Photon etc
A spectrum of solutions

5795 DE GASPE AVENUE, #222
MONTREAL, QUEBEC, H2S 2X3
CANADA

IR VIVO™ NIR II MULTISPECTRAL PRECLINICAL IMAGER

UNPRECEDENTED COMBINATION OF FAST ACQUISITION SPEED, MULTICOLOR IMAGING, HIGH SPATIAL RESOLUTION AND PENETRATION DEPTH ALLOWS TO SEE BOTH STRUCTURE AND FUNCTION

Photon etc's preclinical infrared imager is a multispectral infrared imaging system for *in vivo* studies in small animals or living organisms. The system, with detection range of 900-1700nm, can isolate emission of several IR labels by virtue of high efficiency filters and high speed scientific grade SWIR cameras. The Imager provides the perfect tool for all applications that involve detection in the second biological window.

NIR II IMAGING PROPERTIES

- Non ionizing & non invasive
- High spatial resolution
- Probes for multispectral imaging
- Intrinsic contrast
- Functionnal Imaging
- High temporal resolution = Real time dynamics
- Good penetration depth *(10x greater than traditionnal optical systems)*

TECHNICAL SPECIFICATIONS

Emission spectral range	850 - 1600 nm
Illumination source	780 nm and 810 nm LEDs Other sources avalaible upon request
Averaged power density	~1 mW/mm^2 @ 780 nm
Illumination area	~15.5 x 12.5 cm
Field of view	Field of view continuously variable from 3.1 x 2.5 cm to 15.5 x 12.5 cm
Camera	Low noise, High Sensitivity Scientific grade InGAas camera 640 x 512 pixels 15 µm pixel size Quantum efficiency < 75% Dynamic Range: 13/15 bits
Overall instrument dimensions	Tabletop
Stage temperature	Up to 40°C
Anesthetic tubing and nosecone	Supplied
Computer	PC, Windows 7, 64 bit
Imaging software	PHySpec™
Power requirement	120 VAC / 12A / 60Hz
Avalaible modes	Broadband
	Video

IDEAL FOR:

» All in vivo applications involving detection in the second biological window

» Drugs, toxicology, diagnostic, IR tracers and labels development studies

» The evaluation of oxygenated versus deoxygenated blood ratios

» Nanoparticles distribution

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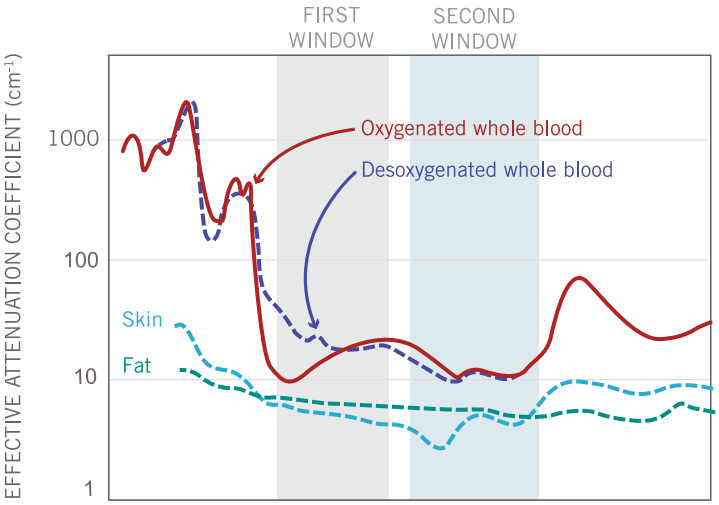
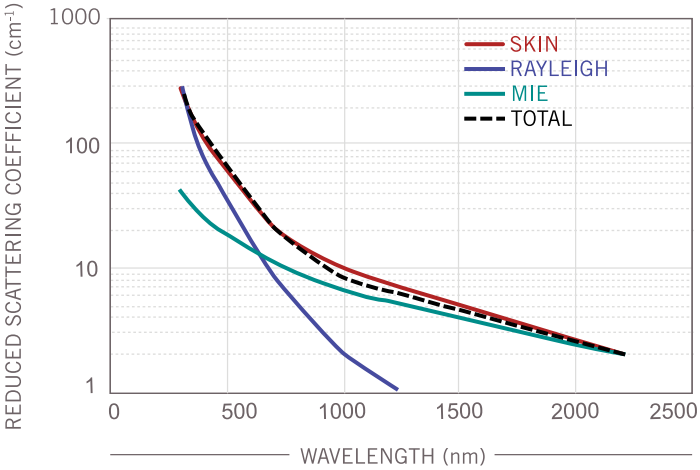
BIOLOGICAL WINDOWS IN LIVING TISSUES



LIGHT SCATTERING FROM SKIN (INVERSELY RELATED TO IMAGE CLARITY)

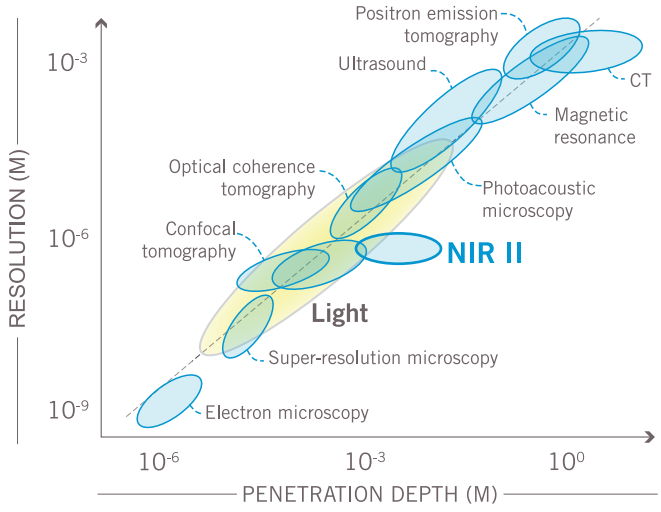


EXAMPLES OF NIR II IMAGING APPLICATIONS

- 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



DISTRIBUTORS

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

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

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

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

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

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

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

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

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

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

www.photonetc.com