

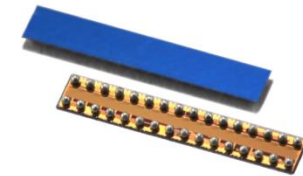
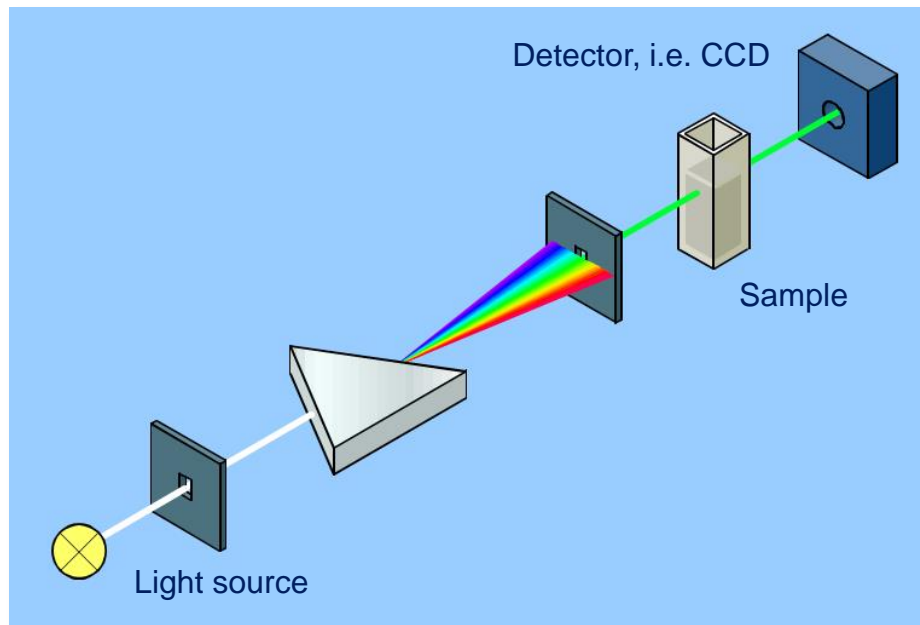
New multi channel CCD arrays for spectral content measurements

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- Example for Spectrometer
- Principle of the Multispectral Sensor
- Benefits and Parameters
- SPM64 Multispectral Sensor Developer Kit
- Possible Applications

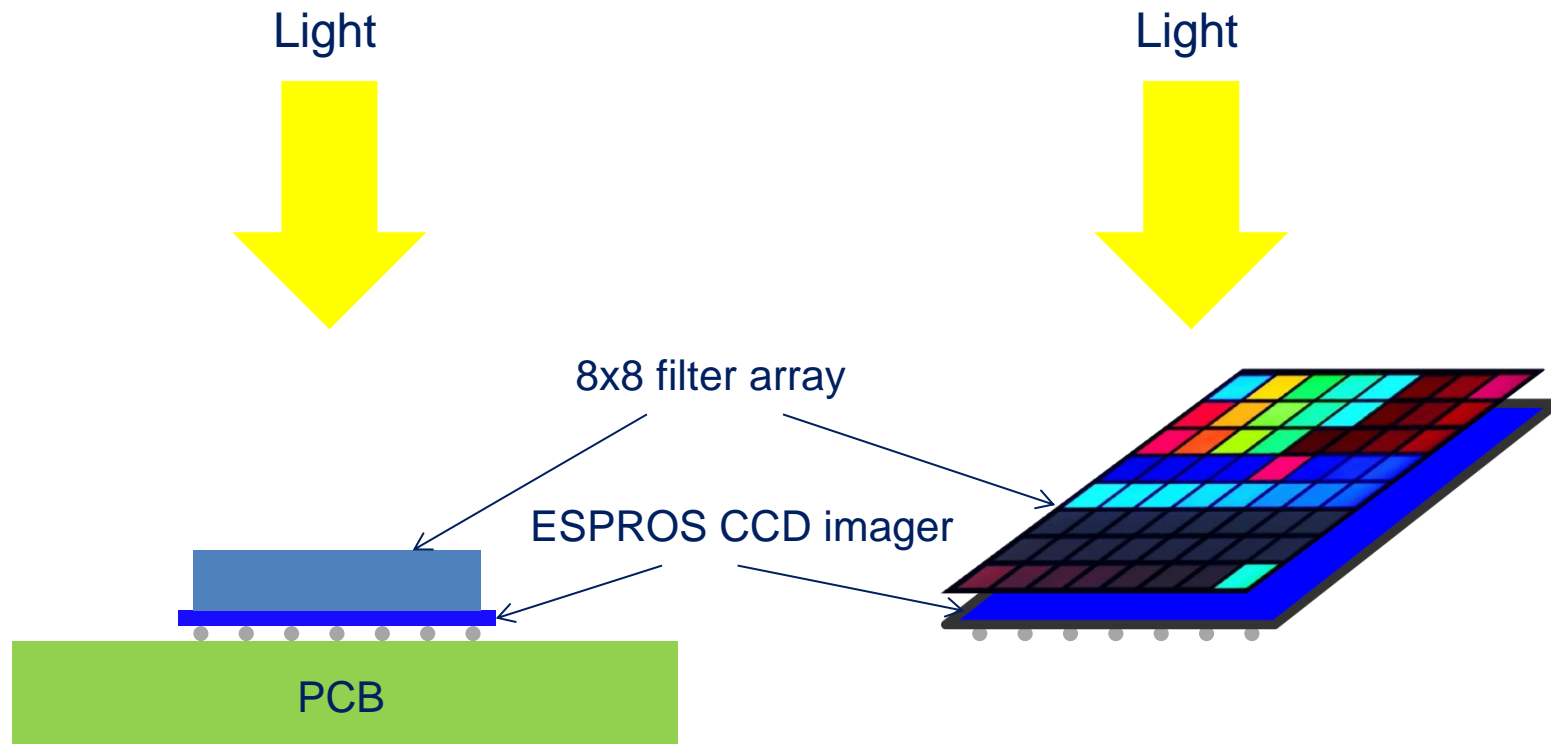
Spectrometer

Example



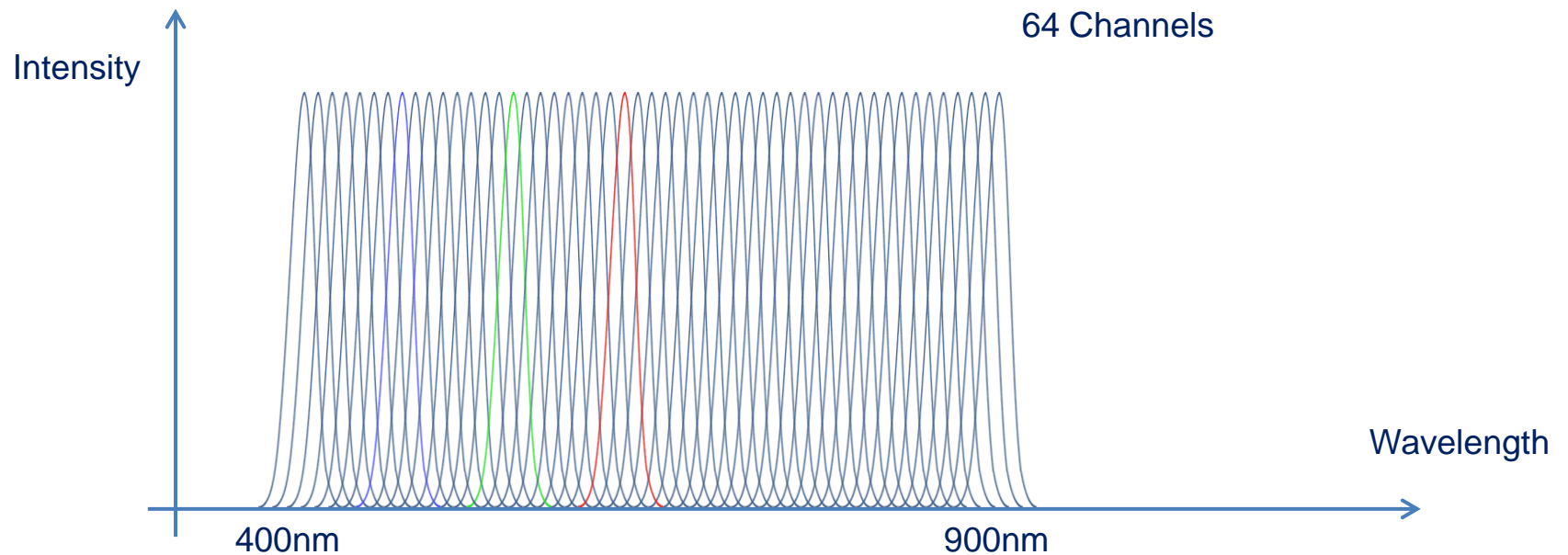
Line Sensor Array epc901
1024 Pixels on 7.68mm

Multispectral Sensor



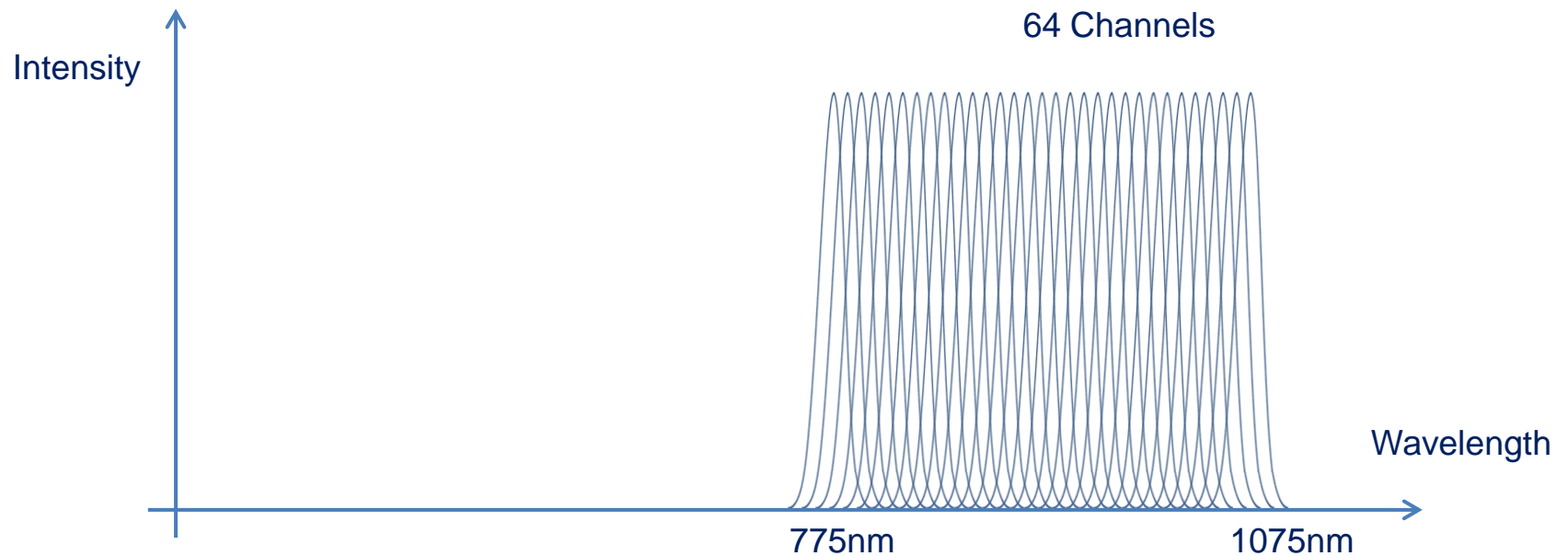
Multispectral Sensor

Visible Version

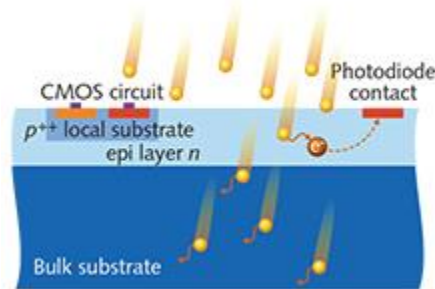


Multispectral Sensor

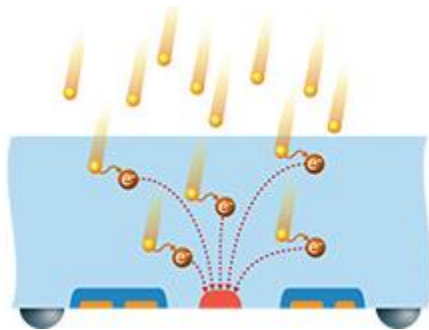
Near Infrared Version



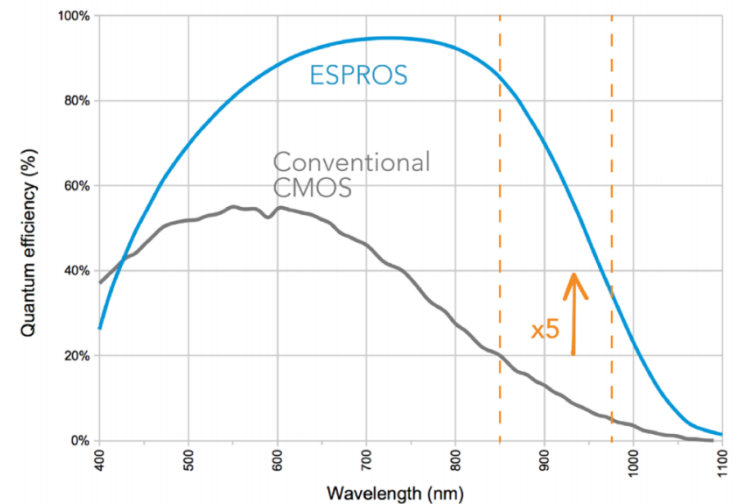
ESPROS Photonic CMOS™



Standard SMD CMOS process
100 photons create 10 electrons (NIR)



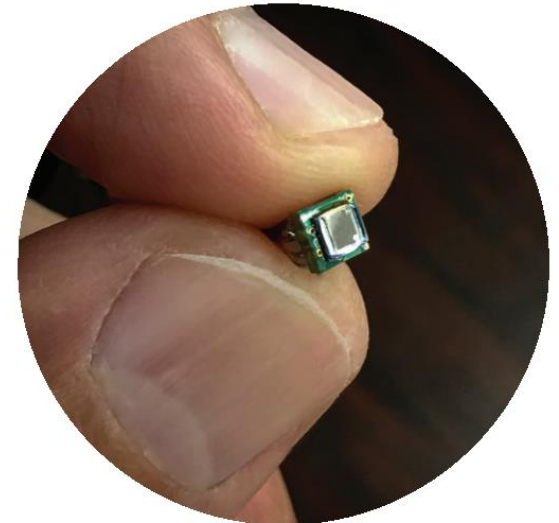
ESPROS BSI process
100 photons create 90 electrons (NIR)



- ➔ Much higher Quantum Efficiency in NIR (90%)
- ➔ Fill factor 100%

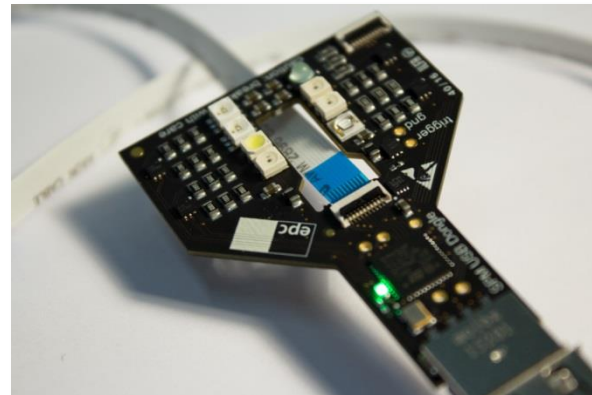
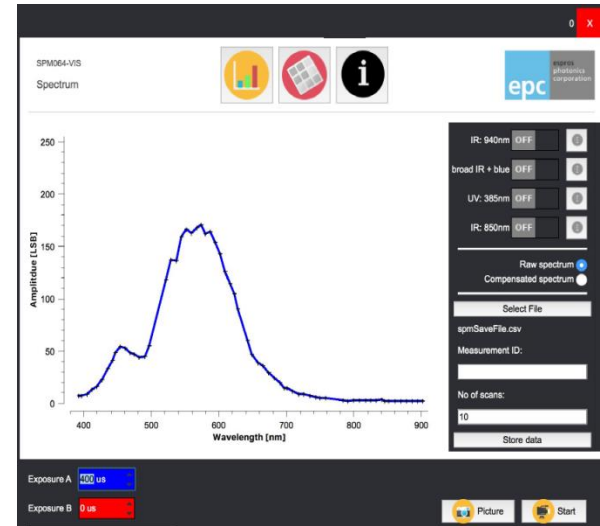
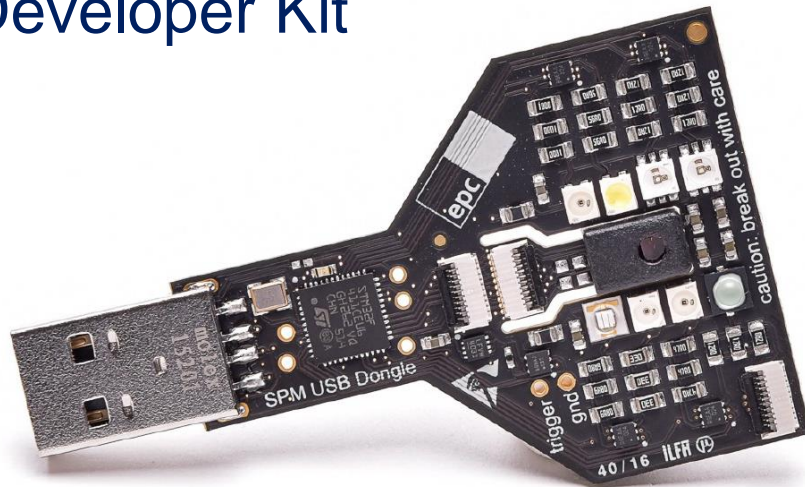
SPM64 Multispectral Sensor Developer Kit

Optical	Visible	Near Infrared
Wavelength Range	387nm - 903nm	776nm - 1064nm
Number of Channels	64	64
FWHM (typ., normal incidence)	30nm @ 400nm , 17nm @ 800nm	1.5nm @ 775nm, 4nm @ 1054nm
Filter Configuration	8x8	8x8
Filter Pitch	110um x 110um	110um x 110um
Active Sensor Area	870um x 870um	870um x 870um
Light Sources	LEDs 1 each UV, Blue, Green, Red, 850nm, 940nm, White, Broadband NIR	
Electrical	Visible	Near Infrared
Computer Interface	USB Type A 2.0	
Detector	CCD array 80 x 70 Pixels, BSI, 100% Fill Factor	
Power	USB Powered, 5V/500mA max.	
Included Remote Cable	500mm Ribbon Cable	
Remote Trigger	Yes	
Remote Light Sources	Up to 4 (in parallel)	
Mechanical	Visible	Near Infrared
Dimensions - Main Board	Approx. 40mm x 69mm x 6mm	
Dimensions - Sensor Board	Approx. 17mm x 8mm x 3mm	
Detachable Sensor Board	Snap off and connect with included 500mm ribbon cable	
Sensor Chip (CSP)	2.65mm x 2.65mm x approx. 1.1mm	
Software & User Interface	Visible	Near Infrared
Bit Depth	8 Bits per Channel	
Output File Format	*.csv Data set with Header containing Event Information	
Output File Data	Wavelength, Measured Counts (0-255)	
Software API	For Automation and Real-Time Analysis	



SPM64

Developer Kit



Multispectral Sensor

Applications



Identification



Color Matching



Food Monitoring



Textile



Cosmetic



Plastic

Multispectral Sensor

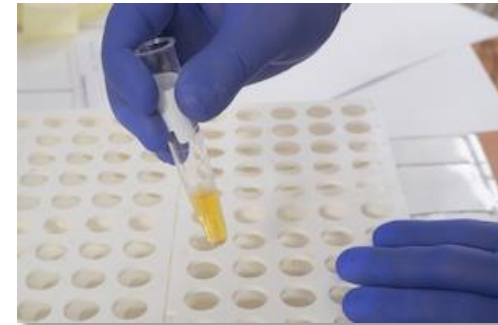
Applications



Water Analysis



Blood Analysis



Serum Analysis



Freshness of Vegetables



Fructose Measurement

Thank you

Your Solution Partner

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