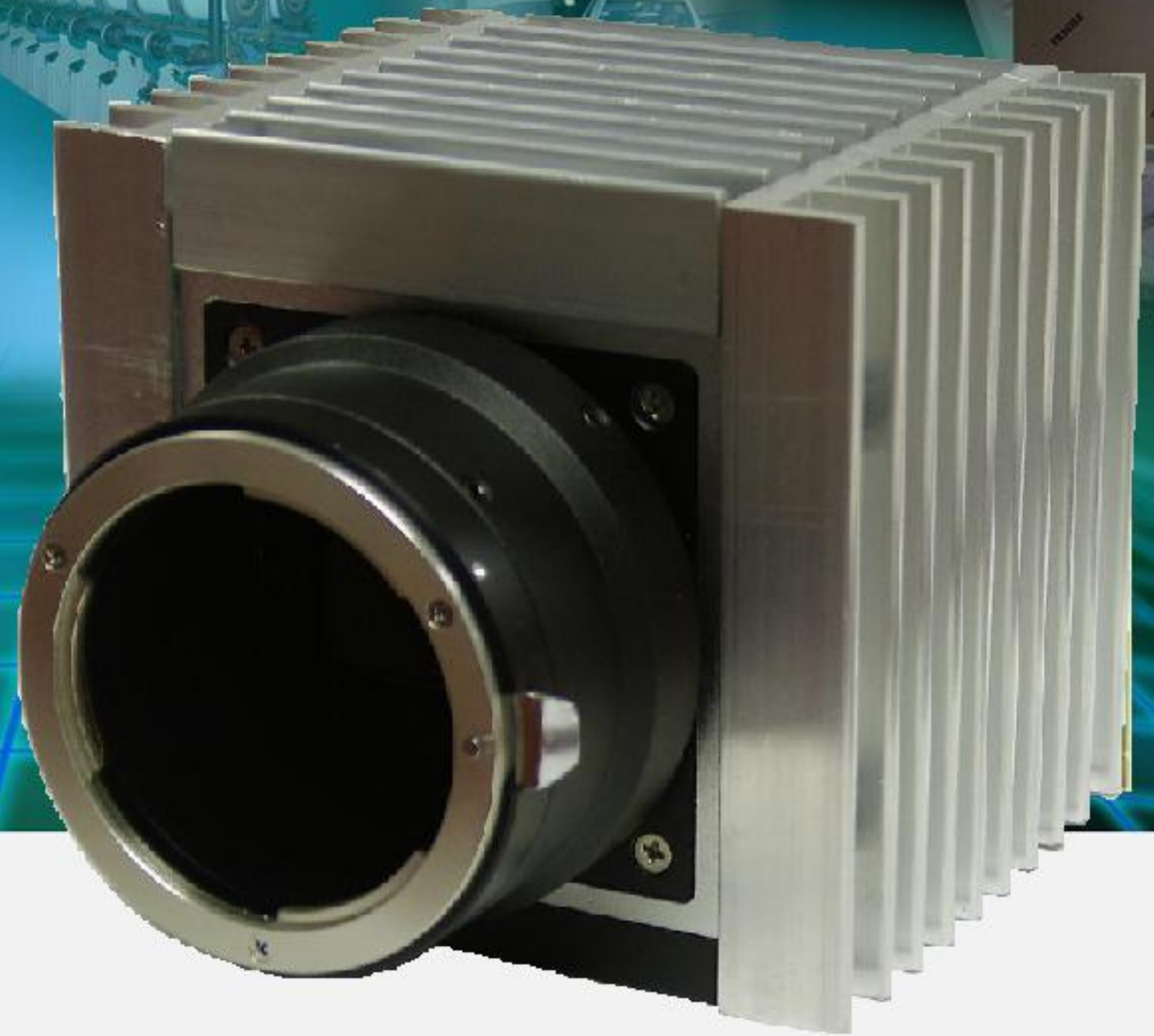


11 MEGA-PIXEL 8/10/12 BIT, 5 FPS, THERMOELECTRIC COOLED, FIELD UPGRADEABLE, PROGRAMMABLE DIGITAL CAMERA

**TEC-11M5-L**



## Features

- Peltier Cooling, +/- 0.1 C accuracy
- Optimized Thermal Equalization
- Constant CCD temperature
- 4000 x 2672 pixels @ 5 fps
- Mono or Color
- 8/10/12 bit data, Base Camera Link
- Single or Dual tap operation
- RS232 serial communication
- 32 bit RISC processor
- Horizontal and vertical binning
- Highly programmable:
  - resolution • frame rate
  - electronic shutter • long integration
  - external trigger • pre-exposure
  - fast triggering • double exposure
  - strobe output • gain and offset
  - area of interest • user LUT
- Dynamic Transfer Function correction
- Temperature monitor
- Field upgradeable:
  - software • firmware • user LUT

## Applications

- Flat Panel Display Inspection
- Machine Vision and Metrology
- Scientific Imaging
- Medical Imaging
- Microscopy

The **TEC-11M5-L** is an advanced, high-resolution progressive scan, fully programmable, field upgradeable, actively cooled CCD camera, built around KODAK's KAI-11000 interline transfer CCD. The camera provides 4000 x 2672 resolution and delivers 5 frames per second at full resolution. The camera image processing engine is based on a 1 million gate FPGA and 32 bit RISC processor, featuring programmable resolution, AOI, binning, triggering, shutter, long integration, transfer function correction and user LUT.

FAST...SMART...FLEXIBLE...  
**LYNX** FAMILY



# Specifications for TEC-11M5-L

<b>Active Image Pixels</b>	4000 (H) x 2672 (V), Mono or Color
<b>Active Image Area</b>	37.25 mm x 25.70 mm (1.466" x 1.012")
<b>Pixel size</b>	9.0 um
<b>Video Output</b>	Digital, 8/10/12 bit, one or two outputs
<b>Camera Interface</b>	Base Camera Link
<b>Data Clock</b>	28.000 MHz
<b>Resolution</b>	4000 x 2672 pixels max
<b>Frame Rate</b>	5 fps (dual) /2.5 fps (single), up to 49 fps w/AOI
<b>Shutter Speed</b>	1/12000 sec to 1/3 sec
<b>Long Integration</b>	1/3 sec to 10 sec
<b>Gamma Correction</b>	G=1.0, G=0.45, User defined LUT
<b>Black Level Offset</b>	256 levels/output
<b>Video Gain</b>	6-40 dB, 1024 steps/output
<b>External Trigger</b>	Asynchronous
<b>Hardware Trigger</b>	External, level sensitive, 3.3V - 5.0V, 10 mA., optically isolated, programmable exposure
<b>Software Trigger</b>	Frame-grabber, CC1, programmable exposure
<b>S/N Ratio</b>	66 dB
<b>Strobe Output</b>	Active HIGH, for external light source
<b>Lens Mount</b>	F mount, 43.3 mm image diagonal
<b>Environmental</b>	Operating: -5 to 50 C, Storage: -10 to 65 C
<b>Min. Illumination</b>	1.0 Lux, f=1.4, no IR cut filter, no shutter
<b>Mechanical</b>	(95 x 79 x 70) mm; 33 oz (920 g)
<b>CCD Cooling</b>	Peltier Thermoelectric cooling
<b>CCD Temperature</b>	20 C +/- 0.1 C - passive heat sink (default) 10 C +/- 0.1 C - active liquid cooled heat sink

## Power Connector



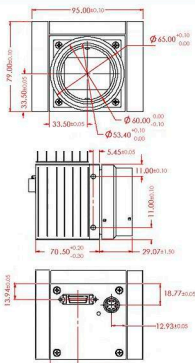
Rear Camera View

- 1 Trigger IN -
- 2 Trigger IN +
- 3 -12 VDC
- 4 -12 VDC
- 5 +12 VDC
- 6 +12 VDC
- 7 Strobe OUT -
- 8 Strobe OUT +
- 9 Auto Iris +
- 10 Auto Iris -

## Power Requirements

- 12V DC, (10V min, 15V max)
- Camera: 500 mA steady, 1.5 A inrush  
6.0 W constant power
- TEC: 250 mA (3W) at 25 C ambient  
1A (12 W) at 40 C ambient
- Connector: Hirose HR 10A-10R-10P

## Mechanical Dimensions



Ordering: **TEC-11M5-LMCI**

Camera Family

L - LYNX Family

S - Sensor Type

M - Monochrome

C - Color

U - UV sensitive (no glass)

S - Special - user filter

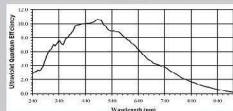
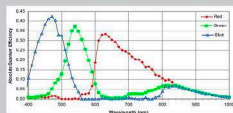
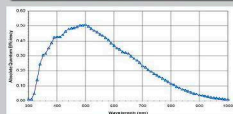
Options

blank - none

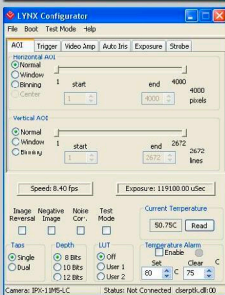
Lens Mount

blank - "F" mount (default)

## Spectral Response



## Configuration Utility



- CameraLink protocol compliant
- Control all camera features via:
  - our intuitive, easy-to-use GUI, or
  - simple ASCII commands

For specific details and ordering information, consult the camera user's manual or contact us at [sales@imperx.com](mailto:sales@imperx.com).

Copyright © 2005, Imperx, Inc. Product information subject to change without notice.

Rev. 1.0, 12/20/05



Imperx Incorporated • 6421 Congress Avenue • Boca Raton, FL 33487 • USA  
 Phone: 1-561-989-0006 • 1-866-849-1662 • Fax: 1-561-989-0045  
[www.imperx.com](http://www.imperx.com) • [sales@imperx.com](mailto:sales@imperx.com)



Made in USA