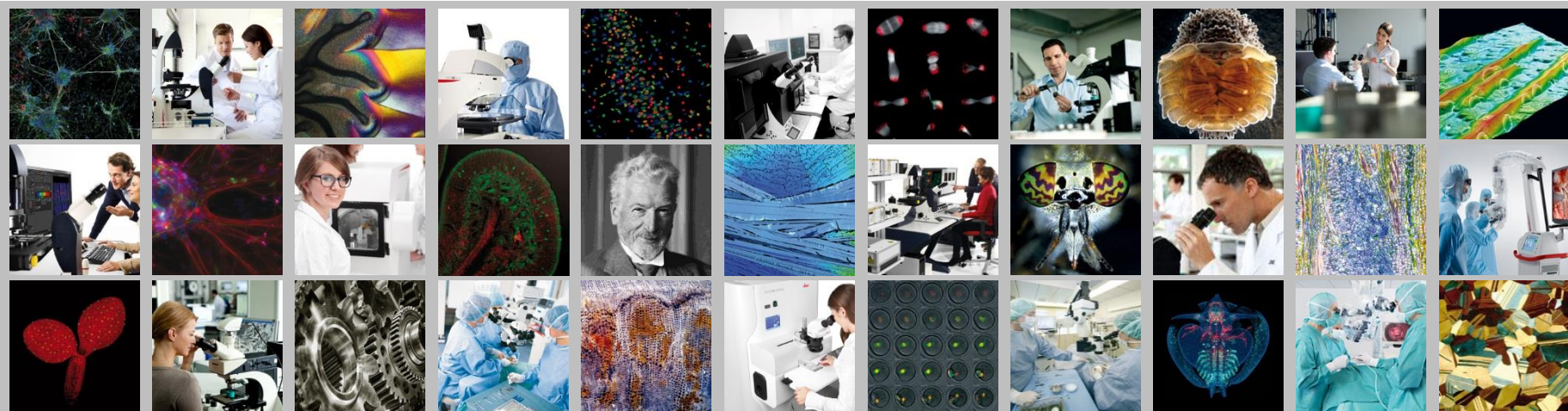


Living up to Life

Leica
MICROSYSTEMS

給你無限想像...



DMi8 倒立螢光顯微影像系統



Specialist : Vicky (美嘉儀器股份有限公司)



Science Lab



The Future starts today

DMi8

**As universal as your ideas.
As individual as your tasks.**

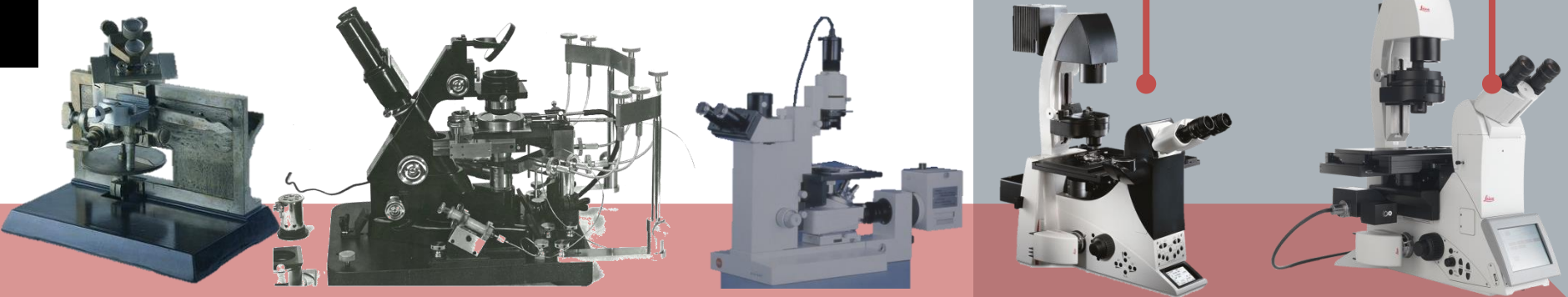
High Performance

PERFORMANCE

FUNCTIONALITY

Leica
DMI6000

Leica
DMi8



revolution & evolution

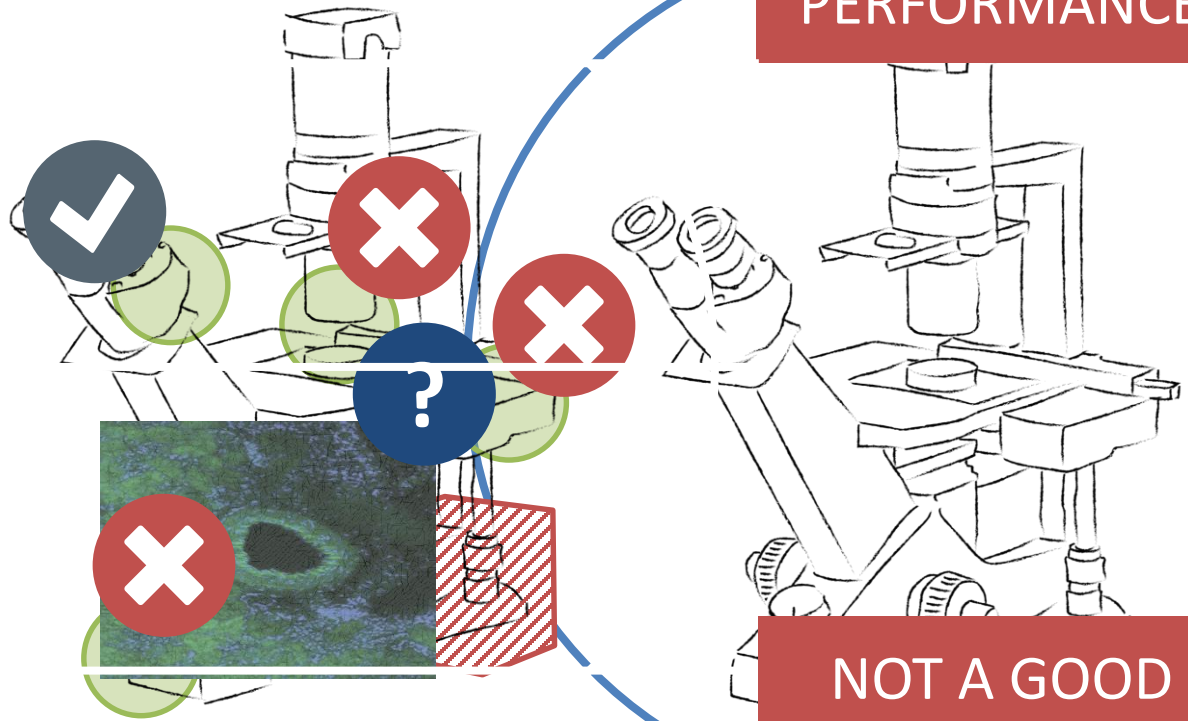
Some Perspectives on Life Science Research

POOR
FLEXIBILITY

COMPROMISED
PERFORMANCE

LACK OF
UPGRADABILITY

NOT A GOOD
DEAL



A Shift Of Perspective

Leica DMI8

REVOLUTIONARY
TAILOR-MADE
SOLUTIONS



HIGH
PERFORMANCE
IMAGING
SYSTEM

Leica DMI8 Inverted Microscope Platform



Lighting the way

Perfect staging

Infinite fluorescence capabilities

Capture the perfect image

Get the best view

Brilliant optics

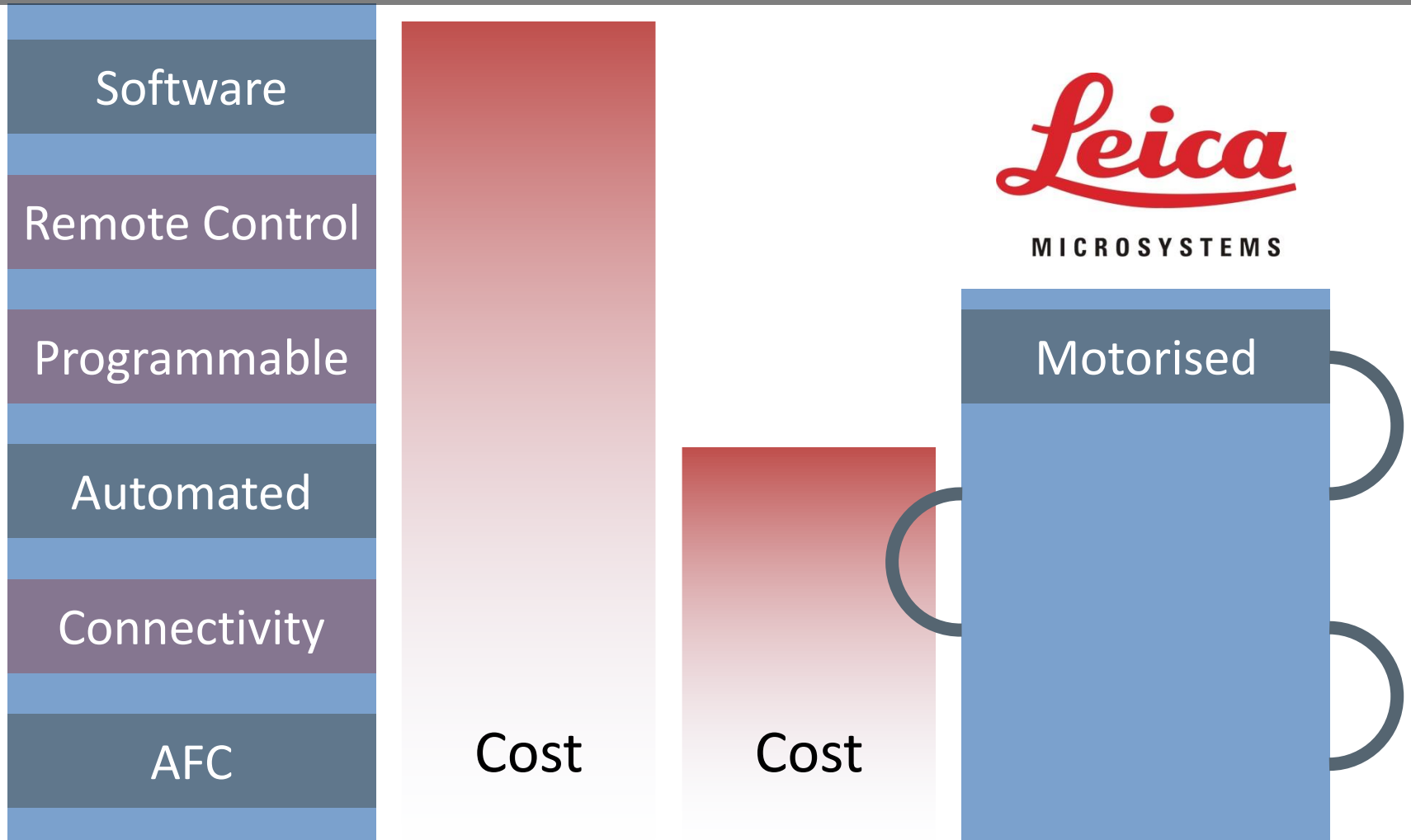
You're in control



INFINITE POSSIBILITIES

Easy On Your Budget

BEST PRICE PERFORMANCE



Extensive Third Party Integration

Fluorescence
port

Infinity port

Four camera
ports

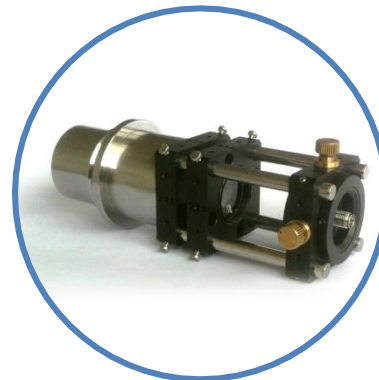
Laser safety
tools

Opto-mechanical
documentation



Leica

M I C R O S Y S T E M S



Andor

Linos

Thorlabs

Lumencor

Lumen
Dynamics

Hamamatsu

Metamorph

Many more...

Infinity Port - Unfold Your Cells' Story

Leica
MICROSYSTEMS

FRAP
Two infinity ports

TIRF

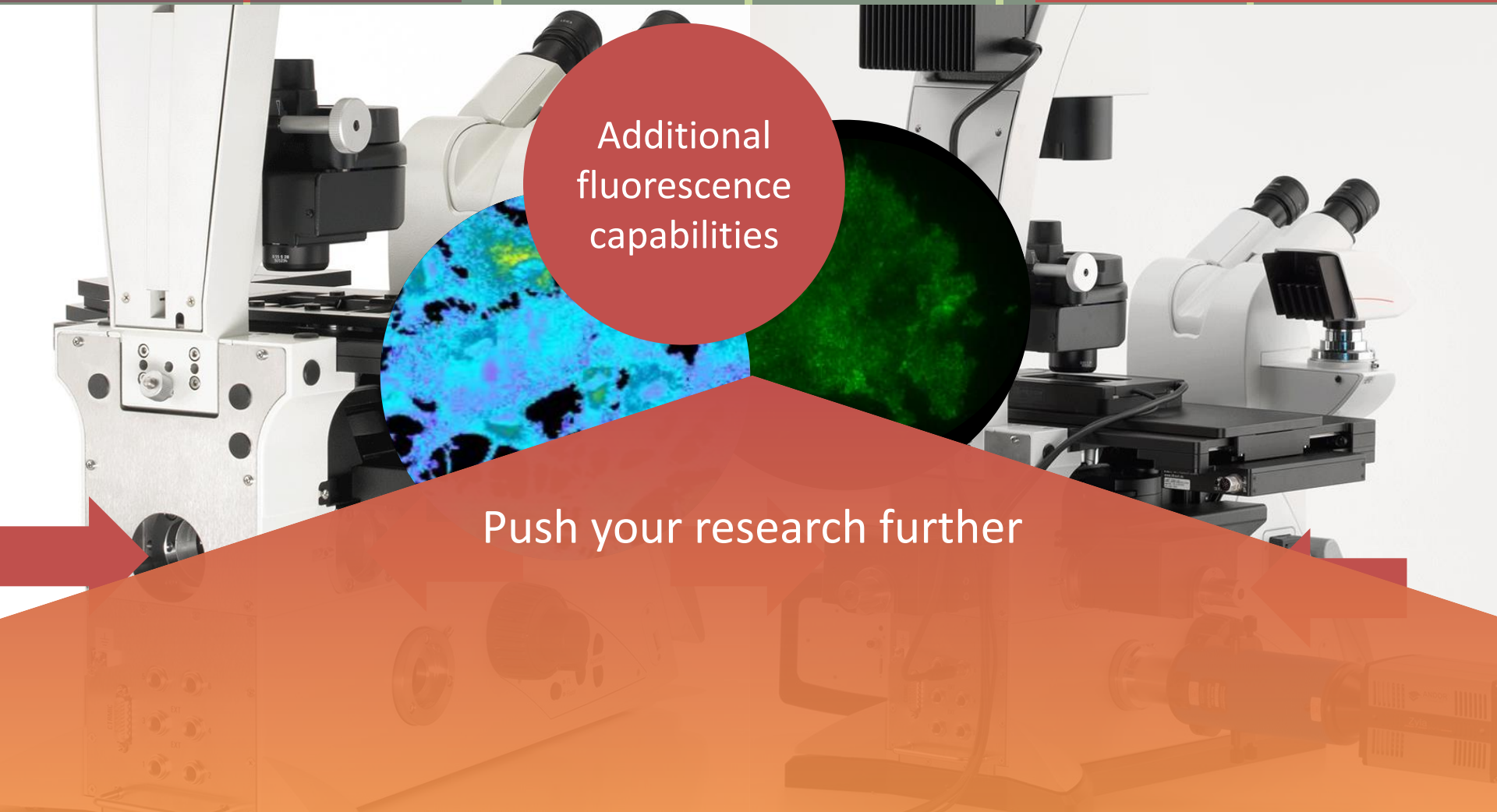
Photo-
switching/
activation

Laser
ablation

Two fluorescence
ports

Additional
fluorescence
capabilities

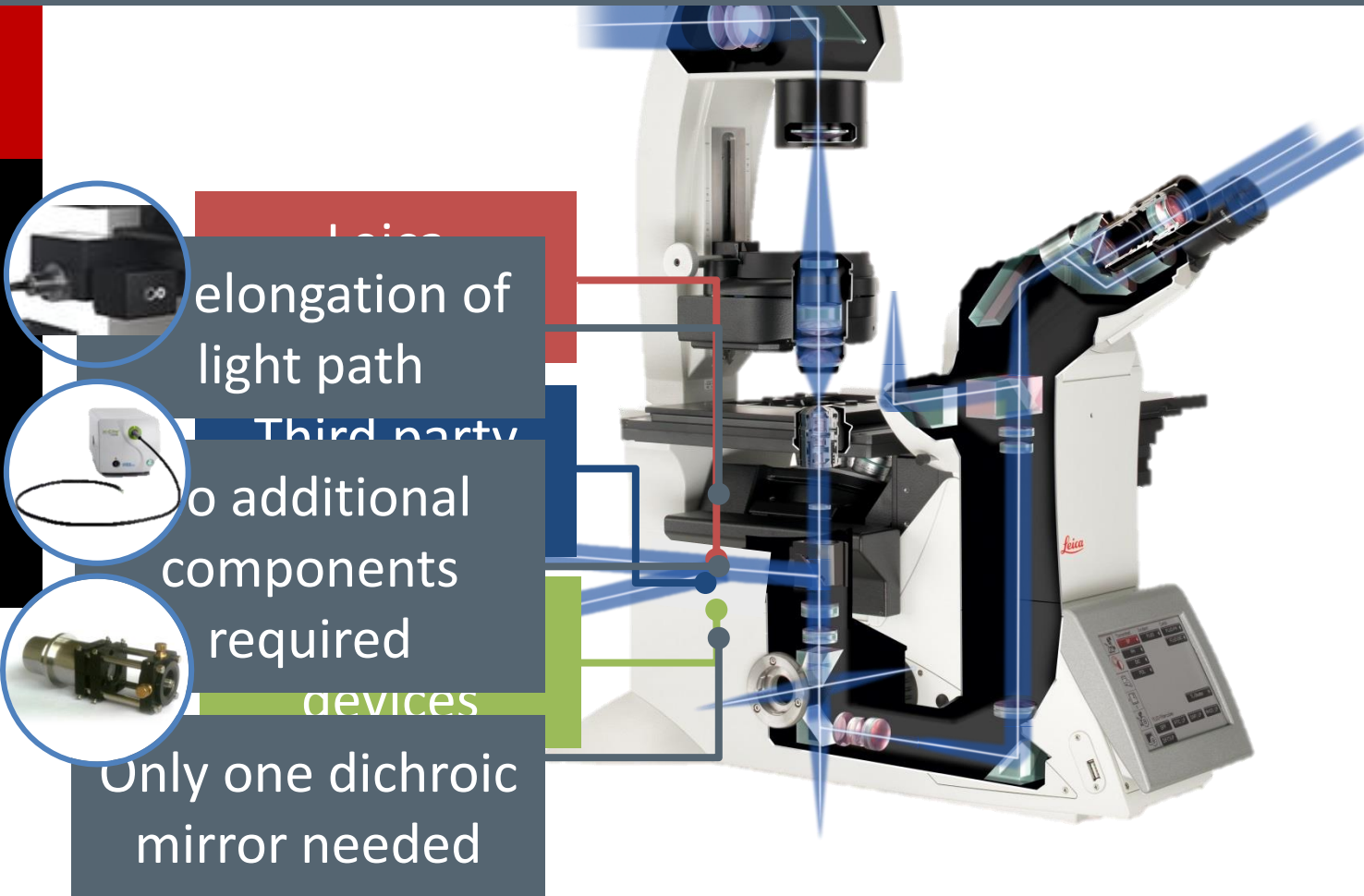
Push your research further



Infinity Port Designed for Flexibility



Maximum flexibility

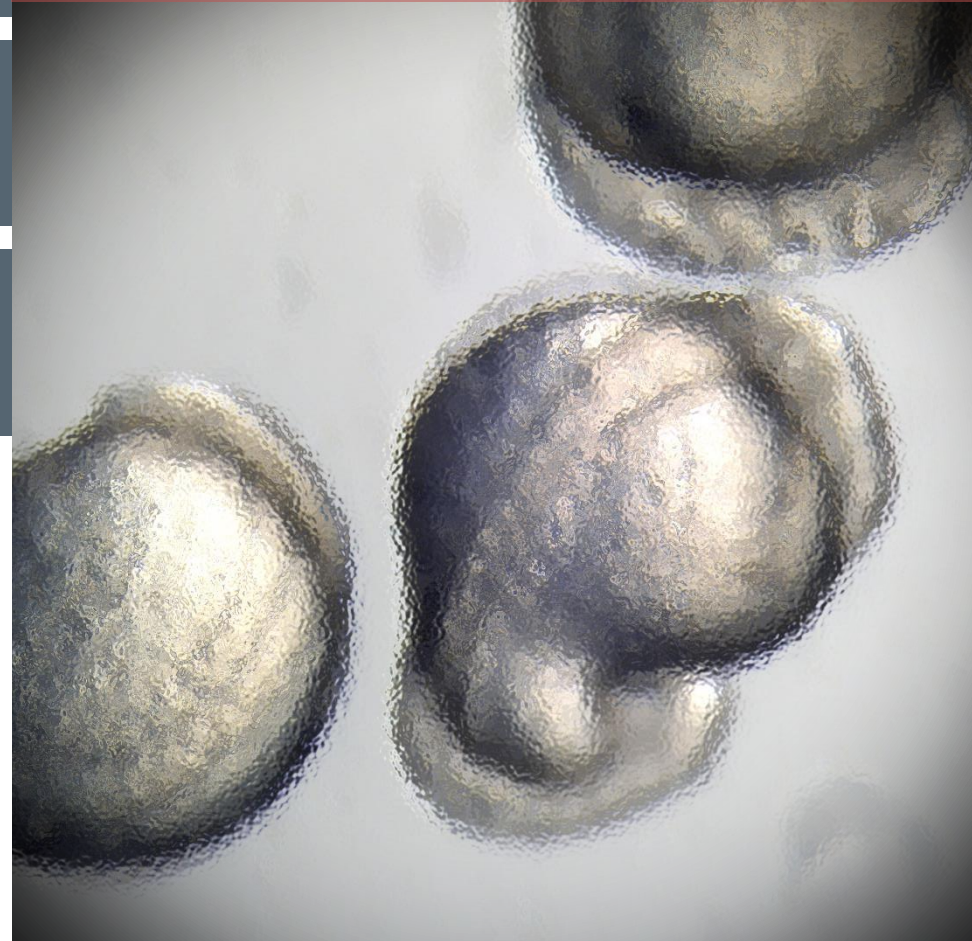


No compromise

Wider Optical Field Of View



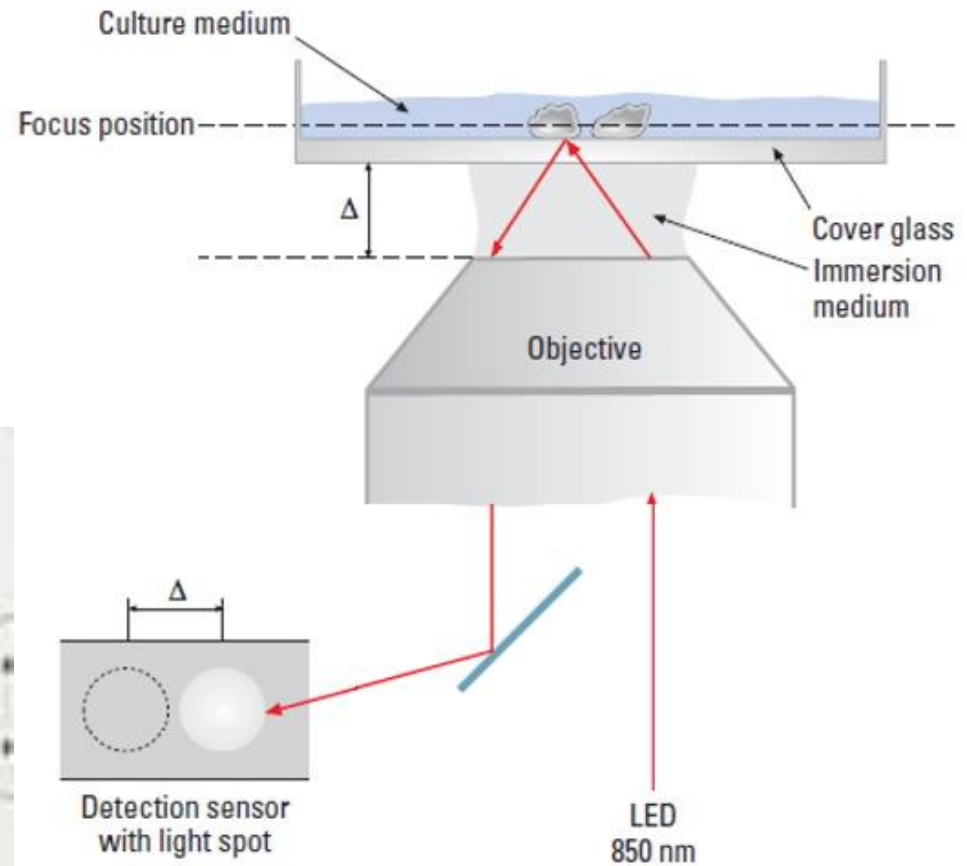
OPTIMAL RESOLUTION AND
OPTICAL PERFORMANCE



FULL ILLUMINATION OF A
19 mm Field of View
WIDER FIELD OF VIEW

AFC – Keep in focus

- Perfect with glass or plastic
- Water, oil or air objectives
- Redesigned for DMI8, longer working range



Focus on Live Cell Imaging



BEAUTIFULLY CLEAR RESULTS

One LAS X Platform



Intuitive

Innovative

Indispensable

Never Focus Again

Leica

MICROSYSTEMS

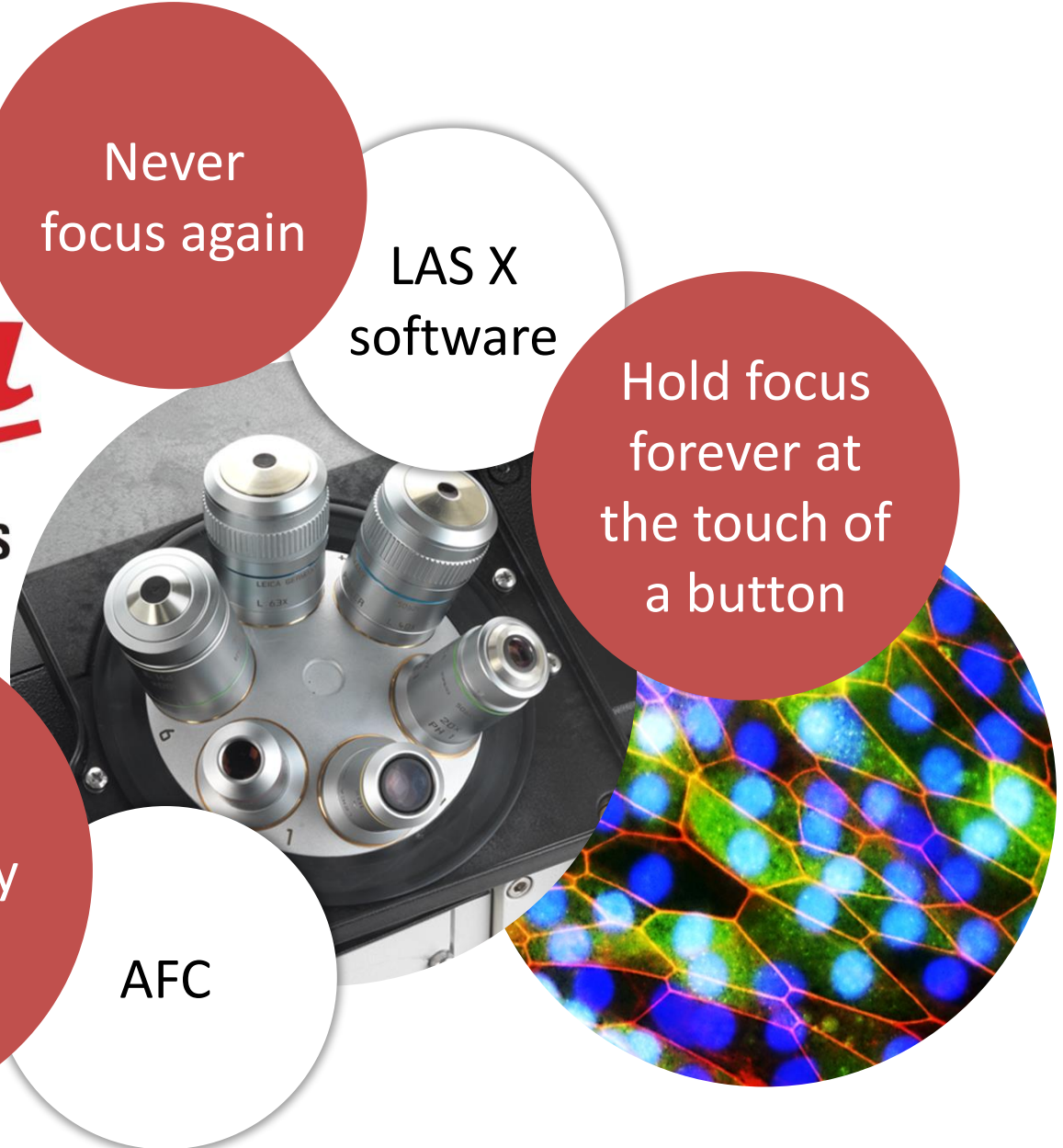
Never
focus again

LAS X
software

Hold focus
forever at
the touch of
a button

Focus
reproducibility
of 20 nm

AFC



Ultimate Speed Imaging



Image splitting devices for
Fast light sources
simultaneous multi-color

Minimize photo toxicity
and bleaching

Leica EL6000

Lumen Dynamics X-LED

Lumencor SOLA

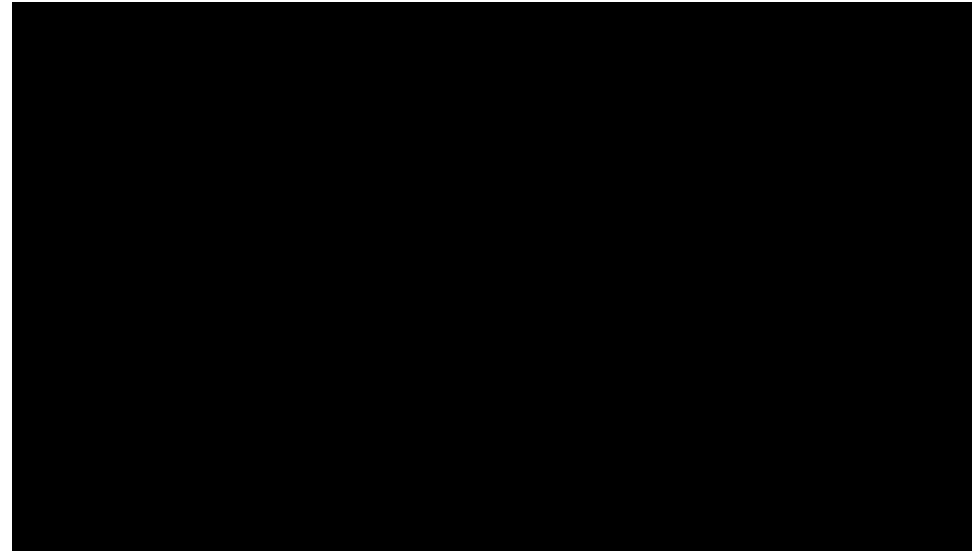
Latest sCMOS cameras

Andor

PCO

Fast excitation and emission
Hamamatsu
filter wheels

Control with μ s speed
and accuracy

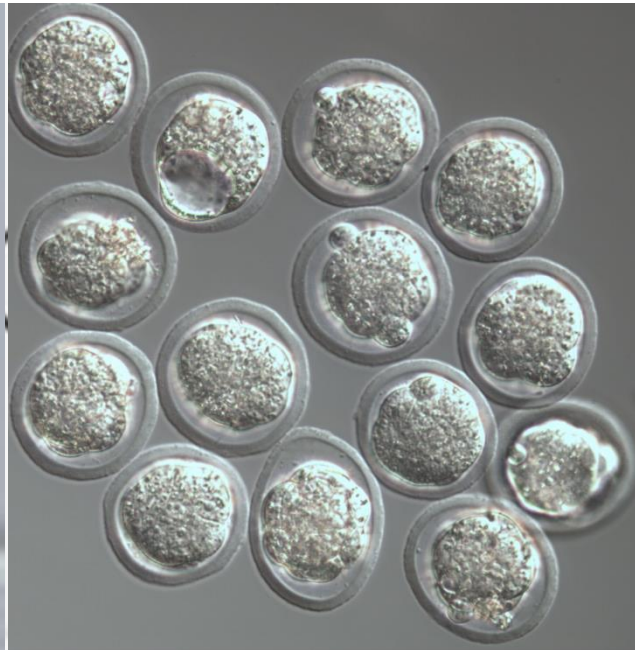


Zebrafish Embryo Courtesy of Darren Gilmour, EMBL
Heidelberg Green: Mechanosensory lateral line placode (GFP)
Red: Innervating axons (DsRedExpress)

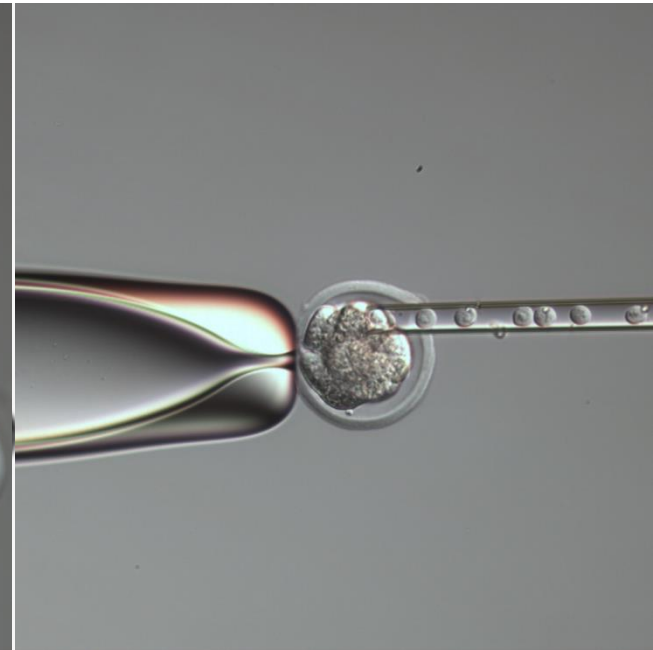
Micro-Manipulation Solutions



IVF/ICSI/IMSI



Stem cell research



Transgenics

BEST EQUIPMENT TO ACHIEVE EXCELLENT RESULTS



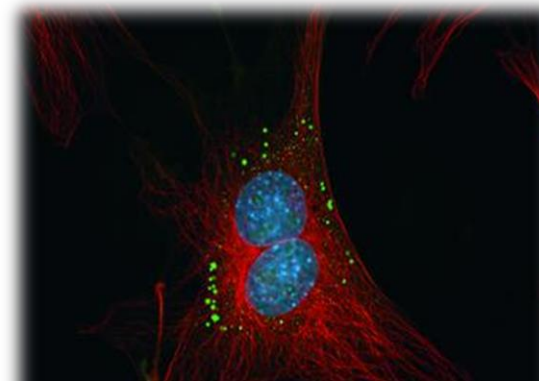
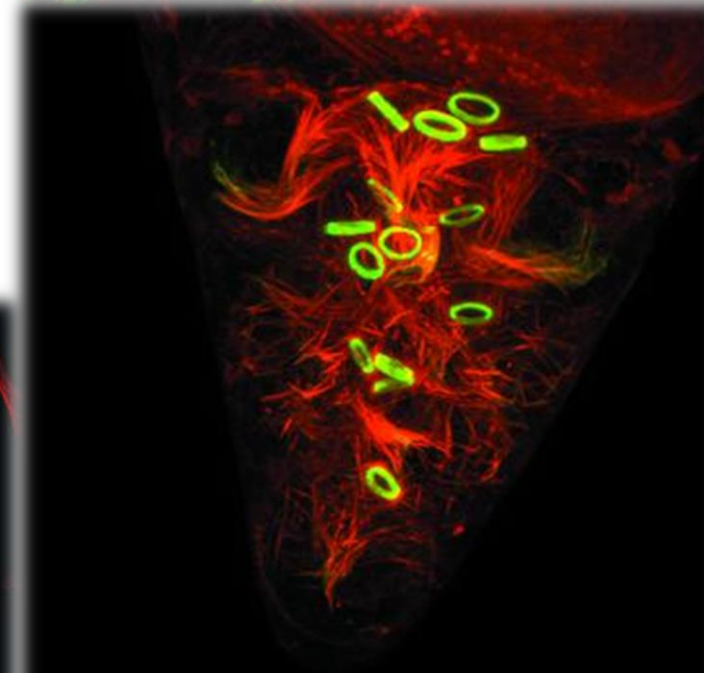
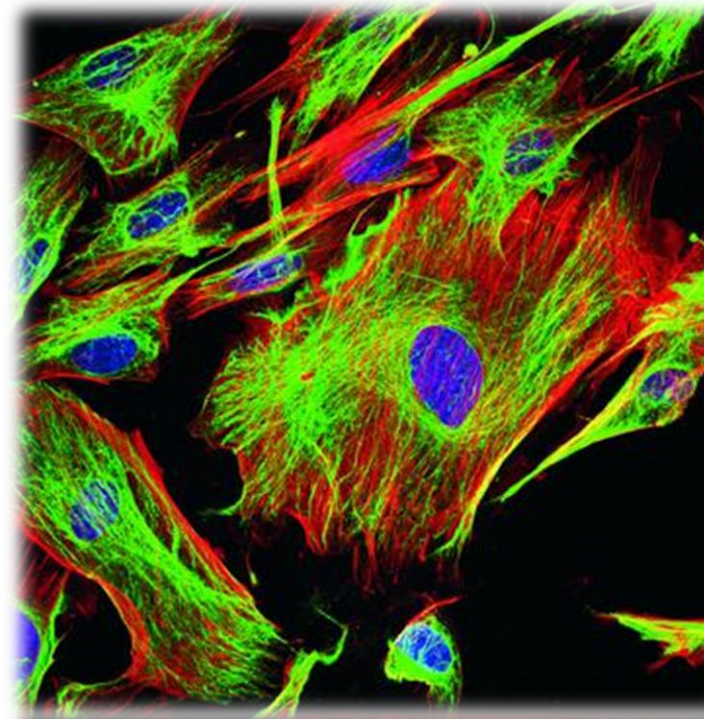
SEAMLESS INTEGRATION WITH MICRO-MANIPULATION PROVIDERS
GREATER CHOICE AND FLEXIBILITY

Leica DMI8 Configurations



Fluorescence Microscopy

- ✓ Leica DMI8
- ✓ Good sample !
- ✓ Fluorescence light source ! SOLA!
- ✓ Sensitivity of detector (Camera) !



□ SOLA light engine[®]

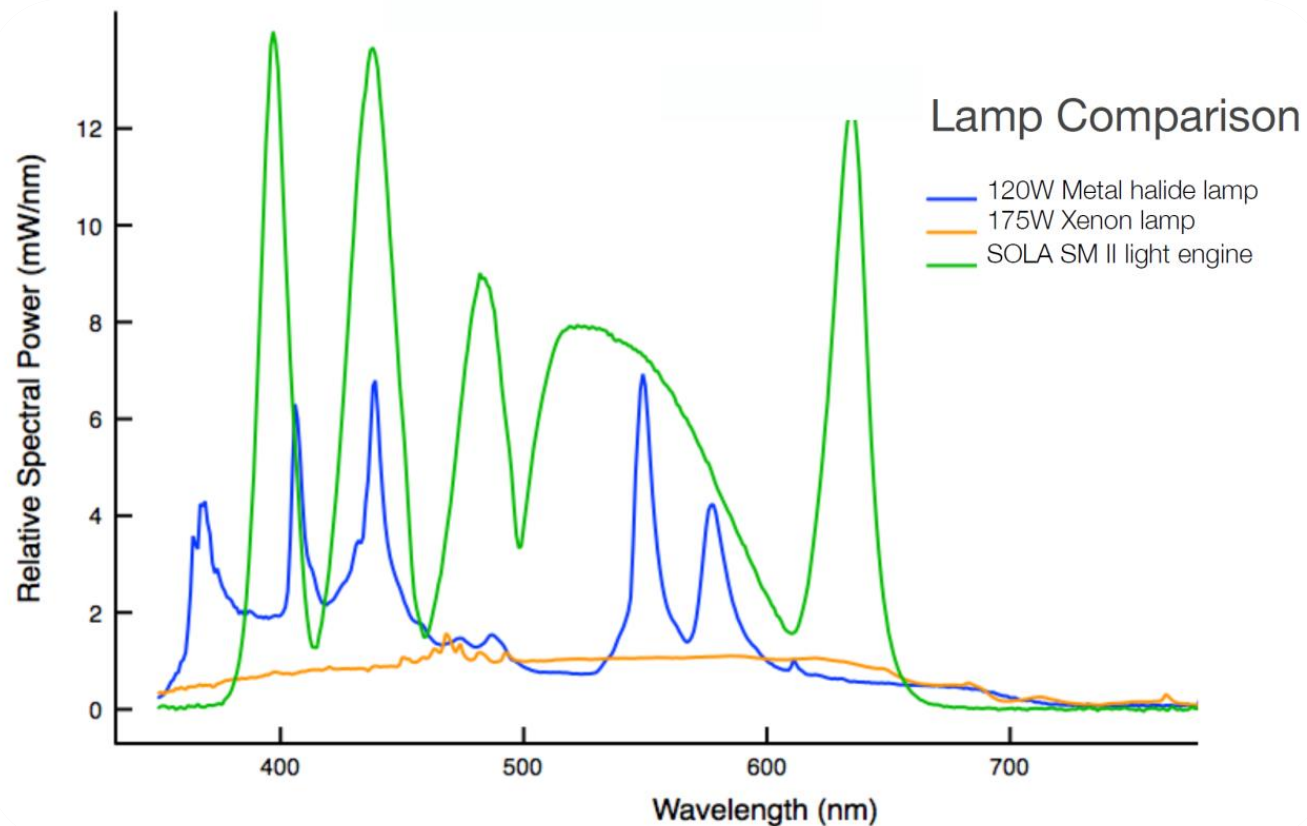


High-intensity Discharge Arc Lamp Replacement

✓ State of the Art Solid State Lighting for Microscopists and Instrument Manufacturers



✓ 20,000 Hours



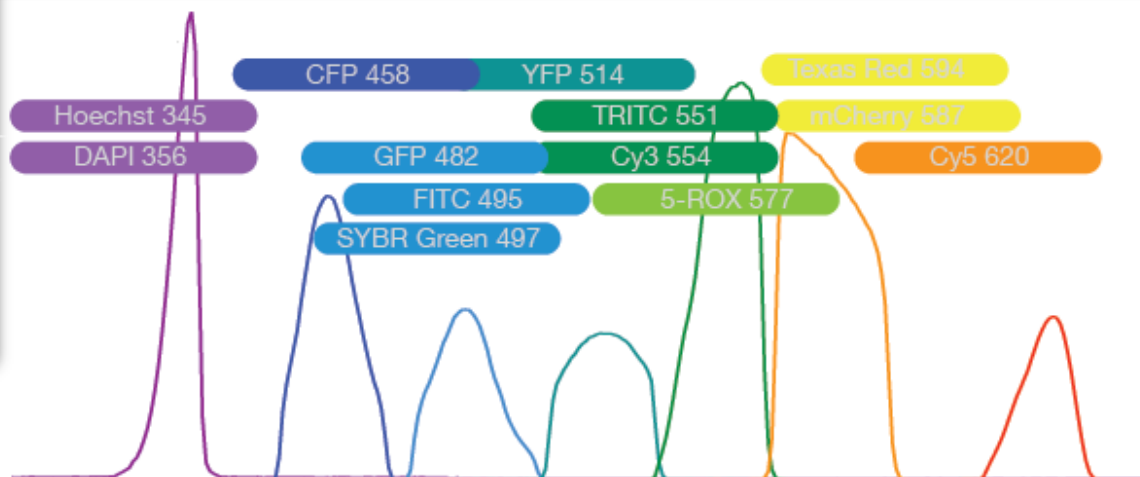
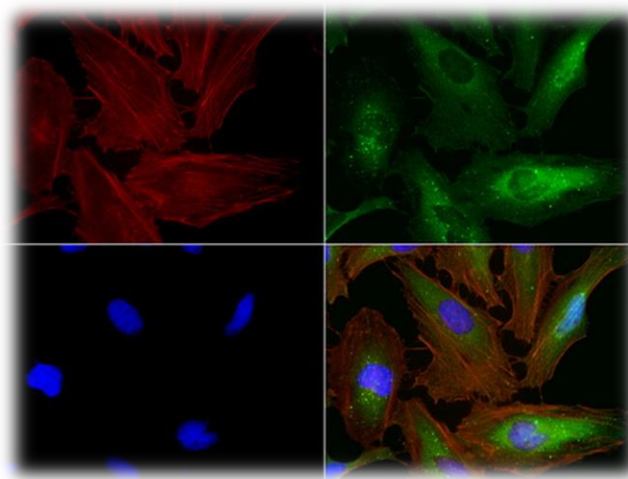
美嘉儀器股份有限公司
Major Instruments Co., Ltd.



□ SOLA light engine®

Solid-state illuminator

✓ 20,000 Hours of Bright Visible , White Light



Colors	Violet	Blue	Cyan	Cyan	Teal	Green	Green	Yellow	Red	Red
Output, nm	390	438	475	485	518	549	580	575	632	660
Width, nm >80%	18	24	28	20	17	16	26	26	22	18
Power, mW	260	280	200	200	200	400	400	500	160	160

Note: All nominal wavelengths and bands are customizable, please inquire

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Power, mW	260	280	200	200	200	400	400	500	160	160
Width, nm >80%	18	24	28	20	17	16	26	26	22	18
Output, nm	390	438	475	485	518	549	580	575	632	660



美嘉儀器股份有限公司
Major Instruments Co., Ltd.

□ SOLA light engine®

Advantages

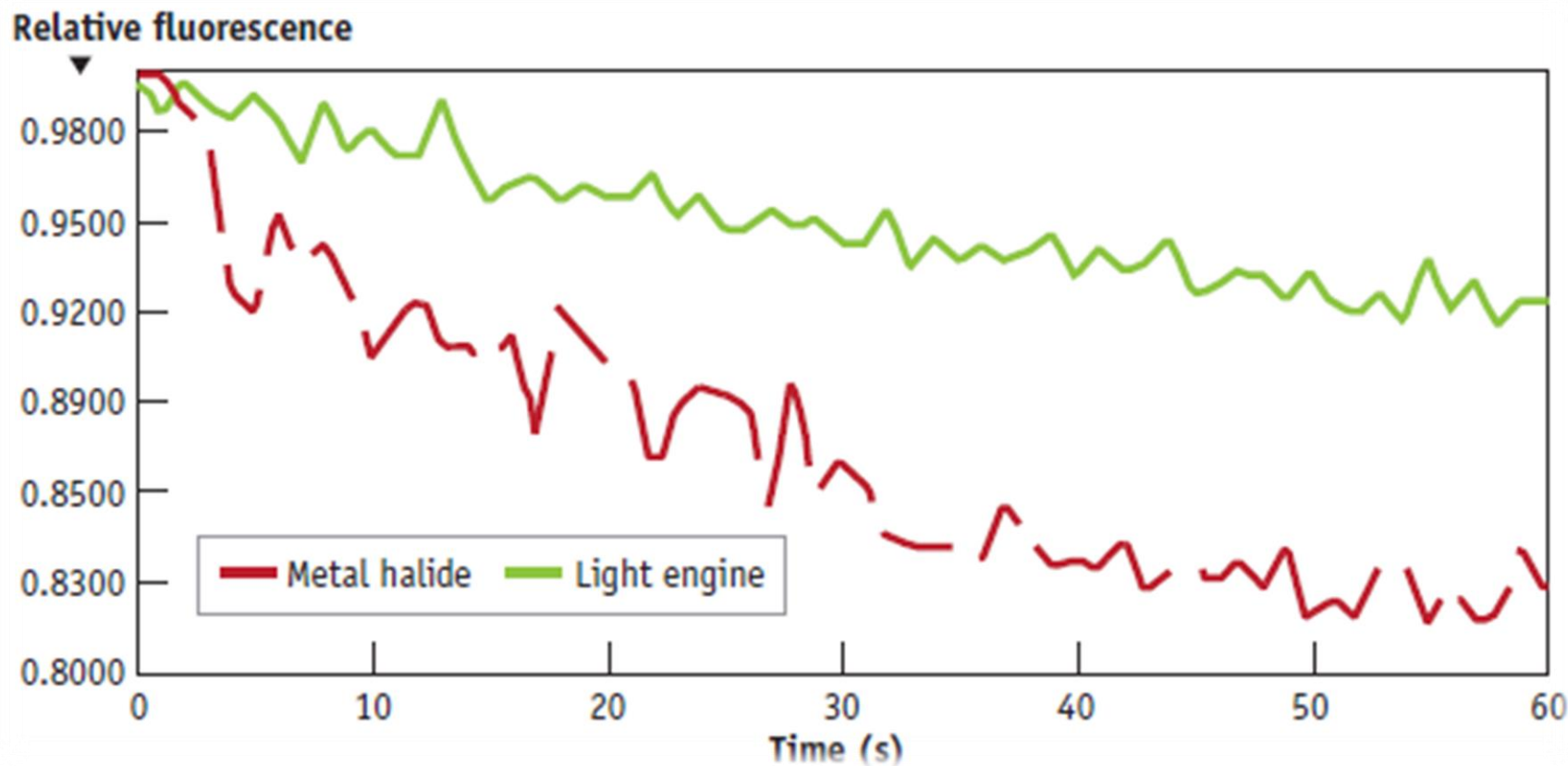


- ✓ Mercury-free, Solid state lamp as an alternative the traditional mercury-containing arc lamps
- ✓ Easy to install with LLG (liquid light guide) and adapter and without alignment
- ✓ Powerful, cool, robust
- ✓ White light from 380 to 680 nm
- ✓ No warm-up time, all working hours
- ✓ Stable less than 2% drift over 24 hours of continuous operation
- ✓ Lifetime > 20,000 hours
- ✓ UV- and IR-free light



□ SOLA light engine[®]

- ✓ The bleaching rate of FITC with different light sources



□ Light source



傳統汞燈 (Hg)	X-Cite 120Q(HxP)	SOLA(Solid-state illuminator)
平均100~300 hrs	平均1,400~2,000 hrs	>20,000 hrs
需換燈泡/需校正	需換燈泡/無需校正	無需換燈泡/無需校正
光源強度: 強	光源強度: 中等	光源強度: 很強
需要暖機及冷卻重置時間(約30min)	冷卻重置時間較短(90sec)	無需冷卻重置時間

37.5天/8hrs

250天/8hrs

2500天/8hrs

- ✓ High performance, stable, robust lighting with easy operation at an affordable price



美嘉儀器股份有限公司
Major Instruments Co., Ltd.

Fluorescence Microscopy

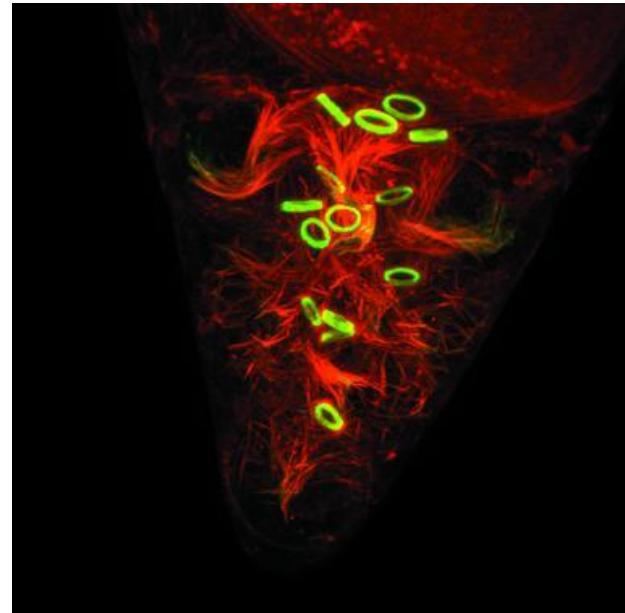
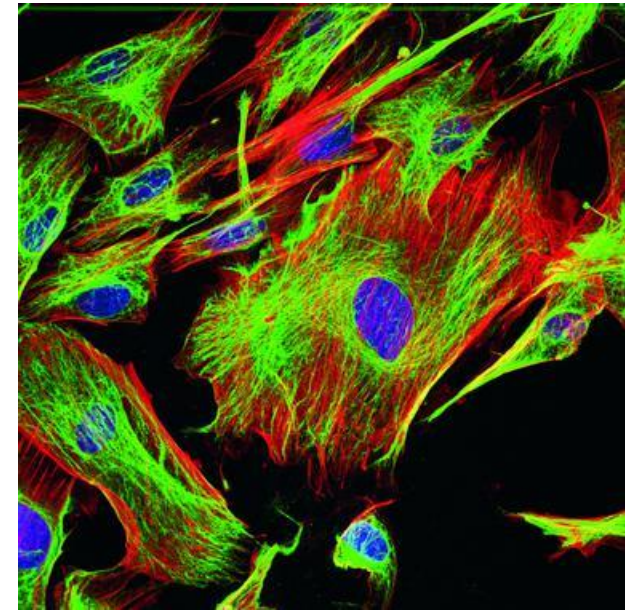
- ✓ Leica DMI8
- ✓ Good sample !
- ✓ Fluorescence light source !
- ✓ **Sensitivity of detector (Camera) Zyla!**

What makes a detector sensitive?

- Quantum Efficiency QE
- Noise floor

When do we need sensitivity?

- Low dye concentrations
- single molecule
- Short exposures
- Fast frame rates



❑ 2009 Scientific CMOS Technology (sCMOS)

✓ sCMOS~ A High-Performance Imaging Breakthrough

- Extremely low noise
- Rapid frame rates
- Wide dynamic range
- High quantum efficiency (QE)
- High resolution
- Large field of view



□ Zyla sCMOS

Its poised for widespread recognition
as a true scientific grade CMOS image sensor

Interline CCD	Andor sCMOS Zyla
4 to 8 e ⁻	Down to 1e ⁻ Low noise
11-16 fps	Up to 100 fps sustained Faster
< 12-bit	> 14-bit Wider DR
1.4 MP	5.5 MP Larger FoV / Resolution
'Snapshot' exposure	Rolling & Global exposure Both

Image quality

Software integration

Price

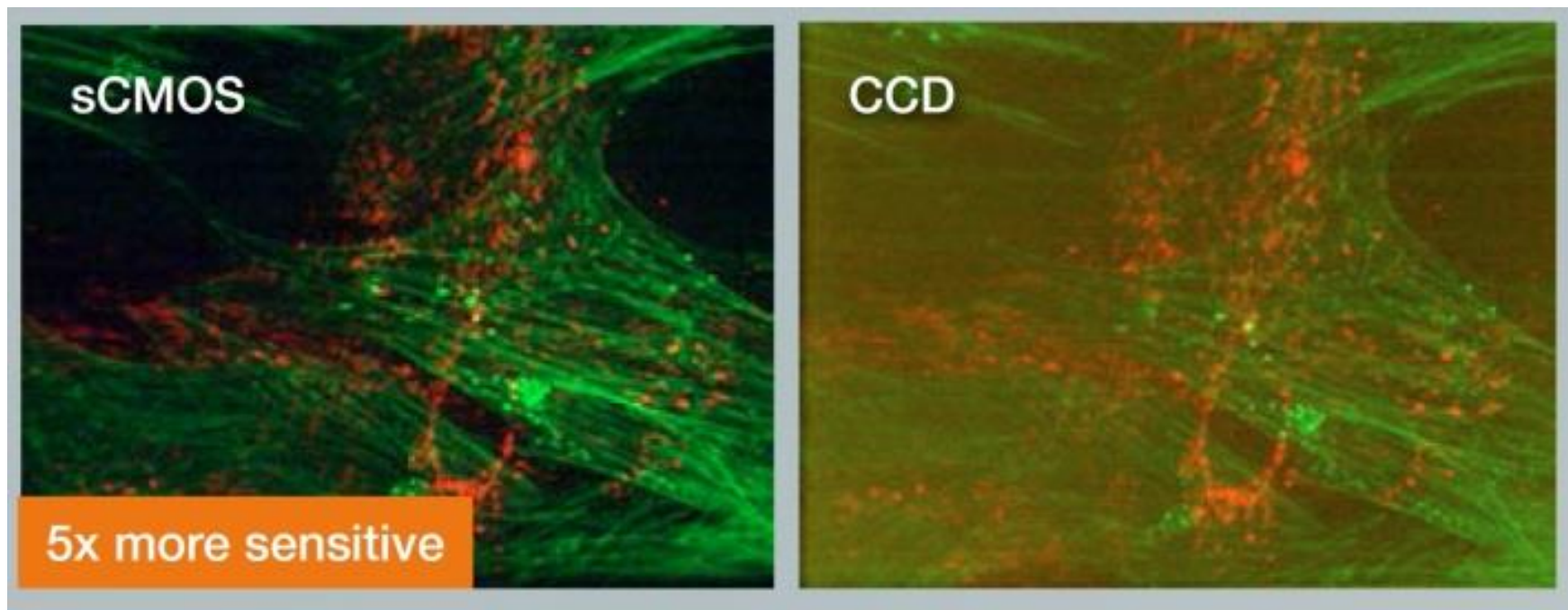


□ Zyla sCMOS

✓ 1/5 noise (e^-)

sCMOS $1.2 e^-$ noise

Interline CCD $4-8 e^-$ noise



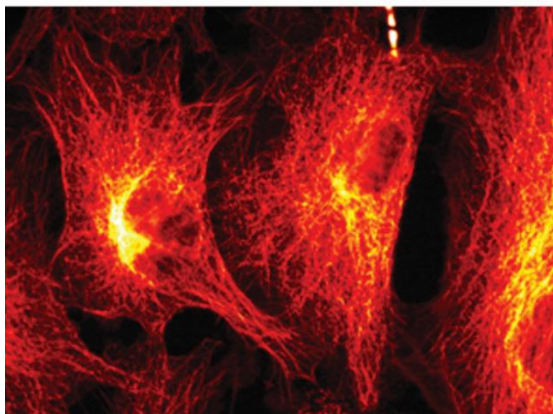
$$DR=30,000/1.2=25,000(16\text{bit})$$

$$DR=18,000/6=3,000(12\text{bit})$$

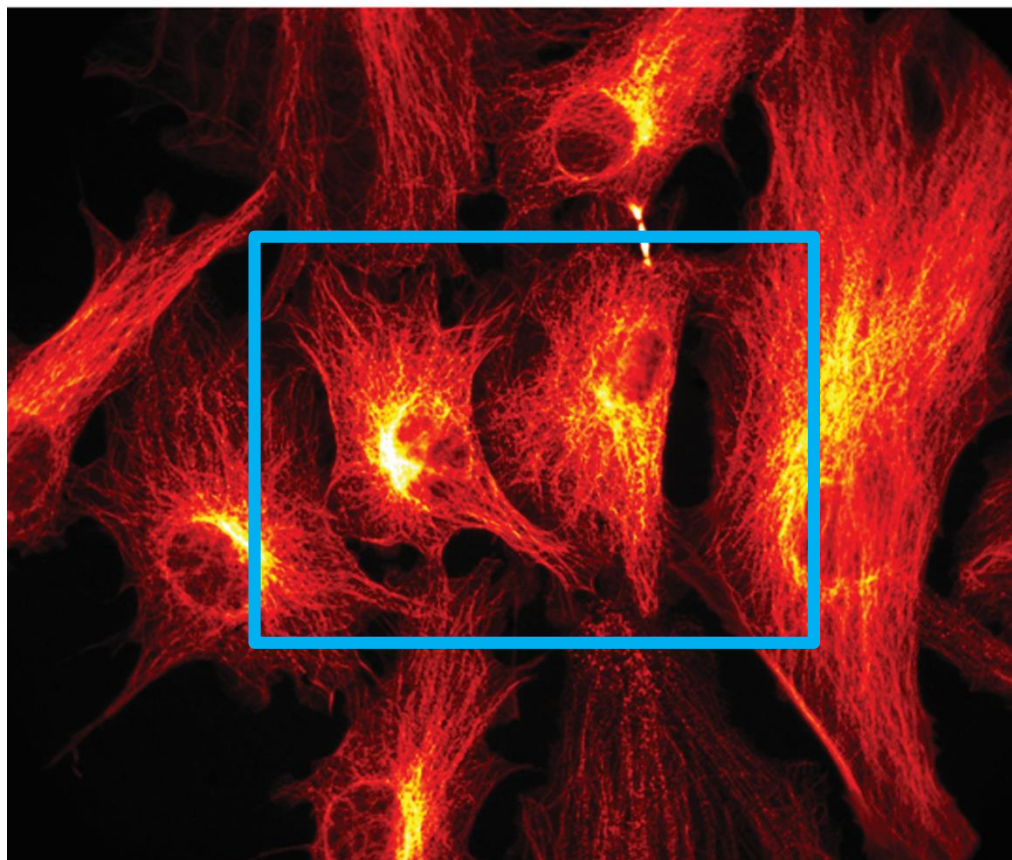
□ Zyla sCMOS

- ✓ Field of view comparison ~
X60 magnification

1.3 Megapixel interline
11 frames/sec

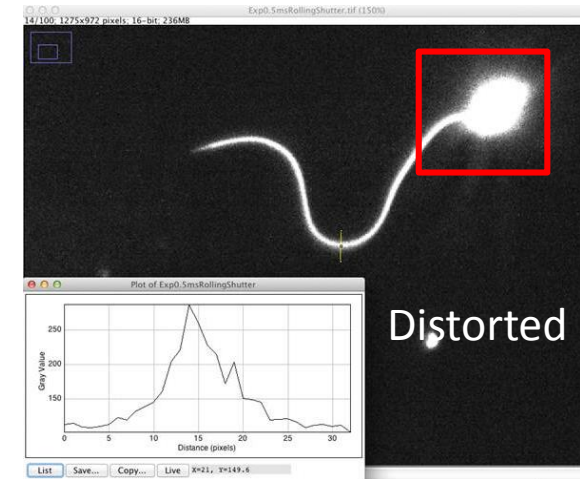


5.5 Megapixel sCMOS
100 frames/sec

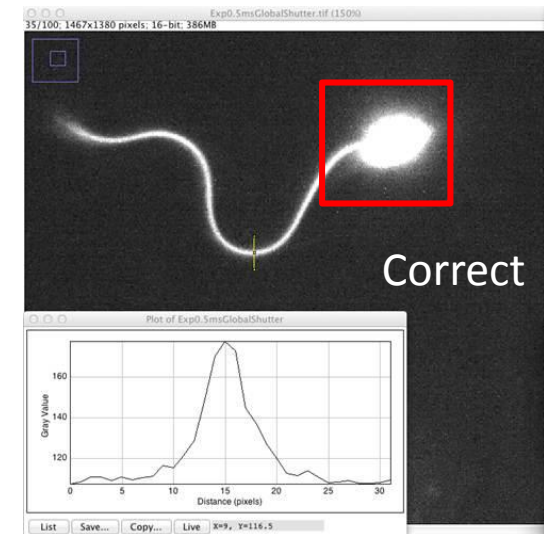


□ Zyla sCMOS

✓ Rolling shutter



✓ Global shutter



DMi8 倒立螢光顯微影像系統

Best for your research!

Leica DMI8

Leica
MICROSYSTEMS

- 打造專屬顯微鏡

ANDORTM
TECHNOLOGY

Andor Zyla

- 讀出訊號快
- 低雜訊
- 高DR
- 高QE
- 高品質影像



EL6000



Leica
MICROSYSTEMS

Lumencor SOLA



- 隨開即用
- 免校正
- 亮度更亮
- 全光譜
- 使用壽命長



美嘉儀器股份有限公司
Major Instruments Co., Ltd.

歡迎攜帶樣本DEMO!!!

Living up to Life