### Specifications

<table>
<thead>
<tr>
<th>Basler</th>
<th>A311f</th>
<th>A311fc</th>
<th>A312f</th>
<th>A312fc</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Camera</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>659 x 494</td>
<td>658 x 492</td>
<td>782 x 582</td>
<td>780 x 580</td>
</tr>
<tr>
<td>Sensor Type</td>
<td>Sony ICX414AL/AQ, progressive scan CCD</td>
<td>Sony ICX415AL/AQ, progressive scan CCD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensor Optical Size</td>
<td>1/2&quot;</td>
<td>1/2&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pixel Size (µm)</td>
<td>9.9 x 9.9</td>
<td>8.3 x 8.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frame Rate at Full Resolution</td>
<td>73 fps</td>
<td>53 fps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mono/Color</td>
<td>Mono</td>
<td>Color</td>
<td>Mono</td>
<td>Color</td>
</tr>
<tr>
<td>Video Output Type</td>
<td>IEEE1394a</td>
<td>IEEE1394a</td>
<td>IEEE1394a</td>
<td>IEEE1394a</td>
</tr>
<tr>
<td>Gain Control</td>
<td>0-22 dB</td>
<td>0-17.4 dB</td>
<td>0-22 dB</td>
<td>0-17.4 dB</td>
</tr>
<tr>
<td>Synchronization</td>
<td>Via external trigger, via the 1394 bus, or free run</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposal Control</td>
<td>Programmable via the 1394 bus</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mechanical / Electrical**

- Housing Size (L x W x H): 42 mm x 62 mm x 62 mm without lens adapter
- Weight: ca. 210 g
- Power Requirements: 8-36 VDC, max. 3.0 W (at 12 VDC), provided via the 1394 cable
- Mount Type: C-mount
- IR-Cut-Filter: optional standard
- Conformity: CE, FCC

**Software and Features**

- Camera Features: Long exposure mode, freely programmable sets of infrared (IR) trigger ready look-up tables (programmable), lossless compression, and many other included in the Basler features framework (BFF)
- License: Basler Advantage (BA) through BA41

*Specifications are subject to change without prior notice.

---

### What Makes Basler Camera Quality So Special?

To ensure consistently high-product quality we employ several quality inspection procedures during manufacturing. This list describes some of the most essential actions that take to make your highest requirements:

- The back focal length on each camera is carefully measured and adjusted. This guarantees an optimum distance between the lens flange and the sensor and ensures compliance with optics standards.
- Our advanced Camera Test Tool (CTT+), the first fully automated inspection system for digital cameras, checks all of the significant quality aspects of each camera we produce. The CTT+ is a unique combination of optics, hardware, and software that can be quickly and efficiently used to calibrate a camera and to ensure its performance against a set of standards. For defined sets of conditions, we automated software program ensures the camera's output; monitors any calibration adjustments necessary, and compares the output to a strictly defined set of performance criteria.

---

**Excellent Image Quality, Small, Easy to Use**

The A300f is measured by the CTT+ according to the EMVA 1288 standard.
The A300F Series – Excellent Image Quality at Standard Resolution

FireWire integration is easy, cost-effective, and standardized. It supports plug-and-play and therefore no need for a frame-grabber.

One-Shot Operation and Software Trigger
The camera lets you use the 1394 bus to “trigger” image capture without the need for a frame-grabber-generated trigger.

In one-shot operation, the camera captures a single image based on user-defined parameters that are transmitted to the camera. The operating mode usually results in the start of image exposure within an acceptable amount of time. But to get an even quicker response you can use a “software trigger” to start grabbing a single image easily when needed by your application.

Trigger Ready!
The Trigger Ready feature is a patented innovation. It lets you optimize your image capture timing by monitoring the communicate camera settings and calculating the earliest moment each exposure can begin.

By using the Trigger Ready signal, you can easily operate at the maximum frame rate allowed with the current camera settings. It allows you to prevent the camera from turning faster and avoid dropping or losing images.

Live Exposure Mode
With A300F cameras, an exposure time of up to 5 seconds is possible. This lets you capture superb images even under low light conditions as it offers the ease of noise reduction with built-in imaging applications.

12 Bit Image Digitization
A 12-bit camera can digitize each pixel in a captured image at 12 bit depth. This lets you detect even the finest details. In addition, the camera automatically low noise level provides an extraordinary signal-to-noise ratio. Image can be set at 12 bits via the 1394 bus to a remote computer. This lets you access the camera’s look-up table (LUT) features at ‘Live.”

The SDK API is a fully documented and comes with the SDK Driver, the SDK package includes source code for both low level (C++) and high level (C++) APIs. The APIs provide access to camera features (e.g., grabbing images and configuring the camera with Virtual Studio and StudioLite). In addition, the SDK package offers DirectShow support via a DirectShow Video Source Filter and includes DirectX source code for both Visual C++ and Visual Basic.

Basler Camera Software

The SDK’s API is a fully documented and comes with source code for the user module driver. A collection of code samples demonstrates how to use the SDK. The SDK package also includes some helpful tools along with the source code for faster development.

The BaslerAPI – an integrated camera viewer program for grabbing images and for configuring the camera.

The BaslerAPI provides an easy-to-use Basler viewer that you can use to view and save images captured by your camera. The BaslerAPI is a plug-and-play solution that is easy to use. It lets you use the camera’s look-up table (LUT) features at “Live.”

The BaslerAPI is a plug-and-play solution that is easy to use. It lets you use the camera’s look-up table (LUT) features at “Live.”

How Does Basler Measure and Define Image Quality?

Sensitivity Parameters

Quantum Efficiency

Signal-to-Noise Ratio (dB)*

Signal-to-Noise Ratio (bits)*

A selection of companies offering third party products is shown below. Many other products are also available.

Cogent

Matrox Imaging

National Instruments

Stevens

Corel

Exposure

Sensor

Medium

1288

API standard compliant

Basler Components is leading the effort to standardize image quality and sensitivity measurement for machine vision cameras and sensors. The 1288 standard will enable the integration of an A300F camera with DCAM compliant software is in 100% compliance with the new European Machine Vision Association EMVA 1288 standard. Because it defines a unified method to measure and provide compliant information about the quality and sensitivity of our products.

The following charts and parameters are extracted from the Basler Camera Software.