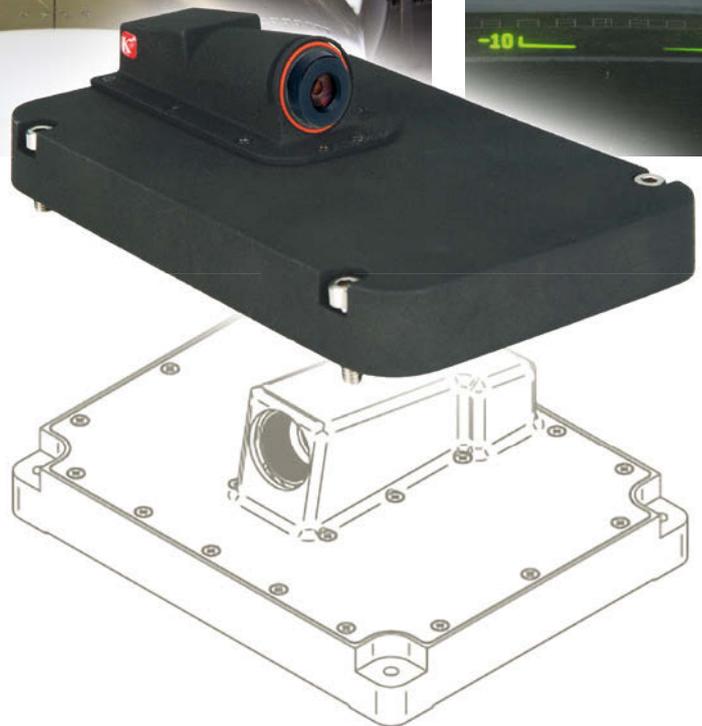


Pilot View: Head-Up Display Cameras

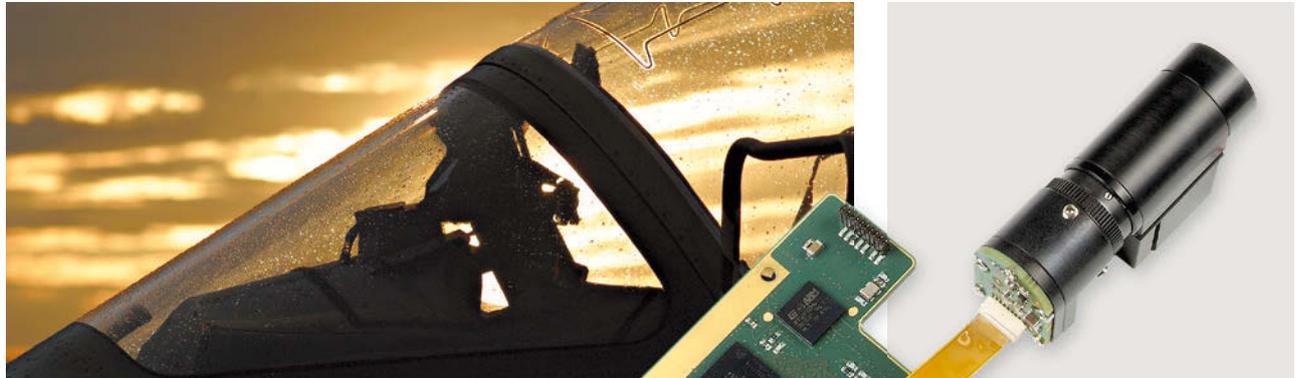


-  Flight training
-  Flight evaluation
-  Flight documentation



realize visions .

Get the Pilot's View with Kappa Head-Up Display Cameras



We are your expert partner
for HUD cameras.

We understand your requirements completely!
Built on our HUD camera technology platform, we offer you
cost-effective, customized solutions for every fighter cockpit
with qualification up to DAL B.

Outstanding Performance

HUD cameras for recording full pilot views with HUD symbology and outside world are subjected to rough environmental conditions that place enormous demands on the camera design. Kappa's HUD cameras offer extremely fast, specific image processing that delivers distortion- and disruption-free, real-time videos at Mach 2 (twice the speed of sound). Sudden light changes in the fighter aircraft due to sun and clouds go from complete overexposure to nearly total darkness, requiring outstanding camera dynamics. Kappa's extremely robust HUD cameras, with customized, very small design, physically integrate unobtrusively into diverse cockpit situations without impeding the pilot at all.

Typical Uses of Kappa Fighter HUD Cameras

- ✎ HUD cameras in training aircraft display the pilot's complete view live on the accompanying trainer's screen
- ✎ HUD cameras connect to the existing recording system for debriefing / recording the pilot view for later flight evaluations and documentation

Typical Specifications of Kappa Fighter HUD Cameras

- ✎ Shock/vibration/acceleration: MIL-STD-810G
- ✎ Temperature: - 40°C up to +60°C
- ✎ EMC: MIL-STD-461F
- ✎ ESD: MIL-STD-464C

Kappa FFF Retrofit Design: Latest CMOS Camera Technology for all Generations of HUD

Our Retrofit Design cameras for swapping out existing older camera technology in fighter aircraft fit seamlessly into the elaborate on-board systems of our customers in the military sector. Cutting-edge Kappa HUD camera technology, with the latest CMOS sensor technology and image processing, is designed for all technical generations of HUD systems, from current scanning laser back to older CRT technology. Our HUD cameras thus offer complete investment security for your obsolescence management. We guarantee you long-term availability for your needs.



Technology Platform for HUD Cameras

For all generations of HUD, from scanning laser systems up to CRT technology (flicker-free)

Full HD camera systems

Latest CMOS sensor technology (e.g., IMX 252, IMX 273), optimized using Kappa know-how for HUD applications

COTS modules, either with a compactly housed design or a remote camera head

Extremely fast image processing for disruption-free videos at supersonic speed

Extremely high dynamic range

Electronic image stabilization

Global Shutter

Event Mark

Variable FoV, 12° to 45° according to cockpit layout

Exact line-of-sight orientation in the milliradian range

HD SDI interfaces (optional analog video (PAL, NTSC) for replacement of older systems, other interfaces on request)

FFF retrofit design

Aviation-Qualified Rugged Design (development and manufacturing in accordance with DO-178C up to DAL B, DO-254 up to DAL B, DO-160, MIL-STD-810, MIL-STD-704)

Long-term availability

Small size and shape: extremely small design, adaptable for various cockpit environments and installation requirements

40 years of experience

Kappa has 40 years of experience with cameras and vision systems in rugged and certifiable design for anything that drives or flies. We ensure maximum performance of higher level systems with innovative solutions for day and night operation and lightweight SWaP-C optimized cameras for indoor/outdoor use.

Close collaboration with our major aviation clients sets the course for demand-oriented development. We are not only leaders in technology. Moreover, we meet all safety requirements on design assurance procedures in hard- and software development, qualification and certification (DO-254 and DO-178 through DAL B, DO-160, MIL STD 810/704, and NATO Supplier Code C4792). KAPPA is one of very few EN/AS 9100-certified camera suppliers with 21G competencies under the supervision of a major OEM.

More Aerospace Cameras: the Kappa Aviation Camera Program

With our Flight Eye technology platform, we offer you fully developed, standardized modules for the most common in- and outdoor requirements profiles in the aviation sector. Customizations are possible at any time. Request our Flight Eye program data sheets today.



Several Shapes
Available
on Demand



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