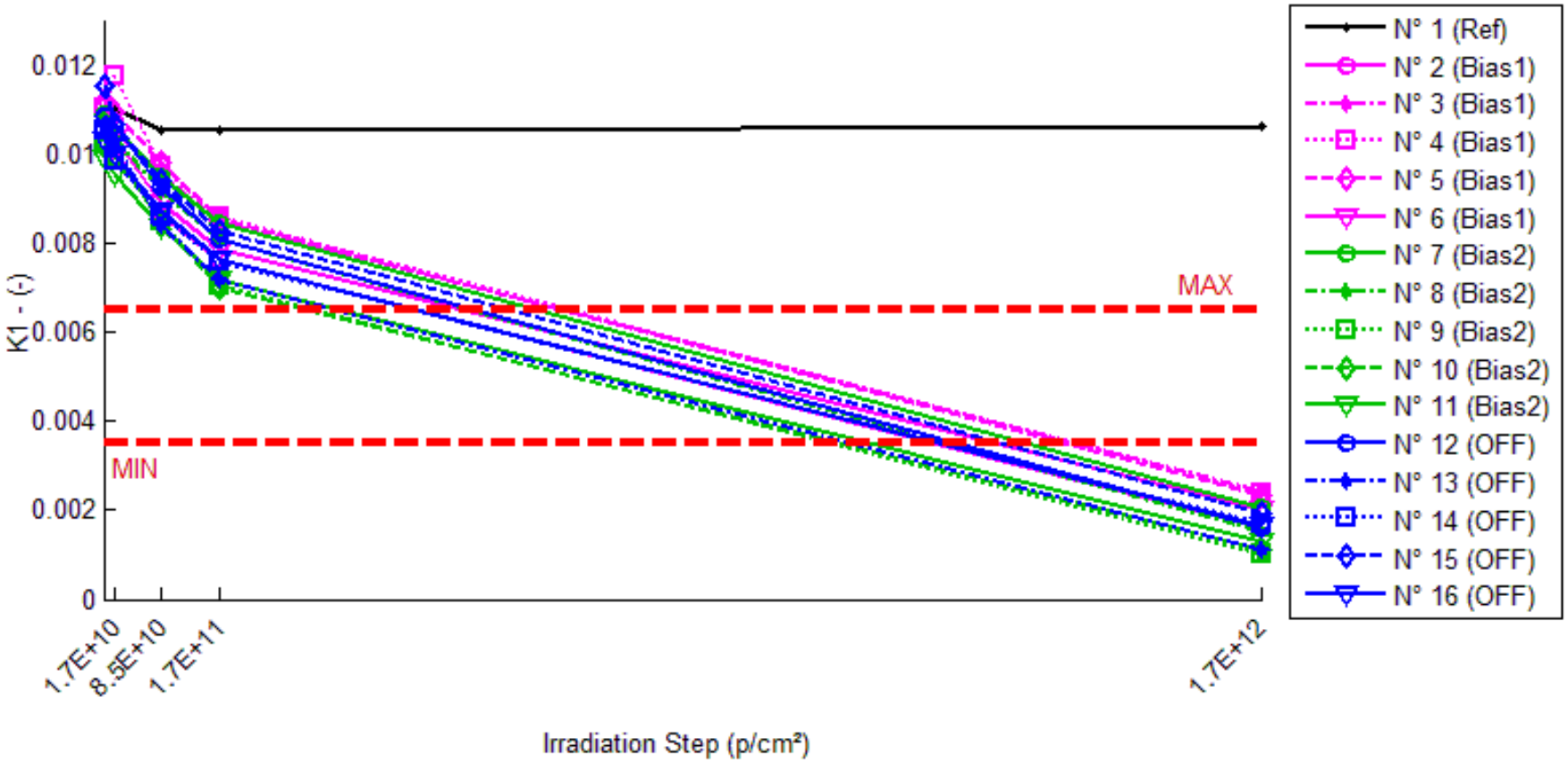
Delta [Ip1]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	4.534E+0	-6.939E-1	-5.843E-1	3.327E-1
N° 2 (Bias1)	---	-1.048E+0	-1.580E+1	-2.554E+1	-8.604E+1
N° 3 (Bias1)	---	-1.600E+0	-1.178E+1	-2.189E+1	-8.291E+1
N° 4 (Bias1)	---	7.301E+0	-1.312E+1	-2.441E+1	-8.665E+1
N° 5 (Bias1)	---	-2.836E+0	-1.387E+1	-2.654E+1	-8.868E+1
N° 6 (Bias1)	---	4.983E-1	-1.379E+1	-2.428E+1	-8.275E+1
N° 7 (Bias2)	---	-2.988E+0	-1.421E+1	-2.481E+1	-8.861E+1
N° 8 (Bias2)	---	-4.637E+0	-1.649E+1	-2.735E+1	-9.266E+1
N° 9 (Bias2)	---	-2.584E+0	-1.689E+1	-3.169E+1	-9.202E+1
N° 10 (Bias2)	---	-2.069E+0	-1.726E+1	-3.197E+1	-9.106E+1
N° 11 (Bias2)	---	-3.445E+0	-1.516E+1	-2.706E+1	-8.582E+1
N° 12 (OFF)	---	-2.206E+0	-1.607E+1	-2.766E+1	-9.241E+1
N° 13 (OFF)	---	-3.209E+0	-2.254E+1	-3.429E+1	-9.537E+1
N° 14 (OFF)	---	-6.317E+0	-1.875E+1	-2.902E+1	-8.789E+1
N° 15 (OFF)	---	-8.572E+0	-2.134E+1	-3.270E+1	-9.587E+1
N° 16 (OFF)	---	-3.023E+0	-1.602E+1	-2.687E+1	-8.658E+1
Average (OFF)	---	4.631E-1	-1.367E+1	-2.453E+1	-8.541E+1
σ (OFF)	---	4.006E+0	1.456E+0	1.741E+0	2.549E+0
Average+3σ (OFF)	---	1.248E+1	-9.303E+0	-1.931E+1	-7.776E+1
Average-3σ (OFF)	---	-1.155E+1	-1.804E+1	-2.975E+1	-9.305E+1
Average (Bias1)	---	-3.144E+0	-1.600E+1	-2.858E+1	-9.003E+1
σ (Bias1)	---	9.763E-1	1.279E+0	3.130E+0	2.814E+0
Average+3σ (Bias1)	---	-2.155E-1	-1.216E+1	-1.919E+1	-8.159E+1
Average-3σ (Bias1)	---	-6.073E+0	-1.984E+1	-3.797E+1	-9.847E+1
Average (Bias2)	---	-4.665E+0	-1.894E+1	-3.011E+1	-9.162E+1
σ (Bias2)	---	2.686E+0	2.979E+0	3.235E+0	4.244E+0
Average+3σ (Bias2)	---	3.393E+0	-1.001E+1	-2.040E+1	-7.889E+1
Average-3σ (Bias2)	---	-1.272E+1	-2.788E+1	-3.981E+1	-1.044E+2

30 MeV proton / detailed results

8. K1

Ta = 25°C ; IF = 10mA ; Vdet = -15V



30 MeV proton / detailed results

K1 . (-) **Min = 0.0035 Max = 0.0065**

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	0.01058	0.01103	0.01051	0.01052	0.01061
N° 2 (Bias1)	0.01019	0.01009	0.00861	0.00764	0.00159
N° 3 (Bias1)	0.01070	0.01054	0.00952	0.00851	0.00241
N° 4 (Bias1)	0.01103	0.01176	0.00971	0.00859	0.00236
N° 5 (Bias1)	0.01121	0.01093	0.00982	0.00856	0.00234
N° 6 (Bias1)	0.01030	0.01035	0.00892	0.00787	0.00202
N° 7 (Bias2)	0.01091	0.01061	0.00949	0.00843	0.00205
N° 8 (Bias2)	0.01081	0.01034	0.00916	0.00807	0.00154
N° 9 (Bias2)	0.01020	0.00994	0.00851	0.00703	0.00100
N° 10 (Bias2)	0.01019	0.00999	0.00847	0.00699	0.00109
N° 11 (Bias2)	0.00989	0.00954	0.00837	0.00718	0.00131
N° 12 (OFF)	0.01086	0.01064	0.00925	0.00809	0.00162
N° 13 (OFF)	0.01063	0.01031	0.00838	0.00720	0.00109
N° 14 (OFF)	0.01051	0.00987	0.00863	0.00760	0.00172
N° 15 (OFF)	0.01152	0.01066	0.00939	0.00825	0.00193
N° 16 (OFF)	0.01031	0.01001	0.00871	0.00762	0.00165

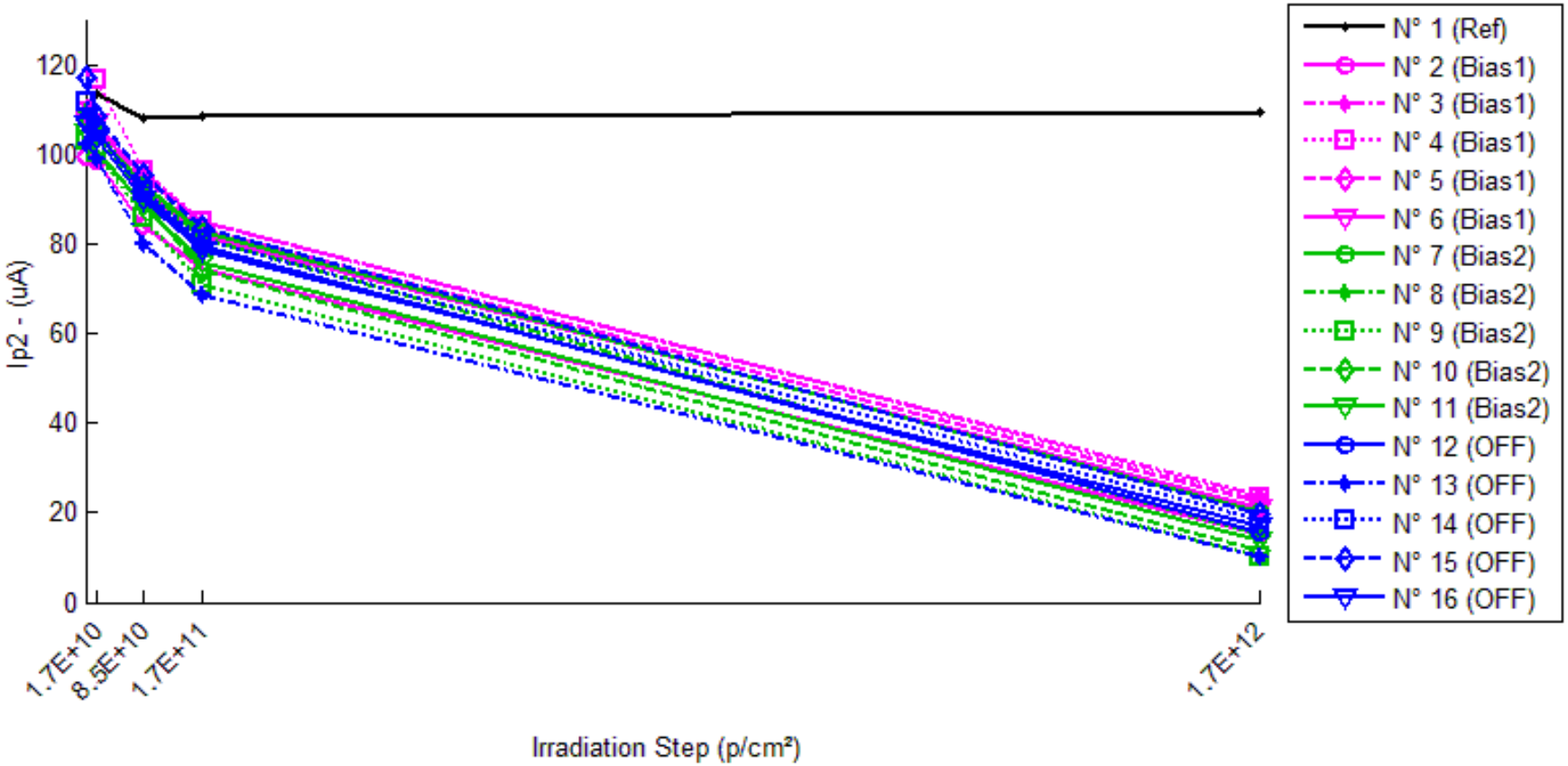
Delta [K1]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	4.534E-4	-6.939E-5	-5.843E-5	3.327E-5
N° 2 (Bias1)	---	-1.048E-4	-1.580E-3	-2.554E-3	-8.604E-3
N° 3 (Bias1)	---	-1.600E-4	-1.178E-3	-2.189E-3	-8.291E-3
N° 4 (Bias1)	---	7.301E-4	-1.312E-3	-2.441E-3	-8.665E-3
N° 5 (Bias1)	---	-2.836E-4	-1.387E-3	-2.654E-3	-8.868E-3
N° 6 (Bias1)	---	4.983E-5	-1.379E-3	-2.428E-3	-8.275E-3
N° 7 (Bias2)	---	-2.988E-4	-1.421E-3	-2.481E-3	-8.861E-3
N° 8 (Bias2)	---	-4.637E-4	-1.649E-3	-2.735E-3	-9.266E-3
N° 9 (Bias2)	---	-2.584E-4	-1.689E-3	-3.169E-3	-9.202E-3
N° 10 (Bias2)	---	-2.069E-4	-1.726E-3	-3.197E-3	-9.106E-3
N° 11 (Bias2)	---	-3.445E-4	-1.516E-3	-2.706E-3	-8.582E-3
N° 12 (OFF)	---	-2.206E-4	-1.607E-3	-2.766E-3	-9.241E-3
N° 13 (OFF)	---	-3.209E-4	-2.254E-3	-3.429E-3	-9.537E-3
N° 14 (OFF)	---	-6.317E-4	-1.875E-3	-2.902E-3	-8.789E-3
N° 15 (OFF)	---	-8.572E-4	-2.134E-3	-3.270E-3	-9.587E-3
N° 16 (OFF)	---	-3.023E-4	-1.602E-3	-2.687E-3	-8.658E-3
Average (OFF)	---	4.631E-5	-1.367E-3	-2.453E-3	-8.541E-3
σ (OFF)	---	4.006E-4	1.456E-4	1.741E-4	2.549E-4
Average+3σ (OFF)	---	1.248E-3	-9.303E-4	-1.931E-3	-7.776E-3
Average-3σ (OFF)	---	-1.155E-3	-1.804E-3	-2.975E-3	-9.305E-3
Average (Bias1)	---	-3.144E-4	-1.600E-3	-2.858E-3	-9.003E-3
σ (Bias1)	---	9.763E-5	1.279E-4	3.130E-4	2.814E-4
Average+3σ (Bias1)	---	-2.155E-5	-1.216E-3	-1.919E-3	-8.159E-3
Average-3σ (Bias1)	---	-6.073E-4	-1.984E-3	-3.797E-3	-9.847E-3
Average (Bias2)	---	-4.665E-4	-1.894E-3	-3.011E-3	-9.162E-3
σ (Bias2)	---	2.686E-4	2.979E-4	3.235E-4	4.244E-4
Average+3σ (Bias2)	---	3.393E-4	-1.001E-3	-2.040E-3	-7.889E-3
Average-3σ (Bias2)	---	-1.272E-3	-2.788E-3	-3.981E-3	-1.044E-2

30 MeV proton / detailed results

9. Ip2

Ta = 25°C ; Vcc = 5V ; If = 8mA



30 MeV proton / detailed results

Ip2 . (uA)

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	108.938	113.588	108.222	108.335	109.274
N° 2 (Bias1)	99.565	98.438	83.926	74.347	15.388
N° 3 (Bias1)	106.982	105.305	94.886	84.728	23.925
N° 4 (Bias1)	109.329	116.500	96.160	84.905	23.299
N° 5 (Bias1)	109.200	106.391	95.454	83.020	22.474
N° 6 (Bias1)	106.759	107.215	92.380	81.545	21.037
N° 7 (Bias2)	107.391	104.299	93.026	82.462	19.987
N° 8 (Bias2)	109.573	104.766	92.520	81.422	15.350
N° 9 (Bias2)	102.868	100.203	85.721	70.834	10.105
N° 10 (Bias2)	107.853	105.594	89.480	73.859	11.348
N° 11 (Bias2)	104.699	100.983	88.566	75.994	13.813
N° 12 (OFF)	107.522	105.173	91.126	79.528	15.773
N° 13 (OFF)	102.013	98.842	80.130	68.743	10.398
N° 14 (OFF)	111.656	104.935	91.709	80.851	18.349
N° 15 (OFF)	117.228	108.484	95.337	83.781	19.670
N° 16 (OFF)	106.471	103.299	89.801	78.569	17.068

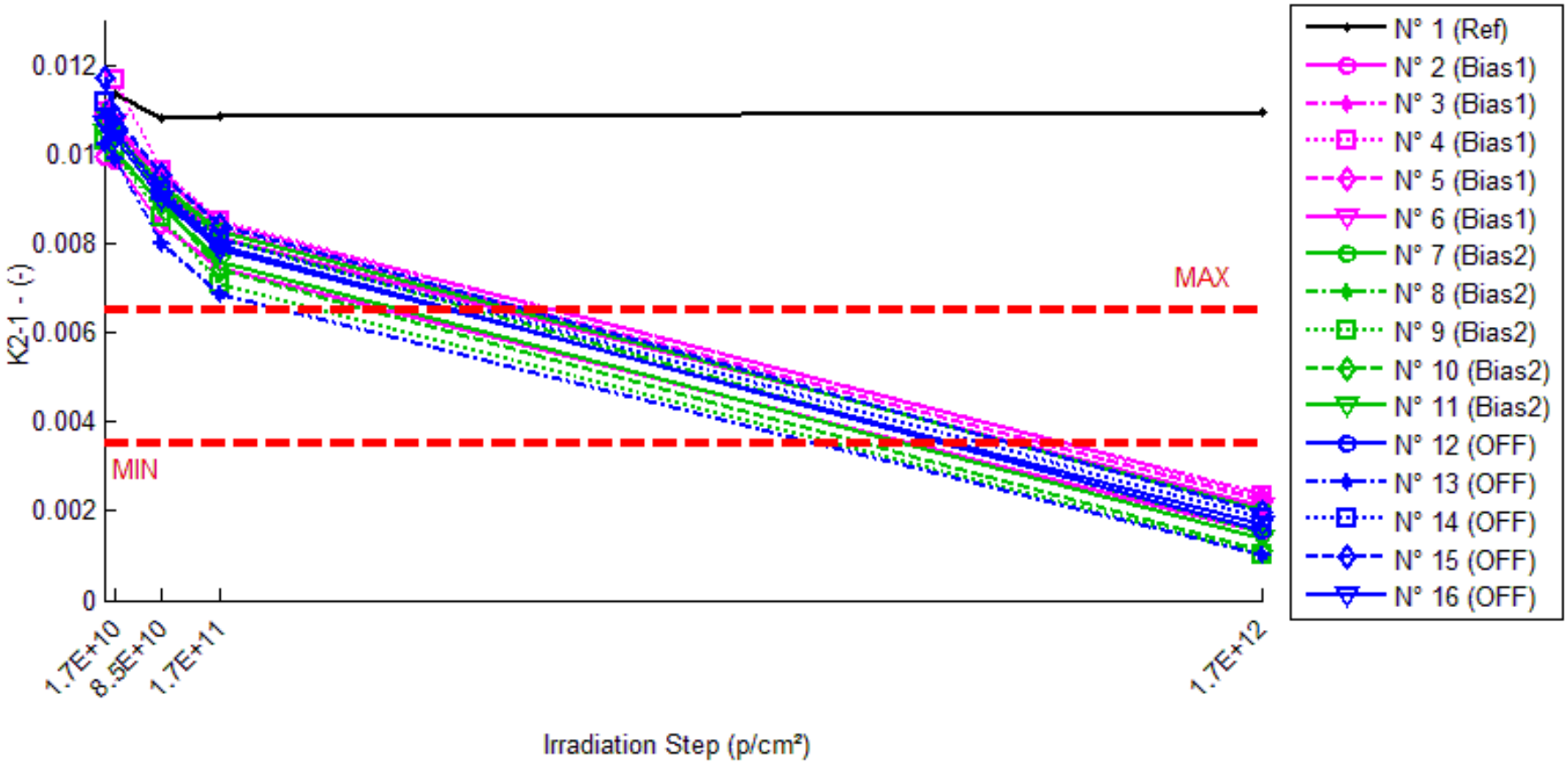
Delta [Ip2]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	4.650E+0	-7.154E-1	-6.023E-1	3.366E-1
N° 2 (Bias1)	---	-1.127E+0	-1.564E+1	-2.522E+1	-8.418E+1
N° 3 (Bias1)	---	-1.677E+0	-1.210E+1	-2.225E+1	-8.306E+1
N° 4 (Bias1)	---	7.170E+0	-1.317E+1	-2.442E+1	-8.603E+1
N° 5 (Bias1)	---	-2.809E+0	-1.375E+1	-2.618E+1	-8.673E+1
N° 6 (Bias1)	---	4.552E-1	-1.438E+1	-2.521E+1	-8.572E+1
N° 7 (Bias2)	---	-3.092E+0	-1.436E+1	-2.493E+1	-8.740E+1
N° 8 (Bias2)	---	-4.807E+0	-1.705E+1	-2.815E+1	-9.422E+1
N° 9 (Bias2)	---	-2.665E+0	-1.715E+1	-3.203E+1	-9.276E+1
N° 10 (Bias2)	---	-2.258E+0	-1.837E+1	-3.399E+1	-9.651E+1
N° 11 (Bias2)	---	-3.716E+0	-1.613E+1	-2.870E+1	-9.089E+1
N° 12 (OFF)	---	-2.350E+0	-1.640E+1	-2.799E+1	-9.175E+1
N° 13 (OFF)	---	-3.171E+0	-2.188E+1	-3.327E+1	-9.162E+1
N° 14 (OFF)	---	-6.721E+0	-1.995E+1	-3.081E+1	-9.331E+1
N° 15 (OFF)	---	-8.743E+0	-2.189E+1	-3.345E+1	-9.756E+1
N° 16 (OFF)	---	-3.171E+0	-1.667E+1	-2.790E+1	-8.940E+1
Average (OFF)	---	4.024E-1	-1.381E+1	-2.466E+1	-8.514E+1
σ (OFF)	---	3.962E+0	1.325E+0	1.481E+0	1.493E+0
Average+3σ (OFF)	---	1.229E+1	-9.831E+0	-2.021E+1	-8.066E+1
Average-3σ (OFF)	---	-1.148E+1	-1.778E+1	-2.910E+1	-8.962E+1
Average (Bias1)	---	-3.308E+0	-1.661E+1	-2.956E+1	-9.236E+1
σ (Bias1)	---	9.969E-1	1.488E+0	3.534E+0	3.448E+0
Average+3σ (Bias1)	---	-3.169E-1	-1.215E+1	-1.896E+1	-8.201E+1
Average-3σ (Bias1)	---	-6.298E+0	-2.108E+1	-4.016E+1	-1.027E+2
Average (Bias2)	---	-4.831E+0	-1.936E+1	-3.068E+1	-9.273E+1
σ (Bias2)	---	2.763E+0	2.699E+0	2.707E+0	3.038E+0
Average+3σ (Bias2)	---	3.459E+0	-1.126E+1	-2.256E+1	-8.361E+1
Average-3σ (Bias2)	---	-1.312E+1	-2.745E+1	-3.881E+1	-1.018E+2

30 MeV proton / detailed results

10.K2-1

Ta = 25°C ; IF = 10mA ; Vdet = -15V



30 MeV proton / detailed results

K2-1 . (-) **Min = 0.0035 Max = 0.0065**

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	0.01089	0.01136	0.01082	0.01083	0.01093
N° 2 (Bias1)	0.00996	0.00984	0.00839	0.00743	0.00154
N° 3 (Bias1)	0.01070	0.01053	0.00949	0.00847	0.00239
N° 4 (Bias1)	0.01093	0.01165	0.00962	0.00849	0.00233
N° 5 (Bias1)	0.01092	0.01064	0.00955	0.00830	0.00225
N° 6 (Bias1)	0.01068	0.01072	0.00924	0.00815	0.00210
N° 7 (Bias2)	0.01074	0.01043	0.00930	0.00825	0.00200
N° 8 (Bias2)	0.01096	0.01048	0.00925	0.00814	0.00153
N° 9 (Bias2)	0.01029	0.01002	0.00857	0.00708	0.00101
N° 10 (Bias2)	0.01079	0.01056	0.00895	0.00739	0.00113
N° 11 (Bias2)	0.01047	0.01010	0.00886	0.00760	0.00138
N° 12 (OFF)	0.01075	0.01052	0.00911	0.00795	0.00158
N° 13 (OFF)	0.01020	0.00988	0.00801	0.00687	0.00104
N° 14 (OFF)	0.01117	0.01049	0.00917	0.00809	0.00183
N° 15 (OFF)	0.01172	0.01085	0.00953	0.00838	0.00197
N° 16 (OFF)	0.01065	0.01033	0.00898	0.00786	0.00171

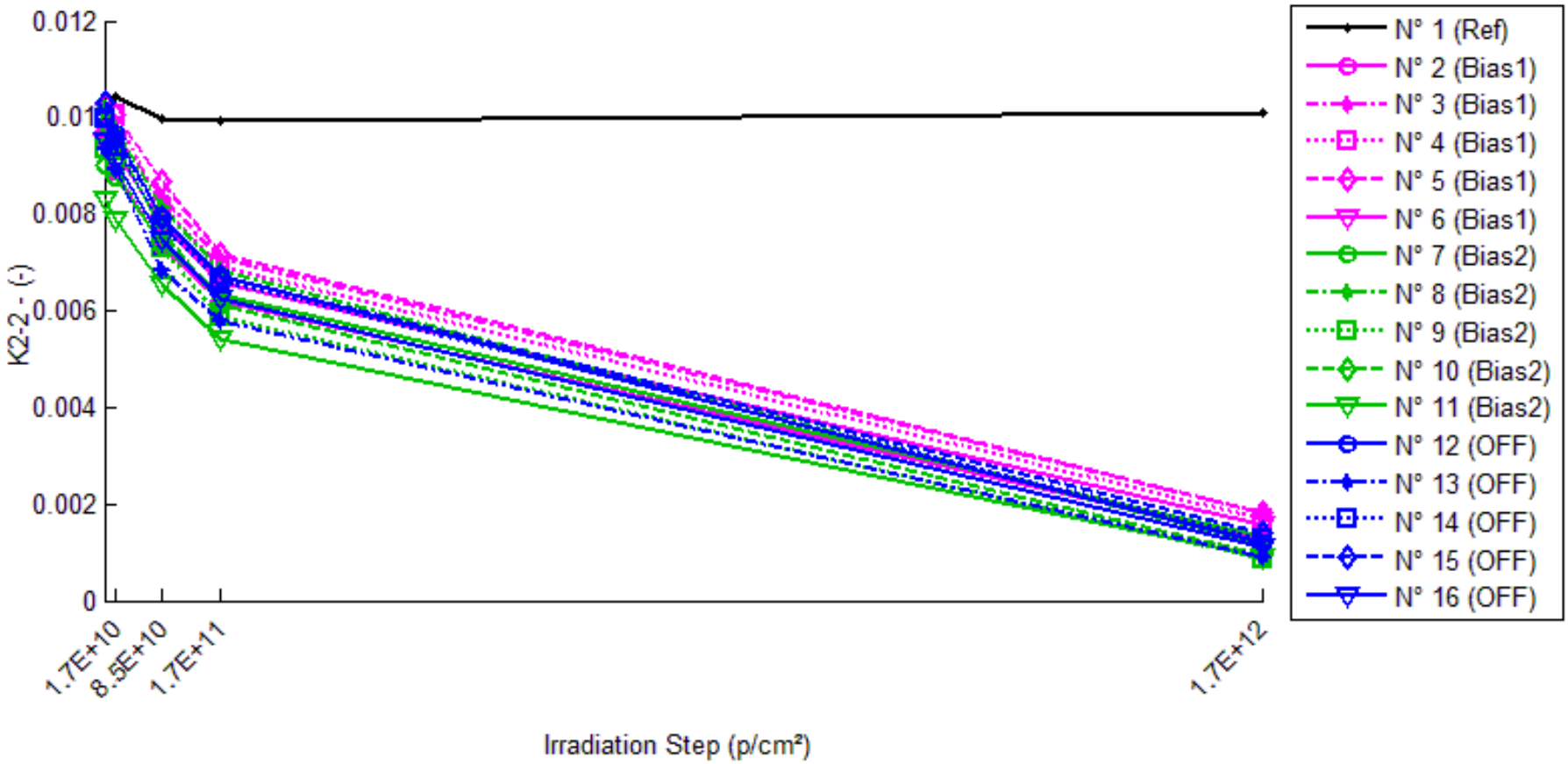
Delta [K2-1]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	4.650E-4	-7.154E-5	-6.023E-5	3.366E-5
N° 2 (Bias1)	---	-1.127E-4	-1.564E-3	-2.522E-3	-8.418E-3
N° 3 (Bias1)	---	-1.677E-4	-1.210E-3	-2.225E-3	-8.306E-3
N° 4 (Bias1)	---	7.170E-4	-1.317E-3	-2.442E-3	-8.603E-3
N° 5 (Bias1)	---	-2.809E-4	-1.375E-3	-2.618E-3	-8.673E-3
N° 6 (Bias1)	---	4.552E-5	-1.438E-3	-2.521E-3	-8.572E-3
N° 7 (Bias2)	---	-3.092E-4	-1.436E-3	-2.493E-3	-8.740E-3
N° 8 (Bias2)	---	-4.807E-4	-1.705E-3	-2.815E-3	-9.422E-3
N° 9 (Bias2)	---	-2.665E-4	-1.715E-3	-3.203E-3	-9.276E-3
N° 10 (Bias2)	---	-2.258E-4	-1.837E-3	-3.399E-3	-9.651E-3
N° 11 (Bias2)	---	-3.716E-4	-1.613E-3	-2.870E-3	-9.089E-3
N° 12 (OFF)	---	-2.350E-4	-1.640E-3	-2.799E-3	-9.175E-3
N° 13 (OFF)	---	-3.171E-4	-2.188E-3	-3.327E-3	-9.162E-3
N° 14 (OFF)	---	-6.721E-4	-1.995E-3	-3.081E-3	-9.331E-3
N° 15 (OFF)	---	-8.743E-4	-2.189E-3	-3.345E-3	-9.756E-3
N° 16 (OFF)	---	-3.171E-4	-1.667E-3	-2.790E-3	-8.940E-3
Average (OFF)	---	4.024E-5	-1.381E-3	-2.466E-3	-8.514E-3
σ (OFF)	---	3.962E-4	1.325E-4	1.481E-4	1.493E-4
Average+3σ (OFF)	---	1.229E-3	-9.831E-4	-2.021E-3	-8.066E-3
Average-3σ (OFF)	---	-1.148E-3	-1.778E-3	-2.910E-3	-8.962E-3
Average (Bias1)	---	-3.308E-4	-1.661E-3	-2.956E-3	-9.236E-3
σ (Bias1)	---	9.969E-5	1.488E-4	3.534E-4	3.448E-4
Average+3σ (Bias1)	---	-3.169E-5	-1.215E-3	-1.896E-3	-8.201E-3
Average-3σ (Bias1)	---	-6.298E-4	-2.108E-3	-4.016E-3	-1.027E-2
Average (Bias2)	---	-4.831E-4	-1.936E-3	-3.068E-3	-9.273E-3
σ (Bias2)	---	2.763E-4	2.699E-4	2.707E-4	3.038E-4
Average+3σ (Bias2)	---	3.459E-4	-1.126E-3	-2.256E-3	-8.361E-3
Average-3σ (Bias2)	---	-1.312E-3	-2.745E-3	-3.881E-3	-1.018E-2

30 MeV proton / detailed results

11.K2-2

Ta = 25°C ; IF = 1mA ; Vdet = -15V



30 MeV proton / detailed results

K2-2 . (-)

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	0.01003	0.01042	0.00998	0.00993	0.01010
N° 2 (Bias1)	0.00900	0.00890	0.00735	0.00621	0.00128
N° 3 (Bias1)	0.00975	0.00967	0.00836	0.00709	0.00181
N° 4 (Bias1)	0.00953	0.01005	0.00815	0.00691	0.00170
N° 5 (Bias1)	0.01026	0.01006	0.00867	0.00719	0.00181
N° 6 (Bias1)	0.00945	0.00932	0.00779	0.00659	0.00155
N° 7 (Bias2)	0.00901	0.00877	0.00736	0.00633	0.00132
N° 8 (Bias2)	0.01020	0.00975	0.00812	0.00683	0.00115
N° 9 (Bias2)	0.00934	0.00897	0.00730	0.00586	0.00086
N° 10 (Bias2)	0.00987	0.00947	0.00769	0.00614	0.00094
N° 11 (Bias2)	0.00832	0.00787	0.00656	0.00542	0.00089
N° 12 (OFF)	0.01000	0.00969	0.00791	0.00669	0.00121
N° 13 (OFF)	0.00933	0.00893	0.00684	0.00580	0.00088
N° 14 (OFF)	0.00996	0.00940	0.00776	0.00662	0.00126
N° 15 (OFF)	0.01030	0.00955	0.00792	0.00673	0.00141
N° 16 (OFF)	0.00953	0.00910	0.00745	0.00625	0.00112

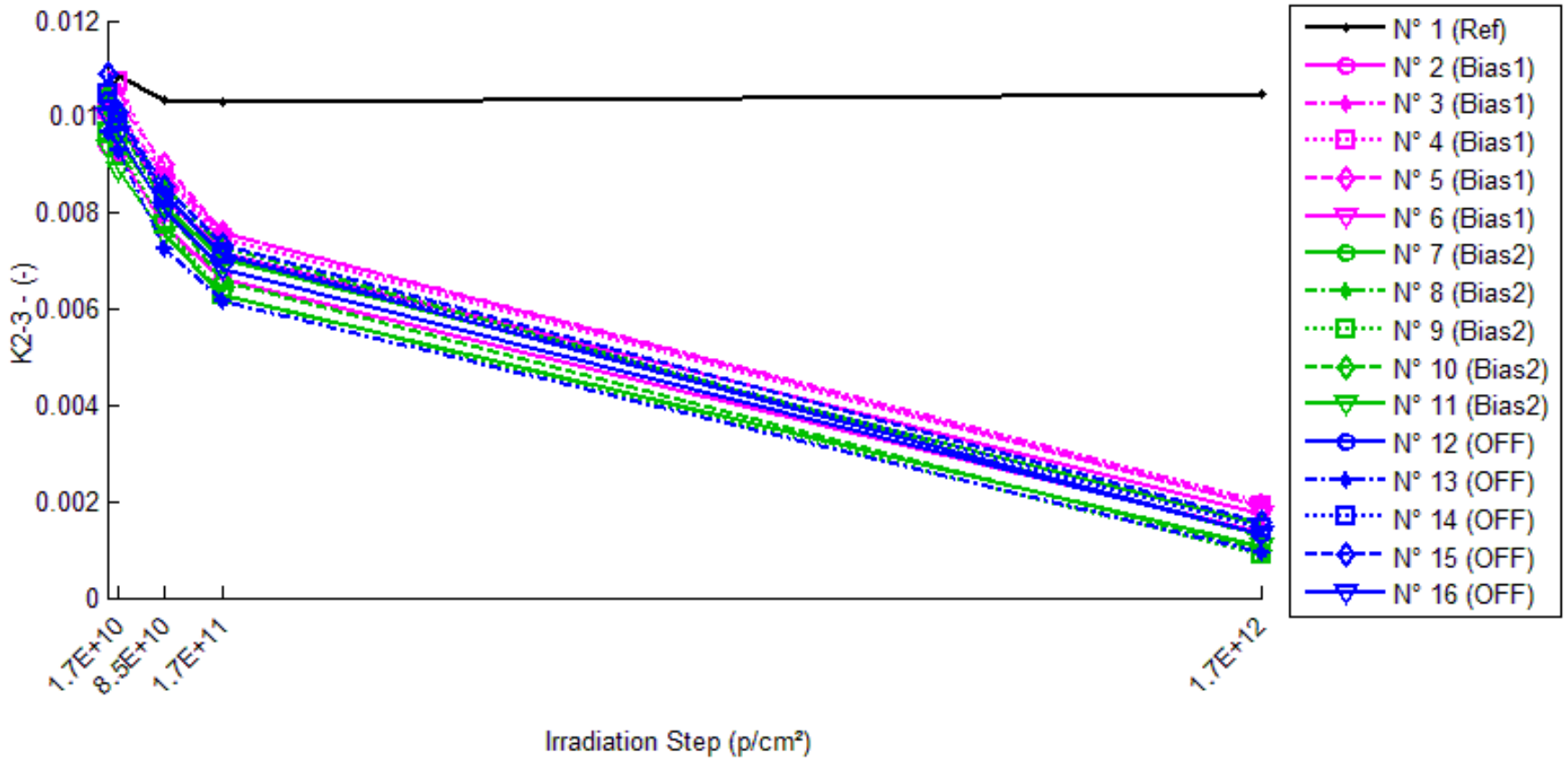
Delta [K2-2]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	3.821E-4	-5.491E-5	-1.034E-4	6.625E-5
N° 2 (Bias1)	---	-9.898E-5	-1.646E-3	-2.783E-3	-7.715E-3
N° 3 (Bias1)	---	-7.837E-5	-1.387E-3	-2.665E-3	-7.936E-3
N° 4 (Bias1)	---	5.148E-4	-1.386E-3	-2.624E-3	-7.832E-3
N° 5 (Bias1)	---	-1.953E-4	-1.586E-3	-3.071E-3	-8.452E-3
N° 6 (Bias1)	---	-1.235E-4	-1.652E-3	-2.857E-3	-7.894E-3
N° 7 (Bias2)	---	-2.480E-4	-1.656E-3	-2.689E-3	-7.696E-3
N° 8 (Bias2)	---	-4.573E-4	-2.086E-3	-3.375E-3	-9.059E-3
N° 9 (Bias2)	---	-3.745E-4	-2.041E-3	-3.481E-3	-8.479E-3
N° 10 (Bias2)	---	-4.030E-4	-2.178E-3	-3.727E-3	-8.930E-3
N° 11 (Bias2)	---	-4.533E-4	-1.759E-3	-2.901E-3	-7.429E-3
N° 12 (OFF)	---	-3.044E-4	-2.084E-3	-3.302E-3	-8.786E-3
N° 13 (OFF)	---	-3.951E-4	-2.492E-3	-3.532E-3	-8.450E-3
N° 14 (OFF)	---	-5.616E-4	-2.201E-3	-3.347E-3	-8.706E-3
N° 15 (OFF)	---	-7.512E-4	-2.372E-3	-3.571E-3	-8.885E-3
N° 16 (OFF)	---	-4.293E-4	-2.083E-3	-3.277E-3	-8.407E-3
Average (OFF)	---	3.749E-6	-1.531E-3	-2.800E-3	-7.966E-3
σ (OFF)	---	2.891E-4	1.347E-4	1.774E-4	2.841E-4
Average+3σ (OFF)	---	8.710E-4	-1.127E-3	-2.268E-3	-7.113E-3
Average-3σ (OFF)	---	-8.635E-4	-1.936E-3	-3.332E-3	-8.818E-3
Average (Bias1)	---	-3.872E-4	-1.944E-3	-3.235E-3	-8.318E-3
σ (Bias1)	---	8.527E-5	2.242E-4	4.278E-4	7.294E-4
Average+3σ (Bias1)	---	-1.314E-4	-1.272E-3	-1.951E-3	-6.130E-3
Average-3σ (Bias1)	---	-6.430E-4	-2.617E-3	-4.518E-3	-1.051E-2
Average (Bias2)	---	-4.883E-4	-2.246E-3	-3.406E-3	-8.647E-3
σ (Bias2)	---	1.736E-4	1.809E-4	1.361E-4	2.097E-4
Average+3σ (Bias2)	---	3.235E-5	-1.704E-3	-2.997E-3	-8.018E-3
Average-3σ (Bias2)	---	-1.009E-3	-2.789E-3	-3.814E-3	-9.276E-3

30 MeV proton / detailed results

12.K2-3

Ta = 25°C ; IF = 2mA ; Vdet = -15V



30 MeV proton / detailed results

K2-3 . (-)

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	0.01040	0.01083	0.01034	0.01032	0.01046
N° 2 (Bias1)	0.00937	0.00925	0.00771	0.00663	0.00135
N° 3 (Bias1)	0.01016	0.01004	0.00880	0.00758	0.00198
N° 4 (Bias1)	0.01012	0.01073	0.00871	0.00748	0.00189
N° 5 (Bias1)	0.01053	0.01029	0.00899	0.00757	0.00192
N° 6 (Bias1)	0.00997	0.00991	0.00836	0.00717	0.00172
N° 7 (Bias2)	0.00976	0.00949	0.00814	0.00705	0.00153
N° 8 (Bias2)	0.01053	0.01005	0.00855	0.00730	0.00126
N° 9 (Bias2)	0.00970	0.00937	0.00776	0.00628	0.00090
N° 10 (Bias2)	0.01023	0.00989	0.00815	0.00657	0.00100
N° 11 (Bias2)	0.00933	0.00889	0.00755	0.00630	0.00106
N° 12 (OFF)	0.01033	0.01004	0.00838	0.00714	0.00132
N° 13 (OFF)	0.00967	0.00931	0.00726	0.00616	0.00093
N° 14 (OFF)	0.01047	0.00987	0.00832	0.00716	0.00143
N° 15 (OFF)	0.01091	0.01009	0.00854	0.00732	0.00158
N° 16 (OFF)	0.01001	0.00962	0.00805	0.00685	0.00131

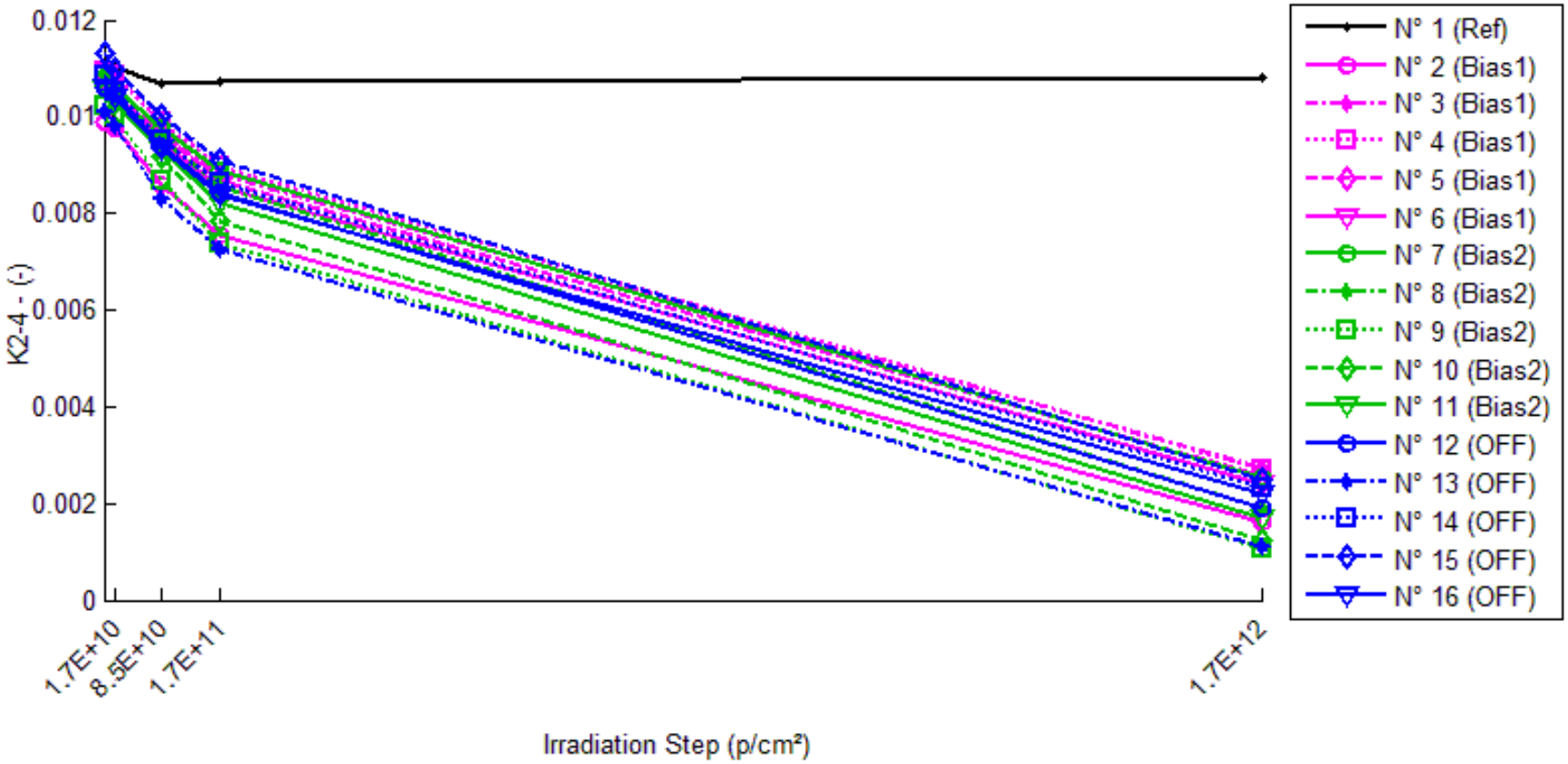
Delta [K2-3]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	4.243E-4	-5.954E-5	-8.012E-5	5.232E-5
N° 2 (Bias1)	---	-1.114E-4	-1.653E-3	-2.734E-3	-8.012E-3
N° 3 (Bias1)	---	-1.182E-4	-1.362E-3	-2.574E-3	-8.177E-3
N° 4 (Bias1)	---	6.109E-4	-1.413E-3	-2.646E-3	-8.237E-3
N° 5 (Bias1)	---	-2.400E-4	-1.545E-3	-2.967E-3	-8.610E-3
N° 6 (Bias1)	---	-5.931E-5	-1.613E-3	-2.807E-3	-8.253E-3
N° 7 (Bias2)	---	-2.753E-4	-1.623E-3	-2.709E-3	-8.234E-3
N° 8 (Bias2)	---	-4.802E-4	-1.980E-3	-3.232E-3	-9.267E-3
N° 9 (Bias2)	---	-3.369E-4	-1.943E-3	-3.425E-3	-8.798E-3
N° 10 (Bias2)	---	-3.474E-4	-2.085E-3	-3.659E-3	-9.236E-3
N° 11 (Bias2)	---	-4.385E-4	-1.782E-3	-3.029E-3	-8.272E-3
N° 12 (OFF)	---	-2.838E-4	-1.947E-3	-3.185E-3	-9.010E-3
N° 13 (OFF)	---	-3.554E-4	-2.408E-3	-3.512E-3	-8.742E-3
N° 14 (OFF)	---	-5.966E-4	-2.146E-3	-3.310E-3	-9.033E-3
N° 15 (OFF)	---	-8.210E-4	-2.369E-3	-3.592E-3	-9.334E-3
N° 16 (OFF)	---	-3.929E-4	-1.960E-3	-3.163E-3	-8.706E-3
Average (OFF)	---	1.640E-5	-1.517E-3	-2.746E-3	-8.258E-3
σ (OFF)	---	3.389E-4	1.259E-4	1.517E-4	2.186E-4
Average+3σ (OFF)	---	1.033E-3	-1.140E-3	-2.290E-3	-7.602E-3
Average-3σ (OFF)	---	-1.000E-3	-1.895E-3	-3.201E-3	-8.914E-3
Average (Bias1)	---	-3.757E-4	-1.883E-3	-3.211E-3	-8.761E-3
σ (Bias1)	---	8.253E-5	1.813E-4	3.648E-4	5.001E-4
Average+3σ (Bias1)	---	-1.281E-4	-1.339E-3	-2.116E-3	-7.261E-3
Average-3σ (Bias1)	---	-6.233E-4	-2.426E-3	-4.305E-3	-1.026E-2
Average (Bias2)	---	-4.899E-4	-2.166E-3	-3.352E-3	-8.965E-3
σ (Bias2)	---	2.185E-4	2.181E-4	1.926E-4	2.549E-4
Average+3σ (Bias2)	---	1.656E-4	-1.512E-3	-2.775E-3	-8.200E-3
Average-3σ (Bias2)	---	-1.145E-3	-2.820E-3	-3.930E-3	-9.730E-3

30 MeV proton / detailed results

13.K2-4

Ta = 25°C ; IF = 60mA ; Vdet = -15V



30 MeV proton / detailed results

K2-4 . (-)

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	0.01076	0.01101	0.01069	0.01071	0.01080
N° 2 (Bias1)	0.00990	0.00977	0.00858	0.00754	0.00163
N° 3 (Bias1)	0.01059	0.01045	0.00962	0.00880	0.00274
N° 4 (Bias1)	0.01094	0.01084	0.00990	0.00897	0.00270
N° 5 (Bias1)	0.01070	0.01047	0.00962	0.00867	0.00256
N° 6 (Bias1)	0.01062	0.01044	0.00947	0.00855	0.00239
N° 7 (Bias2)	0.01081	0.01058	0.00975	0.00887	0.00252
N° 8 (Bias2)	0.01084	0.01047	0.00956	0.00857	0.00190
N° 9 (Bias2)	0.01022	0.01003	0.00868	0.00737	0.00108
N° 10 (Bias2)	0.01069	0.01049	0.00917	0.00784	0.00125
N° 11 (Bias2)	0.01054	0.01028	0.00929	0.00822	0.00169
N° 12 (OFF)	0.01061	0.01047	0.00940	0.00844	0.00192
N° 13 (OFF)	0.01009	0.00981	0.00832	0.00724	0.00111
N° 14 (OFF)	0.01085	0.01051	0.00951	0.00863	0.00231
N° 15 (OFF)	0.01130	0.01096	0.01000	0.00908	0.00249
N° 16 (OFF)	0.01058	0.01037	0.00933	0.00840	0.00218

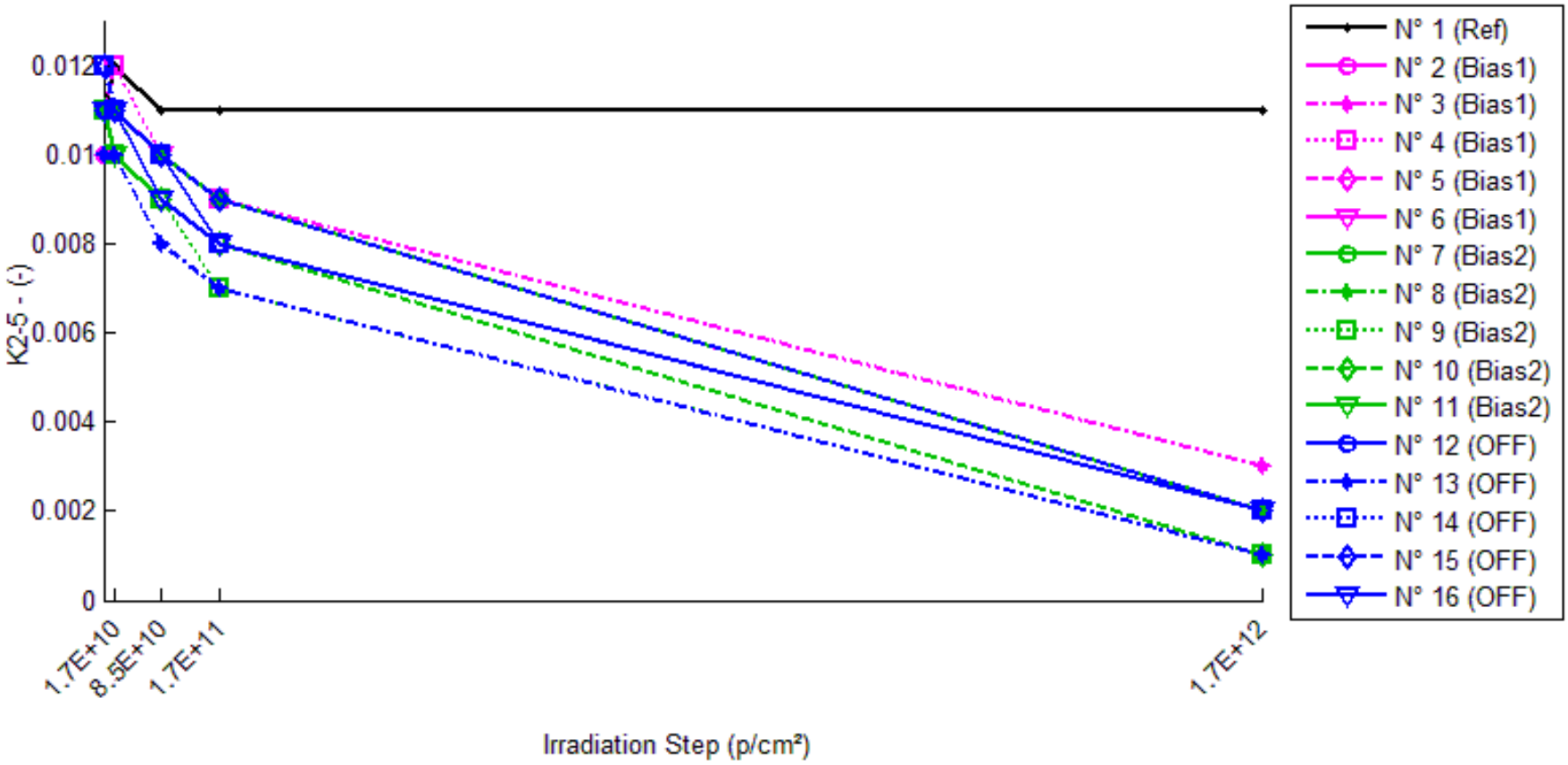
Delta [K2-4]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	2.433E-4	-7.198E-5	-5.434E-5	3.273E-5
N° 2 (Bias1)	---	-1.242E-4	-1.316E-3	-2.362E-3	-8.264E-3
N° 3 (Bias1)	---	-1.341E-4	-9.625E-4	-1.783E-3	-7.844E-3
N° 4 (Bias1)	---	-1.064E-4	-1.042E-3	-1.972E-3	-8.244E-3
N° 5 (Bias1)	---	-2.325E-4	-1.078E-3	-2.037E-3	-8.147E-3
N° 6 (Bias1)	---	-1.757E-4	-1.148E-3	-2.064E-3	-8.230E-3
N° 7 (Bias2)	---	-2.282E-4	-1.060E-3	-1.933E-3	-8.283E-3
N° 8 (Bias2)	---	-3.699E-4	-1.282E-3	-2.267E-3	-8.945E-3
N° 9 (Bias2)	---	-1.865E-4	-1.542E-3	-2.850E-3	-9.138E-3
N° 10 (Bias2)	---	-1.923E-4	-1.518E-3	-2.847E-3	-9.437E-3
N° 11 (Bias2)	---	-2.574E-4	-1.255E-3	-2.326E-3	-8.853E-3
N° 12 (OFF)	---	-1.459E-4	-1.216E-3	-2.178E-3	-8.695E-3
N° 13 (OFF)	---	-2.860E-4	-1.770E-3	-2.852E-3	-8.986E-3
N° 14 (OFF)	---	-3.439E-4	-1.342E-3	-2.221E-3	-8.539E-3
N° 15 (OFF)	---	-3.414E-4	-1.300E-3	-2.221E-3	-8.815E-3
N° 16 (OFF)	---	-2.107E-4	-1.251E-3	-2.180E-3	-8.407E-3
Average (OFF)	---	-1.546E-4	-1.109E-3	-2.044E-3	-8.146E-3
σ (OFF)	---	5.043E-5	1.335E-4	2.091E-4	1.743E-4
Average+3σ (OFF)	---	-3.268E-6	-7.089E-4	-1.416E-3	-7.623E-3
Average-3σ (OFF)	---	-3.059E-4	-1.510E-3	-2.671E-3	-8.669E-3
Average (Bias1)	---	-2.469E-4	-1.331E-3	-2.445E-3	-8.931E-3
σ (Bias1)	---	7.455E-5	2.010E-4	3.979E-4	4.257E-4
Average+3σ (Bias1)	---	-2.323E-5	-7.285E-4	-1.251E-3	-7.654E-3
Average-3σ (Bias1)	---	-4.705E-4	-1.934E-3	-3.638E-3	-1.021E-2
Average (Bias2)	---	-2.656E-4	-1.376E-3	-2.330E-3	-8.688E-3
σ (Bias2)	---	8.607E-5	2.253E-4	2.924E-4	2.267E-4
Average+3σ (Bias2)	---	-7.366E-6	-7.001E-4	-1.453E-3	-8.008E-3
Average-3σ (Bias2)	---	-5.238E-4	-2.052E-3	-3.207E-3	-9.368E-3

30 MeV proton / detailed results

14.K2-5

Ta = 25°C ; IF = 10mA ; Vdet = -30V



30 MeV proton / detailed results

K2-5 . (-)

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	0.011	0.012	0.011	0.011	0.011
N° 2 (Bias1)	0.010	0.010	0.009	0.008	0.002
N° 3 (Bias1)	0.011	0.011	0.010	0.009	0.003
N° 4 (Bias1)	0.011	0.012	0.010	0.009	0.002
N° 5 (Bias1)	0.011	0.011	0.010	0.009	0.002
N° 6 (Bias1)	0.011	0.011	0.010	0.008	0.002
N° 7 (Bias2)	0.011	0.011	0.010	0.009	0.002
N° 8 (Bias2)	0.011	0.011	0.010	0.009	0.002
N° 9 (Bias2)	0.011	0.010	0.009	0.007	0.001
N° 10 (Bias2)	0.011	0.011	0.009	0.008	0.001
N° 11 (Bias2)	0.011	0.010	0.009	0.008	0.002
N° 12 (OFF)	0.011	0.011	0.010	0.008	0.002
N° 13 (OFF)	0.010	0.010	0.008	0.007	0.001
N° 14 (OFF)	0.012	0.011	0.010	0.008	0.002
N° 15 (OFF)	0.012	0.011	0.010	0.009	0.002
N° 16 (OFF)	0.011	0.011	0.009	0.008	0.002

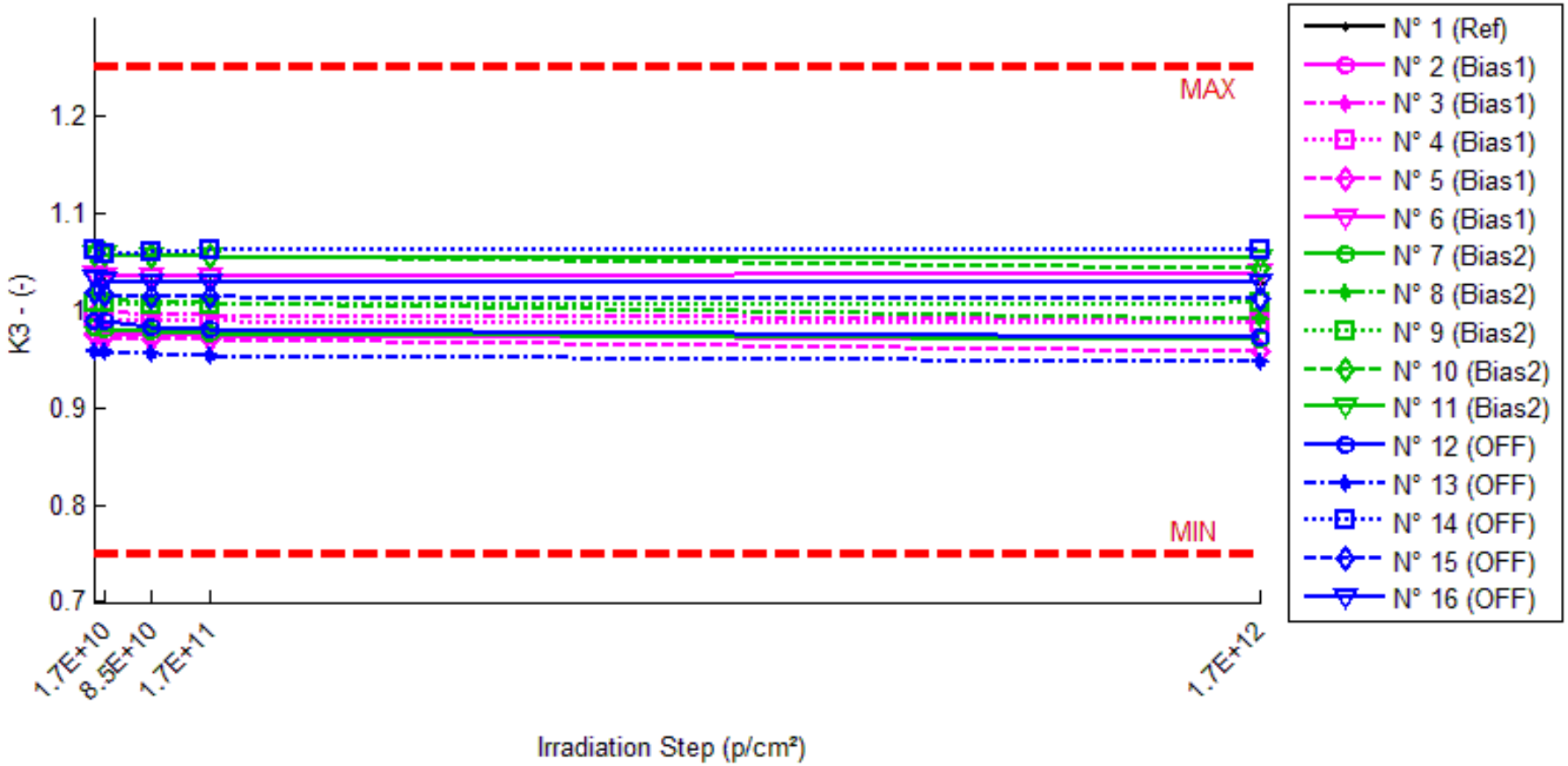
Delta [K2-5]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	4.802E-4	-7.540E-5	-6.296E-5	3.562E-5
N° 2 (Bias1)	---	-9.161E-5	-1.548E-3	-2.506E-3	-8.575E-3
N° 3 (Bias1)	---	-1.406E-4	-1.186E-3	-2.212E-3	-8.472E-3
N° 4 (Bias1)	---	7.704E-4	-1.286E-3	-2.419E-3	-8.754E-3
N° 5 (Bias1)	---	-2.555E-4	-1.344E-3	-2.600E-3	-8.827E-3
N° 6 (Bias1)	---	7.275E-5	-1.417E-3	-2.504E-3	-8.729E-3
N° 7 (Bias2)	---	-2.737E-4	-1.371E-3	-2.425E-3	-8.753E-3
N° 8 (Bias2)	---	-4.444E-4	-1.633E-3	-2.739E-3	-9.463E-3
N° 9 (Bias2)	---	-2.193E-4	-1.620E-3	-3.126E-3	-9.419E-3
N° 10 (Bias2)	---	-1.729E-4	-1.742E-3	-3.323E-3	-9.775E-3
N° 11 (Bias2)	---	-3.338E-4	-1.530E-3	-2.791E-3	-9.118E-3
N° 12 (OFF)	---	-2.033E-4	-1.577E-3	-2.737E-3	-9.186E-3
N° 13 (OFF)	---	-2.866E-4	-2.126E-3	-3.327E-3	-9.290E-3
N° 14 (OFF)	---	-6.519E-4	-1.947E-3	-3.030E-3	-9.355E-3
N° 15 (OFF)	---	-8.649E-4	-2.138E-3	-3.289E-3	-9.774E-3
N° 16 (OFF)	---	-2.919E-4	-1.609E-3	-2.733E-3	-8.941E-3
Average (OFF)	---	7.109E-5	-1.356E-3	-2.448E-3	-8.671E-3
σ (OFF)	---	4.084E-4	1.365E-4	1.468E-4	1.445E-4
Average+3σ (OFF)	---	1.296E-3	-9.469E-4	-2.008E-3	-8.238E-3
Average-3σ (OFF)	---	-1.154E-3	-1.766E-3	-2.889E-3	-9.105E-3
Average (Bias1)	---	-2.888E-4	-1.579E-3	-2.881E-3	-9.306E-3
σ (Bias1)	---	1.057E-4	1.388E-4	3.504E-4	3.871E-4
Average+3σ (Bias1)	---	2.836E-5	-1.163E-3	-1.830E-3	-8.144E-3
Average-3σ (Bias1)	---	-6.060E-4	-1.996E-3	-3.932E-3	-1.047E-2
Average (Bias2)	---	-4.597E-4	-1.880E-3	-3.023E-3	-9.309E-3
σ (Bias2)	---	2.850E-4	2.724E-4	2.870E-4	3.039E-4
Average+3σ (Bias2)	---	3.954E-4	-1.062E-3	-2.162E-3	-8.398E-3
Average-3σ (Bias2)	---	-1.315E-3	-2.697E-3	-3.884E-3	-1.022E-2

30 MeV proton / detailed results

15.K3

Ta = 25°C ; IF = 10mA ; Vdet = -15V



30 MeV proton / detailed results

K3 . (-) **Min = 0.75 Max = 1.25**

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	1.030	1.030	1.030	1.030	1.030
N° 2 (Bias1)	0.977	0.976	0.975	0.974	0.970
N° 3 (Bias1)	1.000	0.999	0.996	0.995	0.992
N° 4 (Bias1)	0.992	0.991	0.989	0.989	0.987
N° 5 (Bias1)	0.974	0.973	0.971	0.970	0.959
N° 6 (Bias1)	1.037	1.036	1.035	1.036	1.040
N° 7 (Bias2)	0.984	0.982	0.979	0.977	0.971
N° 8 (Bias2)	1.014	1.013	1.009	1.008	0.992
N° 9 (Bias2)	1.008	1.008	1.007	1.007	1.009
N° 10 (Bias2)	1.058	1.058	1.057	1.056	1.043
N° 11 (Bias2)	1.059	1.058	1.057	1.057	1.054
N° 12 (OFF)	0.990	0.989	0.984	0.982	0.973
N° 13 (OFF)	0.959	0.959	0.956	0.954	0.948
N° 14 (OFF)	1.063	1.059	1.061	1.062	1.063
N° 15 (OFF)	1.018	1.017	1.015	1.015	1.013
N° 16 (OFF)	1.033	1.031	1.030	1.030	1.029

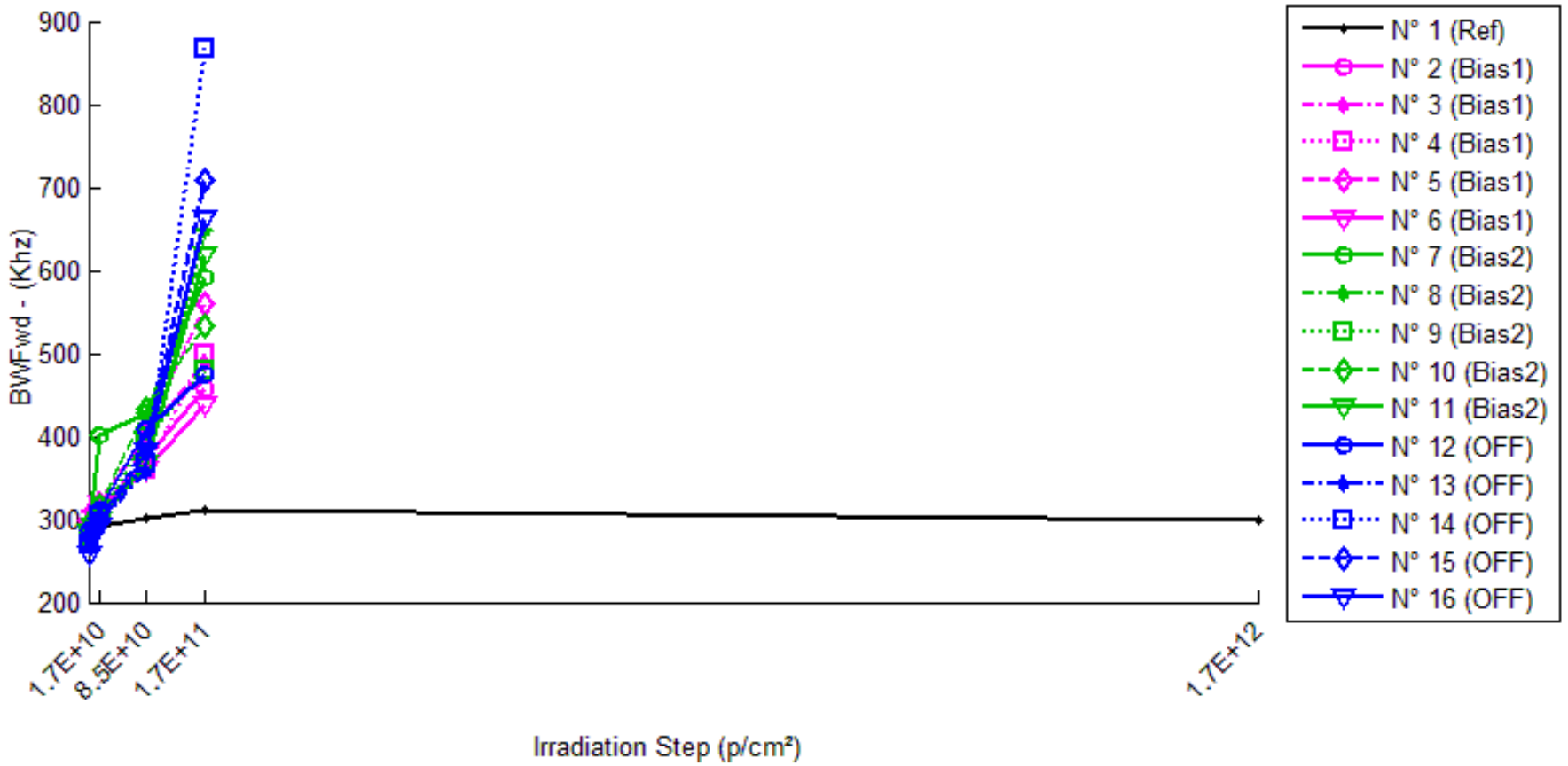
Delta [K3]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	-1.150E-4	1.800E-5	3.200E-5	-3.300E-5
N° 2 (Bias1)	---	-9.161E-4	-2.142E-3	-3.250E-3	-7.282E-3
N° 3 (Bias1)	---	-1.250E-3	-4.393E-3	-5.084E-3	-7.563E-3
N° 4 (Bias1)	---	-8.691E-4	-2.395E-3	-3.166E-3	-5.311E-3
N° 5 (Bias1)	---	-7.615E-4	-3.308E-3	-4.435E-3	-1.524E-2
N° 6 (Bias1)	---	-7.670E-4	-1.455E-3	-8.760E-4	3.536E-3
N° 7 (Bias2)	---	-1.927E-3	-4.738E-3	-6.823E-3	-1.292E-2
N° 8 (Bias2)	---	-1.152E-3	-4.515E-3	-6.142E-3	-2.173E-2
N° 9 (Bias2)	---	-6.150E-4	-1.542E-3	-1.418E-3	3.600E-4
N° 10 (Bias2)	---	-6.770E-4	-1.676E-3	-2.690E-3	-1.547E-2
N° 11 (Bias2)	---	-7.230E-4	-1.261E-3	-1.143E-3	-4.303E-3
N° 12 (OFF)	---	-1.808E-3	-6.066E-3	-8.291E-3	-1.770E-2
N° 13 (OFF)	---	-9.018E-4	-3.260E-3	-5.109E-3	-1.138E-2
N° 14 (OFF)	---	-3.701E-3	-1.379E-3	-6.520E-4	2.570E-4
N° 15 (OFF)	---	-2.870E-4	-2.504E-3	-2.832E-3	-4.244E-3
N° 16 (OFF)	---	-1.046E-3	-2.163E-3	-2.794E-3	-3.062E-3
Average (OFF)	---	-9.127E-4	-2.739E-3	-3.362E-3	-6.373E-3
σ (OFF)	---	1.998E-4	1.138E-3	1.608E-3	6.713E-3
Average+3σ (OFF)	---	-3.133E-4	6.765E-4	1.463E-3	1.377E-2
Average-3σ (OFF)	---	-1.512E-3	-6.154E-3	-8.188E-3	-2.651E-2
Average (Bias1)	---	-1.019E-3	-2.746E-3	-3.643E-3	-1.081E-2
σ (Bias1)	---	5.498E-4	1.725E-3	2.668E-3	8.837E-3
Average+3σ (Bias1)	---	6.306E-4	2.427E-3	4.360E-3	1.570E-2
Average-3σ (Bias1)	---	-2.668E-3	-7.920E-3	-1.165E-2	-3.732E-2
Average (Bias2)	---	-1.549E-3	-3.074E-3	-3.936E-3	-7.226E-3
σ (Bias2)	---	1.319E-3	1.804E-3	2.900E-3	7.232E-3
Average+3σ (Bias2)	---	2.409E-3	2.337E-3	4.765E-3	1.447E-2
Average-3σ (Bias2)	---	-5.507E-3	-8.486E-3	-1.264E-2	-2.892E-2

30 MeV proton / detailed results

16.BWFwd

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



30 MeV proton / detailed results

BWFwd . (Khz)

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	282	292	302	310	298
N° 2 (Bias1)	270	310	374	458	Not Measurable*
N° 3 (Bias1)	308	322	402	490	Not Measurable*
N° 4 (Bias1)	290	314	360	498	Not Measurable*
N° 5 (Bias1)	288	318	402	560	Not Measurable*
N° 6 (Bias1)	288	318	360	438	Not Measurable*
N° 7 (Bias2)	290	402	428	592	Not Measurable*
N° 8 (Bias2)	298	298	380	648	Not Measurable*
N° 9 (Bias2)	278	304	398	480	Not Measurable*
N° 10 (Bias2)	276	316	432	532	Not Measurable*
N° 11 (Bias2)	284	298	368	618	Not Measurable*
N° 12 (OFF)	286	310	408	474	Not Measurable*
N° 13 (OFF)	278	298	358	Not Measurable*	Not Measurable*
N° 14 (OFF)	270	304	368	866	Not Measurable*
N° 15 (OFF)	280	298	390	708	Not Measurable*
N° 16 (OFF)	258	292	382	662	Not Measurable*

***Saturation du Banc !**

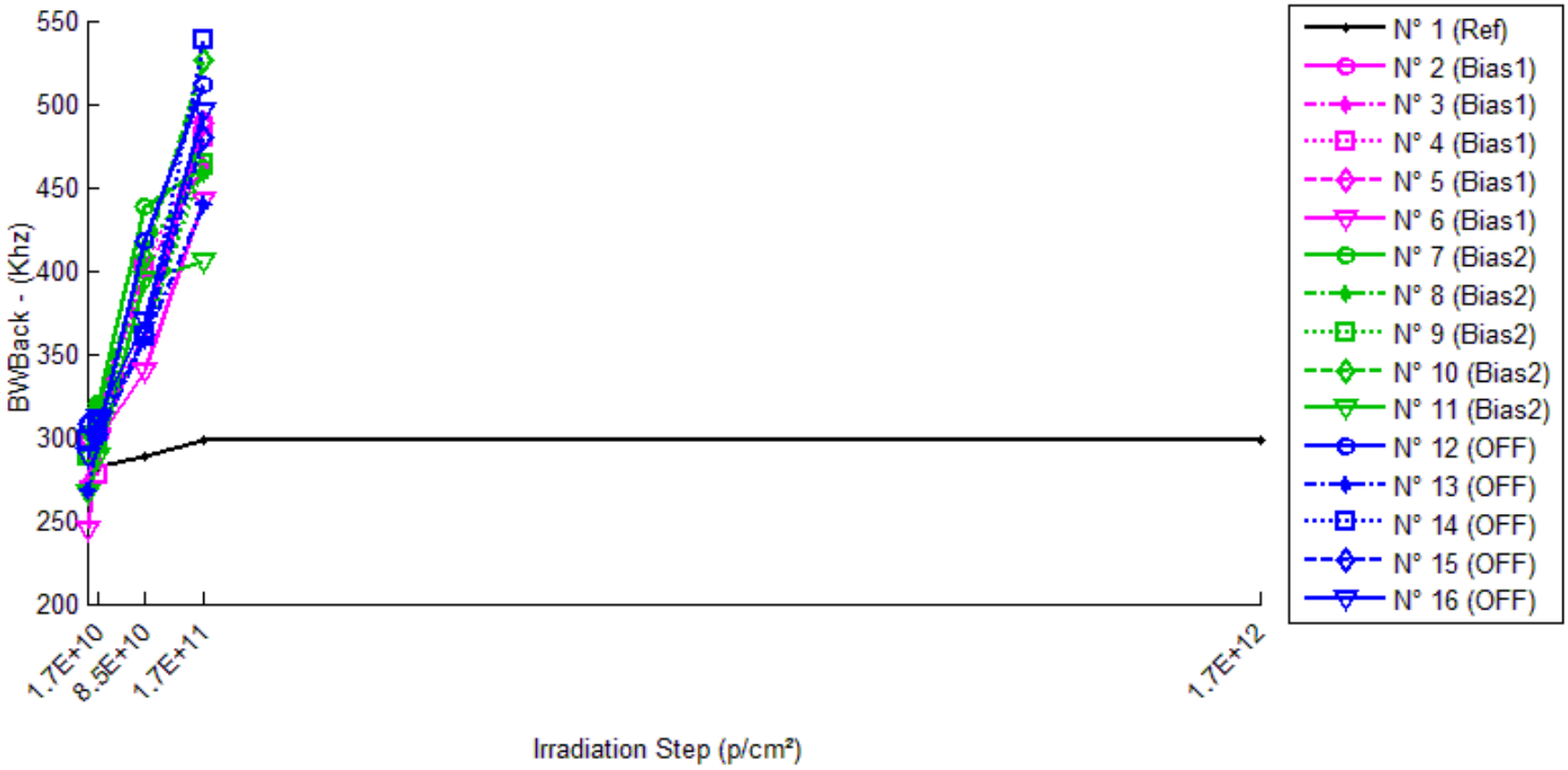
Delta [BWFwd]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	1.000E+1	2.000E+1	2.800E+1	1.600E+1
N° 2 (Bias1)	---	4.000E+1	1.040E+2	1.880E+2	NaN
N° 3 (Bias1)	---	1.400E+1	9.400E+1	1.820E+2	NaN
N° 4 (Bias1)	---	2.400E+1	7.000E+1	2.080E+2	NaN
N° 5 (Bias1)	---	3.000E+1	1.140E+2	2.720E+2	NaN
N° 6 (Bias1)	---	3.000E+1	7.200E+1	1.500E+2	NaN
N° 7 (Bias2)	---	1.120E+2	1.380E+2	3.020E+2	NaN
N° 8 (Bias2)	---	0.000E+0	8.200E+1	3.500E+2	NaN
N° 9 (Bias2)	---	2.600E+1	1.200E+2	2.020E+2	NaN
N° 10 (Bias2)	---	4.000E+1	1.560E+2	2.560E+2	NaN
N° 11 (Bias2)	---	1.400E+1	8.400E+1	3.340E+2	NaN
N° 12 (OFF)	---	2.400E+1	1.220E+2	1.880E+2	NaN
N° 13 (OFF)	---	2.000E+1	8.000E+1	NaN	NaN
N° 14 (OFF)	---	3.400E+1	9.800E+1	5.960E+2	NaN
N° 15 (OFF)	---	1.800E+1	1.100E+2	4.280E+2	NaN
N° 16 (OFF)	---	3.400E+1	1.240E+2	4.040E+2	NaN
Average (OFF)	---	2.760E+1	9.080E+1	2.000E+2	NaN
σ (OFF)	---	9.529E+0	1.942E+1	4.532E+1	0.000E+0
Average+3σ (OFF)	---	5.619E+1	1.491E+2	3.360E+2	NaN
Average-3σ (OFF)	---	-9.867E-1	3.254E+1	6.404E+1	NaN
Average (Bias1)	---	3.840E+1	1.160E+2	2.888E+2	NaN
σ (Bias1)	---	4.371E+1	3.271E+1	6.036E+1	0.000E+0
Average+3σ (Bias1)	---	1.695E+2	2.141E+2	4.699E+2	NaN
Average-3σ (Bias1)	---	-9.274E+1	1.787E+1	1.077E+2	NaN
Average (Bias2)	---	2.600E+1	1.068E+2	4.040E+2	NaN
σ (Bias2)	---	7.616E+0	1.825E+1	1.674E+2	0.000E+0
Average+3σ (Bias2)	---	4.885E+1	1.616E+2	9.063E+2	NaN
Average-3σ (Bias2)	---	3.153E+0	5.204E+1	-9.828E+1	NaN

30 MeV proton / detailed results

17.BWBack

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



30 MeV proton / detailed results

BWBack . (Khz)

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	304	282	288	298	298
N° 2 (Bias1)	270	298	362	490	Not Measurable*
N° 3 (Bias1)	272	318	398	464	Not Measurable*
N° 4 (Bias1)	298	278	402	480	Not Measurable*
N° 5 (Bias1)	298	310	362	488	Not Measurable*
N° 6 (Bias1)	244	298	340	442	Not Measurable*
N° 7 (Bias2)	290	320	438	462	Not Measurable*
N° 8 (Bias2)	302	298	414	458	Not Measurable*
N° 9 (Bias2)	288	296	362	464	Not Measurable*
N° 10 (Bias2)	290	318	408	526	Not Measurable*
N° 11 (Bias2)	266	288	394	406	Not Measurable*
N° 12 (OFF)	308	302	418	512	Not Measurable*
N° 13 (OFF)	268	298	358	440	Not Measurable*
N° 14 (OFF)	298	308	360	538	Not Measurable*
N° 15 (OFF)	308	302	362	480	Not Measurable*
N° 16 (OFF)	288	312	370	496	Not Measurable*

***test equipment limit**

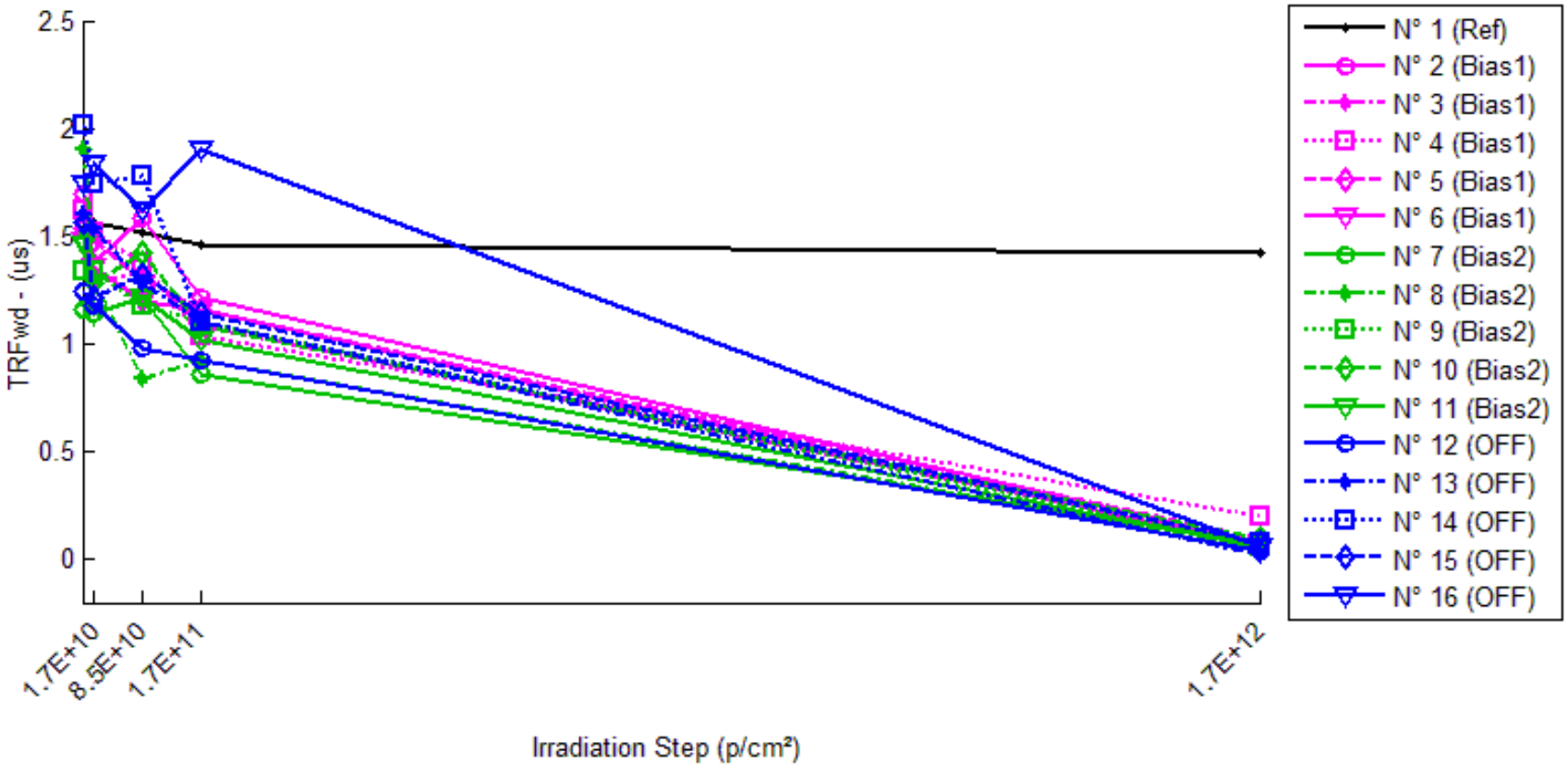
Delta [BWBack]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	-2.200E+1	-1.600E+1	-6.000E+0	-6.000E+0
N° 2 (Bias1)	---	2.800E+1	9.200E+1	2.200E+2	NaN
N° 3 (Bias1)	---	4.600E+1	1.260E+2	1.920E+2	NaN
N° 4 (Bias1)	---	-2.000E+1	1.040E+2	1.820E+2	NaN
N° 5 (Bias1)	---	1.200E+1	6.400E+1	1.900E+2	NaN
N° 6 (Bias1)	---	5.400E+1	9.600E+1	1.980E+2	NaN
N° 7 (Bias2)	---	3.000E+1	1.480E+2	1.720E+2	NaN
N° 8 (Bias2)	---	-4.000E+0	1.120E+2	1.560E+2	NaN
N° 9 (Bias2)	---	8.000E+0	7.400E+1	1.760E+2	NaN
N° 10 (Bias2)	---	2.800E+1	1.180E+2	2.360E+2	NaN
N° 11 (Bias2)	---	2.200E+1	1.280E+2	1.400E+2	NaN
N° 12 (OFF)	---	-6.000E+0	1.100E+2	2.040E+2	NaN
N° 13 (OFF)	---	3.000E+1	9.000E+1	1.720E+2	NaN
N° 14 (OFF)	---	1.000E+1	6.200E+1	2.400E+2	NaN
N° 15 (OFF)	---	-6.000E+0	5.400E+1	1.720E+2	NaN
N° 16 (OFF)	---	2.400E+1	8.200E+1	2.080E+2	NaN
Average (OFF)	---	2.400E+1	9.640E+1	1.964E+2	NaN
σ (OFF)	---	2.950E+1	2.238E+1	1.438E+1	0.000E+0
Average+3σ (OFF)	---	1.125E+2	1.635E+2	2.395E+2	NaN
Average-3σ (OFF)	---	-6.449E+1	2.926E+1	1.533E+2	NaN
Average (Bias1)	---	1.680E+1	1.160E+2	1.760E+2	NaN
σ (Bias1)	---	1.446E+1	2.717E+1	3.644E+1	0.000E+0
Average+3σ (Bias1)	---	6.019E+1	1.975E+2	2.853E+2	NaN
Average-3σ (Bias1)	---	-2.659E+1	3.450E+1	6.667E+1	NaN
Average (Bias2)	---	1.040E+1	7.960E+1	1.992E+2	NaN
σ (Bias2)	---	1.664E+1	2.238E+1	2.848E+1	0.000E+0
Average+3σ (Bias2)	---	6.031E+1	1.467E+2	2.846E+2	NaN
Average-3σ (Bias2)	---	-3.951E+1	1.246E+1	1.138E+2	NaN

30 MeV proton / detailed results

18.TRFwd

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



30 MeV proton / detailed results

TRFwd . (us)

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	1.54	1.56	1.52	1.46	1.42
N° 2 (Bias1)	1.70	1.38	1.58	1.22	0.08
N° 3 (Bias1)	1.90	1.28	1.34	1.08	0.08
N° 4 (Bias1)	1.62	1.52	1.38	1.04	0.20
N° 5 (Bias1)	1.54	1.48	1.30	1.16	0.10
N° 6 (Bias1)	1.48	1.36	1.20	1.16	0.06
N° 7 (Bias2)	1.16	1.14	1.22	0.86	0.08
N° 8 (Bias2)	1.90	1.30	0.84	0.92	0.06
N° 9 (Bias2)	1.34	1.34	1.18	1.10	0.06
N° 10 (Bias2)	1.48	1.28	1.42	1.08	0.10
N° 11 (Bias2)	1.46	1.14	1.22	1.02	0.06
N° 12 (OFF)	1.24	1.18	0.98	0.92	0.04
N° 13 (OFF)	1.60	1.54	1.28	1.10	0.02
N° 14 (OFF)	2.02	1.74	1.78	1.10	0.08
N° 15 (OFF)	1.56	1.22	1.32	1.14	0.08
N° 16 (OFF)	1.74	1.84	1.62	1.90	0.06

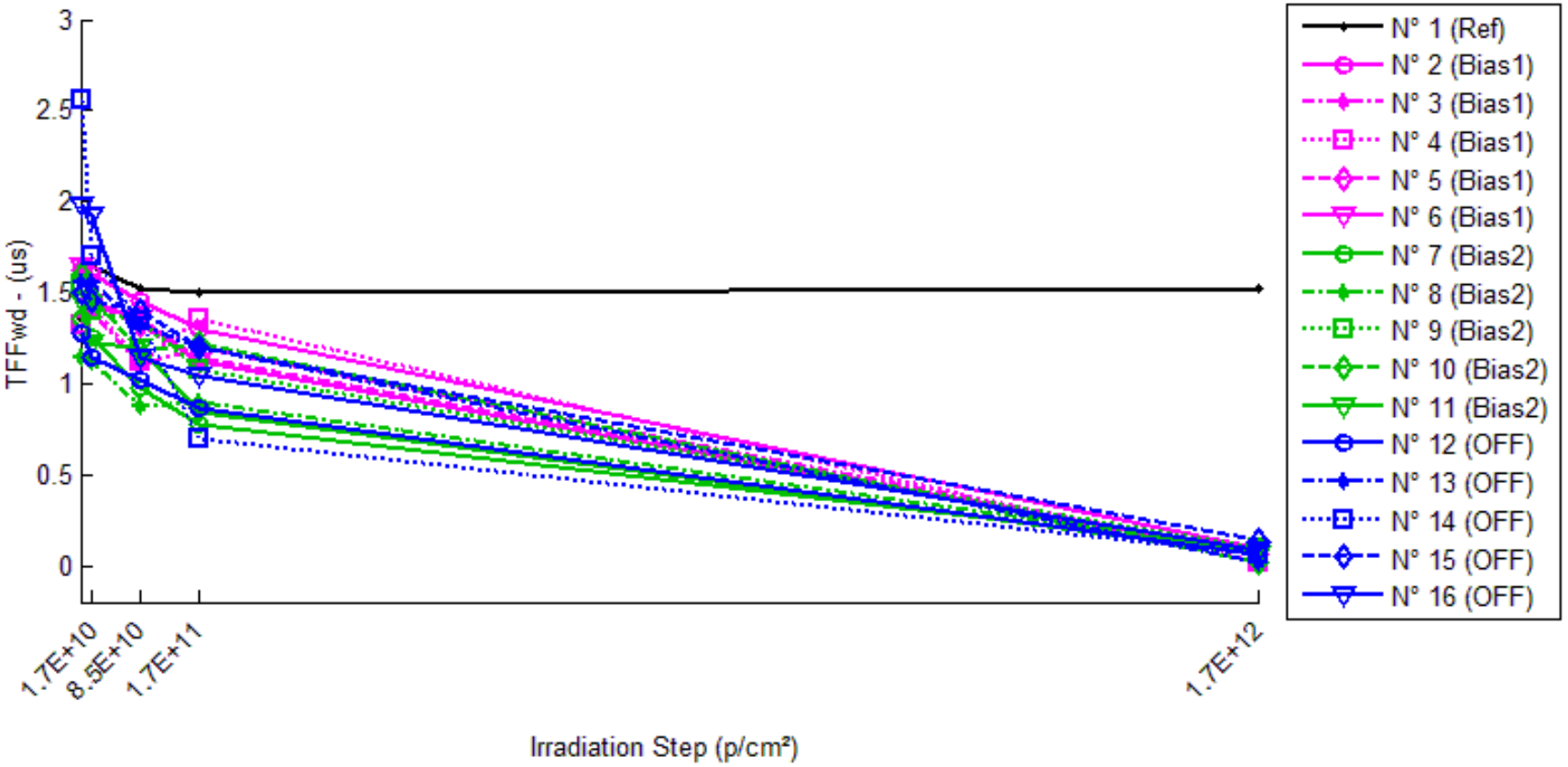
Delta [TRFwd]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	2.000E-2	-2.000E-2	-8.000E-2	-1.200E-1
N° 2 (Bias1)	---	-3.200E-1	-1.200E-1	-4.800E-1	-1.620E+0
N° 3 (Bias1)	---	-6.200E-1	-5.600E-1	-8.200E-1	-1.820E+0
N° 4 (Bias1)	---	-1.000E-1	-2.400E-1	-5.800E-1	-1.420E+0
N° 5 (Bias1)	---	-6.000E-2	-2.400E-1	-3.800E-1	-1.440E+0
N° 6 (Bias1)	---	-1.200E-1	-2.800E-1	-3.200E-1	-1.420E+0
N° 7 (Bias2)	---	-2.000E-2	6.000E-2	-3.000E-1	-1.080E+0
N° 8 (Bias2)	---	-6.000E-1	-1.060E+0	-9.800E-1	-1.840E+0
N° 9 (Bias2)	---	0.000E+0	-1.600E-1	-2.400E-1	-1.280E+0
N° 10 (Bias2)	---	-2.000E-1	-6.000E-2	-4.000E-1	-1.380E+0
N° 11 (Bias2)	---	-3.200E-1	-2.400E-1	-4.400E-1	-1.400E+0
N° 12 (OFF)	---	-6.000E-2	-2.600E-1	-3.200E-1	-1.200E+0
N° 13 (OFF)	---	-6.000E-2	-3.200E-1	-5.000E-1	-1.580E+0
N° 14 (OFF)	---	-2.800E-1	-2.400E-1	-9.200E-1	-1.940E+0
N° 15 (OFF)	---	-3.400E-1	-2.400E-1	-4.200E-1	-1.480E+0
N° 16 (OFF)	---	1.000E-1	-1.200E-1	1.600E-1	-1.680E+0
Average (OFF)	---	-2.440E-1	-2.880E-1	-5.160E-1	-1.544E+0
σ (OFF)	---	2.330E-1	1.635E-1	1.967E-1	1.757E-1
Average+3σ (OFF)	---	4.549E-1	2.024E-1	7.402E-2	-1.017E+0
Average-3σ (OFF)	---	-9.429E-1	-7.784E-1	-1.106E+0	-2.071E+0
Average (Bias1)	---	-2.280E-1	-2.920E-1	-4.720E-1	-1.396E+0
σ (Bias1)	---	2.464E-1	4.438E-1	2.948E-1	2.787E-1
Average+3σ (Bias1)	---	5.112E-1	1.039E+0	4.125E-1	-5.599E-1
Average-3σ (Bias1)	---	-9.672E-1	-1.623E+0	-1.356E+0	-2.232E+0
Average (Bias2)	---	-1.280E-1	-2.360E-1	-4.000E-1	-1.576E+0
σ (Bias2)	---	1.798E-1	7.266E-2	3.876E-1	2.711E-1
Average+3σ (Bias2)	---	4.113E-1	-1.801E-2	7.627E-1	-7.628E-1
Average-3σ (Bias2)	---	-6.673E-1	-4.540E-1	-1.563E+0	-2.389E+0

30 MeV proton / detailed results

19.TFFwd

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



30 MeV proton / detailed results

TFFwd . (us)

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	1.36	1.64	1.52	1.50	1.52
N° 2 (Bias1)	1.62	1.60	1.46	1.30	0.10
N° 3 (Bias1)	1.60	1.40	1.10	1.20	0.06
N° 4 (Bias1)	1.32	1.42	1.12	1.36	0.02
N° 5 (Bias1)	1.62	1.44	1.32	1.14	0.06
N° 6 (Bias1)	1.64	1.44	1.36	1.12	0.06
N° 7 (Bias2)	1.36	1.26	0.98	0.78	0.08
N° 8 (Bias2)	1.14	1.12	0.88	0.90	0.08
N° 9 (Bias2)	1.54	1.40	1.34	1.08	0.10
N° 10 (Bias2)	1.60	1.48	1.18	1.22	0.02
N° 11 (Bias2)	1.46	1.22	1.20	0.84	0.06
N° 12 (OFF)	1.28	1.14	1.02	0.86	0.06
N° 13 (OFF)	1.56	1.56	1.32	1.20	0.02
N° 14 (OFF)	2.56	1.70	1.34	0.70	0.06
N° 15 (OFF)	1.50	1.46	1.40	1.20	0.14
N° 16 (OFF)	1.98	1.92	1.14	1.04	0.08

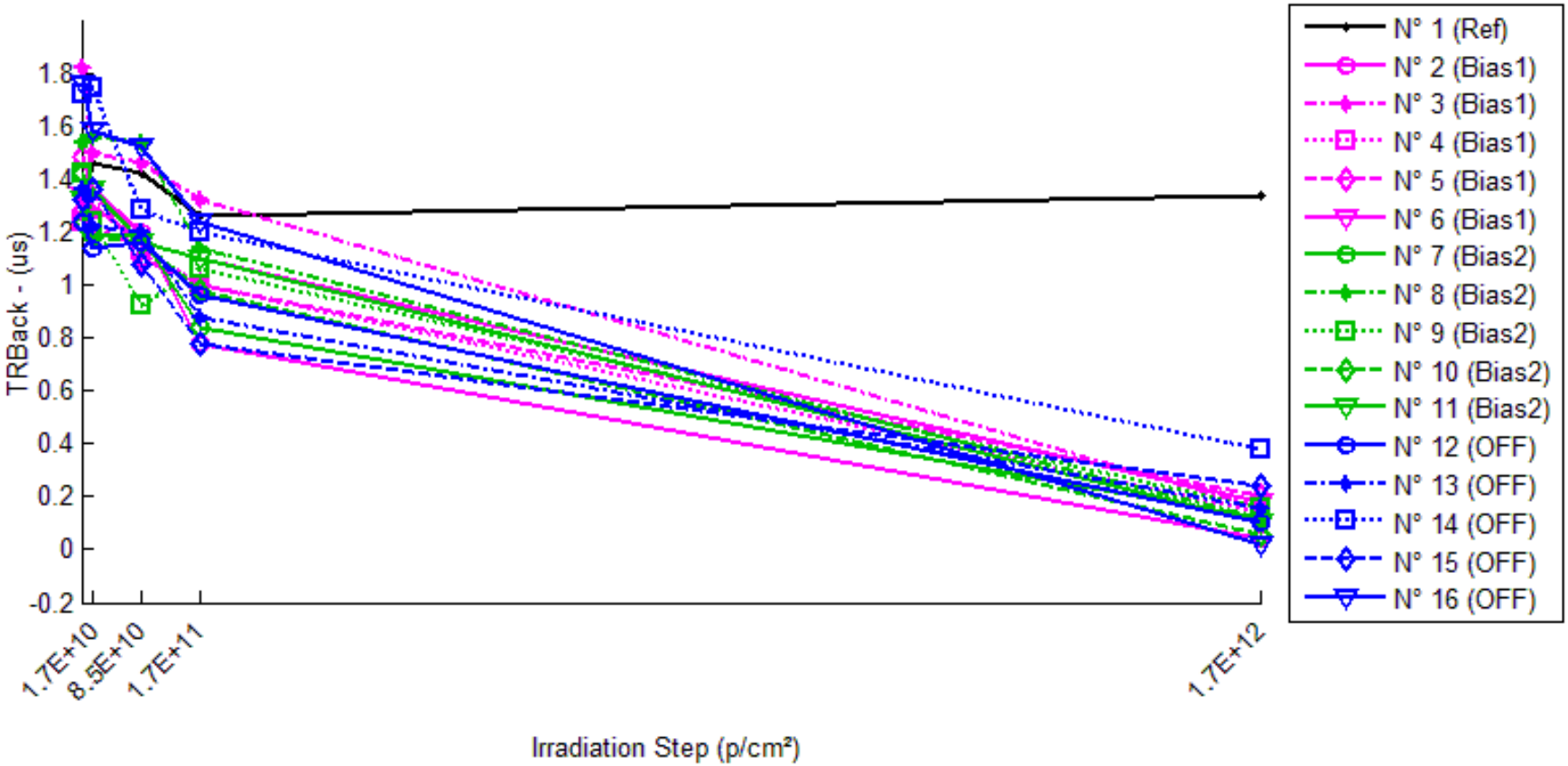
Delta [TFFwd]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	2.800E-1	1.600E-1	1.400E-1	1.600E-1
N° 2 (Bias1)	---	-2.000E-2	-1.600E-1	-3.200E-1	-1.520E+0
N° 3 (Bias1)	---	-2.000E-1	-5.000E-1	-4.000E-1	-1.540E+0
N° 4 (Bias1)	---	1.000E-1	-2.000E-1	4.000E-2	-1.300E+0
N° 5 (Bias1)	---	-1.800E-1	-3.000E-1	-4.800E-1	-1.560E+0
N° 6 (Bias1)	---	-2.000E-1	-2.800E-1	-5.200E-1	-1.580E+0
N° 7 (Bias2)	---	-1.000E-1	-3.800E-1	-5.800E-1	-1.280E+0
N° 8 (Bias2)	---	-2.000E-2	-2.600E-1	-2.400E-1	-1.060E+0
N° 9 (Bias2)	---	-1.400E-1	-2.000E-1	-4.600E-1	-1.440E+0
N° 10 (Bias2)	---	-1.200E-1	-4.200E-1	-3.800E-1	-1.580E+0
N° 11 (Bias2)	---	-2.400E-1	-2.600E-1	-6.200E-1	-1.400E+0
N° 12 (OFF)	---	-1.400E-1	-2.600E-1	-4.200E-1	-1.220E+0
N° 13 (OFF)	---	0.000E+0	-2.400E-1	-3.600E-1	-1.540E+0
N° 14 (OFF)	---	-8.600E-1	-1.220E+0	-1.860E+0	-2.500E+0
N° 15 (OFF)	---	-4.000E-2	-1.000E-1	-3.000E-1	-1.360E+0
N° 16 (OFF)	---	-6.000E-2	-8.400E-1	-9.400E-1	-1.900E+0
Average (OFF)	---	-1.000E-1	-2.880E-1	-3.360E-1	-1.500E+0
σ (OFF)	---	1.349E-1	1.316E-1	2.238E-1	1.140E-1
Average+3σ (OFF)	---	3.047E-1	1.068E-1	3.354E-1	-1.158E+0
Average-3σ (OFF)	---	-5.047E-1	-6.828E-1	-1.007E+0	-1.842E+0
Average (Bias1)	---	-1.240E-1	-3.040E-1	-4.560E-1	-1.352E+0
σ (Bias1)	---	7.925E-2	9.209E-2	1.539E-1	1.952E-1
Average+3σ (Bias1)	---	1.137E-1	-2.774E-2	5.649E-3	-7.663E-1
Average-3σ (Bias1)	---	-3.617E-1	-5.803E-1	-9.176E-1	-1.938E+0
Average (Bias2)	---	-2.200E-1	-5.320E-1	-7.760E-1	-1.704E+0
σ (Bias2)	---	3.614E-1	4.780E-1	6.573E-1	5.127E-1
Average+3σ (Bias2)	---	8.642E-1	9.021E-1	1.196E+0	-1.658E-1
Average-3σ (Bias2)	---	-1.304E+0	-1.966E+0	-2.748E+0	-3.242E+0

30 MeV proton / detailed results

20.TRBack

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



30 MeV proton / detailed results

TRBack . (us)

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	1.32	1.46	1.42	1.26	1.34
N° 2 (Bias1)	1.48	1.36	1.20	0.78	0.04
N° 3 (Bias1)	1.82	1.50	1.46	1.32	0.16
N° 4 (Bias1)	1.24	1.22	1.14	1.00	0.14
N° 5 (Bias1)	1.28	1.36	1.10	1.00	0.20
N° 6 (Bias1)	1.34	1.30	1.16	1.10	0.18
N° 7 (Bias2)	1.42	1.18	1.18	0.84	0.12
N° 8 (Bias2)	1.54	1.56	1.54	1.14	0.12
N° 9 (Bias2)	1.42	1.24	0.92	1.06	0.16
N° 10 (Bias2)	1.24	1.18	1.16	0.98	0.06
N° 11 (Bias2)	1.32	1.36	1.16	1.10	0.10
N° 12 (OFF)	1.24	1.14	1.16	0.96	0.10
N° 13 (OFF)	1.36	1.22	1.20	0.88	0.16
N° 14 (OFF)	1.72	1.74	1.28	1.20	0.38
N° 15 (OFF)	1.32	1.36	1.08	0.78	0.24
N° 16 (OFF)	1.76	1.58	1.52	1.24	0.02

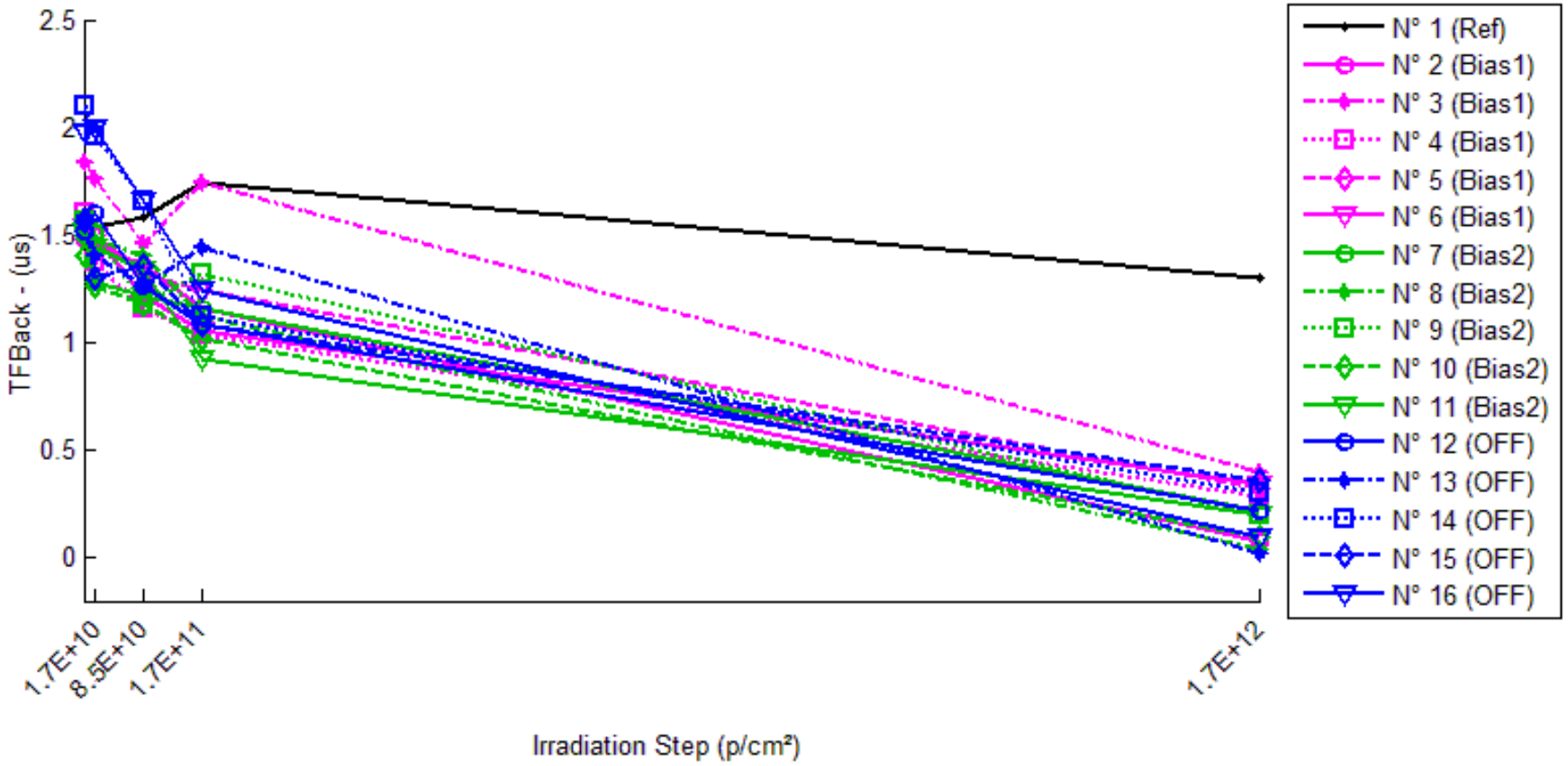
Delta [TRBack]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	1.400E-1	1.000E-1	-6.000E-2	2.000E-2
N° 2 (Bias1)	---	-1.200E-1	-2.800E-1	-7.000E-1	-1.440E+0
N° 3 (Bias1)	---	-3.200E-1	-3.600E-1	-5.000E-1	-1.660E+0
N° 4 (Bias1)	---	-2.000E-2	-1.000E-1	-2.400E-1	-1.100E+0
N° 5 (Bias1)	---	8.000E-2	-1.800E-1	-2.800E-1	-1.080E+0
N° 6 (Bias1)	---	-4.000E-2	-1.800E-1	-2.400E-1	-1.160E+0
N° 7 (Bias2)	---	-2.400E-1	-2.400E-1	-5.800E-1	-1.300E+0
N° 8 (Bias2)	---	2.000E-2	0.000E+0	-4.000E-1	-1.420E+0
N° 9 (Bias2)	---	-1.800E-1	-5.000E-1	-3.600E-1	-1.260E+0
N° 10 (Bias2)	---	-6.000E-2	-8.000E-2	-2.600E-1	-1.180E+0
N° 11 (Bias2)	---	4.000E-2	-1.600E-1	-2.200E-1	-1.220E+0
N° 12 (OFF)	---	-1.000E-1	-8.000E-2	-2.800E-1	-1.140E+0
N° 13 (OFF)	---	-1.400E-1	-1.600E-1	-4.800E-1	-1.200E+0
N° 14 (OFF)	---	2.000E-2	-4.400E-1	-5.200E-1	-1.340E+0
N° 15 (OFF)	---	4.000E-2	-2.400E-1	-5.400E-1	-1.080E+0
N° 16 (OFF)	---	-1.800E-1	-2.400E-1	-5.200E-1	-1.740E+0
Average (OFF)	---	-8.400E-2	-2.200E-1	-3.920E-1	-1.288E+0
σ (OFF)	---	1.499E-1	1.010E-1	2.033E-1	2.532E-1
Average+3σ (OFF)	---	3.658E-1	8.299E-2	2.178E-1	-5.283E-1
Average-3σ (OFF)	---	-5.338E-1	-5.230E-1	-1.002E+0	-2.048E+0
Average (Bias1)	---	-8.400E-2	-1.960E-1	-3.640E-1	-1.276E+0
σ (Bias1)	---	1.228E-1	1.920E-1	1.410E-1	9.209E-2
Average+3σ (Bias1)	---	2.844E-1	3.801E-1	5.899E-2	-9.997E-1
Average-3σ (Bias1)	---	-4.524E-1	-7.721E-1	-7.870E-1	-1.552E+0
Average (Bias2)	---	-7.200E-2	-2.320E-1	-4.680E-1	-1.300E+0
σ (Bias2)	---	9.757E-2	1.339E-1	1.073E-1	2.642E-1
Average+3σ (Bias2)	---	2.207E-1	1.696E-1	-1.460E-1	-5.074E-1

30 MeV proton / detailed results

21.TFBack

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



30 MeV proton / detailed results

TFBack . (us)

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	1.52	1.54	1.58	1.74	1.30
N° 2 (Bias1)	1.48	1.46	1.36	1.16	0.08
N° 3 (Bias1)	1.84	1.76	1.46	1.74	0.40
N° 4 (Bias1)	1.60	1.38	1.16	1.04	0.28
N° 5 (Bias1)	1.54	1.50	1.32	1.24	0.32
N° 6 (Bias1)	1.54	1.50	1.22	1.06	0.34
N° 7 (Bias2)	1.50	1.28	1.22	1.16	0.22
N° 8 (Bias2)	1.50	1.48	1.40	1.12	0.04
N° 9 (Bias2)	1.56	1.50	1.18	1.32	0.20
N° 10 (Bias2)	1.40	1.26	1.18	1.02	0.10
N° 11 (Bias2)	1.52	1.44	1.34	0.92	0.20
N° 12 (OFF)	1.52	1.60	1.26	1.08	0.22
N° 13 (OFF)	1.58	1.40	1.26	1.44	0.02
N° 14 (OFF)	2.10	1.96	1.66	1.12	0.30
N° 15 (OFF)	1.56	1.30	1.36	1.08	0.36
N° 16 (OFF)	1.98	2.00	1.66	1.24	0.10

Delta [TFBack]

	0.p/cm²	1.7E10.p/cm²	8.5E10.p/cm²	1.7E11.p/cm²	1.7E12.p/cm²
N° 1 (Ref)	---	2.000E-2	6.000E-2	2.200E-1	-2.200E-1
N° 2 (Bias1)	---	-2.000E-2	-1.200E-1	-3.200E-1	-1.400E+0
N° 3 (Bias1)	---	-8.000E-2	-3.800E-1	-1.000E-1	-1.440E+0
N° 4 (Bias1)	---	-2.200E-1	-4.400E-1	-5.600E-1	-1.320E+0
N° 5 (Bias1)	---	-4.000E-2	-2.200E-1	-3.000E-1	-1.220E+0
N° 6 (Bias1)	---	-4.000E-2	-3.200E-1	-4.800E-1	-1.200E+0
N° 7 (Bias2)	---	-2.200E-1	-2.800E-1	-3.400E-1	-1.280E+0
N° 8 (Bias2)	---	-2.000E-2	-1.000E-1	-3.800E-1	-1.460E+0
N° 9 (Bias2)	---	-6.000E-2	-3.800E-1	-2.400E-1	-1.360E+0
N° 10 (Bias2)	---	-1.400E-1	-2.200E-1	-3.800E-1	-1.300E+0
N° 11 (Bias2)	---	-8.000E-2	-1.800E-1	-6.000E-1	-1.320E+0
N° 12 (OFF)	---	8.000E-2	-2.600E-1	-4.400E-1	-1.300E+0
N° 13 (OFF)	---	-1.800E-1	-3.200E-1	-1.400E-1	-1.560E+0
N° 14 (OFF)	---	-1.400E-1	-4.400E-1	-9.800E-1	-1.800E+0
N° 15 (OFF)	---	-2.600E-1	-2.000E-1	-4.800E-1	-1.200E+0
N° 16 (OFF)	---	2.000E-2	-3.200E-1	-7.400E-1	-1.880E+0
Average (OFF)	---	-8.000E-2	-2.960E-1	-3.520E-1	-1.316E+0
σ (OFF)	---	8.124E-2	1.276E-1	1.781E-1	1.062E-1
Average+3σ (OFF)	---	1.637E-1	8.678E-2	1.823E-1	-9.974E-1
Average-3σ (OFF)	---	-3.237E-1	-6.788E-1	-8.863E-1	-1.635E+0
Average (Bias1)	---	-1.040E-1	-2.320E-1	-3.880E-1	-1.344E+0
σ (Bias1)	---	7.797E-2	1.055E-1	1.316E-1	7.127E-2
Average+3σ (Bias1)	---	1.299E-1	8.435E-2	6.816E-3	-1.130E+0
Average-3σ (Bias1)	---	-3.379E-1	-5.484E-1	-7.828E-1	-1.558E+0
Average (Bias2)	---	-9.600E-2	-3.080E-1	-5.560E-1	-1.548E+0
σ (Bias2)	---	1.417E-1	8.899E-2	3.186E-1	2.985E-1
Average+3σ (Bias2)	---	3.291E-1	-4.102E-2	3.997E-1	-6.524E-1
Average-3σ (Bias2)	---	-5.211E-1	-5.750E-1	-1.512E+0	-2.444E+0

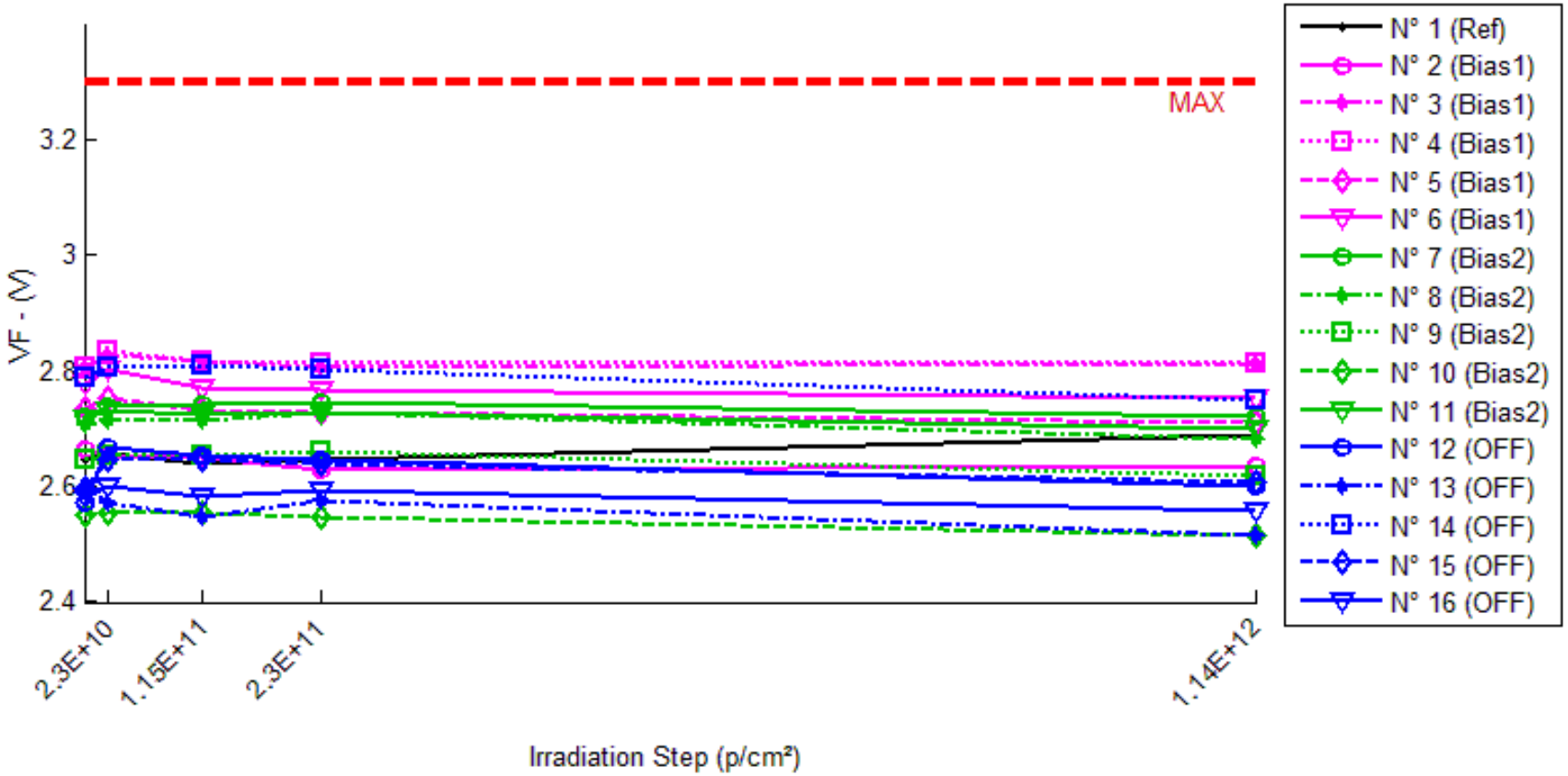
60 MeV proton / detailed results

CONTENTS

60 MeV proton / detailed results

1. VF

Ta = 25°C ; IF = 10mA



60 MeV proton / detailed results

VF . (V) **Max = 3.3**

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	2.645	2.656	2.638	2.647	2.690
N° 2 (Bias1)	2.663	2.655	2.651	2.630	2.636
N° 3 (Bias1)	2.805	2.826	2.816	2.805	2.813
N° 4 (Bias1)	2.807	2.833	2.818	2.814	2.812
N° 5 (Bias1)	2.734	2.754	2.732	2.727	2.712
N° 6 (Bias1)	2.776	2.801	2.770	2.768	2.752
N° 7 (Bias2)	2.721	2.739	2.743	2.745	2.720
N° 8 (Bias2)	2.708	2.715	2.713	2.728	2.681
N° 9 (Bias2)	2.645	2.655	2.655	2.661	2.619
N° 10 (Bias2)	2.551	2.554	2.554	2.548	2.515
N° 11 (Bias2)	2.716	2.731	2.724	2.727	2.698
N° 12 (OFF)	2.572	2.668	2.652	2.648	2.601
N° 13 (OFF)	2.598	2.573	2.547	2.575	2.517
N° 14 (OFF)	2.790	2.807	2.810	2.804	2.749
N° 15 (OFF)	2.597	2.647	2.647	2.638	2.608
N° 16 (OFF)	2.584	2.601	2.582	2.592	2.558

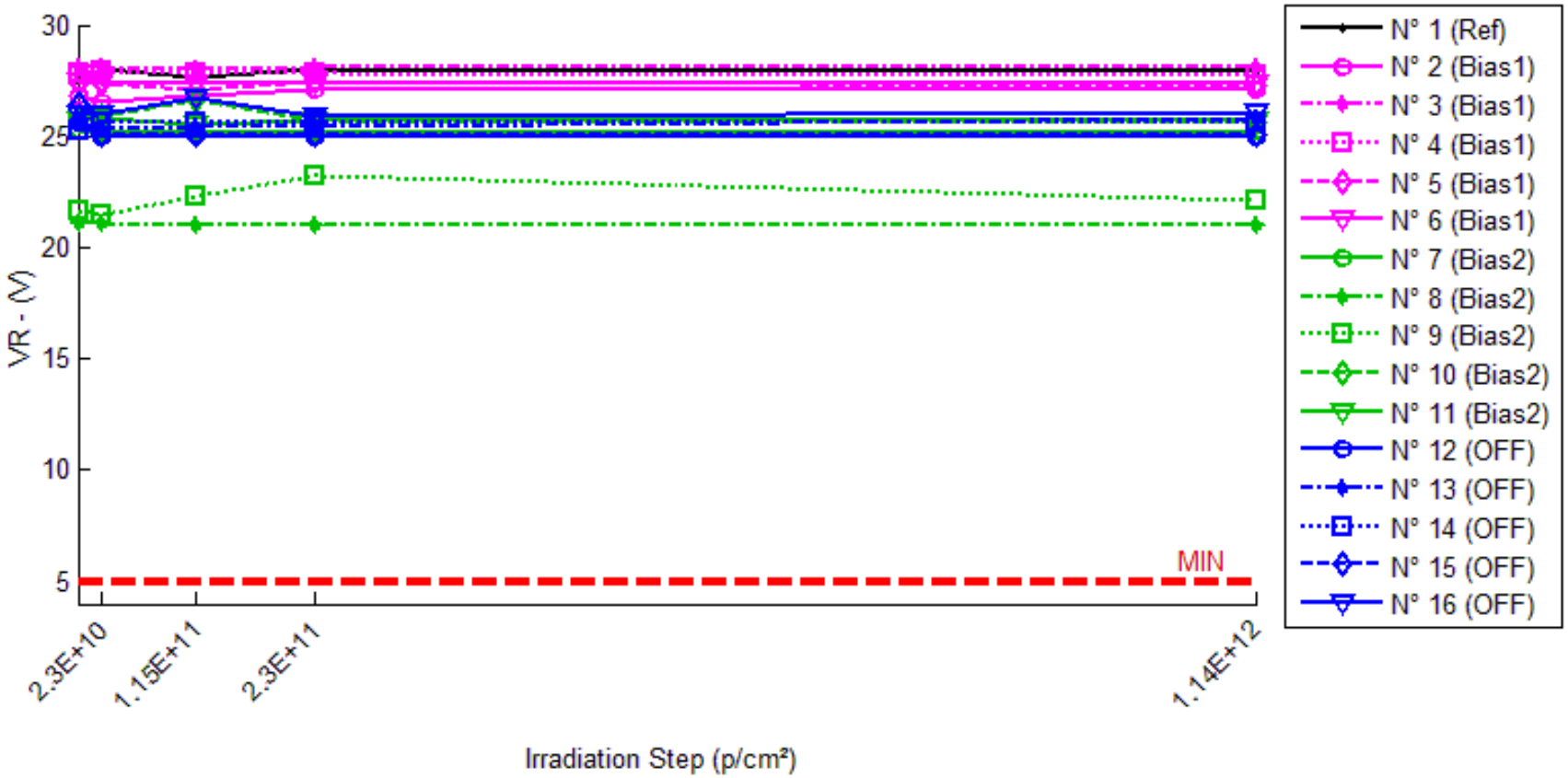
Delta [VF]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	1.052E-2	-7.473E-3	2.213E-3	4.506E-2
N° 2 (Bias1)	---	-7.530E-3	-1.170E-2	-3.327E-2	-2.705E-2
N° 3 (Bias1)	---	2.115E-2	1.101E-2	-4.900E-5	8.148E-3
N° 4 (Bias1)	---	2.607E-2	1.094E-2	7.032E-3	5.185E-3
N° 5 (Bias1)	---	1.986E-2	-1.627E-3	-6.607E-3	-2.183E-2
N° 6 (Bias1)	---	2.529E-2	-5.859E-3	-7.964E-3	-2.393E-2
N° 7 (Bias2)	---	1.799E-2	2.244E-2	2.408E-2	-4.400E-4
N° 8 (Bias2)	---	6.586E-3	5.061E-3	1.973E-2	-2.747E-2
N° 9 (Bias2)	---	9.429E-3	9.148E-3	1.582E-2	-2.691E-2
N° 10 (Bias2)	---	2.654E-3	2.755E-3	-3.551E-3	-3.657E-2
N° 11 (Bias2)	---	1.517E-2	8.864E-3	1.143E-2	-1.778E-2
N° 12 (OFF)	---	9.590E-2	8.022E-2	7.649E-2	2.934E-2
N° 13 (OFF)	---	-2.468E-2	-5.143E-2	-2.322E-2	-8.104E-2
N° 14 (OFF)	---	1.615E-2	1.925E-2	1.309E-2	-4.164E-2
N° 15 (OFF)	---	5.016E-2	5.089E-2	4.131E-2	1.121E-2
N° 16 (OFF)	---	1.691E-2	-2.721E-3	8.122E-3	-2.626E-2
Average (OFF)	---	1.697E-2	5.536E-4	-8.172E-3	-1.189E-2
σ (OFF)	---	1.395E-2	1.016E-2	1.524E-2	1.708E-2
Average+3σ (OFF)	---	5.881E-2	3.105E-2	3.756E-2	3.934E-2
Average-3σ (OFF)	---	-2.487E-2	-2.994E-2	-5.391E-2	-6.313E-2
Average (Bias1)	---	1.037E-2	9.653E-3	1.350E-2	-2.184E-2
σ (Bias1)	---	6.244E-3	7.631E-3	1.062E-2	1.368E-2
Average+3σ (Bias1)	---	2.910E-2	3.255E-2	4.536E-2	1.921E-2
Average-3σ (Bias1)	---	-8.364E-3	-1.324E-2	-1.836E-2	-6.288E-2
Average (Bias2)	---	3.089E-2	1.924E-2	2.316E-2	-2.168E-2
σ (Bias2)	---	4.500E-2	5.049E-2	3.759E-2	4.367E-2
Average+3σ (Bias2)	---	1.659E-1	1.707E-1	1.359E-1	1.093E-1
Average-3σ (Bias2)	---	-1.041E-1	-1.322E-1	-8.961E-2	-1.527E-1

60 MeV proton / detailed results

2. VR

Ta = 25°C ; IR = 100µA



60 MeV proton / detailed results

VR . (V) **Min = 5.0**

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	27.473	28.046	27.672	27.994	27.944
N° 2 (Bias1)	26.787	26.565	26.802	27.072	27.075
N° 3 (Bias1)	28.104	28.110	28.012	28.134	28.107
N° 4 (Bias1)	27.847	27.903	27.819	27.798	27.728
N° 5 (Bias1)	27.371	27.390	27.111	27.431	27.264
N° 6 (Bias1)	27.500	27.425	27.379	27.381	27.396
N° 7 (Bias2)	25.238	25.194	25.206	25.199	25.217
N° 8 (Bias2)	21.088	21.075	21.037	21.044	21.039
N° 9 (Bias2)	21.694	21.517	22.264	23.199	22.084
N° 10 (Bias2)	25.835	25.894	26.671	25.748	25.596
N° 11 (Bias2)	25.738	25.829	25.559	25.744	25.673
N° 12 (OFF)	25.603	24.963	25.028	25.009	24.977
N° 13 (OFF)	25.632	25.304	25.407	25.446	25.822
N° 14 (OFF)	25.250	25.649	25.652	25.653	25.655
N° 15 (OFF)	26.447	25.063	25.075	25.092	25.108
N° 16 (OFF)	25.965	25.987	26.683	25.857	26.037

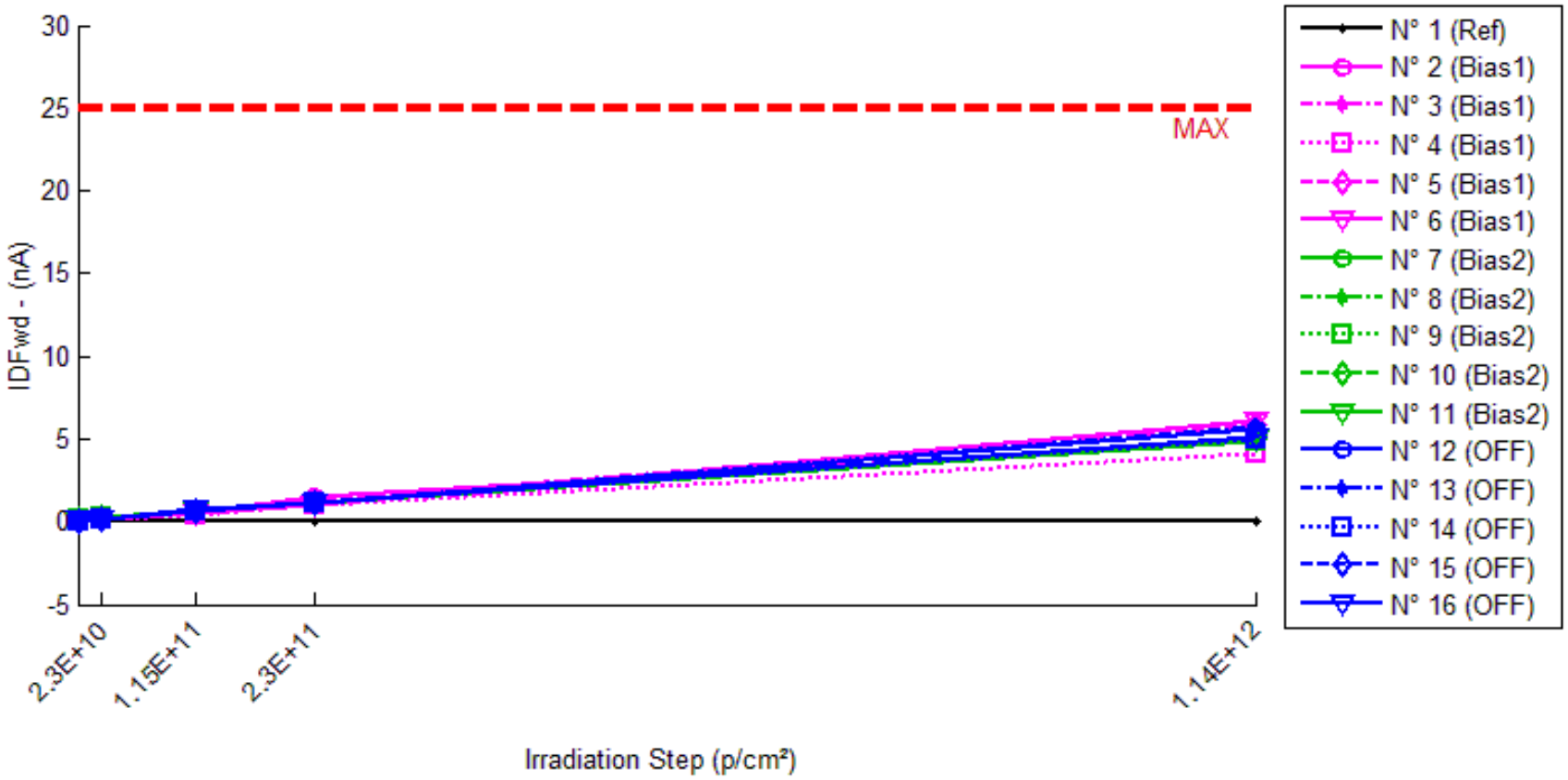
Delta [VR]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	5.723E-1	1.986E-1	5.208E-1	4.705E-1
N° 2 (Bias1)	---	-2.221E-1	1.497E-2	2.848E-1	2.879E-1
N° 3 (Bias1)	---	5.660E-3	-9.177E-2	3.012E-2	2.950E-3
N° 4 (Bias1)	---	5.618E-2	-2.728E-2	-4.824E-2	-1.190E-1
N° 5 (Bias1)	---	1.907E-2	-2.601E-1	6.006E-2	-1.065E-1
N° 6 (Bias1)	---	-7.483E-2	-1.214E-1	-1.187E-1	-1.041E-1
N° 7 (Bias2)	---	-4.459E-2	-3.204E-2	-3.935E-2	-2.067E-2
N° 8 (Bias2)	---	-1.322E-2	-5.048E-2	-4.375E-2	-4.896E-2
N° 9 (Bias2)	---	-1.766E-1	5.708E-1	1.506E+0	3.905E-1
N° 10 (Bias2)	---	5.835E-2	8.353E-1	-8.755E-2	-2.394E-1
N° 11 (Bias2)	---	9.138E-2	-1.789E-1	6.080E-3	-6.402E-2
N° 12 (OFF)	---	-6.399E-1	-5.753E-1	-5.942E-1	-6.261E-1
N° 13 (OFF)	---	-3.279E-1	-2.255E-1	-1.867E-1	1.900E-1
N° 14 (OFF)	---	3.985E-1	4.024E-1	4.026E-1	4.048E-1
N° 15 (OFF)	---	-1.384E+0	-1.373E+0	-1.356E+0	-1.339E+0
N° 16 (OFF)	---	2.232E-2	7.175E-1	-1.081E-1	7.214E-2
Average (OFF)	---	-4.321E-2	-9.712E-2	4.160E-2	-7.748E-3
σ (OFF)	---	1.109E-1	1.056E-1	1.528E-1	1.724E-1
Average+3σ (OFF)	---	2.894E-1	2.197E-1	5.000E-1	5.096E-1
Average-3σ (OFF)	---	-3.758E-1	-4.140E-1	-4.168E-1	-5.250E-1
Average (Bias1)	---	-1.693E-2	2.289E-1	2.682E-1	3.498E-3
σ (Bias1)	---	1.045E-1	4.464E-1	6.925E-1	2.327E-1
Average+3σ (Bias1)	---	2.965E-1	1.568E+0	2.346E+0	7.017E-1
Average-3σ (Bias1)	---	-3.303E-1	-1.110E+0	-1.809E+0	-6.947E-1
Average (Bias2)	---	-3.862E-1	-2.107E-1	-3.685E-1	-2.597E-1
σ (Bias2)	---	6.793E-1	8.248E-1	6.560E-1	7.166E-1
Average+3σ (Bias2)	---	1.652E+0	2.264E+0	1.599E+0	1.890E+0
Average-3σ (Bias2)	---	-2.424E+0	-2.685E+0	-2.336E+0	-2.410E+0

60 MeV proton / detailed results

3. IDFwd

Ta = 25°C ; VR = 15V ; IF = 0mA



60 MeV proton / detailed results

IDFwd . (nA) **Max = 25.0**

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	0.034	0.035	0.065	0.048	0.037
N° 2 (Bias1)	0.054	0.159	0.535	1.456	4.837
N° 3 (Bias1)	0.028	0.133	0.563	1.058	5.149
N° 4 (Bias1)	0.101	0.131	0.459	1.009	4.182
N° 5 (Bias1)	0.101	0.226	0.640	1.281	5.898
N° 6 (Bias1)	0.013	0.118	0.534	1.006	6.105
N° 7 (Bias2)	0.093	0.224	0.641	1.094	4.854
N° 8 (Bias2)	0.111	0.249	0.644	1.161	5.127
N° 9 (Bias2)	0.114	0.239	0.630	1.116	4.808
N° 10 (Bias2)	0.095	0.227	0.637	1.185	4.945
N° 11 (Bias2)	0.068	0.193	0.609	1.141	4.950
N° 12 (OFF)	0.085	0.175	0.624	1.128	5.639
N° 13 (OFF)	0.085	0.195	0.637	1.086	5.759
N° 14 (OFF)	0.052	0.189	0.674	1.160	4.931
N° 15 (OFF)	0.083	0.174	0.601	1.113	5.077
N° 16 (OFF)	0.119	0.185	0.779	1.115	5.149

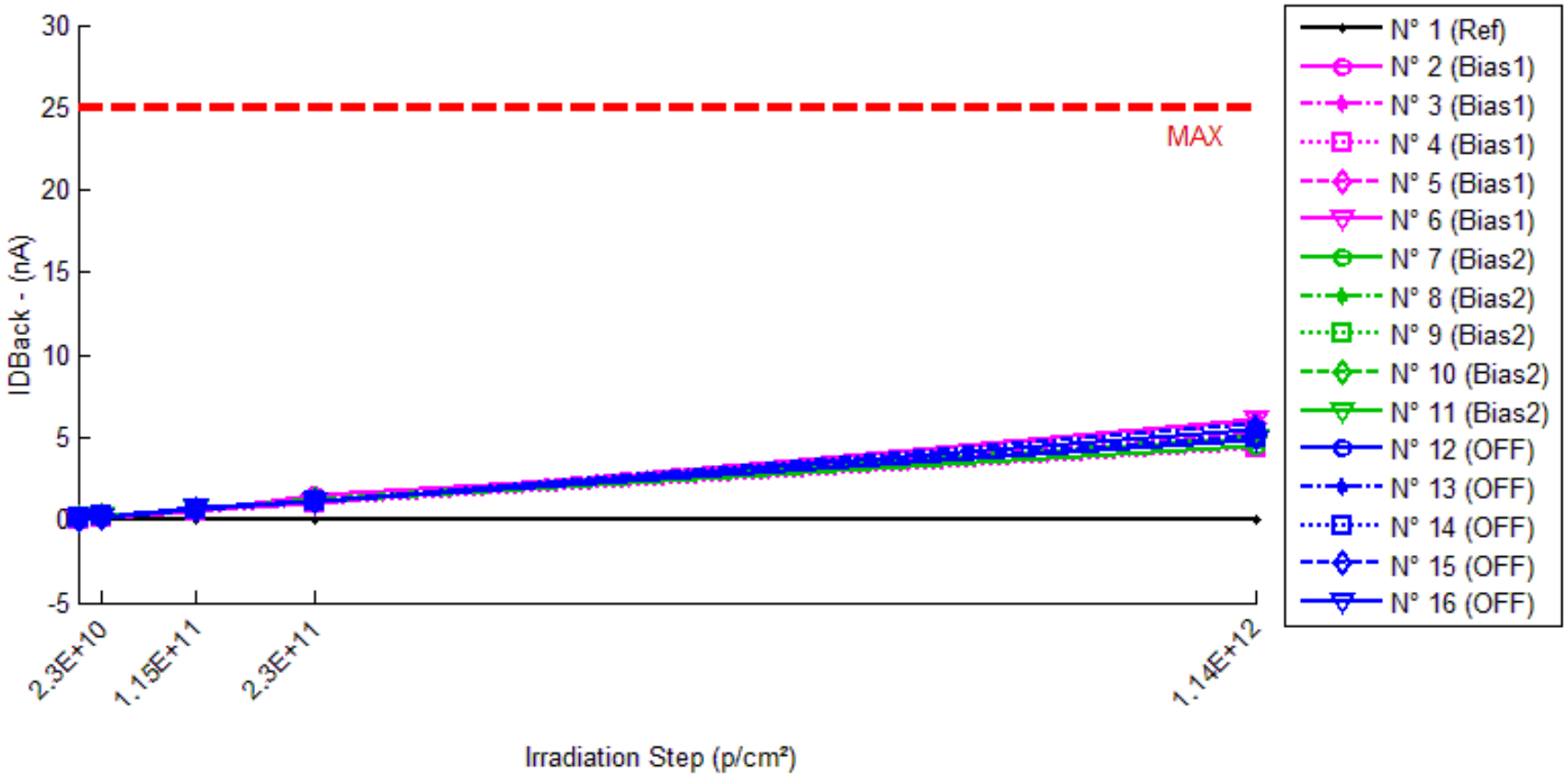
Delta [IDFwd]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	6.705E-4	3.072E-2	1.408E-2	2.389E-3
N° 2 (Bias1)	---	1.050E-1	4.809E-1	1.402E+0	4.783E+0
N° 3 (Bias1)	---	1.046E-1	5.352E-1	1.030E+0	5.120E+0
N° 4 (Bias1)	---	3.005E-2	3.572E-1	9.071E-1	4.081E+0
N° 5 (Bias1)	---	1.257E-1	5.389E-1	1.180E+0	5.797E+0
N° 6 (Bias1)	---	1.047E-1	5.202E-1	9.927E-1	6.092E+0
N° 7 (Bias2)	---	1.311E-1	5.473E-1	1.001E+0	4.761E+0
N° 8 (Bias2)	---	1.379E-1	5.325E-1	1.050E+0	5.016E+0
N° 9 (Bias2)	---	1.244E-1	5.152E-1	1.001E+0	4.693E+0
N° 10 (Bias2)	---	1.316E-1	5.417E-1	1.089E+0	4.850E+0
N° 11 (Bias2)	---	1.246E-1	5.408E-1	1.072E+0	4.882E+0
N° 12 (OFF)	---	9.037E-2	5.398E-1	1.044E+0	5.555E+0
N° 13 (OFF)	---	1.105E-1	5.517E-1	1.001E+0	5.675E+0
N° 14 (OFF)	---	1.374E-1	6.221E-1	1.109E+0	4.879E+0
N° 15 (OFF)	---	9.024E-2	5.177E-1	1.030E+0	4.994E+0
N° 16 (OFF)	---	6.568E-2	6.601E-1	9.962E-1	5.030E+0
Average (OFF)	---	9.402E-2	4.865E-1	1.102E+0	5.175E+0
σ (OFF)	---	3.689E-2	7.584E-2	1.945E-1	8.034E-1
Average+3σ (OFF)	---	2.047E-1	7.140E-1	1.686E+0	7.585E+0
Average-3σ (OFF)	---	-1.665E-2	2.589E-1	5.188E-1	2.764E+0
Average (Bias1)	---	1.299E-1	5.355E-1	1.043E+0	4.840E+0
σ (Bias1)	---	5.632E-3	1.255E-2	4.050E-2	1.231E-1
Average+3σ (Bias1)	---	1.468E-1	5.731E-1	1.164E+0	5.210E+0
Average-3σ (Bias1)	---	1.130E-1	4.978E-1	9.212E-1	4.471E+0
Average (Bias2)	---	9.885E-2	5.783E-1	1.036E+0	5.226E+0
σ (Bias2)	---	2.679E-2	6.016E-2	4.518E-2	3.613E-1
Average+3σ (Bias2)	---	1.792E-1	7.587E-1	1.172E+0	6.310E+0
Average-3σ (Bias2)	---	1.847E-2	3.978E-1	9.004E-1	4.143E+0

60 MeV proton / detailed results

4. IDBack

Ta = 25°C ; VR = 15V ; IF = 0mA



60 MeV proton / detailed results

IDBack . (nA) **Max = 25.0**

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	0.056	0.055	0.038	0.065	0.078
N° 2 (Bias1)	0.088	0.197	0.583	1.524	4.903
N° 3 (Bias1)	0.072	0.166	0.613	1.090	5.216
N° 4 (Bias1)	0.087	0.161	0.534	1.077	4.336
N° 5 (Bias1)	0.114	0.257	0.653	1.284	5.833
N° 6 (Bias1)	0.060	0.156	0.587	1.046	6.087
N° 7 (Bias2)	0.117	0.240	0.662	1.129	4.487
N° 8 (Bias2)	0.120	0.250	0.652	1.173	5.163
N° 9 (Bias2)	0.121	0.241	0.641	1.132	4.836
N° 10 (Bias2)	0.112	0.250	0.661	1.217	4.995
N° 11 (Bias2)	0.097	0.226	0.624	1.165	4.975
N° 12 (OFF)	0.104	0.202	0.658	1.137	5.537
N° 13 (OFF)	0.102	0.214	0.669	1.121	5.873
N° 14 (OFF)	0.093	0.213	0.681	1.180	4.943
N° 15 (OFF)	0.083	0.210	0.627	1.128	5.091
N° 16 (OFF)	0.108	0.207	0.763	1.084	4.919

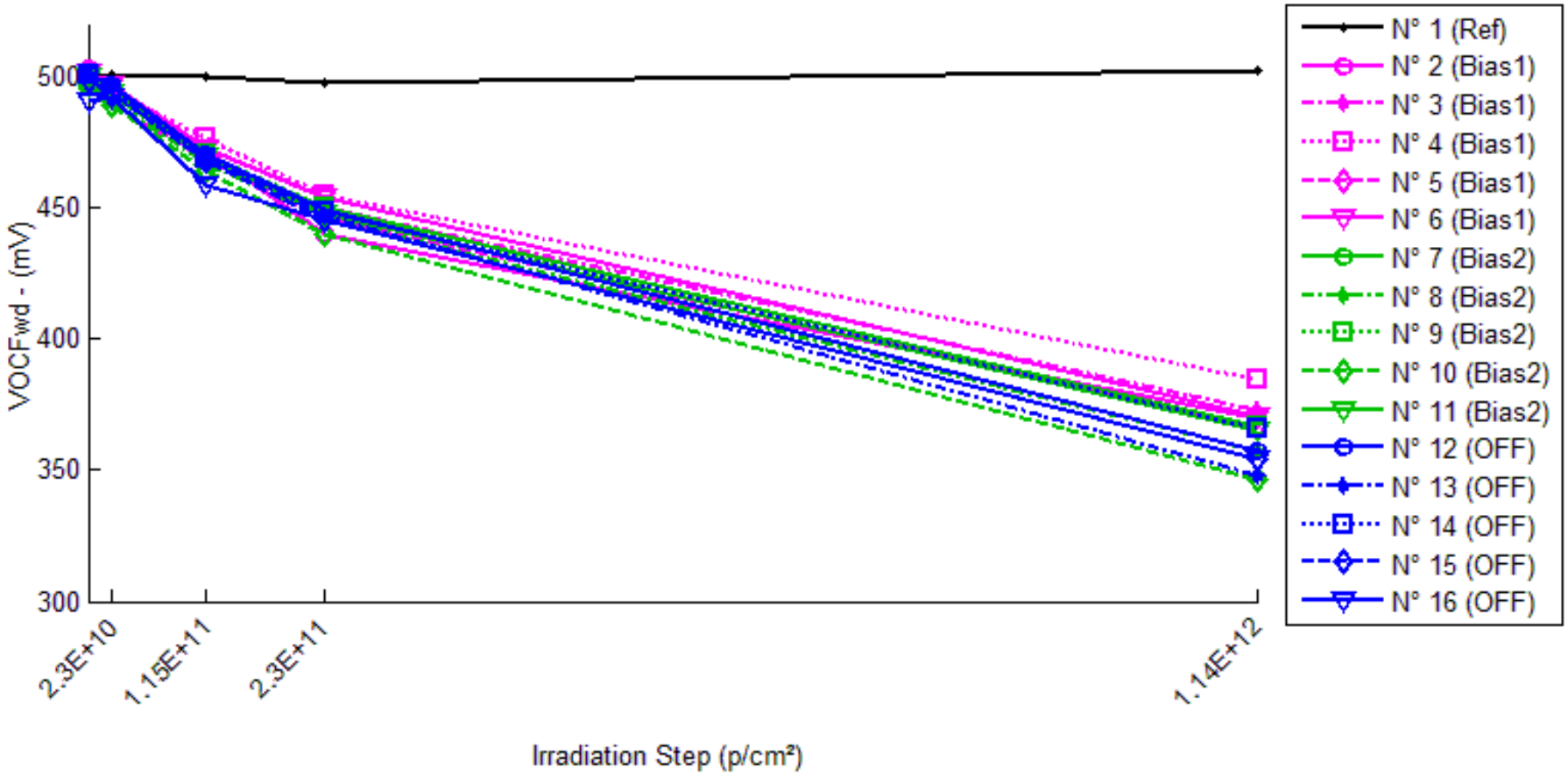
Delta [IDBack]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	-9.222E-4	-1.798E-2	9.431E-3	2.180E-2
N° 2 (Bias1)	---	1.089E-1	4.950E-1	1.436E+0	4.815E+0
N° 3 (Bias1)	---	9.356E-2	5.408E-1	1.018E+0	5.144E+0
N° 4 (Bias1)	---	7.457E-2	4.466E-1	9.905E-1	4.249E+0
N° 5 (Bias1)	---	1.429E-1	5.390E-1	1.169E+0	5.719E+0
N° 6 (Bias1)	---	9.569E-2	5.271E-1	9.863E-1	6.027E+0
N° 7 (Bias2)	---	1.230E-1	5.450E-1	1.012E+0	4.370E+0
N° 8 (Bias2)	---	1.302E-1	5.320E-1	1.053E+0	5.042E+0
N° 9 (Bias2)	---	1.201E-1	5.199E-1	1.011E+0	4.715E+0
N° 10 (Bias2)	---	1.381E-1	5.489E-1	1.105E+0	4.883E+0
N° 11 (Bias2)	---	1.290E-1	5.270E-1	1.068E+0	4.879E+0
N° 12 (OFF)	---	9.779E-2	5.536E-1	1.032E+0	5.433E+0
N° 13 (OFF)	---	1.121E-1	5.664E-1	1.019E+0	5.771E+0
N° 14 (OFF)	---	1.199E-1	5.882E-1	1.087E+0	4.851E+0
N° 15 (OFF)	---	1.274E-1	5.440E-1	1.046E+0	5.009E+0
N° 16 (OFF)	---	9.896E-2	6.546E-1	9.755E-1	4.811E+0
Average (OFF)	---	1.031E-1	5.097E-1	1.120E+0	5.191E+0
σ (OFF)	---	2.538E-2	3.977E-2	1.918E-1	7.086E-1
Average+3σ (OFF)	---	1.793E-1	6.290E-1	1.695E+0	7.317E+0
Average-3σ (OFF)	---	2.697E-2	3.904E-1	5.446E-1	3.065E+0
Average (Bias1)	---	1.281E-1	5.346E-1	1.050E+0	4.778E+0
σ (Bias1)	---	6.976E-3	1.221E-2	3.987E-2	2.559E-1
Average+3σ (Bias1)	---	1.490E-1	5.712E-1	1.169E+0	5.546E+0
Average-3σ (Bias1)	---	1.072E-1	4.979E-1	9.303E-1	4.010E+0
Average (Bias2)	---	1.112E-1	5.814E-1	1.032E+0	5.175E+0
σ (Bias2)	---	1.294E-2	4.415E-2	4.051E-2	4.145E-1
Average+3σ (Bias2)	---	1.501E-1	7.138E-1	1.153E+0	6.418E+0
Average-3σ (Bias2)	---	7.243E-2	4.489E-1	9.104E-1	3.932E+0

60 MeV proton / detailed results

5. VOCFwd

Ta = 25°C ; IF = 10mA



60 MeV proton / detailed results

VOCFwd . (mV)

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	500.426	500.771	499.748	498.104	502.480
N° 2 (Bias1)	503.224	494.599	471.790	439.648	369.608
N° 3 (Bias1)	498.852	492.977	469.888	450.038	373.236
N° 4 (Bias1)	498.469	495.000	477.002	455.006	384.325
N° 5 (Bias1)	497.222	489.387	468.662	445.979	366.780
N° 6 (Bias1)	501.455	496.749	472.577	453.839	370.275
N° 7 (Bias2)	496.291	492.902	469.359	450.370	366.665
N° 8 (Bias2)	498.878	491.090	467.325	446.074	357.397
N° 9 (Bias2)	498.923	493.927	470.274	450.179	366.963
N° 10 (Bias2)	497.253	489.311	464.123	439.991	346.442
N° 11 (Bias2)	499.719	493.954	469.667	448.139	365.012
N° 12 (OFF)	500.791	497.092	470.644	449.382	357.102
N° 13 (OFF)	501.158	496.069	469.747	447.134	348.288
N° 14 (OFF)	500.658	494.430	469.092	448.828	365.761
N° 15 (OFF)	498.795	494.140	467.950	445.217	353.836
N° 16 (OFF)	490.952	492.451	459.124	445.414	354.162

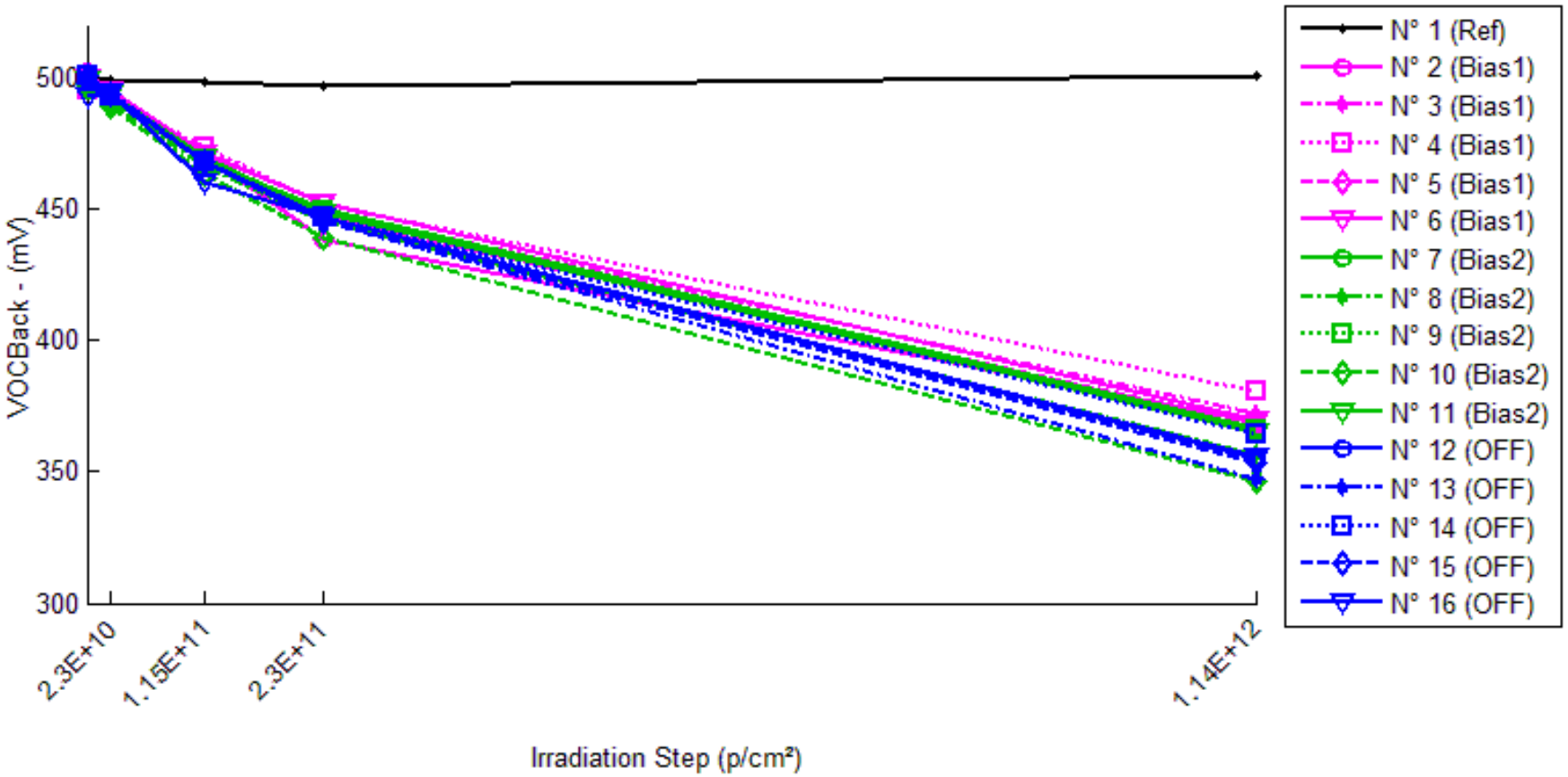
Delta [VOCFwd]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	3.447E-1	-6.784E-1	-2.322E+0	2.054E+0
N° 2 (Bias1)	---	-8.625E+0	-3.143E+1	-6.358E+1	-1.336E+2
N° 3 (Bias1)	---	-5.876E+0	-2.896E+1	-4.881E+1	-1.256E+2
N° 4 (Bias1)	---	-3.468E+0	-2.147E+1	-4.346E+1	-1.141E+2
N° 5 (Bias1)	---	-7.835E+0	-2.856E+1	-5.124E+1	-1.304E+2
N° 6 (Bias1)	---	-4.706E+0	-2.888E+1	-4.762E+1	-1.312E+2
N° 7 (Bias2)	---	-3.389E+0	-2.693E+1	-4.592E+1	-1.296E+2
N° 8 (Bias2)	---	-7.789E+0	-3.155E+1	-5.280E+1	-1.415E+2
N° 9 (Bias2)	---	-4.997E+0	-2.865E+1	-4.874E+1	-1.320E+2
N° 10 (Bias2)	---	-7.942E+0	-3.313E+1	-5.726E+1	-1.508E+2
N° 11 (Bias2)	---	-5.765E+0	-3.005E+1	-5.158E+1	-1.347E+2
N° 12 (OFF)	---	-3.700E+0	-3.015E+1	-5.141E+1	-1.437E+2
N° 13 (OFF)	---	-5.089E+0	-3.141E+1	-5.402E+1	-1.529E+2
N° 14 (OFF)	---	-6.228E+0	-3.157E+1	-5.183E+1	-1.349E+2
N° 15 (OFF)	---	-4.655E+0	-3.084E+1	-5.358E+1	-1.450E+2
N° 16 (OFF)	---	1.498E+0	-3.183E+1	-4.554E+1	-1.368E+2
Average (OFF)	---	-6.102E+0	-2.786E+1	-5.094E+1	-1.270E+2
σ (OFF)	---	2.139E+0	3.755E+0	7.603E+0	7.751E+0
Average+3σ (OFF)	---	3.152E-1	-1.660E+1	-2.813E+1	-1.037E+2
Average-3σ (OFF)	---	-1.252E+1	-3.913E+1	-7.375E+1	-1.503E+2
Average (Bias1)	---	-5.976E+0	-3.006E+1	-5.126E+1	-1.377E+2
σ (Bias1)	---	1.927E+0	2.420E+0	4.282E+0	8.563E+0
Average+3σ (Bias1)	---	-1.967E-1	-2.280E+1	-3.842E+1	-1.120E+2
Average-3σ (Bias1)	---	-1.176E+1	-3.732E+1	-6.411E+1	-1.634E+2
Average (Bias2)	---	-3.635E+0	-3.116E+1	-5.128E+1	-1.426E+2
σ (Bias2)	---	3.010E+0	6.706E-1	3.394E+0	7.164E+0
Average+3σ (Bias2)	---	5.394E+0	-2.915E+1	-4.109E+1	-1.211E+2
Average-3σ (Bias2)	---	-1.266E+1	-3.317E+1	-6.146E+1	-1.641E+2

60 MeV proton / detailed results

6. VOCBack

Ta = 25°C ; IF = 10mA



60 MeV proton / detailed results

VOCBack . (mV)

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	499.164	499.517	498.483	496.828	501.185
N° 2 (Bias1)	502.316	493.765	470.974	438.775	368.933
N° 3 (Bias1)	498.405	492.379	469.143	449.173	372.341
N° 4 (Bias1)	495.639	492.030	473.782	451.730	380.879
N° 5 (Bias1)	497.631	489.632	469.309	446.835	368.075
N° 6 (Bias1)	500.259	495.531	471.457	452.805	369.842
N° 7 (Bias2)	495.576	492.047	468.327	449.858	366.659
N° 8 (Bias2)	497.863	490.009	466.430	445.266	356.878
N° 9 (Bias2)	497.978	492.874	469.212	449.066	366.220
N° 10 (Bias2)	497.084	488.999	463.817	439.597	346.029
N° 11 (Bias2)	499.676	493.779	469.720	448.368	365.430
N° 12 (OFF)	499.225	493.788	468.057	446.970	355.079
N° 13 (OFF)	499.815	494.467	468.303	445.751	346.871
N° 14 (OFF)	500.590	493.021	467.735	447.400	364.336
N° 15 (OFF)	500.866	494.185	468.045	445.272	353.600
N° 16 (OFF)	493.128	494.309	460.660	446.697	355.512

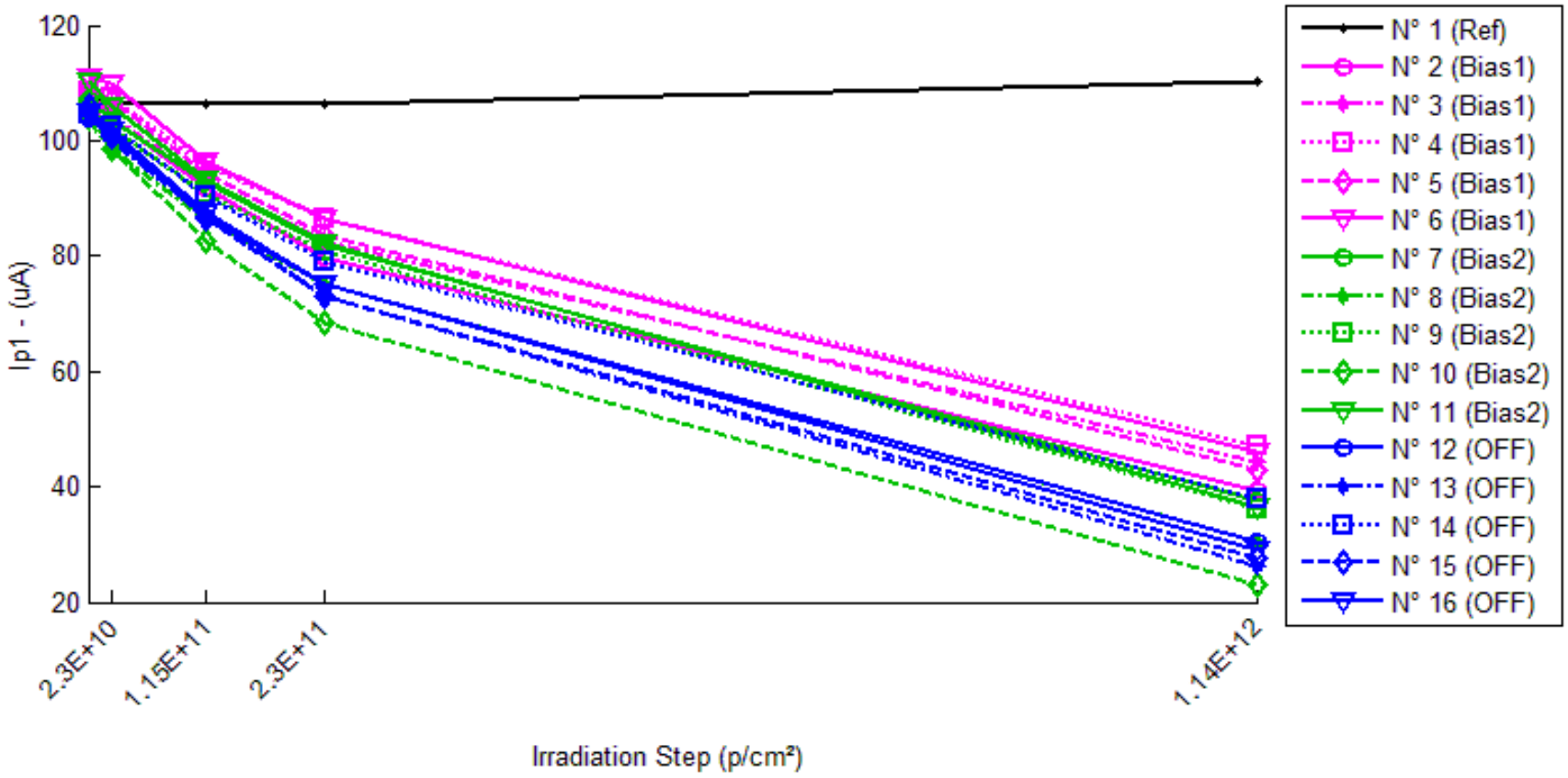
Delta [VOCBack]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	3.533E-1	-6.810E-1	-2.336E+0	2.021E+0
N° 2 (Bias1)	---	-8.550E+0	-3.134E+1	-6.354E+1	-1.334E+2
N° 3 (Bias1)	---	-6.025E+0	-2.926E+1	-4.923E+1	-1.261E+2
N° 4 (Bias1)	---	-3.609E+0	-2.186E+1	-4.391E+1	-1.148E+2
N° 5 (Bias1)	---	-7.999E+0	-2.832E+1	-5.080E+1	-1.296E+2
N° 6 (Bias1)	---	-4.728E+0	-2.880E+1	-4.745E+1	-1.304E+2
N° 7 (Bias2)	---	-3.529E+0	-2.725E+1	-4.572E+1	-1.289E+2
N° 8 (Bias2)	---	-7.854E+0	-3.143E+1	-5.260E+1	-1.410E+2
N° 9 (Bias2)	---	-5.104E+0	-2.877E+1	-4.891E+1	-1.318E+2
N° 10 (Bias2)	---	-8.085E+0	-3.327E+1	-5.749E+1	-1.511E+2
N° 11 (Bias2)	---	-5.897E+0	-2.996E+1	-5.131E+1	-1.342E+2
N° 12 (OFF)	---	-5.437E+0	-3.117E+1	-5.226E+1	-1.441E+2
N° 13 (OFF)	---	-5.349E+0	-3.151E+1	-5.406E+1	-1.529E+2
N° 14 (OFF)	---	-7.569E+0	-3.286E+1	-5.319E+1	-1.363E+2
N° 15 (OFF)	---	-6.680E+0	-3.282E+1	-5.559E+1	-1.473E+2
N° 16 (OFF)	---	1.182E+0	-3.247E+1	-4.643E+1	-1.376E+2
Average (OFF)	---	-6.182E+0	-2.792E+1	-5.099E+1	-1.268E+2
σ (OFF)	---	2.102E+0	3.578E+0	7.471E+0	7.237E+0
Average+3σ (OFF)	---	1.236E-1	-1.718E+1	-2.857E+1	-1.051E+2
Average-3σ (OFF)	---	-1.249E+1	-3.865E+1	-7.340E+1	-1.485E+2
Average (Bias1)	---	-6.094E+0	-3.013E+1	-5.120E+1	-1.374E+2
σ (Bias1)	---	1.915E+0	2.331E+0	4.381E+0	8.847E+0
Average+3σ (Bias1)	---	-3.501E-1	-2.314E+1	-3.806E+1	-1.109E+2
Average-3σ (Bias1)	---	-1.184E+1	-3.713E+1	-6.435E+1	-1.639E+2
Average (Bias2)	---	-4.771E+0	-3.217E+1	-5.231E+1	-1.436E+2
σ (Bias2)	---	3.453E+0	7.775E-1	3.507E+0	6.907E+0
Average+3σ (Bias2)	---	5.587E+0	-2.983E+1	-4.178E+1	-1.229E+2
Average-3σ (Bias2)	---	-1.513E+1	-3.450E+1	-6.283E+1	-1.644E+2

60 MeV proton / detailed results

7. Ip1

Ta = 25°C ; IF = 10mA ; Vdet = -15V



60 MeV proton / detailed results

Ip1 . (uA)

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	106.964	106.856	106.328	106.242	110.112
N° 2 (Bias1)	108.496	103.995	91.917	79.818	39.439
N° 3 (Bias1)	105.414	104.066	93.042	82.551	44.232
N° 4 (Bias1)	108.567	107.304	95.759	86.373	47.249
N° 5 (Bias1)	108.600	107.179	94.378	83.721	42.877
N° 6 (Bias1)	110.902	109.769	96.457	86.453	46.093
N° 7 (Bias2)	106.939	103.633	92.884	81.823	37.593
N° 8 (Bias2)	103.166	98.648	86.074	75.272	30.544
N° 9 (Bias2)	105.814	102.266	90.834	80.681	36.141
N° 10 (Bias2)	104.361	98.576	82.714	68.539	23.154
N° 11 (Bias2)	110.116	106.165	93.176	82.233	36.480
N° 12 (OFF)	103.916	101.102	86.761	75.290	30.368
N° 13 (OFF)	105.496	99.815	86.835	72.980	26.276
N° 14 (OFF)	104.596	102.601	90.319	78.897	37.820
N° 15 (OFF)	106.054	100.660	86.440	73.142	27.736
N° 16 (OFF)	104.961	101.898	87.590	75.140	28.970

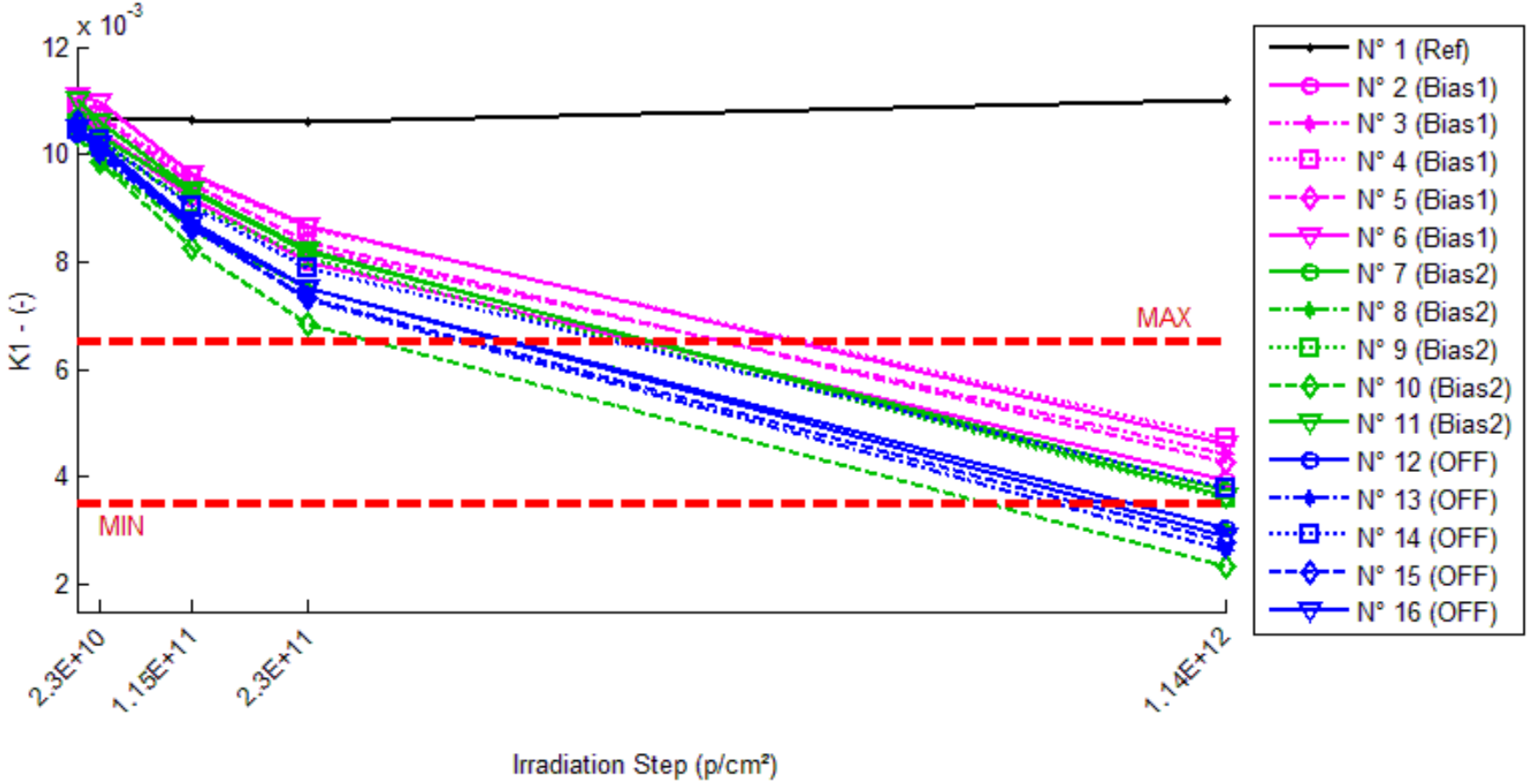
Delta [Ip1]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	-1.080E-1	-6.366E-1	-7.226E-1	3.148E+0
N° 2 (Bias1)	---	-4.501E+0	-1.658E+1	-2.868E+1	-6.906E+1
N° 3 (Bias1)	---	-1.348E+0	-1.237E+1	-2.286E+1	-6.118E+1
N° 4 (Bias1)	---	-1.263E+0	-1.281E+1	-2.219E+1	-6.132E+1
N° 5 (Bias1)	---	-1.421E+0	-1.422E+1	-2.488E+1	-6.572E+1
N° 6 (Bias1)	---	-1.132E+0	-1.444E+1	-2.445E+1	-6.481E+1
N° 7 (Bias2)	---	-3.306E+0	-1.405E+1	-2.512E+1	-6.935E+1
N° 8 (Bias2)	---	-4.518E+0	-1.709E+1	-2.789E+1	-7.262E+1
N° 9 (Bias2)	---	-3.548E+0	-1.498E+1	-2.513E+1	-6.967E+1
N° 10 (Bias2)	---	-5.785E+0	-2.165E+1	-3.582E+1	-8.121E+1
N° 11 (Bias2)	---	-3.951E+0	-1.694E+1	-2.788E+1	-7.364E+1
N° 12 (OFF)	---	-2.815E+0	-1.716E+1	-2.863E+1	-7.355E+1
N° 13 (OFF)	---	-5.681E+0	-1.866E+1	-3.252E+1	-7.922E+1
N° 14 (OFF)	---	-1.996E+0	-1.428E+1	-2.570E+1	-6.678E+1
N° 15 (OFF)	---	-5.394E+0	-1.961E+1	-3.291E+1	-7.832E+1
N° 16 (OFF)	---	-3.063E+0	-1.737E+1	-2.982E+1	-7.599E+1
Average (OFF)	---	-1.933E+0	-1.409E+1	-2.461E+1	-6.442E+1
σ (OFF)	---	1.440E+0	1.653E+0	2.527E+0	3.296E+0
Average+3σ (OFF)	---	2.386E+0	-9.125E+0	-1.703E+1	-5.453E+1
Average-3σ (OFF)	---	-6.252E+0	-1.905E+1	-3.219E+1	-7.431E+1
Average (Bias1)	---	-4.222E+0	-1.694E+1	-2.837E+1	-7.330E+1
σ (Bias1)	---	9.869E-1	2.930E+0	4.389E+0	4.793E+0
Average+3σ (Bias1)	---	-1.261E+0	-8.152E+0	-1.520E+1	-5.892E+1
Average-3σ (Bias1)	---	-7.182E+0	-2.573E+1	-4.154E+1	-8.768E+1
Average (Bias2)	---	-3.790E+0	-1.742E+1	-2.992E+1	-7.477E+1
σ (Bias2)	---	1.647E+0	2.019E+0	2.966E+0	4.982E+0
Average+3σ (Bias2)	---	1.151E+0	-1.136E+1	-2.102E+1	-5.983E+1
Average-3σ (Bias2)	---	-8.730E+0	-2.347E+1	-3.881E+1	-8.972E+1

60 MeV proton / detailed results

8. K1

Ta = 25°C ; IF = 10mA ; Vdet = -15V



60 MeV proton / detailed results

K1 . (-) **Min = 0.0035 Max = 0.0065**

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	0.01070	0.01069	0.01063	0.01062	0.01101
N° 2 (Bias1)	0.01085	0.01040	0.00919	0.00798	0.00394
N° 3 (Bias1)	0.01054	0.01041	0.00930	0.00826	0.00442
N° 4 (Bias1)	0.01086	0.01073	0.00958	0.00864	0.00472
N° 5 (Bias1)	0.01086	0.01072	0.00944	0.00837	0.00429
N° 6 (Bias1)	0.01109	0.01098	0.00965	0.00865	0.00461
N° 7 (Bias2)	0.01069	0.01036	0.00929	0.00818	0.00376
N° 8 (Bias2)	0.01032	0.00986	0.00861	0.00753	0.00305
N° 9 (Bias2)	0.01058	0.01023	0.00908	0.00807	0.00361
N° 10 (Bias2)	0.01044	0.00986	0.00827	0.00685	0.00232
N° 11 (Bias2)	0.01101	0.01062	0.00932	0.00822	0.00365
N° 12 (OFF)	0.01039	0.01011	0.00868	0.00753	0.00304
N° 13 (OFF)	0.01055	0.00998	0.00868	0.00730	0.00263
N° 14 (OFF)	0.01046	0.01026	0.00903	0.00789	0.00378
N° 15 (OFF)	0.01061	0.01007	0.00864	0.00731	0.00277
N° 16 (OFF)	0.01050	0.01019	0.00876	0.00751	0.00290

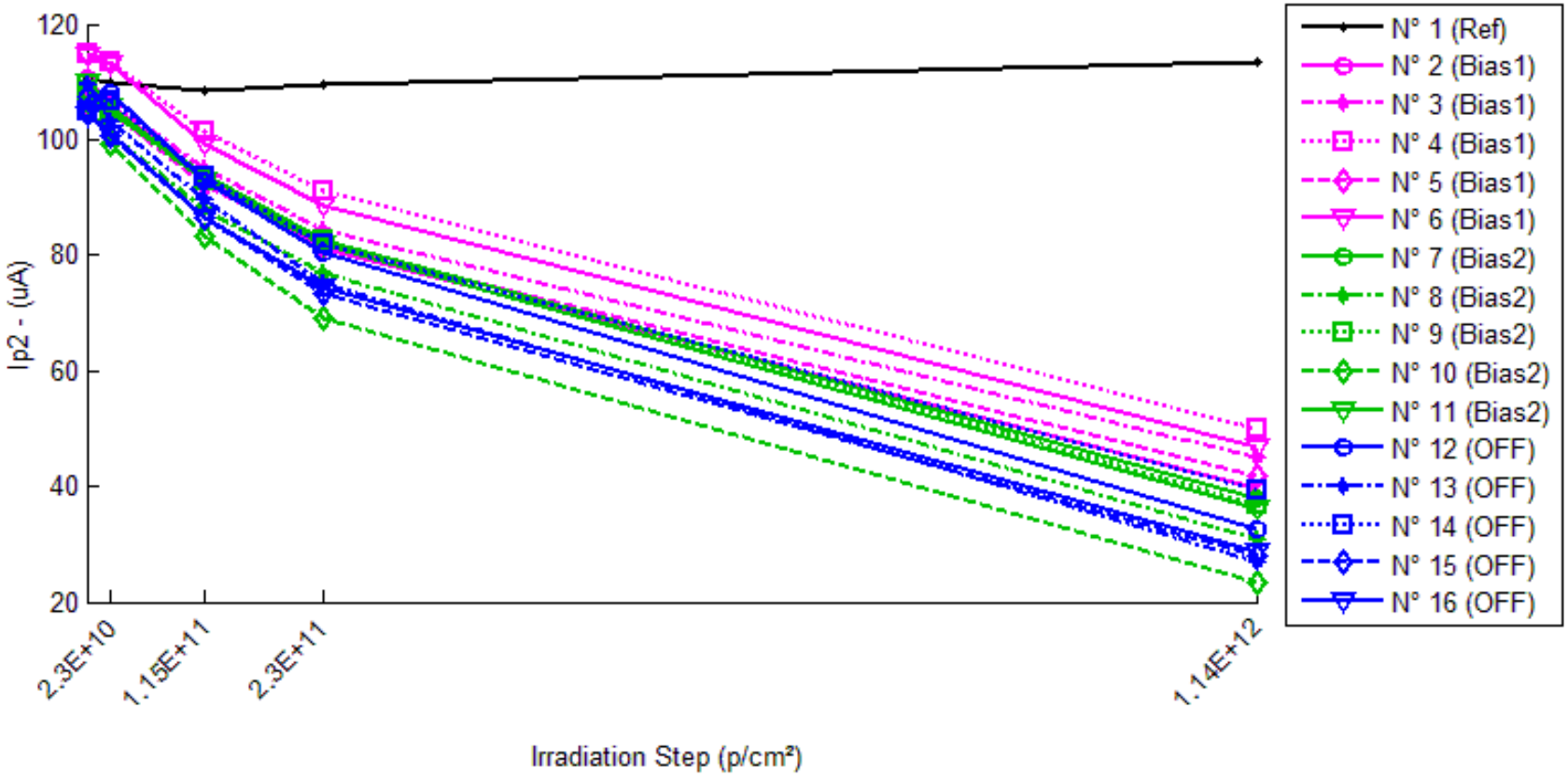
Delta [K1]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	-1.080E-5	-6.366E-5	-7.226E-5	3.148E-4
N° 2 (Bias1)	---	-4.501E-4	-1.658E-3	-2.868E-3	-6.906E-3
N° 3 (Bias1)	---	-1.348E-4	-1.237E-3	-2.286E-3	-6.118E-3
N° 4 (Bias1)	---	-1.263E-4	-1.281E-3	-2.219E-3	-6.132E-3
N° 5 (Bias1)	---	-1.422E-4	-1.422E-3	-2.488E-3	-6.572E-3
N° 6 (Bias1)	---	-1.132E-4	-1.444E-3	-2.445E-3	-6.481E-3
N° 7 (Bias2)	---	-3.306E-4	-1.405E-3	-2.512E-3	-6.935E-3
N° 8 (Bias2)	---	-4.518E-4	-1.709E-3	-2.789E-3	-7.262E-3
N° 9 (Bias2)	---	-3.548E-4	-1.498E-3	-2.513E-3	-6.967E-3
N° 10 (Bias2)	---	-5.785E-4	-2.165E-3	-3.582E-3	-8.121E-3
N° 11 (Bias2)	---	-3.951E-4	-1.694E-3	-2.788E-3	-7.364E-3
N° 12 (OFF)	---	-2.815E-4	-1.716E-3	-2.863E-3	-7.355E-3
N° 13 (OFF)	---	-5.681E-4	-1.866E-3	-3.252E-3	-7.922E-3
N° 14 (OFF)	---	-1.996E-4	-1.428E-3	-2.570E-3	-6.678E-3
N° 15 (OFF)	---	-5.394E-4	-1.961E-3	-3.291E-3	-7.832E-3
N° 16 (OFF)	---	-3.063E-4	-1.737E-3	-2.982E-3	-7.599E-3
Average (OFF)	---	-1.933E-4	-1.409E-3	-2.461E-3	-6.442E-3
σ (OFF)	---	1.440E-4	1.653E-4	2.527E-4	3.296E-4
Average+3σ (OFF)	---	2.386E-4	-9.125E-4	-1.703E-3	-5.453E-3
Average-3σ (OFF)	---	-6.252E-4	-1.905E-3	-3.219E-3	-7.431E-3
Average (Bias1)	---	-4.222E-4	-1.694E-3	-2.837E-3	-7.330E-3
σ (Bias1)	---	9.869E-5	2.930E-4	4.389E-4	4.793E-4
Average+3σ (Bias1)	---	-1.261E-4	-8.152E-4	-1.520E-3	-5.892E-3
Average-3σ (Bias1)	---	-7.182E-4	-2.573E-3	-4.154E-3	-8.768E-3
Average (Bias2)	---	-3.790E-4	-1.742E-3	-2.992E-3	-7.477E-3
σ (Bias2)	---	1.647E-4	2.019E-4	2.966E-4	4.982E-4
Average+3σ (Bias2)	---	1.151E-4	-1.136E-3	-2.102E-3	-5.983E-3
Average-3σ (Bias2)	---	-8.730E-4	-2.347E-3	-3.881E-3	-8.972E-3

60 MeV proton / detailed results

9. Ip2

Ta = 25°C ; Vcc = 5V ; If = 8mA



60 MeV proton / detailed results

Ip2 . (uA)

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	110.624	110.015	108.601	109.389	113.371
N° 2 (Bias1)	110.530	106.066	93.427	81.042	39.806
N° 3 (Bias1)	108.002	106.573	95.176	84.332	44.969
N° 4 (Bias1)	114.702	113.409	101.209	91.260	49.961
N° 5 (Bias1)	106.365	104.894	92.284	81.779	41.685
N° 6 (Bias1)	114.395	113.118	99.165	88.723	46.762
N° 7 (Bias2)	108.514	105.103	94.043	82.720	37.802
N° 8 (Bias2)	105.909	101.133	88.010	76.847	30.949
N° 9 (Bias2)	108.471	104.764	92.888	82.440	36.679
N° 10 (Bias2)	105.265	99.322	83.312	69.055	23.353
N° 11 (Bias2)	109.813	105.806	92.754	81.774	36.129
N° 12 (OFF)	107.390	108.071	92.744	80.458	32.476
N° 13 (OFF)	109.612	103.085	89.517	75.097	27.047
N° 14 (OFF)	104.766	106.560	93.689	81.818	39.196
N° 15 (OFF)	105.166	100.791	86.631	73.392	28.034
N° 16 (OFF)	104.062	100.971	86.583	74.282	28.574

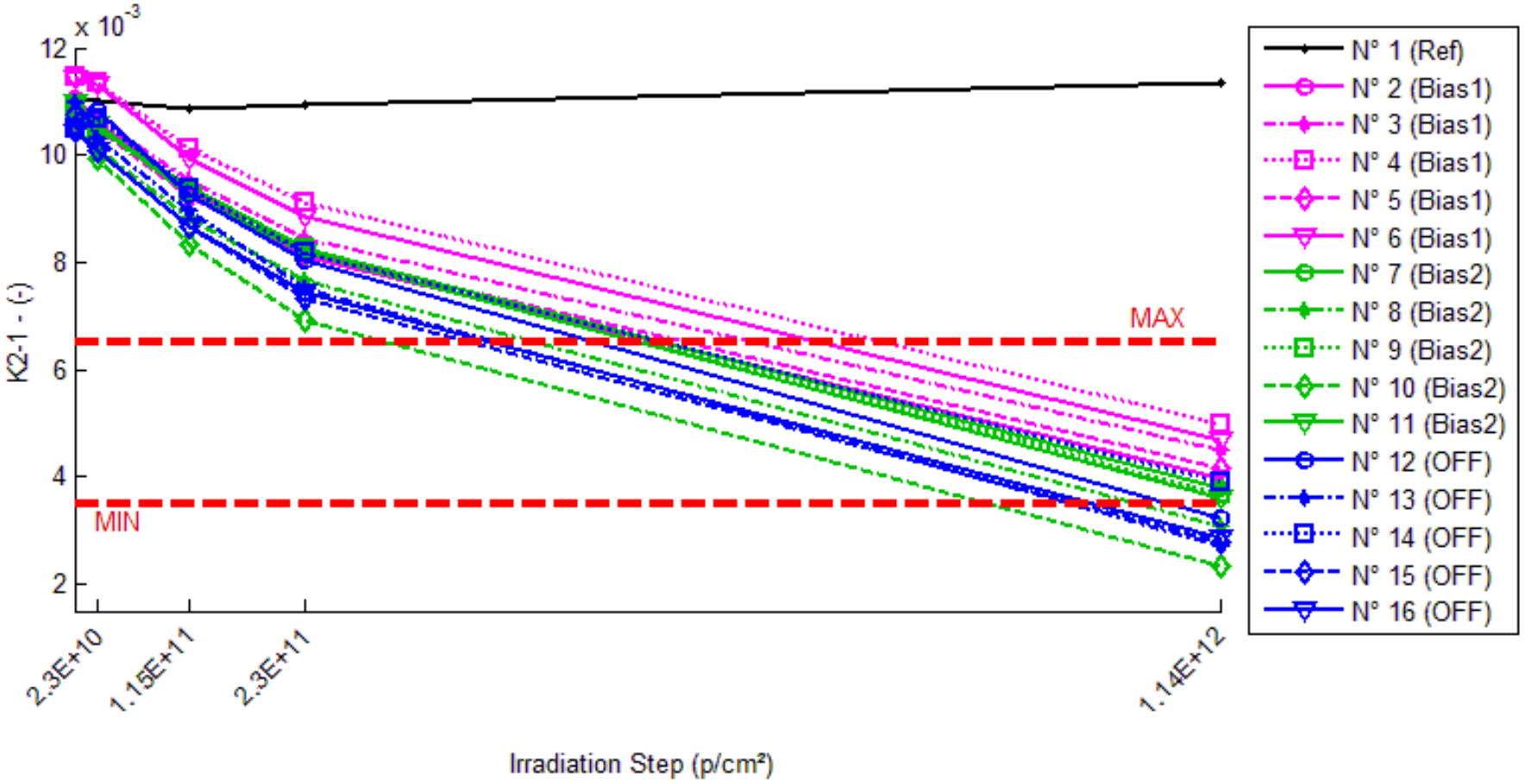
Delta [Ip2]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	-6.098E-1	-2.023E+0	-1.236E+0	2.747E+0
N° 2 (Bias1)	---	-4.464E+0	-1.710E+1	-2.949E+1	-7.072E+1
N° 3 (Bias1)	---	-1.429E+0	-1.283E+1	-2.367E+1	-6.303E+1
N° 4 (Bias1)	---	-1.293E+0	-1.349E+1	-2.344E+1	-6.474E+1
N° 5 (Bias1)	---	-1.471E+0	-1.408E+1	-2.459E+1	-6.468E+1
N° 6 (Bias1)	---	-1.276E+0	-1.523E+1	-2.567E+1	-6.763E+1
N° 7 (Bias2)	---	-3.411E+0	-1.447E+1	-2.579E+1	-7.071E+1
N° 8 (Bias2)	---	-4.776E+0	-1.790E+1	-2.906E+1	-7.496E+1
N° 9 (Bias2)	---	-3.707E+0	-1.558E+1	-2.603E+1	-7.179E+1
N° 10 (Bias2)	---	-5.943E+0	-2.195E+1	-3.621E+1	-8.191E+1
N° 11 (Bias2)	---	-4.007E+0	-1.706E+1	-2.804E+1	-7.368E+1
N° 12 (OFF)	---	6.815E-1	-1.465E+1	-2.693E+1	-7.491E+1
N° 13 (OFF)	---	-6.527E+0	-2.009E+1	-3.451E+1	-8.256E+1
N° 14 (OFF)	---	1.793E+0	-1.108E+1	-2.295E+1	-6.557E+1
N° 15 (OFF)	---	-4.376E+0	-1.854E+1	-3.177E+1	-7.713E+1
N° 16 (OFF)	---	-3.091E+0	-1.748E+1	-2.978E+1	-7.549E+1
Average (OFF)	---	-1.987E+0	-1.455E+1	-2.537E+1	-6.616E+1
σ (OFF)	---	1.387E+0	1.680E+0	2.463E+0	3.040E+0
Average+3σ (OFF)	---	2.176E+0	-9.507E+0	-1.798E+1	-5.704E+1
Average-3σ (OFF)	---	-6.149E+0	-1.959E+1	-3.276E+1	-7.528E+1
Average (Bias1)	---	-4.369E+0	-1.739E+1	-2.903E+1	-7.461E+1
σ (Bias1)	---	1.016E+0	2.871E+0	4.243E+0	4.400E+0
Average+3σ (Bias1)	---	-1.320E+0	-8.779E+0	-1.630E+1	-6.141E+1
Average-3σ (Bias1)	---	-7.417E+0	-2.601E+1	-4.176E+1	-8.781E+1
Average (Bias2)	---	-2.304E+0	-1.637E+1	-2.919E+1	-7.513E+1
σ (Bias2)	---	3.480E+0	3.563E+0	4.457E+0	6.141E+0
Average+3σ (Bias2)	---	8.136E+0	-5.678E+0	-1.582E+1	-5.671E+1
Average-3σ (Bias2)	---	-1.274E+1	-2.705E+1	-4.256E+1	-9.356E+1

60 MeV proton / detailed results

10.K2-1

Ta = 25°C ; IF = 10mA ; Vdet = -15V



60 MeV proton / detailed results

K2-1 . (-) **Min = 0.0035 Max = 0.0065**

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	0.01106	0.01100	0.01086	0.01094	0.01134
N° 2 (Bias1)	0.01105	0.01061	0.00934	0.00810	0.00398
N° 3 (Bias1)	0.01080	0.01066	0.00952	0.00843	0.00450
N° 4 (Bias1)	0.01147	0.01134	0.01012	0.00913	0.00500
N° 5 (Bias1)	0.01064	0.01049	0.00923	0.00818	0.00417
N° 6 (Bias1)	0.01144	0.01131	0.00992	0.00887	0.00468
N° 7 (Bias2)	0.01085	0.01051	0.00940	0.00827	0.00378
N° 8 (Bias2)	0.01059	0.01011	0.00880	0.00768	0.00309
N° 9 (Bias2)	0.01085	0.01048	0.00929	0.00824	0.00367
N° 10 (Bias2)	0.01053	0.00993	0.00833	0.00691	0.00234
N° 11 (Bias2)	0.01098	0.01058	0.00928	0.00818	0.00361
N° 12 (OFF)	0.01074	0.01081	0.00927	0.00805	0.00325
N° 13 (OFF)	0.01096	0.01031	0.00895	0.00751	0.00270
N° 14 (OFF)	0.01048	0.01066	0.00937	0.00818	0.00392
N° 15 (OFF)	0.01052	0.01008	0.00866	0.00734	0.00280
N° 16 (OFF)	0.01041	0.01010	0.00866	0.00743	0.00286

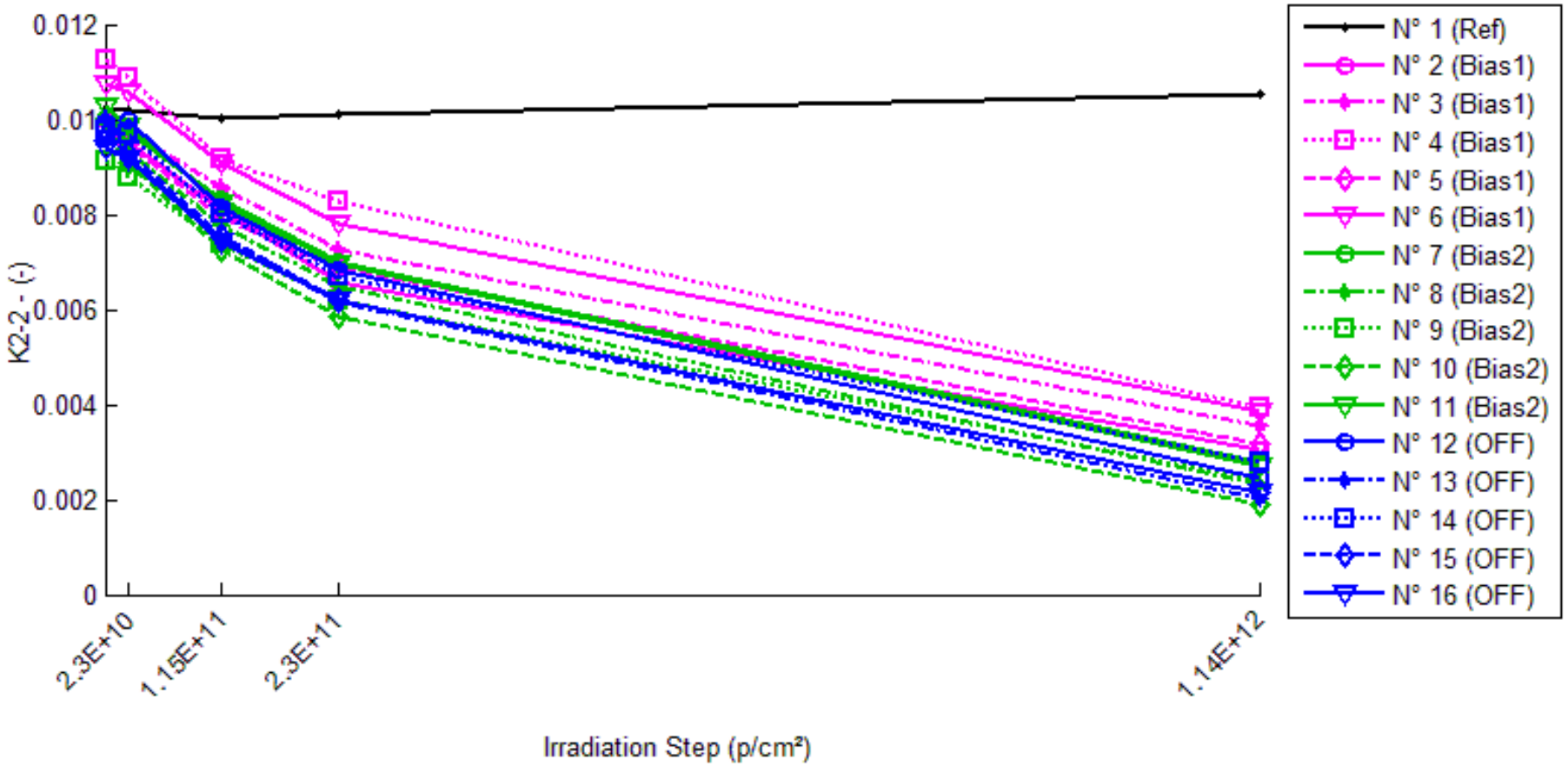
Delta [K2-1]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	-6.098E-5	-2.023E-4	-1.236E-4	2.747E-4
N° 2 (Bias1)	---	-4.464E-4	-1.710E-3	-2.949E-3	-7.072E-3
N° 3 (Bias1)	---	-1.429E-4	-1.283E-3	-2.367E-3	-6.303E-3
N° 4 (Bias1)	---	-1.293E-4	-1.349E-3	-2.344E-3	-6.474E-3
N° 5 (Bias1)	---	-1.471E-4	-1.408E-3	-2.459E-3	-6.468E-3
N° 6 (Bias1)	---	-1.276E-4	-1.523E-3	-2.567E-3	-6.763E-3
N° 7 (Bias2)	---	-3.411E-4	-1.447E-3	-2.579E-3	-7.071E-3
N° 8 (Bias2)	---	-4.776E-4	-1.790E-3	-2.906E-3	-7.496E-3
N° 9 (Bias2)	---	-3.707E-4	-1.558E-3	-2.603E-3	-7.179E-3
N° 10 (Bias2)	---	-5.943E-4	-2.195E-3	-3.621E-3	-8.191E-3
N° 11 (Bias2)	---	-4.007E-4	-1.706E-3	-2.804E-3	-7.368E-3
N° 12 (OFF)	---	6.815E-5	-1.465E-3	-2.693E-3	-7.491E-3
N° 13 (OFF)	---	-6.527E-4	-2.009E-3	-3.451E-3	-8.256E-3
N° 14 (OFF)	---	1.793E-4	-1.108E-3	-2.295E-3	-6.557E-3
N° 15 (OFF)	---	-4.376E-4	-1.854E-3	-3.177E-3	-7.713E-3
N° 16 (OFF)	---	-3.091E-4	-1.748E-3	-2.978E-3	-7.549E-3
Average (OFF)	---	-1.987E-4	-1.455E-3	-2.537E-3	-6.616E-3
σ (OFF)	---	1.387E-4	1.680E-4	2.463E-4	3.040E-4
Average+3σ (OFF)	---	2.176E-4	-9.507E-4	-1.798E-3	-5.704E-3
Average-3σ (OFF)	---	-6.149E-4	-1.959E-3	-3.276E-3	-7.528E-3
Average (Bias1)	---	-4.369E-4	-1.739E-3	-2.903E-3	-7.461E-3
σ (Bias1)	---	1.016E-4	2.871E-4	4.243E-4	4.400E-4
Average+3σ (Bias1)	---	-1.320E-4	-8.779E-4	-1.630E-3	-6.141E-3
Average-3σ (Bias1)	---	-7.417E-4	-2.601E-3	-4.176E-3	-8.781E-3
Average (Bias2)	---	-2.304E-4	-1.637E-3	-2.919E-3	-7.513E-3
σ (Bias2)	---	3.480E-4	3.563E-4	4.457E-4	6.141E-4
Average+3σ (Bias2)	---	8.136E-4	-5.678E-4	-1.582E-3	-5.671E-3
Average-3σ (Bias2)	---	-1.274E-3	-2.705E-3	-4.256E-3	-9.356E-3

60 MeV proton / detailed results

11.K2-2

Ta = 25°C ; IF = 1mA ; Vdet = -15V



60 MeV proton / detailed results

K2-2 . (-)

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	0.01024	0.01020	0.01002	0.01012	0.01054
N° 2 (Bias1)	0.00998	0.00950	0.00809	0.00659	0.00306
N° 3 (Bias1)	0.01000	0.00977	0.00856	0.00725	0.00354
N° 4 (Bias1)	0.01127	0.01088	0.00918	0.00826	0.00394
N° 5 (Bias1)	0.00962	0.00948	0.00794	0.00687	0.00317
N° 6 (Bias1)	0.01076	0.01058	0.00907	0.00780	0.00386
N° 7 (Bias2)	0.01003	0.00973	0.00830	0.00701	0.00280
N° 8 (Bias2)	0.00991	0.00935	0.00776	0.00649	0.00234
N° 9 (Bias2)	0.00914	0.00877	0.00738	0.00619	0.00240
N° 10 (Bias2)	0.00969	0.00907	0.00727	0.00584	0.00189
N° 11 (Bias2)	0.01026	0.00984	0.00822	0.00696	0.00272
N° 12 (OFF)	0.00959	0.00997	0.00813	0.00681	0.00243
N° 13 (OFF)	0.01002	0.00916	0.00750	0.00614	0.00202
N° 14 (OFF)	0.00976	0.00967	0.00801	0.00671	0.00279
N° 15 (OFF)	0.00966	0.00928	0.00757	0.00618	0.00213
N° 16 (OFF)	0.00940	0.00915	0.00744	0.00619	0.00216

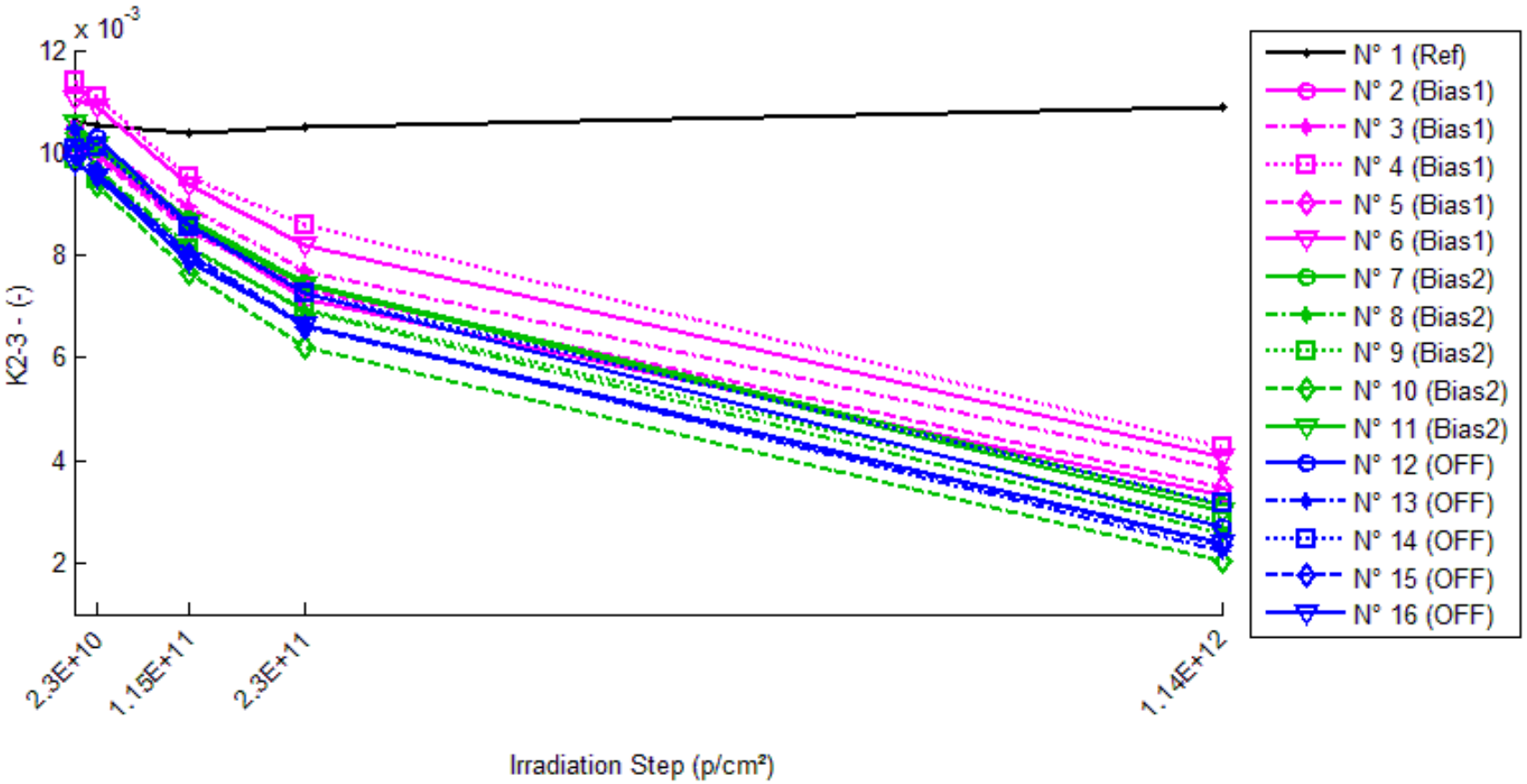
Delta [K2-2]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	-3.726E-5	-2.221E-4	-1.198E-4	3.028E-4
N° 2 (Bias1)	---	-4.740E-4	-1.888E-3	-3.386E-3	-6.919E-3
N° 3 (Bias1)	---	-2.282E-4	-1.444E-3	-2.749E-3	-6.458E-3
N° 4 (Bias1)	---	-3.893E-4	-2.091E-3	-3.010E-3	-7.333E-3
N° 5 (Bias1)	---	-1.409E-4	-1.677E-3	-2.754E-3	-6.451E-3
N° 6 (Bias1)	---	-1.870E-4	-1.696E-3	-2.960E-3	-6.900E-3
N° 7 (Bias2)	---	-3.000E-4	-1.730E-3	-3.019E-3	-7.224E-3
N° 8 (Bias2)	---	-5.590E-4	-2.152E-3	-3.422E-3	-7.572E-3
N° 9 (Bias2)	---	-3.700E-4	-1.761E-3	-2.947E-3	-6.736E-3
N° 10 (Bias2)	---	-6.215E-4	-2.414E-3	-3.845E-3	-7.794E-3
N° 11 (Bias2)	---	-4.231E-4	-2.038E-3	-3.305E-3	-7.539E-3
N° 12 (OFF)	---	3.830E-4	-1.458E-3	-2.780E-3	-7.156E-3
N° 13 (OFF)	---	-8.626E-4	-2.523E-3	-3.882E-3	-7.998E-3
N° 14 (OFF)	---	-9.795E-5	-1.752E-3	-3.051E-3	-6.971E-3
N° 15 (OFF)	---	-3.753E-4	-2.092E-3	-3.478E-3	-7.529E-3
N° 16 (OFF)	---	-2.434E-4	-1.962E-3	-3.209E-3	-7.237E-3
Average (OFF)	---	-2.839E-4	-1.759E-3	-2.972E-3	-6.812E-3
σ (OFF)	---	1.416E-4	2.436E-4	2.600E-4	3.694E-4
Average+3σ (OFF)	---	1.409E-4	-1.029E-3	-2.192E-3	-5.704E-3
Average-3σ (OFF)	---	-7.086E-4	-2.490E-3	-3.752E-3	-7.920E-3
Average (Bias1)	---	-4.547E-4	-2.019E-3	-3.308E-3	-7.373E-3
σ (Bias1)	---	1.330E-4	2.845E-4	3.588E-4	4.099E-4
Average+3σ (Bias1)	---	-5.560E-5	-1.165E-3	-2.231E-3	-6.143E-3
Average-3σ (Bias1)	---	-8.539E-4	-2.872E-3	-4.384E-3	-8.603E-3
Average (Bias2)	---	-2.392E-4	-1.957E-3	-3.280E-3	-7.378E-3
σ (Bias2)	---	4.512E-4	3.969E-4	4.209E-4	4.007E-4
Average+3σ (Bias2)	---	1.114E-3	-7.664E-4	-2.017E-3	-6.176E-3
Average-3σ (Bias2)	---	-1.593E-3	-3.148E-3	-4.543E-3	-8.580E-3

60 MeV proton / detailed results

12.K2-3

Ta = 25°C ; IF = 2mA ; Vdet = -15V



60 MeV proton / detailed results

K2-3 . (-)

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	0.01062	0.01055	0.01039	0.01048	0.01089
N° 2 (Bias1)	0.01044	0.00996	0.00857	0.00714	0.00334
N° 3 (Bias1)	0.01035	0.01014	0.00893	0.00768	0.00382
N° 4 (Bias1)	0.01139	0.01109	0.00954	0.00857	0.00426
N° 5 (Bias1)	0.01007	0.00992	0.00846	0.00735	0.00347
N° 6 (Bias1)	0.01106	0.01089	0.00938	0.00818	0.00408
N° 7 (Bias2)	0.01038	0.01005	0.00872	0.00747	0.00311
N° 8 (Bias2)	0.01021	0.00968	0.00817	0.00692	0.00258
N° 9 (Bias2)	0.00986	0.00949	0.00813	0.00695	0.00281
N° 10 (Bias2)	0.01000	0.00938	0.00764	0.00620	0.00203
N° 11 (Bias2)	0.01057	0.01015	0.00863	0.00740	0.00300
N° 12 (OFF)	0.01004	0.01032	0.00857	0.00726	0.00269
N° 13 (OFF)	0.01044	0.00960	0.00804	0.00663	0.00224
N° 14 (OFF)	0.01007	0.01010	0.00856	0.00727	0.00315
N° 15 (OFF)	0.01000	0.00961	0.00799	0.00660	0.00234
N° 16 (OFF)	0.00980	0.00952	0.00789	0.00662	0.00238

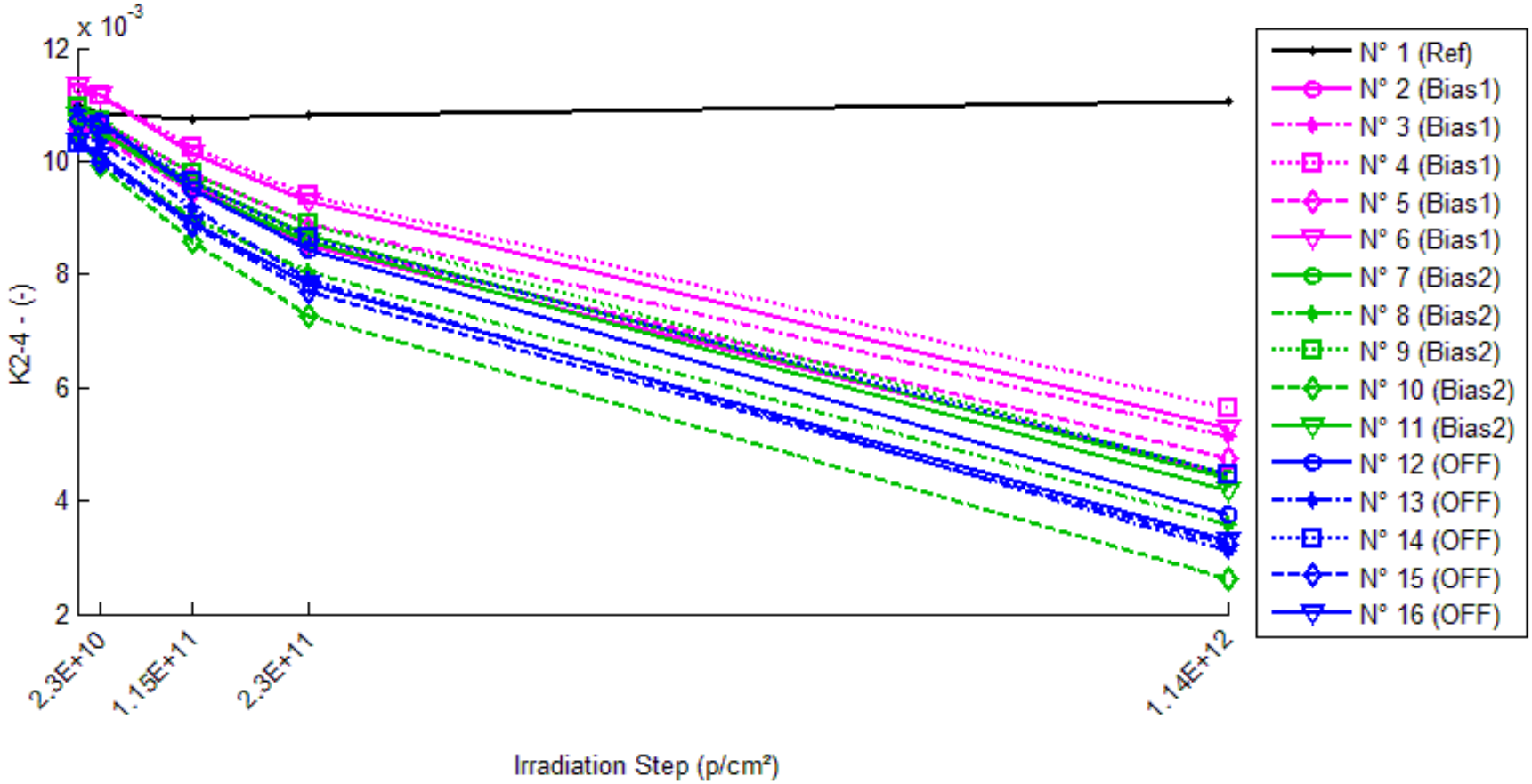
Delta [K2-3]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	-7.389E-5	-2.348E-4	-1.457E-4	2.712E-4
N° 2 (Bias1)	---	-4.808E-4	-1.871E-3	-3.302E-3	-7.105E-3
N° 3 (Bias1)	---	-2.053E-4	-1.415E-3	-2.670E-3	-6.522E-3
N° 4 (Bias1)	---	-2.984E-4	-1.849E-3	-2.814E-3	-7.130E-3
N° 5 (Bias1)	---	-1.572E-4	-1.617E-3	-2.722E-3	-6.603E-3
N° 6 (Bias1)	---	-1.751E-4	-1.681E-3	-2.879E-3	-6.978E-3
N° 7 (Bias2)	---	-3.298E-4	-1.662E-3	-2.911E-3	-7.274E-3
N° 8 (Bias2)	---	-5.327E-4	-2.047E-3	-3.292E-3	-7.639E-3
N° 9 (Bias2)	---	-3.708E-4	-1.734E-3	-2.910E-3	-7.051E-3
N° 10 (Bias2)	---	-6.269E-4	-2.361E-3	-3.805E-3	-7.977E-3
N° 11 (Bias2)	---	-4.230E-4	-1.947E-3	-3.171E-3	-7.577E-3
N° 12 (OFF)	---	2.749E-4	-1.467E-3	-2.781E-3	-7.350E-3
N° 13 (OFF)	---	-8.432E-4	-2.405E-3	-3.819E-3	-8.206E-3
N° 14 (OFF)	---	2.742E-5	-1.509E-3	-2.799E-3	-6.921E-3
N° 15 (OFF)	---	-3.855E-4	-2.014E-3	-3.402E-3	-7.662E-3
N° 16 (OFF)	---	-2.804E-4	-1.917E-3	-3.182E-3	-7.428E-3
Average (OFF)	---	-2.634E-4	-1.687E-3	-2.877E-3	-6.868E-3
σ (OFF)	---	1.332E-4	1.867E-4	2.509E-4	2.857E-4
Average+3σ (OFF)	---	1.361E-4	-1.127E-3	-2.125E-3	-6.011E-3
Average-3σ (OFF)	---	-6.629E-4	-2.247E-3	-3.630E-3	-7.725E-3
Average (Bias1)	---	-4.566E-4	-1.950E-3	-3.218E-3	-7.504E-3
σ (Bias1)	---	1.218E-4	2.773E-4	3.679E-4	3.555E-4
Average+3σ (Bias1)	---	-9.114E-5	-1.118E-3	-2.114E-3	-6.437E-3
Average-3σ (Bias1)	---	-8.221E-4	-2.782E-3	-4.322E-3	-8.570E-3
Average (Bias2)	---	-2.414E-4	-1.862E-3	-3.197E-3	-7.514E-3
σ (Bias2)	---	4.253E-4	3.877E-4	4.363E-4	4.708E-4
Average+3σ (Bias2)	---	1.034E-3	-6.992E-4	-1.888E-3	-6.101E-3
Average-3σ (Bias2)	---	-1.517E-3	-3.025E-3	-4.506E-3	-8.926E-3

60 MeV proton / detailed results

13.K2-4

Ta = 25°C ; IF = 60mA ; Vdet = -15V



60 MeV proton / detailed results

K2-4 . (-)

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	0.01098	0.01086	0.01073	0.01080	0.01105
N° 2 (Bias1)	0.01097	0.01061	0.00957	0.00852	0.00445
N° 3 (Bias1)	0.01079	0.01070	0.00978	0.00889	0.00513
N° 4 (Bias1)	0.01120	0.01116	0.01026	0.00940	0.00563
N° 5 (Bias1)	0.01058	0.01043	0.00947	0.00858	0.00475
N° 6 (Bias1)	0.01134	0.01117	0.01014	0.00930	0.00529
N° 7 (Bias2)	0.01075	0.01049	0.00963	0.00869	0.00439
N° 8 (Bias2)	0.01044	0.01007	0.00902	0.00803	0.00357
N° 9 (Bias2)	0.01097	0.01069	0.00977	0.00891	0.00445
N° 10 (Bias2)	0.01042	0.00994	0.00858	0.00726	0.00261
N° 11 (Bias2)	0.01082	0.01053	0.00949	0.00857	0.00417
N° 12 (OFF)	0.01070	0.01072	0.00949	0.00842	0.00374
N° 13 (OFF)	0.01088	0.01036	0.00917	0.00790	0.00312
N° 14 (OFF)	0.01032	0.01065	0.00965	0.00864	0.00447
N° 15 (OFF)	0.01042	0.01001	0.00887	0.00770	0.00323
N° 16 (OFF)	0.01034	0.01010	0.00889	0.00782	0.00330

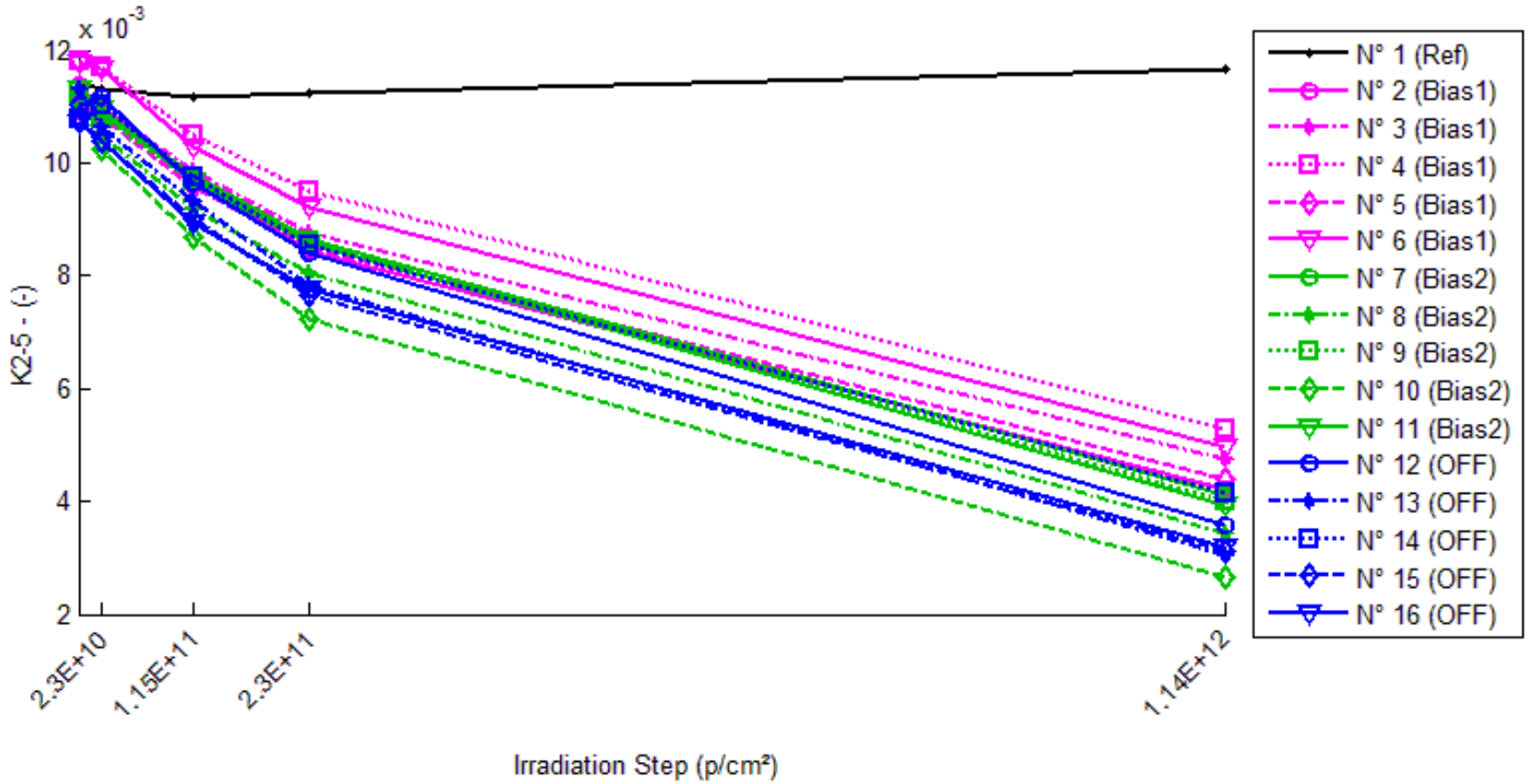
Delta [K2-4]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	-1.165E-4	-2.488E-4	-1.761E-4	7.520E-5
N° 2 (Bias1)	---	-3.590E-4	-1.405E-3	-2.447E-3	-6.524E-3
N° 3 (Bias1)	---	-9.395E-5	-1.015E-3	-1.902E-3	-5.665E-3
N° 4 (Bias1)	---	-3.786E-5	-9.410E-4	-1.801E-3	-5.571E-3
N° 5 (Bias1)	---	-1.505E-4	-1.104E-3	-1.999E-3	-5.823E-3
N° 6 (Bias1)	---	-1.742E-4	-1.197E-3	-2.039E-3	-6.052E-3
N° 7 (Bias2)	---	-2.607E-4	-1.117E-3	-2.059E-3	-6.358E-3
N° 8 (Bias2)	---	-3.680E-4	-1.420E-3	-2.413E-3	-6.871E-3
N° 9 (Bias2)	---	-2.818E-4	-1.195E-3	-2.062E-3	-6.516E-3
N° 10 (Bias2)	---	-4.859E-4	-1.846E-3	-3.167E-3	-7.813E-3
N° 11 (Bias2)	---	-2.978E-4	-1.330E-3	-2.256E-3	-6.656E-3
N° 12 (OFF)	---	1.233E-5	-1.209E-3	-2.280E-3	-6.959E-3
N° 13 (OFF)	---	-5.254E-4	-1.707E-3	-2.977E-3	-7.765E-3
N° 14 (OFF)	---	3.329E-4	-6.679E-4	-1.672E-3	-5.843E-3
N° 15 (OFF)	---	-4.131E-4	-1.557E-3	-2.724E-3	-7.196E-3
N° 16 (OFF)	---	-2.406E-4	-1.452E-3	-2.516E-3	-7.043E-3
Average (OFF)	---	-1.631E-4	-1.132E-3	-2.037E-3	-5.927E-3
σ (OFF)	---	1.216E-4	1.800E-4	2.468E-4	3.802E-4
Average+3σ (OFF)	---	2.016E-4	-5.924E-4	-1.297E-3	-4.786E-3
Average-3σ (OFF)	---	-5.278E-4	-1.672E-3	-2.778E-3	-7.068E-3
Average (Bias1)	---	-3.388E-4	-1.382E-3	-2.391E-3	-6.843E-3
σ (Bias1)	---	9.154E-5	2.846E-4	4.583E-4	5.742E-4
Average+3σ (Bias1)	---	-6.422E-5	-5.277E-4	-1.016E-3	-5.120E-3
Average-3σ (Bias1)	---	-6.135E-4	-2.235E-3	-3.766E-3	-8.565E-3
Average (Bias2)	---	-1.668E-4	-1.318E-3	-2.434E-3	-6.961E-3
σ (Bias2)	---	3.451E-4	4.064E-4	4.973E-4	6.994E-4
Average+3σ (Bias2)	---	8.686E-4	-9.923E-5	-9.420E-4	-4.863E-3
Average-3σ (Bias2)	---	-1.202E-3	-2.538E-3	-3.926E-3	-9.059E-3

60 MeV proton / detailed results

14.K2-5

Ta = 25°C ; IF = 10mA ; Vdet = -30V



60 MeV proton / detailed results

K2-5 . (-)

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	0.01142	0.01131	0.01116	0.01124	0.01166
N° 2 (Bias1)	0.01137	0.01093	0.00967	0.00842	0.00422
N° 3 (Bias1)	0.01112	0.01099	0.00986	0.00877	0.00476
N° 4 (Bias1)	0.01182	0.01171	0.01049	0.00949	0.00528
N° 5 (Bias1)	0.01094	0.01082	0.00956	0.00850	0.00441
N° 6 (Bias1)	0.01177	0.01167	0.01027	0.00922	0.00495
N° 7 (Bias2)	0.01117	0.01087	0.00977	0.00865	0.00412
N° 8 (Bias2)	0.01092	0.01048	0.00918	0.00806	0.00343
N° 9 (Bias2)	0.01115	0.01082	0.00966	0.00861	0.00399
N° 10 (Bias2)	0.01081	0.01025	0.00868	0.00723	0.00264
N° 11 (Bias2)	0.01132	0.01096	0.00967	0.00857	0.00395
N° 12 (OFF)	0.01104	0.01115	0.00964	0.00840	0.00359
N° 13 (OFF)	0.01131	0.01063	0.00931	0.00785	0.00304
N° 14 (OFF)	0.01077	0.01101	0.00976	0.00856	0.00416
N° 15 (OFF)	0.01080	0.01040	0.00901	0.00767	0.00312
N° 16 (OFF)	0.01069	0.01040	0.00895	0.00775	0.00318

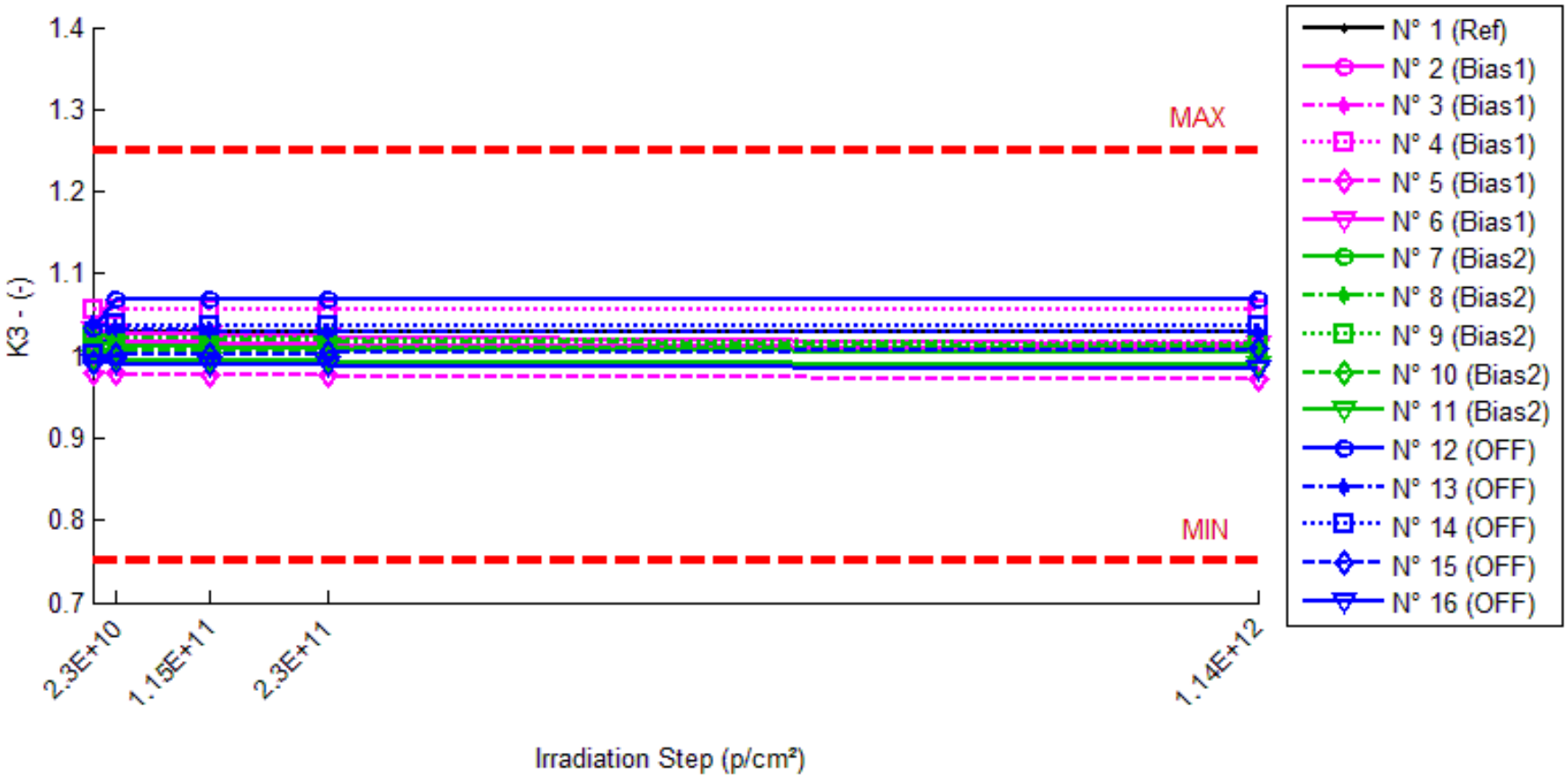
Delta [K2-5]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	-1.117E-4	-2.584E-4	-1.768E-4	2.362E-4
N° 2 (Bias1)	---	-4.351E-4	-1.696E-3	-2.947E-3	-7.143E-3
N° 3 (Bias1)	---	-1.256E-4	-1.263E-3	-2.352E-3	-6.357E-3
N° 4 (Bias1)	---	-1.070E-4	-1.324E-3	-2.325E-3	-6.531E-3
N° 5 (Bias1)	---	-1.268E-4	-1.389E-3	-2.446E-3	-6.535E-3
N° 6 (Bias1)	---	-1.092E-4	-1.508E-3	-2.553E-3	-6.829E-3
N° 7 (Bias2)	---	-3.032E-4	-1.399E-3	-2.517E-3	-7.049E-3
N° 8 (Bias2)	---	-4.415E-4	-1.735E-3	-2.856E-3	-7.491E-3
N° 9 (Bias2)	---	-3.301E-4	-1.495E-3	-2.540E-3	-7.163E-3
N° 10 (Bias2)	---	-5.575E-4	-2.135E-3	-3.577E-3	-8.170E-3
N° 11 (Bias2)	---	-3.628E-4	-1.651E-3	-2.753E-3	-7.369E-3
N° 12 (OFF)	---	1.068E-4	-1.402E-3	-2.637E-3	-7.454E-3
N° 13 (OFF)	---	-6.773E-4	-1.997E-3	-3.458E-3	-8.271E-3
N° 14 (OFF)	---	2.394E-4	-1.013E-3	-2.209E-3	-6.611E-3
N° 15 (OFF)	---	-4.071E-4	-1.798E-3	-3.134E-3	-7.683E-3
N° 16 (OFF)	---	-2.848E-4	-1.742E-3	-2.935E-3	-7.508E-3
Average (OFF)	---	-1.807E-4	-1.436E-3	-2.525E-3	-6.679E-3
σ (OFF)	---	1.425E-4	1.716E-4	2.524E-4	3.098E-4
Average+3σ (OFF)	---	2.467E-4	-9.213E-4	-1.767E-3	-5.750E-3
Average-3σ (OFF)	---	-6.082E-4	-1.951E-3	-3.282E-3	-7.608E-3
Average (Bias1)	---	-3.990E-4	-1.683E-3	-2.849E-3	-7.448E-3
σ (Bias1)	---	1.027E-4	2.847E-4	4.315E-4	4.389E-4
Average+3σ (Bias1)	---	-9.096E-5	-8.290E-4	-1.554E-3	-6.132E-3
Average-3σ (Bias1)	---	-7.071E-4	-2.537E-3	-4.143E-3	-8.765E-3
Average (Bias2)	---	-2.046E-4	-1.590E-3	-2.875E-3	-7.506E-3
σ (Bias2)	---	3.758E-4	3.874E-4	4.770E-4	5.961E-4
Average+3σ (Bias2)	---	9.229E-4	-4.280E-4	-1.444E-3	-5.717E-3
Average-3σ (Bias2)	---	-1.332E-3	-2.753E-3	-4.306E-3	-9.294E-3

60 MeV proton / detailed results

15.K3

Ta = 25°C ; IF = 10mA ; Vdet = -15V



60 MeV proton / detailed results

K3 . (-) **Min = 0.75 Max = 1.25**

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	1.029	1.030	1.030	1.030	1.030
N° 2 (Bias1)	1.019	1.020	1.016	1.015	1.009
N° 3 (Bias1)	1.024	1.024	1.022	1.021	1.016
N° 4 (Bias1)	1.056	1.057	1.056	1.056	1.057
N° 5 (Bias1)	0.979	0.979	0.977	0.976	0.972
N° 6 (Bias1)	1.031	1.030	1.027	1.025	1.014
N° 7 (Bias2)	1.015	1.014	1.012	1.010	1.004
N° 8 (Bias2)	1.026	1.024	1.022	1.020	1.012
N° 9 (Bias2)	1.025	1.024	1.022	1.021	1.014
N° 10 (Bias2)	1.009	1.008	1.007	1.008	1.008
N° 11 (Bias2)	0.997	0.996	0.994	0.993	0.989
N° 12 (OFF)	1.034	1.069	1.068	1.068	1.068
N° 13 (OFF)	1.039	1.033	1.031	1.029	1.028
N° 14 (OFF)	1.001	1.038	1.036	1.036	1.036
N° 15 (OFF)	0.992	1.001	1.002	1.003	1.009
N° 16 (OFF)	0.991	0.991	0.988	0.988	0.985

Delta [K3]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	3.010E-4	3.090E-4	3.420E-4	2.220E-4
N° 2 (Bias1)	---	1.048E-3	-2.735E-3	-3.635E-3	-9.583E-3
N° 3 (Bias1)	---	-6.860E-4	-2.122E-3	-3.547E-3	-8.141E-3
N° 4 (Bias1)	---	1.520E-4	-5.900E-4	-7.530E-4	1.530E-4
N° 5 (Bias1)	---	-5.690E-4	-2.369E-3	-3.317E-3	-7.666E-3
N° 6 (Bias1)	---	-1.134E-3	-4.064E-3	-5.953E-3	-1.722E-2
N° 7 (Bias2)	---	-9.590E-4	-2.892E-3	-4.429E-3	-1.035E-2
N° 8 (Bias2)	---	-1.830E-3	-4.634E-3	-6.110E-3	-1.446E-2
N° 9 (Bias2)	---	-7.990E-4	-3.125E-3	-3.857E-3	-1.148E-2
N° 10 (Bias2)	---	-1.409E-3	-1.764E-3	-1.424E-3	-1.405E-3
N° 11 (Bias2)	---	-8.175E-4	-2.565E-3	-3.568E-3	-8.142E-3
N° 12 (OFF)	---	3.514E-2	3.484E-2	3.451E-2	3.442E-2
N° 13 (OFF)	---	-5.944E-3	-7.856E-3	-9.711E-3	-1.094E-2
N° 14 (OFF)	---	3.662E-2	3.492E-2	3.464E-2	3.464E-2
N° 15 (OFF)	---	9.009E-3	9.812E-3	1.109E-2	1.730E-2
N° 16 (OFF)	---	-6.537E-4	-2.906E-3	-3.000E-3	-6.332E-3
Average (OFF)	---	-2.378E-4	-2.376E-3	-3.441E-3	-8.491E-3
σ (OFF)	---	8.543E-4	1.248E-3	1.844E-3	6.182E-3
Average+3σ (OFF)	---	2.325E-3	1.369E-3	2.091E-3	1.006E-2
Average-3σ (OFF)	---	-2.801E-3	-6.121E-3	-8.973E-3	-2.704E-2
Average (Bias1)	---	-1.163E-3	-2.996E-3	-3.878E-3	-9.169E-3
σ (Bias1)	---	4.469E-4	1.050E-3	1.689E-3	4.902E-3
Average+3σ (Bias1)	---	1.778E-4	1.553E-4	1.188E-3	5.538E-3
Average-3σ (Bias1)	---	-2.504E-3	-6.147E-3	-8.943E-3	-2.388E-2
Average (Bias2)	---	1.483E-2	1.376E-2	1.351E-2	1.382E-2
σ (Bias2)	---	1.995E-2	2.033E-2	2.065E-2	2.173E-2
Average+3σ (Bias2)	---	7.469E-2	7.474E-2	7.544E-2	7.902E-2
Average-3σ (Bias2)	---	-4.502E-2	-4.722E-2	-4.843E-2	-5.138E-2

60 MeV proton / detailed results

16.BWFwd

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms

60 MeV proton / detailed results

BWFwd . (Khz)

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	300	282	294	294	300
N° 2 (Bias1)	290	324	396	688	Not Measurable*
N° 3 (Bias1)	338	316	414	520	Not Measurable*
N° 4 (Bias1)	298	346	392	734	Not Measurable*
N° 5 (Bias1)	310	306	348	938	Not Measurable*
N° 6 (Bias1)	302	304	450	472	Not Measurable*
N° 7 (Bias2)	294	312	314	450	Not Measurable*
N° 8 (Bias2)	308	298	368	558	Not Measurable*
N° 9 (Bias2)	294	320	380	486	Not Measurable*
N° 10 (Bias2)	298	318	438	758	Not Measurable*
N° 11 (Bias2)	298	312	432	560	Not Measurable*
N° 12 (OFF)	290	310	438	498	Not Measurable*
N° 13 (OFF)	318	308	326	638	Not Measurable*
N° 14 (OFF)	298	312	394	548	Not Measurable*
N° 15 (OFF)	262	270	372	480	Not Measurable*
N° 16 (OFF)	296	338	392	408	Not Measurable*

***Test equipment limit**

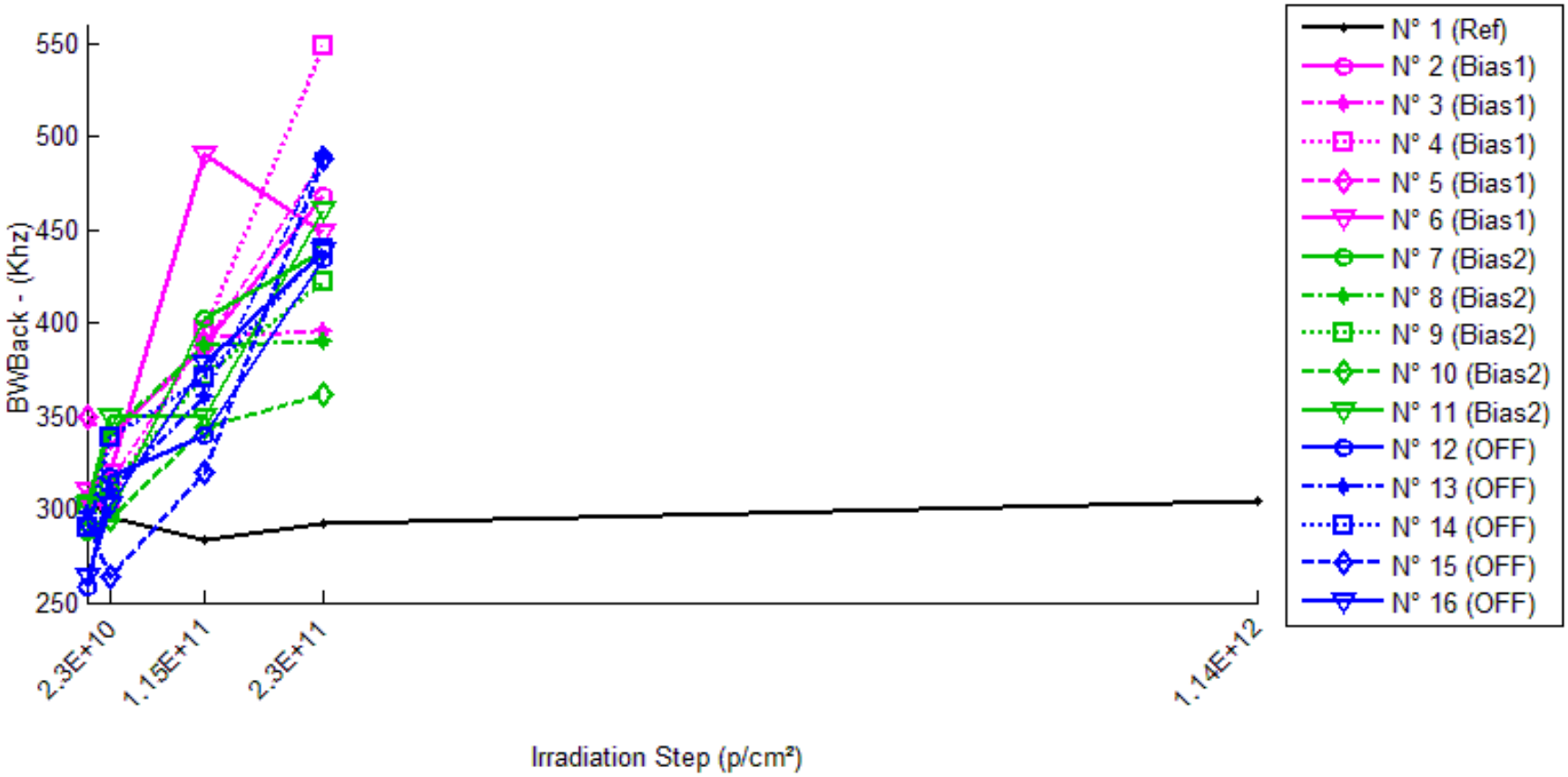
Delta [BWFwd]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	-1.800E+1	-6.000E+0	-6.000E+0	0.000E+0
N° 2 (Bias1)	---	3.400E+1	1.060E+2	3.980E+2	NaN
N° 3 (Bias1)	---	-2.200E+1	7.600E+1	1.820E+2	NaN
N° 4 (Bias1)	---	4.800E+1	9.400E+1	4.360E+2	NaN
N° 5 (Bias1)	---	-4.000E+0	3.800E+1	6.280E+2	NaN
N° 6 (Bias1)	---	2.000E+0	1.480E+2	1.700E+2	NaN
N° 7 (Bias2)	---	1.800E+1	2.000E+1	1.560E+2	NaN
N° 8 (Bias2)	---	-1.000E+1	6.000E+1	2.500E+2	NaN
N° 9 (Bias2)	---	2.600E+1	8.600E+1	1.920E+2	NaN
N° 10 (Bias2)	---	2.000E+1	1.400E+2	4.600E+2	NaN
N° 11 (Bias2)	---	1.400E+1	1.340E+2	2.620E+2	NaN
N° 12 (OFF)	---	2.000E+1	1.480E+2	2.080E+2	NaN
N° 13 (OFF)	---	-1.000E+1	8.000E+0	3.200E+2	NaN
N° 14 (OFF)	---	1.400E+1	9.600E+1	2.500E+2	NaN
N° 15 (OFF)	---	8.000E+0	1.100E+2	2.180E+2	NaN
N° 16 (OFF)	---	4.200E+1	9.600E+1	1.120E+2	NaN
Average (OFF)	---	1.160E+1	9.240E+1	3.628E+2	NaN
σ (OFF)	---	2.868E+1	4.033E+1	1.916E+2	0.000E+0
Average+3σ (OFF)	---	9.765E+1	2.134E+2	9.375E+2	NaN
Average-3σ (OFF)	---	-7.445E+1	-2.860E+1	-2.119E+2	NaN
Average (Bias1)	---	1.360E+1	8.800E+1	2.640E+2	NaN
σ (Bias1)	---	1.389E+1	5.058E+1	1.178E+2	0.000E+0
Average+3σ (Bias1)	---	5.526E+1	2.397E+2	6.173E+2	NaN
Average-3σ (Bias1)	---	-2.806E+1	-6.373E+1	-8.926E+1	NaN
Average (Bias2)	---	1.480E+1	9.160E+1	2.216E+2	NaN
σ (Bias2)	---	1.890E+1	5.135E+1	7.533E+1	0.000E+0
Average+3σ (Bias2)	---	7.150E+1	2.456E+2	4.476E+2	NaN
Average-3σ (Bias2)	---	-4.190E+1	-6.245E+1	-4.394E+0	NaN

60 MeV proton / detailed results

17.BWBack

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



60 MeV proton / detailed results

BWBack . (Khz)

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	306	296	284	292	304
N° 2 (Bias1)	306	340	388	468	Not Measurable*
N° 3 (Bias1)	302	314	392	396	Not Measurable*
N° 4 (Bias1)	302	304	396	548	Not Measurable*
N° 5 (Bias1)	350	338	388	488	Not Measurable*
N° 6 (Bias1)	310	320	490	448	Not Measurable*
N° 7 (Bias2)	288	298	402	438	Not Measurable*
N° 8 (Bias2)	294	342	388	390	Not Measurable*
N° 9 (Bias2)	302	312	372	422	Not Measurable*
N° 10 (Bias2)	292	294	344	362	Not Measurable*
N° 11 (Bias2)	302	350	350	460	Not Measurable*
N° 12 (OFF)	258	318	340	434	Not Measurable*
N° 13 (OFF)	298	310	360	490	Not Measurable*
N° 14 (OFF)	290	338	370	440	Not Measurable*
N° 15 (OFF)	292	264	320	488	Not Measurable*
N° 16 (OFF)	264	302	378	438	Not Measurable*

***Test equipment limit**

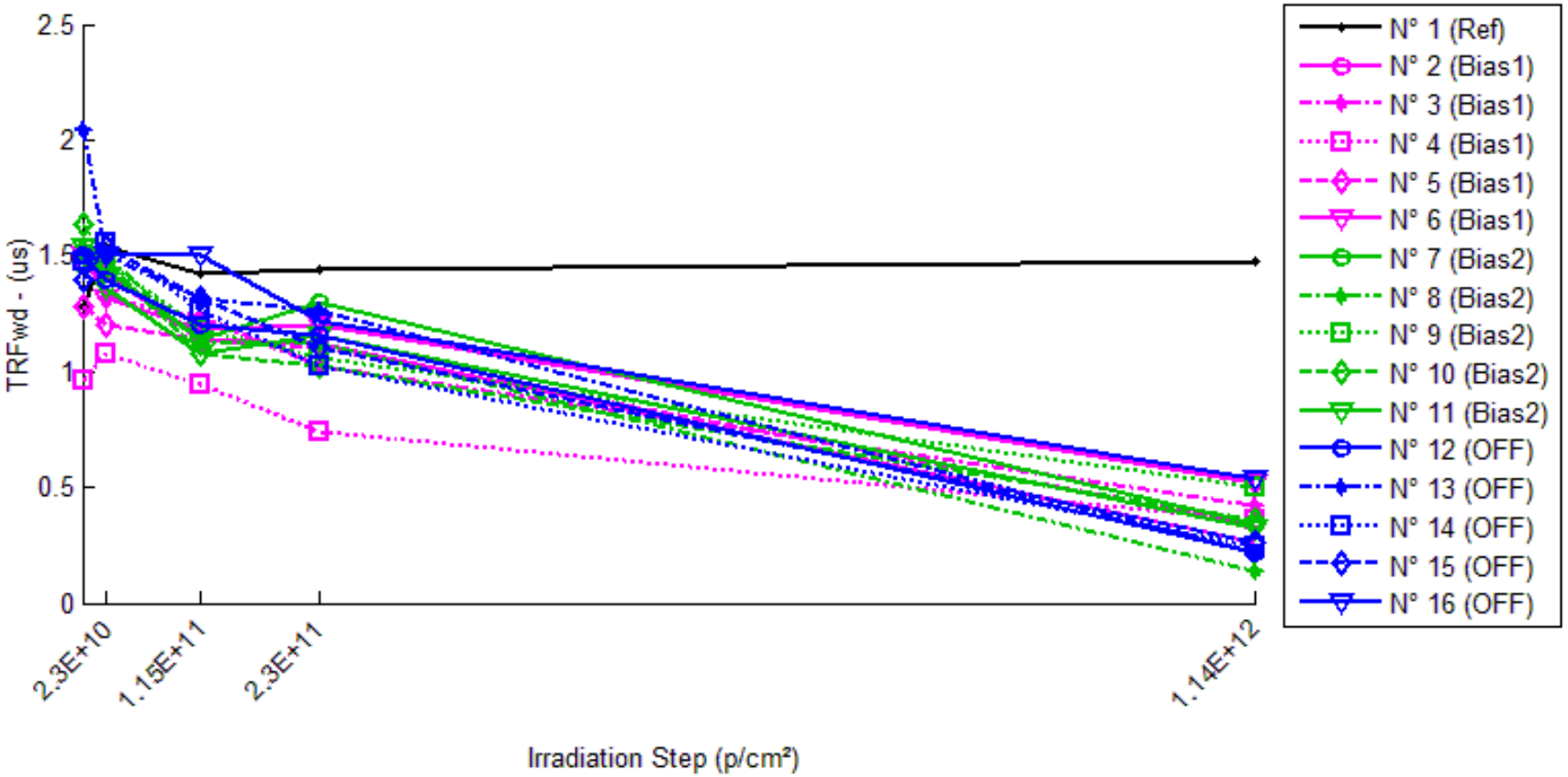
Delta [BWBack]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	-1.000E+1	-2.200E+1	-1.400E+1	-2.000E+0
N° 2 (Bias1)	---	3.400E+1	8.200E+1	1.620E+2	NaN
N° 3 (Bias1)	---	1.200E+1	9.000E+1	9.400E+1	NaN
N° 4 (Bias1)	---	2.000E+0	9.400E+1	2.460E+2	NaN
N° 5 (Bias1)	---	-1.200E+1	3.800E+1	1.380E+2	NaN
N° 6 (Bias1)	---	1.000E+1	1.800E+2	1.380E+2	NaN
N° 7 (Bias2)	---	1.000E+1	1.140E+2	1.500E+2	NaN
N° 8 (Bias2)	---	4.800E+1	9.400E+1	9.600E+1	NaN
N° 9 (Bias2)	---	1.000E+1	7.000E+1	1.200E+2	NaN
N° 10 (Bias2)	---	2.000E+0	5.200E+1	7.000E+1	NaN
N° 11 (Bias2)	---	4.800E+1	4.800E+1	1.580E+2	NaN
N° 12 (OFF)	---	6.000E+1	8.200E+1	1.760E+2	NaN
N° 13 (OFF)	---	1.200E+1	6.200E+1	1.920E+2	NaN
N° 14 (OFF)	---	4.800E+1	8.000E+1	1.500E+2	NaN
N° 15 (OFF)	---	-2.800E+1	2.800E+1	1.960E+2	NaN
N° 16 (OFF)	---	3.800E+1	1.140E+2	1.740E+2	NaN
Average (OFF)	---	9.200E+0	9.680E+1	1.556E+2	NaN
σ (OFF)	---	1.677E+1	5.161E+1	5.619E+1	0.000E+0
Average+3σ (OFF)	---	5.951E+1	2.516E+2	3.242E+2	NaN
Average-3σ (OFF)	---	-4.111E+1	-5.802E+1	-1.296E+1	NaN
Average (Bias1)	---	2.360E+1	7.560E+1	1.188E+2	NaN
σ (Bias1)	---	2.251E+1	2.812E+1	3.679E+1	0.000E+0
Average+3σ (Bias1)	---	9.114E+1	1.600E+2	2.292E+2	NaN
Average-3σ (Bias1)	---	-4.394E+1	-8.763E+0	8.442E+0	NaN
Average (Bias2)	---	2.600E+1	7.320E+1	1.776E+2	NaN
σ (Bias2)	---	3.499E+1	3.145E+1	1.819E+1	0.000E+0
Average+3σ (Bias2)	---	1.310E+2	1.676E+2	2.322E+2	NaN
Average-3σ (Bias2)	---	-7.896E+1	-2.115E+1	1.230E+2	NaN

60 MeV proton / detailed results

18.TRFwd

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



60 MeV proton / detailed results

TRFwd . (us)

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	1.28	1.54	1.42	1.44	1.48
N° 2 (Bias1)	1.48	1.42	1.14	1.12	0.26
N° 3 (Bias1)	1.54	1.32	1.24	1.02	0.42
N° 4 (Bias1)	0.96	1.08	0.94	0.74	0.36
N° 5 (Bias1)	1.28	1.20	1.14	1.10	0.34
N° 6 (Bias1)	1.50	1.32	1.18	1.20	0.52
N° 7 (Bias2)	1.46	1.44	1.14	1.30	0.34
N° 8 (Bias2)	1.54	1.50	1.12	1.12	0.14
N° 9 (Bias2)	1.48	1.48	1.18	1.06	0.50
N° 10 (Bias2)	1.64	1.48	1.08	1.02	0.36
N° 11 (Bias2)	1.54	1.36	1.08	1.16	0.32
N° 12 (OFF)	1.50	1.40	1.20	1.16	0.22
N° 13 (OFF)	2.04	1.50	1.32	1.26	0.22
N° 14 (OFF)	1.48	1.56	1.26	1.02	0.24
N° 15 (OFF)	1.40	1.54	1.32	1.10	0.26
N° 16 (OFF)	1.48	1.50	1.50	1.22	0.54

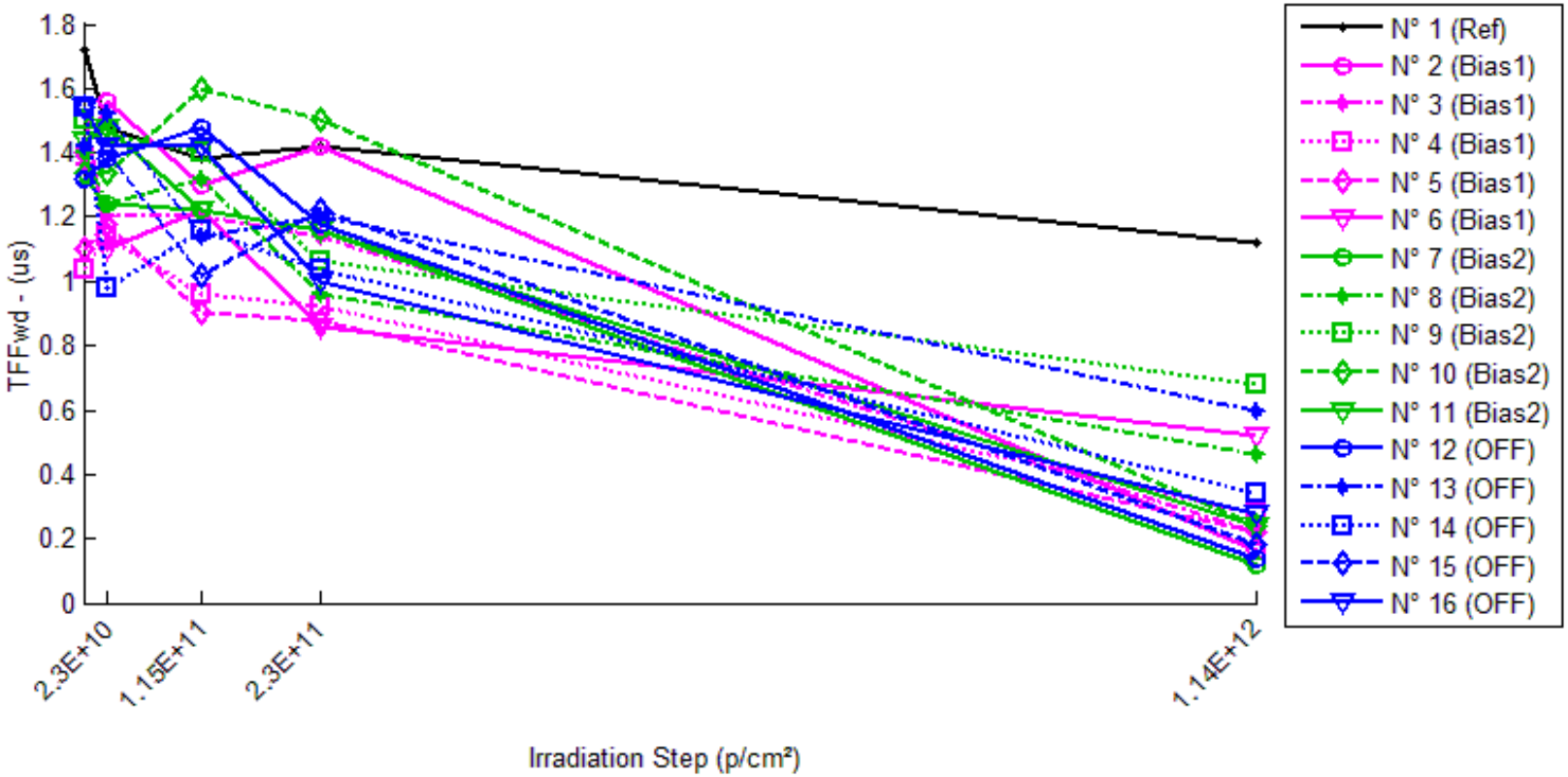
Delta [TRFwd]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	2.600E-1	1.400E-1	1.600E-1	2.000E-1
N° 2 (Bias1)	---	-6.000E-2	-3.400E-1	-3.600E-1	-1.220E+0
N° 3 (Bias1)	---	-2.200E-1	-3.000E-1	-5.200E-1	-1.120E+0
N° 4 (Bias1)	---	1.200E-1	-2.000E-2	-2.200E-1	-6.000E-1
N° 5 (Bias1)	---	-8.000E-2	-1.400E-1	-1.800E-1	-9.400E-1
N° 6 (Bias1)	---	-1.800E-1	-3.200E-1	-3.000E-1	-9.800E-1
N° 7 (Bias2)	---	-2.000E-2	-3.200E-1	-1.600E-1	-1.120E+0
N° 8 (Bias2)	---	-4.000E-2	-4.200E-1	-4.200E-1	-1.400E+0
N° 9 (Bias2)	---	0.000E+0	-3.000E-1	-4.200E-1	-9.800E-1
N° 10 (Bias2)	---	-1.600E-1	-5.600E-1	-6.200E-1	-1.280E+0
N° 11 (Bias2)	---	-1.800E-1	-4.600E-1	-3.800E-1	-1.220E+0
N° 12 (OFF)	---	-1.000E-1	-3.000E-1	-3.400E-1	-1.280E+0
N° 13 (OFF)	---	-5.400E-1	-7.200E-1	-7.800E-1	-1.820E+0
N° 14 (OFF)	---	8.000E-2	-2.200E-1	-4.600E-1	-1.240E+0
N° 15 (OFF)	---	1.400E-1	-8.000E-2	-3.000E-1	-1.140E+0
N° 16 (OFF)	---	2.000E-2	2.000E-2	-2.600E-1	-9.400E-1
Average (OFF)	---	-8.400E-2	-2.240E-1	-3.160E-1	-9.720E-1
σ (OFF)	---	1.322E-1	1.389E-1	1.337E-1	2.361E-1
Average+3σ (OFF)	---	3.126E-1	1.926E-1	8.515E-2	-2.638E-1
Average-3σ (OFF)	---	-4.806E-1	-6.406E-1	-7.171E-1	-1.680E+0
Average (Bias1)	---	-8.000E-2	-4.120E-1	-4.000E-1	-1.200E+0
σ (Bias1)	---	8.367E-2	1.064E-1	1.637E-1	1.594E-1
Average+3σ (Bias1)	---	1.710E-1	-9.281E-2	9.112E-2	-7.219E-1
Average-3σ (Bias1)	---	-3.310E-1	-7.312E-1	-8.911E-1	-1.678E+0
Average (Bias2)	---	-8.000E-2	-2.600E-1	-4.280E-1	-1.284E+0
σ (Bias2)	---	2.720E-1	2.853E-1	2.105E-1	3.272E-1
Average+3σ (Bias2)	---	7.361E-1	5.959E-1	2.036E-1	-3.023E-1
Average-3σ (Bias2)	---	-8.961E-1	-1.116E+0	-1.060E+0	-2.266E+0

60 MeV proton / detailed results

19.TFFwd

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



60 MeV proton / detailed results

TFFwd . (us)

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	1.72	1.48	1.38	1.42	1.12
N° 2 (Bias1)	1.40	1.56	1.30	1.42	0.16
N° 3 (Bias1)	1.36	1.20	1.20	1.14	0.22
N° 4 (Bias1)	1.04	1.14	0.96	0.92	0.28
N° 5 (Bias1)	1.10	1.18	0.90	0.88	0.22
N° 6 (Bias1)	1.54	1.10	1.22	0.86	0.52
N° 7 (Bias2)	1.32	1.24	1.22	1.16	0.12
N° 8 (Bias2)	1.40	1.24	1.32	0.96	0.46
N° 9 (Bias2)	1.50	1.46	1.40	1.06	0.68
N° 10 (Bias2)	1.34	1.34	1.60	1.50	0.24
N° 11 (Bias2)	1.44	1.48	1.22	1.16	0.24
N° 12 (OFF)	1.32	1.38	1.48	1.18	0.14
N° 13 (OFF)	1.42	1.52	1.14	1.20	0.60
N° 14 (OFF)	1.54	0.98	1.16	1.04	0.34
N° 15 (OFF)	1.54	1.40	1.02	1.22	0.18
N° 16 (OFF)	1.54	1.42	1.42	1.00	0.28

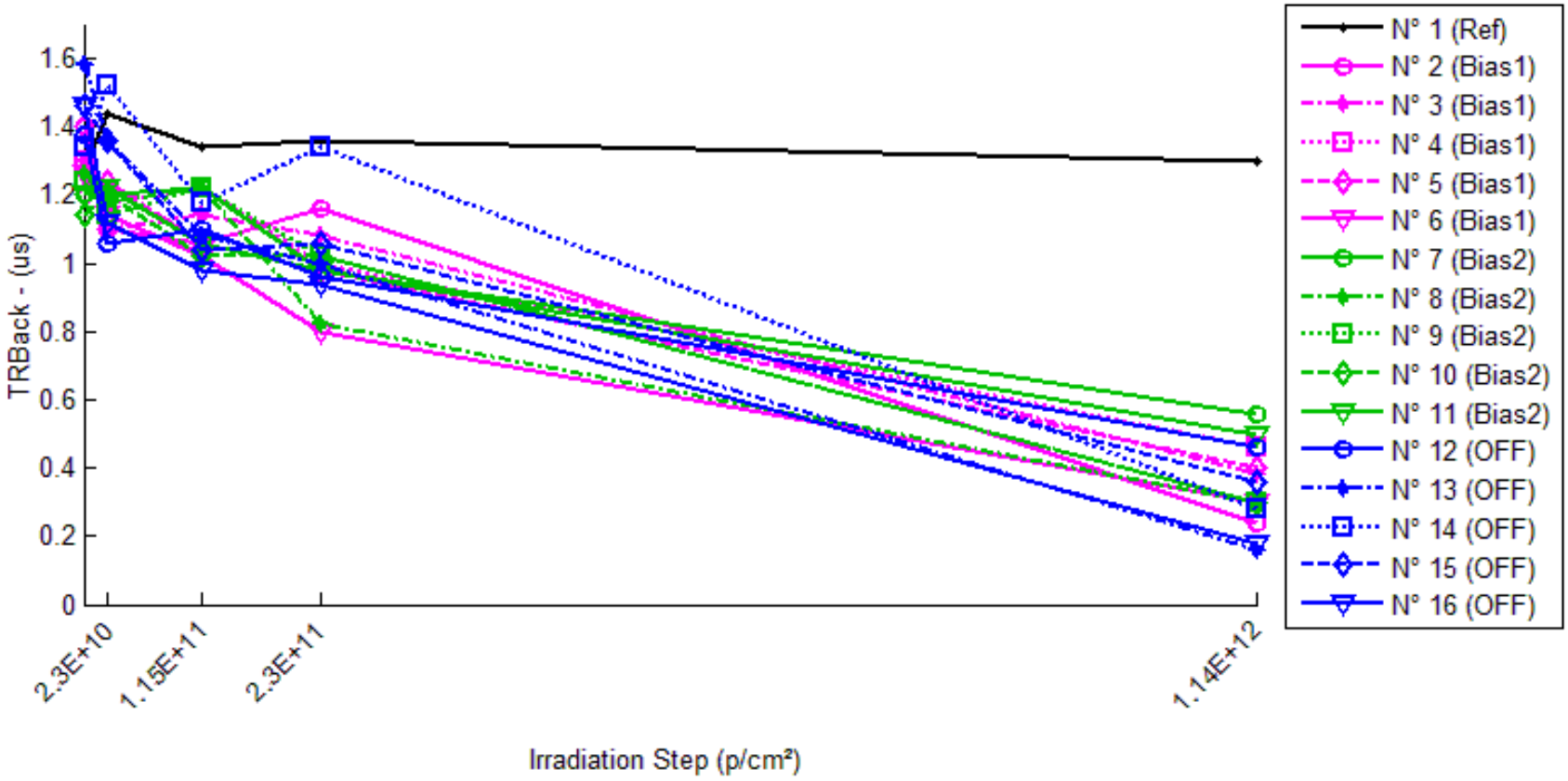
Delta [TFFwd]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	-2.400E-1	-3.400E-1	-3.000E-1	-6.000E-1
N° 2 (Bias1)	---	1.600E-1	-1.000E-1	2.000E-2	-1.240E+0
N° 3 (Bias1)	---	-1.600E-1	-1.600E-1	-2.200E-1	-1.140E+0
N° 4 (Bias1)	---	1.000E-1	-8.000E-2	-1.200E-1	-7.600E-1
N° 5 (Bias1)	---	8.000E-2	-2.000E-1	-2.200E-1	-8.800E-1
N° 6 (Bias1)	---	-4.400E-1	-3.200E-1	-6.800E-1	-1.020E+0
N° 7 (Bias2)	---	-8.000E-2	-1.000E-1	-1.600E-1	-1.200E+0
N° 8 (Bias2)	---	-1.600E-1	-8.000E-2	-4.400E-1	-9.400E-1
N° 9 (Bias2)	---	-4.000E-2	-1.000E-1	-4.400E-1	-8.200E-1
N° 10 (Bias2)	---	0.000E+0	2.600E-1	1.600E-1	-1.100E+0
N° 11 (Bias2)	---	4.000E-2	-2.200E-1	-2.800E-1	-1.200E+0
N° 12 (OFF)	---	6.000E-2	1.600E-1	-1.400E-1	-1.180E+0
N° 13 (OFF)	---	1.000E-1	-2.800E-1	-2.200E-1	-8.200E-1
N° 14 (OFF)	---	-5.600E-1	-3.800E-1	-5.000E-1	-1.200E+0
N° 15 (OFF)	---	-1.400E-1	-5.200E-1	-3.200E-1	-1.360E+0
N° 16 (OFF)	---	-1.200E-1	-1.200E-1	-5.400E-1	-1.260E+0
Average (OFF)	---	-5.200E-2	-1.720E-1	-2.440E-1	-1.008E+0
σ (OFF)	---	2.488E-1	9.550E-2	2.628E-1	1.932E-1
Average+3σ (OFF)	---	6.945E-1	1.145E-1	5.445E-1	-4.284E-1
Average-3σ (OFF)	---	-7.985E-1	-4.585E-1	-1.032E+0	-1.588E+0
Average (Bias1)	---	-4.800E-2	-4.800E-2	-2.320E-1	-1.052E+0
σ (Bias1)	---	7.694E-2	1.809E-1	2.488E-1	1.677E-1
Average+3σ (Bias1)	---	1.828E-1	4.947E-1	5.145E-1	-5.489E-1
Average-3σ (Bias1)	---	-2.788E-1	-5.907E-1	-9.785E-1	-1.555E+0
Average (Bias2)	---	-1.320E-1	-2.280E-1	-3.440E-1	-1.164E+0
σ (Bias2)	---	2.618E-1	2.614E-1	1.734E-1	2.046E-1
Average+3σ (Bias2)	---	6.533E-1	5.561E-1	1.763E-1	-5.501E-1
Average-3σ (Bias2)	---	-9.173E-1	-1.012E+0	-8.643E-1	-1.778E+0

60 MeV proton / detailed results

20.TRBack

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



60 MeV proton / detailed results

TRBack . (us)

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	1.28	1.44	1.34	1.36	1.30
N° 2 (Bias1)	1.40	1.10	1.06	1.16	0.24
N° 3 (Bias1)	1.30	1.10	1.14	1.08	0.38
N° 4 (Bias1)	1.30	1.18	1.22	1.00	0.46
N° 5 (Bias1)	1.20	1.24	1.06	0.98	0.40
N° 6 (Bias1)	1.26	1.14	1.02	0.80	0.30
N° 7 (Bias2)	1.20	1.20	1.22	0.98	0.56
N° 8 (Bias2)	1.26	1.18	1.22	0.82	0.30
N° 9 (Bias2)	1.24	1.14	1.22	1.02	0.30
N° 10 (Bias2)	1.14	1.20	1.02	1.02	0.30
N° 11 (Bias2)	1.20	1.22	1.06	0.98	0.50
N° 12 (OFF)	1.38	1.06	1.10	0.96	0.46
N° 13 (OFF)	1.58	1.36	1.08	1.00	0.16
N° 14 (OFF)	1.34	1.52	1.18	1.34	0.28
N° 15 (OFF)	1.46	1.36	1.04	1.06	0.36
N° 16 (OFF)	1.46	1.12	0.98	0.94	0.18

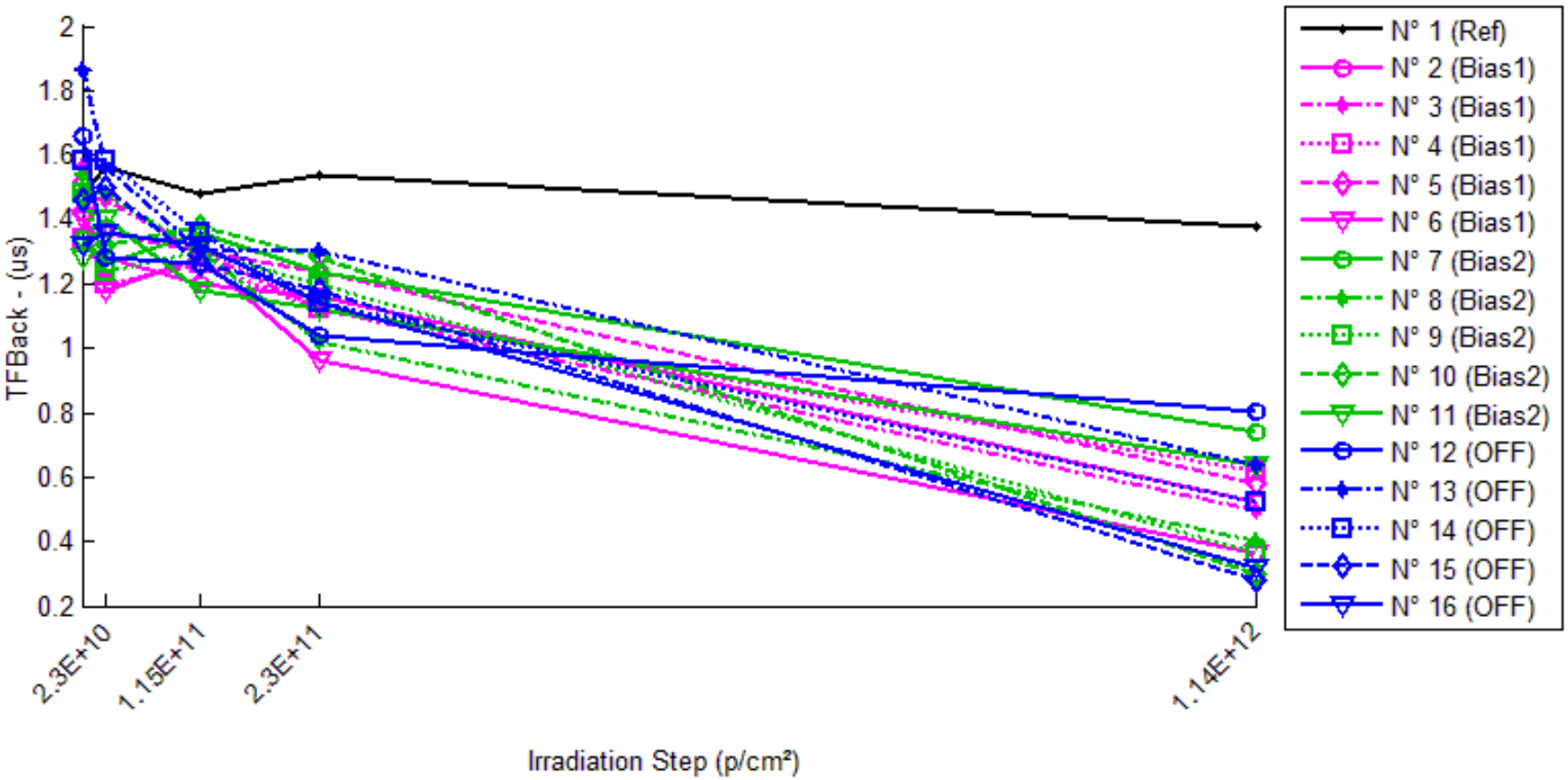
Delta [TRBack]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	1.600E-1	6.000E-2	8.000E-2	2.000E-2
N° 2 (Bias1)	---	-3.000E-1	-3.400E-1	-2.400E-1	-1.160E+0
N° 3 (Bias1)	---	-2.000E-1	-1.600E-1	-2.200E-1	-9.200E-1
N° 4 (Bias1)	---	-1.200E-1	-8.000E-2	-3.000E-1	-8.400E-1
N° 5 (Bias1)	---	4.000E-2	-1.400E-1	-2.200E-1	-8.000E-1
N° 6 (Bias1)	---	-1.200E-1	-2.400E-1	-4.600E-1	-9.600E-1
N° 7 (Bias2)	---	0.000E+0	2.000E-2	-2.200E-1	-6.400E-1
N° 8 (Bias2)	---	-8.000E-2	-4.000E-2	-4.400E-1	-9.600E-1
N° 9 (Bias2)	---	-1.000E-1	-2.000E-2	-2.200E-1	-9.400E-1
N° 10 (Bias2)	---	6.000E-2	-1.200E-1	-1.200E-1	-8.400E-1
N° 11 (Bias2)	---	2.000E-2	-1.400E-1	-2.200E-1	-7.000E-1
N° 12 (OFF)	---	-3.200E-1	-2.800E-1	-4.200E-1	-9.200E-1
N° 13 (OFF)	---	-2.200E-1	-5.000E-1	-5.800E-1	-1.420E+0
N° 14 (OFF)	---	1.800E-1	-1.600E-1	0.000E+0	-1.060E+0
N° 15 (OFF)	---	-1.000E-1	-4.200E-1	-4.000E-1	-1.100E+0
N° 16 (OFF)	---	-3.400E-1	-4.800E-1	-5.200E-1	-1.280E+0
Average (OFF)	---	-1.400E-1	-1.920E-1	-2.880E-1	-9.360E-1
σ (OFF)	---	1.249E-1	1.006E-1	1.016E-1	1.403E-1
Average+3σ (OFF)	---	2.347E-1	1.098E-1	1.676E-2	-5.151E-1
Average-3σ (OFF)	---	-5.147E-1	-4.938E-1	-5.928E-1	-1.357E+0
Average (Bias1)	---	-2.000E-2	-6.000E-2	-2.440E-1	-8.160E-1
σ (Bias1)	---	6.782E-2	6.782E-2	1.178E-1	1.424E-1
Average+3σ (Bias1)	---	1.835E-1	1.435E-1	1.094E-1	-3.888E-1
Average-3σ (Bias1)	---	-2.235E-1	-2.635E-1	-5.974E-1	-1.243E+0
Average (Bias2)	---	-1.600E-1	-3.680E-1	-3.840E-1	-1.156E+0
σ (Bias2)	---	2.126E-1	1.446E-1	2.269E-1	1.957E-1
Average+3σ (Bias2)	---	4.778E-1	6.591E-2	2.967E-1	-5.690E-1
Average-3σ (Bias2)	---	-7.978E-1	-8.019E-1	-1.065E+0	-1.743E+0

60 MeV proton / detailed results

21.TFBack

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



60 MeV proton / detailed results

TFBack . (us)

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	1.48	1.56	1.48	1.54	1.38
N° 2 (Bias1)	1.42	1.28	1.20	1.16	0.52
N° 3 (Bias1)	1.56	1.46	1.30	1.12	0.50
N° 4 (Bias1)	1.34	1.20	1.26	1.12	0.62
N° 5 (Bias1)	1.52	1.36	1.30	1.24	0.58
N° 6 (Bias1)	1.40	1.18	1.28	0.96	0.36
N° 7 (Bias2)	1.34	1.26	1.36	1.24	0.74
N° 8 (Bias2)	1.54	1.48	1.30	1.02	0.40
N° 9 (Bias2)	1.48	1.24	1.30	1.20	0.36
N° 10 (Bias2)	1.48	1.32	1.38	1.28	0.30
N° 11 (Bias2)	1.28	1.40	1.18	1.12	0.64
N° 12 (OFF)	1.66	1.28	1.26	1.04	0.80
N° 13 (OFF)	1.86	1.56	1.30	1.30	0.64
N° 14 (OFF)	1.58	1.58	1.36	1.14	0.52
N° 15 (OFF)	1.46	1.50	1.26	1.18	0.28
N° 16 (OFF)	1.32	1.36	1.32	1.14	0.32

Delta [TFBack]

	0.p/cm²	2.3E10.p/cm²	1.15E11.p/cm²	2.3E11.p/cm²	1.14E12.p/cm²
N° 1 (Ref)	---	8.000E-2	0.000E+0	6.000E-2	-1.000E-1
N° 2 (Bias1)	---	-1.400E-1	-2.200E-1	-2.600E-1	-9.000E-1
N° 3 (Bias1)	---	-1.000E-1	-2.600E-1	-4.400E-1	-1.060E+0
N° 4 (Bias1)	---	-1.400E-1	-8.000E-2	-2.200E-1	-7.200E-1
N° 5 (Bias1)	---	-1.600E-1	-2.200E-1	-2.800E-1	-9.400E-1
N° 6 (Bias1)	---	-2.200E-1	-1.200E-1	-4.400E-1	-1.040E+0
N° 7 (Bias2)	---	-8.000E-2	2.000E-2	-1.000E-1	-6.000E-1
N° 8 (Bias2)	---	-6.000E-2	-2.400E-1	-5.200E-1	-1.140E+0
N° 9 (Bias2)	---	-2.400E-1	-1.800E-1	-2.800E-1	-1.120E+0
N° 10 (Bias2)	---	-1.600E-1	-1.000E-1	-2.000E-1	-1.180E+0
N° 11 (Bias2)	---	1.200E-1	-1.000E-1	-1.600E-1	-6.400E-1
N° 12 (OFF)	---	-3.800E-1	-4.000E-1	-6.200E-1	-8.600E-1
N° 13 (OFF)	---	-3.000E-1	-5.600E-1	-5.600E-1	-1.220E+0
N° 14 (OFF)	---	0.000E+0	-2.200E-1	-4.400E-1	-1.060E+0
N° 15 (OFF)	---	4.000E-2	-2.000E-1	-2.800E-1	-1.180E+0
N° 16 (OFF)	---	4.000E-2	0.000E+0	-1.800E-1	-1.000E+0
Average (OFF)	---	-1.520E-1	-1.800E-1	-3.280E-1	-9.320E-1
σ (OFF)	---	4.382E-2	7.616E-2	1.045E-1	1.361E-1
Average+3σ (OFF)	---	-2.055E-2	4.847E-2	-1.450E-2	-5.237E-1
Average-3σ (OFF)	---	-2.835E-1	-4.085E-1	-6.415E-1	-1.340E+0
Average (Bias1)	---	-8.400E-2	-1.200E-1	-2.520E-1	-9.360E-1
σ (Bias1)	---	1.345E-1	9.798E-2	1.635E-1	2.896E-1
Average+3σ (Bias1)	---	3.194E-1	1.739E-1	2.384E-1	-6.714E-2
Average-3σ (Bias1)	---	-4.874E-1	-4.139E-1	-7.424E-1	-1.805E+0
Average (Bias2)	---	-1.200E-1	-2.760E-1	-4.160E-1	-1.064E+0
σ (Bias2)	---	2.035E-1	2.128E-1	1.851E-1	1.445E-1
Average+3σ (Bias2)	---	4.904E-1	3.624E-1	1.394E-1	-6.305E-1
Average-3σ (Bias2)	---	-7.304E-1	-9.144E-1	-9.714E-1	-1.497E+0

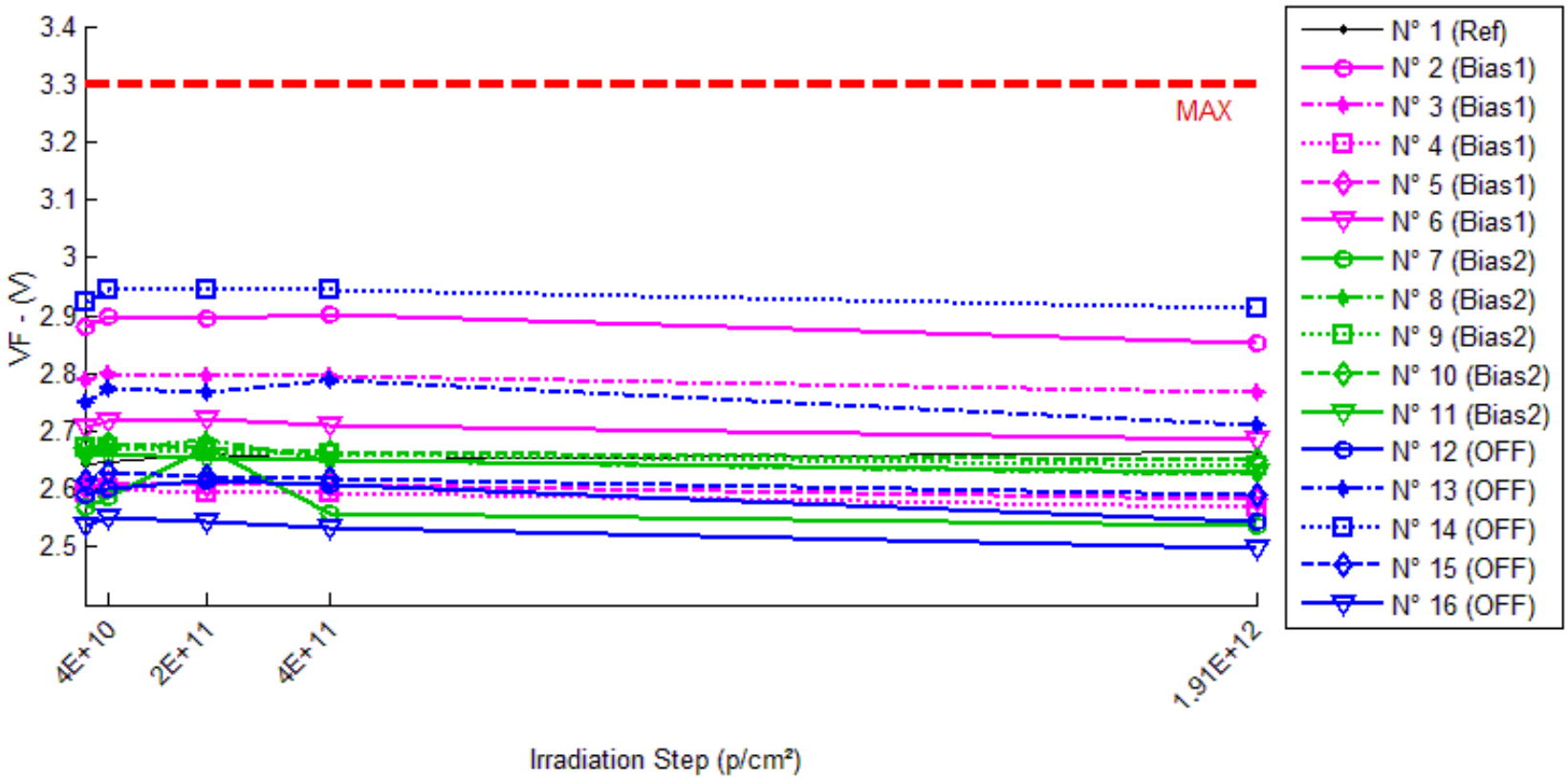
190 MeV proton / detailed results

CONTENTS

190 MeV proton / detailed results

1. VF

Ta = 25°C ; IF = 10mA



190 MeV proton / detailed results

VF . (V) **Max = 3.3**

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	2.644	2.646	2.659	2.650	2.663
N° 2 (Bias1)	2.879	2.898	2.894	2.903	2.851
N° 3 (Bias1)	2.790	2.800	2.797	2.797	2.766
N° 4 (Bias1)	2.595	2.599	2.595	2.594	2.568
N° 5 (Bias1)	2.603	2.610	2.607	2.606	2.583
N° 6 (Bias1)	2.706	2.716	2.720	2.712	2.685
N° 7 (Bias2)	2.568	2.587	2.670	2.558	2.536
N° 8 (Bias2)	2.658	2.667	2.684	2.649	2.626
N° 9 (Bias2)	2.670	2.673	2.664	2.660	2.640
N° 10 (Bias2)	2.672	2.677	2.670	2.664	2.649
N° 11 (Bias2)	2.657	2.662	2.654	2.649	2.630
N° 12 (OFF)	2.589	2.600	2.615	2.607	2.544
N° 13 (OFF)	2.748	2.773	2.767	2.787	2.712
N° 14 (OFF)	2.924	2.944	2.943	2.944	2.913
N° 15 (OFF)	2.616	2.629	2.621	2.618	2.590
N° 16 (OFF)	2.538	2.550	2.542	2.533	2.498

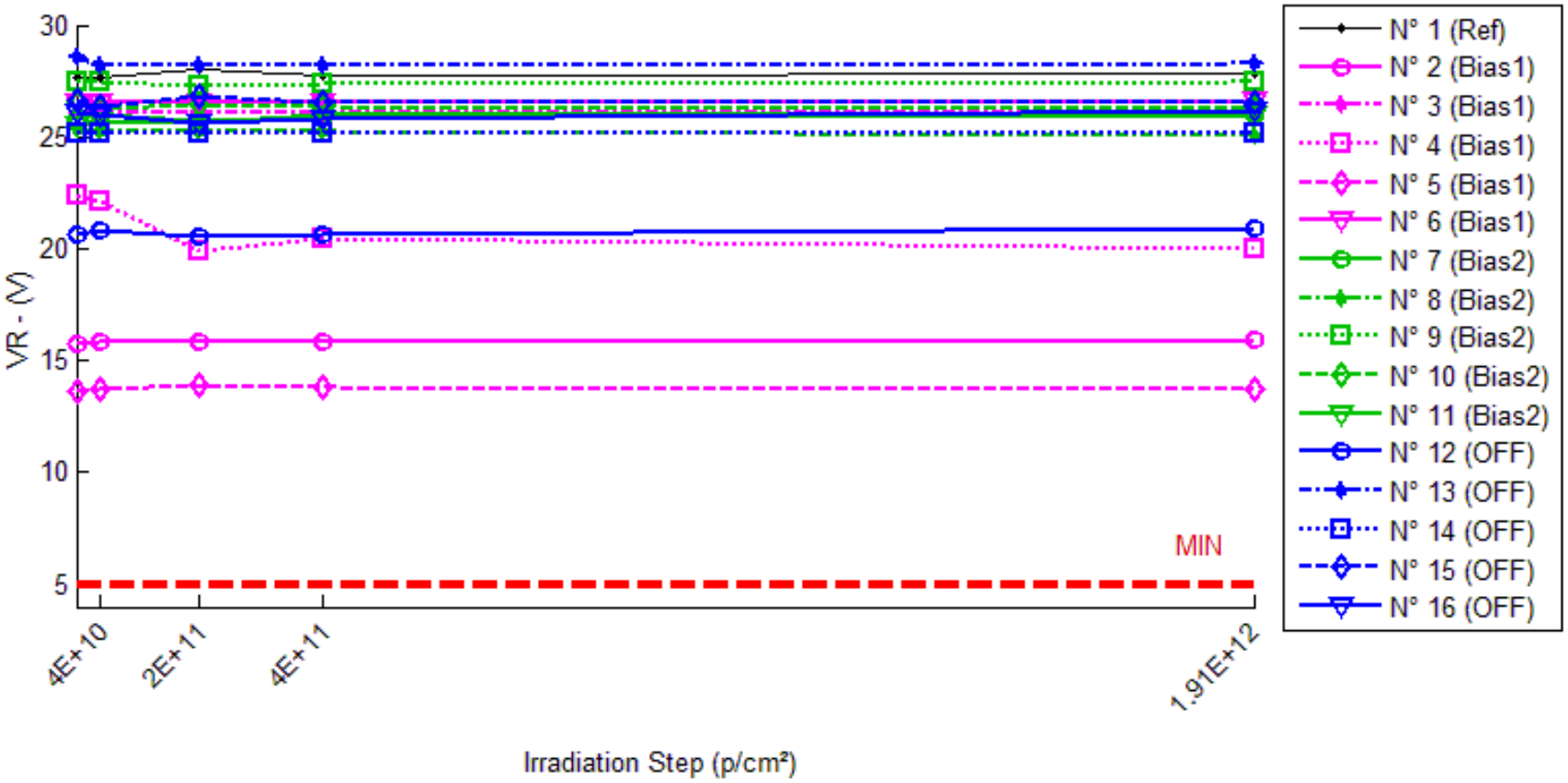
Delta [VF]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	2.796E-3	1.572E-2	5.930E-3	1.890E-2
N° 2 (Bias1)	---	1.909E-2	1.523E-2	2.379E-2	-2.865E-2
N° 3 (Bias1)	---	1.041E-2	7.221E-3	7.525E-3	-2.388E-2
N° 4 (Bias1)	---	3.794E-3	-2.600E-4	-1.353E-3	-2.731E-2
N° 5 (Bias1)	---	7.491E-3	4.411E-3	2.721E-3	-1.948E-2
N° 6 (Bias1)	---	1.009E-2	1.446E-2	5.852E-3	-2.085E-2
N° 7 (Bias2)	---	1.874E-2	1.020E-1	-1.027E-2	-3.265E-2
N° 8 (Bias2)	---	8.392E-3	2.611E-2	-9.211E-3	-3.249E-2
N° 9 (Bias2)	---	2.789E-3	-6.097E-3	-9.830E-3	-2.997E-2
N° 10 (Bias2)	---	4.852E-3	-2.067E-3	-8.102E-3	-2.352E-2
N° 11 (Bias2)	---	4.734E-3	-3.051E-3	-7.645E-3	-2.655E-2
N° 12 (OFF)	---	1.110E-2	2.614E-2	1.779E-2	-4.542E-2
N° 13 (OFF)	---	2.538E-2	1.996E-2	3.922E-2	-3.528E-2
N° 14 (OFF)	---	2.054E-2	1.940E-2	1.971E-2	-1.136E-2
N° 15 (OFF)	---	1.339E-2	5.705E-3	1.932E-3	-2.602E-2
N° 16 (OFF)	---	1.242E-2	3.990E-3	-4.671E-3	-3.956E-2
Average (Bias1)	---	1.018E-2	8.213E-3	7.708E-3	-2.403E-2
σ (Bias1)	---	5.645E-3	6.624E-3	9.607E-3	3.967E-3
Average+3σ (Bias1)	---	2.711E-2	2.809E-2	3.653E-2	-1.213E-2
Average-3σ (Bias1)	---	-6.761E-3	-1.166E-2	-2.111E-2	-3.594E-2
Average (Bias2)	---	7.902E-3	2.338E-2	-9.011E-3	-2.904E-2
σ (Bias2)	---	6.389E-3	4.583E-2	1.116E-3	3.954E-3
Average+3σ (Bias2)	---	2.707E-2	1.609E-1	-5.664E-3	-1.717E-2
Average-3σ (Bias2)	---	-1.126E-2	-1.141E-1	-1.236E-2	-4.090E-2
Average (OFF)	---	1.656E-2	1.504E-2	1.479E-2	-3.153E-2
σ (OFF)	---	6.135E-3	9.691E-3	1.713E-2	1.331E-2
Average+3σ (OFF)	---	3.497E-2	4.411E-2	6.619E-2	8.405E-3
Average-3σ (OFF)	---	-1.841E-3	-1.404E-2	-3.660E-2	-7.146E-2

190 MeV proton / detailed results

2. VR

Ta = 25°C ; IR = 100µA



190 MeV proton / detailed results

VR . (V) **Min = 5.0**

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	27.648	27.691	28.024	27.721	27.849
N° 2 (Bias1)	15.796	15.874	15.891	15.881	15.926
N° 3 (Bias1)	26.075	26.098	26.103	26.118	26.042
N° 4 (Bias1)	22.381	22.143	19.947	20.486	19.956
N° 5 (Bias1)	13.592	13.700	13.866	13.799	13.748
N° 6 (Bias1)	26.525	26.514	26.540	26.497	26.620
N° 7 (Bias2)	25.827	25.956	25.670	25.866	25.993
N° 8 (Bias2)	25.305	25.261	25.270	25.227	25.098
N° 9 (Bias2)	27.434	27.486	27.293	27.386	27.430
N° 10 (Bias2)	26.580	26.270	26.421	26.391	26.306
N° 11 (Bias2)	25.535	25.712	25.646	25.981	25.985
N° 12 (OFF)	20.683	20.785	20.567	20.668	20.888
N° 13 (OFF)	28.553	28.171	28.202	28.159	28.331
N° 14 (OFF)	25.164	25.131	25.140	25.132	25.159
N° 15 (OFF)	26.591	26.322	26.821	26.531	26.578
N° 16 (OFF)	26.041	26.034	25.665	25.833	26.179

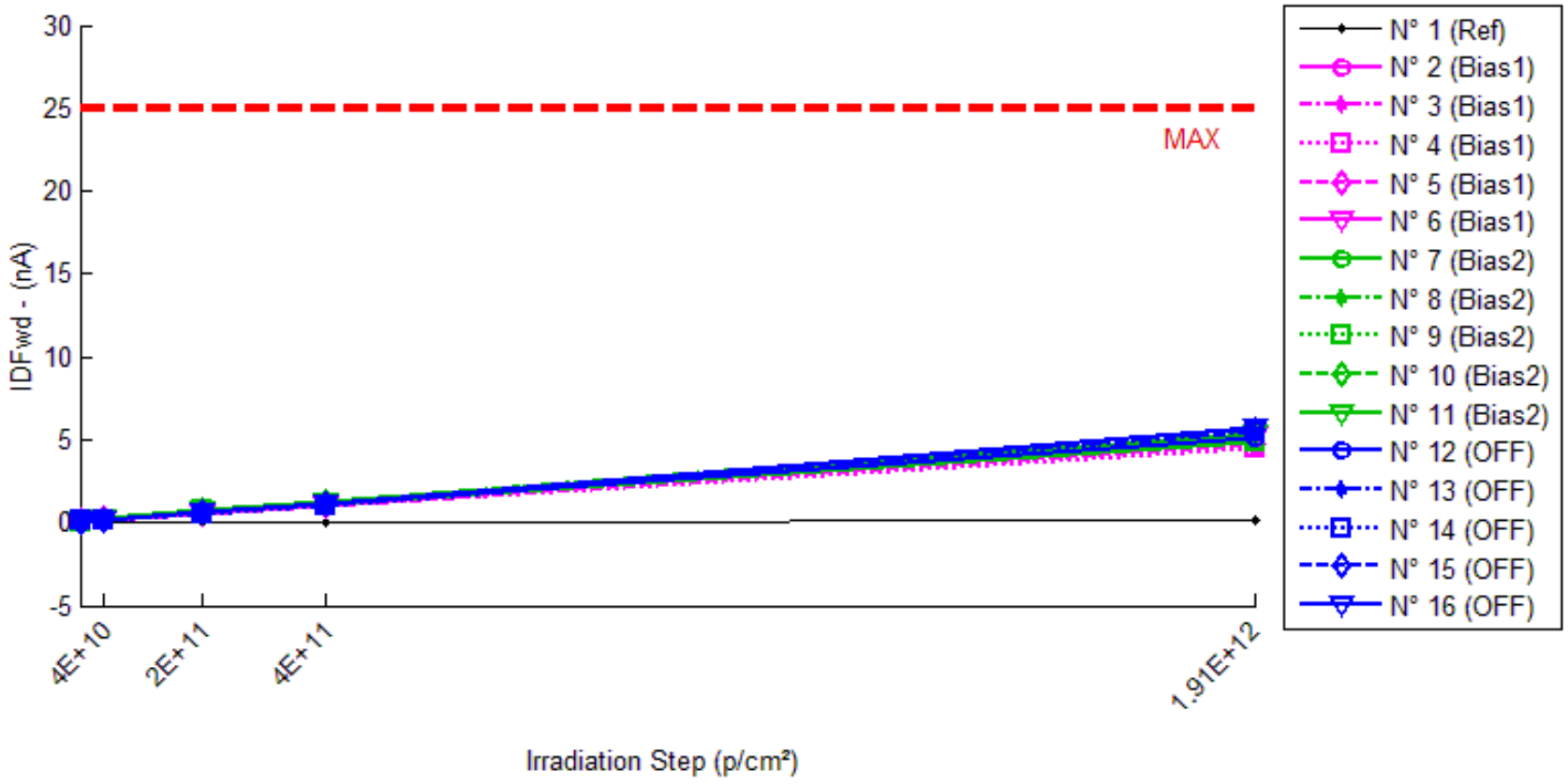
Delta [VR]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	4.282E-2	3.751E-1	7.256E-2	2.009E-1
N° 2 (Bias1)	---	7.786E-2	9.529E-2	8.528E-2	1.300E-1
N° 3 (Bias1)	---	2.292E-2	2.779E-2	4.320E-2	-3.320E-2
N° 4 (Bias1)	---	-2.380E-1	-2.434E+0	-1.895E+0	-2.424E+0
N° 5 (Bias1)	---	1.071E-1	2.731E-1	2.069E-1	1.559E-1
N° 6 (Bias1)	---	-1.087E-2	1.428E-2	-2.804E-2	9.474E-2
N° 7 (Bias2)	---	1.287E-1	-1.567E-1	3.856E-2	1.663E-1
N° 8 (Bias2)	---	-4.344E-2	-3.447E-2	-7.763E-2	-2.063E-1
N° 9 (Bias2)	---	5.289E-2	-1.405E-1	-4.767E-2	-3.070E-3
N° 10 (Bias2)	---	-3.101E-1	-1.595E-1	-1.896E-1	-2.745E-1
N° 11 (Bias2)	---	1.768E-1	1.108E-1	4.459E-1	4.498E-1
N° 12 (OFF)	---	1.017E-1	-1.161E-1	-1.476E-2	2.048E-1
N° 13 (OFF)	---	-3.826E-1	-3.519E-1	-3.941E-1	-2.228E-1
N° 14 (OFF)	---	-3.312E-2	-2.432E-2	-3.218E-2	-5.320E-3
N° 15 (OFF)	---	-2.688E-1	2.298E-1	-6.028E-2	-1.279E-2
N° 16 (OFF)	---	-6.900E-3	-3.760E-1	-2.079E-1	1.381E-1
Average (Bias1)	---	-8.198E-3	-4.047E-1	-3.175E-1	-4.154E-1
σ (Bias1)	---	1.365E-1	1.139E+0	8.859E-1	1.125E+0
Average+3σ (Bias1)	---	4.012E-1	3.013E+0	2.340E+0	2.961E+0
Average-3σ (Bias1)	---	-4.176E-1	-3.822E+0	-2.975E+0	-3.792E+0
Average (Bias2)	---	9.920E-4	-7.606E-2	3.391E-2	2.644E-2
σ (Bias2)	---	1.928E-1	1.165E-1	2.443E-1	2.934E-1
Average+3σ (Bias2)	---	5.794E-1	2.734E-1	7.670E-1	9.068E-1
Average-3σ (Bias2)	---	-5.774E-1	-4.255E-1	-6.991E-1	-8.539E-1
Average (OFF)	---	-1.180E-1	-1.277E-1	-1.419E-1	2.039E-2
σ (OFF)	---	2.004E-1	2.503E-1	1.603E-1	1.649E-1
Average+3σ (OFF)	---	4.831E-1	6.231E-1	3.392E-1	5.151E-1
Average-3σ (OFF)	---	-7.190E-1	-8.785E-1	-6.229E-1	-4.743E-1

190 MeV proton / detailed results

3. IDFwd

Ta = 25°C ; VR = 15V ; IF = 0mA



190 MeV proton / detailed results

IDFwd . (nA) **Max = 25.0**

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	0.075	0.079	0.078	0.085	0.100
N° 2 (Bias1)	0.269	0.278	0.660	1.171	5.713
N° 3 (Bias1)	0.099	0.205	0.594	1.044	5.569
N° 4 (Bias1)	0.096	0.199	0.575	1.048	4.532
N° 5 (Bias1)	0.140	0.243	0.604	1.055	4.708
N° 6 (Bias1)	0.018	0.162	0.503	1.006	5.250
N° 7 (Bias2)	0.078	0.193	0.658	1.150	4.913
N° 8 (Bias2)	0.080	0.241	0.714	1.276	5.178
N° 9 (Bias2)	0.051	0.174	0.738	1.148	4.875
N° 10 (Bias2)	0.048	0.198	0.731	1.260	5.578
N° 11 (Bias2)	0.089	0.230	0.744	1.294	5.393
N° 12 (OFF)	0.141	0.161	0.664	1.119	5.170
N° 13 (OFF)	0.078	0.183	0.633	1.124	5.447
N° 14 (OFF)	0.098	0.199	0.584	1.076	5.471
N° 15 (OFF)	0.077	0.190	0.658	1.127	5.550
N° 16 (OFF)	0.078	0.188	0.628	1.145	5.756

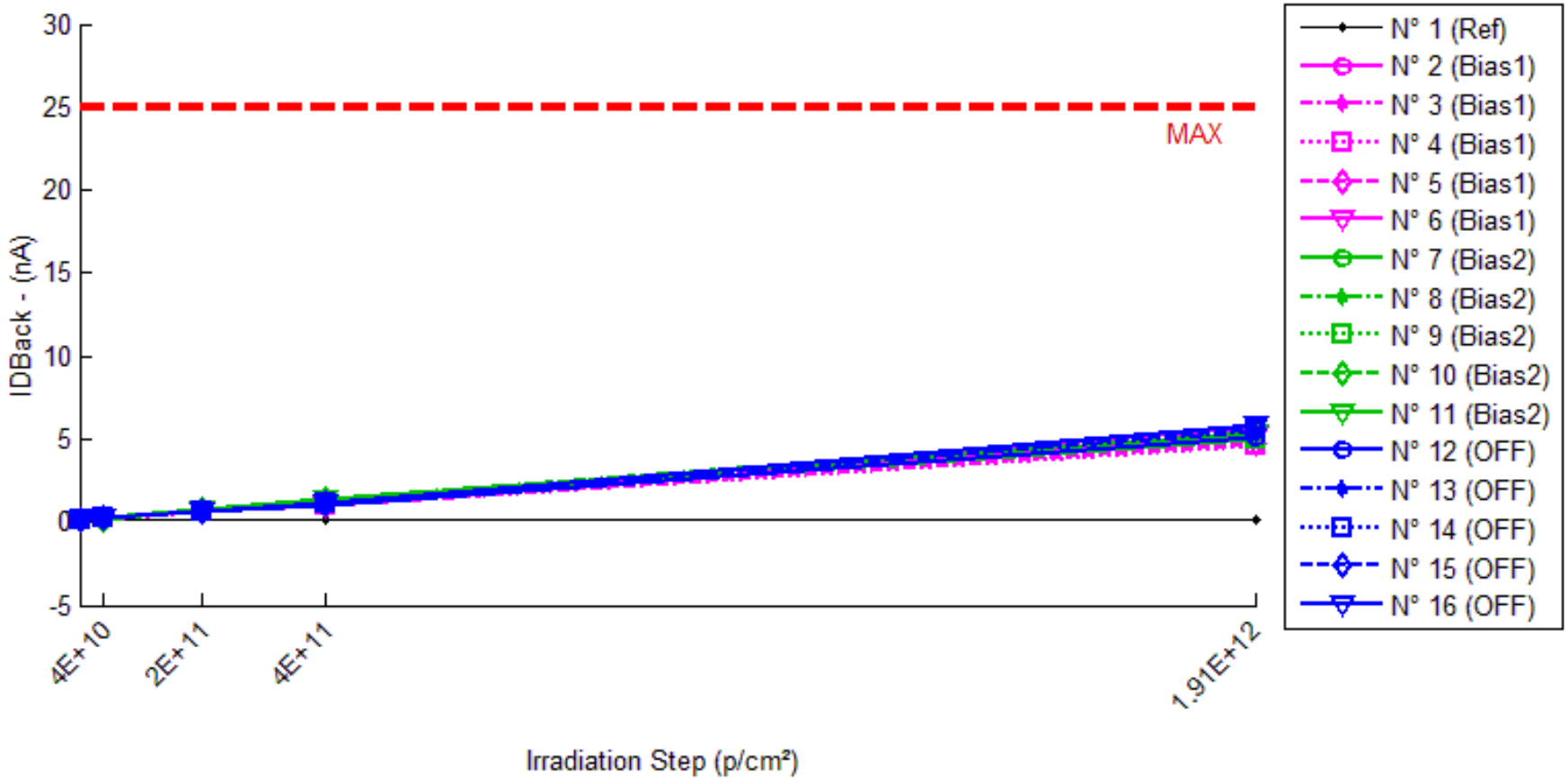
Delta [IDFwd]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	3.562E-3	3.143E-3	1.014E-2	2.502E-2
N° 2 (Bias1)	---	8.718E-3	3.908E-1	9.012E-1	5.444E+0
N° 3 (Bias1)	---	1.064E-1	4.951E-1	9.455E-1	5.470E+0
N° 4 (Bias1)	---	1.034E-1	4.789E-1	9.515E-1	4.435E+0
N° 5 (Bias1)	---	1.028E-1	4.637E-1	9.155E-1	4.568E+0
N° 6 (Bias1)	---	1.439E-1	4.849E-1	9.882E-1	5.231E+0
N° 7 (Bias2)	---	1.148E-1	5.803E-1	1.071E+0	4.835E+0
N° 8 (Bias2)	---	1.610E-1	6.338E-1	1.196E+0	5.098E+0
N° 9 (Bias2)	---	1.237E-1	6.874E-1	1.097E+0	4.824E+0
N° 10 (Bias2)	---	1.498E-1	6.832E-1	1.212E+0	5.530E+0
N° 11 (Bias2)	---	1.413E-1	6.552E-1	1.205E+0	5.305E+0
N° 12 (OFF)	---	1.966E-2	5.224E-1	9.773E-1	5.028E+0
N° 13 (OFF)	---	1.055E-1	5.557E-1	1.047E+0	5.370E+0
N° 14 (OFF)	---	1.013E-1	4.859E-1	9.783E-1	5.373E+0
N° 15 (OFF)	---	1.130E-1	5.814E-1	1.050E+0	5.473E+0
N° 16 (OFF)	---	1.103E-1	5.505E-1	1.067E+0	5.679E+0
Average (Bias1)	---	9.304E-2	4.627E-1	9.404E-1	5.030E+0
σ (Bias1)	---	5.019E-2	4.173E-2	3.386E-2	4.930E-1
Average+3σ (Bias1)	---	2.436E-1	5.879E-1	1.042E+0	6.509E+0
Average-3σ (Bias1)	---	-5.753E-2	3.375E-1	8.388E-1	3.551E+0
Average (Bias2)	---	1.381E-1	6.480E-1	1.156E+0	5.118E+0
σ (Bias2)	---	1.887E-2	4.367E-2	6.667E-2	3.046E-1
Average+3σ (Bias2)	---	1.948E-1	7.790E-1	1.356E+0	6.032E+0
Average-3σ (Bias2)	---	8.152E-2	5.170E-1	9.562E-1	4.205E+0
Average (OFF)	---	8.995E-2	5.392E-1	1.024E+0	5.385E+0
σ (OFF)	---	3.955E-2	3.642E-2	4.279E-2	2.353E-1
Average+3σ (OFF)	---	2.086E-1	6.484E-1	1.152E+0	6.091E+0
Average-3σ (OFF)	---	-2.870E-2	4.299E-1	8.955E-1	4.679E+0

190 MeV proton / detailed results

4. IDBack

Ta = 25°C ; VR = 15V ; IF = 0mA



190 MeV proton / detailed results

IDBack . (nA) **Max = 25.0**

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	0.105	0.103	0.099	0.114	0.125
N° 2 (Bias1)	0.145	0.258	0.659	1.165	5.688
N° 3 (Bias1)	0.128	0.191	0.619	1.101	5.631
N° 4 (Bias1)	0.110	0.240	0.604	1.075	4.649
N° 5 (Bias1)	0.147	0.249	0.600	1.073	4.706
N° 6 (Bias1)	0.122	0.214	0.679	1.048	5.256
N° 7 (Bias2)	0.143	0.239	0.697	1.200	4.974
N° 8 (Bias2)	0.212	0.310	0.814	1.351	5.344
N° 9 (Bias2)	0.102	0.238	0.672	1.284	4.984
N° 10 (Bias2)	0.117	0.175	0.779	1.372	5.628
N° 11 (Bias2)	0.133	0.294	0.776	1.340	5.385
N° 12 (OFF)	0.155	0.249	0.674	1.032	5.089
N° 13 (OFF)	0.123	0.220	0.670	1.185	5.526
N° 14 (OFF)	0.130	0.239	0.681	1.147	5.665
N° 15 (OFF)	0.127	0.229	0.699	1.157	5.560
N° 16 (OFF)	0.123	0.244	0.674	1.205	5.837

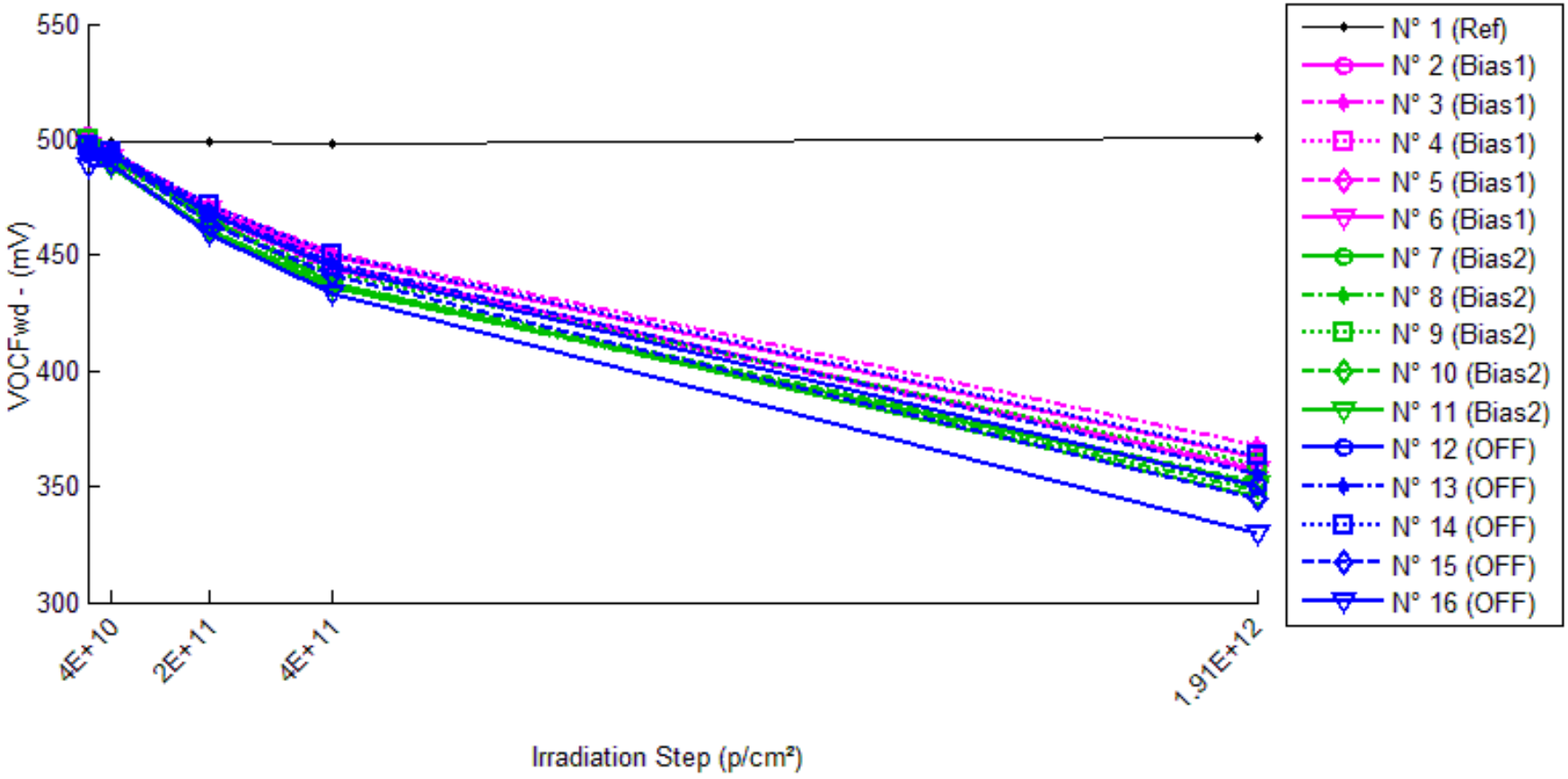
Delta [IDBack]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	-2.012E-3	-6.077E-3	8.215E-3	1.924E-2
N° 2 (Bias1)	---	1.125E-1	5.137E-1	1.020E+0	5.543E+0
N° 3 (Bias1)	---	6.287E-2	4.916E-1	9.732E-1	5.503E+0
N° 4 (Bias1)	---	1.306E-1	4.945E-1	9.655E-1	4.539E+0
N° 5 (Bias1)	---	1.028E-1	4.530E-1	9.266E-1	4.560E+0
N° 6 (Bias1)	---	9.196E-2	5.579E-1	9.263E-1	5.135E+0
N° 7 (Bias2)	---	9.611E-2	5.539E-1	1.058E+0	4.831E+0
N° 8 (Bias2)	---	9.762E-2	6.022E-1	1.138E+0	5.132E+0
N° 9 (Bias2)	---	1.362E-1	5.703E-1	1.182E+0	4.882E+0
N° 10 (Bias2)	---	5.834E-2	6.623E-1	1.255E+0	5.511E+0
N° 11 (Bias2)	---	1.618E-1	6.435E-1	1.207E+0	5.253E+0
N° 12 (OFF)	---	9.385E-2	5.190E-1	8.773E-1	4.934E+0
N° 13 (OFF)	---	9.753E-2	5.471E-1	1.062E+0	5.403E+0
N° 14 (OFF)	---	1.091E-1	5.514E-1	1.017E+0	5.535E+0
N° 15 (OFF)	---	1.015E-1	5.715E-1	1.030E+0	5.433E+0
N° 16 (OFF)	---	1.210E-1	5.506E-1	1.082E+0	5.714E+0
Average (Bias1)	---	1.001E-1	5.021E-1	9.623E-1	5.056E+0
σ (Bias1)	---	2.522E-2	3.815E-2	3.881E-2	4.891E-1
Average+3σ (Bias1)	---	1.758E-1	6.166E-1	1.079E+0	6.523E+0
Average-3σ (Bias1)	---	2.447E-2	3.877E-1	8.459E-1	3.589E+0
Average (Bias2)	---	1.100E-1	6.065E-1	1.168E+0	5.122E+0
σ (Bias2)	---	3.996E-2	4.632E-2	7.487E-2	2.787E-1
Average+3σ (Bias2)	---	2.299E-1	7.454E-1	1.393E+0	5.958E+0
Average-3σ (Bias2)	---	-9.867E-3	4.675E-1	9.435E-1	4.286E+0
Average (OFF)	---	1.046E-1	5.479E-1	1.014E+0	5.404E+0
σ (OFF)	---	1.076E-2	1.878E-2	8.041E-2	2.895E-1
Average+3σ (OFF)	---	1.369E-1	6.043E-1	1.255E+0	6.272E+0
Average-3σ (OFF)	---	7.231E-2	4.916E-1	7.724E-1	4.535E+0

190 MeV proton / detailed results

5. VOCFwd

Ta = 25°C ; IF = 10mA



190 MeV proton / detailed results

VOCFwd . (mV)

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	498.595	498.793	498.740	498.044	500.942
N° 2 (Bias1)	501.476	494.774	470.125	449.608	362.744
N° 3 (Bias1)	501.067	494.971	471.435	450.954	367.604
N° 4 (Bias1)	498.870	492.136	467.839	445.260	358.247
N° 5 (Bias1)	496.130	490.647	467.045	443.792	356.106
N° 6 (Bias1)	497.094	491.728	470.140	446.226	357.444
N° 7 (Bias2)	497.525	491.671	466.320	437.578	345.338
N° 8 (Bias2)	495.434	488.596	460.993	435.760	348.548
N° 9 (Bias2)	499.671	491.696	464.734	442.321	359.734
N° 10 (Bias2)	497.518	489.662	460.916	437.778	352.103
N° 11 (Bias2)	496.525	488.284	459.997	436.163	350.590
N° 12 (OFF)	493.552	494.104	467.682	445.230	350.486
N° 13 (OFF)	496.323	495.519	468.632	446.874	355.774
N° 14 (OFF)	497.666	494.987	471.818	450.692	363.337
N° 15 (OFF)	495.955	493.462	463.899	441.072	344.567
N° 16 (OFF)	488.272	488.876	459.313	433.055	330.109

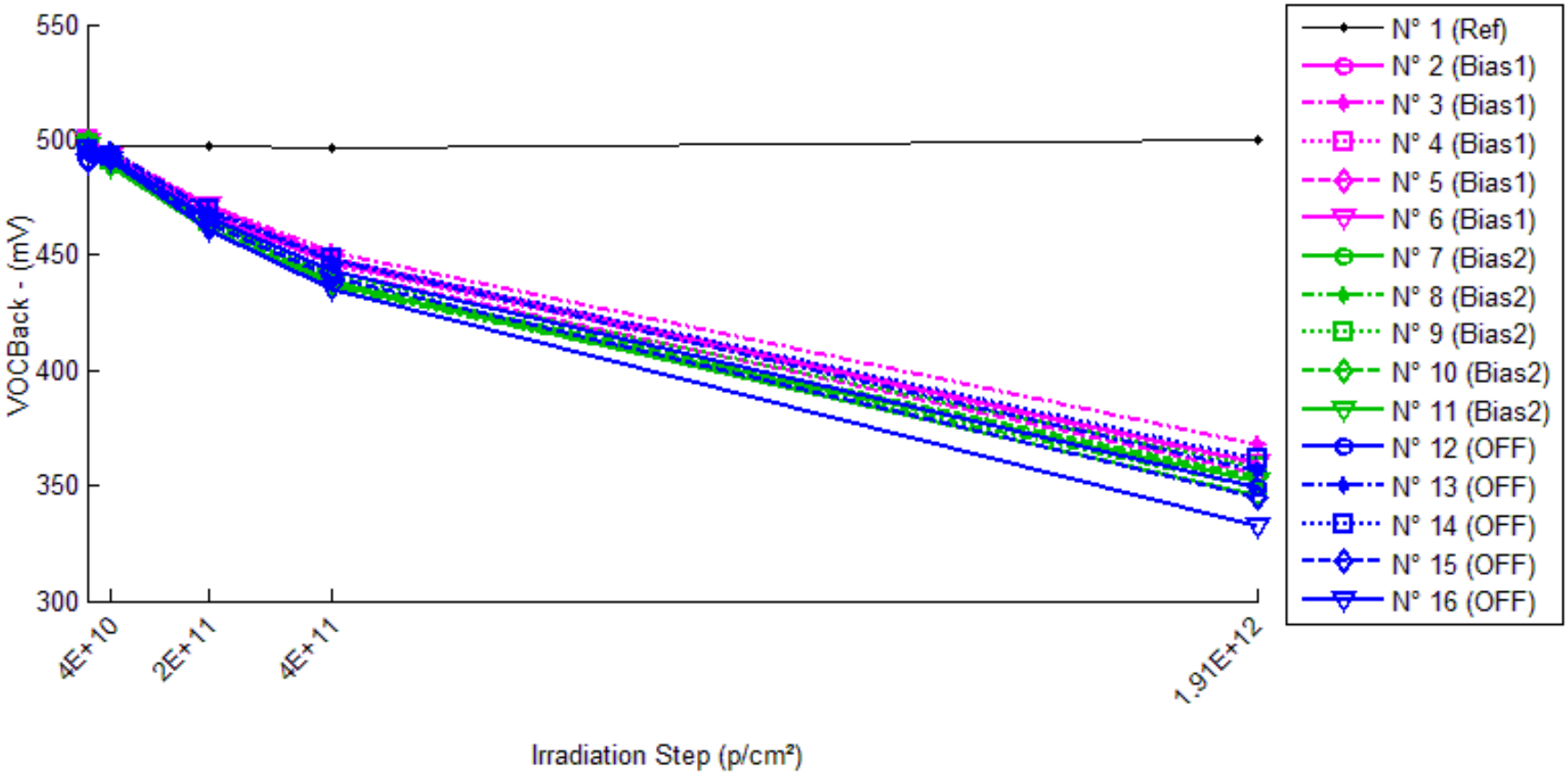
Delta [VOCFwd]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	1.982E-1	1.452E-1	-5.512E-1	2.347E+0
N° 2 (Bias1)	---	-6.702E+0	-3.135E+1	-5.187E+1	-1.387E+2
N° 3 (Bias1)	---	-6.097E+0	-2.963E+1	-5.011E+1	-1.335E+2
N° 4 (Bias1)	---	-6.734E+0	-3.103E+1	-5.361E+1	-1.406E+2
N° 5 (Bias1)	---	-5.484E+0	-2.909E+1	-5.234E+1	-1.400E+2
N° 6 (Bias1)	---	-5.366E+0	-2.695E+1	-5.087E+1	-1.397E+2
N° 7 (Bias2)	---	-5.853E+0	-3.120E+1	-5.995E+1	-1.522E+2
N° 8 (Bias2)	---	-6.838E+0	-3.444E+1	-5.967E+1	-1.469E+2
N° 9 (Bias2)	---	-7.975E+0	-3.494E+1	-5.735E+1	-1.399E+2
N° 10 (Bias2)	---	-7.856E+0	-3.660E+1	-5.974E+1	-1.454E+2
N° 11 (Bias2)	---	-8.240E+0	-3.653E+1	-6.036E+1	-1.459E+2
N° 12 (OFF)	---	5.522E-1	-2.587E+1	-4.832E+1	-1.431E+2
N° 13 (OFF)	---	-8.040E-1	-2.769E+1	-4.945E+1	-1.405E+2
N° 14 (OFF)	---	-2.679E+0	-2.585E+1	-4.697E+1	-1.343E+2
N° 15 (OFF)	---	-2.494E+0	-3.206E+1	-5.488E+1	-1.514E+2
N° 16 (OFF)	---	6.043E-1	-2.896E+1	-5.522E+1	-1.582E+2
Average (Bias1)	---	-6.077E+0	-2.961E+1	-5.176E+1	-1.385E+2
σ (Bias1)	---	6.481E-1	1.759E+0	1.349E+0	2.897E+0
Average+3σ (Bias1)	---	-4.132E+0	-2.433E+1	-4.771E+1	-1.298E+2
Average-3σ (Bias1)	---	-8.021E+0	-3.489E+1	-5.581E+1	-1.472E+2
Average (Bias2)	---	-7.353E+0	-3.474E+1	-5.941E+1	-1.461E+2
σ (Bias2)	---	9.925E-1	2.196E+0	1.185E+0	4.363E+0
Average+3σ (Bias2)	---	-4.375E+0	-2.815E+1	-5.586E+1	-1.330E+2
Average-3σ (Bias2)	---	-1.033E+1	-4.133E+1	-6.297E+1	-1.592E+2
Average (OFF)	---	-9.641E-1	-2.809E+1	-5.097E+1	-1.455E+2
σ (OFF)	---	1.586E+0	2.579E+0	3.829E+0	9.357E+0
Average+3σ (OFF)	---	3.795E+0	-2.035E+1	-3.948E+1	-1.174E+2
Average-3σ (OFF)	---	-5.723E+0	-3.582E+1	-6.246E+1	-1.736E+2

190 MeV proton / detailed results

6. VOCBack

Ta = 25°C ; IF = 10mA



190 MeV proton / detailed results

VOCBack . (mV)

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	497.243	497.474	497.397	496.701	499.608
N° 2 (Bias1)	498.706	491.681	466.993	446.359	359.621
N° 3 (Bias1)	500.312	494.516	471.154	450.728	367.470
N° 4 (Bias1)	499.974	493.170	468.811	446.187	359.104
N° 5 (Bias1)	496.012	490.272	466.655	443.417	355.801
N° 6 (Bias1)	498.600	493.125	471.826	448.131	359.752
N° 7 (Bias2)	497.021	491.222	466.190	437.644	345.550
N° 8 (Bias2)	495.264	488.198	461.209	436.291	349.461
N° 9 (Bias2)	498.138	490.798	464.049	441.425	358.417
N° 10 (Bias2)	499.036	490.839	462.135	439.054	353.619
N° 11 (Bias2)	497.059	488.761	460.817	437.148	351.886
N° 12 (OFF)	490.859	491.669	465.787	443.601	349.412
N° 13 (OFF)	496.369	495.917	469.185	447.340	356.041
N° 14 (OFF)	495.794	493.127	470.014	448.862	361.355
N° 15 (OFF)	495.183	492.558	463.313	440.604	344.474
N° 16 (OFF)	490.461	490.838	461.261	435.241	332.614

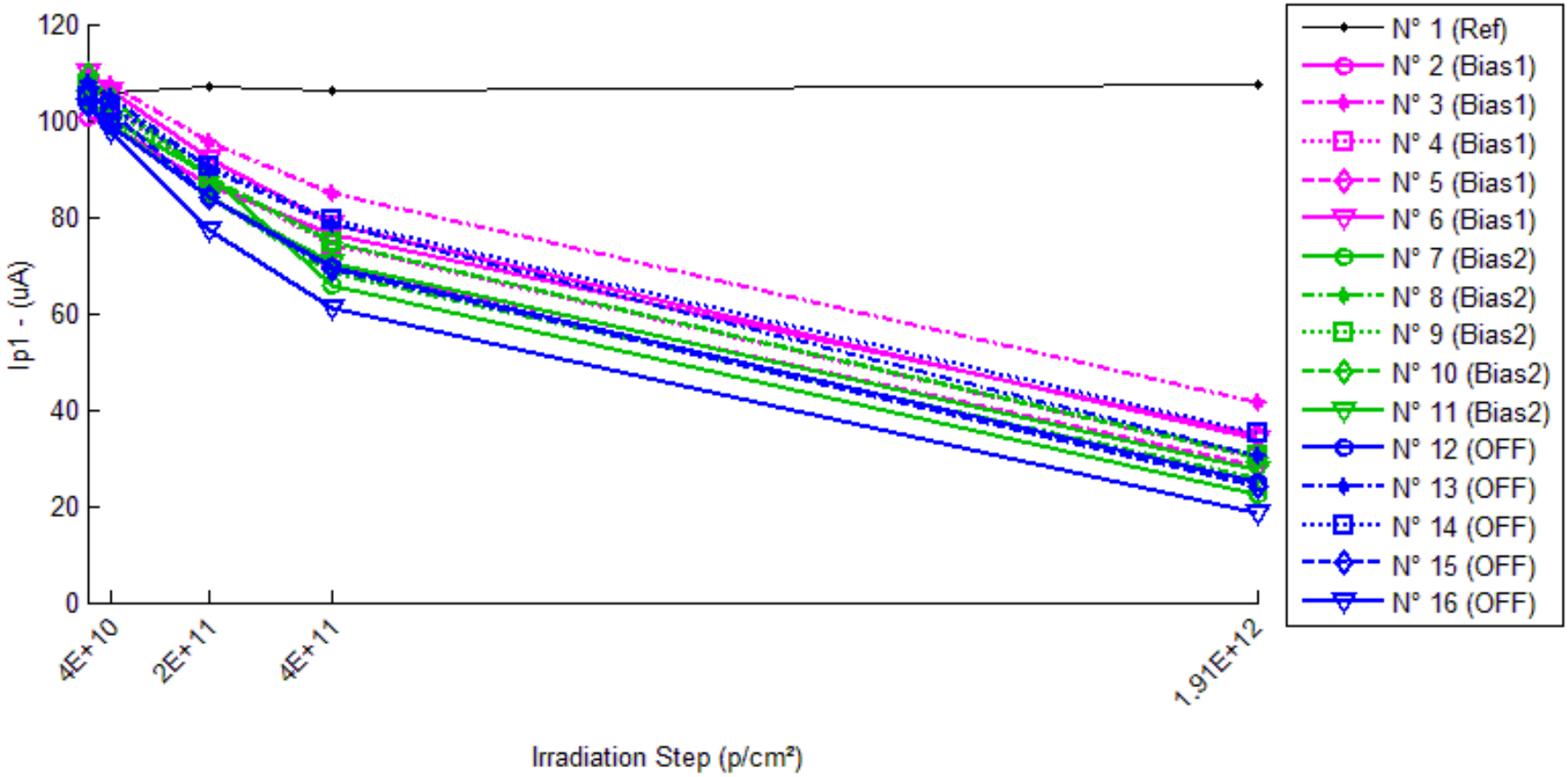
Delta [VOCBack]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	2.312E-1	1.542E-1	-5.424E-1	2.365E+0
N° 2 (Bias1)	---	-7.025E+0	-3.171E+1	-5.235E+1	-1.391E+2
N° 3 (Bias1)	---	-5.796E+0	-2.916E+1	-4.958E+1	-1.328E+2
N° 4 (Bias1)	---	-6.804E+0	-3.116E+1	-5.379E+1	-1.409E+2
N° 5 (Bias1)	---	-5.740E+0	-2.936E+1	-5.260E+1	-1.402E+2
N° 6 (Bias1)	---	-5.475E+0	-2.677E+1	-5.047E+1	-1.388E+2
N° 7 (Bias2)	---	-5.800E+0	-3.083E+1	-5.938E+1	-1.515E+2
N° 8 (Bias2)	---	-7.066E+0	-3.406E+1	-5.897E+1	-1.458E+2
N° 9 (Bias2)	---	-7.340E+0	-3.409E+1	-5.671E+1	-1.397E+2
N° 10 (Bias2)	---	-8.197E+0	-3.690E+1	-5.998E+1	-1.454E+2
N° 11 (Bias2)	---	-8.298E+0	-3.624E+1	-5.991E+1	-1.452E+2
N° 12 (OFF)	---	8.096E-1	-2.507E+1	-4.726E+1	-1.414E+2
N° 13 (OFF)	---	-4.528E-1	-2.718E+1	-4.903E+1	-1.403E+2
N° 14 (OFF)	---	-2.667E+0	-2.578E+1	-4.693E+1	-1.344E+2
N° 15 (OFF)	---	-2.625E+0	-3.187E+1	-5.458E+1	-1.507E+2
N° 16 (OFF)	---	3.771E-1	-2.920E+1	-5.522E+1	-1.578E+2
Average (Bias1)	---	-6.168E+0	-2.963E+1	-5.176E+1	-1.384E+2
σ (Bias1)	---	6.967E-1	1.946E+0	1.700E+0	3.199E+0
Average+3σ (Bias1)	---	-4.078E+0	-2.380E+1	-4.666E+1	-1.288E+2
Average-3σ (Bias1)	---	-8.258E+0	-3.547E+1	-5.686E+1	-1.480E+2
Average (Bias2)	---	-7.340E+0	-3.442E+1	-5.899E+1	-1.455E+2
σ (Bias2)	---	1.012E+0	2.377E+0	1.338E+0	4.161E+0
Average+3σ (Bias2)	---	-4.303E+0	-2.729E+1	-5.498E+1	-1.330E+2
Average-3σ (Bias2)	---	-1.038E+1	-4.155E+1	-6.301E+1	-1.580E+2
Average (OFF)	---	-9.116E-1	-2.782E+1	-5.060E+1	-1.450E+2
σ (OFF)	---	1.647E+0	2.758E+0	4.008E+0	9.268E+0
Average+3σ (OFF)	---	4.030E+0	-1.955E+1	-3.858E+1	-1.171E+2
Average-3σ (OFF)	---	-5.853E+0	-3.609E+1	-6.263E+1	-1.728E+2

190 MeV proton / detailed results

7. Ip1

Ta = 25°C ; IF = 10mA ; Vdet = -15V



190 MeV proton / detailed results

Ip1. (uA)

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	105.640	105.925	107.199	106.352	107.348
N° 2 (Bias1)	100.727	98.791	86.549	76.219	34.865
N° 3 (Bias1)	109.803	107.271	95.653	84.801	41.652
N° 4 (Bias1)	107.528	103.017	87.946	74.050	30.209
N° 5 (Bias1)	103.747	99.180	84.140	70.187	28.302
N° 6 (Bias1)	109.982	106.136	92.340	78.595	33.875
N° 7 (Bias2)	104.596	100.277	88.852	65.930	22.175
N° 8 (Bias2)	103.596	98.754	84.214	68.390	25.551
N° 9 (Bias2)	107.556	102.808	87.833	74.643	30.515
N° 10 (Bias2)	109.374	104.646	88.410	74.618	29.837
N° 11 (Bias2)	104.302	99.378	84.064	70.565	27.537
N° 12 (OFF)	103.277	99.087	84.101	69.426	24.688
N° 13 (OFF)	107.817	104.909	89.887	78.358	30.458
N° 14 (OFF)	104.944	102.640	90.555	79.365	35.078
N° 15 (OFF)	106.647	102.010	84.064	69.034	23.902
N° 16 (OFF)	102.579	97.599	77.358	60.972	18.696

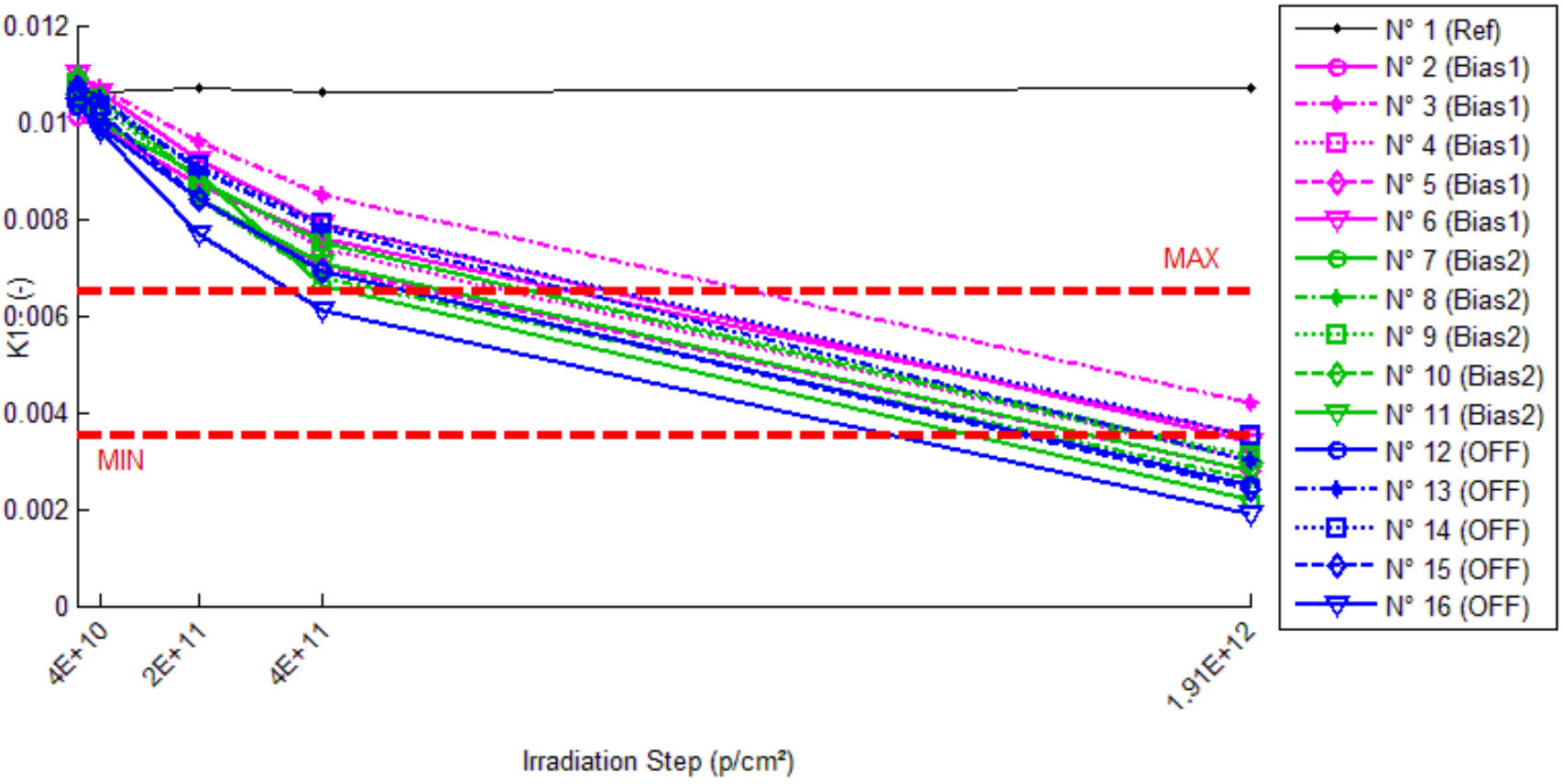
Delta [Ip1]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	2.851E-1	1.559E+0	7.123E-1	1.708E+0
N° 2 (Bias1)	---	-1.936E+0	-1.418E+1	-2.451E+1	-6.586E+1
N° 3 (Bias1)	---	-2.532E+0	-1.415E+1	-2.500E+1	-6.815E+1
N° 4 (Bias1)	---	-4.511E+0	-1.958E+1	-3.348E+1	-7.732E+1
N° 5 (Bias1)	---	-4.567E+0	-1.961E+1	-3.356E+1	-7.544E+1
N° 6 (Bias1)	---	-3.845E+0	-1.764E+1	-3.139E+1	-7.611E+1
N° 7 (Bias2)	---	-4.319E+0	-1.574E+1	-3.867E+1	-8.242E+1
N° 8 (Bias2)	---	-4.842E+0	-1.938E+1	-3.521E+1	-7.804E+1
N° 9 (Bias2)	---	-4.748E+0	-1.972E+1	-3.291E+1	-7.704E+1
N° 10 (Bias2)	---	-4.729E+0	-2.096E+1	-3.476E+1	-7.954E+1
N° 11 (Bias2)	---	-4.924E+0	-2.024E+1	-3.374E+1	-7.676E+1
N° 12 (OFF)	---	-4.190E+0	-1.918E+1	-3.385E+1	-7.859E+1
N° 13 (OFF)	---	-2.908E+0	-1.793E+1	-2.946E+1	-7.736E+1
N° 14 (OFF)	---	-2.304E+0	-1.439E+1	-2.558E+1	-6.987E+1
N° 15 (OFF)	---	-4.638E+0	-2.258E+1	-3.761E+1	-8.274E+1
N° 16 (OFF)	---	-4.980E+0	-2.522E+1	-4.161E+1	-8.388E+1
Average (Bias1)	---	-3.478E+0	-1.703E+1	-2.959E+1	-7.258E+1
σ (Bias1)	---	1.190E+0	2.737E+0	4.499E+0	5.192E+0
Average+3σ (Bias1)	---	9.120E-2	-8.822E+0	-1.609E+1	-5.700E+1
Average-3σ (Bias1)	---	-7.048E+0	-2.524E+1	-4.308E+1	-8.815E+1
Average (Bias2)	---	-4.712E+0	-1.921E+1	-3.506E+1	-7.876E+1
σ (Bias2)	---	2.334E-1	2.028E+0	2.206E+0	2.316E+0
Average+3σ (Bias2)	---	-4.012E+0	-1.313E+1	-2.844E+1	-7.181E+1
Average-3σ (Bias2)	---	-5.412E+0	-2.529E+1	-4.167E+1	-8.571E+1
Average (OFF)	---	-3.804E+0	-1.986E+1	-3.362E+1	-7.849E+1
σ (OFF)	---	1.149E+0	4.192E+0	6.359E+0	5.542E+0
Average+3σ (OFF)	---	-3.571E-1	-7.285E+0	-1.454E+1	-6.186E+1
Average-3σ (OFF)	---	-7.250E+0	-3.243E+1	-5.270E+1	-9.511E+1

190 MeV proton / detailed results

8. K1

Ta = 25°C ; IF = 10mA ; Vdet = -15V



190 MeV proton / detailed results

K1. (-) **Min = 0.0035 Max = 0.0065**

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	0.0106	0.0106	0.0107	0.0106	0.0107
N° 2 (Bias1)	0.0101	0.0099	0.0087	0.0076	0.0035
N° 3 (Bias1)	0.0110	0.0107	0.0096	0.0085	0.0042
N° 4 (Bias1)	0.0108	0.0103	0.0088	0.0074	0.0030
N° 5 (Bias1)	0.0104	0.0099	0.0084	0.0070	0.0028
N° 6 (Bias1)	0.0110	0.0106	0.0092	0.0079	0.0034
N° 7 (Bias2)	0.0105	0.0100	0.0089	0.0066	0.0022
N° 8 (Bias2)	0.0104	0.0099	0.0084	0.0068	0.0026
N° 9 (Bias2)	0.0108	0.0103	0.0088	0.0075	0.0031
N° 10 (Bias2)	0.0109	0.0105	0.0088	0.0075	0.0030
N° 11 (Bias2)	0.0104	0.0099	0.0084	0.0071	0.0028
N° 12 (OFF)	0.0103	0.0099	0.0084	0.0069	0.0025
N° 13 (OFF)	0.0108	0.0105	0.0090	0.0078	0.0030
N° 14 (OFF)	0.0105	0.0103	0.0091	0.0079	0.0035
N° 15 (OFF)	0.0107	0.0102	0.0084	0.0069	0.0024
N° 16 (OFF)	0.0103	0.0098	0.0077	0.0061	0.0019

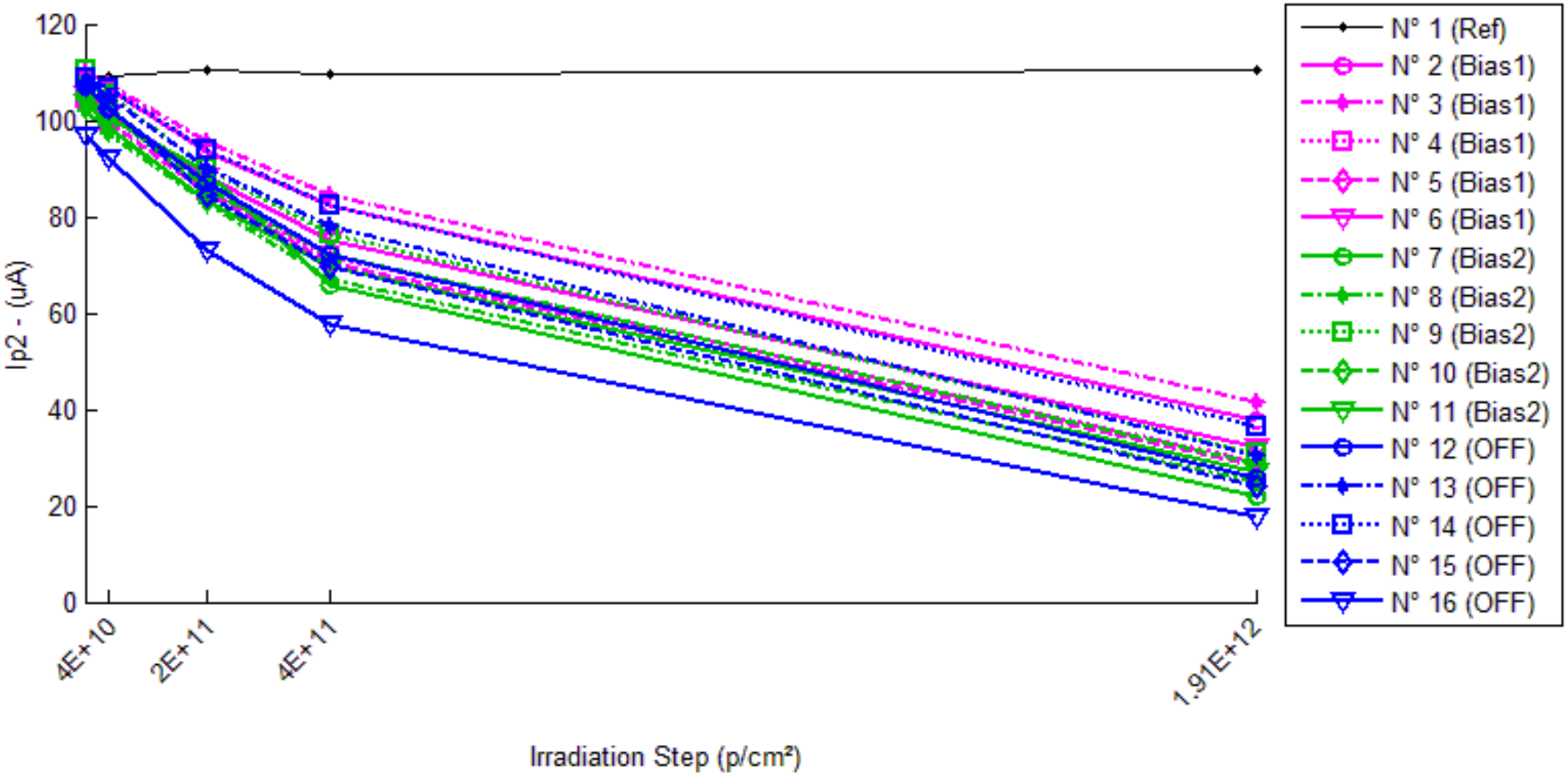
Delta [K1]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	2.851E-5	1.559E-4	7.123E-5	1.708E-4
N° 2 (Bias1)	---	-1.936E-4	-1.418E-3	-2.451E-3	-6.586E-3
N° 3 (Bias1)	---	-2.532E-4	-1.415E-3	-2.500E-3	-6.815E-3
N° 4 (Bias1)	---	-4.511E-4	-1.958E-3	-3.348E-3	-7.732E-3
N° 5 (Bias1)	---	-4.567E-4	-1.961E-3	-3.356E-3	-7.544E-3
N° 6 (Bias1)	---	-3.845E-4	-1.764E-3	-3.139E-3	-7.611E-3
N° 7 (Bias2)	---	-4.319E-4	-1.574E-3	-3.867E-3	-8.242E-3
N° 8 (Bias2)	---	-4.842E-4	-1.938E-3	-3.521E-3	-7.804E-3
N° 9 (Bias2)	---	-4.748E-4	-1.972E-3	-3.291E-3	-7.704E-3
N° 10 (Bias2)	---	-4.729E-4	-2.096E-3	-3.476E-3	-7.954E-3
N° 11 (Bias2)	---	-4.924E-4	-2.024E-3	-3.374E-3	-7.676E-3
N° 12 (OFF)	---	-4.190E-4	-1.918E-3	-3.385E-3	-7.859E-3
N° 13 (OFF)	---	-2.908E-4	-1.793E-3	-2.946E-3	-7.736E-3
N° 14 (OFF)	---	-2.304E-4	-1.439E-3	-2.558E-3	-6.987E-3
N° 15 (OFF)	---	-4.638E-4	-2.258E-3	-3.761E-3	-8.274E-3
N° 16 (OFF)	---	-4.980E-4	-2.522E-3	-4.161E-3	-8.388E-3
Average (Bias1)	---	-3.478E-4	-1.703E-3	-2.959E-3	-7.258E-3
σ (Bias1)	---	1.190E-4	2.737E-4	4.499E-4	5.192E-4
Average+3σ (Bias1)	---	9.120E-6	-8.822E-4	-1.609E-3	-5.700E-3
Average-3σ (Bias1)	---	-7.048E-4	-2.524E-3	-4.308E-3	-8.815E-3
Average (Bias2)	---	-4.712E-4	-1.921E-3	-3.506E-3	-7.876E-3
σ (Bias2)	---	2.334E-5	2.028E-4	2.206E-4	2.316E-4
Average+3σ (Bias2)	---	-4.012E-4	-1.313E-3	-2.844E-3	-7.181E-3
Average-3σ (Bias2)	---	-5.412E-4	-2.529E-3	-4.167E-3	-8.571E-3
Average (OFF)	---	-3.804E-4	-1.986E-3	-3.362E-3	-7.849E-3
σ (OFF)	---	1.149E-4	4.192E-4	6.359E-4	5.542E-4
Average+3σ (OFF)	---	-3.571E-5	-7.285E-4	-1.454E-3	-6.186E-3
Average-3σ (OFF)	---	-7.250E-4	-3.243E-3	-5.270E-3	-9.511E-3

190 MeV proton / detailed results

9. Ip2

Ta = 25°C ; Vcc = 5V ; If = 8mA



190 MeV proton / detailed results

Ip2. (uA)

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	108.795	109.058	110.371	109.497	110.514
N° 2 (Bias1)	108.768	106.623	93.440	82.337	37.738
N° 3 (Bias1)	110.192	107.538	95.707	84.677	41.593
N° 4 (Bias1)	104.401	99.993	85.199	71.674	29.052
N° 5 (Bias1)	104.504	99.924	84.682	70.562	28.424
N° 6 (Bias1)	105.403	101.680	88.293	75.010	32.084
N° 7 (Bias2)	105.008	100.577	88.953	65.897	22.071
N° 8 (Bias2)	102.038	97.100	82.561	66.876	24.809
N° 9 (Bias2)	110.225	105.237	89.830	76.235	31.045
N° 10 (Bias2)	106.091	101.440	85.547	72.008	28.596
N° 11 (Bias2)	103.617	98.595	83.183	69.732	27.063
N° 12 (OFF)	106.934	102.517	87.074	71.947	25.637
N° 13 (OFF)	107.969	105.008	89.863	78.283	30.297
N° 14 (OFF)	108.841	106.465	93.835	82.156	36.226
N° 15 (OFF)	107.533	102.830	84.589	69.394	23.940
N° 16 (OFF)	97.010	92.229	73.033	57.454	17.451

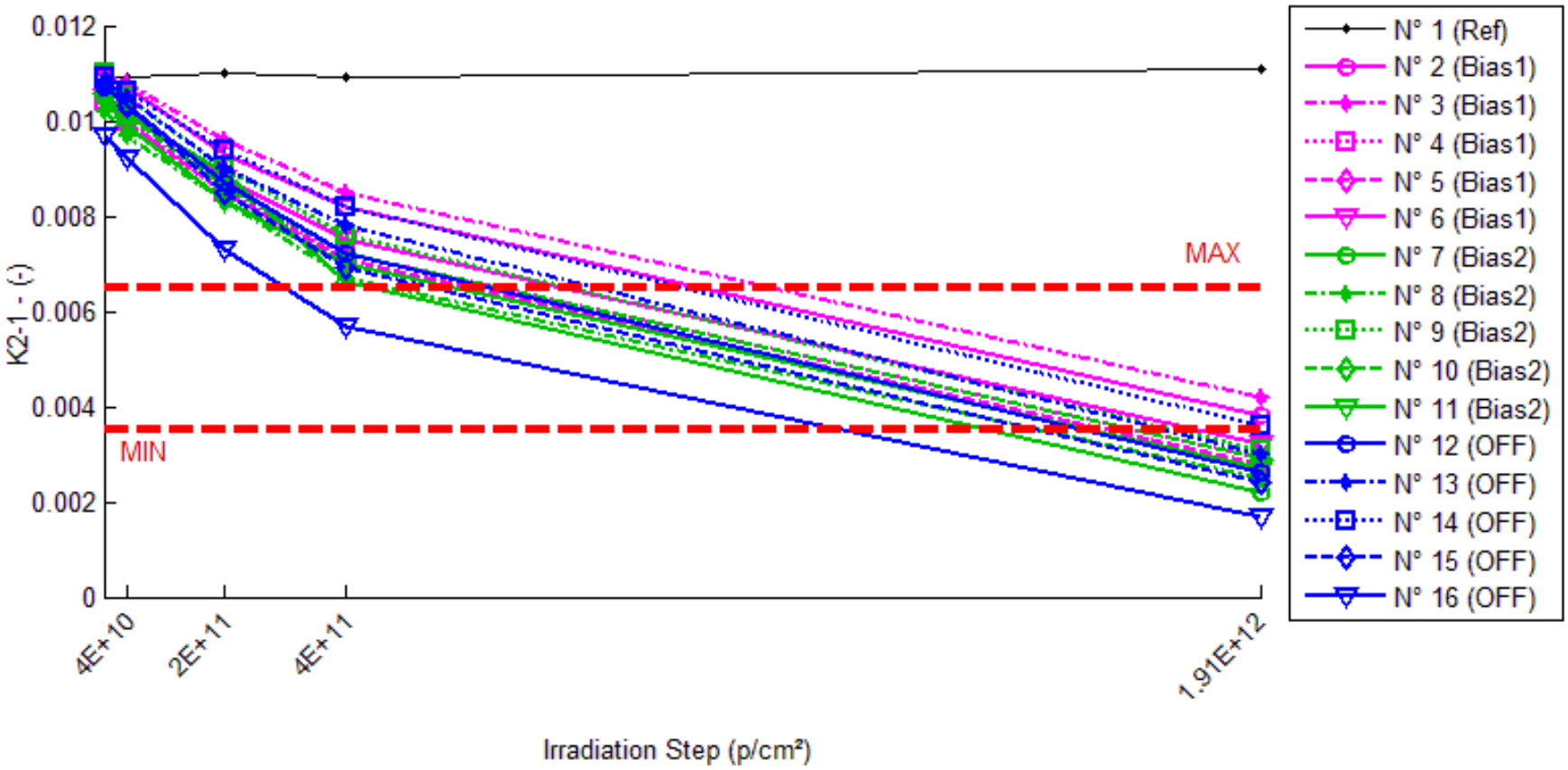
Delta [Ip2]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	2.629E-1	1.576E+0	7.017E-1	1.719E+0
N° 2 (Bias1)	---	-2.145E+0	-1.533E+1	-2.643E+1	-7.103E+1
N° 3 (Bias1)	---	-2.654E+0	-1.449E+1	-2.551E+1	-6.860E+1
N° 4 (Bias1)	---	-4.408E+0	-1.920E+1	-3.273E+1	-7.535E+1
N° 5 (Bias1)	---	-4.580E+0	-1.982E+1	-3.394E+1	-7.608E+1
N° 6 (Bias1)	---	-3.724E+0	-1.711E+1	-3.039E+1	-7.332E+1
N° 7 (Bias2)	---	-4.431E+0	-1.606E+1	-3.911E+1	-8.294E+1
N° 8 (Bias2)	---	-4.938E+0	-1.948E+1	-3.516E+1	-7.723E+1
N° 9 (Bias2)	---	-4.988E+0	-2.040E+1	-3.399E+1	-7.918E+1
N° 10 (Bias2)	---	-4.651E+0	-2.054E+1	-3.408E+1	-7.750E+1
N° 11 (Bias2)	---	-5.022E+0	-2.043E+1	-3.389E+1	-7.655E+1
N° 12 (OFF)	---	-4.418E+0	-1.986E+1	-3.499E+1	-8.130E+1
N° 13 (OFF)	---	-2.961E+0	-1.811E+1	-2.969E+1	-7.767E+1
N° 14 (OFF)	---	-2.376E+0	-1.501E+1	-2.669E+1	-7.262E+1
N° 15 (OFF)	---	-4.702E+0	-2.294E+1	-3.814E+1	-8.359E+1
N° 16 (OFF)	---	-4.781E+0	-2.398E+1	-3.956E+1	-7.956E+1
Average (Bias1)	---	-3.502E+0	-1.719E+1	-2.980E+1	-7.288E+1
σ (Bias1)	---	1.071E+0	2.333E+0	3.735E+0	3.094E+0
Average+3σ (Bias1)	---	-2.877E-1	-1.019E+1	-1.860E+1	-6.359E+1
Average-3σ (Bias1)	---	-6.716E+0	-2.419E+1	-4.101E+1	-8.216E+1
Average (Bias2)	---	-4.806E+0	-1.938E+1	-3.525E+1	-7.868E+1
σ (Bias2)	---	2.561E-1	1.908E+0	2.221E+0	2.569E+0
Average+3σ (Bias2)	---	-4.038E+0	-1.366E+1	-2.858E+1	-7.097E+1
Average-3σ (Bias2)	---	-5.574E+0	-2.511E+1	-4.191E+1	-8.639E+1
Average (OFF)	---	-3.848E+0	-1.998E+1	-3.381E+1	-7.895E+1
σ (OFF)	---	1.104E+0	3.641E+0	5.498E+0	4.159E+0
Average+3σ (OFF)	---	-5.351E-1	-9.055E+0	-1.732E+1	-6.647E+1
Average-3σ (OFF)	---	-7.161E+0	-3.090E+1	-5.031E+1	-9.143E+1

190 MeV proton / detailed results

10.K2-1

Ta = 25°C ; IF = 10mA ; Vdet = -15V



190 MeV proton / detailed results

K2-1. (-) **Min = 0.0035 Max = 0.0065**

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	0.0109	0.0109	0.0110	0.0109	0.0111
N° 2 (Bias1)	0.0109	0.0107	0.0093	0.0082	0.0038
N° 3 (Bias1)	0.0110	0.0108	0.0096	0.0085	0.0042
N° 4 (Bias1)	0.0104	0.0100	0.0085	0.0072	0.0029
N° 5 (Bias1)	0.0105	0.0100	0.0085	0.0071	0.0028
N° 6 (Bias1)	0.0105	0.0102	0.0088	0.0075	0.0032
N° 7 (Bias2)	0.0105	0.0101	0.0089	0.0066	0.0022
N° 8 (Bias2)	0.0102	0.0097	0.0083	0.0067	0.0025
N° 9 (Bias2)	0.0110	0.0105	0.0090	0.0076	0.0031
N° 10 (Bias2)	0.0106	0.0101	0.0086	0.0072	0.0029
N° 11 (Bias2)	0.0104	0.0099	0.0083	0.0070	0.0027
N° 12 (OFF)	0.0107	0.0103	0.0087	0.0072	0.0026
N° 13 (OFF)	0.0108	0.0105	0.0090	0.0078	0.0030
N° 14 (OFF)	0.0109	0.0106	0.0094	0.0082	0.0036
N° 15 (OFF)	0.0108	0.0103	0.0085	0.0069	0.0024
N° 16 (OFF)	0.0097	0.0092	0.0073	0.0057	0.0017

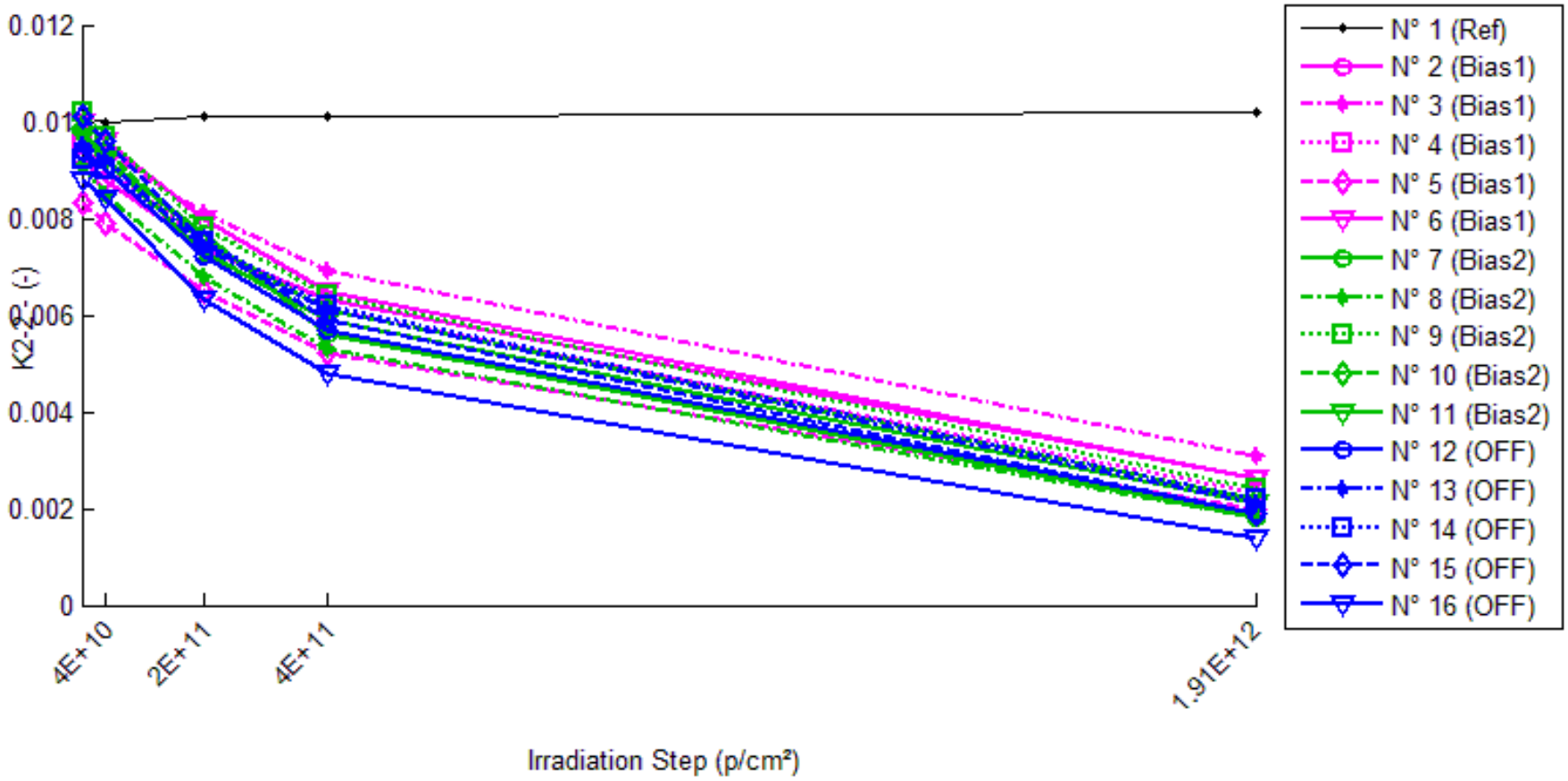
Delta [K2-1]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	2.629E-5	1.576E-4	7.017E-5	1.719E-4
N° 2 (Bias1)	---	-2.145E-4	-1.533E-3	-2.643E-3	-7.103E-3
N° 3 (Bias1)	---	-2.654E-4	-1.449E-3	-2.551E-3	-6.860E-3
N° 4 (Bias1)	---	-4.408E-4	-1.920E-3	-3.273E-3	-7.535E-3
N° 5 (Bias1)	---	-4.580E-4	-1.982E-3	-3.394E-3	-7.608E-3
N° 6 (Bias1)	---	-3.724E-4	-1.711E-3	-3.039E-3	-7.332E-3
N° 7 (Bias2)	---	-4.431E-4	-1.606E-3	-3.911E-3	-8.294E-3
N° 8 (Bias2)	---	-4.938E-4	-1.948E-3	-3.516E-3	-7.723E-3
N° 9 (Bias2)	---	-4.988E-4	-2.040E-3	-3.399E-3	-7.918E-3
N° 10 (Bias2)	---	-4.651E-4	-2.054E-3	-3.408E-3	-7.750E-3
N° 11 (Bias2)	---	-5.022E-4	-2.043E-3	-3.389E-3	-7.655E-3
N° 12 (OFF)	---	-4.418E-4	-1.986E-3	-3.499E-3	-8.130E-3
N° 13 (OFF)	---	-2.961E-4	-1.811E-3	-2.969E-3	-7.767E-3
N° 14 (OFF)	---	-2.377E-4	-1.501E-3	-2.669E-3	-7.262E-3
N° 15 (OFF)	---	-4.702E-4	-2.294E-3	-3.814E-3	-8.359E-3
N° 16 (OFF)	---	-4.781E-4	-2.398E-3	-3.956E-3	-7.956E-3
Average (Bias1)	---	-3.502E-4	-1.719E-3	-2.980E-3	-7.288E-3
σ (Bias1)	---	1.071E-4	2.333E-4	3.735E-4	3.094E-4
Average+3σ (Bias1)	---	-2.877E-5	-1.019E-3	-1.860E-3	-6.359E-3
Average-3σ (Bias1)	---	-6.716E-4	-2.419E-3	-4.101E-3	-8.216E-3
Average (Bias2)	---	-4.806E-4	-1.938E-3	-3.525E-3	-7.868E-3
σ (Bias2)	---	2.561E-5	1.908E-4	2.221E-4	2.569E-4
Average+3σ (Bias2)	---	-4.038E-4	-1.366E-3	-2.858E-3	-7.097E-3
Average-3σ (Bias2)	---	-5.574E-4	-2.511E-3	-4.191E-3	-8.639E-3
Average (OFF)	---	-3.848E-4	-1.998E-3	-3.381E-3	-7.895E-3
σ (OFF)	---	1.104E-4	3.641E-4	5.498E-4	4.159E-4
Average+3σ (OFF)	---	-5.351E-5	-9.055E-4	-1.732E-3	-6.647E-3
Average-3σ (OFF)	---	-7.161E-4	-3.090E-3	-5.031E-3	-9.143E-3

190 MeV proton / detailed results

11.K2-2

Ta = 25°C ; IF = 1mA ; Vdet = -15V



190 MeV proton / detailed results

K2-2 . (-)

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	0.0101	0.0100	0.0101	0.0101	0.0102
N° 2 (Bias1)	0.0092	0.0088	0.0074	0.0063	0.0026
N° 3 (Bias1)	0.0098	0.0094	0.0081	0.0069	0.0031
N° 4 (Bias1)	0.0096	0.0091	0.0075	0.0061	0.0023
N° 5 (Bias1)	0.0083	0.0079	0.0065	0.0052	0.0020
N° 6 (Bias1)	0.0100	0.0096	0.0080	0.0065	0.0026
N° 7 (Bias2)	0.0098	0.0092	0.0077	0.0056	0.0018
N° 8 (Bias2)	0.0091	0.0085	0.0068	0.0053	0.0018
N° 9 (Bias2)	0.0102	0.0097	0.0078	0.0064	0.0024
N° 10 (Bias2)	0.0099	0.0094	0.0075	0.0061	0.0022
N° 11 (Bias2)	0.0097	0.0092	0.0073	0.0059	0.0021
N° 12 (OFF)	0.0094	0.0090	0.0072	0.0057	0.0019
N° 13 (OFF)	0.0095	0.0092	0.0074	0.0061	0.0021
N° 14 (OFF)	0.0092	0.0090	0.0075	0.0062	0.0022
N° 15 (OFF)	0.0101	0.0096	0.0075	0.0059	0.0019
N° 16 (OFF)	0.0088	0.0084	0.0063	0.0048	0.0014

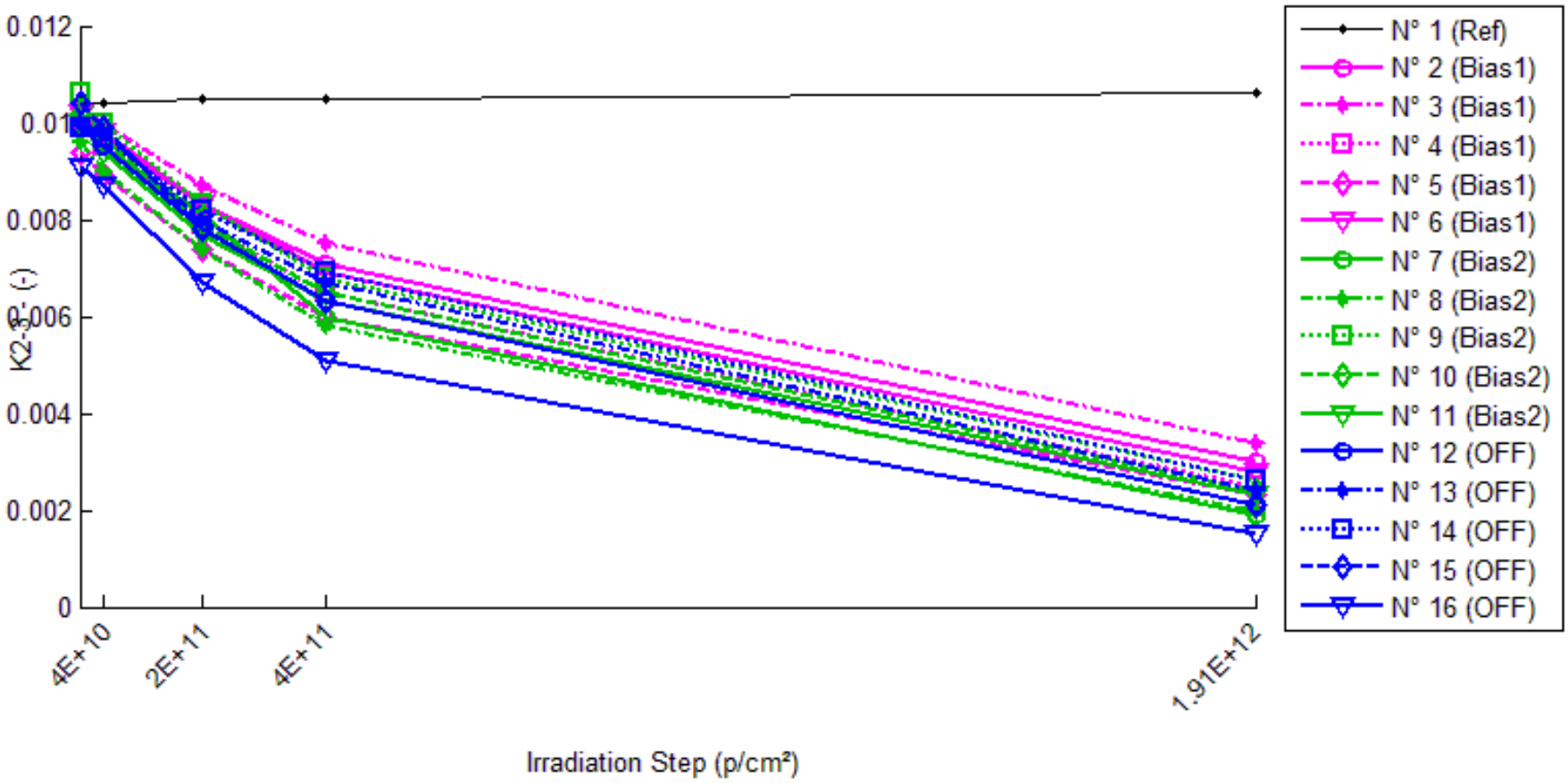
Delta [K2-2]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	-3.599E-5	8.181E-5	1.336E-5	1.202E-4
N° 2 (Bias1)	---	-3.846E-4	-1.774E-3	-2.945E-3	-6.608E-3
N° 3 (Bias1)	---	-3.352E-4	-1.673E-3	-2.873E-3	-6.709E-3
N° 4 (Bias1)	---	-4.972E-4	-2.099E-3	-3.504E-3	-7.230E-3
N° 5 (Bias1)	---	-3.859E-4	-1.819E-3	-3.082E-3	-6.288E-3
N° 6 (Bias1)	---	-3.645E-4	-1.914E-3	-3.408E-3	-7.391E-3
N° 7 (Bias2)	---	-5.573E-4	-2.118E-3	-4.161E-3	-7.980E-3
N° 8 (Bias2)	---	-5.386E-4	-2.284E-3	-3.785E-3	-7.311E-3
N° 9 (Bias2)	---	-5.443E-4	-2.388E-3	-3.823E-3	-7.879E-3
N° 10 (Bias2)	---	-4.948E-4	-2.365E-3	-3.770E-3	-7.640E-3
N° 11 (Bias2)	---	-5.202E-4	-2.327E-3	-3.749E-3	-7.550E-3
N° 12 (OFF)	---	-3.703E-4	-2.173E-3	-3.627E-3	-7.486E-3
N° 13 (OFF)	---	-2.534E-4	-2.073E-3	-3.352E-3	-7.390E-3
N° 14 (OFF)	---	-2.139E-4	-1.728E-3	-3.041E-3	-6.997E-3
N° 15 (OFF)	---	-4.906E-4	-2.589E-3	-4.134E-3	-8.147E-3
N° 16 (OFF)	---	-4.046E-4	-2.473E-3	-3.966E-3	-7.359E-3
Average (Bias1)	---	-3.935E-4	-1.856E-3	-3.163E-3	-6.845E-3
σ (Bias1)	---	6.150E-5	1.616E-4	2.806E-4	4.558E-4
Average+3σ (Bias1)	---	-2.090E-4	-1.371E-3	-2.321E-3	-5.478E-3
Average-3σ (Bias1)	---	-5.780E-4	-2.341E-3	-4.004E-3	-8.213E-3
Average (Bias2)	---	-5.310E-4	-2.297E-3	-3.858E-3	-7.672E-3
σ (Bias2)	---	2.427E-5	1.072E-4	1.715E-4	2.664E-4
Average+3σ (Bias2)	---	-4.582E-4	-1.975E-3	-3.343E-3	-6.873E-3
Average-3σ (Bias2)	---	-6.038E-4	-2.618E-3	-4.372E-3	-8.471E-3
Average (OFF)	---	-3.465E-4	-2.207E-3	-3.624E-3	-7.476E-3
σ (OFF)	---	1.129E-4	3.409E-4	4.448E-4	4.185E-4
Average+3σ (OFF)	---	-7.910E-6	-1.184E-3	-2.290E-3	-6.220E-3
Average-3σ (OFF)	---	-6.852E-4	-3.230E-3	-4.958E-3	-8.731E-3

190 MeV proton / detailed results

12.K2-3

Ta = 25°C ; IF = 2mA ; Vdet = -15V



190 MeV proton / detailed results

K2-3. (-)

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	0.0104	0.0104	0.0105	0.0105	0.0106
N° 2 (Bias1)	0.0100	0.0097	0.0083	0.0071	0.0030
N° 3 (Bias1)	0.0103	0.0100	0.0087	0.0075	0.0034
N° 4 (Bias1)	0.0099	0.0095	0.0079	0.0065	0.0025
N° 5 (Bias1)	0.0094	0.0089	0.0074	0.0060	0.0023
N° 6 (Bias1)	0.0102	0.0098	0.0083	0.0069	0.0028
N° 7 (Bias2)	0.0101	0.0095	0.0081	0.0060	0.0019
N° 8 (Bias2)	0.0096	0.0090	0.0074	0.0058	0.0020
N° 9 (Bias2)	0.0106	0.0100	0.0083	0.0068	0.0026
N° 10 (Bias2)	0.0102	0.0097	0.0079	0.0065	0.0024
N° 11 (Bias2)	0.0100	0.0094	0.0077	0.0063	0.0023
N° 12 (OFF)	0.0099	0.0095	0.0078	0.0063	0.0021
N° 13 (OFF)	0.0100	0.0098	0.0080	0.0067	0.0024
N° 14 (OFF)	0.0099	0.0097	0.0082	0.0069	0.0026
N° 15 (OFF)	0.0104	0.0099	0.0078	0.0063	0.0021
N° 16 (OFF)	0.0091	0.0087	0.0067	0.0051	0.0015

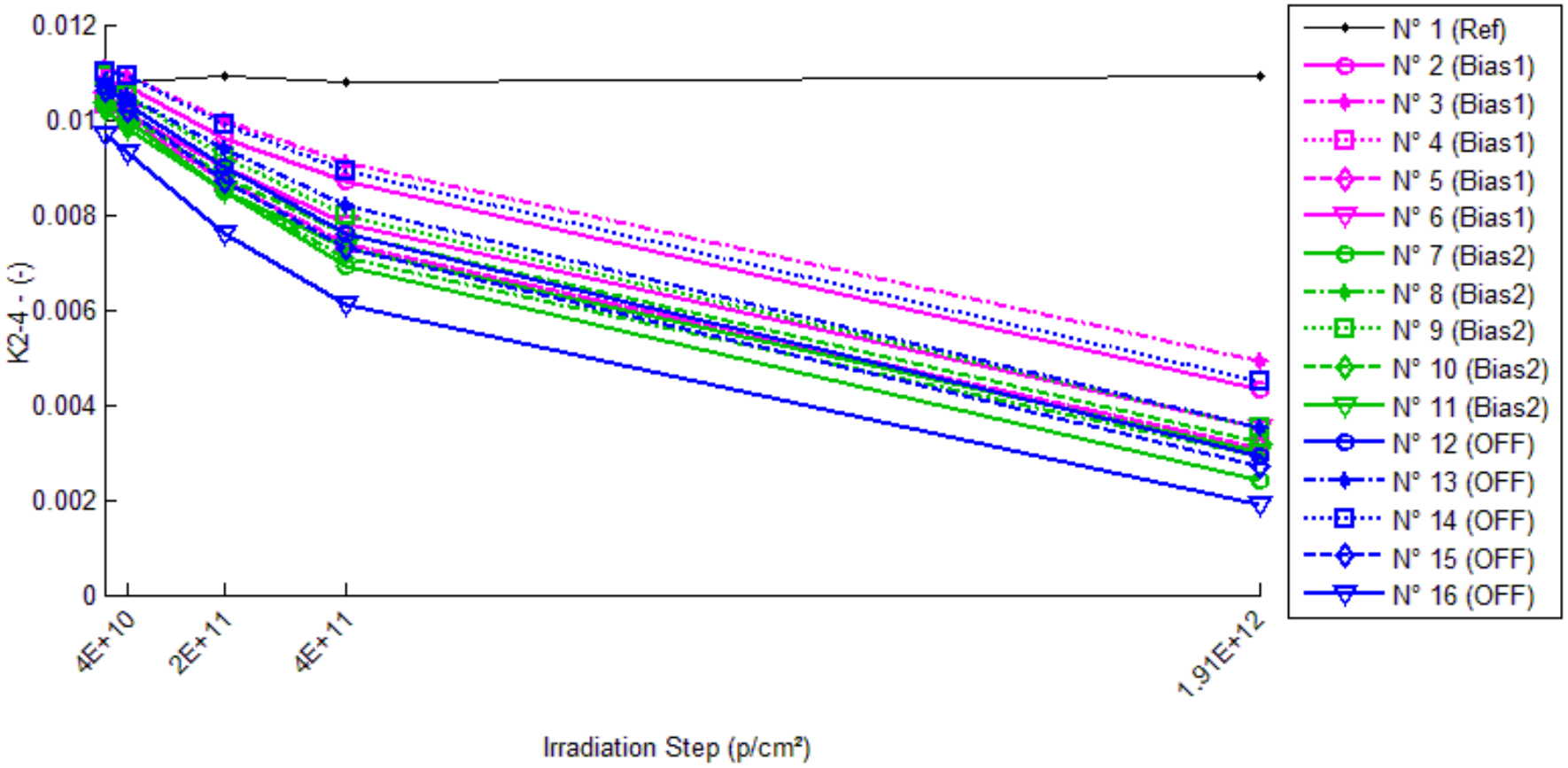
Delta [K2-3]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	-5.840E-6	1.100E-4	4.122E-5	1.424E-4
N° 2 (Bias1)	---	-3.430E-4	-1.763E-3	-2.960E-3	-7.032E-3
N° 3 (Bias1)	---	-3.178E-4	-1.635E-3	-2.836E-3	-6.916E-3
N° 4 (Bias1)	---	-4.813E-4	-2.069E-3	-3.477E-3	-7.433E-3
N° 5 (Bias1)	---	-4.444E-4	-1.989E-3	-3.361E-3	-7.051E-3
N° 6 (Bias1)	---	-3.813E-4	-1.881E-3	-3.337E-3	-7.459E-3
N° 7 (Bias2)	---	-5.191E-4	-1.928E-3	-4.114E-3	-8.139E-3
N° 8 (Bias2)	---	-5.321E-4	-2.206E-3	-3.766E-3	-7.574E-3
N° 9 (Bias2)	---	-5.334E-4	-2.287E-3	-3.721E-3	-7.980E-3
N° 10 (Bias2)	---	-4.894E-4	-2.282E-3	-3.692E-3	-7.756E-3
N° 11 (Bias2)	---	-5.222E-4	-2.255E-3	-3.669E-3	-7.668E-3
N° 12 (OFF)	---	-4.072E-4	-2.139E-3	-3.649E-3	-7.812E-3
N° 13 (OFF)	---	-2.548E-4	-2.023E-3	-3.294E-3	-7.670E-3
N° 14 (OFF)	---	-2.284E-4	-1.683E-3	-2.979E-3	-7.252E-3
N° 15 (OFF)	---	-4.927E-4	-2.521E-3	-4.084E-3	-8.301E-3
N° 16 (OFF)	---	-4.459E-4	-2.480E-3	-4.009E-3	-7.611E-3
Average (Bias1)	---	-3.936E-4	-1.867E-3	-3.194E-3	-7.178E-3
σ (Bias1)	---	6.839E-5	1.738E-4	2.791E-4	2.500E-4
Average+3σ (Bias1)	---	-1.884E-4	-1.346E-3	-2.357E-3	-6.428E-3
Average-3σ (Bias1)	---	-5.987E-4	-2.389E-3	-4.031E-3	-7.928E-3
Average (Bias2)	---	-5.192E-4	-2.192E-3	-3.792E-3	-7.824E-3
σ (Bias2)	---	1.778E-5	1.510E-4	1.833E-4	2.320E-4
Average+3σ (Bias2)	---	-4.659E-4	-1.739E-3	-3.242E-3	-7.128E-3
Average-3σ (Bias2)	---	-5.726E-4	-2.644E-3	-4.342E-3	-8.519E-3
Average (OFF)	---	-3.658E-4	-2.169E-3	-3.603E-3	-7.729E-3
σ (OFF)	---	1.177E-4	3.461E-4	4.700E-4	3.805E-4
Average+3σ (OFF)	---	-1.266E-5	-1.131E-3	-2.193E-3	-6.588E-3
Average-3σ (OFF)	---	-7.189E-4	-3.207E-3	-5.013E-3	-8.871E-3

190 MeV proton / detailed results

13.K2-4

Ta = 25°C ; IF = 60mA ; Vdet = -15V



190 MeV proton / detailed results

K2-4 . (-)

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	0.0107	0.0108	0.0109	0.0108	0.0109
N° 2 (Bias1)	0.0108	0.0107	0.0096	0.0087	0.0043
N° 3 (Bias1)	0.0111	0.0109	0.0100	0.0091	0.0049
N° 4 (Bias1)	0.0103	0.0100	0.0087	0.0074	0.0031
N° 5 (Bias1)	0.0104	0.0100	0.0087	0.0074	0.0031
N° 6 (Bias1)	0.0104	0.0101	0.0090	0.0078	0.0035
N° 7 (Bias2)	0.0104	0.0100	0.0085	0.0069	0.0024
N° 8 (Bias2)	0.0102	0.0098	0.0085	0.0071	0.0029
N° 9 (Bias2)	0.0109	0.0105	0.0092	0.0080	0.0035
N° 10 (Bias2)	0.0105	0.0101	0.0088	0.0076	0.0032
N° 11 (Bias2)	0.0102	0.0098	0.0085	0.0073	0.0030
N° 12 (OFF)	0.0107	0.0103	0.0090	0.0076	0.0029
N° 13 (OFF)	0.0108	0.0105	0.0094	0.0082	0.0035
N° 14 (OFF)	0.0110	0.0109	0.0099	0.0089	0.0045
N° 15 (OFF)	0.0106	0.0102	0.0087	0.0073	0.0027
N° 16 (OFF)	0.0097	0.0093	0.0076	0.0061	0.0019

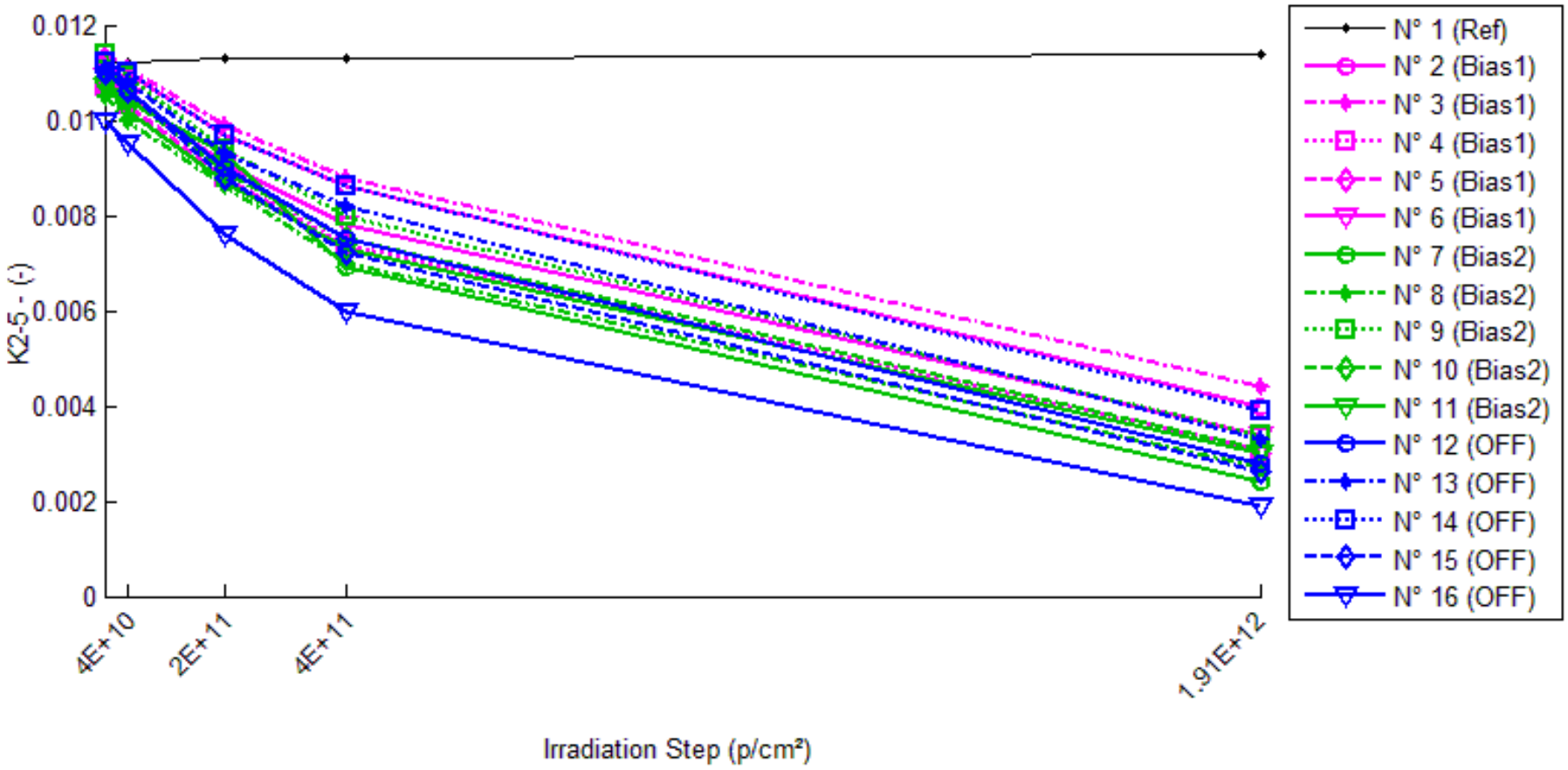
Delta [K2-4]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	3.374E-5	1.440E-4	7.324E-5	1.388E-4
N° 2 (Bias1)	---	-1.354E-4	-1.207E-3	-2.168E-3	-6.573E-3
N° 3 (Bias1)	---	-1.861E-4	-1.123E-3	-2.036E-3	-6.224E-3
N° 4 (Bias1)	---	-3.670E-4	-1.646E-3	-2.879E-3	-7.202E-3
N° 5 (Bias1)	---	-3.873E-4	-1.718E-3	-3.031E-3	-7.358E-3
N° 6 (Bias1)	---	-2.962E-4	-1.401E-3	-2.559E-3	-6.828E-3
N° 7 (Bias2)	---	-3.433E-4	-1.861E-3	-3.469E-3	-7.959E-3
N° 8 (Bias2)	---	-3.922E-4	-1.645E-3	-3.038E-3	-7.305E-3
N° 9 (Bias2)	---	-3.966E-4	-1.661E-3	-2.869E-3	-7.374E-3
N° 10 (Bias2)	---	-3.724E-4	-1.683E-3	-2.904E-3	-7.271E-3
N° 11 (Bias2)	---	-4.083E-4	-1.692E-3	-2.904E-3	-7.184E-3
N° 12 (OFF)	---	-3.537E-4	-1.685E-3	-3.082E-3	-7.764E-3
N° 13 (OFF)	---	-2.407E-4	-1.432E-3	-2.538E-3	-7.239E-3
N° 14 (OFF)	---	-1.681E-4	-1.150E-3	-2.114E-3	-6.581E-3
N° 15 (OFF)	---	-3.669E-4	-1.903E-3	-3.305E-3	-7.922E-3
N° 16 (OFF)	---	-4.044E-4	-2.102E-3	-3.609E-3	-7.784E-3
Average (Bias1)	---	-2.744E-4	-1.419E-3	-2.535E-3	-6.837E-3
σ (Bias1)	---	1.106E-4	2.616E-4	4.327E-4	4.608E-4
Average+3σ (Bias1)	---	5.732E-5	-6.341E-4	-1.236E-3	-5.455E-3
Average-3σ (Bias1)	---	-6.062E-4	-2.204E-3	-3.833E-3	-8.219E-3
Average (Bias2)	---	-3.826E-4	-1.708E-3	-3.037E-3	-7.419E-3
σ (Bias2)	---	2.551E-5	8.717E-5	2.501E-4	3.095E-4
Average+3σ (Bias2)	---	-3.060E-4	-1.447E-3	-2.287E-3	-6.490E-3
Average-3σ (Bias2)	---	-4.591E-4	-1.970E-3	-3.787E-3	-8.347E-3
Average (OFF)	---	-3.068E-4	-1.654E-3	-2.930E-3	-7.458E-3
σ (OFF)	---	9.867E-5	3.762E-4	6.008E-4	5.552E-4
Average+3σ (OFF)	---	-1.075E-5	-5.257E-4	-1.128E-3	-5.792E-3
Average-3σ (OFF)	---	-6.028E-4	-2.783E-3	-4.732E-3	-9.123E-3

190 MeV proton / detailed results

14.K2-5

Ta = 25°C ; IF = 10mA ; Vdet = -30V



190 MeV proton / detailed results

K2-5 . (-)

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	0.0112	0.0112	0.0113	0.0113	0.0114
N° 2 (Bias1)	0.0112	0.0110	0.0097	0.0086	0.0040
N° 3 (Bias1)	0.0114	0.0111	0.0099	0.0088	0.0044
N° 4 (Bias1)	0.0107	0.0103	0.0088	0.0074	0.0031
N° 5 (Bias1)	0.0107	0.0103	0.0088	0.0073	0.0030
N° 6 (Bias1)	0.0109	0.0105	0.0091	0.0078	0.0034
N° 7 (Bias2)	0.0108	0.0104	0.0093	0.0069	0.0024
N° 8 (Bias2)	0.0105	0.0100	0.0086	0.0070	0.0027
N° 9 (Bias2)	0.0114	0.0109	0.0094	0.0080	0.0034
N° 10 (Bias2)	0.0109	0.0105	0.0089	0.0075	0.0031
N° 11 (Bias2)	0.0107	0.0102	0.0087	0.0073	0.0030
N° 12 (OFF)	0.0110	0.0106	0.0090	0.0075	0.0028
N° 13 (OFF)	0.0111	0.0108	0.0093	0.0082	0.0033
N° 14 (OFF)	0.0112	0.0110	0.0097	0.0086	0.0039
N° 15 (OFF)	0.0110	0.0106	0.0088	0.0072	0.0026
N° 16 (OFF)	0.0100	0.0095	0.0076	0.0060	0.0019

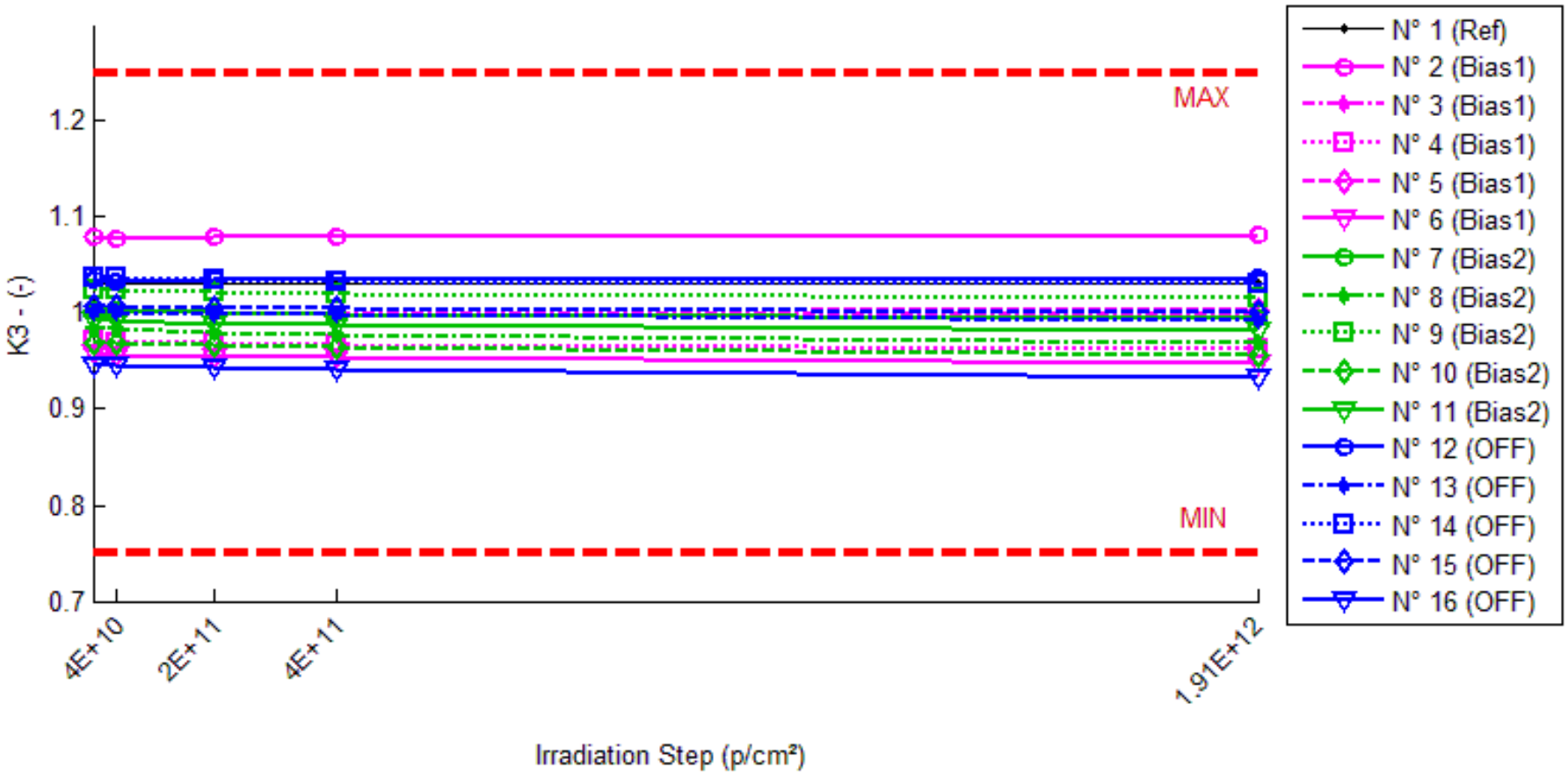
Delta [K2-5]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	2.688E-5	1.622E-4	7.152E-5	1.772E-4
N° 2 (Bias1)	---	-1.996E-4	-1.530E-3	-2.650E-3	-7.219E-3
N° 3 (Bias1)	---	-2.509E-4	-1.435E-3	-2.547E-3	-6.955E-3
N° 4 (Bias1)	---	-4.317E-4	-1.919E-3	-3.286E-3	-7.641E-3
N° 5 (Bias1)	---	-4.493E-4	-1.986E-3	-3.416E-3	-7.724E-3
N° 6 (Bias1)	---	-3.579E-4	-1.706E-3	-3.053E-3	-7.450E-3
N° 7 (Bias2)	---	-4.087E-4	-1.539E-3	-3.906E-3	-8.350E-3
N° 8 (Bias2)	---	-4.677E-4	-1.906E-3	-3.506E-3	-7.771E-3
N° 9 (Bias2)	---	-4.666E-4	-1.998E-3	-3.379E-3	-7.967E-3
N° 10 (Bias2)	---	-4.351E-4	-2.016E-3	-3.390E-3	-7.802E-3
N° 11 (Bias2)	---	-4.741E-4	-2.008E-3	-3.373E-3	-7.702E-3
N° 12 (OFF)	---	-4.212E-4	-1.945E-3	-3.478E-3	-8.163E-3
N° 13 (OFF)	---	-2.705E-4	-1.771E-3	-2.937E-3	-7.822E-3
N° 14 (OFF)	---	-2.135E-4	-1.458E-3	-2.635E-3	-7.287E-3
N° 15 (OFF)	---	-4.503E-4	-2.264E-3	-3.806E-3	-8.405E-3
N° 16 (OFF)	---	-4.596E-4	-2.373E-3	-3.958E-3	-8.036E-3
Average (Bias1)	---	-3.379E-4	-1.715E-3	-2.991E-3	-7.398E-3
σ (Bias1)	---	1.099E-4	2.387E-4	3.825E-4	3.148E-4
Average+3σ (Bias1)	---	-8.234E-6	-9.992E-4	-1.843E-3	-6.453E-3
Average-3σ (Bias1)	---	-6.675E-4	-2.431E-3	-4.138E-3	-8.342E-3
Average (Bias2)	---	-4.505E-4	-1.894E-3	-3.511E-3	-7.919E-3
σ (Bias2)	---	2.782E-5	2.028E-4	2.278E-4	2.602E-4
Average+3σ (Bias2)	---	-3.670E-4	-1.285E-3	-2.828E-3	-7.138E-3
Average-3σ (Bias2)	---	-5.339E-4	-2.502E-3	-4.194E-3	-8.699E-3
Average (OFF)	---	-3.630E-4	-1.962E-3	-3.363E-3	-7.943E-3
σ (OFF)	---	1.132E-4	3.714E-4	5.647E-4	4.229E-4
Average+3σ (OFF)	---	-2.347E-5	-8.480E-4	-1.669E-3	-6.674E-3
Average-3σ (OFF)	---	-7.026E-4	-3.076E-3	-5.057E-3	-9.211E-3

190 MeV proton / detailed results

15.K3

Ta = 25°C ; IF = 10mA ; Vdet = -15V



190 MeV proton / detailed results

K3 . (-) **Min = 0.75 Max = 1.25**

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	1.030	1.030	1.030	1.030	1.030
N° 2 (Bias1)	1.079	1.078	1.079	1.079	1.082
N° 3 (Bias1)	1.003	1.002	1.000	0.998	0.998
N° 4 (Bias1)	0.971	0.970	0.969	0.968	0.962
N° 5 (Bias1)	1.007	1.007	1.006	1.005	1.004
N° 6 (Bias1)	0.958	0.957	0.955	0.954	0.947
N° 7 (Bias2)	1.004	1.003	1.001	0.999	0.995
N° 8 (Bias2)	0.985	0.983	0.980	0.977	0.970
N° 9 (Bias2)	1.025	1.024	1.022	1.021	1.016
N° 10 (Bias2)	0.970	0.969	0.967	0.965	0.957
N° 11 (Bias2)	0.993	0.992	0.989	0.988	0.982
N° 12 (OFF)	1.036	1.034	1.035	1.036	1.037
N° 13 (OFF)	1.001	1.001	0.999	0.998	0.993
N° 14 (OFF)	1.037	1.037	1.035	1.034	1.031
N° 15 (OFF)	1.008	1.008	1.006	1.005	1.001
N° 16 (OFF)	0.946	0.945	0.944	0.942	0.933

Delta [K3]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	2.600E-5	-1.400E-5	2.200E-5	-9.000E-6
N° 2 (Bias1)	---	-9.240E-4	-4.090E-4	3.700E-4	2.859E-3
N° 3 (Bias1)	---	-1.151E-3	-3.476E-3	-5.435E-3	-5.131E-3
N° 4 (Bias1)	---	-3.482E-4	-2.138E-3	-2.887E-3	-8.817E-3
N° 5 (Bias1)	---	1.150E-4	-8.290E-4	-1.821E-3	-2.588E-3
N° 6 (Bias1)	---	-1.021E-3	-2.876E-3	-4.509E-3	-1.152E-2
N° 7 (Bias2)	---	-1.372E-3	-3.292E-3	-4.898E-3	-9.767E-3
N° 8 (Bias2)	---	-1.676E-3	-4.643E-3	-7.096E-3	-1.459E-2
N° 9 (Bias2)	---	-1.220E-3	-2.564E-3	-3.949E-3	-8.358E-3
N° 10 (Bias2)	---	-1.184E-3	-2.931E-3	-5.513E-3	-1.262E-2
N° 11 (Bias2)	---	-1.399E-3	-4.056E-3	-5.315E-3	-1.125E-2
N° 12 (OFF)	---	-1.152E-3	-4.810E-4	4.790E-4	1.890E-3
N° 13 (OFF)	---	-8.710E-4	-2.482E-3	-3.134E-3	-8.008E-3
N° 14 (OFF)	---	-3.100E-5	-1.551E-3	-2.602E-3	-5.576E-3
N° 15 (OFF)	---	-6.870E-4	-2.480E-3	-3.502E-3	-7.800E-3
N° 16 (OFF)	---	-6.369E-4	-1.545E-3	-3.290E-3	-1.266E-2
Average (Bias1)	---	-6.658E-4	-1.946E-3	-2.856E-3	-5.040E-3
σ (Bias1)	---	5.335E-4	1.309E-3	2.284E-3	5.584E-3
Average+3σ (Bias1)	---	9.348E-4	1.981E-3	3.995E-3	1.171E-2
Average-3σ (Bias1)	---	-2.266E-3	-5.872E-3	-9.707E-3	-2.179E-2
Average (Bias2)	---	-1.370E-3	-3.497E-3	-5.354E-3	-1.132E-2
σ (Bias2)	---	1.947E-4	8.456E-4	1.145E-3	2.426E-3
Average+3σ (Bias2)	---	-7.862E-4	-9.605E-4	-1.920E-3	-4.039E-3
Average-3σ (Bias2)	---	-1.954E-3	-6.034E-3	-8.789E-3	-1.859E-2
Average (OFF)	---	-6.756E-4	-1.708E-3	-2.410E-3	-6.432E-3
σ (OFF)	---	4.130E-4	8.293E-4	1.649E-3	5.319E-3
Average+3σ (OFF)	---	5.634E-4	7.802E-4	2.537E-3	9.526E-3
Average-3σ (OFF)	---	-1.915E-3	-4.196E-3	-7.356E-3	-2.239E-2

190 MeV proton / detailed results

16.BWFwd

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms

190 MeV proton / detailed results

BWFwd . (Khz)

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	282.0	296.0	272.0	300.0	312.0
N° 2 (Bias1)	320.0	318.0	448.0	458.0	Not Measurable
N° 3 (Bias1)	300.0	368.0	388.0	508.0	Not Measurable
N° 4 (Bias1)	308.0	310.0	388.0	598.0	Not Measurable
N° 5 (Bias1)	298.0	320.0	388.0	458.0	Not Measurable
N° 6 (Bias1)	280.0	318.0	398.0	438.0	Not Measurable
N° 7 (Bias2)	268.0	298.0	338.0	466.0	Not Measurable
N° 8 (Bias2)	290.0	310.0	402.0	468.0	Not Measurable
N° 9 (Bias2)	292.0	300.0	354.0	468.0	Not Measurable
N° 10 (Bias2)	270.0	338.0	402.0	560.0	Not Measurable
N° 11 (Bias2)	280.0	310.0	378.0	446.0	Not Measurable
N° 12 (OFF)	308.0	284.0	360.0	488.0	Not Measurable
N° 13 (OFF)	292.0	318.0	398.0	488.0	Not Measurable
N° 14 (OFF)	298.0	312.0	382.0	540.0	Not Measurable
N° 15 (OFF)	288.0	300.0	378.0	738.0	Not Measurable
N° 16 (OFF)	270.0	300.0	398.0	568.0	Not Measurable

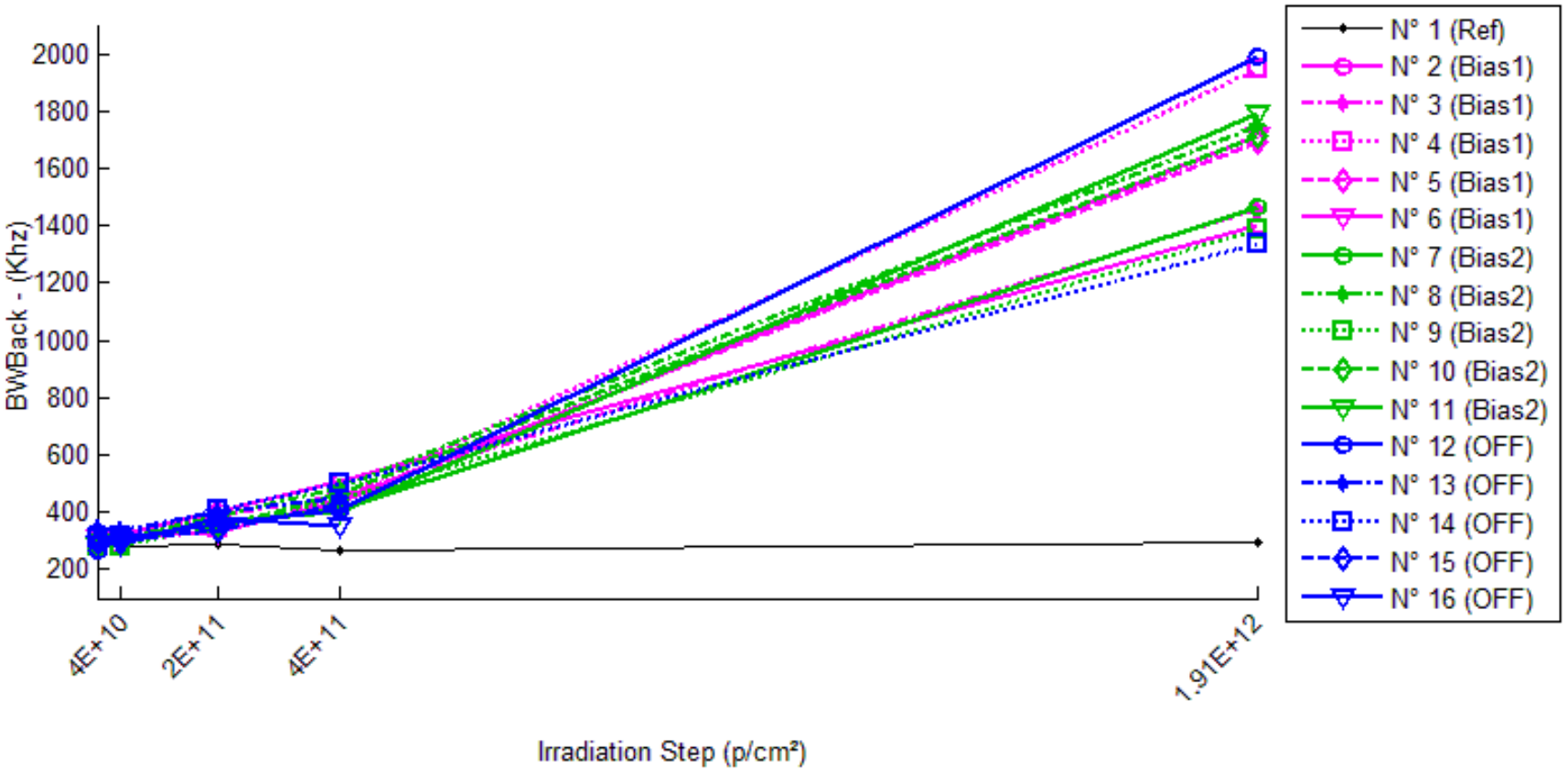
Delta [BWFwd]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	1.400E+1	-1.000E+1	1.800E+1	3.000E+1
N° 2 (Bias1)	---	-2.000E+0	1.280E+2	1.380E+2	NaN
N° 3 (Bias1)	---	6.800E+1	8.800E+1	2.080E+2	NaN
N° 4 (Bias1)	---	2.000E+0	8.000E+1	2.900E+2	NaN
N° 5 (Bias1)	---	2.200E+1	9.000E+1	1.600E+2	NaN
N° 6 (Bias1)	---	3.800E+1	1.180E+2	1.580E+2	NaN
N° 7 (Bias2)	---	3.000E+1	7.000E+1	1.980E+2	NaN
N° 8 (Bias2)	---	2.000E+1	1.120E+2	1.780E+2	NaN
N° 9 (Bias2)	---	8.000E+0	6.200E+1	1.760E+2	NaN
N° 10 (Bias2)	---	6.800E+1	1.320E+2	2.900E+2	NaN
N° 11 (Bias2)	---	3.000E+1	9.800E+1	1.660E+2	NaN
N° 12 (OFF)	---	-2.400E+1	5.200E+1	1.800E+2	NaN
N° 13 (OFF)	---	2.600E+1	1.060E+2	1.960E+2	NaN
N° 14 (OFF)	---	1.400E+1	8.400E+1	2.420E+2	NaN
N° 15 (OFF)	---	1.200E+1	9.000E+1	4.500E+2	NaN
N° 16 (OFF)	---	3.000E+1	1.280E+2	2.980E+2	NaN
Average (Bias1)	---	2.560E+1	1.008E+2	1.908E+2	NaN
σ (Bias1)	---	2.865E+1	2.091E+1	6.113E+1	0.000E+0
Average+3σ (Bias1)	---	1.115E+2	1.635E+2	3.742E+2	NaN
Average-3σ (Bias1)	---	-6.035E+1	3.807E+1	7.402E+0	NaN
Average (Bias2)	---	3.120E+1	9.480E+1	2.016E+2	NaN
σ (Bias2)	---	2.248E+1	2.907E+1	5.076E+1	0.000E+0
Average+3σ (Bias2)	---	9.863E+1	1.820E+2	3.539E+2	NaN
Average-3σ (Bias2)	---	-3.623E+1	7.583E+0	4.931E+1	NaN
Average (OFF)	---	1.160E+1	9.200E+1	2.732E+2	NaN
σ (OFF)	---	2.133E+1	2.811E+1	1.090E+2	0.000E+0
Average+3σ (OFF)	---	7.558E+1	1.763E+2	6.001E+2	NaN
Average-3σ (OFF)	---	-5.238E+1	7.679E+0	-5.369E+1	NaN

190 MeV proton / detailed results

17.BWBack

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



190 MeV proton / detailed results

BWBack . (Khz)

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	304.000	284.000	288.000	268.000	298.000
N° 2 (Bias1)	322.000	320.000	398.000	510.000	1398.000
N° 3 (Bias1)	316.000	330.000	388.000	460.000	1458.000
N° 4 (Bias1)	286.000	290.000	348.000	448.000	1948.000
N° 5 (Bias1)	298.000	292.000	358.000	442.000	1690.000
N° 6 (Bias1)	308.000	314.000	328.000	438.000	1710.000
N° 7 (Bias2)	272.000	308.000	368.000	408.000	1468.000
N° 8 (Bias2)	280.000	312.000	388.000	488.000	1750.000
N° 9 (Bias2)	280.000	282.000	360.000	446.000	1388.000
N° 10 (Bias2)	310.000	302.000	342.000	468.000	1710.000
N° 11 (Bias2)	284.000	292.000	368.000	398.000	1788.000
N° 12 (OFF)	264.000	310.000	356.000	408.000	1990.000
N° 13 (OFF)	348.000	338.000	400.000	448.000	Not Measurable
N° 14 (OFF)	312.000	316.000	408.000	500.000	1338.000
N° 15 (OFF)	292.000	300.000	340.000	428.000	Not Measurable
N° 16 (OFF)	290.000	286.000	378.000	354.000	Not Measurable

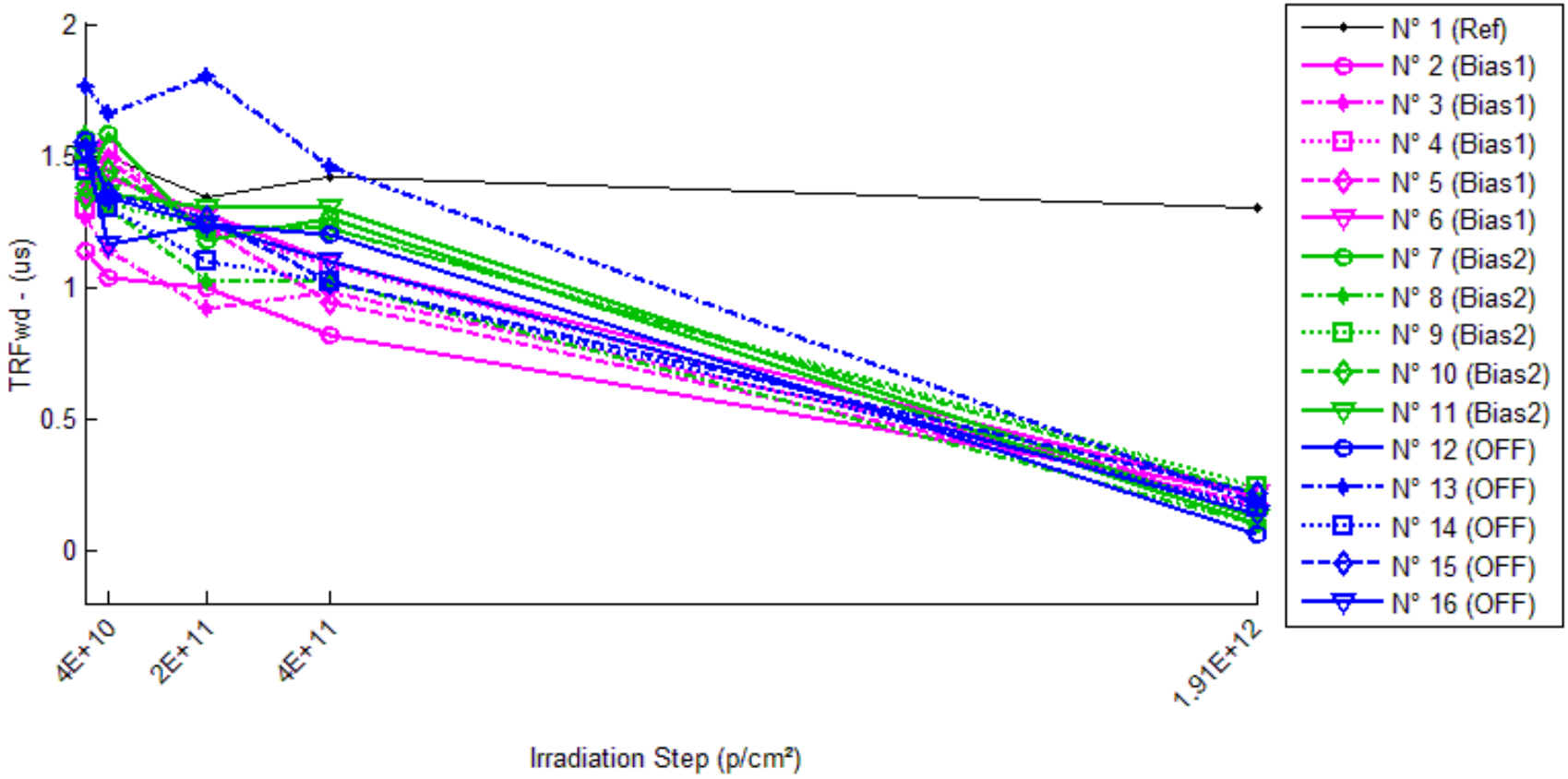
Delta [BWBack]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	-2.000E+1	-1.600E+1	-3.600E+1	-6.000E+0
N° 2 (Bias1)	---	-2.000E+0	7.600E+1	1.880E+2	1.076E+3
N° 3 (Bias1)	---	1.400E+1	7.200E+1	1.440E+2	1.142E+3
N° 4 (Bias1)	---	4.000E+0	6.200E+1	1.620E+2	1.662E+3
N° 5 (Bias1)	---	-6.000E+0	6.000E+1	1.440E+2	1.392E+3
N° 6 (Bias1)	---	6.000E+0	2.000E+1	1.300E+2	1.402E+3
N° 7 (Bias2)	---	3.600E+1	9.600E+1	1.360E+2	1.196E+3
N° 8 (Bias2)	---	3.200E+1	1.080E+2	2.080E+2	1.470E+3
N° 9 (Bias2)	---	2.000E+0	8.000E+1	1.660E+2	1.108E+3
N° 10 (Bias2)	---	-8.000E+0	3.200E+1	1.580E+2	1.400E+3
N° 11 (Bias2)	---	8.000E+0	8.400E+1	1.140E+2	1.504E+3
N° 12 (OFF)	---	4.600E+1	9.200E+1	1.440E+2	1.726E+3
N° 13 (OFF)	---	-1.000E+1	5.200E+1	1.000E+2	NaN
N° 14 (OFF)	---	4.000E+0	9.600E+1	1.880E+2	1.026E+3
N° 15 (OFF)	---	8.000E+0	4.800E+1	1.360E+2	NaN
N° 16 (OFF)	---	-4.000E+0	8.800E+1	6.400E+1	NaN
Average (Bias1)	---	3.200E+0	5.800E+1	1.536E+2	1.335E+3
σ (Bias1)	---	7.694E+0	2.227E+1	2.233E+1	2.340E+2
Average+3σ (Bias1)	---	2.628E+1	1.248E+2	2.206E+2	2.037E+3
Average-3σ (Bias1)	---	-1.988E+1	-8.813E+0	8.660E+1	6.328E+2
Average (Bias2)	---	1.400E+1	8.000E+1	1.564E+2	1.336E+3
σ (Bias2)	---	1.918E+1	2.898E+1	3.525E+1	1.745E+2
Average+3σ (Bias2)	---	7.155E+1	1.669E+2	2.622E+2	1.859E+3
Average-3σ (Bias2)	---	-4.355E+1	-6.948E+0	5.064E+1	8.120E+2
Average (OFF)	---	8.800E+0	7.520E+1	1.264E+2	1.376E+3
σ (OFF)	---	2.194E+1	2.322E+1	4.687E+1	4.950E+2
Average+3σ (OFF)	---	7.461E+1	1.449E+2	2.670E+2	2.861E+3
Average-3σ (OFF)	---	-5.701E+1	5.538E+0	-1.421E+1	-1.089E+2

190 MeV proton / detailed results

18.TRFwd

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



190 MeV proton / detailed results

TRFwd . (us)

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	1.56	1.50	1.34	1.42	1.30
N° 2 (Bias1)	1.14	1.04	1.00	0.82	0.22
N° 3 (Bias1)	1.26	1.14	0.92	0.98	0.20
N° 4 (Bias1)	1.30	1.52	1.22	1.08	0.16
N° 5 (Bias1)	1.36	1.48	1.22	0.94	0.18
N° 6 (Bias1)	1.42	1.42	1.28	1.10	0.22
N° 7 (Bias2)	1.38	1.58	1.18	1.26	0.10
N° 8 (Bias2)	1.58	1.30	1.02	1.02	0.10
N° 9 (Bias2)	1.50	1.32	1.22	1.22	0.24
N° 10 (Bias2)	1.34	1.44	1.22	1.22	0.22
N° 11 (Bias2)	1.50	1.36	1.30	1.30	0.12
N° 12 (OFF)	1.56	1.34	1.24	1.20	0.06
N° 13 (OFF)	1.76	1.66	1.80	1.46	0.18
N° 14 (OFF)	1.44	1.30	1.10	1.02	0.16
N° 15 (OFF)	1.52	1.36	1.26	1.02	0.22
N° 16 (OFF)	1.52	1.16	1.24	1.10	0.14

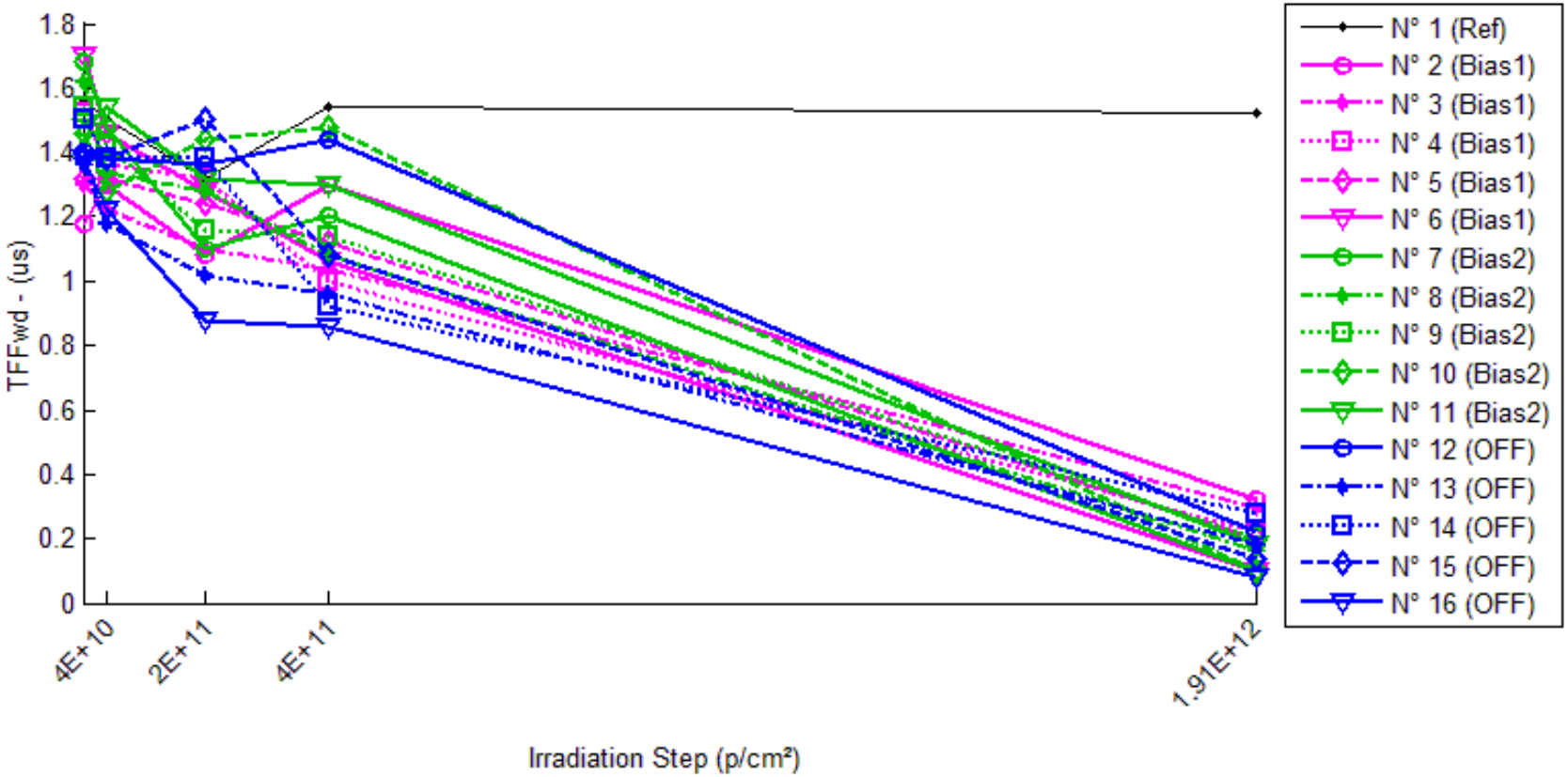
Delta [TRFwd]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	-6.000E-2	-2.200E-1	-1.400E-1	-2.600E-1
N° 2 (Bias1)	---	-1.000E-1	-1.400E-1	-3.200E-1	-9.200E-1
N° 3 (Bias1)	---	-1.200E-1	-3.400E-1	-2.800E-1	-1.060E+0
N° 4 (Bias1)	---	2.200E-1	-8.000E-2	-2.200E-1	-1.140E+0
N° 5 (Bias1)	---	1.200E-1	-1.400E-1	-4.200E-1	-1.180E+0
N° 6 (Bias1)	---	0.000E+0	-1.400E-1	-3.200E-1	-1.200E+0
N° 7 (Bias2)	---	2.000E-1	-2.000E-1	-1.200E-1	-1.280E+0
N° 8 (Bias2)	---	-2.800E-1	-5.600E-1	-5.600E-1	-1.480E+0
N° 9 (Bias2)	---	-1.800E-1	-2.800E-1	-2.800E-1	-1.260E+0
N° 10 (Bias2)	---	1.000E-1	-1.200E-1	-1.200E-1	-1.120E+0
N° 11 (Bias2)	---	-1.400E-1	-2.000E-1	-2.000E-1	-1.380E+0
N° 12 (OFF)	---	-2.200E-1	-3.200E-1	-3.600E-1	-1.500E+0
N° 13 (OFF)	---	-1.000E-1	4.000E-2	-3.000E-1	-1.580E+0
N° 14 (OFF)	---	-1.400E-1	-3.400E-1	-4.200E-1	-1.280E+0
N° 15 (OFF)	---	-1.600E-1	-2.600E-1	-5.000E-1	-1.300E+0
N° 16 (OFF)	---	-3.600E-1	-2.800E-1	-4.200E-1	-1.380E+0
Average (Bias1)	---	2.400E-2	-1.680E-1	-3.120E-1	-1.100E+0
σ (Bias1)	---	1.452E-1	9.960E-2	7.294E-2	1.140E-1
Average+3σ (Bias1)	---	4.596E-1	1.308E-1	-9.319E-2	-7.579E-1
Average-3σ (Bias1)	---	-4.116E-1	-4.668E-1	-5.308E-1	-1.442E+0
Average (Bias2)	---	-6.000E-2	-2.720E-1	-2.560E-1	-1.304E+0
σ (Bias2)	---	2.015E-1	1.706E-1	1.824E-1	1.352E-1
Average+3σ (Bias2)	---	5.445E-1	2.399E-1	2.913E-1	-8.984E-1
Average-3σ (Bias2)	---	-6.645E-1	-7.839E-1	-8.033E-1	-1.710E+0
Average (OFF)	---	-1.960E-1	-2.320E-1	-4.000E-1	-1.408E+0
σ (OFF)	---	1.014E-1	1.553E-1	7.483E-2	1.293E-1
Average+3σ (OFF)	---	1.082E-1	2.339E-1	-1.755E-1	-1.020E+0
Average-3σ (OFF)	---	-5.002E-1	-6.979E-1	-6.245E-1	-1.796E+0

190 MeV proton / detailed results

19.TFFwd

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



190 MeV proton / detailed results

TFFwd . (us)

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	1.56	1.50	1.32	1.54	1.52
N° 2 (Bias1)	1.18	1.30	1.08	1.30	0.32
N° 3 (Bias1)	1.30	1.22	1.10	1.04	0.30
N° 4 (Bias1)	1.52	1.36	1.32	1.00	0.22
N° 5 (Bias1)	1.32	1.32	1.24	1.12	0.20
N° 6 (Bias1)	1.70	1.46	1.28	1.06	0.10
N° 7 (Bias2)	1.68	1.48	1.10	1.20	0.10
N° 8 (Bias2)	1.62	1.34	1.28	1.08	0.16
N° 9 (Bias2)	1.54	1.42	1.16	1.14	0.20
N° 10 (Bias2)	1.46	1.28	1.44	1.48	0.10
N° 11 (Bias2)	1.48	1.54	1.32	1.30	0.18
N° 12 (OFF)	1.40	1.38	1.36	1.44	0.22
N° 13 (OFF)	1.36	1.18	1.02	0.96	0.18
N° 14 (OFF)	1.50	1.38	1.38	0.92	0.28
N° 15 (OFF)	1.38	1.38	1.50	1.08	0.14
N° 16 (OFF)	1.38	1.22	0.88	0.86	0.08

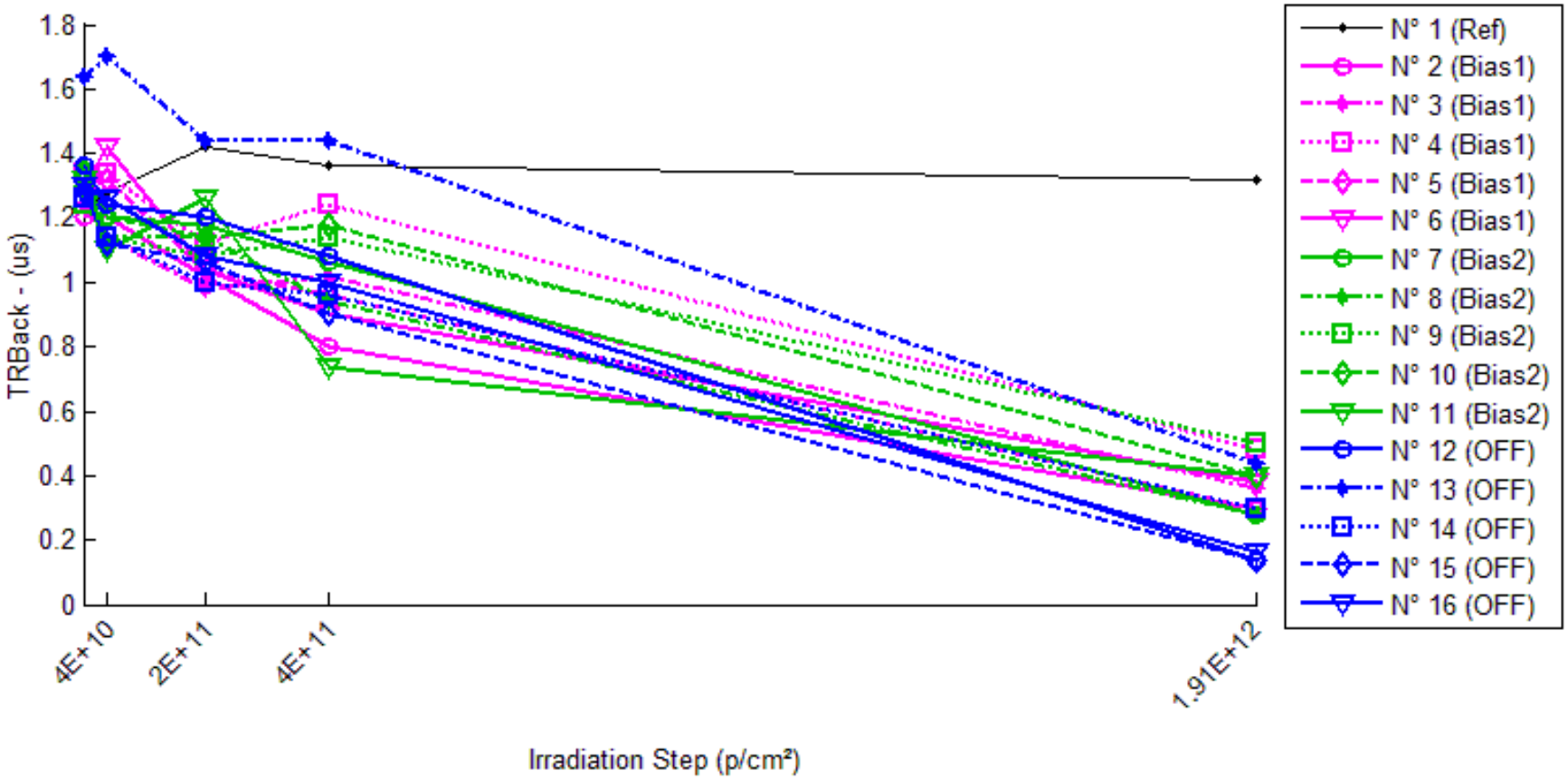
Delta [TFFwd]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	-6.000E-2	-2.400E-1	-2.000E-2	-4.000E-2
N° 2 (Bias1)	---	1.200E-1	-1.000E-1	1.200E-1	-8.600E-1
N° 3 (Bias1)	---	-8.000E-2	-2.000E-1	-2.600E-1	-1.000E+0
N° 4 (Bias1)	---	-1.600E-1	-2.000E-1	-5.200E-1	-1.300E+0
N° 5 (Bias1)	---	0.000E+0	-8.000E-2	-2.000E-1	-1.120E+0
N° 6 (Bias1)	---	-2.400E-1	-4.200E-1	-6.400E-1	-1.600E+0
N° 7 (Bias2)	---	-2.000E-1	-5.800E-1	-4.800E-1	-1.580E+0
N° 8 (Bias2)	---	-2.800E-1	-3.400E-1	-5.400E-1	-1.460E+0
N° 9 (Bias2)	---	-1.200E-1	-3.800E-1	-4.000E-1	-1.340E+0
N° 10 (Bias2)	---	-1.800E-1	-2.000E-2	2.000E-2	-1.360E+0
N° 11 (Bias2)	---	6.000E-2	-1.600E-1	-1.800E-1	-1.300E+0
N° 12 (OFF)	---	-2.000E-2	-4.000E-2	4.000E-2	-1.180E+0
N° 13 (OFF)	---	-1.800E-1	-3.400E-1	-4.000E-1	-1.180E+0
N° 14 (OFF)	---	-1.200E-1	-1.200E-1	-5.800E-1	-1.220E+0
N° 15 (OFF)	---	0.000E+0	1.200E-1	-3.000E-1	-1.240E+0
N° 16 (OFF)	---	-1.600E-1	-5.000E-1	-5.200E-1	-1.300E+0
Average (Bias1)	---	-7.200E-2	-2.000E-1	-3.000E-1	-1.176E+0
σ (Bias1)	---	1.397E-1	1.349E-1	2.966E-1	2.868E-1
Average+3σ (Bias1)	---	3.471E-1	2.047E-1	5.899E-1	-3.155E-1
Average-3σ (Bias1)	---	-4.911E-1	-6.047E-1	-1.190E+0	-2.037E+0
Average (Bias2)	---	-1.440E-1	-2.960E-1	-3.160E-1	-1.408E+0
σ (Bias2)	---	1.276E-1	2.147E-1	2.321E-1	1.128E-1
Average+3σ (Bias2)	---	2.388E-1	3.480E-1	3.804E-1	-1.070E+0
Average-3σ (Bias2)	---	-5.268E-1	-9.400E-1	-1.012E+0	-1.746E+0
Average (OFF)	---	-9.600E-2	-1.760E-1	-3.520E-1	-1.224E+0
σ (OFF)	---	8.173E-2	2.455E-1	2.444E-1	4.980E-2
Average+3σ (OFF)	---	1.492E-1	5.606E-1	3.811E-1	-1.075E+0
Average-3σ (OFF)	---	-3.412E-1	-9.126E-1	-1.085E+0	-1.373E+0

190 MeV proton / detailed results

20.TRBack

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



190 MeV proton / detailed results

TRBack . (us)

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	1.22	1.28	1.42	1.36	1.32
N° 2 (Bias1)	1.20	1.20	1.02	0.80	0.30
N° 3 (Bias1)	1.24	1.14	0.98	1.02	0.36
N° 4 (Bias1)	1.34	1.34	1.12	1.24	0.48
N° 5 (Bias1)	1.28	1.32	1.04	0.96	0.30
N° 6 (Bias1)	1.30	1.42	1.04	0.90	0.38
N° 7 (Bias2)	1.30	1.20	1.18	1.06	0.28
N° 8 (Bias2)	1.36	1.14	1.14	0.94	0.28
N° 9 (Bias2)	1.24	1.14	1.08	1.14	0.50
N° 10 (Bias2)	1.34	1.20	1.14	1.18	0.40
N° 11 (Bias2)	1.32	1.10	1.26	0.74	0.40
N° 12 (OFF)	1.36	1.24	1.20	1.08	0.14
N° 13 (OFF)	1.64	1.70	1.44	1.44	0.44
N° 14 (OFF)	1.26	1.14	1.00	0.96	0.30
N° 15 (OFF)	1.28	1.12	1.06	0.90	0.14
N° 16 (OFF)	1.30	1.26	1.08	1.00	0.16

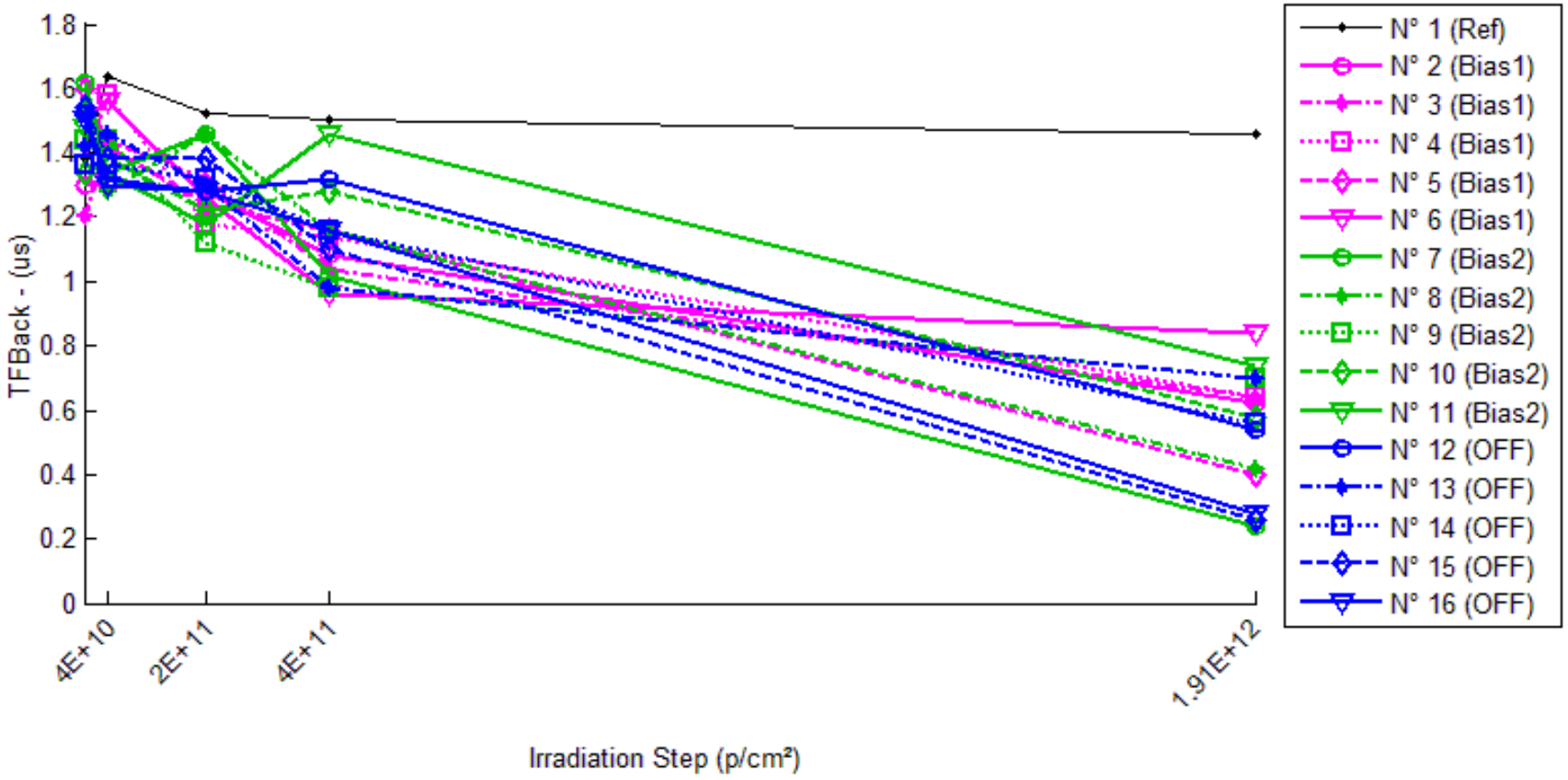
Delta [TRBack]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	6.000E-2	2.000E-1	1.400E-1	1.000E-1
N° 2 (Bias1)	---	0.000E+0	-1.800E-1	-4.000E-1	-9.000E-1
N° 3 (Bias1)	---	-1.000E-1	-2.600E-1	-2.200E-1	-8.800E-1
N° 4 (Bias1)	---	0.000E+0	-2.200E-1	-1.000E-1	-8.600E-1
N° 5 (Bias1)	---	4.000E-2	-2.400E-1	-3.200E-1	-9.800E-1
N° 6 (Bias1)	---	1.200E-1	-2.600E-1	-4.000E-1	-9.200E-1
N° 7 (Bias2)	---	-1.000E-1	-1.200E-1	-2.400E-1	-1.020E+0
N° 8 (Bias2)	---	-2.200E-1	-2.200E-1	-4.200E-1	-1.080E+0
N° 9 (Bias2)	---	-1.000E-1	-1.600E-1	-1.000E-1	-7.400E-1
N° 10 (Bias2)	---	-1.400E-1	-2.000E-1	-1.600E-1	-9.400E-1
N° 11 (Bias2)	---	-2.200E-1	-6.000E-2	-5.800E-1	-9.200E-1
N° 12 (OFF)	---	-1.200E-1	-1.600E-1	-2.800E-1	-1.220E+0
N° 13 (OFF)	---	6.000E-2	-2.000E-1	-2.000E-1	-1.200E+0
N° 14 (OFF)	---	-1.200E-1	-2.600E-1	-3.000E-1	-9.600E-1
N° 15 (OFF)	---	-1.600E-1	-2.200E-1	-3.800E-1	-1.140E+0
N° 16 (OFF)	---	-4.000E-2	-2.200E-1	-3.000E-1	-1.140E+0
Average (Bias1)	---	1.200E-2	-2.320E-1	-2.880E-1	-9.080E-1
σ (Bias1)	---	7.950E-2	3.347E-2	1.285E-1	4.604E-2
Average+3σ (Bias1)	---	2.505E-1	-1.316E-1	9.759E-2	-7.699E-1
Average-3σ (Bias1)	---	-2.265E-1	-3.324E-1	-6.736E-1	-1.046E+0
Average (Bias2)	---	-1.560E-1	-1.520E-1	-3.000E-1	-9.400E-1
σ (Bias2)	---	6.066E-2	6.419E-2	1.975E-1	1.288E-1
Average+3σ (Bias2)	---	2.599E-2	4.056E-2	2.925E-1	-5.535E-1
Average-3σ (Bias2)	---	-3.380E-1	-3.446E-1	-8.925E-1	-1.327E+0
Average (OFF)	---	-7.600E-2	-2.120E-1	-2.920E-1	-1.132E+0
σ (OFF)	---	8.764E-2	3.633E-2	6.419E-2	1.026E-1
Average+3σ (OFF)	---	1.869E-1	-1.030E-1	-9.944E-2	-8.243E-1
Average-3σ (OFF)	---	-3.389E-1	-3.210E-1	-4.846E-1	-1.440E+0

190 MeV proton / detailed results

21.TFBack

Ta = 25°C ; IF = 10mA +/- 4mA ; RL = 50Ohms



190 MeV proton / detailed results

TFBack . (us)

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	1.38	1.64	1.52	1.50	1.46
N° 2 (Bias1)	1.30	1.30	1.28	1.08	0.62
N° 3 (Bias1)	1.20	1.44	1.32	1.04	0.64
N° 4 (Bias1)	1.36	1.58	1.18	1.14	0.64
N° 5 (Bias1)	1.60	1.42	1.24	1.16	0.40
N° 6 (Bias1)	1.50	1.56	1.26	0.96	0.84
N° 7 (Bias2)	1.62	1.34	1.46	1.02	0.24
N° 8 (Bias2)	1.54	1.28	1.46	1.16	0.42
N° 9 (Bias2)	1.44	1.44	1.12	0.98	0.70
N° 10 (Bias2)	1.34	1.38	1.22	1.28	0.58
N° 11 (Bias2)	1.48	1.34	1.18	1.46	0.74
N° 12 (OFF)	1.52	1.32	1.28	1.32	0.54
N° 13 (OFF)	1.42	1.46	1.30	0.98	0.70
N° 14 (OFF)	1.36	1.36	1.32	1.16	0.56
N° 15 (OFF)	1.54	1.38	1.38	1.10	0.26
N° 16 (OFF)	1.50	1.30	1.28	1.16	0.28

Delta [TFBack]

	0.p/cm²	4E10.p/cm²	2E11.p/cm²	4E11.p/cm²	1.91E12.p/cm²
N° 1 (Ref)	---	2.600E-1	1.400E-1	1.200E-1	8.000E-2
N° 2 (Bias1)	---	0.000E+0	-2.000E-2	-2.200E-1	-6.800E-1
N° 3 (Bias1)	---	2.400E-1	1.200E-1	-1.600E-1	-5.600E-1
N° 4 (Bias1)	---	2.200E-1	-1.800E-1	-2.200E-1	-7.200E-1
N° 5 (Bias1)	---	-1.800E-1	-3.600E-1	-4.400E-1	-1.200E+0
N° 6 (Bias1)	---	6.000E-2	-2.400E-1	-5.400E-1	-6.600E-1
N° 7 (Bias2)	---	-2.800E-1	-1.600E-1	-6.000E-1	-1.380E+0
N° 8 (Bias2)	---	-2.600E-1	-8.000E-2	-3.800E-1	-1.120E+0
N° 9 (Bias2)	---	0.000E+0	-3.200E-1	-4.600E-1	-7.400E-1
N° 10 (Bias2)	---	4.000E-2	-1.200E-1	-6.000E-2	-7.600E-1
N° 11 (Bias2)	---	-1.400E-1	-3.000E-1	-2.000E-2	-7.400E-1
N° 12 (OFF)	---	-2.000E-1	-2.400E-1	-2.000E-1	-9.800E-1
N° 13 (OFF)	---	4.000E-2	-1.200E-1	-4.400E-1	-7.200E-1
N° 14 (OFF)	---	0.000E+0	-4.000E-2	-2.000E-1	-8.000E-1
N° 15 (OFF)	---	-1.600E-1	-1.600E-1	-4.400E-1	-1.280E+0
N° 16 (OFF)	---	-2.000E-1	-2.200E-1	-3.400E-1	-1.220E+0
Average (Bias1)	---	6.800E-2	-1.360E-1	-3.160E-1	-7.640E-1
σ (Bias1)	---	1.724E-1	1.884E-1	1.646E-1	2.508E-1
Average+3σ (Bias1)	---	5.852E-1	4.291E-1	1.777E-1	-1.172E-2
Average-3σ (Bias1)	---	-4.492E-1	-7.011E-1	-8.097E-1	-1.516E+0
Average (Bias2)	---	-1.280E-1	-1.960E-1	-3.040E-1	-9.480E-1
σ (Bias2)	---	1.460E-1	1.081E-1	2.539E-1	2.907E-1
Average+3σ (Bias2)	---	3.100E-1	1.282E-1	4.578E-1	-7.583E-2
Average-3σ (Bias2)	---	-5.660E-1	-5.202E-1	-1.066E+0	-1.820E+0
Average (OFF)	---	-1.040E-1	-1.560E-1	-3.240E-1	-1.000E+0
σ (OFF)	---	1.152E-1	8.050E-2	1.203E-1	2.478E-1
Average+3σ (OFF)	---	2.417E-1	8.550E-2	3.700E-2	-2.566E-1
Average-3σ (OFF)	---	-4.497E-1	-3.975E-1	-6.850E-1	-1.743E+0