



# Calibration Request for Electrometer in terms of DC current

## 1. General Information

Customer <i>Name and full address</i>		
Contact person <i>Name, telephone, and e-mail</i>	Name:	
	Tel:	E-mail:

I would like to receive a quote.

## 2. Official Authorization

Name: ..... Date: ..... Signature:

Please fill in the entries and submit the form using the submit button or e-mail the file to service-emea@iba-group.com (subject: Calibration Request). Thank you for your request!

Comments:

The calibration certificate shall contain a recommendation on the calibration interval.

Note: According to DIN EN ISO/IEC 17025:2018 Chapter 7.8.4.3 a calibration certificate or calibration label shall not contain any recommendation on the calibration interval, except where this has been agreed with the customer. DIN EN ISO/IEC 17025:2018 is a German adoption of ISO/IEC 17025:2017.



## 3. Description of the Item to be Calibrated

**Dosemeter (electrometer, maximum 1):**

**No. of Channels:**

Serial №	
Manufacturer	
Model/Type	

*If your electrometer's manufacturer is other than IBA Dosimetry (or Scanditronics-Wellhöfer), please consider that we are not authorized to perform any repair or internal adjustment of the device.*

*If you are sending more than one electrometer, please submit a separate request for each electrometer.*



Please select the calibration type and enter the necessary information.




<b>SSDL Calibration – IBA electrometers only</b>	
Dose 1	2 calibration points ( $\pm 1\text{nA}$ )
Dose <sup>2</sup>	4 calibration points per channel ( $\pm 100\text{ pA}$ and $\pm 1\text{nA}$ )
DOSE-X	6 calibration points ( $\pm 100\text{ pA}$ , $\pm 1\text{ nA}$ and $\pm 1\mu\text{A}$ )
<b>SSDL Calibration of Electrometer in terms of DC Current or Charge</b>	
No. 1	Dual channel electrometer, 2 calibration points per channel at $\pm 1\text{ nA}$
No. 2	Single channel electrometer, 4 calibration points at $\pm 100\text{ pA}$ and $\pm 1\text{ nA}$
No. 3	Single channel electrometer, 6 calibration points at $\pm 10\text{ pA}$ , $\pm 100\text{ pA}$ and $\pm 1\text{ nA}$

### Custom Calibration

No. of Points	Electrometer Range <i>E.g., "High", "Medium", or "0 - 10nA"</i>	Calibration Points <i>Select points from the scope of <math>\pm 1\text{ pA}</math> to <math>\pm 20\text{ }\mu\text{A}</math></i>
1		$\pm$
2		$\pm$
3		$\pm$
4		$\pm$
5		$\pm$
6		$\pm$
7		$\pm$
8		$\pm$

### Calibration with Linearity Check

Requested calibration extent	Lowest value: $\pm$	Highest value <sup>§</sup> : $\pm$
	<b>Calibration Points</b>	
Linearity check calibration 1 *	at 100 % of the decade <sup>1</sup>	
Linearity check calibration 2 **	at 50 % and 100 % of the decade <sup>1</sup>	
Linearity check calibration 3 ***	at 20 %, 50 % and 100 % of the decade <sup>1</sup>	
Linearity check calibration IEC	Please refer to IEC 60731 chapter 6.2.3	

<sup>§</sup> The calibrated extent will cover four decades starting from the given lowest value. The entire extent needs to be within the range of 1 pA up to 10  $\mu\text{A}$ .

Example: For a single channel dosimeter, if the requested extent is  $\pm 1\text{ pA}$  to  $\pm 10\text{ nA}$ , 2x4 decades will be calibrated: 8(\*), 16(\*\*), or 24(\*\*\*) calibration points.

<sup>1</sup> "Decade" to be understood as a factor of 10 difference between two numbers (an order of magnitude difference) on a logarithmic scale

e-mail the file to [service-emea@iba-group.com](mailto:service-emea@iba-group.com) (subject: Calibration Request)



<b>For Internal Use Only (Art. Nr.)</b>	
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## Electrometer Calibration Guide

Recommended electrometer calibration points with respect to beam type and chamber used for given beam types, points of typically used absolute dosimetry chambers are highlighted.



Chamber Type	Chamber sensitivity nC/Gy	Beam Type and Typical Dose Rate					
		Diagnostic KV x-ray 4 mGy/min	Therapy KV x-ray 1 Gy/min	Co-60 1 Gy/min	Linac: Electrons 6 Gy/min	Linac: Photons 6 Gy/min	Linac: FFF 20 Gy/min
CC01	0.4			±10 pA	±10 pA	±10 pA	±100 pA
CC04	1.0			±10 pA	±100 pA	±100 pA	±100 pA
CC08	1.9			±10 pA	±100 pA	±100 pA	±1 nA
CC13	3.6			±100 pA	±100 pA	±100 pA	±1 nA
CC25	7.5			±100 pA	±1 nA	±1 nA	±1 nA
FC23-C	7.2		±100 pA	±100 pA	±1 nA	±1 nA	±1 nA
FC65-G	21		±100 pA	±100 pA	±1 nA	±1 nA	±1 nA
FC65-P	21		±100 pA	±100 pA	±1 nA	±1 nA	±1 nA
PPC05	1.7			±10 pA	±100 pA	±100 pA	±100 pA
PPC40	11		±100 pA	±100 pA	±1 nA	±1 nA	±1 nA
NACP-02	6.0		±100 pA	±100 pA	±1 nA	±1 nA	±1 nA
PS-033	16	±1 pA	±100 pA	±100 pA	±1 nA	±1 nA	±1 nA
DC300	110	±10 pA	±1 nA	±1 nA	±1 nA	±1 nA	±1 nA



## Electrometer Current vs Dose Rate

The electrometer current reading is a function of both, chamber sensitivity and dose rate

