

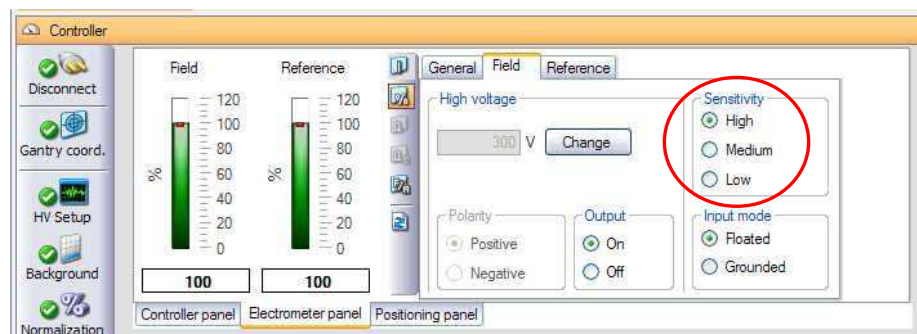
Technical Note: CCU electrometer setup

This technical note describes the correct setup of the CCU electrometer. Please read the following lines carefully:

Important for good measurement results are the right, well-adapted selection and constellation of detectors, and the associated electrometer setup in the OmniPro-Accept software.

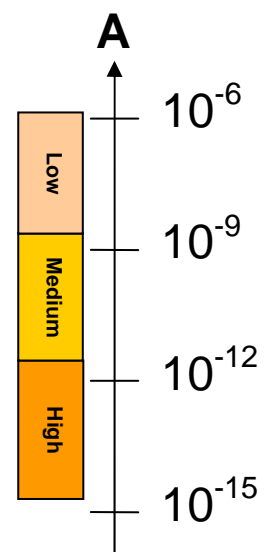
The CCU electrometer panel provides three different, independent selectable sensitivity ranges for the Field and Reference channel:

- High
- Medium
- Low



These ranges represent the following input currents:

Sensitivity	Current	Current nA
High	0.4pA to 400pA	0.0004 to 0.4
Medium	200pA to 40nA	0.2 to 40
Low	20nA to 4µA	20 to 4000



To choose an appropriate sensitivity setting, the operator needs to estimate the measured current, in regards to the dose rate used.

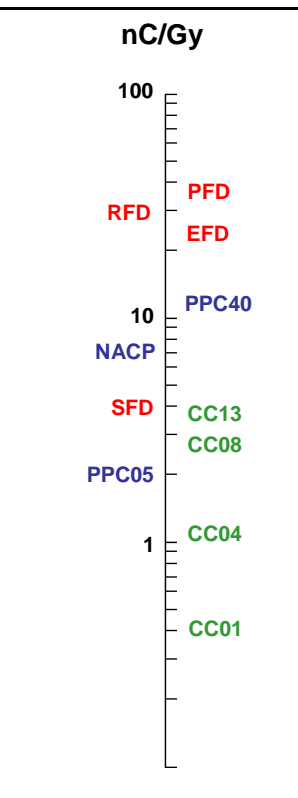
To calculate the input current, the operator can use the following formula:

$$I \text{ (nA)} = \text{sensitivity (nC/Gy)} \times \text{dose rate (Gy/s)}$$

With the calculated input current for the electrometer, and the known sensitivity of the selected detector, the applicable sensitivity range for the CCU electrometer channel can be selected.

The adjacent table provides an overview of the sensitivities of IBA detectors:

Detector	Nominal sensitivity (nC/Gy)	nC/Gy
CC01	0.4	
CC04	1.1	
CC08	2.7	
CC13	3.8	
CC25	8	
PPC05	2	
PPC40	12	
NACP	6	
PFD	35	
EFD	25	
RFD	30	
SFD	4	
FC23-C	7	
FC65-P	21	
FC65-G	21	



The calculation of the detector current might result in the following setting of the CCU electrometer channels as shown in the table below (examples with an average dose rate of 5 Gy/min (= 0.0833 Gy/s):

Detector	Nominal Sensitivity (nC/Gy)	Current (nA)	Recommended setting
CC01	0.4	0.033	High
CC04	1.1	0.091	High
CC08	2.7	0.23	High (Medium)
CC13	3.8	0.32	High (Medium)
CC25	8	0.66	Medium (High)
PPC05	2	0.17	High (Medium)
PPC40	12	1	Medium (High)
NACP	6	0.5	Medium (High)
PFD	35	2.92	Medium
EFD	25	2.08	Medium
RFD	30	2.5	Medium
SFD	4	0.33	High (Medium)

The associated *OmniPro-Accept User's Guide* will provide further details and instructions concerning the CCU control panel.