

IR VIVO™



Using the first (NIR) and second biological window (NIR-II) from 900-1620 nm, Photon etc.'s IR VIVO™ preclinical imager provides multispectral or hyperspectral infrared imaging capabilities for in vivo studies on small animals or living organisms. It combines micron-scale spatial resolution, real-time imaging and full spectral coverage throughout small animals. Emission of several fluorophores can be isolated with a high-efficiency tunable filter and ultra-low noise scientific-grade InGaAs camera.

PRECLINICAL IMAGER

IR VIVO™ PRECLINICAL IMAGING SYSTEM OPENS A NEW WINDOW ON LIVING BODIES

TECHNICAL SPECIFICATIONS

Emission Spectral Range	850 - 1620 nm <i>Extension available in the visible up to 400 nm</i>
Filter Types	Multispectral: Filter wheel Hyperspectral: HyperCube™
HyperCube™ Spectral Resolution	< 4 nm
Illumination Source	730, 780, 808 or 810 nm LEDs <i>Other sources available upon request</i>
Illumination Area	15.6 x 12.5 cm field of view for 3 mice model
Field of view	Variable from 5 x 4 cm to 15.6 x 12.5 cm
Overall Instrument Dimensions	Tabletop: 75 x 115 x 75 cm (Expected to change)
Stage Temperature	Up to 40°C
Anesthetic tubing and nosecone	3 mice anesthetic gas manifold supplied
Computer	PC with Windows 7 - 64 Bits
Imaging Software	PHySpec™
Spectral Data Format	HDF5, FITS
Single Image Data Format	HDF5, CSV, JPG, PNG, TIFF
Preprocessing	Spatial filtering, Statistical tools, Spectrum extraction, Data normalization, Spectral calibration
Power Requirement	120 VAC / 12 A / 60 Hz
Acquisition Modes Available	Unfiltered (Broadband)
Video Mode	Megapixel camera for sample visualization

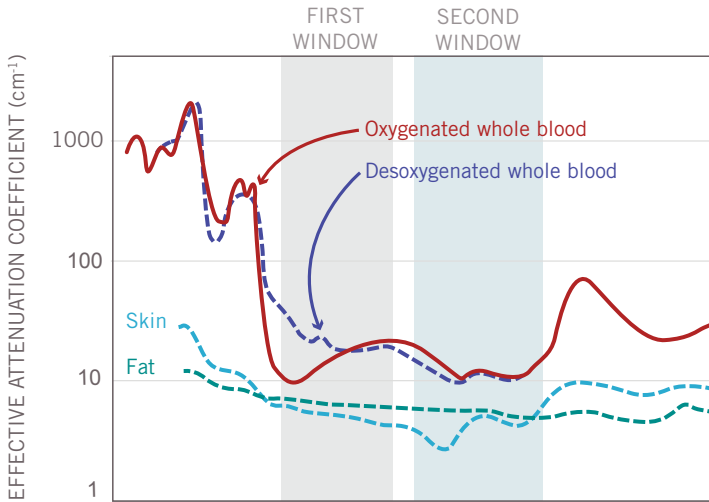
CAMERA

Type	InGaAs (ZephIR 1.7™)
FPA	640 x 512 pixels
Pixel Size	15 µm
QE	< 75%
Dynamic Range	13 / 15 bits

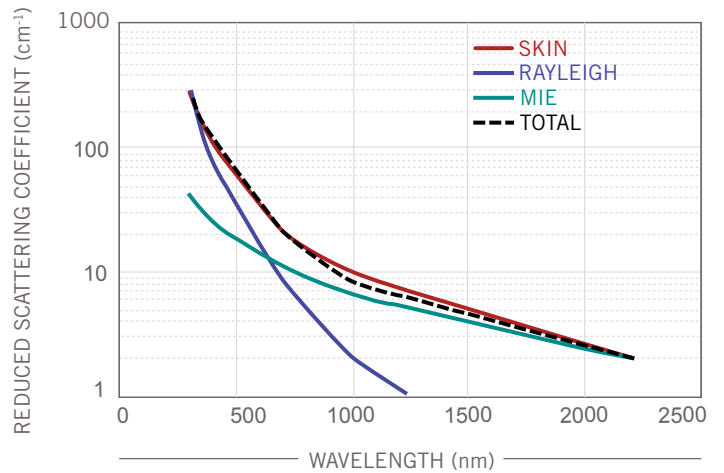
ALLOWS SEEING BOTH **STRUCTURE** AND **FUNCTION** BY COMBINING

- » Fast acquisition speed
- » Micron-scale spatial resolution
- » Centimeter-scale penetration depth
- » Multicolour imaging

BIOLOGICAL WINDOWS IN LIVING TISSUES



LIGHT SCATTERING FROM SKIN (INVERSELY RELATED TO IMAGE CLARITY)



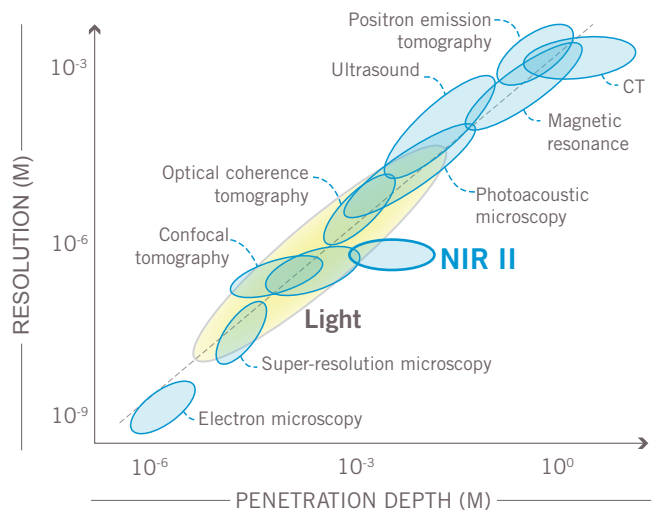
EXAMPLES OF NIR II IMAGING APPLICATIONS

- » Visualize microvasculature
- » Identify cancer tissue, guide real-time surgeries
- » Monitor blood flow & metabolic imaging
- » Monitor cell environment (pH, lipid, mRNA)
- » Monitor heart and respiratory rates contact-free

NIR II IN PERSPECTIVE

Modality	Source	Resolution	Depth	Sensitivity	Time
MRI	Radio Wave	10-100 μm	No limit	10^{-9} , 10^{-6}	Minutes to hours
CT	X-ray	50-200 μm	No limit	10^0	Minutes
PET	Y-ray	1-2 mm	No limit	10^{-15}	Minutes to hours
NIR II	Light	>0.6 μm	~ 3 cm	10^{-12}	Subseconds to minutes
Visible	Light	>0.3 μm	~ 3 mm	10^{-12}	Subseconds to minutes

The penetration depth depend on the sample properties.



OUR DISTRIBUTORS

EUROPE

ITALY
CRISEL INSTRUMENTS
+39 06 35402933
vitucci@crisel-instruments.it

PORTUGAL
IZASA SCIENTIFIC LDA
+351 21 424 73 00
info-pt@izasascientific.com

BELGIUM, NETHERLANDS & LUXEMBURG
TE LINTELO SYSTEMS B.V.
+31 316-340804
roland@tlsbv.nl

UNITED KINGDOM & IRELAND
PRO-LITE TECHNOLOGY LTD
+44 (0) 12344 36110
nick.barnett@pro-lite.co.uk

GERMANY, SWITZERLAND, AUSTRIA
MD INNOVATION TECH GMBH
+49 9233 7157745
info@md-innovationtech.com

SPAIN
IZASA SCIENTIFIC S.L.U.
+902 20 30 80
jrecasens@izasascientific.com

FRANCE
OPTON LASER INTERNATIONAL
+33 (0)1 69 41 04 05
ventes@optonlaser.com

POLAND
LABNATEK
+22 119 47 17
info@labnatek.pl

GERMANY, SWITZERLAND, AUSTRIA & EASTERN EUROPE
SPHEREOPTICS
+49 (0)8152 983 78-90
info@sphereoptics.de

SWEDEN, NORWAY, DENMARK & FINLAND
KMG FOTONIK AB
+46 (0) 70 64 64 275
info@kmgfotnik.se

ASIA & OCEANIA

JAPAN
TOKYO INSTRUMENT
+81 3 3686 4711
sales@tokyoinst.co.jp

SINGAPOUR
CADENCE TECHNOLOGIES
+65 6779 0900
cwchong@cadence-tech.com.sg

AUSTRALIA
SCITECH PTY LTD
+61 3 9480 4999
con@scitech.com.au

CHINA
AUNION TECH
+86 21 51083793
info@auniontech.com

SOUTHEAST ASIA
ALV TECHNOLOGIES
+65 67468068

INDIA
INKARP INSTRUMENTS PVT.LTD
+914027172293
harishk@inkarp.co.in

SHANGAI CHEER INSTRUMENT LTD
18201727656

GENERAL TECH SCIENCES
+86 10 68337300
info@gtechsci.com