NEP PbS 256 Pixel Array

Specifications:

- Operating Wavelength: 1 – 3 microns
- Array Operating Temperature: -4°C (TEC cooled and stabilized)
- Number of Elements: 256
element size: 40 μm² on a 50 μm pitch
- Element Height Option: Up to 400 μm high with the tradeoff of speed
- Peak Detectivity: D* = 8 x 10¹⁰
- Response Uniformity: ±15% of mean
- Programmable Integration Time: 10μs to 100ms
- Power Requirements:
  - Data Acquisition Unit: 12VDC / 50mA
  - TEC Controller: 5VDC / 3A
LMAC-PC05 Linear Multiplexed Array Controller

- Complete Data Acquisition System
- USB 2.0 Full Speed Interface
- 256 pixel arrays supported
- Integrated TE Cooler Controller with 5mK stability
- 16 bit A/D Converter
- Windows DLL Software Interface
- Compact form factor
- On board NVRAM remembers last settings
- External trigger input to control start of integration time
- FLASH upgradable firmware

The LMAC-PC05 is a complete acquisition system for use with the A/DIC Inc 256 channel photo conductive readout integrated circuit. The on board microcontroller provides all signals needed to operate the array. Operation and calibration of the per pixel dark current skimmers is handled by the DLL and the array microcontroller. Physically the LMAC is designed to attach to a standard 28 pin tub package (pictured in right column). The dual board system separates the acquisition function (upper board) from the TE cooler controller (lower board).

Data Acquisition Unit
- 16 bit
- 2.5V signal swing
- 12 VDC 50mA supply required
- Up to 60 Frames per second
- Digitally controlled integration time 10us to 100ms
- Crystal controlled time base
- External trigger input
- Micro USB connector

TE Controller Unit
- Analog PWM controller for high efficiency
- 2.5 A peak current
- 4.1 V peak voltage
- Requires 5VDC supply at 3A
- 5mK temperature stability
- Bidirectional drive (heats and cools)
- LC filter creates DC conditions across TE element
- Set point digitally controllable
- Self-monitoring for thermal runaway; with auto shut down