

ULTRIS X20

Expanding Human Vision



HIGH SPECTRAL DETAIL IN ONE SNAPSHOT

The ULTRIS X20 captures 164 spectral channels with 4 nm sampling and a native spatial resolution of 410 × 410 pixels. Covering the UV, visible and near-infrared range from 350 to 1002 nm, it provides a detailed spectrum at every pixel for spectral analysis, classification and quantitative imaging.

BUILT FOR SPECTRAL IMAGING IN MOTION

All spectral channels are captured simultaneously in one exposure, without scanning or moving optics. This makes the X20 suitable for dynamic scenes as well as laboratory and field measurements. Applications range from scientific and biomedical imaging to industrial inspection, plant research and UAV-based remote sensing.

164

Spectral Channels

410 × 410 PX

Spatial Resolution, native

350-1002 NM

Wavelength Range

10/16 HZ

Live at 12/8 bit

Technical Specifications Ultris X20

Imaging	
Technology	Light Field
Readout	Global Shutter
Spatial Resolution	410 × 410 pixel
Field of View	32°
Attachable Optics	–
Integration Time	0.1–1,000 ms
Max Frame Rate	10 Hz (12 bit) · 16 Hz (8 bit)
Data Depth	8/12 bit
Sensor	CMV 20,000

Spectral & System	
Wavelength Range	350–1,002 nm
Spectral Channels/Sampling	164/4 nm
FWHM	Constant 10 nm
Bandpass Filter	Mosaic
Spectral Data Points	164 × 168,100 (27.6 M)
Data Link	GigE
File size processed	< 55 MB
Weight · Dimensions	350 g · 60 × 60 × 57 mm
Options	Industrial Housing (IP66) Underwater Housing (IP68)



The ULTRIS X20 on the Cubert Knowledge Base.

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One exposure, the complete datacube. No scanning, no image combination and no moving optics. All 164 spectral channels are captured simultaneously, enabling spectral imaging of moving scenes and objects.

Optics

CONSISTENT SPECTRAL PERFORMANCE

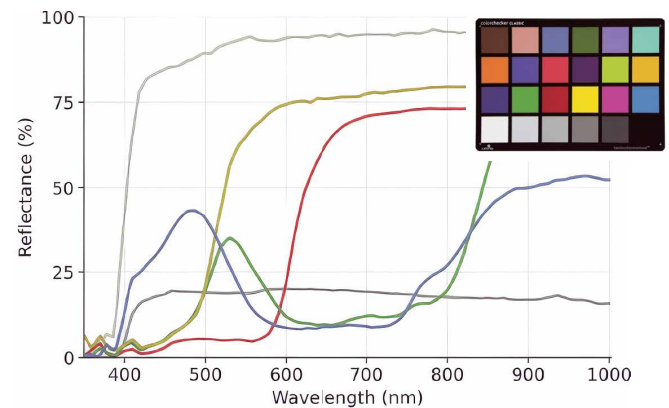
The X20 uses a mosaic of optical bandpass filters directly on the sensor. With high transmission and OD4 blocking, the filter system is designed to reduce stray light while maintaining well-defined spectral bands across the wavelength range.

Optional IP66 and IP68 housings extend the X20 to demanding field environments, including underwater applications.



The mosaic filter array is positioned directly on the sensor. No moving optics and no scanning axis are required.

A constant FWHM of 10 nm across the spectral range provides equally broad bands, while 4 nm spectral sampling delivers detailed spectral information from 350 to 1002 nm.



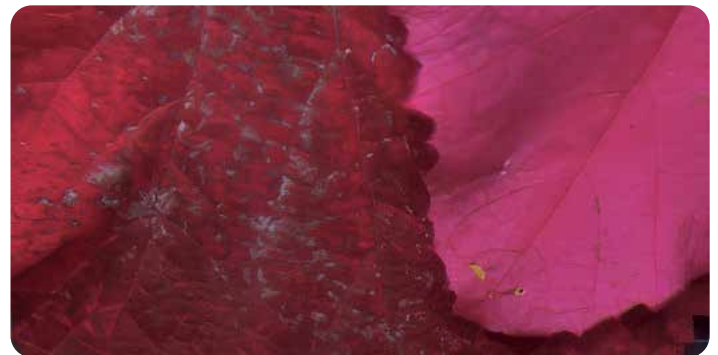
A full spectrum at every pixel. Six patches of a 24-field colour chart measured simultaneously in a single exposure.

Software

FROM ACQUISITION TO ANALYSIS

CUVIS provides camera control, calibrated spectral data, live visualization and recording for the X20. Raw data, reflectance and radiance workflows are supported, while recorded data can be exported to established scientific formats including ENVI and TIFF.

For integration into research, remote-sensing and industrial workflows, the CUVIS SDK provides programmatic access from C++, Python and other supported environments. Cuvis.AI adds an open framework for combining spectral information with modern computer vision and machine-learning methods.



CIR radiance image of vine leaves. Near-infrared information reveals differences that are not visible to the human eye.

