



Aer'ODE

Aérial 光学剂量测量设备

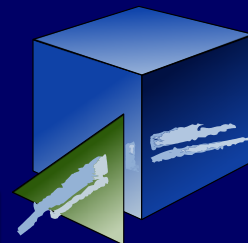
一种独特的、灵活的、专业化工具
专注于所有的光学剂量计
适用于电子束、伽玛和X射线剂量测定

尚帕信息科技有限公司(上海)有限公司 中国区独家授权分销商

www.sunplume.com

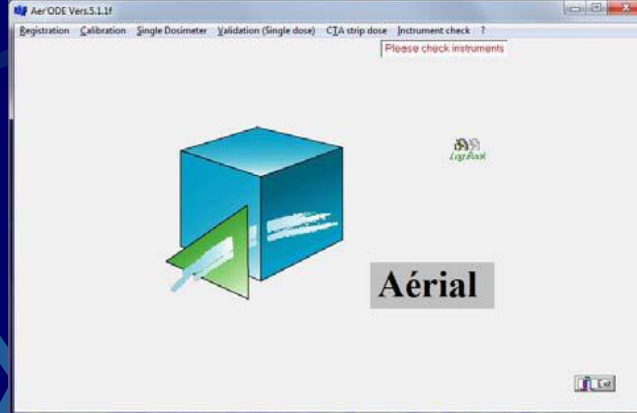
SUNPlume

Aérial



Aer'ODE

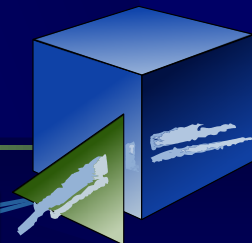
Aérial 光学辐照剂量测量设备



20多年来，Aerial 精心致力于向世界辐照加工行业奉献一种优质剂量读出装置，名为 Aer'ODE

该数据库驱动的装置由Aerial开发，为了满足辐照加工领域的认证剂量测定的工业需要

Aer'ODE设计用于读取目前市场上可以获得的所有种类的光学剂量计，包括条状剂量计



Aer'ODE

Aérial 光学辐照剂量测量设备

Aer'ODE 设备是国际认证产品，经鉴定满足FDA CFR 21 part 11, ISO, EN, ASTM, ...等有关质量保证的规定和标准

FDA: Food and Drug Administration of USA

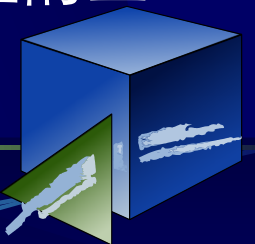
ISO: International Standardization Organization

EN: Europe Norme (Normalization)

ASTM: American Society for Testing and Materials

Aer'ODE设计用于高效集成您公司的计算机网络，适合于多台仪器同时运行

Aer'ODE是一个灵活的、完整的、专业化的、经认证的工业剂量测量工具



Aer'ODE

Aérial 光学辐照剂量测量设备

工业辐照剂量测定

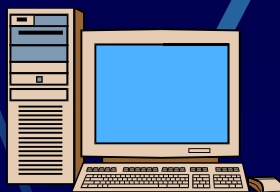
Aer'ODE如何被集成到工业辐照管理系统

Aer'ODE

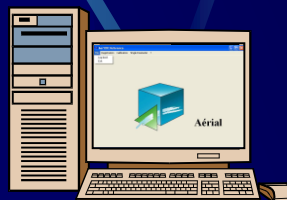
剂量实验室
性能鉴定PQ剂量测定
日常剂量测定



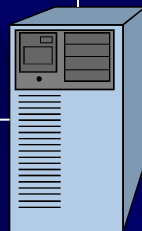
日常生产
辐照加工参数



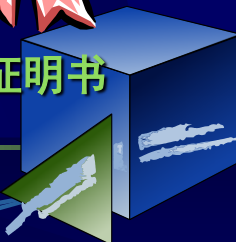
质量部门
性能鉴定PQ参数
• 装载模式
• 验证证书



服务器
剂量测定数据库
Oracle, MySQL,
Access工厂数据库



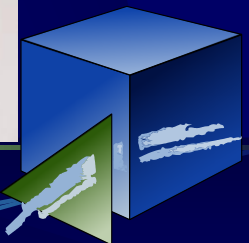
合格证明书



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Aérial 光学辐照剂量测量设备

剂量测定系统描述



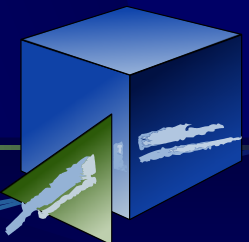
Aer'ODE

Aérial 光学辐照剂量测量设备

剂量测定系统描述

用于单个和条状剂量计读数

- Aer'ODE 软件版本4
- Windows系统的PC，17" LCD显示器，彩色喷墨打印机
- 分光光度计UV 1240（日本岛津）
- 测厚仪Solartron LE 12/S (Solartron)
- 参考滤光片（NIST可追溯）
- 参考厚度块（EA可追溯）
- FWT，Harwell，GafChronics，GEX-B3剂量计支架
- 用于CTA剂量计的条驱动马达，带PC接口卡
- 设备验证证书和用户手册



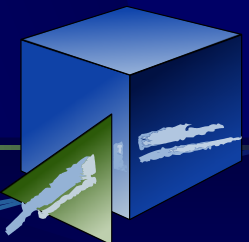
Aer'ODE

Aérial 光学辐照剂量测量设备

剂量测定系统描述

仅用于单个剂量计读数

- Aer'ODE 软件版本4
- Windows系统的PC，17" LCD显示器，彩色喷墨打印机
- 分光光度计 Genesys 20（美国赛默飞）
- 微型恒温热处理装置/系统（美国Scigene）
- 参考滤光片（NIST可追溯）
- 参考厚度块（EA可追溯）
- FWT，Harwell，GafChromics，GEX-B3剂量计支架
- 用于CTA剂量计的条驱动马达，带PC接口卡
- 设备验证证书和用户手册



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Aérial 光学辐照剂量测量设备

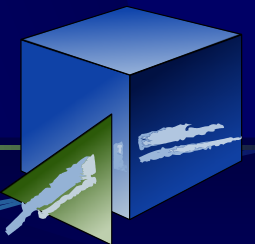
一个灵活的经验证的工具
用于高效的剂量测定

适用于剂量计：

- GEX
- FWT
- GafChromic
- Harwell

使用分光光度计：

UV1240、Genesys2、Genesys5、Genesys20



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Aérial 光学辐照剂量测量设备

一个灵活的经验证的工具
用于高效的剂量测定

适用剂量计：

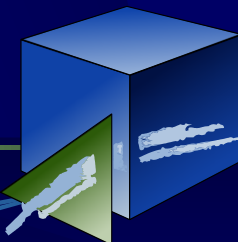
- GEX B3薄膜剂量计

WINDose

DoseStix

GAFstix

使用分光光度计：
美国赛默飞Genesys20



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Aérial 光学辐照剂量测量设备

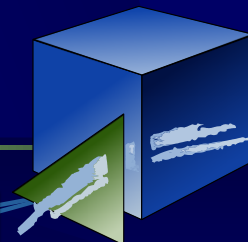
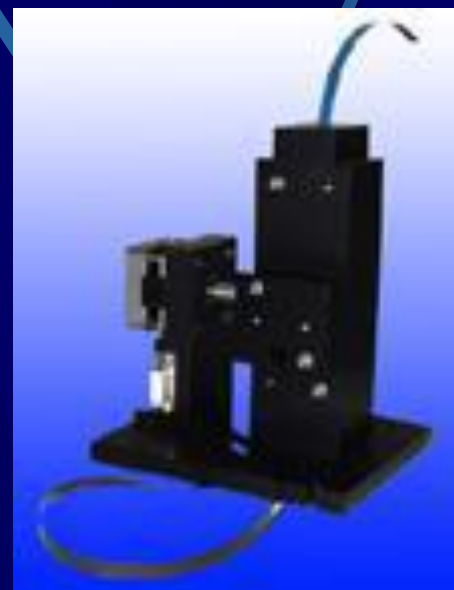
一个灵活的经验证的工具
用于高效的剂量测定

适用剂量计:

- GEX B3薄膜条
- CTA薄膜条

使用分光光度计:

UV1240、Genesys2、Genesys5



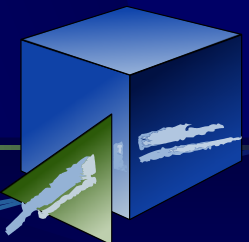
Aer'ODE

Aérial 光学辐照剂量测量设备

一个灵活的经验证的工具
用于高效的剂量测定

- Harwell 机器人

使用分光光度计：
仅 Genesys2、Genesys5



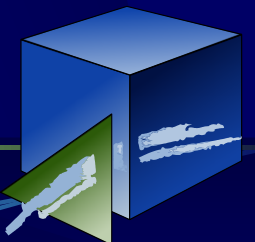
Aer'ODE

Aérial 光学辐照剂量测量设备

Aer'ODE 软件：

- 控制整个设备(仪器设置，测量读数，数据计算，数据库存取与管理，操作细节自动记录...)
- 执行剂量系统校准、单个或条状剂量计校准、绘制曲线、轮廓图、过程验证（装载模式，计划定义，报告编辑 ...)
- 执行设备需要的验证（吸光度、波长、厚度），以保证吸收剂量的测量

可根据特定工业需求，执行特别的软件功能开发和定制

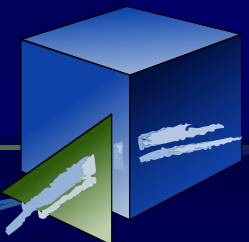
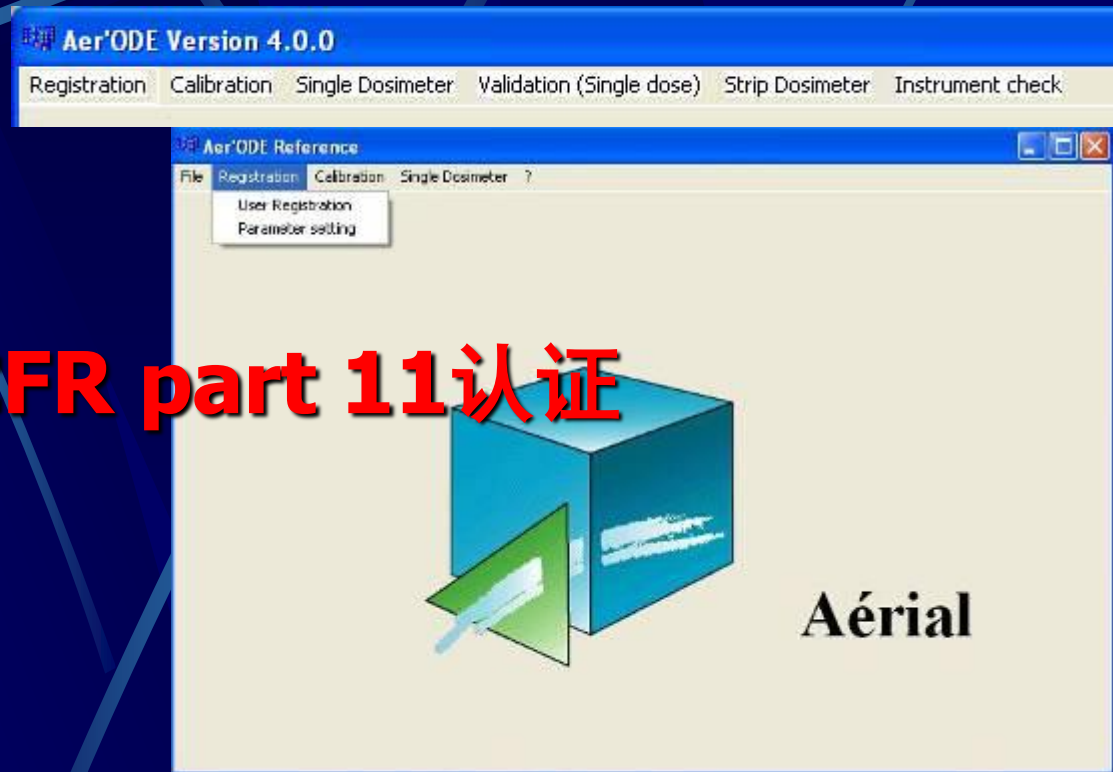


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Aérial 光学辐照剂量测量设备

经 FDA - 21 CFR part 11 认证

- 用户注册
- 剂量校准
- 单个剂量计测量
- IQ/OQ/PQ 剂量测量
- 分光光度计检查
- 软件活动日志



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Aérial 光学辐照剂量测量设备

用户授权

User Registration (Aer'ODE Vers. 4.0.0)

Aérial

Add new user

Change pass word

Remove current user

User name Operator x

Pass word: [REDACTED]

Functions authorized for the user :

Calibration

- Routine use
- Saving calibration sheet
- Erase/modify 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 RQA authorized

Strip dose

- Measurement
- Saving measurement sheet
- Erase/Restore sheets or modify no count poi
- Strip measurement for Beam energy evaluation
- Saving beam energy sheet
- Erase/Restore the sheets or modify no count points
- Strip measurement for Scan width evaluation
- Saving Scan width sheet
- Erase/Restore the sheets or modify no count points

Access Single/Strip dose list DB

- Reading list DB
- Write/Modify note in list DB

Single/strip BGD

- Measurement
- Saving
- Erasing some data

Instrument check

- Routine use
- Saving check data sheet
- Erase/Restore check data sheet
- Modify references
- Inst. check RQA authorized

Log book

- Reading
- Write notes

Miscellaneous functions

- Set parameters
- Set min./max. required doses
- Measure current (mean) BGD in Single/Strip dose measurement sheet

Enable all

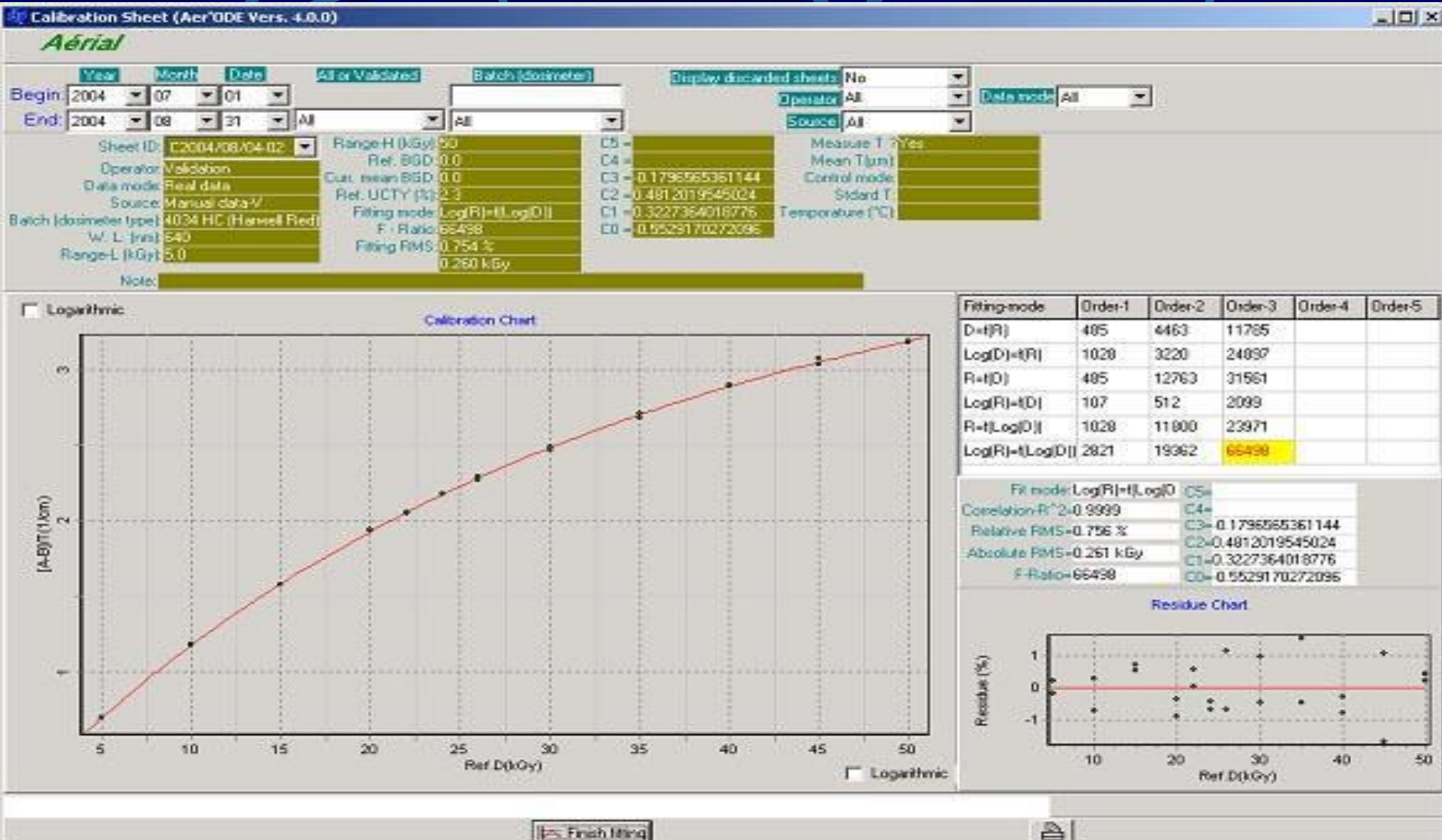
Disenable all

 Close

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剂量计批校准记录

Aérial 光学辐照剂量测量设备



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Aérial 光学辐照剂量测量设备

仪器波长准确度检查

Spectrometer Wave Length Check

Aérial

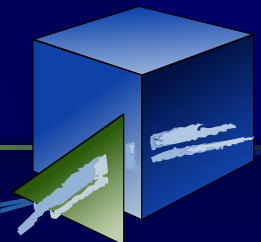
Year: 2003 01
Month: 01
Serial N° selection: All
Conclusion selection: All
Operator selection: All

Begin: 2003 01
End: 2004 08

Test ID List: W2004/08/04-00
Serial N°: 3V1E294003
Conclusion: Ok
Operator: Validation
RQA: Runtz

Filter N°	Value measured	Toler. L (nm)	Toler. H (nm)	Conclusion
F1 592-WL1	362.0	360	362	Ok
F1 592-WL2	639.0	637	639	Ok
F1 592-WL3	279	277	282	Ok

Current test | Print | Close



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Aérial 光学辐照剂量测量设备

仪器吸光度准确度检查

Spectrometer Absorbance Check

Aérial

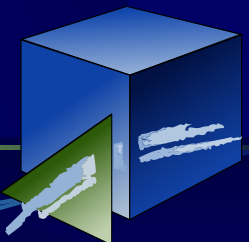
Year: 2003, Month: 01
Begin: 2003, 01
End: 2004, 08

Serial N° selection: All
Conclusion selection: All
Operator selection: All

Test ID List: A2004/08/04/00
Serial N°: 3V1E294003
Conclusion: Not ok
Operator: Validation
BOA: tkuntz

Filter N°	W/L (mm)	ABS measured	Toler L	Toler H	Conclusion
F0/992	440	0.000	-0.003	0.003	Ok
F0/992	465	0.000	-0.003	0.003	Ok
F0/992	546	0.000	-0.003	0.003	Ok
F0/992	590	0.000	-0.003	0.003	Ok
F0/992	635	-0.000	-0.003	0.003	Ok
F2/992	440	0.270	0.267	0.277	Ok
F2/992	465	0.240	0.238	0.248	Ok
F2/992	546	0.240	0.241	0.251	Not ok
F2/992	590	0.294	0.298	0.298	Not ok
F2/992	635	0.255	0.260	0.270	Not ok
F3/992	440	0.506	0.492	0.504	Not ok
F3/992	465	0.465	0.451	0.463	Not ok
F3/992	546	0.494	0.470	0.492	Not ok
F3/992	590	0.520	0.506	0.518	Not ok
F3/992	635	0.506	0.493	0.505	Not ok
F4/992	440	1.057	0.962	0.982	Not ok
F4/992	465	0.985	0.895	0.915	Not ok
F4/992	546	0.937	0.923	0.943	Not ok
F4/992	590	1.033	0.962	0.972	Not ok
F4/992	635	0.985	0.917	0.937	Not ok

Current test | Print | Close



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Aérial 光学辐照剂量测量设备

剂量计测量记录

Single Dose Sheet (Aer'ODE Vers. 4.0.0)

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Year: 2004, Month: 07, Date: 01, Entry, Batch (dosimeter), Display discarded sheets: No, Operator: All, Date mode: All

End: 2004, 08, 31, All

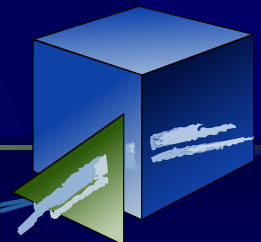
Sheet ID: S2004080300, W. L. (mm): 5.54, Filing RMS: 2.2%, Measure T: No
Operator: ValSabin, Range L (kGy): 1, C5 = 0.00000000484, Mean T (um): 22
Data mode: Real data, Range H (kGy): 50, C4 = 0.00000000484, Control mode: Beep beep
Mode: Measure (Indiv. EGD), Ref. BGD: 0.055, C3 = 0.000000004810, Std dev T:
Entry, Curt. mean BGD: 0.055, C2 = 0.000160040000, Temperature (°C):
Calibration ID: C2004073001, Ref. UCTY (%): 5.0, C1 = 0.000000000000, C0 = 0.0068635
Batch (dosimeter type): B3 (Rise), Filing mode: D=IR

Note:

Sample N°	Position	BGD	ABS	T(um)	[A-B]/T (1/cm)	Dose(kG)	Mean(kG)	UCTY(kGy/kG)	Measurement time	Req. dose(kGy)
0001			0.438	174.09	13.35				20040803@10h58m26	
0002			0.812	344.09	30.54				20040803@10h58m39	
0003			0.143	40.000	2.516				20040803@10h58m47	

"Delete" key - Delete current sheet date.

SAVE, Clear, Cut data, Chart, Spread sheet, Close



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Aérial 光学辐照剂量测量设备

软件活动日志

Log Book: (Aer'ODE Vers. 4.0.0)

Aérial

Log reader: Validation

Operator: All

Begin: 2004-08-01 10:00 clock

End: 2004-08-31 13:00 clock

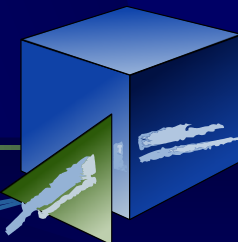
Data type: All

Action: All except log in/out

Date	Time	Operator	Note	Event	Spectrometer/PC SN
2004-08-03	10H57M36	Aérial		It's time to do instrument check ! (last checking in 2004/04/20, period: 30 days)	3VE294003 / A3342
2004-08-03	10H58M50	Validation		Saving single dose sheet :S2004/08/03-00, 3 dose records, Entry:	3VE294003 / A3342
2004-08-03	10H58M50.01	Validation		Saving 3 single dose(s): 0001(13.39) 0002(30.54) 0003(2.516)	3VE294003 / A3342
2004-08-03	11H10M39	Validation		Saving dose ROI data for sheet: F2004/08/03-00	3VE294003 / A3342
2004-08-03	11H11M19	Validation		Saving strip dose sheet :F2004/08/03-00, strip N°: Dose: min: 0.0000°, max: 146.8°, mean 65.45	3VE294003 / A3342
2004-08-04	10H34M43	Aérial		It's time to do instrument check ! (last checking in 2004/04/20, period: 30 days)	3VE294003 / A3342
2004-08-04	10H42M00	Validation		Changing Gauge Port from COM3 to COM1, Motor Port from COM1 to COM3	3VE294003 / A3342
2004-08-04	10H43M40	Validation		Changing Gauge from Solarton LE125/000A332L01 to Solarton LE125/000A039L02	3VE294003 / A3342
2004-08-04	10H44M26	Validation		Changing Gauge Port from COM1 to COM3, Motor Port from COM3 to COM1	3VE294003 / A3342
2004-08-04	10H44M52	Aérial		It's time to do instrument check ! (last checking in 2004/04/20, period: 30 days)	3VE294003 / A3342
2004-08-04	10H48M10	Validation		Saving strip dose sheet :F2004/08/04-00, strip N°: Dose: min: , max: , mean	3VE294003 / A3342
2004-08-04	11H14M18	Aérial		Adding user Operator!	3VE294003 / A3342
2004-08-04	11H37M53	Validation		Saving WL Check sheet W2004/08/04-00, Conclusion: Ok.	3VE294003 / A3342
2004-08-04	11H41M27	Validation		Saving ABS Check sheet A2004/08/04-00, Conclusion: Not ok.	3VE294003 / A3342
2004-08-04	12H16M07	Validation		Saving calibration sheet :C2004/08/04-00	3VE294003 / A3342
2004-08-04	12H18M36	Validation		Validate Calibration C2004/08/04-00 (Strip ROI)	3VE294003 / A3342
2004-08-04	12H27M11	Validation		Saving strip dose sheet :F2004/08/04-01, strip N°: Dose: min: 7.215, max: 22.03, mean 13.35	3VE294003 / A3342
2004-08-04	12H31M49	Validation		Saving dose ROI data for sheet: F2004/08/04-01, ROI-1 (Manual): 150.2-686.2 mm, min: 9.028 (64.6%), max: 16.16 (115.6%), mean 13.98(100%); ROI-2 (Manual): 66.3-192.9 mm, min: 7.215 (79.5%), max: 11.72 (129.1%), mean 9.078(100%); ROI-3 (Manual): 113.6-352.2 mm, min: 7.215 (59.9%), max: 15.67 (130.1%), mean 12.04(100%);	3VE294003 / A3342
2004-08-04	12H31M49:01				
2004-08-04	12H31M49:02				
2004-08-04	12H31M49:03				
2004-08-04	12H34M43	Validation		Overwriting dose ROI data for sheet: F2004/08/04-01, ROI-1 (Manual): 150.2-686.2 mm, min: 9.028 (64.6%), max: 16.16 (115.6%), mean 13.98(100%); ROI-2 (Manual): 66.3-192.9 mm, min: 7.215 (79.5%), max: 11.72 (129.1%), mean 9.078(100%); ROI-3 (Manual): 113.6-352.2 mm, min: 7.215 (59.9%), max: 15.67 (130.1%), mean 12.04(100%);	3VE294003 / A3342
2004-08-04	12H34M43:01				
2004-08-04	12H34M43:02				
2004-08-04	12H34M43:03				
2004-08-04	12H57M11	Validation		Saving beam energy evaluation sheet :E2004/08/04-00 Energy (MeV)	3VE294003 / A3342

Data browse or selection. Click 'Note' for editing

Close



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Aérial 光学辐照剂量测量设备

开发最佳的装载模式

Loading pattern

Data ID: A2001/10/15-00 Operator: H. MICHEL Vldt N°: Mode: Maximum Num. of Boxes: 150 Occupancy(%): 93.33

Container: Treatment unit

Charge limit(kg)	2000
Width (mm)	1500
Depth (mm)	1500
Height (mm)	3000

Inner Sides (mm):

Bot.	Top
Back	Fr.
L.	R.

Charge: Box

Orient: Non limit

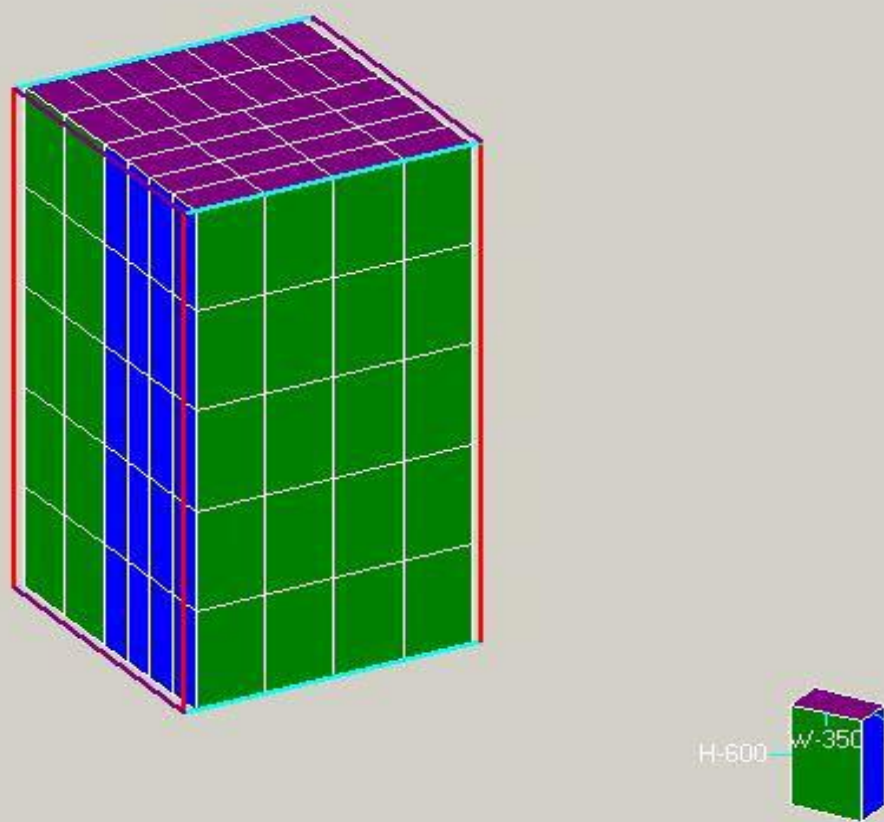
Weight(kg)	1
Width (mm)	350
Depth (mm)	200
Height (mm)	600

Additional Box :

Weight(kg)	
Width (mm)	
Depth (mm)	
Height (mm)	
Position	

Planes: Orient. Number

Plane 1 (mm)	
Plane 2 (mm)	
Plane 3 (mm)	
Plane 4 (mm)	
Plane 5 (mm)	



H-600 W-350 D-200

1:1

Aer'ODE

建立剂量计分布放置位置

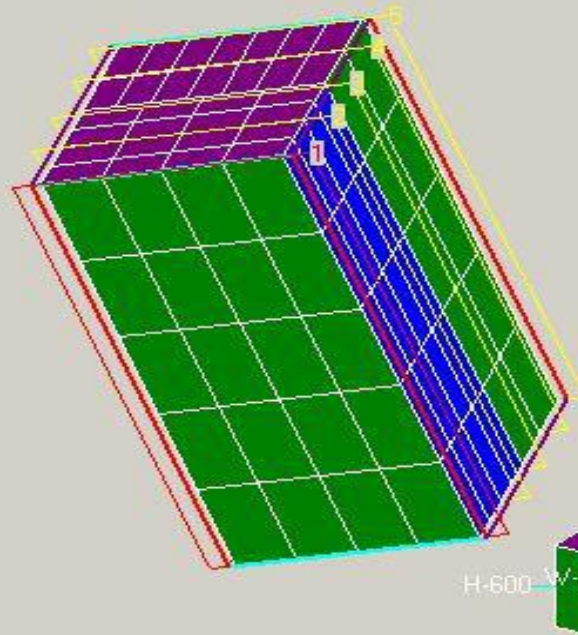
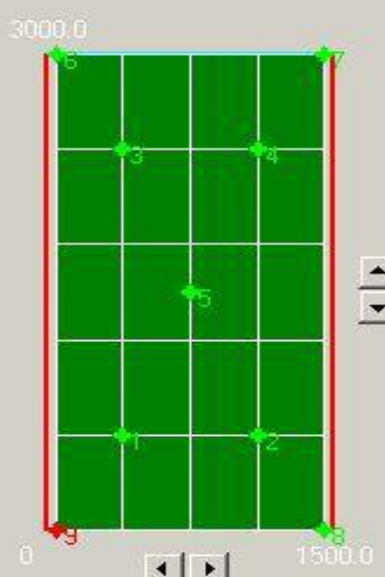
Aérial 光学辐照剂量测量设备

Loading pattern

Data ID: A2001/10/15-00 Operator: H. MICHEL Vldt N°: Mode Maximum Num. of Boxes 150 Occupancy(%) 93.33

Sample-ID	X(mm)	Y(mm)	Dosimeter-N°	Dose(kGy)
P1-001	400.0	600.0	A1	
P1-002	1100.0	600.0	A2	
P1-003	400.0	2400.0	A3	
P1-004	1100.0	2400.0	Reference	
P1-005	750.0	1500.0	A4	

Data of Plane 1:



Container Treatment unit

Charge limit(kg) 2000
Width (mm) 1500
Depth (mm) 1500
Height (mm) 3000

Inner Sides (mm):
Bot. Top
Back Fr.
L. R.

Charge: Box
Orient. Non limit
Weight(kg) 1
Width (mm) 350
Depth (mm) 200
Height (mm) 600

Additional Box:
Weight(kg)
Width (mm)
Depth (mm)
Height (mm)
Position

Planes: Orient. Cut Depth

Number	Plane 1 (mm)	Plane 2 (mm)	Plane 3 (mm)	Plane 4 (mm)	Plane 5 (mm)
5	0.0	400.0	750.0	1150.0	1500.0

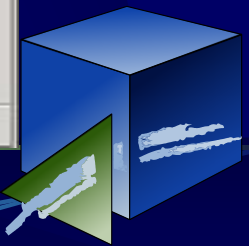
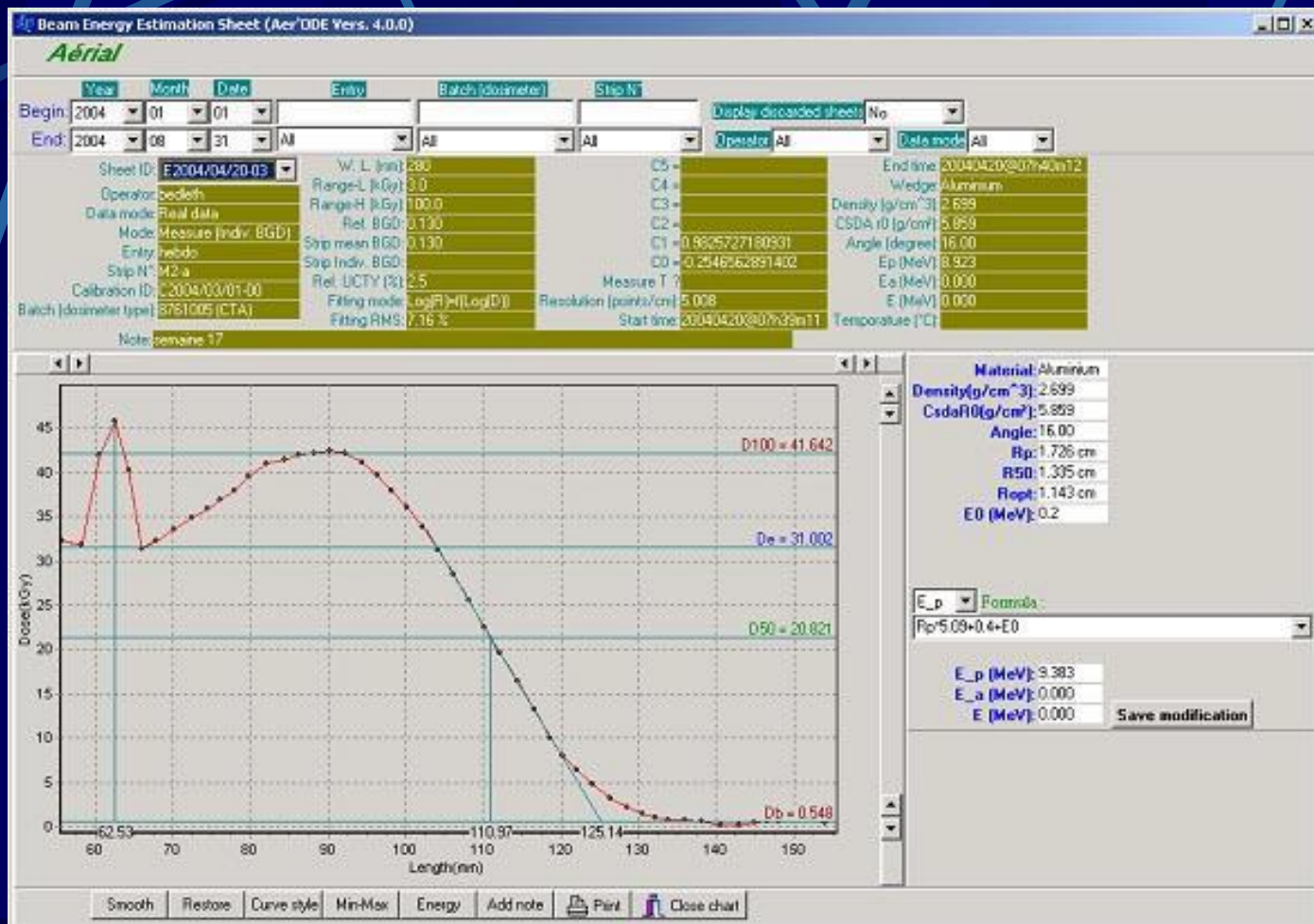
Step size: default

Close

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深度剂量/能量测量

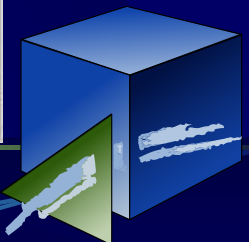
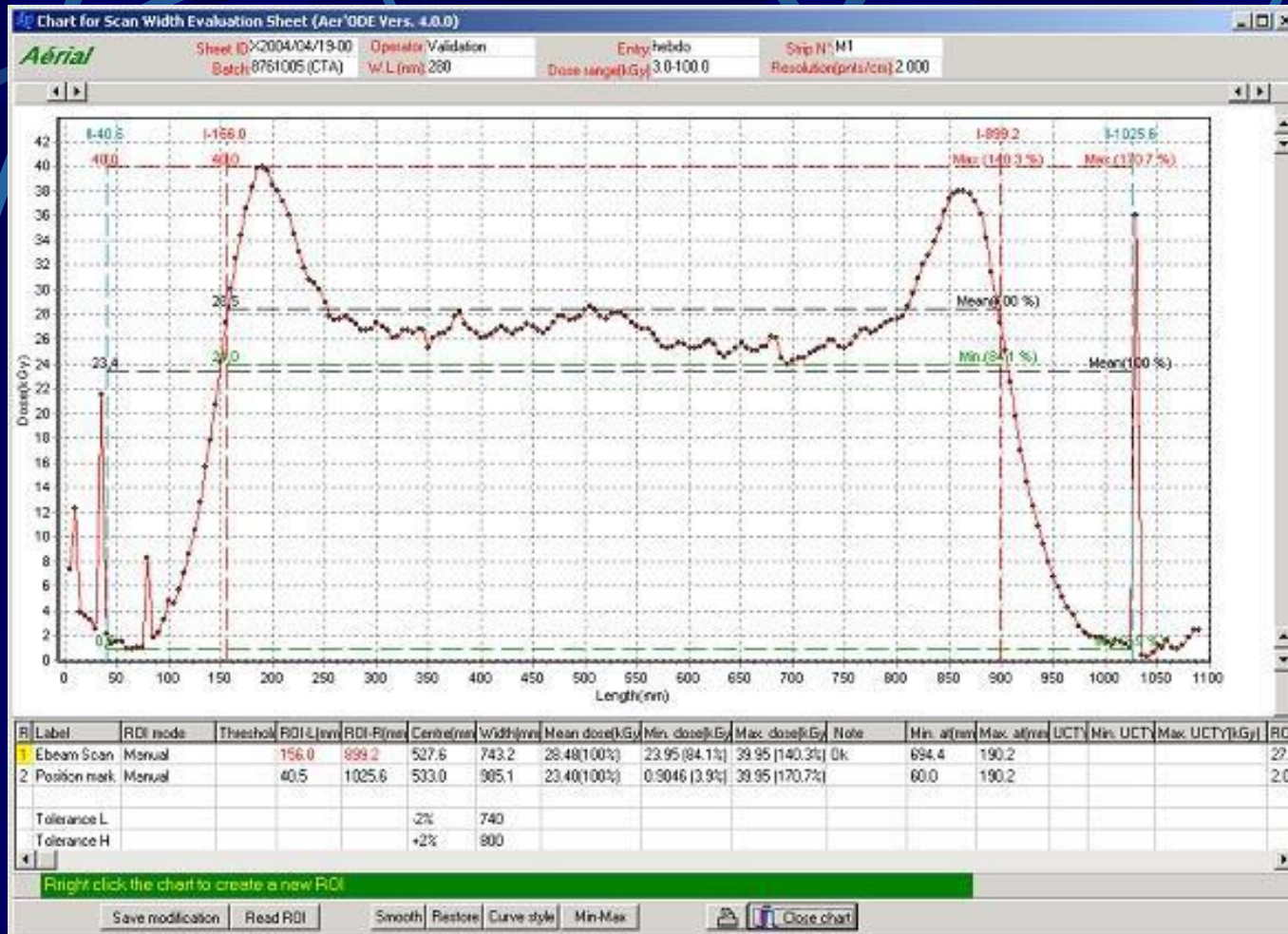
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扫描和速度均匀线测量



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