



VD56G3

Compact & high sensitivity 1.53 MP B&W global shutter image sensor



Compact 1.53 MP monochrome global shutter image sensor with enhanced sensitivity and sharpness for accurate image capture

Combining advanced processes of 3D stacking, BSI and CDTI from ST fab, the **VD56G3** ensures bright and high-precision image capture at high speed, making it a key asset for time-critical use cases such as logistics or 3D vision.



KEY FEATURES

- Output:
 - MIPI CSI-2 (1 or 2 lanes)
 - RAW monochrome
- Image enhancement:
 - Autoexposure
 - Dark calibration
 - Defect correction
- Data optimization:
 - Binning
 - Subsampling
 - Cropping
- Synchronization:
 - Context management
 - Illumination control output
 - GPIOs x8
 - Multiple trigger modes

KEY APPLICATIONS

- Barcode reading
- Industrial inspection
- Factory automation
- Biometrics
- IoT
- Mobile
- Smart home
- Security
- Drones
- Robotics
- 3D stereo vision
- 3D structured light
- Medical imaging

VD56G3 at a glance

Capture crystal clear images

The VD56G3 leverages full pixel encapsulation to provide unrivaled sensitivity and sharpness for capturing details from visible to near infrared spectra, such as 850 nm or 940 nm. Its global shutter operation enables removal of motion and lighting artifacts and reduces lighting power requirements. Leveraging advanced 2.61 μm pixels, the VD56G3 offers a compact footprint without compromising image quality.

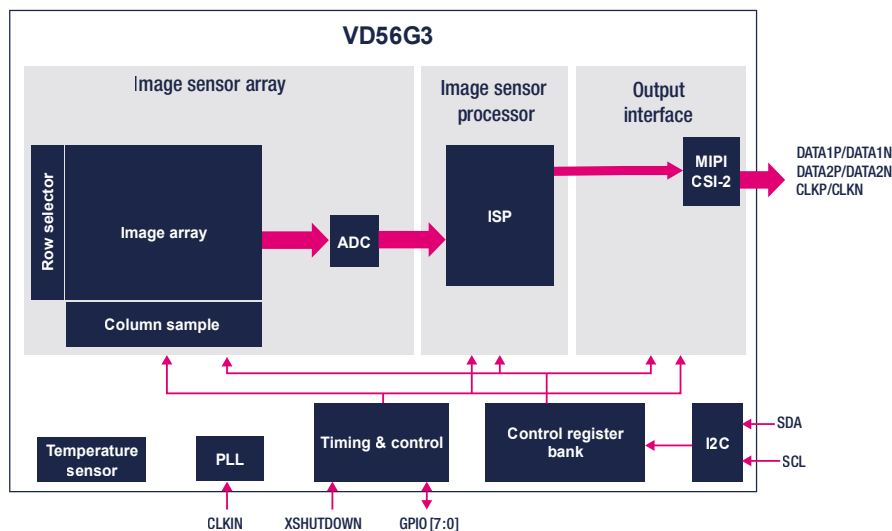
One design fits all

The VD56G3 monochrome image sensor is available in 1.5 MP RGB (VD66GY), 1.5 MP RGB-IR (VD16GZ), and 640x600 resolution monochrome (VD55G0) versions. These products share the same pixel architecture, controls, and functionalities, which help streamline derivative product developments and simplify integration across various applications.

Effortless integration

With its MIPI CSI-2 output (single or dual lane), the VD56G3 is compatible with a broad range of embedded platforms and FPGAs. As part of the ST BrightSense portfolio, the sensor benefits from a full ecosystem that facilitates rapid development. Designers can leverage our comprehensive kits and camera modules, along with free drivers and evaluation software to simplify evaluation, integration, and prototyping.

Block diagram



Imaging capabilities



Auto exposure

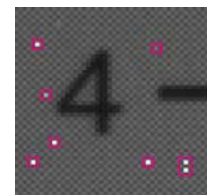


Image correction

Ordering codes

Category	Item	Deliverable	Description	Part number
Product	VD56G3	Reconstructed wafer	1.53 MP monochrome global shutter image sensor	VD56G3CCA/RW
Evaluation Tools	EVK Main	Evaluation kit	USB evaluation kit for any ST BrightSense sensor	STEVAL-EVK-U011
	P-Board	Development kit	MIPI CSI-2 development kit for any promodule	STEVAL-CAM-M011
	VD56G3 S-Board	Development kit	MIPI CSI-2 development kit for VD56G3 sensor	STEVAL-56G3MA11
	CAM-56G3 promodules	Evaluation camera module	VD56G3 promodule with 73° DFOV lens, clear filter	CAM-6G3-073CLR
			VD56G3 promodule with 84° DFOV lens, clear filter	CAM-6G3-084CLR
VD56G3 promodule with 152° DFOV lens, clear filter			CAM-6G3-152CLR	



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