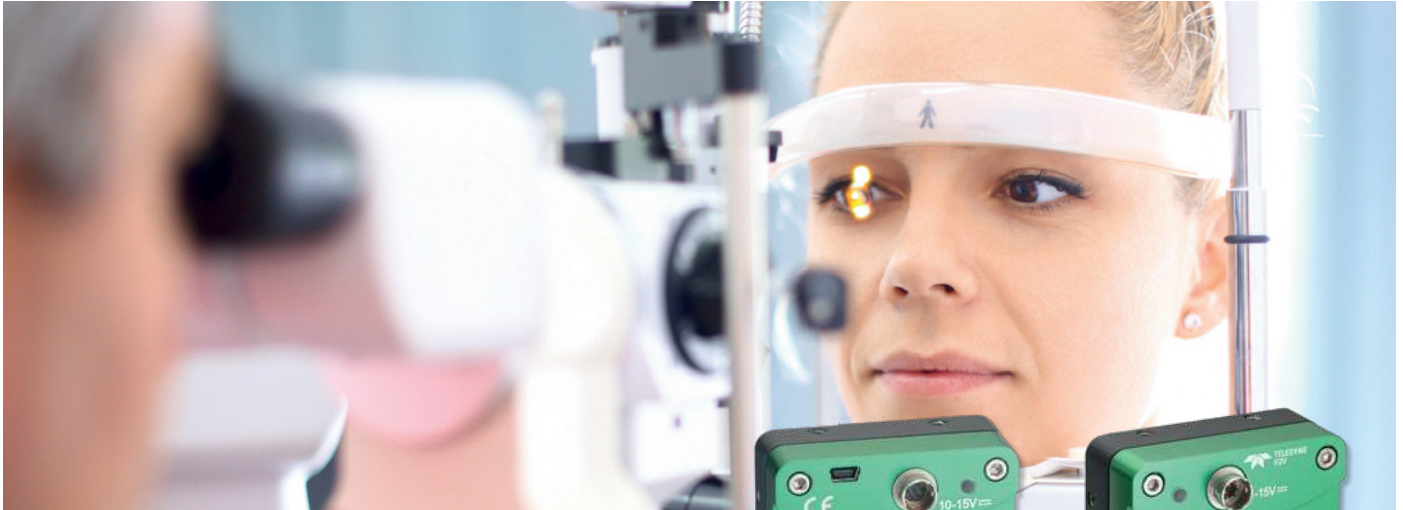# THE NEXT GENERATION OF OCT CAMERAS

The OctoPlus® family of line scan cameras is the industry's first modular linear camera platform for Optical Coherence Tomography (OCT) and general spectrometry, combining high speed, easy alignment, high signal-to-noise ratio, easy CameraLink or USB3 interfacing and customizable processing, all at attractive price points.

OctoPlus® offers users the freedom to choose their own speed, pixel height, full well capacity, interface and sensor package, offering more than 60 camera combinations. This enables optical engineers to design their particular OctoPlus® camera to best fit their spectrometer and control the cost to meet their targeted selling price by only selecting the options/features that are of interest to them.
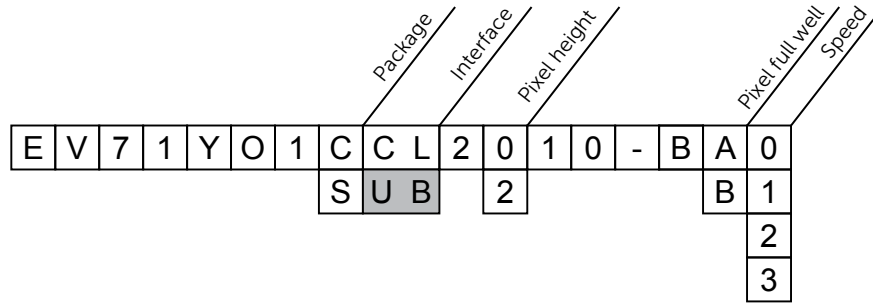
KEY BENEFITS

- 2,048 pixels CMOS monochrome line scan sensor
- Pixel size available in 2 versions: 10 μm x 20 μm and 10 μm x 200 μm
- Pixel full well capacity available in two versions: 140 ke- and 200 ke-
- CameraLink (base, medium, full) or USB3 interface
- Line rate available in 4 versions: up to 20 kl/s, 80 kl/s, 130 kl/s and 250 kl/s
- Bit depth: 10, 11 and 12 bits
- Configurable region of interest
- Sensor package available in two versions: ceramic and organic
- Power supply: 10 to 15V DC. PoCL compliant
- Low power consumption: <3W

APPLICATIONS

- Optical Coherence Tomography
- Fourier Domain – Spectrometry

KEY SPECIFICATIONS

The camera is available in different sensor versions and speeds. The camera part numbers are described below.
The USB camera (UB) is indicated for information and gives access to different speeds, that are not mentioned here.

PACKAGE		Material used to connect the silicon chip with the electronics board. Sensor package is correlated for alignment precision (flatness, rotation and tilt) and robustness to temperature changes.
C	Ceramic	High precision alignment and robust temperature changes.
S	Organic	Moderate precision alignment, but cost optimized.

INTERFACE		Camera interface to be chosen according to the speed required and system complexity.
CL	CameraLink	Enables quick demonstration and testing, enabled to reach the highest speed (up to 250kHz).
UB	USB3	Optimizes system cost by removing the need for the frame grabber component. Limited to 130kHz speed because of USB3 data throughput limitation.

PIXEL HEIGHT		Pixel shape is rectangular to help alignment and increase tolerance to T° changes.
0	20 µm	Medium pixel height – optimize energy capture in defocused edges relatively to a 10µm square pixel.
2	200 µm	Large pixel height – removes the need for active alignment and calibration.

PIXEL FULL WELL CAPACITY		Pixel converts photons into e- and stores them during integration time. The maximum amount of e- stored in the pixel is named the full well capacity. Higher full well allows higher Signal to Noise Ratio (SNR).
A	140 ke-	Standard pixel full well capacity.
B	200 ke-	High pixel full well capacity.

SENSOR/CAMERA SPEED			Several sensor speed versions are available to enable choosing the best price versus performance ratio. Higher speeds allow the fastest scan rate to increase cube/window size. Lower speeds cameras optimize costs.
0	20 kHz	@10, 11, 12 bits	Low speed for basic B-scans.
1	80 kHz	@10, 11, 12 bits	Medium speed for first level of functional imaging.
2	130 kHz	@10, 11, 12 bits	High speed for wide cube acquisition and faster angiogram analysis.
3	250 kHz CameraLink 150 kHz (USB3)	250 kHz @10 bits 200 kHz @11 bits 130 kHz @12 bits 150 kHz @10 bits 135 kHz @11 bits 120 kHz @12 bits	Ultra high speed for the widest acquisition window – decrease eye motion/fixation artefact.