



IMX326LQC

Diagonal 6.15 mm (Type 1/2.9) Approx. 6.82M-Effective Pixel
Color CMOS Image Sensor

CMOS Image Sensor that Supports Variety of Output Formats for Security Camera and Industrial Applications

Sony has commercialized the "IMX326LQC"-type 1/2.9 back-illuminated CMOS image sensor with approximately 6.82 M effective pixels for the expanding security camera market.

The IMX326LQC is capable of up to 6 M (3096 × 2196) output at 60 frames/s in ADC 10-bit mode. In addition, the DOL

(Digital Overlap)-type HDR (High Dynamic Range) function is supported at 30 frames/s, realizing video imaging with a wide dynamic range.

This makes the IMX326LQC a CMOS image sensor that can support various and applications.

- High-speed video imaging function
- Variety of output formats
- DOL-HDR function
- Compact device size
(Pin compatibility with IMX274LQC)

Exmor R

*Exmor R is a trademark of Sony Corporation. The Exmor R is a Sony's CMOS image sensor with significantly enhanced imaging characteristics including sensitivity and low noise by changing fundamental structure of Exmor™ pixel adopted column parallel A/D converter to back-illuminated type.

STARVIS

*STARVIS is a trademark of Sony Corporation. The STARVIS is back-illuminated pixel technology for CMOS image sensors for surveillance camera applications. It features a sensitivity of 2000 mV or more per 1 μm² (color product, when imaging with a 706 cd/m² light source, F5.6 in 1 s accumulation equivalent), and realizes high picture quality in the visible-light and near infrared light regions.

High-speed video imaging function

The IMX326LQC realizes up to 6 M (3096 × 2196) all-pixel scan at 30 frames/s in ADC 12-bit mode, and at the high frame rate output of 60 frame/s in ADC 10-bit mode, making it ideal for expanding security camera market applications.

For applications not requiring a high frame rate, power consumption can be reduced through the use of a lower frame rate.

Variety of output formats

The IMX326LQC supports variety of output formats (3:2, 4:3, 16:9, 1:1 output angles of view) in consideration of normal box-type cameras as well as omnidirectional cameras and

multi-sensor cameras, which are becoming increasingly common. (Table-3)

DOL-HDR function

The IMX326LQC supports the DOL-type HDR function for a 6 M angle of view. This makes it possible to shoot high-resolution video with an expanded dynamic range. The

modes that support the DOL function are 6 M (3096 × 2196) ADC 10-bit 30 frames/s and Full HD (1920 × 1080) ADC 10-bit 60 frames/s. (Table-3)

Compact device size (Pin compatibility with IMX274LQC)

The IMX326LQC realizes a compact package size of 10.70 mm (H) × 8.50 mm (V) × 1.62 mm (t). This reduced size enables

use for such applications as multi-sensor cameras. In addition, pin compatibility is with the IMX274LQC.

<Photograph 1> Sample Images

Condition: 16:9 mode, F1.6, 30 frame/s



<Table 1> Device Structure

| Item | | IMX326LQC |
|---------------------------------------|------------|---|
| Output image size | | Diagonal 6.15 mm (Type 1 / 2.9) aspect ratio 3:2 |
| Number of effective pixels | | 3096 (H) × 2202 (V) approx.6.82M pixels |
| Unit cell size | | 1.62 μm (H) × 1.62 μm (V) |
| Optical blacks | Horizontal | Front: 0 pixels, rear: 0 pixels |
| | Vertical | Front: 16 pixels, rear: 0 pixels |
| Input drive frequency | | 12 MHz / 24 MHz / 36 MHz / 72 MHz (Sub-LVDS) 6 MHz / 12 MHz / 18 MHz / 24 MHz (MIPI CSI-2) |
| Interface | | Sub-LVDS (576 Mbps / ch, Max. 10 ch) *1 MIPI CSI-2 (1.440 Gbps / Lane) *1 |
| Package | | 92-pin LGA |
| Supply voltage V _{DD} (Typ.) | | 2.8 V / 1.8 V / 1.2 V |

*1 Sensor slave mode when using Sub-LVDS and sensor master mode when using MIPI.

<Table 2> Image Sensor Characteristics

| Item | Value | Remarks |
|--------------------|-------------|------------------------|
| Sensitivity (F5.6) | Typ. 237 mV | 1/30s accumulation |
| Saturation signal | Min. 645 mV | T _j = 60 °C |

<Table 3> Basic Drive Mode

| Drive mode | Recommended number of recording pixels | Frame rate [frame/s] | ADC[bit] |
|-------------------------|--|----------------------|----------|
| All-pixel scan (12 bit) | 3072 (H) × 2160 (V) | 30 | 12 |
| 5M 4:3 scan (12 bit) | 2592 (H) × 1944 (V) | 30 | 12 |
| 5M 16:9 scan (12 bit) | 3072 (H) × 1728 (V) | 30 | 12 |
| 4M 1:1 scan (12 bit) | 2160 (H) × 2160 (V) | 30 | 12 |
| All-pixel scan (10 bit) | 3072 (H) × 2160 (V) | 60 | 10 |
| 5M 4:3 scan (10 bit) | 2592 (H) × 1944 (V) | 60 | 10 |
| 5M 16:9 scan (10 bit) | 3072 (H) × 1728 (V) | 60 | 10 |
| 4M 1:1 scan (10 bit) | 2160 (H) × 2160 (V) | 60 | 10 |

| Drive mode | Recommended number of recording pixels | Frame rate [frame/s] | ADC[bit] |
|-------------------------------|--|----------------------|----------|
| All-pixel scan (10 bit) DOL*1 | 3072 (H) × 2160 (V) | 30 | 10 |
| Full HD (10 bit) DOL*1*2 | 1920 (H) × 1080 (V) | 60 | 10 |

*1 There are restrictions on the storage time setting values when using DOL.

*2 With vertical addition

*Sony reserves the right to change products and specifications without prior notice.