

Basler dart

With its single-board design, the Basler dart camera series offers the latest technology in a small form factor. The dart not only scores points with its compact design, but also with its excellent price/performance ratio and flexible integration capabilities: The camera modules can be connected to a single board computer (SBC) via USB 3.0, for example, or directly to a SoC (System-on-Chip) or FPGA (Field Programmable Gate Array) via MIPI based data transmission. This allows the dart cameras to be used for a variety of embedded and machine vision solutions.

Image Signal Processing: on the camera or on the processing unit, just as required

dart cameras provide in-camera image pre-processing performed by an integrated Image Signal Processor (ISP). For those embedded systems that already provide an ISP we offer camera modules without ISP but with drivers utilizing the host's ISP – resulting in the leanest solution and a cost optimized set up.

Highlights

- Smallest board level cameras with extremely low weight and low power consumption
- Bare board: just 27 mm×27 mm and 5 g in weight; S- and CS-mount: only 29 mm×29 mm at 15 g
- Popular CMOS sensors from Sony, onsemi and e2v with resolutions from 1.2 to 13 MP and up to 160 fps
- USB3 Vision: Plug and play with a single cable solution compliant with industry standards
- Basler BCON for MIPI interface tailor-made for MIPI CSI-2 connections
- Excellent color reliability and image adjustment features for color-critical applications
- Best-in-class image pre-processing like debayering, denoising, improved sharpness, and more

For more information, please visit baslerweb.com/dart



Image processing in on-camera ISP



With on-camera ISP: Bare board and S-mount models with BCON for MIPI interface and 5 or 13 MP resolution. Here, specific drivers for NXP®'s i.MX 8M Mini, 8M Quad, 8QuadMax and NVIDIA®'s Jetson™ platform are available as a standard.

Image Processing in host ISP



Uses the ISP of NXP®'s latest processing board i.MX 8M Plus: The new 8 MP dart BCON for MIPI camera module features a premium 4K sensor with excellent High Dynamic Range (HDR) from onsemi. Further SoCs with integrated ISP can be supported upon request.





dart BCON for MIPI



dart USB 3.0

DART

Product Group Specifications	
Interface	BCON for MIPI (MIPI CSI-2), USB 3.0
Housing Size [W×H]	27 mm×27 mm (bare board); 29 mm×29 mm (other mount versions)
Camera Depth	5.3 mm – 8.0 mm (bare board); 18 mm – 19.9 mm (other mount versions)
Housing Temperature during operation	0 °C - 50 °C
Typical Weight	5 g (bare board); 10 g -15 g (other mount versions)
Lens Mount	USB 3.0: bare board, S-mount or CS-mount BCON for MIPI: bare board or S-mount
Power Requirements	5V / 0.6 W – 2.0 W
Digital I/O	BCON for MIPI: 2 outputs/2 inputs, USB 3.0: 2 or 4 GPIO
Synchronization	Via hardware trigger, via software trigger, or free-run ¹
Exposure Control	Via hardware trigger or programmable via the camera API ¹
Conformity	CE, RoHS, GenICam, USB3 Vision, UL, FCC, KC ¹ , EAC ¹
Driver	Basler pylon Camera Software Suite
Operating System	Linux, Windows (USB 3.0 only), macOS (USB 3.0 only)

¹Depending on model.

CAMERA MODEL	SENSOR	RESOLUTION [H×V PIXELS]	RESOLUTION [MP]	SENSOR TYPE	SHUTTER	FRAME RATE [FPS]	PIXEL SIZE [μm ²]	OPTICAL SIZE
dart BCON for MIPI								
daA2500-60mci ²	AR0521	2560×1920	5.0	CMOS	Rolling	60	2.2×2.2	1/2.5"
daA4200-30mci ²	AR1335	4208×3120	13.0	CMOS	Rolling	30	1.1×1.1	1/3"
daA2500-60mc	AR0521	2560×1920	5.0	CMOS	Rolling	60	2.2×2.2	1/2.5"
daA3840-30mc	AR0821	3840×2160	8.0	CMOS	Rolling	30	2.1×2.1	1/1.8"
dart USB 3.0								
★ daA720-520um/uc	IMX287	720×540	0.4	CMOS	Global	523	6.9×6.9	1/2.9"
★ daA1440-220um/uc	IMX273	1440×1080	1.6	CMOS	Global	227	3.45×3.45	1/2.9"
daA1280-54um/uc	AR0134	1280×960	1.2	CMOS	Global	54	3.75×3.75	1/3"
daA1600-60um/uc	EV76C570	1600×1200	2.0	CMOS	Global	60	4.5×4.5	1/1.8"
daA1920-15um ¹	MT9P031	1920×1080	2.0	CMOS	Rolling	15	2.2×2.2	1/3.7"
daA1920-30um/uc	MT9P031	1920×1080	2.0	CMOS	Rolling	30	2.2×2.2	1/3.7"
daA1920-160um/uc	IMX392	1920×1200	2.3	CMOS	Global	160	3.45×3.45	1/2.3"
★ daA2448-70um/uc	IMX548	2448×2048	5.0	CMOS	Global	74	2.74×2.74	1/1.8"
daA2500-14um/uc	MT9P031	2592×1944	5.0	CMOS	Rolling	14	2.2×2.2	1/2.5"
daA3840-45um/uc	IMX334	3840×2160	8.3	CMOS	Rolling	45	2.00×2.00	1/1.8"

¹ Bare board only.

² Internal ISP.



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