



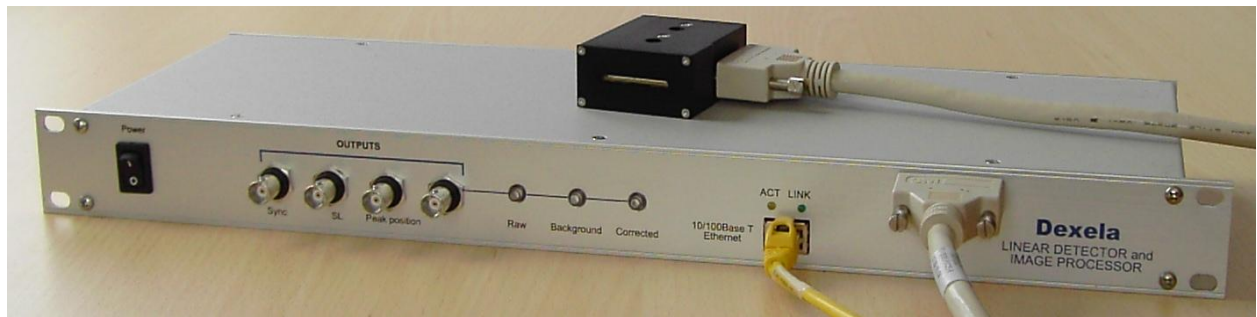
## LINEAR SENSOR and DATA ACQUISITION SYSTEM for Sarcomere Length Measurements

Model PLIN-2605-2

### System Description

Continuous real-time scanning of 2048 pixel high speed linear CCD sensor. The sensor is housed in a detector head that attaches to a single rack space enclosure via a 2 meter cable for maximum flexibility in detector positioning and mounting. The rack enclosure houses the signal processing electronics and BNC connectors for analog output signals, which include: Sensor signal output, Peak signal position, Sync signal for external triggering, and D.C. voltage proportional to Sarcomere length.

System control is network based via client PC GUI and standard TCP/IP connection.



### Features

- Continuous, Real-time Sensor Scan
- High Sensitivity and Accuracy
- Excellent Spatial Resolution
- Real-time Image Processing
- Automatic Background Correction
- Calibration, Control and Monitoring via TCP/IP
- Analog Outputs for Real-time Monitoring and Measurement Control

### Specifications

- Sensor: 2048 pixel high speed linear CCD array
- Sensor pixel dimensions: 13 $\mu$ m x 0.5mm
- Active detector aperture: 26.6mm x 0.5mm
- Pixel readout time: five user selectable rates from 4.8 $\mu$ s to 120ns (Correlated double sampling)

### Specifications – Cont.

- Refresh rates: 4.012kHz  
2.006kHz  
501.5Hz  
200.6Hz  
100.3Hz
- Dynamic range: > 4000
- Pixel digitization: 12-bits (4,095 levels)
- Peak position calculation: Position information available after 50 $\mu$ s of completion of line scan
- Peak filtering option: actively tracks single peak
- Signal processing method:
  - Dynamic exponential background subtraction
  - Peak determination based on 50% level of integrated, background corrected signal
- Signal Monitoring options:
  - Analog (available on BNC connectors)
  - GUI display

- Monitor signals:
  - Raw data (read from sensor)
  - Background subtracted data
  - Peak position superimposed on raw or background corrected data
- Calibration:
  - Automatic peak position determination within selectable regions of interest
  - Fast look-up table downloadable from user interface or stored file.

**Physical Dimensions:**

**Detector Head**

- Size: H: 1" (25.4mm), W: 2" (50.8mm), D: 2.66" (67.5mm)
- Weight: 0.21 lbs (0.094kg)

**Signal Processing Unit**

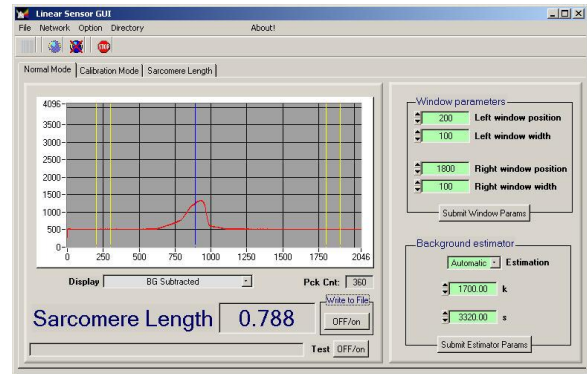
- Size: 1U, 19" (48.26cm) mountable
- Weight: 4.41 lbs (2.00kg)

**Electrical Characteristics:**

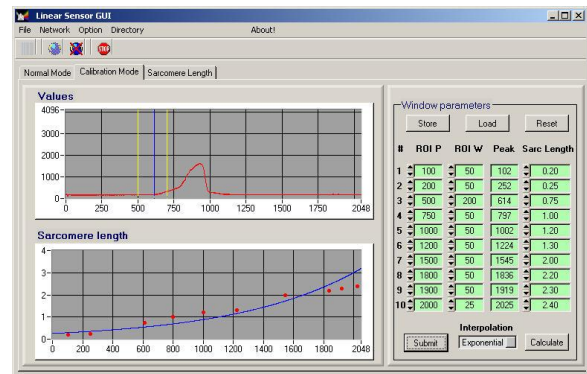
120/230VAC, 50/60Hz, <30 VA



**DETECTOR HEAD (Model PLIN-2048-2)**



**Sensor signal display screen**



**Sarcomere length calibration screen**

**GRAPHICAL USER INTERFACE SCREENS**

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