INDEPENDENT X-RAY QUALITY ASSURANCE

Calibration Certificate

Calibration certificate issued by an accredited calibration laboratory

Tube Voltage

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Certificate Number	248A90721
Date of Calibration	2024-08-21
Date of Issue	2024-08-21
Location	RTI Group Headquarters, Mölndal
Radiation Quality	Radiography (R1)
Object	kVp-, dose-, doserate- and time-meter
Manufacturer	RTI Group
Man. part Number	4560.000076
Calibrated By	Sama Hussein
Customer	RTI Group

Serial Number CB3-24082127
Object Cobia Smart R/F

Environment
All climatic conditions are within RTI's limits for a reliable calibration environment, i.e. 18-25 deg C, 90-110 kPa, and <70 % air humidity.

Geometric Arrangement
The detector was irradiated perpendicular to the entrance window.
The point of reference is 10.0 mm below the top surface.

Method
The method is described in the document MTB-010 (rev. I) Calibration method-Tube Potential, by RTI Group AB.

Traceability
The calibration is performed by comparison against a reference high voltage divider system. The reference high voltage divider system is traceable through RISE Technical Research Institute of Sweden to national or international measurement standards.

Uncertainty
The expanded uncertainty at reference conditions when calibrating is ±0.56 %. The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k = 2, which for a normal distribution corresponds to a coverage probability of approximately 95 %. The standard uncertainty of measurement has been determined in accordance with EAL Publication EA-4/02.

Evaluations
The measured values are within the error limits specified by the manufacturer of the equipment under test.

Authorized signature:

SWEDAC ACKREDITERING
Ackred. nr. 2021
Calibration
ISO/IEC 17025

ilac-MRA

Sama Hussein

The calibration results refer exclusively to the object.
This calibration certificate may not be circulated other than in full.
Template version: 2024.3A

Digitally signed by Botnaru Andrei
Date: 2025.12.26 13:08:24 EET
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Date of Calibration 2024-08-21

Radiography (R1)

SDD 80 cm

Anode/Filter W / 3.0 mm Al

HVL 3,0 mm Al at 80 kV

Settings			Measured Data		Tolerance		Result	
Current (mA)	Time (ms)	Detector Filter	Reference kVp (kV)	Detector kVp (kV)	High (kV)	Low (kV)	Deviation (%)	Status Pass/Fail
100	100	Auto	40,43	40,20	41,43	39,43	-0,6	Pass
100	100	Auto	59,58	59,55	60,77	58,39	-0,1	Pass
100	100	Auto	59,58	59,70	60,77	58,39	0,2	Pass
100	100	Auto	99,46	99,50	101,45	97,47	0,0	Pass
100	100	Auto	119,77	119,50	122,17	117,37	-0,2	Pass
100	100	Auto	139,65	139,40	142,44	136,86	-0,2	Pass

Pass/Fail Criteria

The pass and fail criteria are based on Case 2 as defined in *ILAC-G8:03/2009*. I.e. The calibration result is compared against manufacturer specification, see MTB-010_bil.1_B_Object Uncertainty - Tube Potential. A deviation (excluding expanded uncertainty) less than manufacturer specification is reported as pass, and a larger deviation is reported as fail. Pass/Fail criteria for kV calibrations of the Cobia is ±2,0 %.

Reference Equipment

Ref Number	Type	Model
11-RF005	Voltage divider	Sedecal Internal Divider
19-5-111031	RTI X-ray lab 5:1, R/F	Sedecal, Mod. SHF 535