

# FUSION SOLO S

CHEMILUMINESCENCE &  
OPTIONAL FLUORESCENCE IMAGING



WESTERN BLOT IMAGING

# ULTRA SENSITIVE IMAGING

The Fusion Solo is a high-end ultra-sensitive scientific optical system, designed to extract the lowest level of detection from your protein. The Fusion systems' cameras use the latest generation of sensors and semi-conductors. Combined with our unique build-in High Sensitivity Reading

(HSR) technology and our unrivalled V.070 lens, the Fusion is the most sensitive system and the best for publication, quantification and documentation grade imaging.

Fusion's High Sensitivity Reading technology delivers ultra-low noise and high sensitivity without altering the raw image data. Thanks to a camera modular design, a dual amplifier architecture and a complete control of the electronic components, the camera noise is reduced to a fraction. The HSR technology is a camera "on-head" built-in technology. During the light exposure, the non-necessary camera components are shut down. Once the exposure time is over, the camera components are automatically turned back. The shut-down

process during the image exposition reduced the camera noise, resulting in a better chip capacity to collect the signal.

Thanks to our HSR technology, the Fusion reduces the various sources of noise to the lowest floor level and the signal can stand out from the surrounding background. The figures 1 and 2 are a comparison of weak light signal images showing the sensitivity benefit of the Fusion HSR technology face to competitive systems. The HSR maximizes the signal and minimizes the noise to achieve the best signal to noise ratio for the lowest limit of detection. For Western blot imaging, the time to get the image is dramatically reduced and precious antibody can be saved.



The V.070 lens combines ultra-low dispersion aspheric elements to deliver unrivalled sensitivity and consistently sharp images. The 20mm minimum focusing distance is optimum for very faint light conditions.

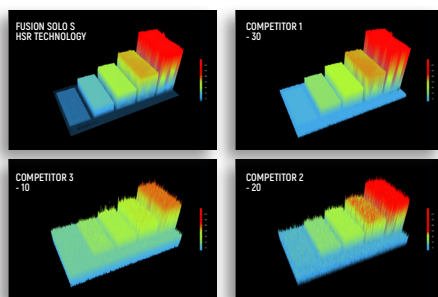


Figure1. Comparative low light images taken with Fusion versus competitive systems with comparable imaging settings. The images are displayed with same relative intensity scaling.

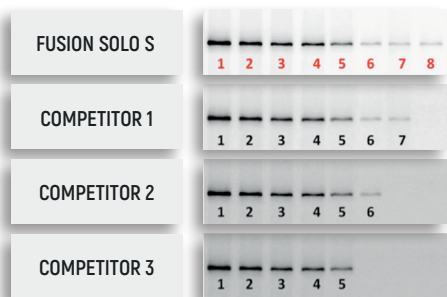


Figure2. The HSR technology provides a better sensitivity by reducing the noise ground level. By keeping the background to its lowest floor level, the very faint signal can easily be detected and quantified.

# ONE CLICK TO THE IMAGE

The FUSION Solo S has been designed for maximum ease of use. From its simple installation to its intuitive user interface, this system is plug-and-play. The Solo S software is the easiest software to take an image. Place your blot on the tray, select your application, click on Start

and automatically the system auto-exposes your blot image, your marker image and combines the two together.

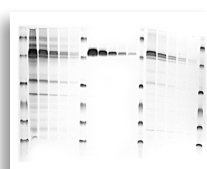
The FUSION Solo S includes our unique Apps Studio approach to imaging. The Apps Studio is a library which contains 40 different protocols for your blot, gel and other bioluminescence samples. The Studio gathers the excitation and the emission spectral of the main fluorophores and suggests the best possible system configuration.

The Apps Studio ensures reproducibility and one click acquisition for the best ease of use.

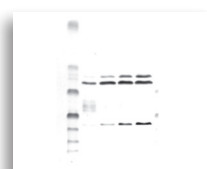
The modularity design of the FUSION Solo S makes the system fully upgradeable. You can simply start with a dedicated chemiluminescence system and upgrade your system as your number of applications grows. You could easily add UV or blue fluorescence for gels or EPI blue, green, NIR et IR excitation sources for fluorescence on blots. The build-in darkroom PadBox could accommodate several optional Application Pad light source. The Application Pad are then automatically recognized by the system and the imaging and software options are adjusted accordingly.



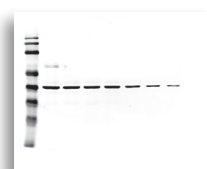
The Apps Studio contains more than 40 different imaging protocols for your Western, Northern or Southern blot.



Several blots detection at once.



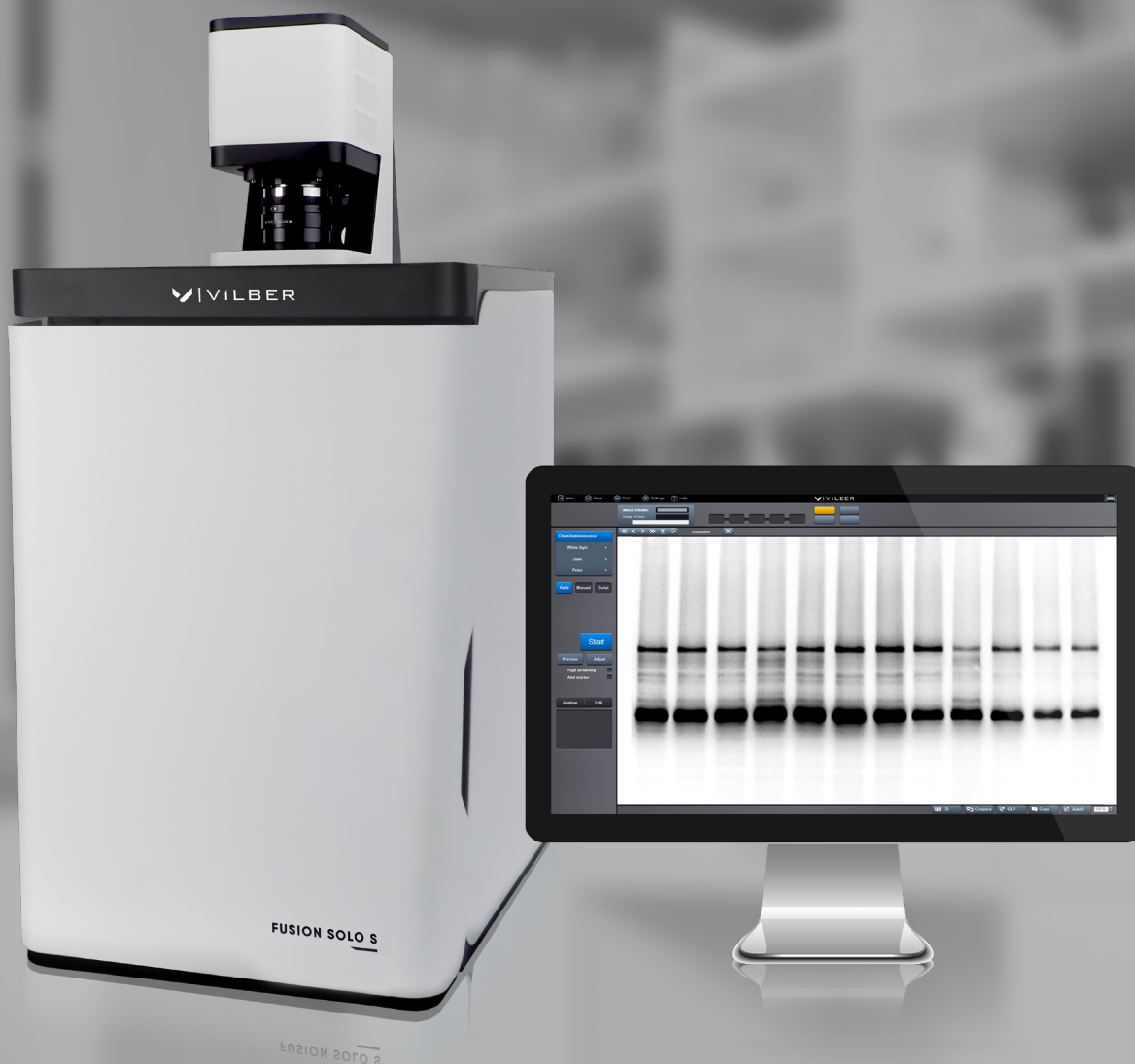
Housekeeping/Protein of interest normalization.



Merged signal & marker images.

# FUSION SOLO S

New Edge Generation



## Super Sensitivity

Ultimate linearity for precise quantification.



## Auto Exposure

Ultra-low noise imaging thanks to a dual camera amplifier.



## Custom Made Super Sharp Lens

Fusion custom made lens for enhanced sensitivity & sharpness.



## Adaptable Fluorescence Detection

Up to 7 excitations channels in the IR, NIR & visible RGB.



## Apps Studio

A complete library of imaging applications to ensure reproducibility.



## PadBox Concept

Interchangeable light-Pad for UV, blue and white fluorescence.

# FUSION SOLO S

## Upgradable

- Dedicated chemiluminescence system with extendable fluorescence capabilities
- Optional epi or transillumination options for blot or gel
- Adaptable to Spectra Capsules for Epi UV, blue, green, red, NIR, IR fluorescence options on blots

## Long Lasting High Quality

- Stainless steel, aluminium and steel darkroom for the best robustness
- Proven camera robustness
- White light LED for thousands of hours of use
- Interchangeable Pad
- Chemiluminescence detection : femtogram level



## Ideal For Quantification

- Reproducible and comparable quantification data
- ImageMaster™ technology to obtain the optimum image for quantification
- Scientific TIFF file or proprietary file format
- Clarity™ technology for razor sharp band revelation without affecting data integrity

## Unrivalled Performance

- Better sensitivity than a film
- Unique custom made V.070 lens performance for super-fast image acquisition
- Reproducible and comparable quantification data
- Best signal to noise ratio of the industry for the lowest limit of detection

## FUSION Solo S Pad-Box Concept

The PadBox concept meets the need for accommodating several interchangeable light sources into one device. The PadBox can easily integrate one of the several available Application Pads such as our UV, blue, white light or your own hardware such as heater, cooler, electrophoresis tank, special light source etc. The Application Pad is automatically recognized by the system and the imaging and software options are adjusted accordingly.





## Camera & Optics

**FUSION Solo 7S with the DarQ-9 camera – sensitivity oriented camera ideal for extremely low light sample**

### DarQ-9 camera:

- Unrivalled custom made lens f/0.70
- Scientific grade CCD camera
- Grade 0, zero defect
- Image resolution: 10 megapixels
- Native resolution: 2160x2160
- -90° C maximum cooling differential from ambient
- -65°C absolute and regulated cooling via a double cooling system & four stages Peltier thermoelectric cooler.
- High Sensitivity Reading (HSR) technology
- USB-3 connection

FUSION Solo 6S with the eVo-6 camera – resolution oriented camera ideal for publication

### eVo-6 camera:

- Unrivalled custom made lens f/0.70
- Scientific grade CCD camera
- Grade 0, zero defect
- Image resolution: 20 megapixels
- Native resolution: 2838x2224
- -55° C maximum cooling differential from ambient
- -30°C absolute and regulated cooling via three stage Peltier thermoelectric cooler
- High Sensitivity Reading (HSR) technology
- USB-3 connection

## Ease Of Use

One-Click-to-the-Image™  
Auto-exposure  
Auto-lighting

## Hardware

### Smart Darkroom technology:

- Motorised 7 positions filter wheel
- Software control of the lighting
- Automatic recognition of the sample position
- Automatic visible lighting adjustment

Steel and stainless steel darkroom for long lasting robustness. Wide access door with UV safety shut-off  
Built-in slide-out tray for interchangeable Pad.

## Software

Free software for image acquisition with full GLP compliance. Molecular weight calculation, band quantification, colony counting, distance calculation, text annotation and image enhancement included.

CFR21 Part 11 ready

## Applications

Chemiluminescence Western, Northern or Southern blot

### Optional applications:

DNA and RNA gels and fluorescence stain imaging with UV-Pad or Blue-Pad  
Colorimetric stained protein gels, X-Ray film, autorads, SSCP gels, colony dish and flask imaging with White-Light-Pad or UV-Pad + conversion screen  
Fluorescence Western blot with Spectra Capsules

## Technologies & Innovation

Apps Studio  
3D Dynamics Scan  
SuperResolution  
High Sensitivity Reading (HSR) technology  
PadBox™  
ImageMaster™ assistant  
Clarity™

## Options

Spectra Capsules Adapter: Upgradable Spectra Capsules innovative concept for a customized choice of up to 7 powerful filtered optic light capsules:

**365nm UV - 440nm - 480nm - 530nm  
640nm - 680nm - 740nm - 780nm**

Covering a wide variety of application in the UV, Visible and the IR range.

- UV-Pad, Super-Bright-Pad, Sky-Light-Pad  
Blue-Pad, White-Light-Pad
- White light or blue light conversion screen
- Advanced Bio-1D quantification software
- CFR21 Part 11 Administration Software



#### **HEADQUARTER**

Vilber Lourmat  
ZAC de Lamirault  
Collegien  
F-77601 Marne-la-Vallee cedex 3  
France  
Phone 3 (0) 1 60 06 07 71  
[info@vilber.com](mailto:info@vilber.com)

#### **GERMANY**

Vilber Lourmat  
Deutschland GmbH  
Wielandstrasse 2  
D-88436 Eberhardzell  
Deutschland  
Phone : + 49 (0) 7355 931 380  
[info@vilber.de](mailto:info@vilber.de)

#### **CHINA**

Vilber China  
Room 127 Building A  
N° 111 Yuquangying  
Fengtai District – Beijing  
China  
Phone : + 86 1361 1131 545  
[info@vilber.cn](mailto:info@vilber.cn)