



Name	NANOSATELLITE CAMERA “KIKAS” (CAM1U)	MONITORING CAMERA “KODAS”	VACUUM CHAMBER CAMERA “TSIGA” (VCC)
Crystalspace code	CS-101	CS-151	CS-201
Market	<ul style="list-style-type: none"> • Space • Cube satellites (From 1 Unit CubeSat) • Nanosatellites 	<ul style="list-style-type: none"> • Space • Satellites • Rovers 	<ul style="list-style-type: none"> • Vacuum Chambers
Applications and use cases	<ul style="list-style-type: none"> • Short missions on LEO up to 4 years • Monitoring mission critical events • Imaging deployments • Low-cost, good quality PR images 	<ul style="list-style-type: none"> • Computer vision in Space • Monitoring of mission critical events • Monitoring of separation and landing • Monitoring & controlling rover robotic arms, drills, etc. (Moon project Maxar/NASA) • Stereo cameras (Moon project Maxar/NASA) 	<ul style="list-style-type: none"> • Monitoring processes inside the vacuum chamber • Monitoring element tests • Monitoring unit production • Monitoring vacuum production lines work
Overview	Nanosatellite cameras are the smallest and most advanced satellite camera systems on the market. It suits well for densely packed satellites starting from CubeSats (for taking pictures of the Earth) to large satellites (monitoring cameras).	Monitoring camera system “Kodas” is the smallest and the most advanced satellite monitoring camera on the market. The possible applications for monitoring cameras are monitoring of satellite deployables and their performance, monitoring of separation and landing, as well as taking images for marketing and mission promotion purposes.	This camera is designed for monitoring vacuum chamber processes from the inside. The fully immersible VCC is based on the nanosatellite camera and inherits space rigidity. The VCC is developed in cooperation with ESA. The VCC combines the best of the space technology and modern-day easy to use industrial applications requirements.
Imaging sensor	5 MP visual wavelength - monochrome or colored	5 MP visual wavelength - monochrome or colored	5 MP visual wavelength - colored
Mass	42 g	330 g	500 g
Dimensions	42 x 25 x 45 mm	82 x 88 x 39 mm	30 x 64 x 90 mm
Working distance	100 mm to ∞	100 mm to ∞	100 mm to ∞
Field of View	Different lenses available from 12 deg ... 120 deg.	Different lenses available from 12 deg ... 120 deg.	131 deg
Supported communication protocols	<ul style="list-style-type: none"> • UART • RS-485 • RS-422 • RS-232 • CAN • SPI 	<ul style="list-style-type: none"> • RS-485 • RS-422 • RS-232 • CAN • Native SpaceWire support will be available in 2022 	<ul style="list-style-type: none"> • Hi-Speed USB
Power consumption	Nominal power consumption 75 mW with peaks of 750 mW during imaging and compression	Nominal power consumption 0.5 W with peaks of 2 W during imaging	Powered over USB
Additional information	<ul style="list-style-type: none"> • Image packing, JPEG compression & long-term storage available 	<ul style="list-style-type: none"> • Baffle & shutter for the camera • ESA certified assembly • Isolated DC-DC conversion 	<ul style="list-style-type: none"> • Desktop application for plug-and-play