Chemiluminescence/Fluorescence

STELLA 2000
high sensitive modular imaging system

STELLA 3200
ultra high sensitive modular imaging system

STELLA 8300
ultra high sensitive modular imaging system
  - white light transilluminator
  - UV-light transilluminator
  - variable wavelength transilluminator

AIDA
advanced image data analysis program
  - densitometry, fragment length
  - array evaluation
  - colony counting
  - whole-body-radioluminography
  - thin layer chromatography

Imaging plate scanner
CR 35 Bio
HD-CR 35 Bio

IPshiebox - shielding box for radioluminography

ImageStream X
imaging flow cytometer

Image plate standards
IPsen - imaging plate sensitivity test
IPcal - imaging plate calibration test
IPust - imaging plate uniformity test
Applications

Bio/Chemiluminescence
Fluorescence, UV to near IR
Multichannel fluorescence
Western Blots
Gel Documentation
Proteomics
GLP/GMP

General description

The STELLA family of imaging systems is based on a modular concept with different high performance modules: several cooled high performance CCD-cameras combined with lens optimized for different applications and a variety of modules for illumination ranging from UV to near IR. This guarantees an optimal price-performance ratio for any given application plus the ability to upgrade the system later for additional future applications.

STELLA 2000 uses a high performance, cooled, full-frame CCD camera with microlenses for optimal quantum efficiency. 4.0 Megapixel resolution, state-of-the-art CCD architecture and four stage Peltier cooling (abs. -20°C) guarantee high sensitivity and high resolution for chemiluminescent western blots and many other applications.

Adding raytest AIDA software for data analysis leads to a high performance chemiluminescence and fluorescence imaging system at affordable price. Optional software modules for GLP/GMP and 21 CFR part 11 allow the operation of STELLA in regulated environment.

Features

modular / upgradable imaging system
manual focus and aperture
white-light table for protein gels or film digitalisation
UV-table for gel documentation
variable illumination unit, visible to near IR
manual 2 position filter changer
AIDA software with many modules incl. GMP/GLP

Ordering information

14800014 STELLA 2000 with bright light performance lens
14800050 Computer controlled Focus and Aperture
14800100 white light table for STELLA
14800200 UV-table 312 nm, 250 x 230 mm
14800300 variable transilluminator
14800400 7 position filter wheel
14800401 manual filter changer
14800410 emission filter Em535/40
14800411 emission filter Em605/20
14800412 emission filter Em700/35
14800450 excitation filter Ex470/40x
14800451 excitation filter HQ540/20x
14800452 excitation filter HQ630/20x
14800600 EPI blue illuminator (Cy2)
14800610 EPI green illuminator (Cy3)
14800620 EPI red illuminator (Cy5)

www.raytest.com
STELEA 2000
high sensitive modular imaging system

Technical data

sensor: cooled full-frame CCD with on-chip microlenses
        low dark current
        100 % fill factor

number of pixels: 2048 x 2048 / 4.0 Mpixel

pixel size: 5.4 x 5.4 μm (unbinned)
            10.8 x 10.8 μm (@ 1MP)

cooling: 4 stage Peltier cooling (-20°C)

digitalisation: 16 bit

binning: 2x2, 3x3, 4x4, ..., 16x16

peak quantum efficiency: 62%

interface: USB 2.0 high-speed

field of view: max. 12.5 x 12.5 cm

excitation sources: UV table (312 nm)
                   white-light table
                   variable transilluminator
                   with 7 position filter wheel

emission filters: manual 2 position filter changer
                   E72 filters for a variety of different applications

control software: easy to operate
                 method-based
                 (optimized methods included)

data analysis: AIDA (network or standalone)
              state-of-the-art data analysis
              optimized modules for
              TLC analysis
              gels and blots
              multilabelling
              whole-body autoradiography
              GLP/GMP, 21 CFR part 11
The STELLA family of imaging systems is based on a modular concept with different high performance modules: several cooled high performance CCD-cameras combined with lenses optimized for different applications and a variety of modules for illumination ranging from UV to near IR. This guarantees an optimal price-performance ratio for any given application plus the ability to upgrade the system later for additional future applications.

STELLA 3200 uses a high performance, cooled, full-frame CCD camera with microlenses for optimal quantum efficiency. 3.2 Megapixel resolution, state-of-the-art CCD architecture and four stage Peltier cooling (abs. -35°C) guarantee ultra high sensitivity and high resolution for chemiluminescent western blots and many other applications.

Adding raytest AIDA software for data analysis leads to a high performance chemiluminescence and fluorescence imaging system at affordable price. Optional software modules for GLP/GMP and 21 CFR part 11 allow the operation of STELLA in regulated environment.

### General description

- **STELLA family of imaging systems**
- **Modular concept**
- **High performance modules**
- **UV to near IR illumination**
- **Optimal price-performance ratio**
- **Upgradable system**

### Features

- Modular / upgradable imaging system
- Motorized focus and aperture
- White-light table for protein gels or film digitalisation
- UV-table for gel documentation
- Variable illumination unit, visible to near IR
- Motorized 7 position filter wheel for fluorescence

### AIDA software with many modules incl. GMP/GLP

### Ordering information

- **14800011** STELLA 3200 without lens
- **14800015** bright light performance lens
- **14800017** bright light, wide angle lens
- **14800100** white light table for STELLA
- **14800200** UV-table 312 nm, 250 x 230 mm
- **14800300** variable transilluminator
- **14800400** 7 position filter wheel
- **14800401** manual filter changer
- **14800410** emission filter Em535/40
- **14800411** emission filter Em605/20
- **14800412** emission filter Em700/35
- **14800450** excitation filter Ex470/40x
- **14800451** excitation filter HQ540/20x
- **14800452** excitation filter HQ630/20x
- **14800600** EPI blue illuminator (Cy2)
- **14800610** EPI green illuminator (Cy3)
- **14800620** EPI red illuminator (Cy5)

www.raytest.com
**Technical data**

- **sensor:** cooled full-frame CCD with on-chip microlenses
  - low dark current
  - 100% fill factor
- **number of pixels:** 2184 x 1472 / 3.2 Mpixel
- **pixel size:**
  - 6.8 x 6.8 μm (unbinned)
  - 13.6 x 13.6 μm (@ 1MP)
- **cooling:** 4 stage Peltier cooling (-35°C)
- **digitalisation:** 16 bit
- **binning:** 2x2, 3x3, 4x4, ..., 16x16
- **peak quantum efficiency:** 90%
- **interface:** Ethernet
- **field of view:**
  - max. 11.5 x 17.5 cm
  - (optional wide angle lens: FOV max. 15 x 23 cm)
- **excitation sources:**
  - UV table (312 nm)
  - white-light table
  - variable transilluminator
  - with 7 position filter wheel
- **emission filters:**
  - 7 position filter wheel
  - E72 filters for a variety of different applications
- **control software:** easy to operate
  - method-based
  - (optimized methods included)
- **data analysis:**
  - AIDA (network or standalone)
  - state-of-the-art data analysis
  - optimized modules for TLC analysis
  - gels and blots
  - multilabelling
  - whole-body-autoradiography
  - GLP/GMP, 21 CFR part 11
The STELLA family of imaging systems is based on a modular concept with different high performance modules: several cooled high performance CCD-cameras combined with lens optimized for different applications and a variety of modules for illumination ranging from UV to near IR. This guarantees an optimal price-performance ratio for any given application plus the ability to upgrade the system later for additional future applications.

STELLA 8300 uses a high performance, cooled, full-frame CCD camera with microlenses for optimal quantum efficiency. 8.3 Megapixel resolution, state-of-the-art CCD architecture and four stage Peltier cooling (abs. -20°C) guarantee high sensitivity and very high resolution for proteomics, chemiluminescent western blots and many other applications.

Adding raytest AIDA software for data analysis leads to a high performance chemiluminescence and fluorescence imaging system at affordable price. Optional software modules for GLP/GMP and 21 CFR part 11 allow the operation of STELLA in regulated environment.

### Applications
- Bio/Chemiluminescence
- Proteomics
- Fluorescence, UV to near IR
- Multichannel fluorescence
- Western Blots
- Gel Documentation
- GLP/GMP

### General description

**STELLA 8300**

- ultra high sensitive, cooled CCD camera

### Features
- modular / upgradable imaging system
- motorized focus and aperture
- white-light table for protein gels or film digitalisation
- UV-table for gel documentation
- variable illumination unit, visible to near IR
- motorized 7 position filter wheel for fluorescence
- AIDA software with many modules incl. GMP/GLP

### Ordering information

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<th>Description</th>
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<tr>
<td>14800012</td>
<td>STELLA 8300 without lens</td>
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<tr>
<td>14800017</td>
<td>bright light, wide angle lens</td>
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<tr>
<td>14800100</td>
<td>white light table for STELLA</td>
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<tr>
<td>14800200</td>
<td>UV-table 312 nm, 250 x 230 mm</td>
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<tr>
<td>14800300</td>
<td>variable transilluminator</td>
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<tr>
<td>14800400</td>
<td>7 position filter wheel</td>
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<tr>
<td>14800401</td>
<td>manual filter changer</td>
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<td>emission filter Em535/40</td>
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<td>14800451</td>
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<tr>
<td>14800452</td>
<td>excitation filter HQ630/20x</td>
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[www.raytest.com](http://www.raytest.com)
Technical data

sensor: cooled full-frame CCD with on-chip microlenses low dark current 100 % fill factor

number of pixels: 3326 x 2504 / 8.3 Mpixel

pixel size: 5.4 x 5.4 µm (unbinned) 10.8 x 10.8 µm (@ 2MP)

cooling: 4 stage Peltier cooling (-20°C)

digitalisation: 16 bit

binning: 2x2, 3x3, 4x4, ..., 16x16

peak quantum efficiency: 62%

interface: USB 2.0 high-speed

field of view: max. 21 x 27 cm

excitation sources: UV table (312 nm) white-light table variable transilluminator with 7 position filter wheel

emission filters: 7 position filter wheel E72 filters for a variety of different applications

control software: easy to operate method-based (optimized methods included)

data analysis: AIDA (network or standalone) state-of-the-art data analysis optimized modules for TLC analysis gels and blots multilabelling whole-body-autoradiography
Applications

- contrast optimizing
- image printing
- 1-dimensional densitometry
  (profile analysis)
- fragment length determination
- molecular weight determination
- 2-dimensional densitometry
  (region of interest analysis)

General description

*AIDA* is designed for the fast and reliable acquisition of quantitative and qualitative data of all kinds of biological samples.

*AIDA* can be run under most service packs of Windows 2000, under Windows XP Professional SP 1 and 2 and under Windows Vista.

**Easy and flexible**
The modular structure of *AIDA* allows to perfectly match individual application demands with optimal software modules. This results in enhanced usability as the software is restricted to just the required features. At any time *AIDA* can be upgraded to changing application demands.

**Versatile**
With *AIDA* it is possible to analyze and save or convert most of the existing image file formats such as TIFF (16 or 8 bit) BMP or JPEG and special file formats from Fuji scanners and cameras and Gel file format.

**Independent**
The origin of the digital data may come from a CCD camera, a flat bed scanner, a fluorescence scanner for micro of macro application and/or an imaging plate scanner.

**Reliable background correction**
*AIDA* allows to adapt the background correction to the individual requirements of a large variety of samples.

Features

easy operation

- fast, accurate results
- intuitive menus
- high flexibility
- professional performance
- full documentation
- standalone or network version
- upgrade with GLP/GMP/21 CFR 11 module possible

Ordering information

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<tr>
<th>Code</th>
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<td>15000001</td>
<td><em>AIDA</em> bio-package, 1D, 2D, FL</td>
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<td>15000002</td>
<td><em>AIDA</em> basic software</td>
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<td>15000003</td>
<td><em>AIDA</em> 1D module quantification</td>
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<td>15000004</td>
<td><em>AIDA</em> 2D module quantification</td>
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<td>15000005</td>
<td><em>AIDA</em> fragment length determination</td>
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<tr>
<td>15000067</td>
<td><em>AIDA</em> bio-package GLP</td>
</tr>
</tbody>
</table>

www.raytest.com
AIDA 1D Densitometry – fast and precise quantification with automatic lane, baseline and peak determination or with manual functions for special requirements. The quantitation result table is user configurable.

**Technical data**

**evaluation:**
- Manual or automated
- 1D (profile analysis)
- 2D (region of interest)

**background correction:**
- based on profiles
- based on background region
- local background
- integration limits

**input data from:**
- most CCD cameras
- most flatbed scanners
- Fuji BAS/FLA scanners
- GE STORM/TYPHOON
- CR 35 Bio
- HD-CR 35 Bio

**output file type:**
- 16 bit TIFF
- 8 bit TIFF
- JPG
- BMP
- Fuji or GE file format

**fragment length determination:**
- RF value
- molecular weight
- fragment length
- pI value

**quantity calibration:**
- linear regression
- linear interpolation
- logarithmic regression
- logarithmic weighted regression
- X vs. log Y regression
- Y vs. log X regression

**running under:**
- Windows 2000 Pro (most service packs)
- Windows XP Pro
- Windows Vista

AIDA 2D Densitometry – Optimal region choice for every type of sample the 2D module contains an appropriate region tool to determine the quantification area.

Reliable background correction
AIDA allows to adapt the background correction to the individual requirements of a large variety of samples.

Enhancement for routine work
Reiterating samples, such as dot or slot blots or microtiter plates can easily be quantified with the matrix function. The freely definable matrix can be saved for further evaluations.
AIDA-array
automatic imaging data analysis program, array evaluation

**Applications**
- contrast optimizing
- image printing
- import of GAL files
- normalization
- alignment
- array compare module

**General description**

**AIDA** is designed for the fast and reliable acquisition of quantitative and qualitative data of all kinds of biological samples.

**AIDA** can be run under most service packs of Windows 2000, under Windows XP Professional SP 1 and 2 and under Windows Vista.

**Easy and flexible**
The modular structure of **AIDA** allows to perfectly match individual application demands with optimal software modules. This results in enhanced usability as the software is restricted to just the required features. At any time **AIDA** can be upgraded to changing application demands.

**Versatile**
Import of GAL files or manual creation of the template.

**Powerful**
**AIDA** allows normalization and up to 9 different correction functions.

**Features**
- easy operation
- fast, accurate results
- intuitive menus
- high flexibility
- professional performance
- full documentation
- array compare module
- standalone or network version
- upgrade with GLP/GMP/21 CFR 11

**Ordering information**

15000002 AIDA basic software
15000050 AIDA-array easy
15000051 AIDA-array matrix easy
15000052 AIDA-array compare
15000053 AIDA-array matrix professional
15000070 AIDA microarray

www.raytest.com
Technical data

templates:
- Manually created
- GAL file import

normalization:
- reference dots
- data range (lowest or highest dots)
- arithmetic or geometric mean
- variance stabilization

background correction:
- 9 different correction functions
- optimal background for most arrays

output file type:
- 16 bit TIFF
- 8 bit TIFF
- JPG
- BMP
- Fuji or GE file format

array compare:
- compare a master array to client arrays

running under:
- Windows 2000 Pro (most service packs)
- Windows XP Pro
- Windows Vista
## Applications

- contrast optimizing
- image printing
- colony counting
- variable search areas

## General description

**AIDA** is designed for the fast and reliable acquisition of quantitative and qualitative data of all kinds of biological samples.

**AIDA** can be run under most service packs of Windows 2000, under Windows XP Professional SP 1 and 2 and under Windows Vista.

**Easy and flexible**

The modular structure of **AIDA** allows to perfectly match individual application demands with optimal software modules. This results in enhanced usability as the software is restricted to just the required features. At any time **AIDA** can be upgraded to changing application demands.

## Features

- easy operation
- fast, accurate results
- intuitive menus
- high flexibility
- professional performance
- full documentation
- standalone or network version
- upgrade with GLP/GMP/21 CFR 11 module possible

## Ordering information

<table>
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<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>15000002</td>
<td>AIDA basic software</td>
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<tr>
<td>15000080</td>
<td>AIDA-colony counting module</td>
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</tbody>
</table>

[www.raytest.com](http://www.raytest.com)
Colony detection
Two ways of parameter setting:
- automatical setting by choosing one or more typical colonies
- manual setting of detection parameters

Variable search areas
For examples circles for Petri dishes or rectangles for microtiter plates

Intersections of search areas
Flexible definition of intersections is possible

Technical data
running under:
- Windows 2000 Pro
  (most service packs)
- Windows XP Pro
- Windows Vista

Result table
User adaptable result table with numerous information

Spot editing
- manual spot editing functions
- separation of double spots
- creation of undetected spots or
- erasure of false spots

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www.raytest.com
AIDA-QWBR
automatic imaging data analysis program,
quantitative whole body radioluminography

Applications
whole body radioluminography
contrast optimizing
image printing
overlay and alignment of
white light and radioactive image

General description
AIDA is designed for the fast and reliable acquisition of quantitative and qualitative data of all kinds of biological samples.

AIDA can be run under most service packs of Windows 2000, under Windows XP Professional SP 1 and 2 and under Windows Vista.

Easy and flexible
The modular structure of AIDA allows to perfectly match individual application demands with optimal software modules. This results in enhanced usability as the software is restricted to just the required features. At any time AIDA can be upgraded to changing application demands.

Versatile and flexible
Images from different sources and/or in different file formats can be overlaid and aligned.

Features
easy operation
fast, accurate results
overlay and alignment
professional performance
full documentation
standalone or network version
upgrade with GLP/GMP/21 CFR 11 module possible

Ordering information
15000002 AIDA basic software
15000078 AIDA quantitative whole body autoradiography

www.raytest.com
**input data from:**
- CR 35 BIO
- HD-CR 35 BIO
- Fuji BAS/FLA scanners
- GE STORM/TYPHOON
- JPG e.g. from camera-based system

**running under:**
- Windows 2000 Pro (most service packs)
- Windows XP Pro
- Windows Vista

---

**Technical data**

**region determination:**
- regions of different shapes
- automatic region finder („magic wall“)
- manual possibilities
- auto contour

**region calibration:**
- linear regression
- linear interpolation
- logarithmic regression
- logarithmic weighted regression
- X vs. log Y regression
- Y vs. log X regression

**image alignment:**
The visible and the radioactive image can vary in
- size
- position
- resolution
The alignment is done
- using three marker points
- without changing the raw data
AIDA-TLC

automatic imaging data analysis program, thin layer chromatography

Applications

- contrast optimizing
- image printing
- 1-dimensional thin layer chromatography
- RF determination
- 2-dimensional thin layer chromatography

General description

AIDA is designed for the fast and reliable acquisition of quantitative and qualitative data of all kinds of biological samples.

AIDA can be run under most service packs of Windows 2000, under Windows XP Professional SP 1 and 2 and under Windows Vista.

Easy and flexible

The modular structure of AIDA allows to perfectly match individual application demands with optimal software modules. This results in enhanced usability as the software is restricted to just the required features. At any time AIDA can be upgraded to changing application demands.

Versatile

With AIDA it is possible to analyze and save or convert most of the existing image file formats such as TIFF (16 or 8 bit) BMP or JPEG and special file formats from Fuji scanners and cameras and Gel file format.

Independent

The origin of the digital data may come from a CCD camera, a flat bed scanner, a fluorescence scanner for micro of macro application and/or an imaging plate scanner.

Reliable background correction

AIDA allows to adapt the background correction to the customers requirements.

Features

- easy operation
- fast, accurate results
- intuitive menus
- high flexibility
- professional performance
- full documentation
- standalone or network version
- upgrade with GLP/GMP/21 CFR 11 module possible

Ordering information

<table>
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<tr>
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<td>15000064</td>
<td>AIDA 1D TLC module</td>
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<td>AIDA 2D TLC module</td>
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<td>15000022</td>
<td>AIDA 1D+2D TLC modules</td>
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<td>15000002</td>
<td>AIDA basis software</td>
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</table>

www.raytest.com
**Technical data**

**evaluation:**
- 1D analysis
- 2D analysis

**background correction:**
- based on profiles
- based on background region
- local background
- integration limits

**input data from:**
- most CCD cameras
- most flatbed scanners
- Fuji BAS/FLA scanners
- GE STORM/TYPHOON
- CR 35 Bio
- HD-CR 35 Bio

**output file type:**
- 16 bit TIFF
- 8 bit TIFF
- JPG
- BMP
- Fuji or GE file format

**running under:**
- Windows 2000 Pro (most service packs)
- Windows XP Pro
- Windows Vista

Clicking and Dragging the X-Axis

Using the AutoContour Tool

Preview Example

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AIDA-TLC
automatic imaging data analysis program,
thin layer chromatography
CR 35 Bio is a compact high-speed scanner for all flexible types of image plates / storage phosphor screens up to the size of 35 x 43 cm. In combination with the corresponding imaging plate it can be used for a variety of different nuclides, such as H-3, C-11, C-14, F-18, P-32, P-33, S-35, Fe-59, Ga-68, Tc-99m, In-111, I-125, I-131, Cs-137, etc.

An integrated erasing unit allows to read and erase the imaging plate in one step.

Its novel design allows compact size and high speed scanning. The laser is focused to 30 μm allowing pixels sizes from 30 to 200 μm without pixel interpolation.

**Applications**

- PhosphorImager
- Digital radiography
- Image plate scanning
- Storage phosphor screens
- Whole body radioluminography

**Features**

- Red LED laser 635 nm
- Easy to use
- High scanning speed
- 16 bit dynamic range
- Integrated erasing unit

**Ordering information**

- 22200002 CR 35 Bio
- 22200012 CR-Reader software
- 22200015 CR 35 Dark Cabinet
- 08000206 External eraser IP’s up to 35 x 43 cm
Technical data

laser: red LED laser 635 nm focused to 30 μm

pixel size: 30 μm, 50 μm, 100 μm, 200 μm

size: 39 x 38 x 52 cm

weight: 21 kg

max. size for screens: 35 cm width, length up to 43 cm or longer

interface: USB 2.0 high-speed

operating noise: < 49db(A)

optional eraser: for high-throughput and/or highly radioactive samples

data analysis: AIDA (network or standalone) state-of-the-art data analysis optimized modules for TLC analysis gels and blots whole-body autoradiography GLP/GMP, 21 CFR part 11

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Applications

PhosphorImager
Digital radiography
Image plate scanning
Storage phosphor screens
Whole body radioluminography

General description

HD-CR 35 Bio is a compact high-speed scanner for all flexible types of image plates / storage phosphor screens up to the size of 35 x 43 cm. In combination with the corresponding imaging plate it can be used for a variety of different nuclides, such as H-3, C-11, C-14, F-18, P-32, P-33, S-35, Fe-59, Ga-68, Tc-99m, In-111, I-125, I-131, Cs-137, etc.

An integrated erasing unit allows to read and erase the imaging plate in one step.

Its novel design allows compact size and high speed scanning. The laser is focused to 12.5 μm allowing pixels sizes from 12.5 to 200 μm without pixel interpolation.

The HD-CR 35 Bio scanner is the first imaging system for radioluminography certified by BAM, Berlin for the tests according to DIN EN 14784, class B.

Features

- red LED laser 635 nm
- easy to use
- high scanning speed
- 16 bit dynamic range
- integrated erasing unit

Ordering information

- 22200001 HD-CR 35 Bio
- 22200012 CR-Reader software
- 22200015 CR 35 Dark Cabinet
- 08000206 external eraser IP’s up to 35 x 43 cm

www.raytest.com
**Technical data**

- **laser:** red LED laser 635 nm focused to 12.5 μm
- **pixel size:** 12.5 μm, 25 μm, 50 μm, 100 μm, 200 μm
- **size:** 39 x 38 x 52 cm
- **weight:** 21 kg
- **max. size for screens:** 35 cm width, length up to 43 cm or longer
- **interface:** USB 2.0 high-speed
- **operating noise:** < 49db(A)
- **optional eraser:** for high-throughput and/or highly radioactive samples
- **data analysis:** AIDA (network or standalone) state-of-the-art data analysis optimized modules for TLC analysis gels and blots whole-body autoradiography GLP/GMP, 21 CFR part 11
Applications

β low activity sample exposure for radio-luminography

General description

At very low activity expositions to imaging plates, the background radiation will generate a signal, which may be as strong as the signal from the sample itself.

Therefore the sample cannot be differentiated from the background radiation.

The background radiation must be reduced.

That is the purpose of the shielding box.

The "external" radiation from construction material, building, nature and cosmos has to be reduced by an effective shielding material, which encloses the sample as well as the sensor (imaging plate).

The internal design material is electrolytic molten pure copper, which contains almost no radioactive contamination.

Especially selected "old", very low activity lead is used for the shielding box.

The outside housing is made from 3 mm steel, selected for low activity.

The foot design suitable for fork lift transportation.

Features

improvement of detectability up to a factor of 10 all image plate sizes refrigerated version

Ordering information

08000165 shielding box for 16 imaging plates 23 x 40 cm

08000173 shielding box for 16 imaging plates 46 x 49 cm

08000182 shielding box refrigerated 16 imaging plates 46 x 49 cm

www.raytest.com
# Technical data

<table>
<thead>
<tr>
<th>Article number</th>
<th>08000165</th>
<th>0800182</th>
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<tbody>
<tr>
<td>Shielding box for</td>
<td>16 IP's 23 x 40 cm size</td>
<td>Refrigeratable but</td>
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<td>Wall composition</td>
<td>5 mm pure copper</td>
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</tr>
<tr>
<td>50 mm low activity lead</td>
<td>16 IP's 460 x 490 mm</td>
<td></td>
</tr>
<tr>
<td>3 mm selected steel</td>
<td>16 IP's 400 x 430 mm</td>
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</tr>
<tr>
<td>Inner dimension</td>
<td>262 x 262 x 433 mm</td>
<td></td>
</tr>
<tr>
<td>Outer dimension</td>
<td>572 x 379 x 479 mm</td>
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<tr>
<td>Weight</td>
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<table>
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<th>08000173</th>
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<tr>
<td>Shielding box for</td>
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<tr>
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<tr>
<td>50 mm low activity lead</td>
<td>3 mm selected steel</td>
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<tr>
<td>3 mm selected steel</td>
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<tr>
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<td>Outer dimension</td>
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ImageStream™
Imaging Flow Cytometer

Applications
Morphology/Shape Change
Internalization
Cell Signalling
Co-localization
Apoptosis
Cell Death and Autophagy
Phenotyping
Cell Cycle and Mitosis
Cell-Cell Interactions
DNA Damage and Repair
Stem Cell Differentiation

General description
The ImageStream™ is a high performance imaging flow cytometer. It combines the speed, sensitivity, and phenotyping abilities of flow cytometry with the detailed imagery and functional insight of microscopy.

The cells are analyzed in flow as on any standard flow cytometer. The ImageStream™ quantifies both the intensity and the location of fluorescent probes and can image more than 50,000 cells per minute, allowing to analyze rare subpopulations and highly heterogeneous samples with statistically robust and objective results.

The ImageStream™ allows to
* image cells directly in suspension with the resolution of a 60X microscope and the fluorescence sensitivity of the best flow cytometers,
* perform phenotypic and functional studies at the same time using up to 12 images per cell,
* analyze highly heterogeneous samples and rare cell sub-populations at speeds of up to 1,000 cells per second,
* quantitate virtually anything visible using the IDEAS software package’s numerous pre-defined fluorescence and morphologic parameters.

The modular design of the ImageStream™ system yields experimental flexibility through a broad range of field-installable options.

Features
High speed cell imaging (up to 1,000 cell/sec)
High sensitivity
Up to 5 lasers / up to 12 imaging channels
Many modular Options
IDEAS software for fast and efficient data analysis

Ordering information
38100000 ImageStream™ (blue laser 488 nm / 100 mW, 6 channels, 40X objective)
38100001 violet laser (405 nm, 100 mW)
38100002 red laser (658 nm, 120 mW)
38100003 high power blue laser (488 nm/500 mW)
38100004 green laser (561 nm, 200 mW)
38100005 yellow laser (592 nm, 300 mW)
38100201 Extended depth of field option, EDF™
38100202 MultiMag option, 20X/40X/60X objectives
38100203 upgrade to 12 imaging channels
38100204 Full color brightfield upgrade
38100205 Autosampler option
38100301 IDEAS software (1 seat)
38100302 IDEAS software (lab licence)
38100401 Speed beads kit
38100601 Data analysis workstation

www.raytest.com
Cell classification

T-cell / APC conjugates

Nuclear translocation

**Technical data**

Up to 5 excitation lasers (405 / 488 / 561 / 594 / 658 nm)

785 nm darkfield laser

Up to 12 imaging channels

**detection limit:** < 50 MESF

**magnification:**
- 40X (0.75 NA) standard
- 60X (0.9 NA) with MultiMag option
- 20X (0.5 NA) with MultiMag option

**pixel size:**
- 0.5 x 0.5 microns at 40X
- 0.3 x 0.3 microns at 60X
- 1.0 x 1.0 microns at 20X

**field of view:**
- 60 x 128 microns at 40X
- 40 x 76 microns at 60X
- 120 x 256 microns at 20X

**imaging rate:**
- 1,000 cells per second at 40X
- 600 cells per second at 60X
- 2,000 cells per second at 20X

**images per cell:**
- 6 images per cell standard (brightfield, darkfield, fluorescence)
- 12 images per cell optional

**throughput:** 1 sample per minute, nominal

**sample volume:** 50 microliters

**autosamper:** Optional upgrade for multiwell plates
Applications

β quantitative evaluation of
- 1D-TLC
- multiple 1D-TLC
- 2D-TLC
- whole-body radioluminography

General description

Imaging plate scanners have to be checked out for sensitivity changes over time in particular after laser or other components replacement.

The imaging plate sensitivity source is supplied in an imaging plate exposition cassette made of metal plate sheet.

The cassette wall is shielding the low energy C-14 beta radiation completely and radiation cannot escape.

For resolution test a suitable stainless steel foil is placed partially over the C-14-sensitivity test source.

The resolution test program is performed and the MTF is calculated and printed.

Features

- shading test is required after every repair of any scanner
- shading test with C-14 source
- very high accuracy standard
- long life of standards, C-14
- low energy radiation of standard
- resolution test with MTF

Ordering information

- 08000010  C-14-polymer source sensitivity test after every repair, 22 kBq, C-14
- 15000012  resolution test after every repair
Technical data

- **nuclide:** C-14
- **half-life time:** 5600 years
- **dimension source:** 25 mm diameter
- **thickness source:** saturation
- **material:** polymer foil
- **activity:** 22kBq
- **surface uniformity:** >1%
### General description

C-14 standards for testing the detection limit. 13 standards have total activities from 0.068 Bq to 19.5 kBq

**Regulatory requirements:**
At installations and during the ongoing use of analytical instruments in a regulated environment it is required to measure the instrument’s performance. To meet these requirements for scanner and imaging plates, raytest has developed tools, consisting of software and radioactive sources:
- limit of detection
- uniformity and resolution

**Determination of limit of detection:**
Exposure of a plate with a series of radioactive standards to an imaging plate for a defined time.

Scan of the imaging plate.

Automated region search for the standards.

Determination of the background.

Generation of the standard curve region area versus activity.

Calculation of the lower detection limit.

Printout of the results for performance documentation.

### Features

- linear range 1 :1 Mio
- comparing sample/standard
- very high accuracy standards
- long life of standards, C-14
- low energy radiation of standard
- uniformity better +/- 1%

### Ordering information

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<th>Description</th>
<th>Details</th>
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<td>C-14-polymer standard array</td>
<td>high activity range</td>
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<td>6 sources, 65.8 Bq to 19.5 kBq</td>
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<td>C-14-polymer standard array</td>
<td>low activity range</td>
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<td>6 sources, 0.068 Bq to 20.2 Bq</td>
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<tr>
<td>15000261</td>
<td>limit of detection software</td>
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www.raytest.com
Technical data

nuclide: C-14
half-life time: 5600 years
dimension 1 source: 10 x 10 mm
thickness of source: saturation
material: polymer foil

activities:
- blue: 19.5 kBq
- light blue: 7 kBq
- yellow: 1.8 kBq
- light yellow: 691 Bq
- purple: 222.5 Bq
- light purple: 65.8 Bq
- orange: 20.2 Bq
- brown: 7 Bq
- green: 2 Bq
- light green: 0.68 Bq
- red: 0.16 Bq
- grey: 0.068 Bq
- colorless: bkg

surface uniformity: > 1%
### Applications

- β quantitative evaluation of
  - 1D-TLC
  - multiple 1D-TLC
  - 2D-TLC
  - whole-body radioluminography

### General description

**Regulatory requirements:**
At installations and during the ongoing use of analytical instruments in a regulated environment it is required to measure the instrument's performance. To meet these requirements for scanner and imaging plates, raytest has developed tools, consisting of software and radioactive sources:
- limit of detection
- uniformity and resolution

**Determination of system uniformity:**
for scanner and imaging plate.
Exposure of the uniformity standard test source with equally distributed radioactivity to an imaging plate for a defined time.
Scan of the imaging plate.
Automated generation of numbered regions of interest.
Determination of the background.
Automated marking of the area with the lowest activity in green and the highest activity in red.
Display of image and marked areas together with experiment parameters.
Automated calculation of the maximum deviation.
Printout of the result for performance documentation.

**Uniformity test source technical data:**
C-14 standard with total activity of 13 – 16 MBq for testing uniformity of all radioluminography scanners and imaging plates. Each scanner needs new uniformity adjustment, this standard must be used. Available size:
- 200 x 250 mm
- 200 x 400 mm
- 230 x 250 mm
- 230 x 400 mm

### Features

- linear range 1 : 1 Mio
- comparing sample/standard
- very high accuracy standards
- long life of standards, C-14
- low energy radiation of standard
- uniformity better +/- 1%

### Ordering information

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<td>C-14-polymer uniformity test source type II 2325</td>
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[www.raytest.com](http://www.raytest.com)
**Technical data**

<table>
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<th>Specification</th>
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<td><strong>nuclide:</strong></td>
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<td><strong>dimensions:</strong></td>
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<tr>
<td></td>
<td>23 x 25 cm</td>
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<tr>
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<td>20 x 40 cm</td>
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<td><strong>uniformity of radioactivity distribution:</strong></td>
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