PEM-1000 Series

- High Q.E., Mega-pixel back-thinned cooled CCD Camera
- Fully integrated
- Flexible
- Portable

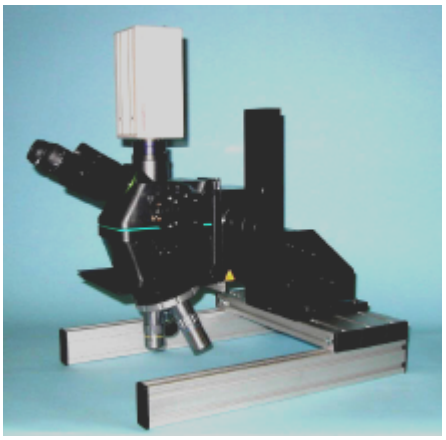
KORIMA

info@korimainc.com

119 E. Star of India Lane
Carson, CA 90746

Tel: (310) 532-2222
Fax: (310) 527-0470

A POWERFUL, FULLY INTEGRATED WORKSTATION FOR EMISSION MICROSCOPY

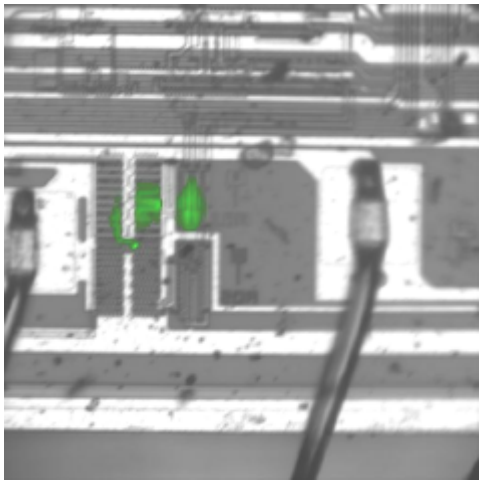


The PEM-1000 emission microscopes incorporates the latest technology in real time, High Quantum Efficiency, Mega-pixel CCD detectors in a back-thinned cooled Camera designed to produce a portable system that can be interfaced with all analytical probe stations, ATE (Automated Test Equipment) and benchtop configurations for high speed, functional testing. The compact, lightweight; modular design allows for unlimited configurations for both packaged and wafer level testing for front AND backside emission microscopy applications.

PHOTO EMISSION DETECTION APPLICATION

An extensive range of photon emitting defects can be easily detected and analyzed with the wide range of PEM 1000 emission microscopes.

- Forward Biased Junctions.
- Avalanche Junctions
- Electrical Overstress-EOS
- Junction Leakage
- Oxide Leakage
- Latch-up
- Saturated Transistors
- Hot Electrons
- Electrostatic Discharge-ESD



Sensitive Microscope and NIR Objectives

Provides manual control prism slide and beam splitter assemblies for increased sensitivity of PEM Image. A wide range of corrected objective lenses provide our customers with 5X, 20X, 50X, and 100X magnification.

CAMERA SPECIFICATIONS

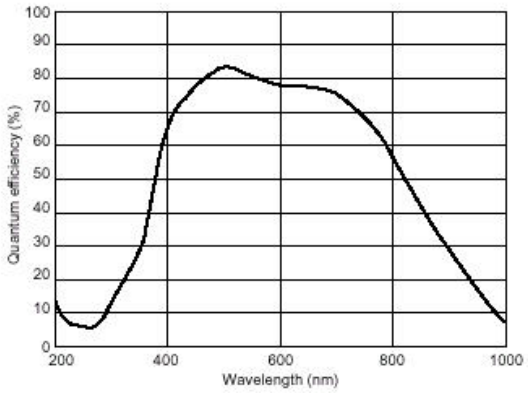
By employing a Back-Thinned CCD Cooled Digital Camera, PEM 1000 provides low noise, high resolution NIR image.

Features:

- Very high resolution format (1024 x 1024 pixels)
- High Quantum Efficiency
- Broad spectrum (UV to NIR)
- Very large full well capacity (80,000 electrons typ.)
- Low readout noise design (6 electrons r.m.s. typ.)
- Analog contrast enhancement.

FLEXIBLE CONFIGURATION FOR ANALYTICAL TASKS

- Stand-alone
- Bench top
- Synchro-coupler (to eliminate image jitters)
- Convenient and easy to use "Dark Shroud", provide an instant and mobile darkroom
- Easily adapted to any Probe Station.



Typical Camera Spectral Response

Software:

The Korima's PhotonView incorporated into the PEM1000 Emission Microscopes provides the utmost ease of use for the FA engineer for device positioning, emission detection, and data management.

- Focus Mode provides fast image update for easy device positioning and focusing.
- Comprehensive software controlled pixel binning or automatic gain control provides superior sensitivity for emission defections.
- An integrated noise reduction algorithm and "Cosmic-Cancellation Adjustment" eliminates potentially 'false' emission sites.
- Overlay emission(s) and DUT images in one color channel corrected image for optimal display.
- Progressive Mode function captures and displays several user-defined exposure emission images (up to 8 frames) on the device image for easy preview and selection. Good for latch-up review.
- Image enhancement functions such as digital zoom, annotations, filters, and background color selection allow for quick display optimization.
- An extensive range of image archiving file (or session) output options easily facilitates importation of images into desktop publishing programs for report generation.

System Specifications:

Available as a standalone unit or in an upgrade kit, the Korima PEM-1000 series combines an exclusive laser marking system with state-of-the-art computer image processing and night vision technologies.

On the PEM-1000 screen, photons emitted from defect locations appear as bright spots, superimposed on the D.U.T. image at the same magnification.

The image can be observed directly from the screen, or recorded to create a continuous action record. Pictures can also be stored on disk for further analysis in common image formats as TIF, BMP, and others.

Options:

- Long working distance Microscope and lenses.
- Narrow band-pass filter.
- CCD Camera
- Laser Marking System (below) for use in secondary tools such as FIBs and SEMs.
- Motorized Turret (MT-405).
- Remote Focus Controller (AF-405).
- Objective lenses: 5x, l0x, 20x, 50x, l00x (all NIR class).
- Color printer.
- Extended Range (wide spectrum) illuminator

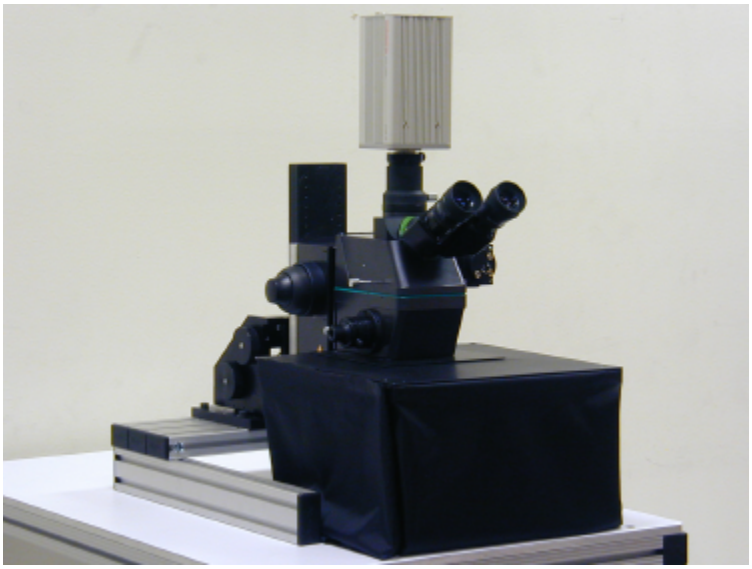
(400 - 1500 nm) for backside emission microscopy.

Broad Spectrum (400-1500nm), Extended Range Illuminator

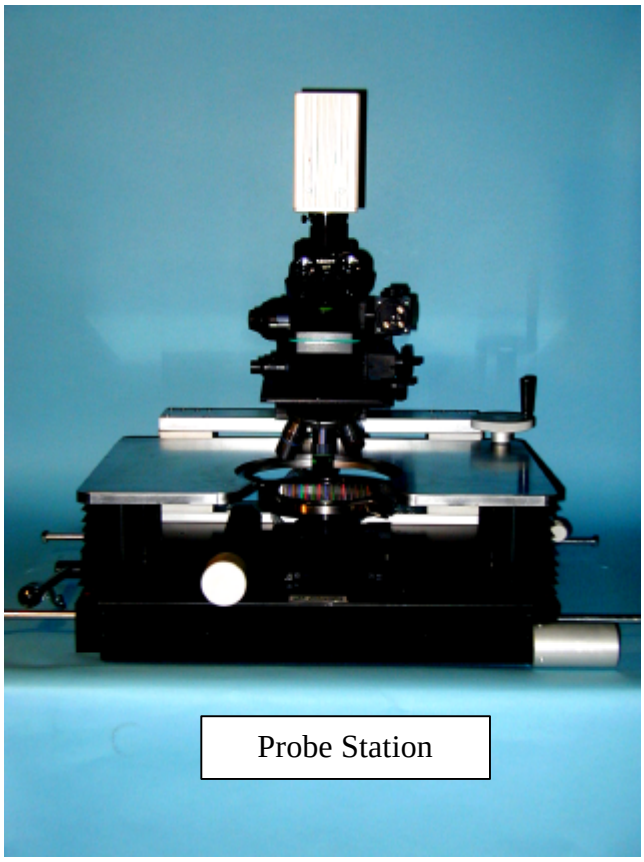
Laser Marker

Distributed by:

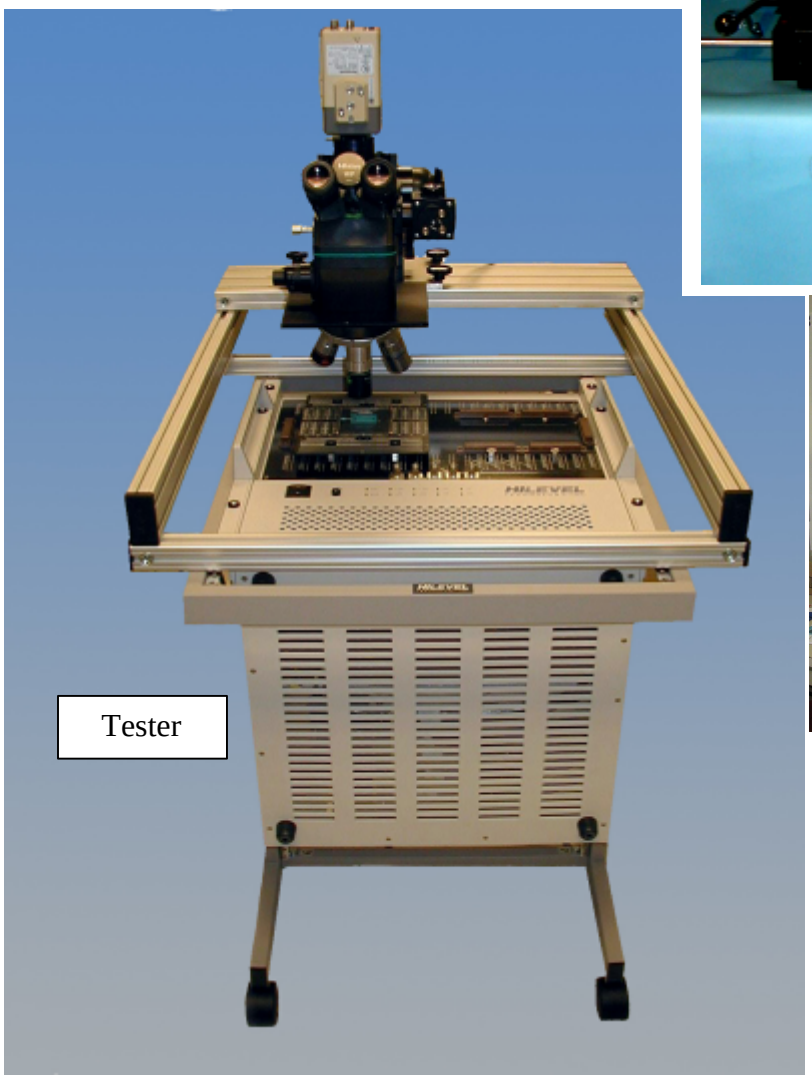
APPLICATIONS



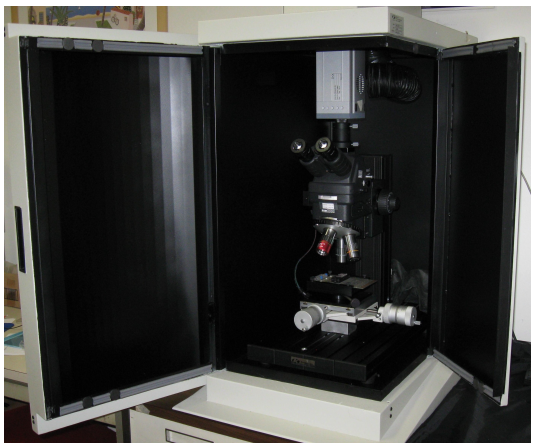
Dark Shroud



Probe Station



Tester



Inside Dark Box