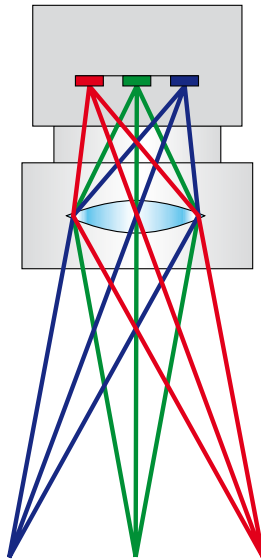# Basler L300 Series

The L300 Color Line Scan Series

BASLER
VISION TECHNOLOGIES

Basler L300 Series Cameras

The L300 Series highlights Basler's commitment to common sense camera design. These tri-linear cameras offer users a cost-effective way of implementing color in line scan applications. The mono versions with their three monochrome lines can be easily used as a high sensitivity line scan camera. With 3 lines × 2098 pixels per line, L301 series cameras offer an exceptional price/performance ratio. L304 series cameras offer useful new features and high resolution with 3 lines × 4080 pixels per line.

With a choice of three different integration modes as well as adjustable gain and offset, these are very flexible cameras. L300 cameras can be triggered via an external sync signal or operated in an internally controlled ,,free-run" mode. All settings can be adjusted by means of simple programming commands via a serial port. The cameras operate with a single voltage power supply and have simple cabling requirements.

The Basler L300 Series features the following benefits:

• An expensive matched lens is not required to capture optimum image quality, providing you with an affordable solution for color imaging
• Use of a tri-linear sensor results in a very compact camera, reducing the space needed in your installation
• LED indicators and test image generation capability reduce your integration time and aid troubleshooting
• Extensive and complete factory testing ensures consistent product quality
• An integrated spatial correction feature combines pixel data and the lines in the sensor, eliminating the need for computer resources to perform this task
• Electronic exposure time control provides maximum flexibility
• Simple integration into your application is ensured with a combination of new useful features and a Windows setup tool.

Principle of the Tri-Linear
Color Line Scan Camera

L301k/kc and L304k/kc Cameras Are Ideal for a Variety of Applications Including:

• Document scanning
• Print inspection
• Web inspection
• Food and forestry products inspection
• Tissue sample scanning
• 3-D imaging and measurements
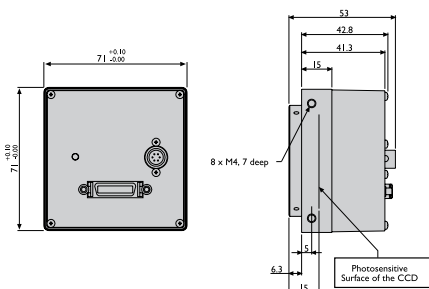• Many other vision applications

Specifications

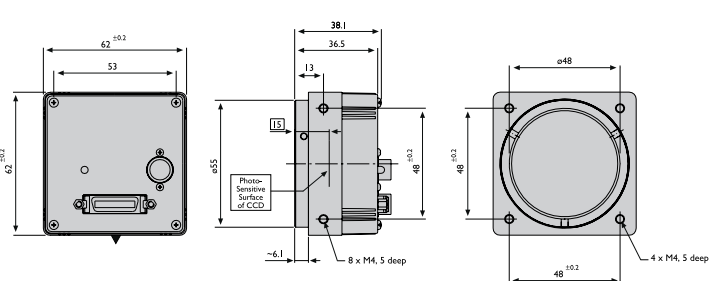| Basler L300 Series	L304k	L304kc	L301k	L301kc
Camera Section				
Resolution	3 lines × 4080 pixels		3 lines × 2098 pixels	
Sensor Type	Tri-linear CCD monochrome	Tri-Linear CCD color	Tri-linear CCD monochrome	Tri-Linear CCD color
Pixel Size	10.0 µm × 10.0 µm × 10.0 µm pitch		14.0 µm × 14.0 µm × 14.0 µm pitch	
Center-to-center-spacing	90 µm		112 µm	
Pixel Clock	30 MHz (in 8 bit triple output mode), 60 MHz (in dual 8 bit or 10 bit output mode)	30 MHz (in 8 bit RGB output mode), 60 MHz (in dual 8 bit or 10 bit output mode)	20 MHz (in 8 bit triple output mode) 40 MHz (in dual 8 bit or 10 bit output mode) 60 MHz (in single 8 bit or 10 bit output mode)	20 MHz (in 8 bit RGB output mode)
Max. Line Rate	7.2 kHz		9.20 kHz (spatial correction off), 8.0 kHz (spatial correction on)	
Video Output Format	Dual pixel 8 bits or 10 bits, or 8 bit RGB (selectable)		Single pixel 8 bits, single pixel 10 bits, dual pixel 8 bits, or 8 bit RGB (selectable)	
Video Output Type	Camera Link (Base)			
Synchronization	Via external trigger or free-run			
Exposure Control	Edge-controlled, level-controlled or programmable			
Mechanical / Electrical				
Housing Size (L × W × H)	41.3 mm × 71.0 mm × 71.0 mm		38.1 mm × 62.0 mm × 62.0 mm	
Weight	Max. 300 g		Max. 282 g	
Power Requirements	12 VDC (±10%), max. 8.0 W		12 VDC (±10%), max. 5.1 W	
Mount Type	F-mount, M58 × 0.75		F-mount	
Certifications	CE, FCC			

Specifications may change without prior notice

Dimensions (in mm)

L304k/kc

L301k/kc

Camera Link® Interface

Camera Link is a communication link for visual applications in the fields of science and industry.

Camera Link was founded in the year 2000 by Basler and other leading companies in the machine vision arena.

Camera Link enables a maximum data transmission rate of 680 MB per second depending on the configuration.

Frame grabbers which collect and evaluate the data are usually used to connect the camera and the PC via the Camera Link interface.

The most important benefits afforded by Camera Link are:
- Accepted communication standard for vision technologies (camera frame grabber)
- Simple and standardized cable concept
- Particular suitability for high data rates
- Standardized data protocol for several types of date transfer, for example single/dual tap, 8 bit, 10 bit, RGB, etc.
- Serial communication to the camera via the frame grabber communication port

The standard CameraLink interface used on the L300 family makes these cameras compatible with frame grabbers produced by many different vendors. These vendors include: Cognex, Matrox, National Instruments, Euresys, Matrix Vision, BitFlow, and Mikrotron. An overview showing more frame grabber vendors and frame grabbers compatible with L300 series cameras can be found on the Basler webpage at www.baslerweb.com.

What Makes Basler Camera Quality So Special?

Camera Test Tool

CTT+

proven

To ensure consistently high product quality, we employ several quality inspection procedures during manufacturing. This list describes some of the most essential actions we take to meet 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 measure its performance against a set of standards. For defined sets of conditions, an automated software program examines the camera's output, makes any calibration adjustments necessary, and compares the output to a strictly defined set of performance criteria.

www.baslerweb.com

BASLER COMPONENTS

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