

IA32 Image Analysis System Specification Sheet

Hardware Features

Frame Grabber

- 640 x 480 x 8 & 24 bit
- 30 frames-per-second
- 4 video inputs
- Type - PCI

CCD Video Camera

- High resolution, B&W CCD
- 640 x 480 pixels
- 100% linear with 2% geometric distortion

PC

Computer

- Pentium® IV 3.2 GHz (min.)
- 80.0 GB Hard Drive (min.)
- 512 MB RAM (min.)
- CD-RW
- Integrated Network Adapter

Monitor

- 19" CCD Flat Panel

Operating System

- Microsoft® Windows® XP

Software Features

Gray Image Operations

- Histogram equalization
- Averaging (3 x 3 & 5 x 5)
- Edge detect—Prewit, Sobel, Kirsch
- Transition filter
- Variable image zoom
- Temporal averaging
- Gradient (Vertical, Horizontal, Diagonal L/R)
- Boolean operations AND, OR, XOR, NOT
- Gray math function ADD, SUB, MIN, MAX, AND with binary planes
- Histogram modification (Gamma, Linear, Log, User defined)
- File import & export of images (TIFF 6.0, Windows BMP, DIB, & JPEG) in Gray/Pseudo Color with/without color bitplanes
- Darkest neighbor
- Create mosaic image
- TWAIN acquire
- Dynamic shade correction
- Euclidian distance mapping

Gray Image Operations (cont'd.)

- Gray display
- Overflow mode
- Dialation
- Erosion
- Select image
- Infinite focus
- Local equalization
- Top hat filter
- Variance filter
- De-interlace
- Export image
- Import image

Binary Image Operations

- Auto/manual thresholding
- 8 independent bitplanes
- Logical (Boolean) operations
- Erosion/eilation
- Skeletonizing
- Thinning & thickening
- Ultimate dilation
- Pruning
- Convex hull
- Hole filling
- Chord sizing & masking
- Transfer marked features
- Binary grid
- Editing functions
- Remove small features
- Remove edge features
- Draw thickness lines
- Scale marker
- Watershed
- Display assign table
- Clear bitplanes
- View bitplanes
- Disconnect
- Paint mode
- Count end points
- Draw box
- Draw line
- Draw table
- Color threshold
- Erode
- Fill
- Move features
- Set color threshold level

Feature Measurements

- Area
- Aspect ratio
- Convex perimeter
- Convex roundness
- Equivalent diameter
- Length
- Width
- Breadth
- Feret average
- Roundness
- Roughness
- Fiber length & width
- Horizontal & vertical projection
- Angular orientation
- Bounding rectangle
- Feature centroid
- Feature exclusion by limits with bitplane transfer
- Perimeter
- Fractal dimension
- Fractal perimeter
- Length
- Feret average
- Nearest
- Average intensity
- Centroid width
- Centroid height

Field Measurements

- Total area
- Area %
- Perimeter
- Feature count
- X-Y intercept
- Intensity
- ASTM E1382 & E112 grain size
- X-Y length
- Count

Other Measurements

- Area/plane fraction
- Intensity profile
- Manual measurements—length, angle, box, circle, diamond, ellipse, horizontal line, rectangle, vertical



Calculations

- Add column
- Assign (data table)
- Columns
- Distribution
- Evaluate
- Filter
- IF (GoTo and Return)
- Sort
- Statistics
- Table copy
- While
- Delete tables
- Fit line
- Merge tables
- Set cells
- Transpose table

Special

- Add sample
- Chart tab
- Comment
- Delete sample
- Export table
- Finish analysis
- Get sample set
- Import table
- Macro return
- Macro run
- Macro stop
- Macro toolbar buttons
- Message box
- Play sound
- Print
- Prompt assign
- Prompt color threshold level
- Prompt threshold level
- Select result
- Start analysis
- Change display settings
- GoTo label
- Move stage
- Receive table (RS-232C)
- Redraw
- Reset stage
- Run stage pattern
- Set current image calibration
- Transmit table (RS-232C)
- TWAIN support
- Export samples
- ODBC Table Export

Specifications and part numbers may change.
Consult LECO for latest information.

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