

Aérial



GEX CORPORATION
THE DOSIMETRY COMPANY

GEX and Aérial are pleased to offer

The **Aer'EDE**

EPR Dosimetry Equipment

A flexible, complete, EPR Dosimetry Solution

Aer'EDE

EPR Dosimetry System

Aérial of France and **Magnettech** of Germany combine their shared experience in developing and supporting complete dosimetry systems to now offer the Aer'EDE EPR Dosimetry System.

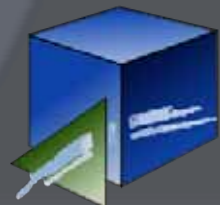
The Aer'EDE Dosimetry System includes all measurement instrumentation, choice of alanine dosimeter(s), as well as a complete set of standard operating instructions.

On-site installation and training certification is provided as well as ongoing dosimetry training and technical support.



GEX CORPORATION
THE DOSIMETRY COMPANY

Aérial



Aer'EDE

EPR Dosimetry System

Aer'EDE is based on more than 15 years experience gained with the popular Aer'ODE database driven dosimetry system used with optical instruments such as the Genesys 5 or Genesys 20 used with CTA, GEX B3, FWT or Harwell dosimeters.

The Aer'EDE dosimetry equipment was developed by **Aérial** to fulfill requirements in ISO/ASTM standards on Dosimetry.

The Aer'EDE equipment uses EPR to measure both alanine pellet and film dosimeters for routine use in industrial irradiation facilities. The system utilizes the established and validated Aer'ODE database software platform resulting in an optimum solution that can communicate with local or wide area networks (LAN & WAN).

Aer'EDE

EPR Dosimetry System

Industrial Dosimetry

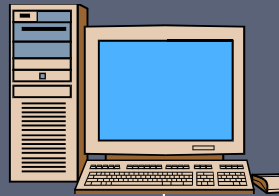
How Aer'EDE can be integrated into a plant management system

Production

Radiation process parameters

Dosimetry Lab.

Performance Qualification Dosimetry
Routine Dosimetry



Quality Assurance Dept.

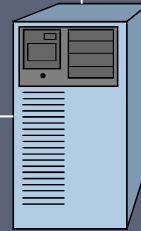
Performance Qualification Parameters

- Loading Pattern
- Validation Certificate

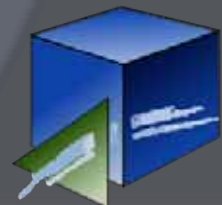
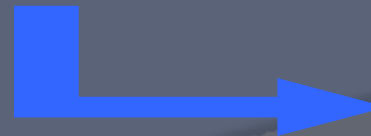


Server

Dosimetry Data Base
Oracle, SQL, Access Plant Data Base



Certification



Aérial



GEX CORPORATION
THE DOSIMETRY COMPANY

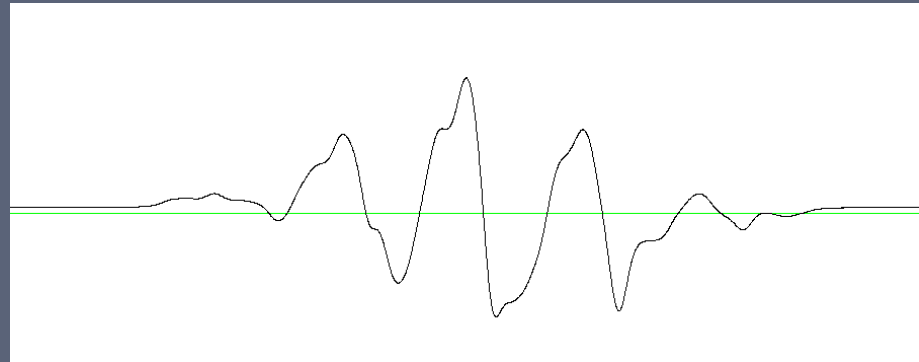
Aer'EDE

EPR Dosimetry System

An industrial tool for efficient
EPR dosimetry

The Aer'EDE equipment uses the Magnostech MS 5000 spectrometer which provides high reproducible EPR signal with very high sensitivity

The amplitude of the main peak is the response that is related to Dose



Aer'EDE

EPR Dosimetry System



Write/Read

Read/Write

DATA EXCHANGE FILE

Aer'EDE

EPR Dosimetry System

Flexibility allows for use of any alanine dosimeter

- Pellets, rods, etc.
- Films *
- Factory Packaged

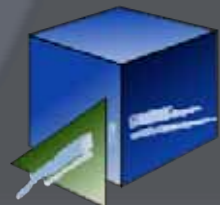


* We recommend the use of alanine pellets over alanine films when possible. (position & reproducibility)



GEX CORPORATION
THE DOSIMETRY COMPANY

Aérial



Aer'EDE

EPR Dosimetry System

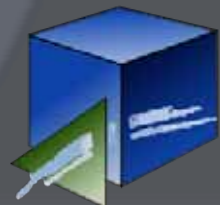
◎ Aer'EDE software:

- Controls the EPR equipment (settings, measurements, data storage,)
- Performs dosimetry system calibration, graphics, process validations, dosimetry reports,)
- Special developments and software customization provided according to user specified requirements



GEX CORPORATION
THE DOSIMETRY COMPANY

Aérial

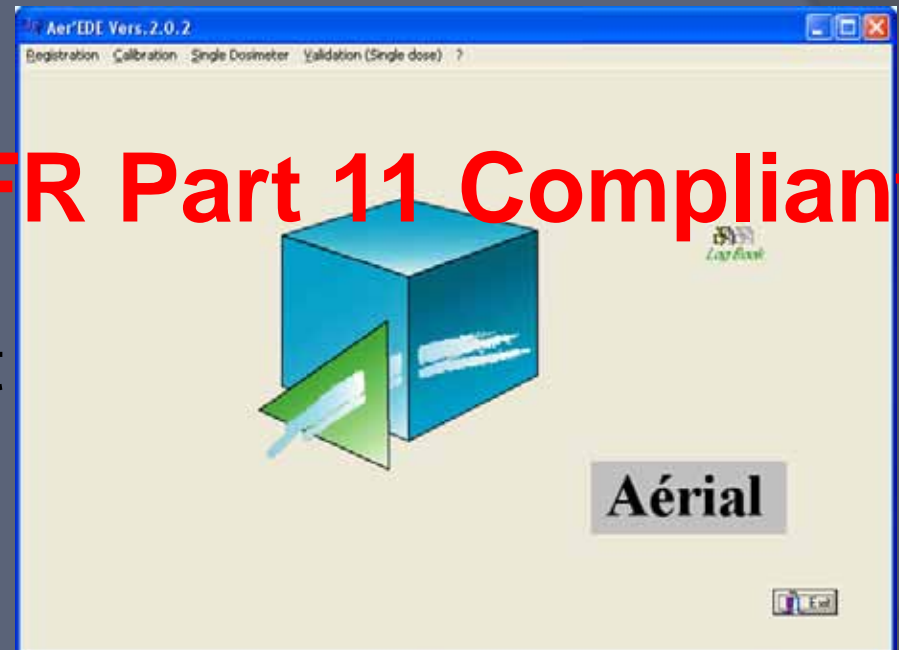


Aer'EDE

EPR Dosimetry System

- Registration
- Calibration
- Dosimeter Measurement
- Product Validation (PQ)
- Complete Logbook

21 CFR Part 11 Compliant



Aer'EDE

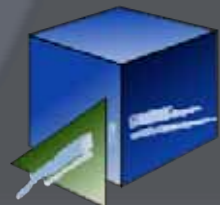
EPR Dosimetry System

SOME FEATURES AND EXAMPLE SCREENS



GEX CORPORATION
THE DOSIMETRY COMPANY

Aérial



Aer'EDE

USER REGISTRATION

EPR Dosimetry System

User Registration (Aer'EDE Vers. 2.0.2)

Aérial

Add new user | Change pass word | Remove current user

User name: stephane | Pass word: []

Functions authorized for the user :

- Calibration**
 - Routine use
 - Saving calibration sheet
 - Erase/reedify calibration
 - Validation of calibration
 - Use all calibration curves
- Single dose**
 - Measurement
 - Saving measurement sheet
 - Erase/Restore sheets or some data in a sheet
- Product validation**
 - Loading pattern design
 - Saving loading pattern
 - Erase/Modify loading pattern
 - Validation dose measurement
 - Saving measurement sheet
 - Erase/Restore sheets or some data in a sheet
 - Making validation report
 - Saving validation report
 - Erase/Restore validation r
 - Report POA authorized
- Access dose list Data Base**
 - Reading list DB
 - Write/Modify note in list DB
- Log book**
 - Reading
 - Write notes
- Miscellaneous functions**
 - Set parameters
 - Set min./max. required doses
 - Measure current (near) BGD in Single/Ship dose measurement sheet

Please enter the new password. | Enable all | Disable all | Close

Aer'EDE

Dose reading and EPR Parameters

EPR Dosimetry System

Single Dose Sheet (Aer'ED, Vers. 2.0.7)

Aérial

Sheet ID: S2009/06/02-02 Range-L (kGy): 1.0 CS = Reference ID: NPL 03/09_23a
Operator: Lucie Range-H (kGy): 70.0 C4 = Hpp Ref: 8953 01/04/2009 09:56:01
Entry: Mode of fitting: Log(R)-I[Log(D)] C3 = -0.0484978840247 Hpp Ref: 8865 02/06/2009 14:35:15
Calibration ID: C2009/04/02-01 RMS of fitting: 0.533 % C2 = 0.0359917226906 Ref. start Hpp: 8865 Ref. end Hpp: 8865
Batch (Type): NPL 03/09 [1-70kGy] Measure in ? No C1 = 0.9533059267658
Ref. UCTY (A): 2.2 Mean in (mg) 37.4 C0 = 1.055330075030

Note: suivi alanine 1 semaine

N°	Sample ID	Hpp	mg	Temp (°C)	Rc (1/mg)	Cal D (kGy)	Mean (kGy)	UCTY (kGy.k=2)	Date/Time	Position	Req D (kGy)
01	12	9419	37.35	25.0	253.09	26.58			02/06/2009 14:42:45		
02	13	9464	37.35	25.0	254.20	26.74			02/06/2009 15:11:07		

End Reference Show microscope param
Measurement Show robot control

Calibration ID : C2009/04/02-01

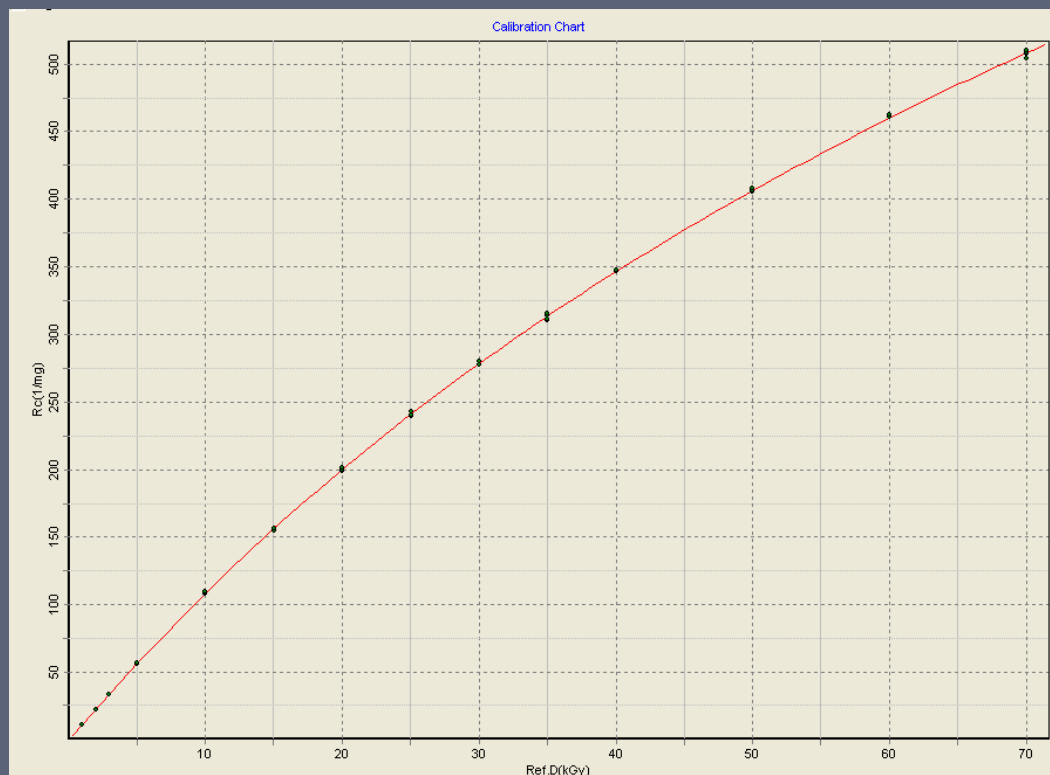
Center Field (G): 3325 Power (mW): 10 Gain: 1 0
Sweep (G): 20 Sweep Time (s): 12 Filter: 50
Modulation (µG): 2000 Scan Number: 1 Phase (°): 0

Close

Aer'EDE

Dosimetry System Calibration

EPR Dosimetry System



Fitting-mode	Order-1	Order-2	Order-3	Order-4	Order-5
D=f(R)	2557	83792	163946		
Log(D)=f(R)	315	596	1091		
R=f(D)	2557	63252	233332		
Log(R)=f(D)	132	246	428		
R=f(Log(D))	315	4261	194120		
Log(R)=f(Log(D))	14562	106887	738173		

Fit mode: Log(R)=f(Log(D)) C5=

Correlation-R²=1.000 C4=

Relative RMS=0.631 % C3=0.0484978840247

Absolute RMS=0.205 kGy C2=0.0359917226906

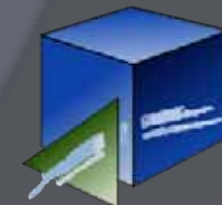
F-Ratio=738173 C1=0.9933059267658

C0=1.055330075030



GEX CORPORATION
THE DOSIMETRY COMPANY

Aérial



Aer'EDE

EPR Dosimetry System

Dosimetry System Calibration

Residuals plot

Calibration Sheet (Aer'EDE Vers. 2.0.2)

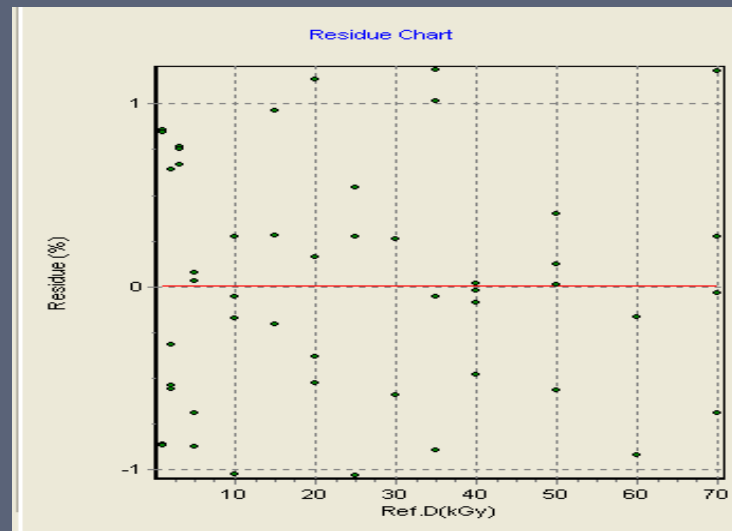
Aérial

Year: 2006, Month: 05, Date: 01
End: 2009, Month: 06, Date: 31
All or Validated: All
Batch (dosimeter): NPL 03/09 [1-70kGy]
Display discarded sheets: No
Operator: All
Data mode: All
1 sheets
Source: All

Sheet ID: C2009/04/02-01	Range-L (kGy): 1.0	C5 =	Measure M ? No
Operator: stephane	Range-H (kGy): 70.0	C4 =	Mean M (mg): 37.35
Data mode: Real data	Fitting mode: Log(R)=f(Log(D))	C3 = -0.0484978840247	Temperature (°C): 25.0
Source: Manual data-V	F - Ratio: 7381.73	C2 = 0.0359917226906	Reference ID: NPL 03/09_23a
Batch (dosimeter type): NPL 03/09 [1-70kGy] (Fitting RMS: 0.633 %	C1 = 0.9933059267658	Ref. start Hpp: 8953 01/04/2009 09:56:01
Ref. UCTY (%): 2.2	0.205 kGy	C0 = 1.055330075030	Ref. end Hpp: 8916 01/04/2009 11:33:08

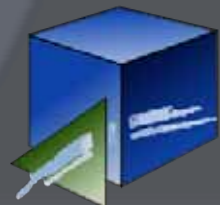
Note:

Show miniscope parms Reference data chart



GEX CORPORATION
THE DOSIMETRY COMPANY

Aérial



Aer'EDE

EPR Dosimetry System

The **Aer'EDE** equipment is validated and meets the quality assurance requirements according to FDA part 11, ISO, ASTM guidance and standards.

Aer'EDE is designed to integrate efficiently to your plant network and the software can be adapted to customers requirements.



GEX CORPORATION
THE DOSIMETRY COMPANY

Aérial

