

SpectraK Dual

Always on YOUR wavelength!

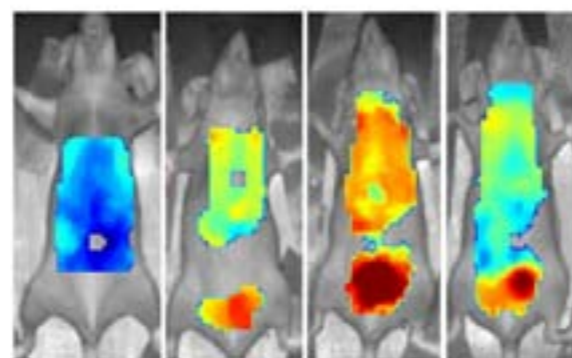
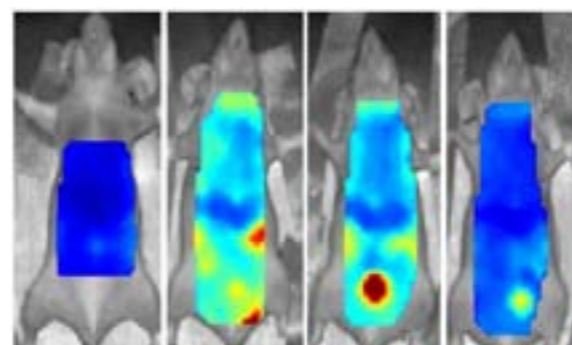
- Wavelength tuning over the SuperK spectrum
- Accusto Optical Tunable Filter (AOTF) technology
- Dual VIS/nIR, VIS/IR, nIR/IR port access
- 8 simultaneous, freely tunable wavelength channels
- Effortless Plug & Play design
- Easy to use SuperKontrol software interface
- Free space, collimated beam output, or
- SpectraK FDS broadband fiber delivery



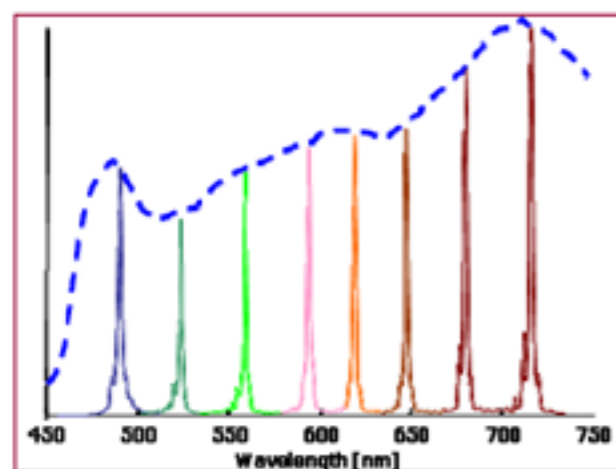
SpectraK Dual with optionally available fiber delivery systems (FDS)



SuperKontrol software allows easy use of the SuperK™ source and the SpectraK Dual



SuperK PowerPlus together with a SpectraK Dual and FDS optimized in the nIR used for in-vivo fluorescent lifetime imaging in an anaesthetized mouse (courtesy of ART Inc, Canada)



Independent power and wavelength control of up to 8 simultaneously available lines per AOTF. The visible wavelength range is shown here.

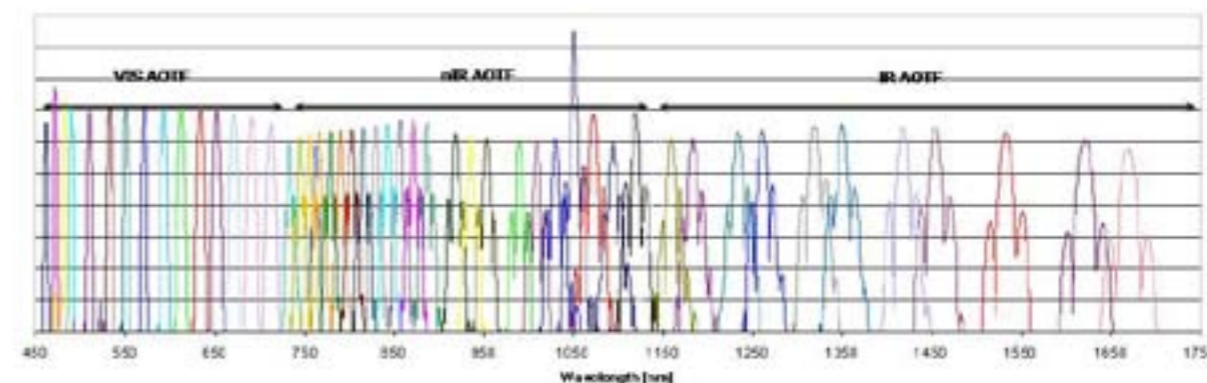
SpectraK Dual filtering the broad spectra of SuperK™ sources



SpectraK Dual Specifications AOTF Wavelength Coverage:

UV	400-650nm
VIS	450 – 750nm
VIS-nIR	500 – 900nm
nIR ₁	640 – 1100nm
nIR ₂	800—1400nm
IR	1100 – 2000nm
Number of Tunable Lines	1 – 8 (per AOTF)
Filter Bandwidth* of AOTF (VIS)	0,5 - 2nm or 3,5 - 7nm
Filter Bandwidth* of AOTF (nIR)	3 - 6nm
Filter Bandwidth* of AOTF (IR)	5 – 14 nm
AOTF Deflection Efficiency	> 85 % (1-8 channel operation)
Polarization	Linear
Output Mode	Free Space Collimated
Mechanical Shutter	Integrated for both Output Ports
Laser Safety	Interlock Integrated and linked with SuperK Laser Series
Fiber Delivery	Optional SpectraK FDS

* Collimated free space output



Gapless coverage on the SuperK™ Series spectrum

SpectraK Split

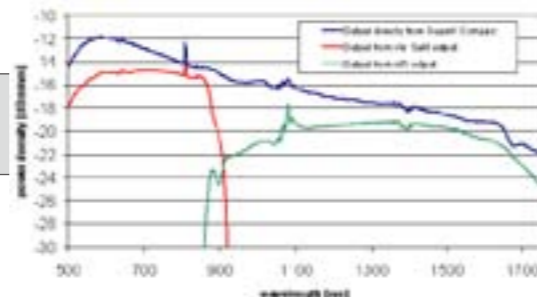
Flexible access to any spectral areas of SuperK™ sources

- Passive filter accessory for all SuperK sources
- Separate Visible and IR spectral access
- Additional filters/polarizers can be inserted
- Manual shutters for port control
- Effortless Plug & Play design
- Free space, collimated beam output, or
- SpectraK FDS broadband fiber delivery



SpectraK Split Specifications

Wavelength Splitting Range	VIS/nIR: 400-690nm/670-1200nm VIS/IR: 450-800nm/900-2400nm nIR/IR: 600-1100nm/1280-2400nm
Output mode	Free Space Collimated
Mechanical Shutter	Integrated for both Output Ports
Laser Safety Interlock	Intergrated and linked with SuperK™ Series
Fiber Delivery (see over)	Optional SpectraK FDS

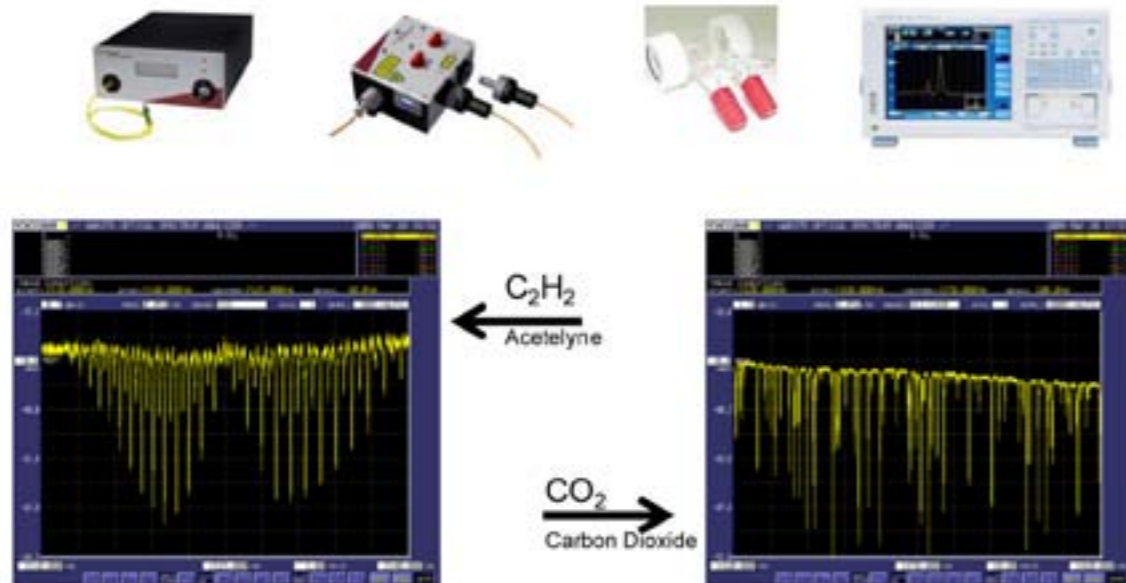


Compact

Split & FDS

Gas Cell

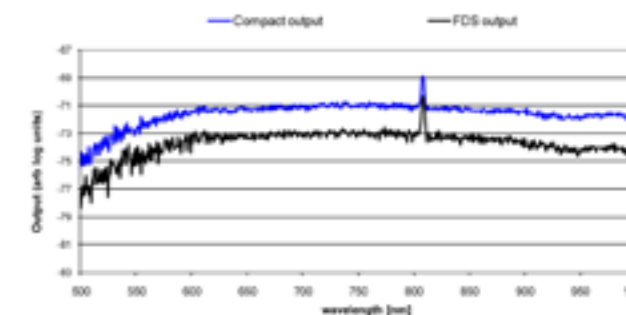
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Typical application in Gas Sensing

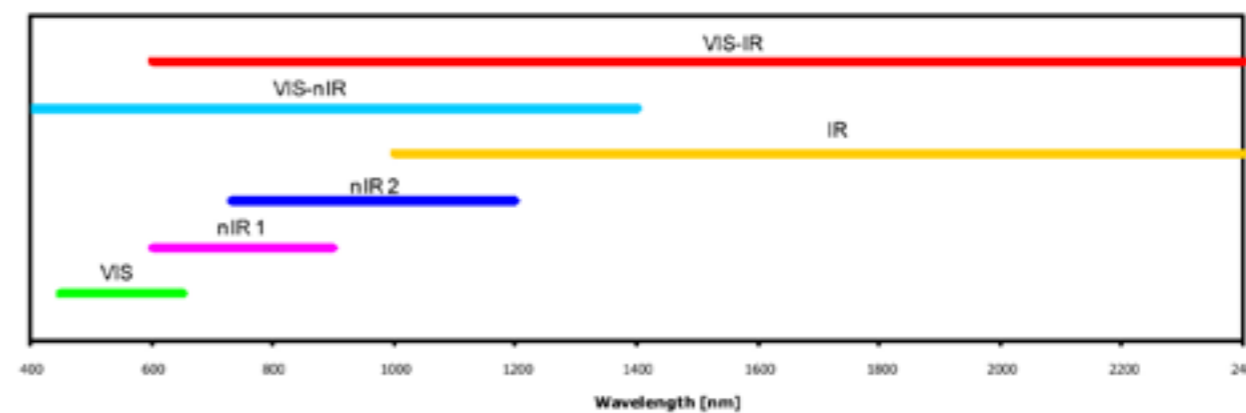
SpectraK FDS Plug and Play fiber delivery for SpectraK systems

- Fiber delivery for all SpectraK accessories
- Standard or ultra-broadband single mode
- Effortless Plug & Play design
- FC-PC or collimated output
- Excellent coupling efficiency from SuperK



Fiber Delivery System (FDS) Specifications

Wavelength Coverage (standard SMF)	VIS: 450 – 750nm nIR 1: 600 – 900nm nIR 2: 730 – 1200nm Ext. IR: 1000 – 2400nm
Wavelength Coverage (Ultra broadband SMF)	VIS-nIR: 400 – 1250nm VIS-IR: 600 – 2400nm
Coupling Efficiency	> 40%
Output Fiber Mode	Single Mode
Fiber Connector (Std. SMF)	VIS, nIR, IR, Ext. IR: FC/APC
Fiber Connector (Ultra broadband SMF)	VIS-nIR, VIS-IR: FC/PC
Fiber Length	2m (longer on request)
Polarization	PM or non-PM



SuperK™ Compact

The ideal general purpose broadband source

- Cost efficient supercontinuum fiber laser
- Industrially reliable, long lifetime performance
- Visible to IR light in one table-top module
- Flexible SpectraK fiber accessory range
- Single light source for all your wavelength needs

The SuperK™ Compact is a turn-key supercontinuum white light source with a wide output spectrum, reducing the need for multiple light sources.

The complete stand-alone unit, allows easy interfacing to any fiber or component under interrogation, with a collimated or connectorised end fiber solution.

The SuperK™ Compact easily interfaces with the SpectraK Split and FDS accessory range, to give flexible fiber and wavelength interfacing



Examples of applications

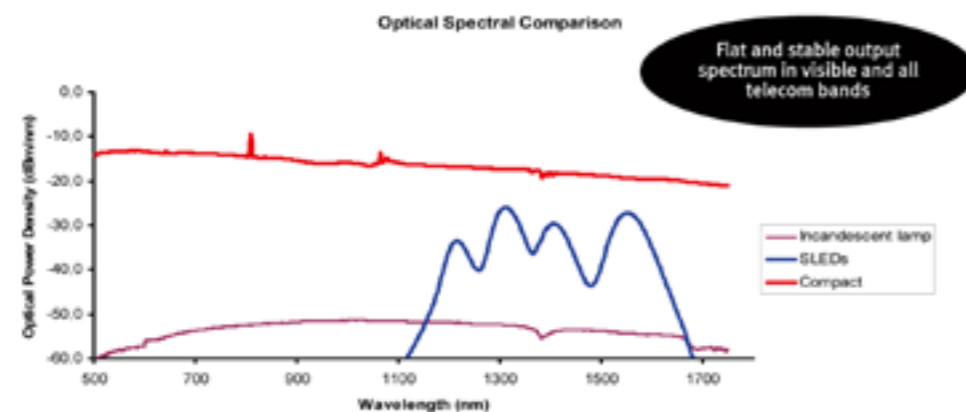
- Optical fiber characterisation
- CWDM/DWDM Component test
- Fiber and grating test system
- Spectroscopy
- Optical Coherent Tomography (OCT)
- Wideband ASE source alternative
- 3D-displacement systems
- Biotech applications

Optical specifications

Optical Spectral Range	From 500 to 2400nm
Total avg. output power	100mW
Power density (500-1750nm)	> -22 dBm/nm
Average power stability	± 0.2 dB
Repetition rate (typical)	24kHz
Master Source Pulse width	~1 ns
Output Fiber mode	Single mode

Other specifications

Power supply requirements [V]	90-240 V;50-60 Hz
Computer interface	USB
Synchronization output port	BNC
Connectors	FC or collimator
Mechanical Dimensions (HxWxD) [mm]	140x350x236
Operating temperature range [°C]	20-30
Storage temperature range [°C]	15-45



SuperK White Light Lasers

High Power, Ultra-Broadband Supercontinuum Sources

- 400-2400nm spectrum
- 1-6W total power
- Up to 10mW/nm power density
- Superior performance in the visible
- Single mode throughout spectrum
- Excellent stability
- Modular and upgradeable construction
- SpectraK wavelength tuning accessories
- Variable repetition rate option available

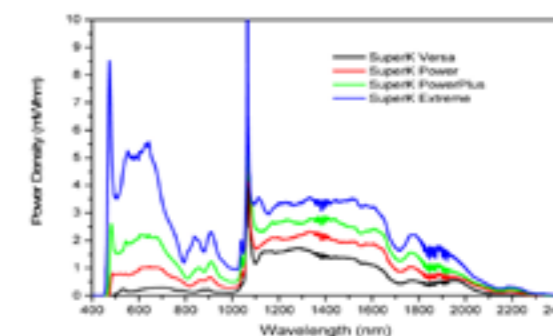


The SuperK™ product family are ultra broadband laser sources based on supercontinuum technology. The standard SuperK™ Versa, Power & Extreme sources provide a comprehensive choice of output power, repetition rate and spectral coverage to cover any application requiring a source that is "Broad as a Lamp and Bright as a Laser".

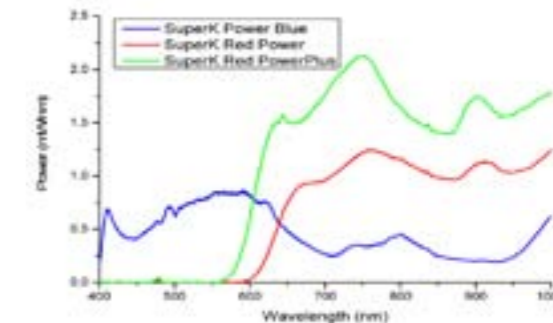
The SpectraK accessory range increases the flexibility of the sources offering the advantage of accessing specific areas or wavelengths in the ultra-broad spectrum.

Examples of applications

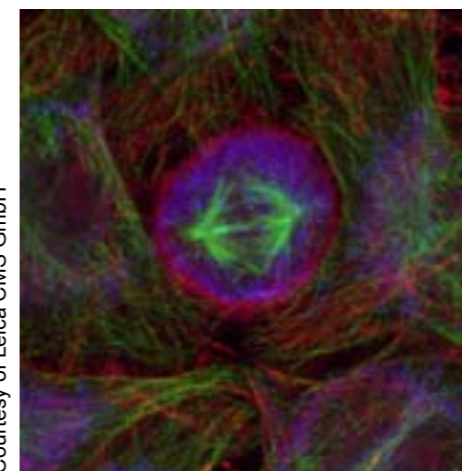
- Confocal Fluorescence Microscopy
- Fluorescence Lifetime Imaging
- Flow Cytometry
- Atmospheric Sensing
- Radiometry
- Scientific (e.g. spectroscopy)
- Optical Coherence Tomography (OCT)
- Semiconductor wafer inspection



Typical spectral performance of SuperK range



Other SuperK system options available upon request



Courtesy of Leica CMS GmbH

HeLa cancer cell imaged from Leica SP5x confocal microscope with SuperK Extreme as the light engine

**Standard SuperK White Light Lasers
Overview**

	Versa	Power	PowerPlus	Extreme
Wavelength Range	490-2200nm	485-2200nm	465-2400nm	460-2400nm
Visible Spectral Density*	510-750nm	490-750nm	475-750nm	465-750nm
Max	0.25mW/nm	0.8mW/nm	2mW/nm	6mW/nm
Min	0.1mW/nm	0.5mW/nm	0.75mW/nm	2mW/nm
nIR Spectral Density*	750-1100nm	750-1100nm	750-1100nm	750-1100nm
Max	5mW/nm	5mW/nm	5mW/nm	5mW/nm
Min	0.1mW/nm	0.25mW/nm	0.5mW/nm	0.8mW/nm
IR Spectral Density*	1100-2000nm	1100-2000nm	1100-2000nm	1100-2000nm
Max	1.5mW/nm	2mW/nm	2.5mW/nm	3mW/nm
Min	0.25mW/nm	0.4mW/nm	0.5mW/nm	0.8mW/nm
Total Visible Power	>100mW	>300mW	>500mW	>1200mW
Total Average Power	>1.5W	>2.5W	>3W	>4.3W
Repetition Rate	80MHz			
Master Source Pulse Width	5ps			
Power Stability	<±1.5%			
Polarisation	Unpolarised			
M2	<1.1			
Output termination	Fiber with collimator			
Beam Diameter	~1mm@VIS; ~2mm@1100nm; ~3mm@2000nm			
Beam Divergence	<5mrad			
Length of Output Fiber	1.5m			
Computer Interface	USB			
Sync Output Port	BNC			
Operating Voltage	100-240V, 50/60Hz			
System Cooling	Air Cooled			
Range of Operating Temp.	18-30oC			
Range of Storage Temp.	5-40oC			
Dimensions (WxHxL)	444 x 223 x 377mm			
Weight	15kg			

