OMRON
MICROSCAN

LVS® 7000 Operations Manual

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GS1 Solution Partner

Disclaimer
The information and specifications described in this manual are subject to change without notice.

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Safety Instructions

This unit has been carefully designed to provide years of safe, reliable performance. However, as with all electrical equipment, there are some basic precautions that you should follow to avoid personal injury or damage to the system:

- Before using the system, carefully read all the installation and operating instructions.
- Observe all warning instruction labels on the system.
- To protect your system from overheating, make sure no openings on the system are blocked.
- Never insert anything into the openings of the system.
- Do not use the system near water or spill liquid into it.
- All circuits were designed to incorporate maximum safety. However, any equipment using electrical voltages may cause personal injury if improperly handled.
- Do not attempt to work on the system with the main power lines connected.
- Ensure that the AC power source matches the ratings listed for the system. If unsure, check with your dealer or local utility provider.
- Do not place the AC power cord where it can be stepped on. If the AC power cord becomes damaged or frayed, replace it immediately.
- Avoid looking directly into any system lights. If you need to examine the lights, or look at any component near the lights, be sure to first turn off the lights. If the lights cannot be turned off, then wear polarized sunglasses while examining the lights.
- To avoid damaging the system, turn off and unplug the system before cleaning.
- If the system ever needs repair, consult Omron Microscan or your Omron Microscan Distributor.

Important Information

- Due to continual product improvements, the product you receive may differ from the content outlined in this guide. If you have questions about your product that are not covered in this guide, please contact your Omron Microscan representative or Omron Microscan headquarters at +1-800-762-1149 or helpdesk@microscan.com.
- The LVS-7000 system arrives to your site packaged in specially designed shipping cartons. Do not discard the shipping cartons in case you must ship or store the system for any reason. Failure to use these cartons when returning your product to Omron Microscan will void warranty.

Introduction

The LVS-7000 is a vision-based system designed to inspect print quality at line speeds for the following areas:

The camera type (color or monochrome) required by each module is noted below.

- 1D Barcode Verification (ISO/IEC Standards) – may be used with a monochrome or color camera. If barcodes are printed in any color scheme other than black and white, the “Barcode Health Check” module must be used.
- 2D Barcode Verification (ISO/IEC Standards) – may be used with a monochrome or color camera
- Barcode Validation (Read Only) (1D and 2D) – may be used with a monochrome or color camera
- Blemish Detection – may be used with a monochrome or color camera
- Optical Character Verification – may be used with a monochrome or color camera
- Optical Character Recognition – may be used with a monochrome or color camera
- Barcode Health Check – may be used with a monochrome or color camera
- Delta E – typically used with a color camera

The LVS-7000 is a modular system, which means that you can check the print quality for *any* of the aforementioned areas, or for *all* of the areas depending on which software modules were purchased. Below is a list of the available software modules:

The software modules listed below can be purchased at any time. Contact your Omron Microscan representative or Omron Microscan headquarters at +1-800-762-1149 or helpdesk@microscan.com for further details. After purchasing a module, refer to “Appendix D: Activating Modules” for activation steps.

Barcode Read

The LVS-7000 decodes 1D (linear) and 2D (two-dimensional) codes (including ECC-200 Data Matrix, Composite, QR Code, PDF-417 and Micro PDF) and determines if the code is “readable.” No attempt is made to grade the codes according to any standard. This module may be used with a monochrome or color camera.

Additional supported symbologies include:

- AIAG / JAMA / JAPIA / ODETTE
- ALDI
- AS9132-A / AIM DPM Cat 0
- Automatic GS1 or ISO
- Aztec
- Chinese Sensible (Han Xin)
- Codabar
- Code 128
- Code 39
- Code 93
- Data Matrix
- DataBar expanded
- DHL
- EAN-13
- EAN-13 (2-digit supplemental)
- EAN-13 (5-digit supplemental)
- EAN-8
- FPMAJ
- French CIP
- GS1-128
- GS1 Databar Limited
- GS1 Databar Stacked
- GS1 Databar-14
- GS1 Data Matrix including NHRN
- GS1 General Specifications
- GS1 (NTIN)
- GS1 1D Report.doc and GS1 2D Report.doc (requires the use of Microsoft® Word)
- HDMA Guidelines
- HIBC
- IFAH
- Interleaved 2 of 5 (ITF)
- ISO/IEC 15415/15416
- Italian Pharmacode
- Japanese Codabar
- Laetus Pharmacode
- Micro QR Code
- MicroPDF417
- MIL-STD-130
- Miniature Pharmacode
- Multi-rotation Data Matrix
- Multi-rotation QR Code
- Postal (USPS IMB/Code 128, PostNet, Japan Post)
- PPN Code
- PZN-big, normal, small (German Pharmacode)
- PZN8
- UPC-A
- UPC-A (2-digit supplemental)
- UPC-A (5-digit supplemental)
- UPC-E
- UPC-E (2-digit supplemental)
- UPC-E (5-digit supplemental)
- All applicable GS1 composite components

Barcode Grade

The LVS-7000 decodes and grades 1D and 2D codes (including ECC-200 Data Matrix, Composite, QR Code, PDF-417 and Micro PDF symbologies) according to the internationally accepted rules of the applicable symbology specifications and ISO 15415 and 15416. See additional supported symbologies in the above section entitled “Barcode Read.” Grading of 1D symbologies can only be performed in color if the barcode is printed in black and white; if any other color combination is utilized, the Healthcheck module must be used.

The LVS-7000 displays a “real-time” graph indicating the overall ISO grade. This allows the operator to see trends in print quality for several hundred labels that were just inspected. When an error is detected, the “real-time” graph will change color. The system can also be programmed to “stop the press” when an error occurs; the appropriate hardware must be purchased for this feature.

Optical Character Recognition (OCR)

Unlike the OCV Module, this module is able to “read” characters and report the data content. This data is typically variable and the content remains unknown until it is read. It is important to note that the system can be trained to

know what to expect for every character position. In other words, the software can be instructed what to expect: alpha, numeric, or special characters. This is called “Field masking” and will be explained in detail later. This module may be used with a monochrome or color camera.

There are many fonts used in the printing industry. This system is designed to learn new fonts as necessary.

Optical Character Verification (OCV)

The human readable characters are verified at very high press speeds. The OCV module ensures that a string of sequential characters is read and or verified against a known field or database. In other words, you tell the software what should be there and the software will report if it was actually there. It will also return a percentage score as to how well it matched to the trained character. This module may be used with a monochrome or color camera.

Blemish Detection

This software module is capable of detecting a multitude of print faults from skewing and smears to missing information. These algorithms also include a “variable image data” function which accounts for variable image data within a pattern-matching zone and does not report them as blemishes. All of this inspecting is completed at press speed. This module may be used with either a monochrome or color camera.

Barcode 1D and 2D Health Check

This feature is enabled by an Omron Microscan representative. When requested, the system can be configured for health check instead of grading. If this feature is enabled, the choices are 1D/2D (Read) or (Health check), instead of 1D/2D (Read) or (Grade). The computer reports a percentage instead of a grade. For example, instead of 3.4/06/660 (B), the computer reports 85%. The warning and passing scores are shown as percentages instead of grades. This module may be used with a monochrome or color camera, and any color combinations of printed barcodes.

Delta E

The Delta E Color Detection module detects color variations by comparing the trained color (also called the Golden color) to the image color currently displayed in the field of view.

The Delta E module continuously calculates the average L*a*b* values of all the pixels within a sector according to CIE 2000 specifications. This module must be used with a color camera only.

Log In

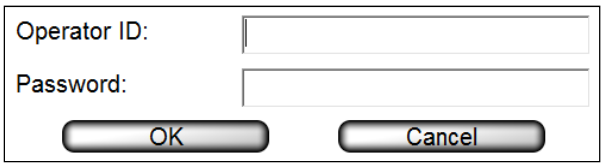
Follow the steps below to log in to the LVS-7000.

1. Start the LVS-7000 software. The **Welcome** screen appears (see below).

Note: Users with the "Automatic Login" feature enabled bypass the screen below and automatically access the screen where they are able to create a new job or load an existing job (as shown in step 3 below). Refer to "Appendix G: Automatic Login" for more information on using the "Automatic Login" feature.

---

2. Click the **Log In** button. The Login box appears (see below). Enter the **Operator ID** and **Password**, and click **OK**.
   - When using the LVS-7000 for the first time, enter **Admin** in the **Operator ID** field and **Admin** in the **Password** field.
   - Each password must consist of the following:
     - At least 8 characters
     - At least 1 letter from A to Z (case insensitive)
     - At least 1 number from 0 to 9



3. Click the **Create a NEW job** button to create a new job. Refer to the “Create a New Job” section for complete instructions on creating a new job.

   Click the **Load an EXISTING job** button to load an existing job. Refer to the “Load an Existing Job” section for complete instructions on loading an existing job.

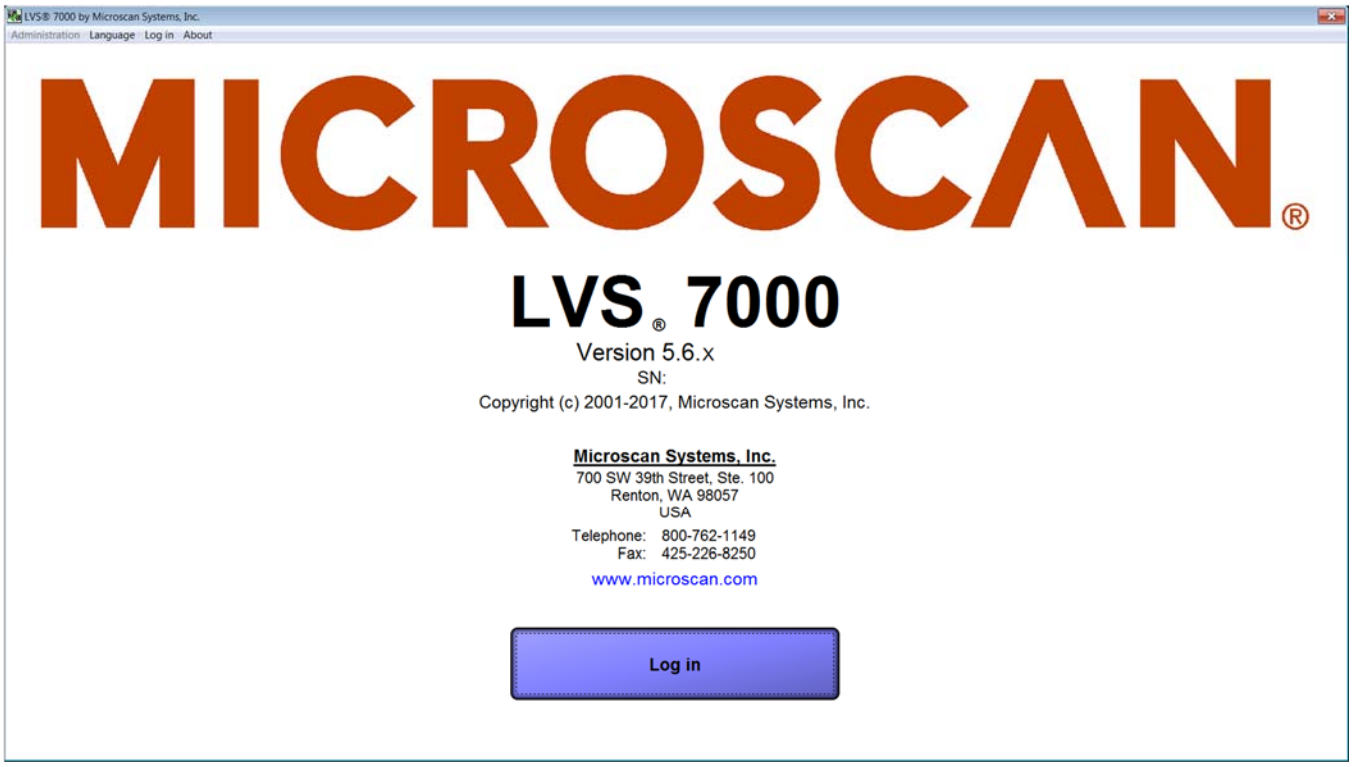
Note: The “AutoScan” checkbox in the lower, right corner of the screen is visible only to users who have the AutoScan program activated for their system and is using external synchronization. Refer to “Appendix F: AutoScan” for more information on the AutoScan program.

Welcome Screen Overview

When starting the LVS-7000 software, the **Welcome** screen appears (see below). This screen allows you to log in to the LVS-7000 (as described in the previous section) and access the following menu bar functions:

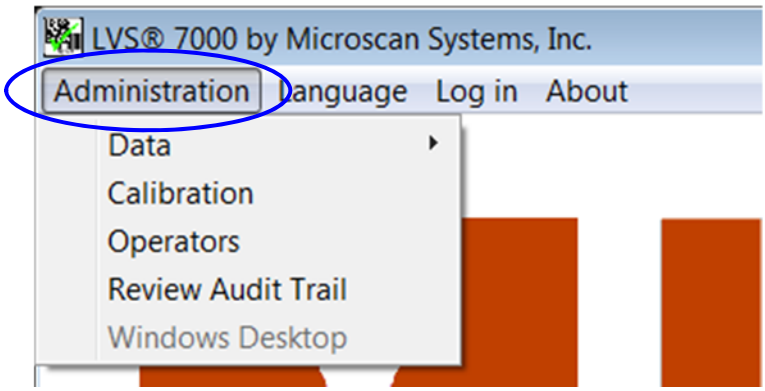
- Administration
- Language
- Log In
- About

Refer to the following sections for more information about each menu bar function.



Administration

The **Administration** menu bar feature allows you to choose from the following options:



Option	Description
Data	Backup or restore jobs.
Calibration	Calibrate the LVS-7000.
Operators	Select operator permissions.
Review Audit Trail	Review an audit trail of all activity performed on the LVS-7000.
Windows® Desktop	Access the Windows® desktop (operator must have access rights to perform this feature).

Refer to the following sections for more information about each feature.

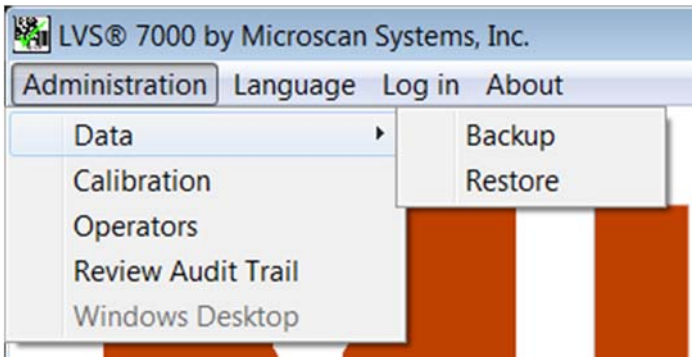
Data

The **Data** feature allows you to backup or restore jobs. All jobs are saved in the “Jobs” directory:

- **LVS-7000 Version 5.6.9:**
  C:\Users\<username>\AppData\Roaming\Microscan\LVS 7000\Jobs

(Pre-5.6.9 Folders)

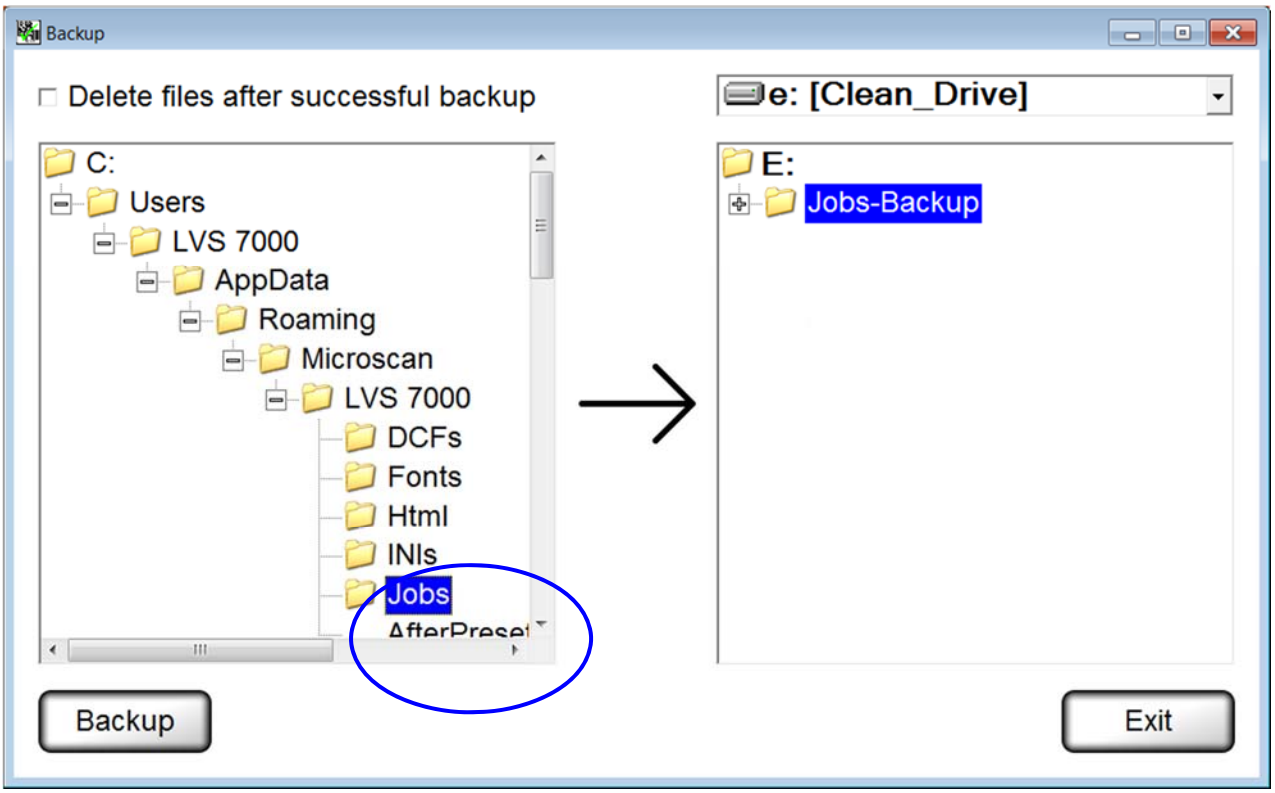
- **Windows® 7:** C:\Users\<username>\AppData\Roaming\Label Vision Systems\LVS 7000\Jobs
- **Windows® XP:** C:\Program Files\Label Vision Systems\LVS7000\Jobs



Data Backup

To backup (copy) jobs from the “Jobs” directory to a different folder, drive or network location, follow the steps below.

1. Select **Administration** -> **Data** -> **Backup**. The following screen appears:



2. On the left side, select the folders within the “Jobs” folder that you want to backup. Multiple folders can be selected at one time by pressing and holding the **CTRL** keyboard button, and then clicking each folder.

3. On the right side, select the folder where the files should be saved.

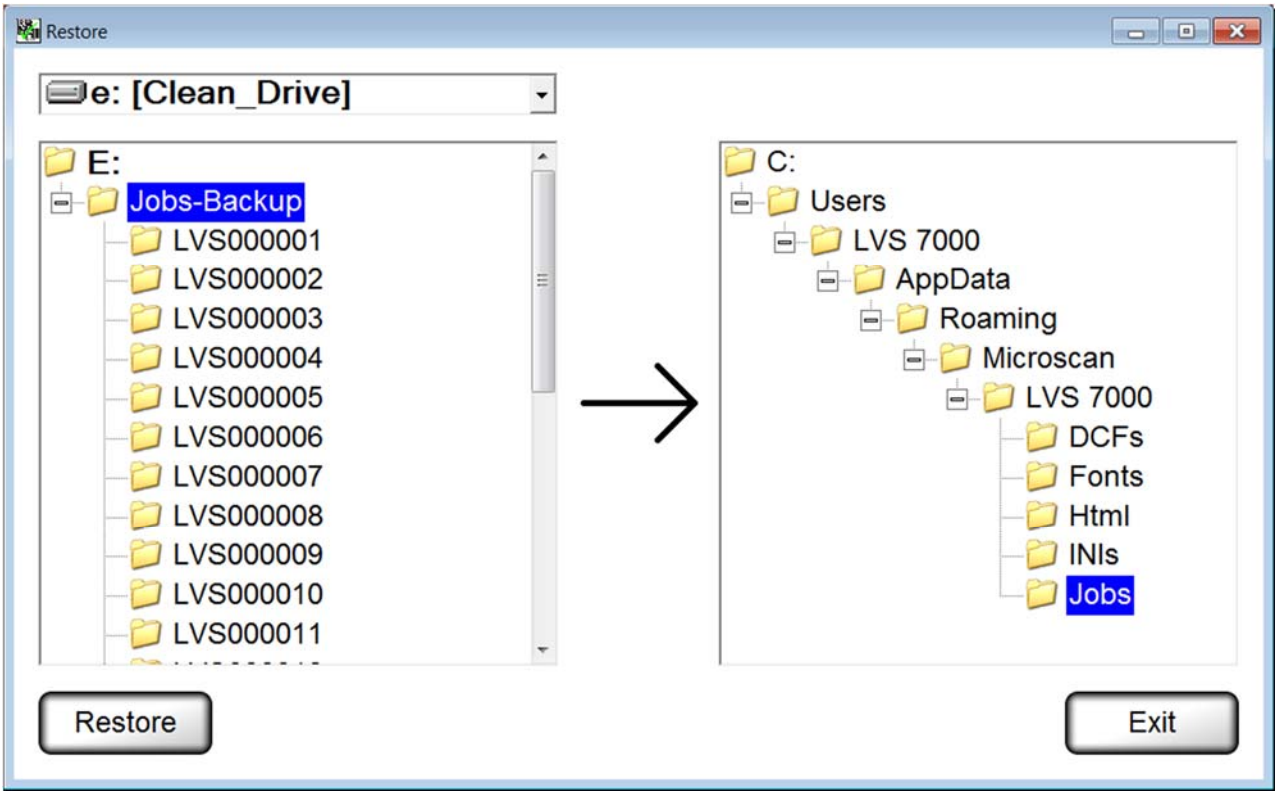
4. If you want to delete the files after backup, click the **Delete files after successful backup** checkbox.

5. Click **Backup**.

Data Restore

To restore (copy) jobs from a folder, drive or network location to the “Jobs” directory, follow the steps below.

1. Select **Administration** -> **Data** -> **Restore** from the menu bar. The following screen appears:



2. On the left side, select the folder(s) you want to restore. Multiple folders can be selected at one time by pressing and holding the **CTRL** keyboard button, and then clicking each folder.

3. On the right side, select the “Jobs” directory.

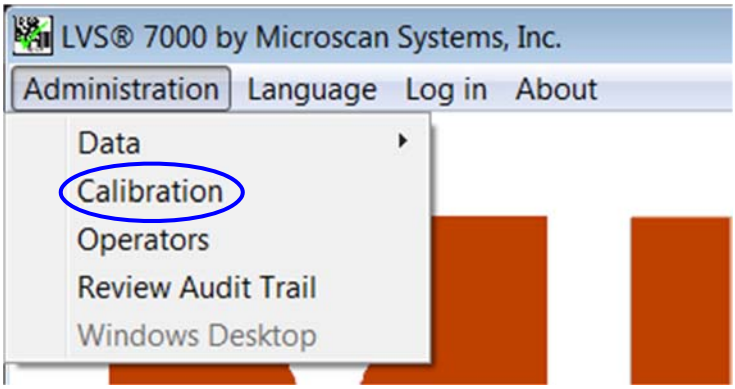
4. Click **Restore**.

Calibration

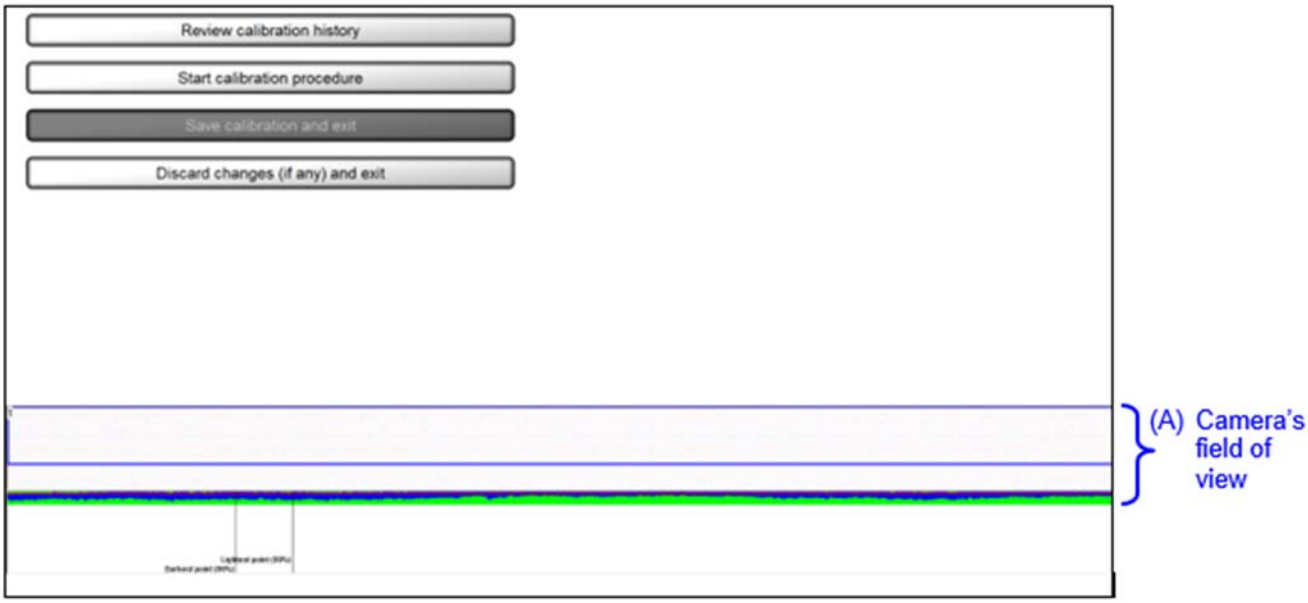
The **Calibration** feature allows you to calibrate the LVS-7000. Calibration is required to keep the LVS-7000 in a standard imaging configuration.

To calibrate the LVS-7000, you need an Omron Microscan Calibration Card in perfect condition with all of the calibration information filled out on the card.

1. Select **Administration**, and then **Calibration** from the menu bar:



2. The following screen appears:

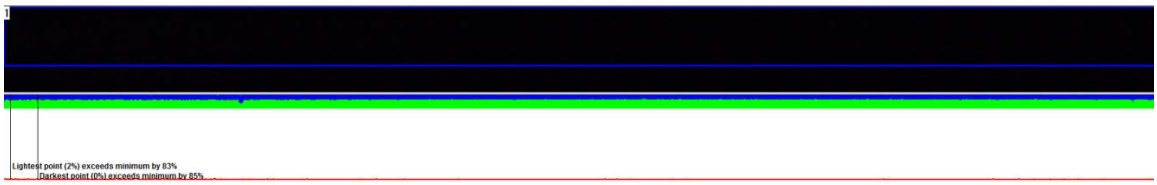


The shaded area as noted in "A" above is the camera's field of view; this is what the camera is seeing. This area may look differently on your screen depending on what is in the camera's field of view. See examples below.

Example 1:

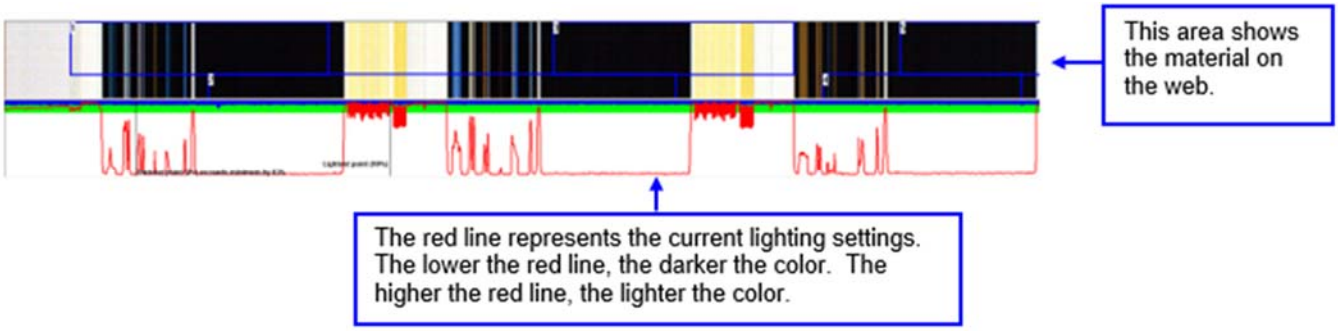
A field of view shaded black indicates the camera is out of alignment, the camera lighting needs adjusting, or the lens cap is on. Resolve any issues so that the field of view looks like the image in step #2.

> ***WARNING:*** *Consult your designated technician or Omron Microscan technical support if the camera needs adjusting.* ***Use extreme care and caution when adjusting the camera.***

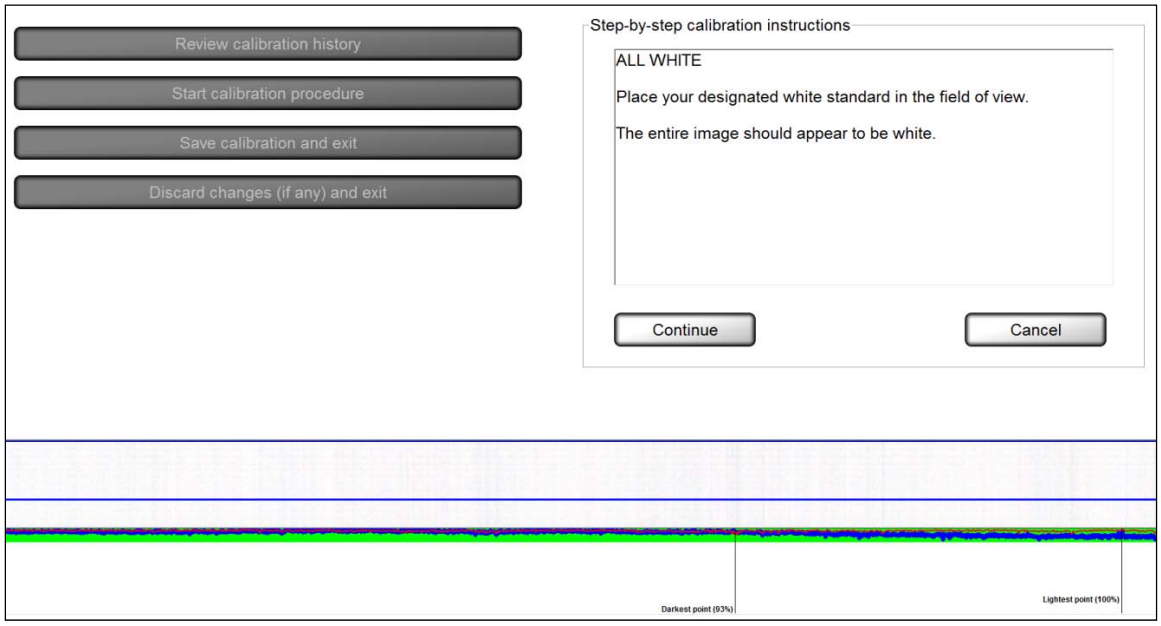


Example 2:

The field of view below is an example of material still positioned on the web. Remove any material from the camera's field of view so that the field of view looks like the image in step #2.



3. Click the **Start calibration procedure** button. The following screen appears:



4. Place your designated white standard (such as the white porcelain plate, white portion on the calibration card, etc.) in the field of view. The entire image should appear white.
   Step-by-step calibration instructions are also listed on the right side of the screen.

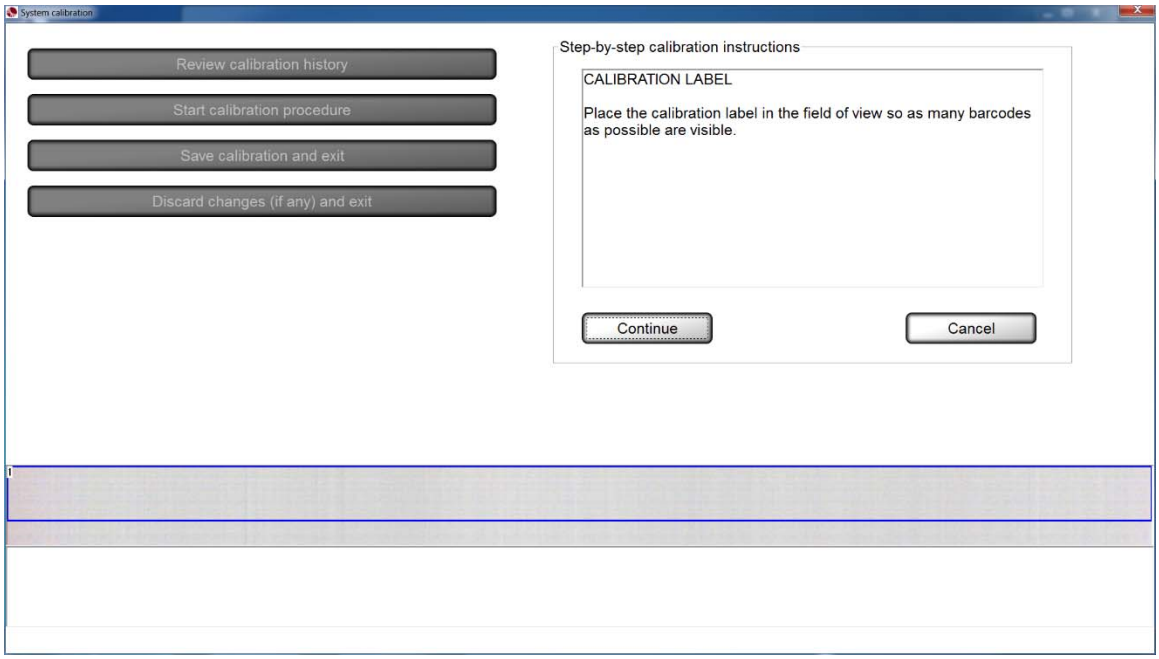
5. Observe the colored lines at the bottom of the screen, which represent the scan reflectance profile (SRP) on the white background.

   - The red line represents the current reflectance values across the white background. This represents your current lighting settings.
   - The green bar represents the threshold values defined in the Lvs7000.ini file. This is the target area.
   - The blue line represents the optimal reflectance profile and is configured by an Omron Microscan technician.

   The red line must fit within the green bar or you will not be allowed to continue with calibration. Ideally, the red line should overlay the blue line, but the red line must fit within the green bar. If the red line does not fit within the green bar, your camera may not be pointed at the brightest spot on the designated white standard. Or, your light may have moved away from the camera's field of view. Consult Omron Microscan technical support if the camera needs adjusting. DO NOT ATTEMPT TO ADJUST THE CAMERA WITHOUT ASSISTANCE FROM OMRON MICROSCAN TECHNICAL SUPPORT.

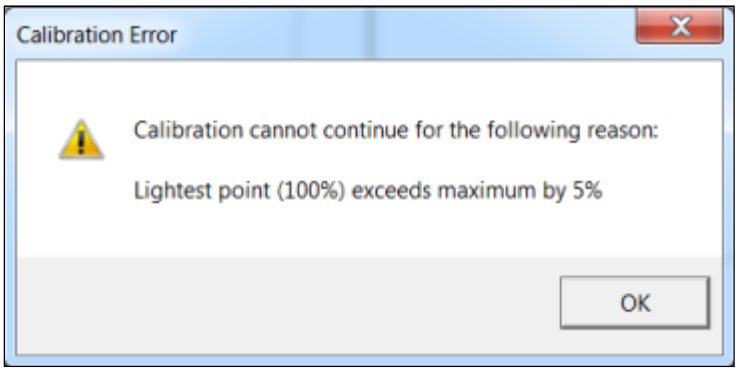
   - helpdesk@microscan.com
   - +1-800-762-1149

6. Click **Continue**. The following page appears:
7.

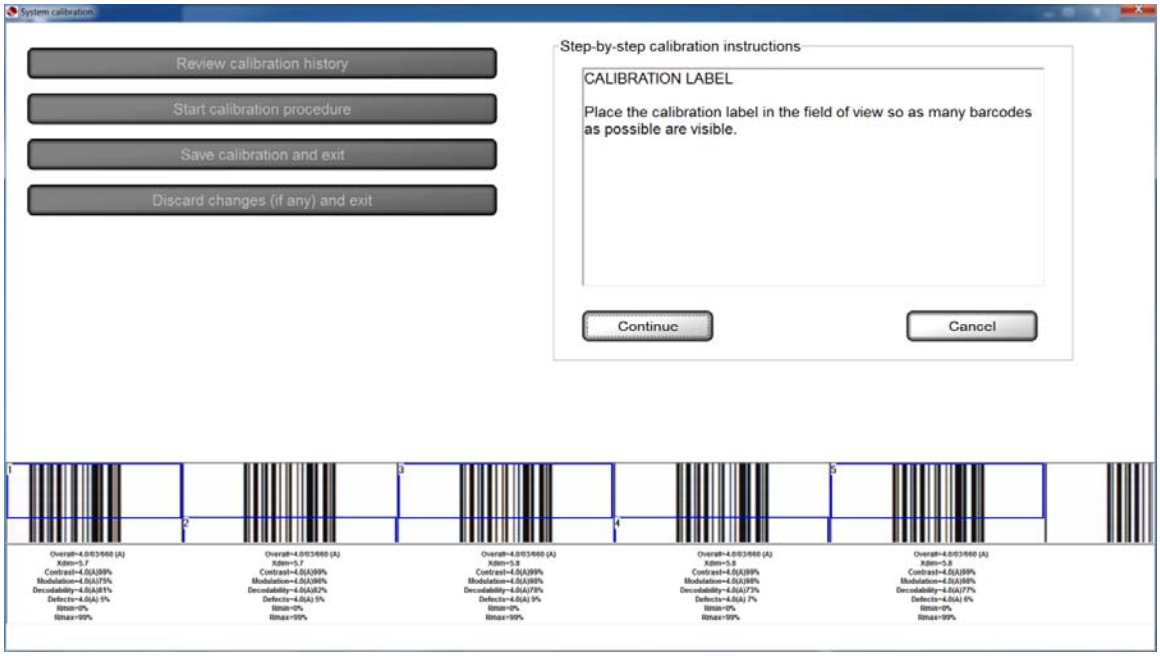


Warning: *If the red line is not within the green bar, the sample error message below appears. If an error message appears, contact Omron Microscan technical support. DO NOT ATTEMPT TO ADJUST THE CAMERA WITHOUT ASSISTANCE FROM OMRON MICROSCAN TECHNICAL SUPPORT.*

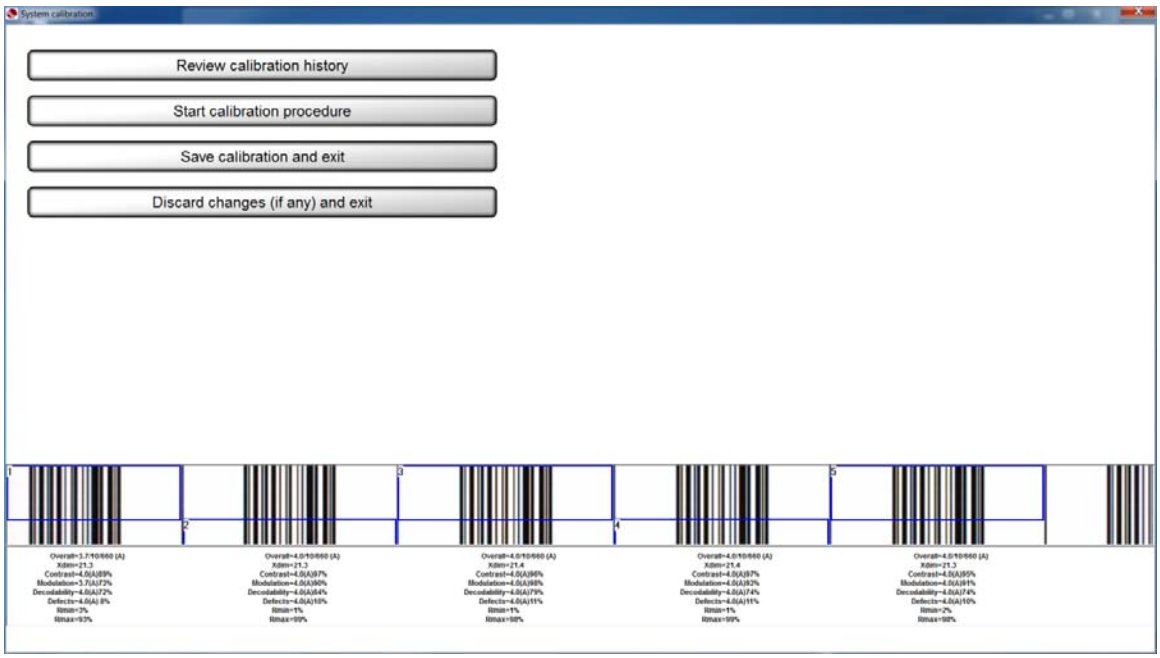
- *E-mail: helpdesk@microscan.com*
- *Phone: +1-800-762-1149*



8. Place the Omron Microscan calibration card under the camera so that as many barcodes are within the field of view as possible. The system displays the ANSII parameters of all the decoded barcodes that the camera detects (see below).



9. Click **Continue** to calibrate. The following page appears:

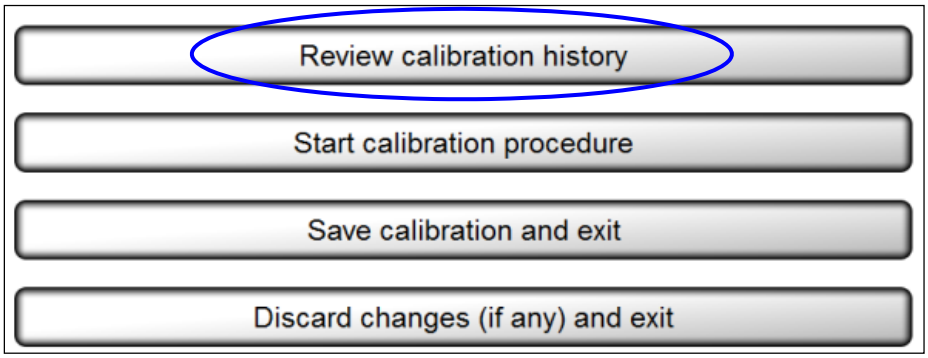


10. Calibration is complete. The ANSI values of the barcodes now match the recorded values on the card within a few points (+/- 8%). If calibration fails, repeat the calibration process. Be sure to inspect the calibration card carefully for damages and impurities. If the problem still persists, contact Omron Microscan for technical assistance.

11. Click the **"Save calibration and exit"** button to save the calibration results and return to the **Welcome** screen. After saving the calibration results, the system automatically saves the Operator ID in the calibration history log (see the section entitled "Review Calibration History" for more information). Click **"Discard changes (if any) and exit"** to discard the calibration results and return to the **Welcome** screen.

Review Calibration History

1. Click **"Review calibration history"**:



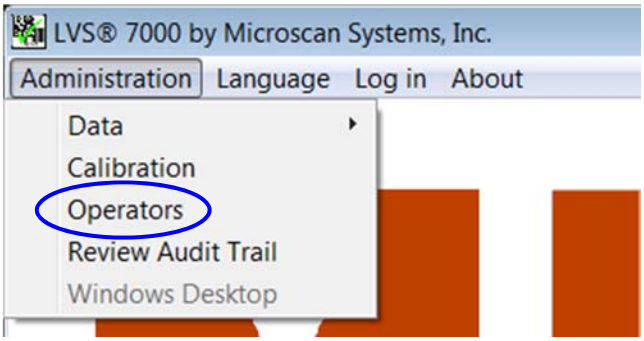
2. The CSV file viewer page appears (see below), which is time stamped, provides the operator ID, and displays the "before" and "after" calibration image readings. The fields are not user editable in the viewer; they are printable if desired.

Time	Operator	Target Rmax	Target Rmin	Actual Rmax	Actual Rmin
10-Aug-2009 08:41:25	Admin (Administrator)	89	5	87.5	2.5

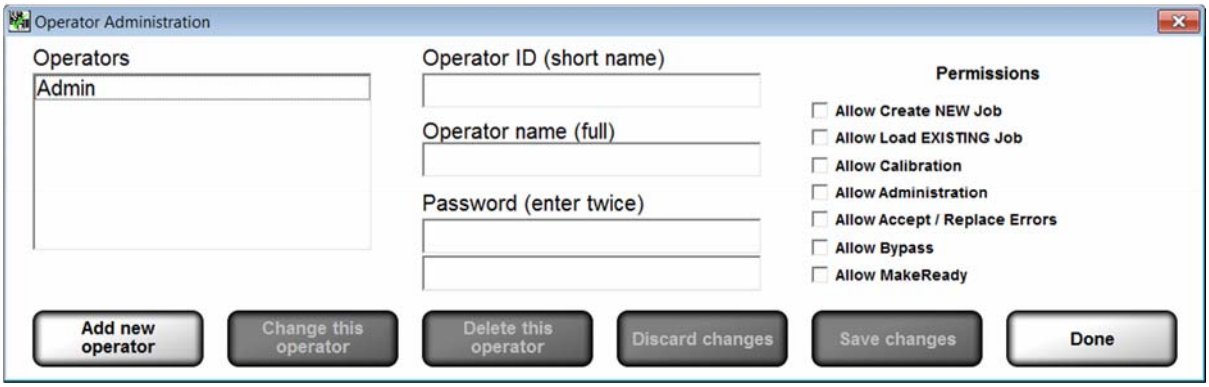
Operators

The **Operators** feature allows you to establish operator permissions.

1. Select **Administration**, and then **Operators** from the menu bar.



2. The following screen allows you to setup operators and operator permissions.



The buttons at the bottom of the screen are described below:

Option	Description
Add new operator	Click the **Add new operator** button to add a new operator, and then complete the following fields: 1. **Operator ID** (short name) 2. **Operator name** (full name) 3. **Password**. Each password must consist of the following: o At least 8 characters o At least 1 letter from A to Z (case insensitive) o At least 1 number from 0 to 9 4. Select the desired permissions 5. Click **Save changes** to save your changes or **Discard changes** to discard and not save your changes
Change this operator	Allows you to make changes to an operator's permissions. • Select the operator's name from the Operators list • Click the **Change this operator** button • Make any necessary changes • Click the **Save Changes** button to save your changes or the **Discard Changes** button to not save your changes

Option	Description
Delete this operator	Select the operator's name from the Operators list, and then click the **Delete this operator** button.
Discard changes	Click this button to discard any changes made to any operator details.
Save changes	Click this button to save changes made to any operator details.
Done	Click this button after all changes are complete.

Permissions

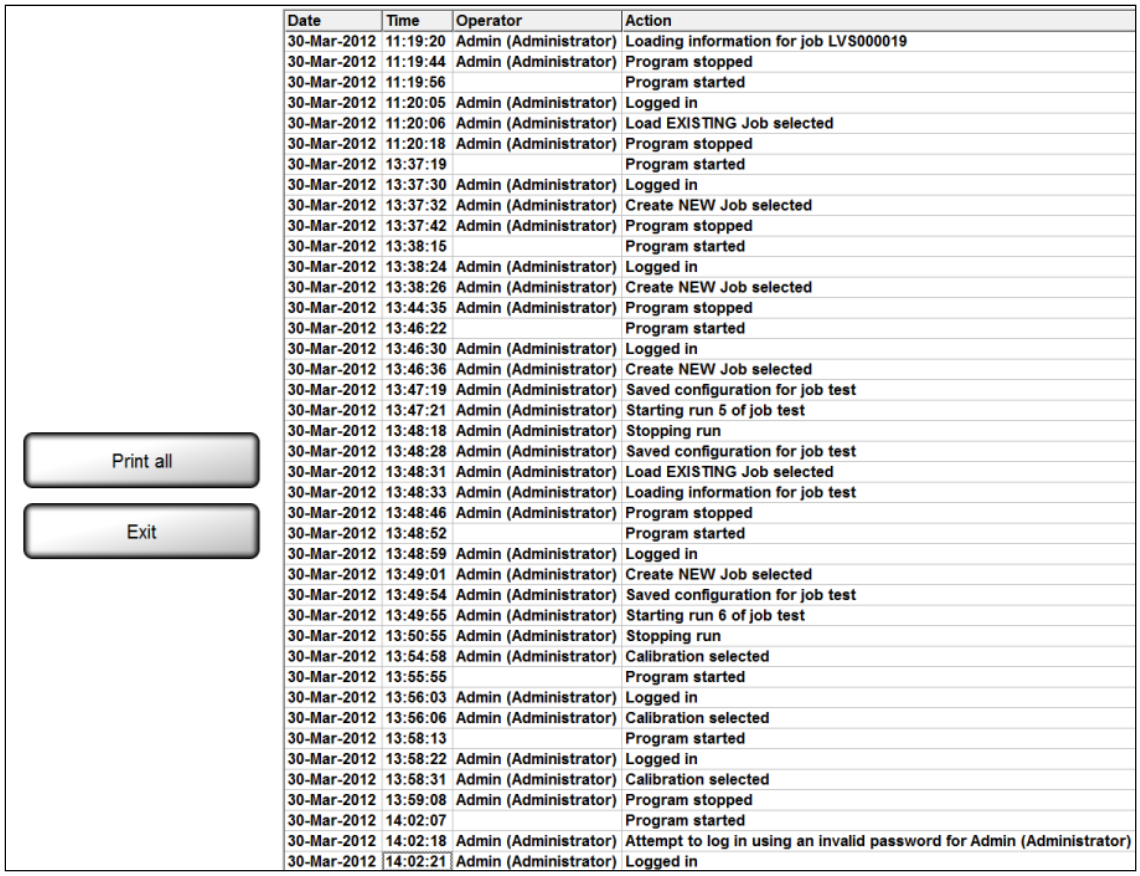
Operator permissions are described in the table below.

Permission	Description
Allow Create NEW Job	Allows the operator to create/edit/delete a job.
Allow Load EXISTING Job	Allows the operator to load existing jobs. Note that you are not allowed to edit existing jobs.
Allow Calibration	Allows the operator to perform calibration.
Allow Administration	Allows the operator access to the "Administration" menu bar feature where operators and operator permissions are set up. See the "Administration" section for more information.
Allow Accept / Replace Errors	Allows the operator to accept or replace errors.
Allow Bypass / MakeReady	Allows the operator the ability to use the "Bypass" and "MakeReady" buttons on the "Operate Screen: Running the Job."

Review Audit Trail

The **Review Audit Trail** feature allows you to monitor user activity.

- Click **Print all** to print the audit trail report.
- Click **Exit** to exit the audit trail report and return to the Welcome screen.



Date	Time	Operator	Action
30-Mar-2012	11:19:20	Admin (Administrator)	Loading information for job LVS000019
30-Mar-2012	11:19:44	Admin (Administrator)	Program stopped
30-Mar-2012	11:19:56		Program started
30-Mar-2012	11:20:05	Admin (Administrator)	Logged in
30-Mar-2012	11:20:06	Admin (Administrator)	Load EXISTING Job selected
30-Mar-2012	11:20:18	Admin (Administrator)	Program stopped
30-Mar-2012	13:37:19		Program started
30-Mar-2012	13:37:30	Admin (Administrator)	Logged in
30-Mar-2012	13:37:32	Admin (Administrator)	Create NEW Job selected
30-Mar-2012	13:37:42	Admin (Administrator)	Program stopped
30-Mar-2012	13:38:15		Program started
30-Mar-2012	13:38:24	Admin (Administrator)	Logged in
30-Mar-2012	13:38:26	Admin (Administrator)	Create NEW Job selected
30-Mar-2012	13:44:35	Admin (Administrator)	Program stopped
30-Mar-2012	13:46:22		Program started
30-Mar-2012	13:46:30	Admin (Administrator)	Logged in
30-Mar-2012	13:46:36	Admin (Administrator)	Create NEW Job selected
30-Mar-2012	13:47:19	Admin (Administrator)	Saved configuration for job test
30-Mar-2012	13:47:21	Admin (Administrator)	Starting run 5 of job test
30-Mar-2012	13:48:18	Admin (Administrator)	Stopping run
30-Mar-2012	13:48:28	Admin (Administrator)	Saved configuration for job test
30-Mar-2012	13:48:31	Admin (Administrator)	Load EXISTING Job selected
30-Mar-2012	13:48:33	Admin (Administrator)	Loading information for job test
30-Mar-2012	13:48:46	Admin (Administrator)	Program stopped
30-Mar-2012	13:48:52		Program started
30-Mar-2012	13:48:59	Admin (Administrator)	Logged in
30-Mar-2012	13:49:01	Admin (Administrator)	Create NEW Job selected
30-Mar-2012	13:49:54	Admin (Administrator)	Saved configuration for job test
30-Mar-2012	13:49:55	Admin (Administrator)	Starting run 6 of job test
30-Mar-2012	13:50:55	Admin (Administrator)	Stopping run
30-Mar-2012	13:54:58	Admin (Administrator)	Calibration selected
30-Mar-2012	13:55:55		Program started
30-Mar-2012	13:56:03	Admin (Administrator)	Logged in
30-Mar-2012	13:56:06	Admin (Administrator)	Calibration selected
30-Mar-2012	13:58:13		Program started
30-Mar-2012	13:58:22	Admin (Administrator)	Logged in
30-Mar-2012	13:58:31	Admin (Administrator)	Calibration selected
30-Mar-2012	13:59:08	Admin (Administrator)	Program stopped
30-Mar-2012	14:02:07		Program started
30-Mar-2012	14:02:18	Admin (Administrator)	Attempt to log in using an invalid password for Admin (Administrator)
30-Mar-2012	14:02:21	Admin (Administrator)	Logged in

Windows Desktop

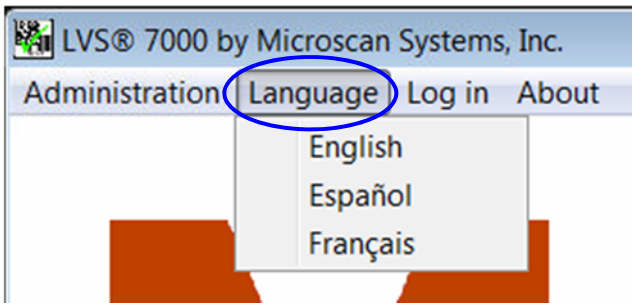
When enabled, Windows® desktop allows a user who has been granted permission rights to access the Windows® desktop from the LVS-7000 system.

Accessing the Windows® desktop from the LVS-7000 is normally disabled due to CFR-21 part 11.

For further information, please contact Omron Microscan about CFR-21 part 11.

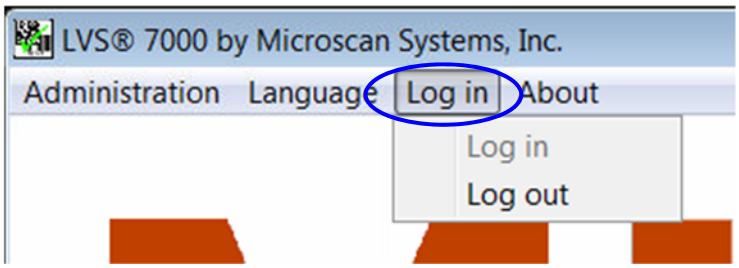
Language

The **Language** menu bar feature allows you to choose either English, Spanish or French as the preferred software language.



Log In

The **Log In** menu bar feature allows you to log in or log out of the LVS-7000.



About

The **About** menu bar feature allows you to view the LVS-7000 software version and contact information.

Create a New Job

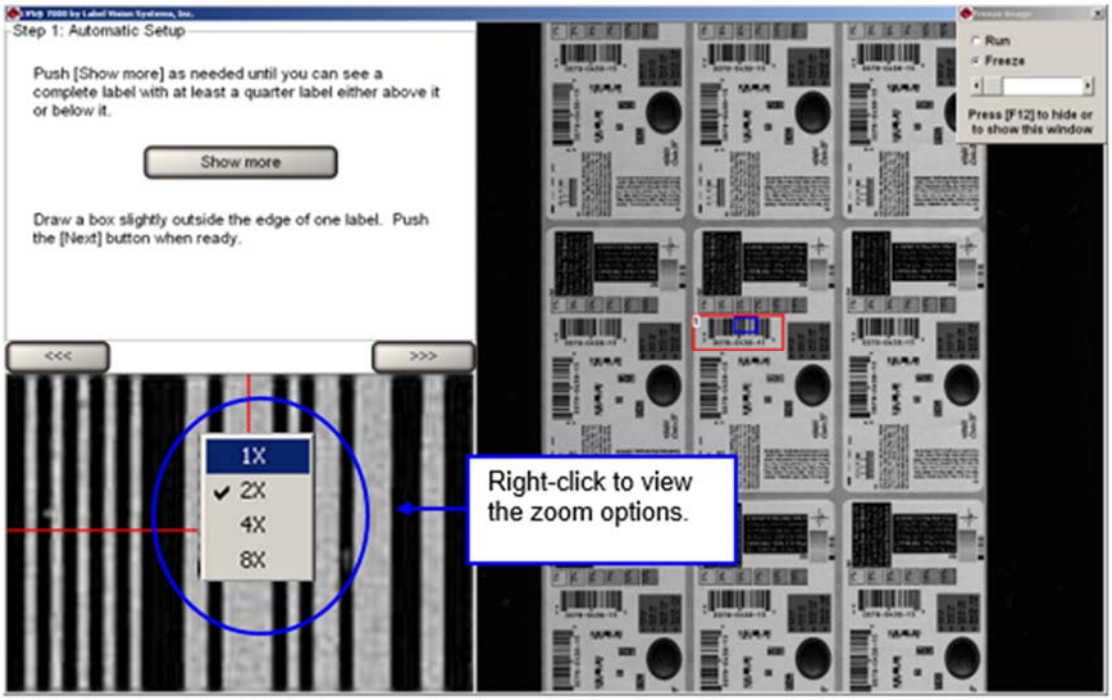
Two setup options are available when creating a new job:

- **Automatic Setup** - Utilizing a box drawn around one label, the LVS-7000 finds all similar labels across the web and automatically draws blemish and barcode sectors with the default setting stored for the corresponding sector types. After this automated process is complete, the system will be at the “Step 7: Save job to disk” screen where the user is able to enter a job name and description.
- **Manual Setup** – Guides the user through each step in creating a new job. The user must manually create sectors around blemishes and barcode sectors.

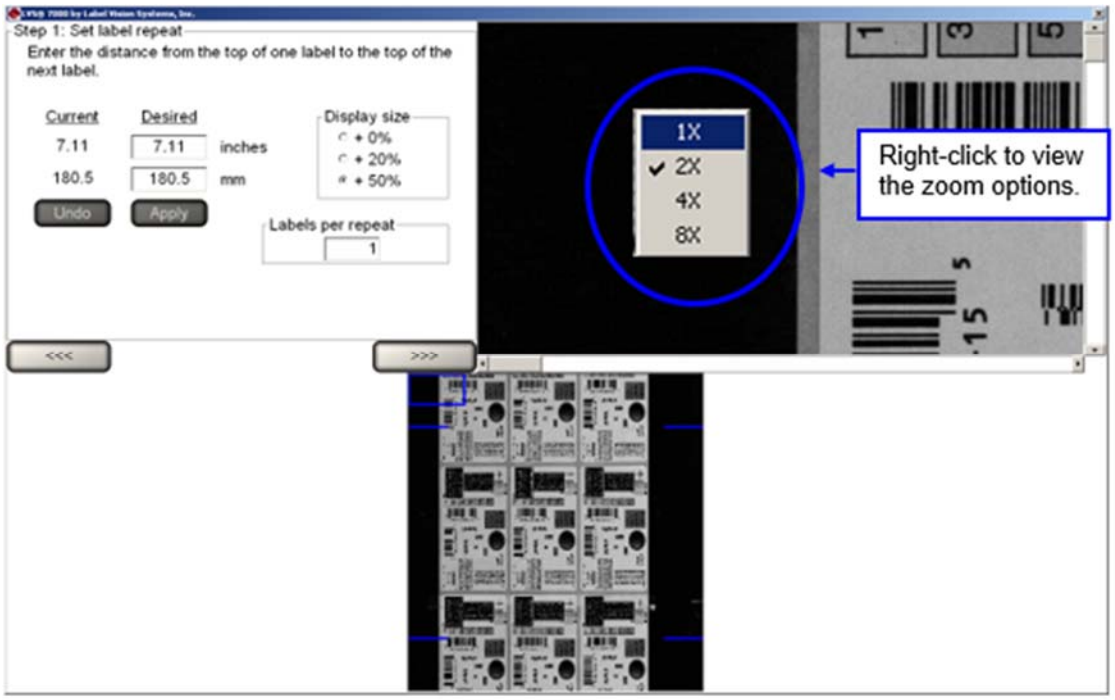
Each option is described below.

IMPORTANT: In both Automatic Setup and Manual Setup modes, images can be zoomed and magnified by right-clicking in the full resolution image window and selecting either 1X, 2X, 4X or 8X. See examples below.

Automatic Setup:



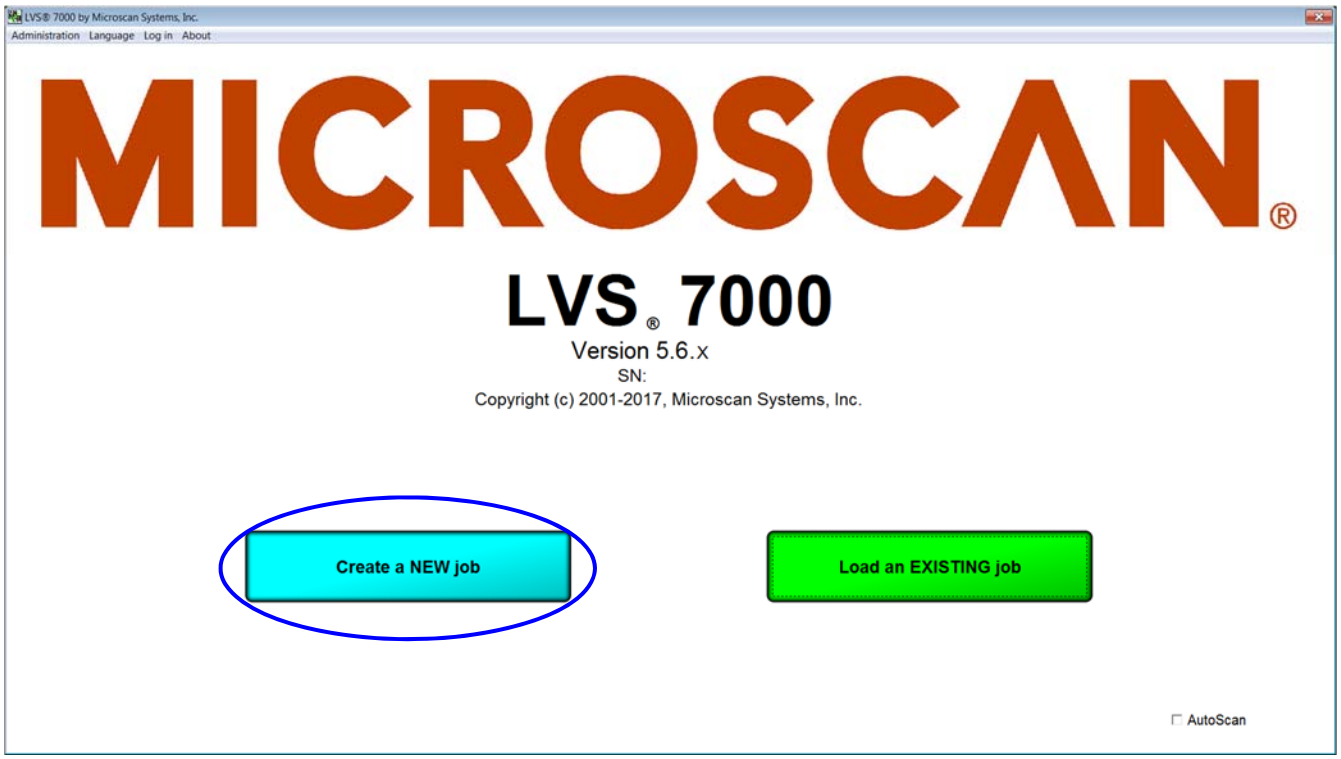
Manual Setup:



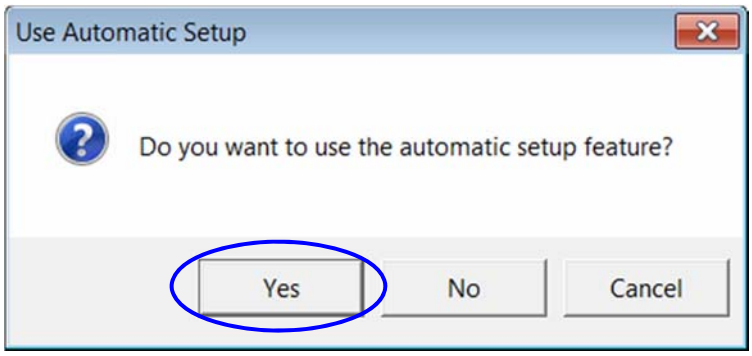
Automatic Setup

Follow the steps below to use the Automatic Setup feature.

1. Click the **"Create a NEW job"** button on the **Welcome** Screen:



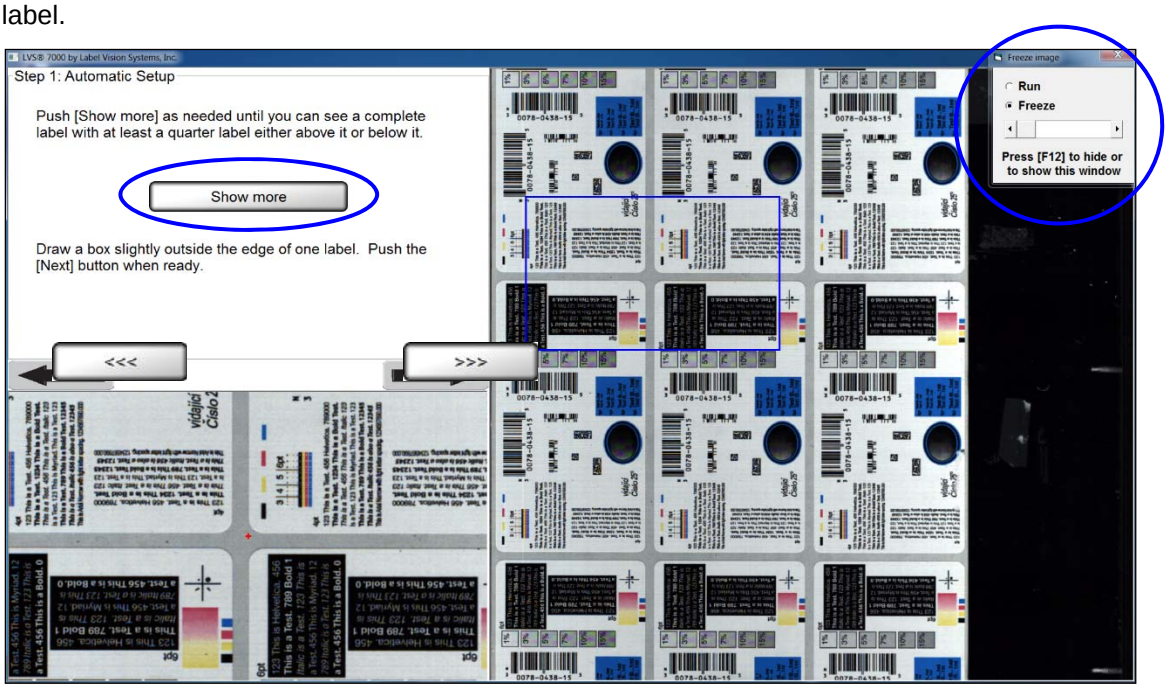
2. Select **"Yes"** when asked, "Do you want to use the automatic setup feature?"



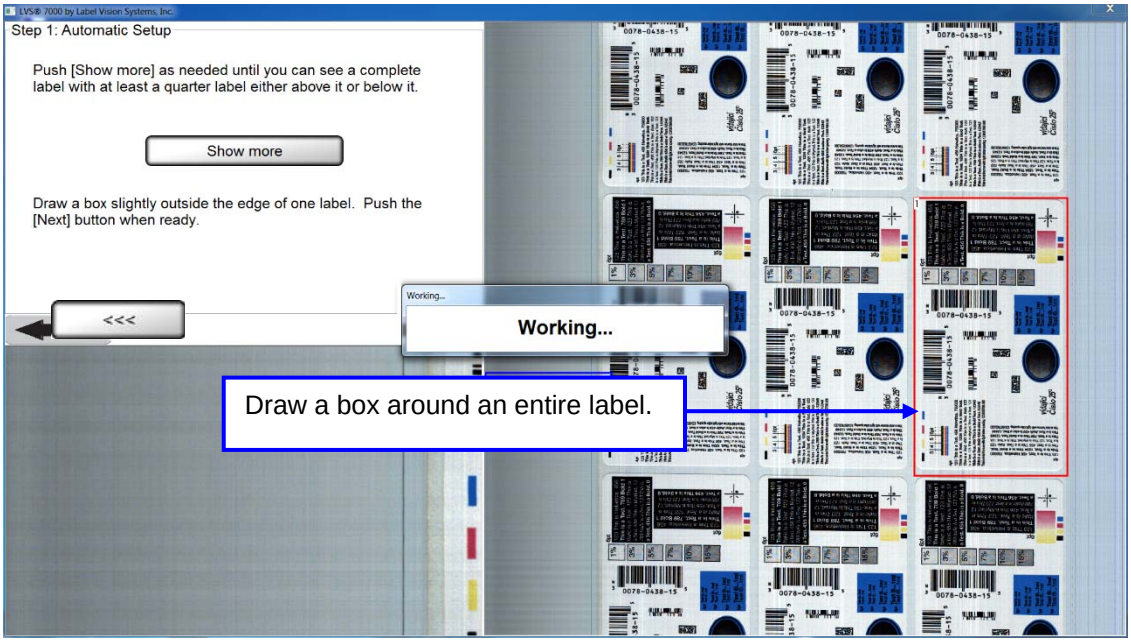
Step 1: Set Label Dimensions

1. Run the web and stop when reaching the desired label(s). Note that pressing the “F12” button on your keyboard allows you to run or freeze images.

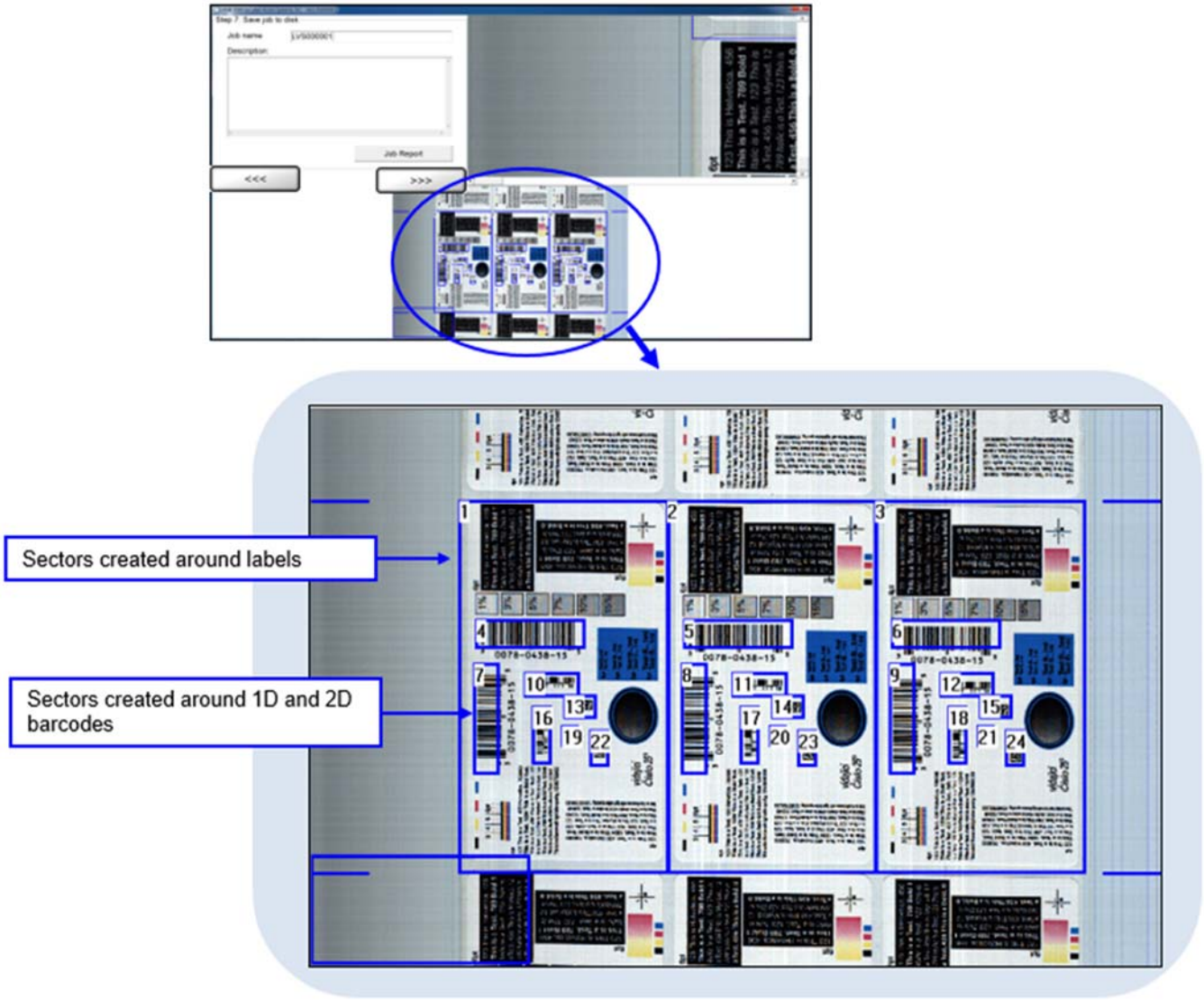
   Click **“Show more”** until you can see a complete label with at least a quarter label either above or below the label.



2. Draw a sector around an entire label, and then click the **“>>>”** button. A “Working…” message appears indicating the system is analyzing the label.



3. The LVS-7000 automatically detects and creates blemish sectors around any other similar labels across the web, and also detects and creates sectors around any 1D or 2D barcodes in each label. The **"Step 7: Save job to disk"** window is now displayed:



4. Enter the name of the job in the **"Job name"** field.

5. *Optional:* Enter a job description in the **"Description"** field.

6. If desired, click the **"Job Report"** button to generate an LVS-7000 Job Report which shows the settings for all created sectors. (See the section entitled "LVS-7000 Job Report" for more information.)

7. Click the **">>>"** button to save the job, and load the "Ready to run" screen.

Manual Setup

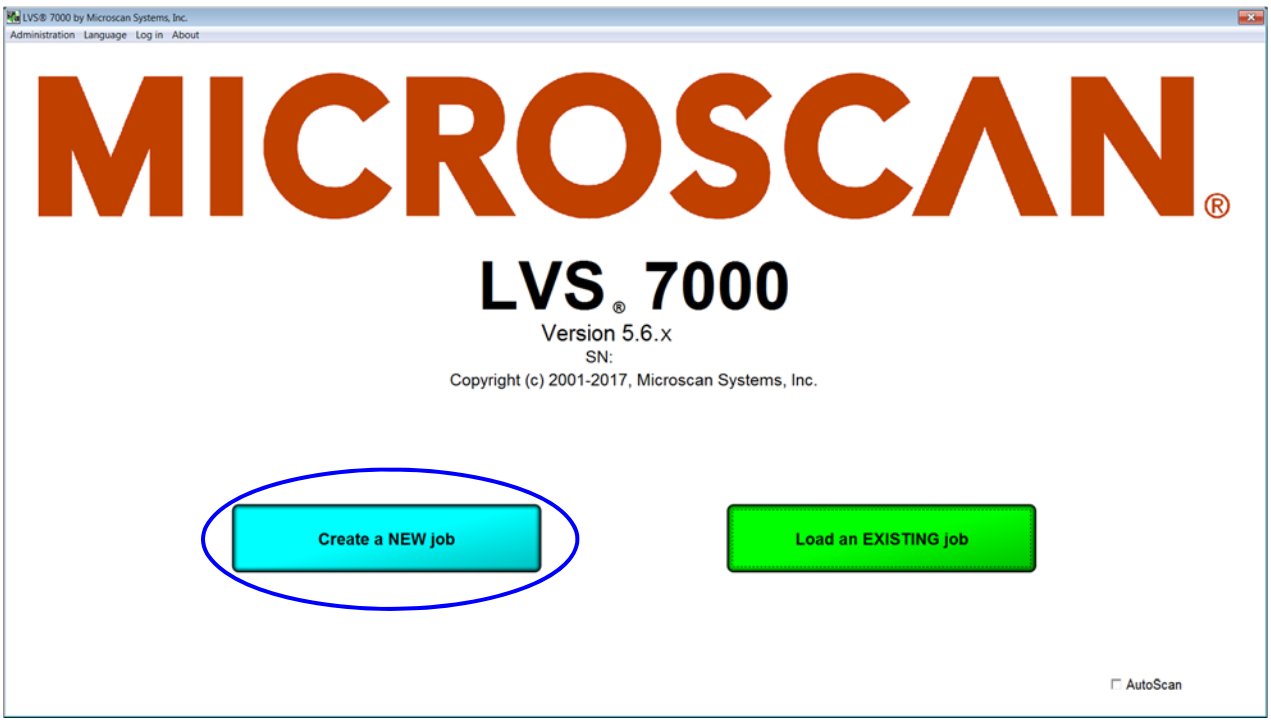
Follow the steps below to use the Manual Setup feature.

Step 1: Set Label Repeat

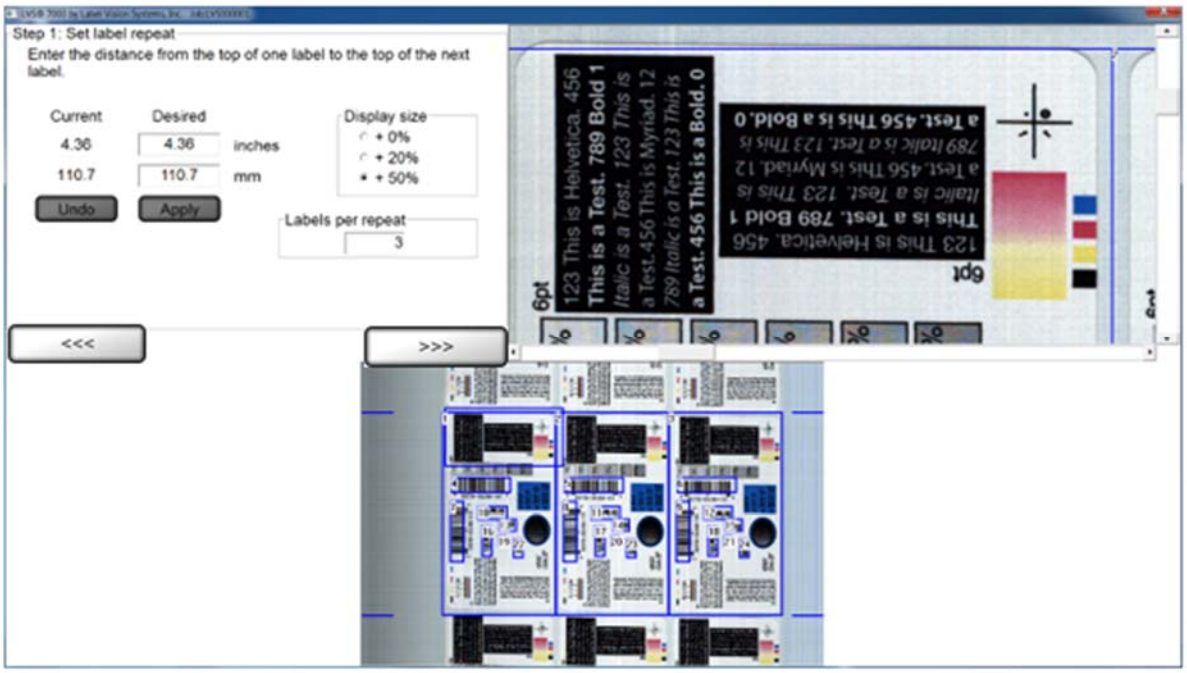
Setting label repeat and synchronization must be performed while the web is moving. It is recommended that the web moves slowly so that waste and uninspected material in minimized.

The LVS-7000 uses an encoder to understand when a label is ready to be inspected. In order for this to happen, the operator must choose a label repeat. To do this, follow the steps below:

1. Click the **"Create a NEW job"** button on the **Welcome** screen.



2. Select **"No"** when asked, "Do you want to use the automatic setup feature?".
   The **"Step 1: Set label repeat"** screen appears:



3. In the **"Desired"** column, enter the desired value into the inches or millimeter (mm) field.

4. Click the **"Apply"** button, or click the **"Undo"** button to clear the values entered into the **"Desired"** column.

5. You may choose to change the **"Display size"**. Options include:
   - 0% (Normal)
   - 20% (Normal + 20%)
   - 50% (Normal + 50%) (Default size)

6. In the **"Labels per repeat"** field, enter the number of labels per repeat. This field is critical for allowing Global Copy capability in Manual setup. See the **Global Copy** section for more information.

7. Click the **">>>"** button.

Step 2: Synchronize

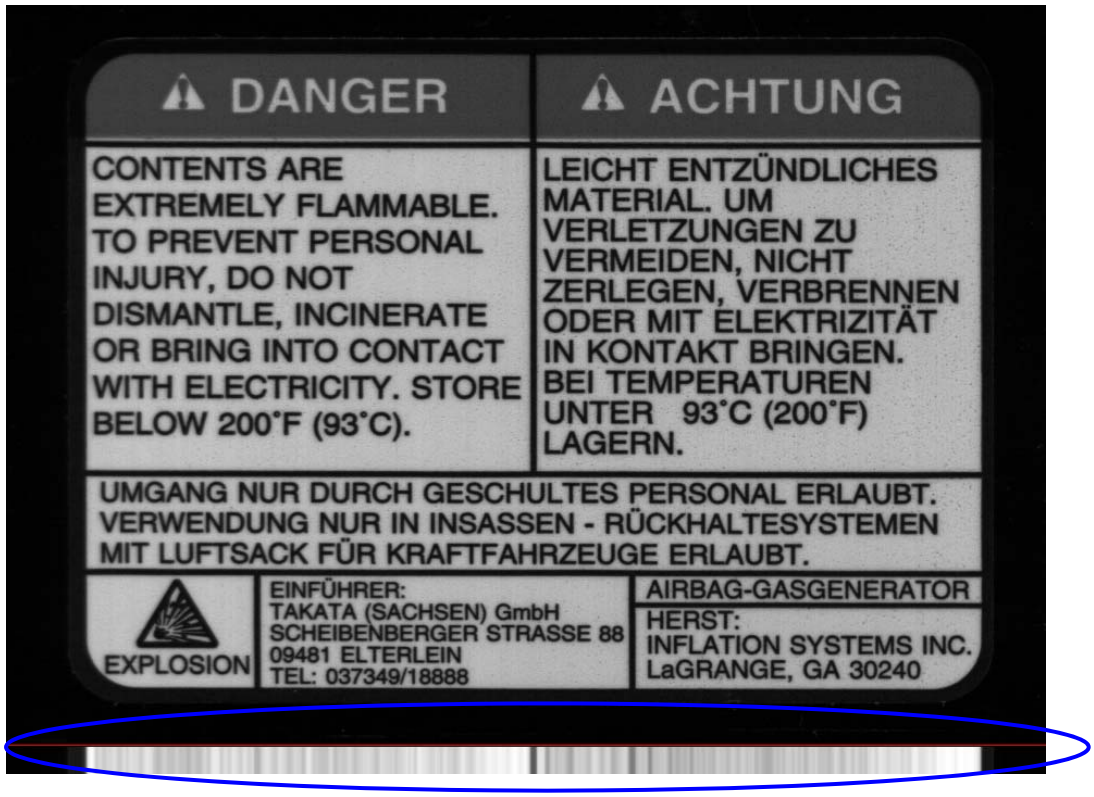
Synchronization Overview

Synchronization of the LVS-7000 takes the image and electronically creates a repeating pattern for locking. This process emulates the effect generated by a traditional Photo Optic trigger. The principle is simple enough to understand with some pictorial illustrations. The LVS-7000 takes the image and averages all pixels going across in rows, then performs the same averaging for all pixels going down in columns (see example below).

If we were to average all the pixels going across in rows, it would look like a strip added to the right of the picture below.

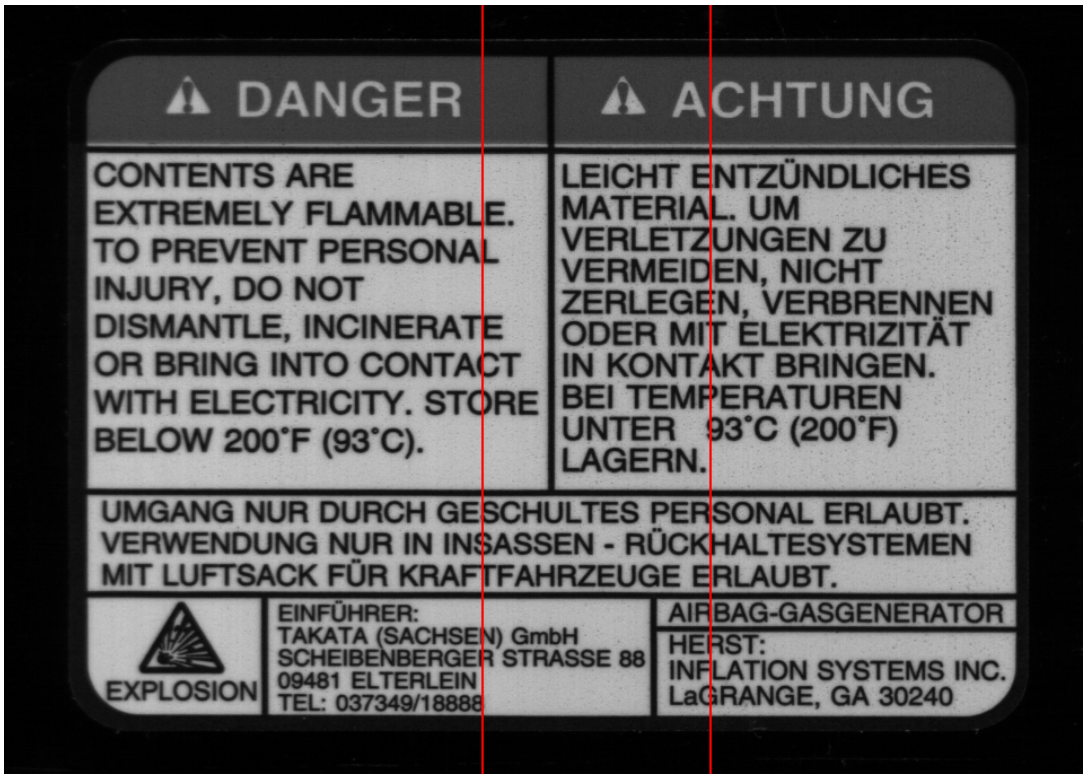
As you can see there are portions of this image attached to the right (after the red line) that look similar. These portions are the where the text goes across the label. The part we are most interested in seeing are the portions that had the black lines going across the image. The image below shows three definite sharp black lines that are unequally spaced apart. This is good as they cannot be mistaken for one another. The black line closest to the top also has a large darker portion above it since the label had a darker border around the words “Danger” and “Achtung”. Solid lines are good to utilize, especially when unevenly spaced.

Now following the same principal going down in columns from top to bottom we get a picture that looks like this (see below).



This example has much less definition through the whole image when looking at the average across the bottom of the label (below the red line). The large vertical black line that was through the center has made itself the most obviously defined dark line on the lighter background. Also the spaces between the print through the center of the label have made the average to the left of the center black line very light in contrast.

Since the smaller the synchronization portion of an image is, the faster it is to process, we can make a guess at the best area to use as a synchronization slice, which is the smallest portion of the image possible to hold good image registration. Below is the image of where we would want to designate as our “sync slice”.



When we average just the portions between the lines, we can process and lock in the repeat much faster than doing the entire image. Keeping it as small as possible is the best rule of thumb, though sometimes it may need to be large in order to accomplish the goal.

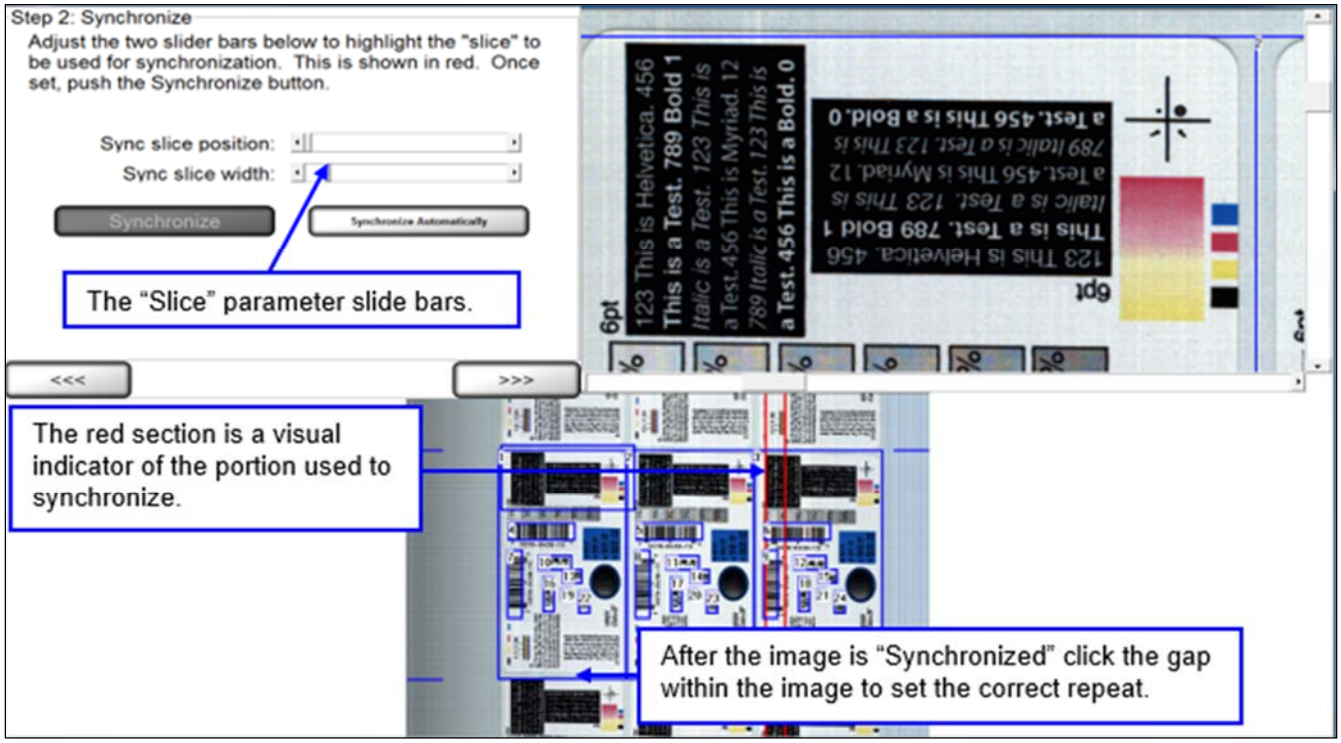
As another rule of thumb, if your label has variable data on it, that area should be avoided if possible. If it cannot be avoided you will need to do the inverse, and make the slice as wide as possible to distribute the variation into the average.

Synchronization

1. In order to manually synchronize the system, the operator must adjust the two slide bars. The “slice” is a portion of the label that has the best representation of the labels static (unchanging) portion. To change the Width of the “slice” use the “Sync slice width” slide bar. The minimum size is 128 pixels, and the max is ¼ of the cameras field of view. Next move the “Sync slice position” slide bar to the desired location. Then, press “Synchronize.”

   The system can also perform the above steps automatically to find the best sync position and width. Click the “Synchronize Automatically” button. The sync slice will be automatically positioned and sized.

   There is no limit to the number of times that manual and automatic sync can be performed.
2. To perfectly center the label in the display, point and left-click the mouse in the center of the label gap shown on the display. The large (full resolution) or the small (full field of view) image can be used. For very small repeats, the larger image is easier to pinpoint the gap location.
3. Click the **right arrow** button.

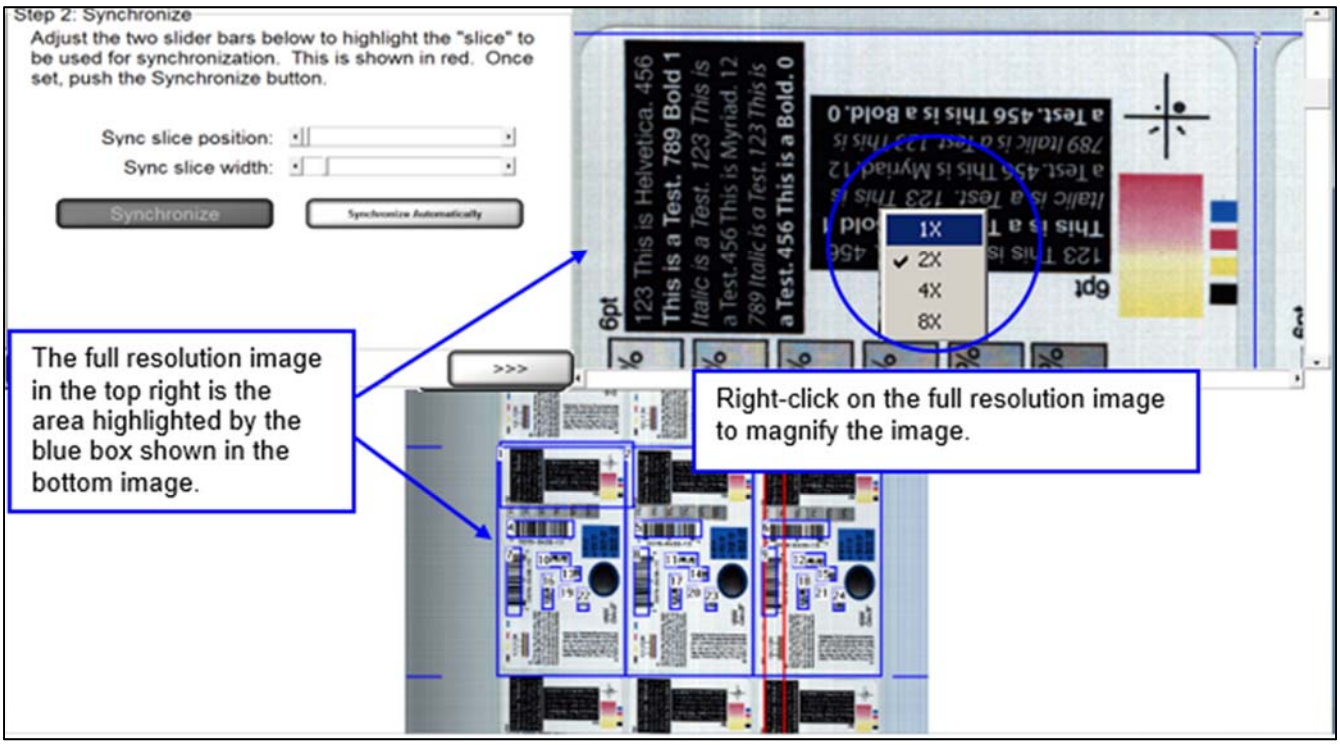


Screen Overview

Two areas on the screen show an image:

The top right image is the full resolution image that has not been altered. The slide bar to the right and below this image will allow the operator to view other parts of the image. Right-click on the full resolution image to zoom in on the image. Zoom options include 1X, 2X, 4X and 8X.

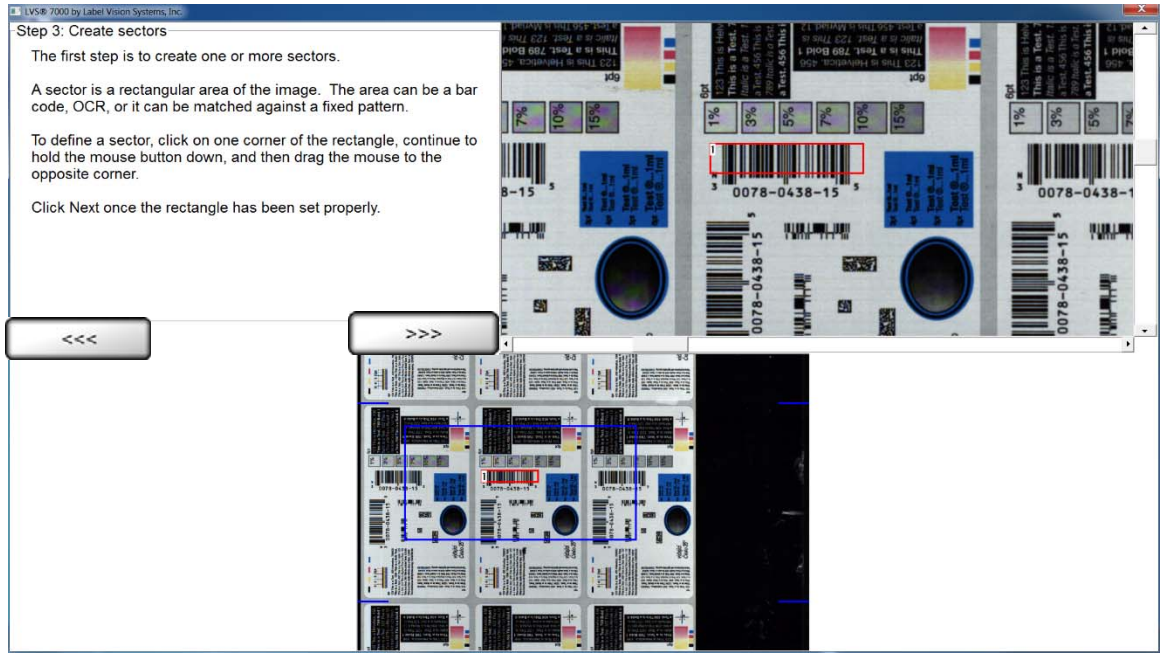
The bottom image is an altered resolution image that has been shrunk in order to show the camera's entire field of view.



Step 3: Create Sectors

A sector is defined as an area of interest that is to be analyzed. This step prompts the operator to establish this sector. The software will not process anything located outside the sector.

An image must be present to draw a sector. An image can only be created by the camera looking at a *moving* roll. This is because a line scan camera cannot see a stationary image; it must be a moving image. Once a correctly synchronized image is acquired, the operator may stop the roll and work with the still image.



The above image is an example of a sector being drawn around a barcode.

Draw a Sector

1. Click on one corner of the area you wish to inspect and drag the mouse while holding down the left-click button. This action will cause the software to draw a “red” box.
2. After you are satisfied with the sector position and size, click the **right arrow** button. The box location will not be stored until the **right arrow** button has been selected.

Note: The operator may draw a sector in either image.

Edit a Sector

1. Using your mouse, click within the desired sector that is located within a blue box; the sector bounding box then turns red.
2. Click the **right arrow** button to edit the sector.
3. You will be directed to Step 3 where you define the sector type.
4. After you are satisfied with the sector, click the **right arrow** button. The box location will not be stored until the **right arrow** button has been selected.

Copy an Entire Sector

1. Using your mouse, click within the desired sector that is located within a blue box; the sector bounding box then turns red.
2. Right-click inside the desired sector; the sector bounding box turns green.
3. Drag and drop the selected sector to the desired location; this copies the parameters of the selected sector.
4. After you are satisfied with the sector, click the **right arrow** button. The sector location will not be stored until the **right arrow** button has been selected.

Note: If you decide not to copy a sector and would like to exit the copying function, simply move the cursor back to the original sector.

Copy Multiple Sectors

Use the smallest sector when precisely aligning copied sectors. This allows you to view the sector's location more precisely in the full resolution image screen.

1. Using your mouse, click within the desired sector that is located within a blue box; the sector bounding box then turns red.
2. Press the **Ctrl** button on your keyboard while using your mouse to select the additional sectors. Each selected sector is highlighted in a red box.
3. Right-click on any sector; this causes a green box to appear around each sector.
4. Drag and drop the selected sectors to the desired location.
5. After you are satisfied with the sector, click the **right arrow** button. The sector location will not be stored until the **right arrow** button has been selected.

Note: If you decide not to copy a sector and would like to exit the copying function, simply move the cursor back to the original sector.

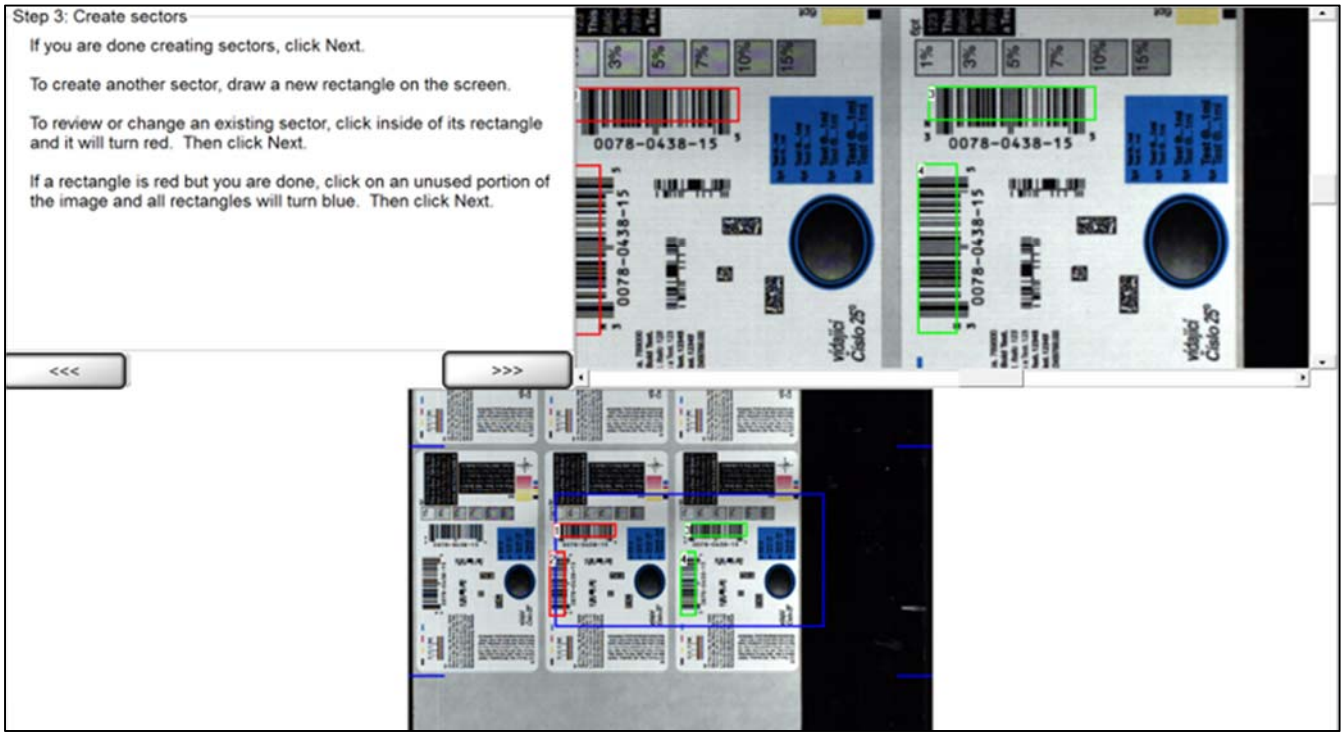
Shortcuts for Highlighting Multiple Sectors

- [Ctrl] + G: Selects all sectors
- [Ctrl] + Left-Click: Individually selects multiple sectors
- [Shift] + Left-Click: Highlights a range of sectors

Moving Sector(s) with Arrow Keys

Highlight the desired sectors and use one of the actions below.

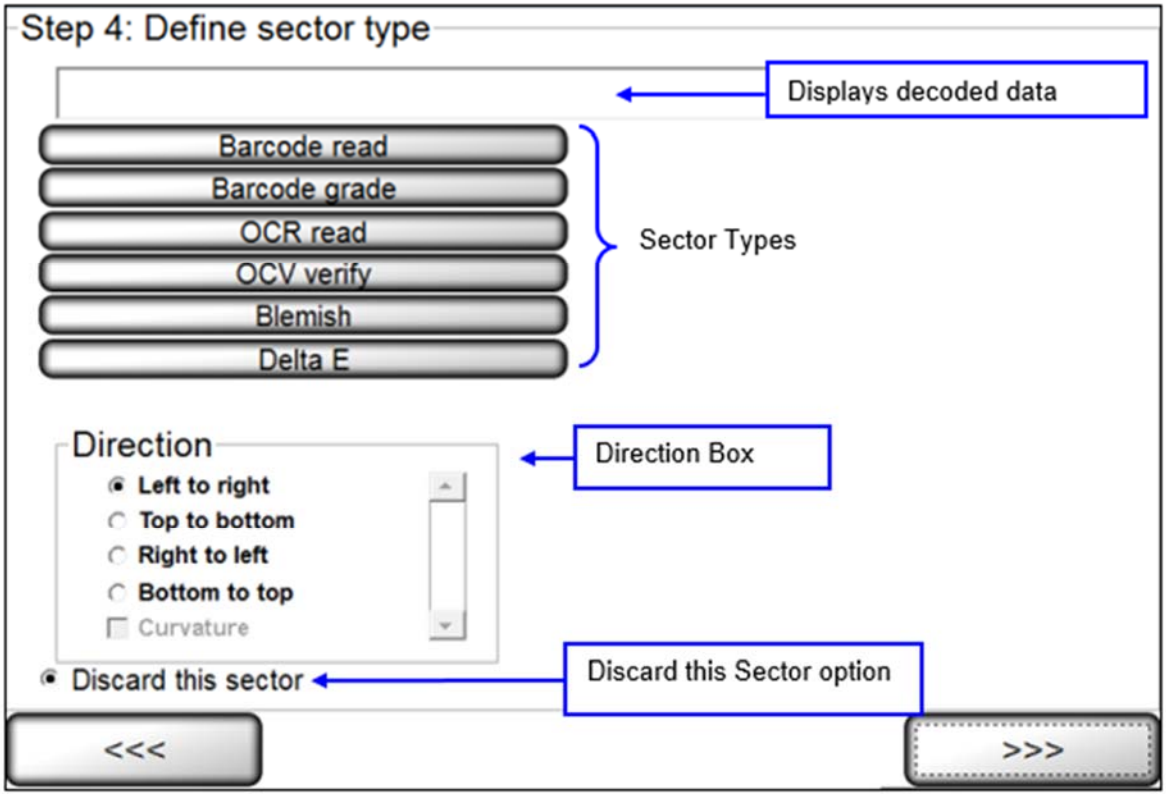
- Arrow keys only: Moves sector(s) by 1 pixel
- [Alt] + Arrow Keys: Moves sector(s) by 5 pixels
- [Shift] + Arrow Keys: Moves sector(s) by 25 pixels
- [Ctrl] + Arrow Keys: Resizes sector(s) in arrow direction



Multiple sectors can be copied and moved to other labels. This is helpful when an operator has to check the same information on different labels within a repeat.

Step 4: Define Sector Type

This step allows you to select the desired sector type that your software is capable of analyzing.



The following sector types are available:

- Barcode read
- Barcode grade
- OCR read
- OCV verify
- Blemish

If a sector is deactivated, please contact Omron Microscan to activate the desired sector type.

Note: The field located above the sector type list pre-populates with the string that the system is returning for the sector type. For example, if selecting the **Barcode read** sector type, the field populates with the decoded string.

Health Check

If “health check” is enabled, the option **Barcode health check** appears on the **Step 4: Define sector type** screen (see below).

A Scoring Box is used to show the Actual Score and the user can configure the Warning and Passing Scores using a range from 0 to 99.

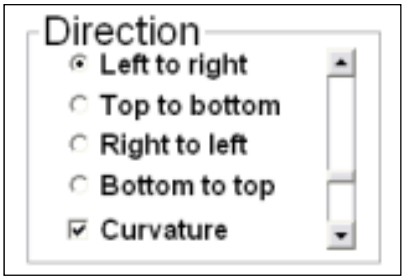
Direction Box

The box labeled **Direction** is applicable when using the OCR or OCV features; it tells the system the orientation in which to read the characters across the screen. Five types of directions are available:

> **IMPORTANT:** The LVS-7000 does not distinguish between touching/overlapping characters; thus, characters must not touch or overlap. The LVS-7000 reads and/or verifies uppercase characters only.

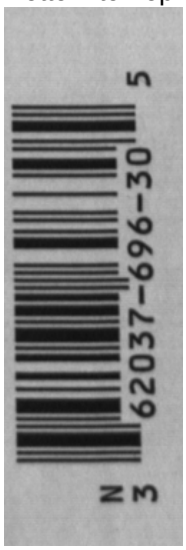
Direction	Description
Left to right	Reads characters from left to right. Typically, this is the desired direction.
Top to bottom	Reads characters from top to bottom.
Right to left	Reads characters from right to left.
Bottom to Top	Reads characters from bottom to top.

Direction Examples



Top to Bottom:

Bottom to Top:



Left to Right:

Right to Left:

Discard This Sector

If you have incorrectly drawn a sector, click the **Discard this Sector** button and then select the **right arrow** button. The sector is deleted. Sectors can also be removed by hitting the delete key while a sector(s) is active.

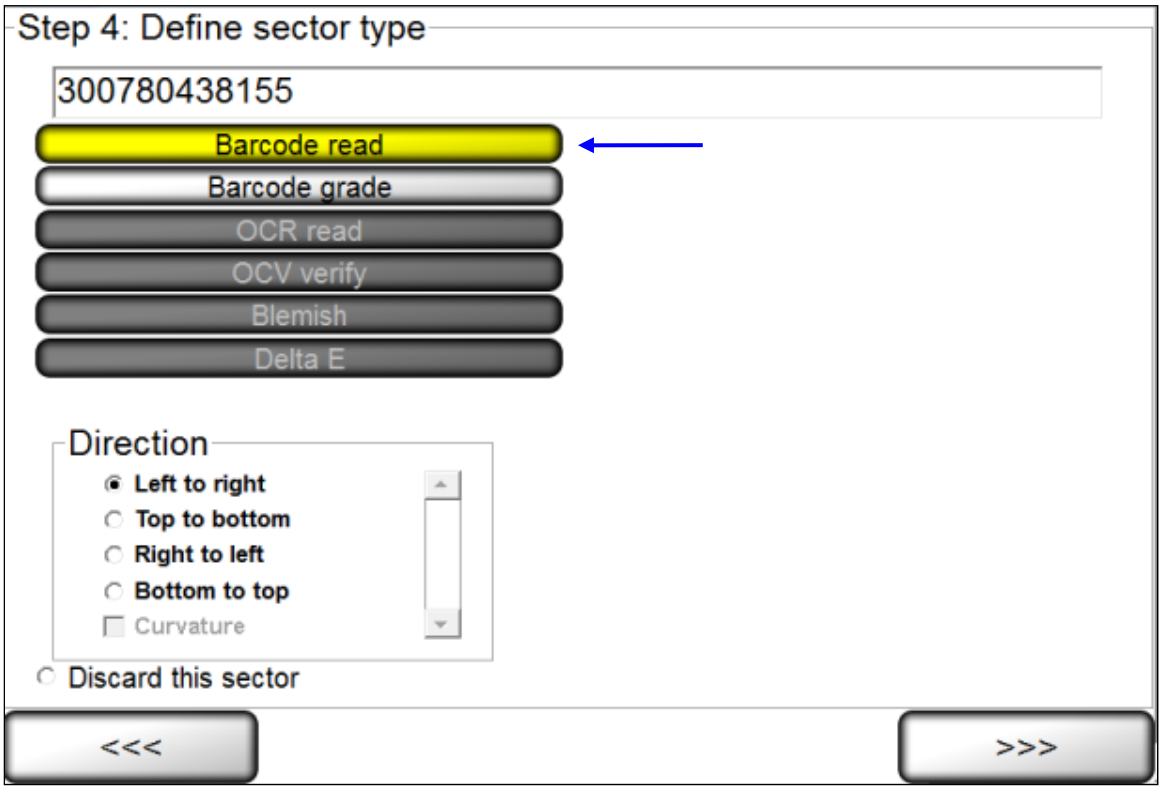
Sector Types

The following is a list of sector types with a description on how to set up a job using that specific sector type.

Sector Type 1: Barcode read

This sector is used to validate a 1D or 2D barcode label. The LVS-7000 inspects the barcode image to determine if it is “readable.” This sector type requires a monochrome or color camera.

1. Select **Barcode read**.

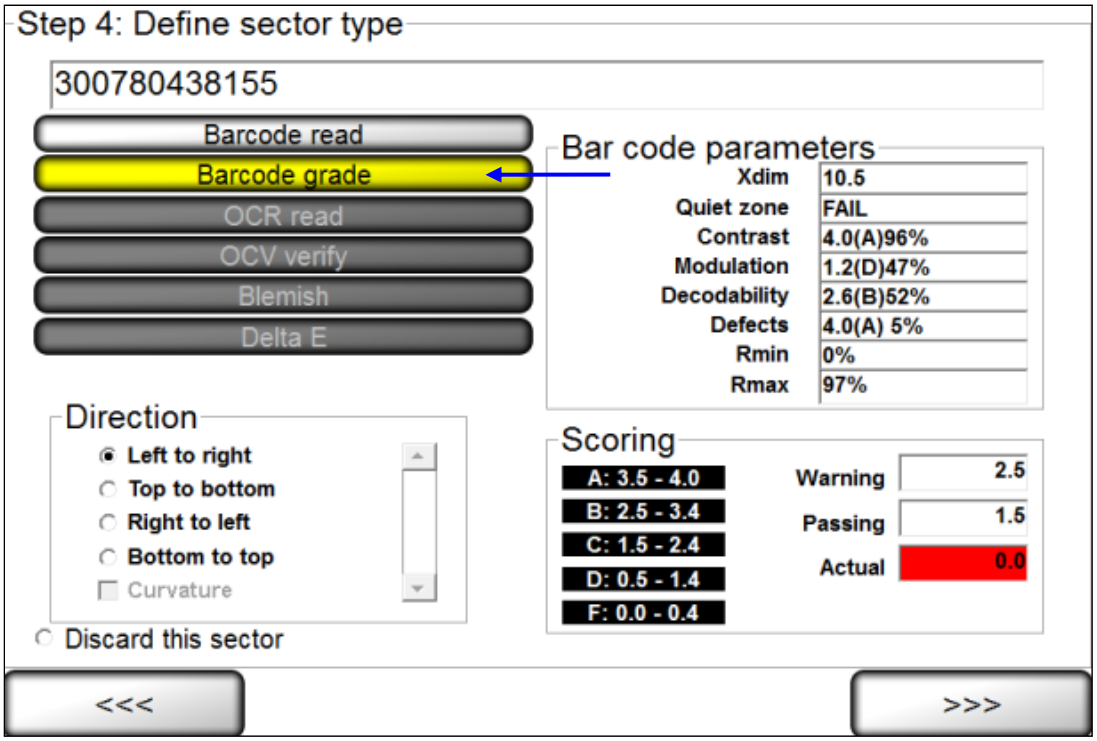


2. Select the desired direction. The encoded data is shown in the top right corner of the screen.
3. Click the **right arrow** button.

Sector Type 2: Barcode grade

This sector is used when you want to grade the 1D or 2D barcode image according to ISO/IEC standards. This sector type requires the use of monochrome camera.

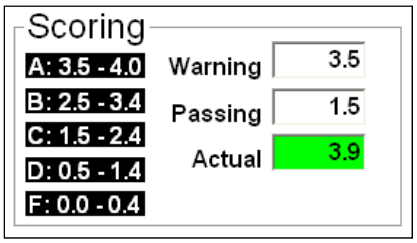
1. Select **Barcode grade**.



2. Select the desired direction.
3. Choose an acceptable grade in the **Scoring** box (see below).
4. Click the **right arrow** button.

Scoring Box

The Scoring box allows you to choose an acceptable grade from 0.0 to 4.0.



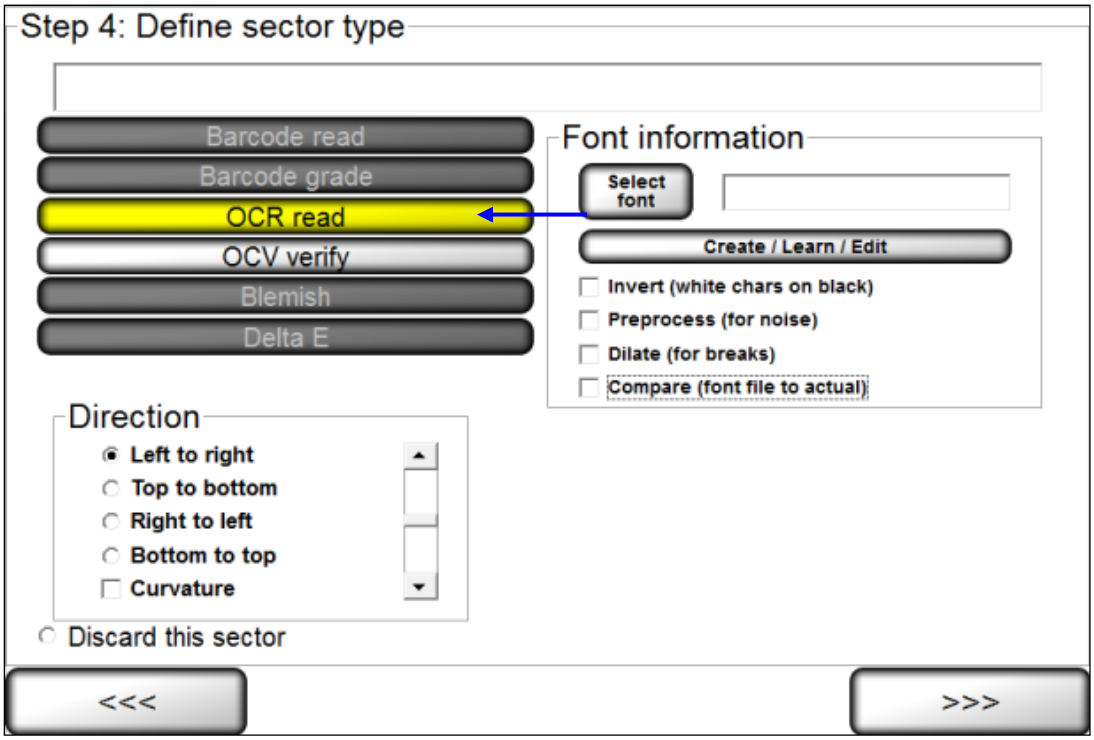
The following fields appear in the Scoring box:

Warning	Indicates an early warning of diminishing quality in the barcode image. The operator must take action to improve the grade score quality.
Passing	Represents what ISO/IEC grade is considered to “pass” and is user-defined to one decimal place.
Actual	Represents what grade is being detected using the setup barcode label.

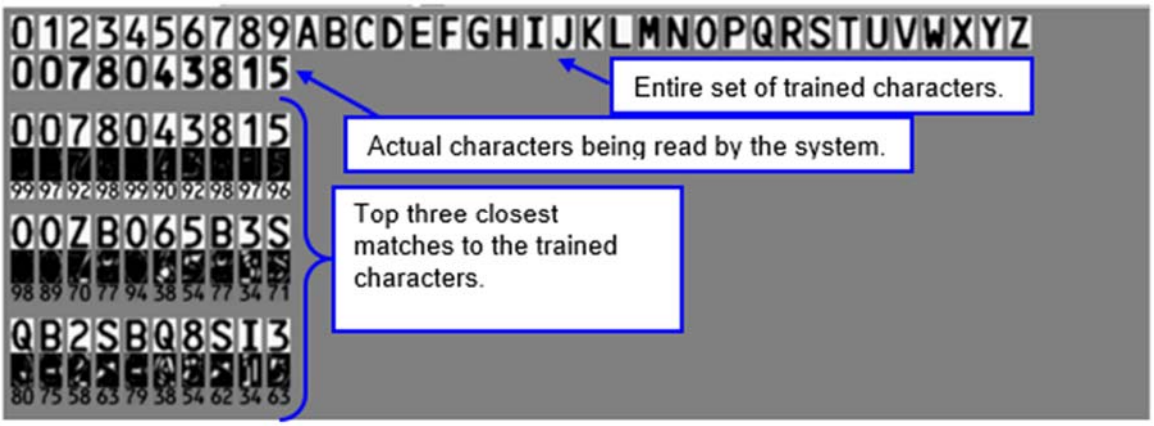
Sector Type 3: OCR Read

This sector type is used to “read” the human readable characters located within the drawn sector. This sector type may be used with a monochrome or color camera.

1. Select OCR (read).



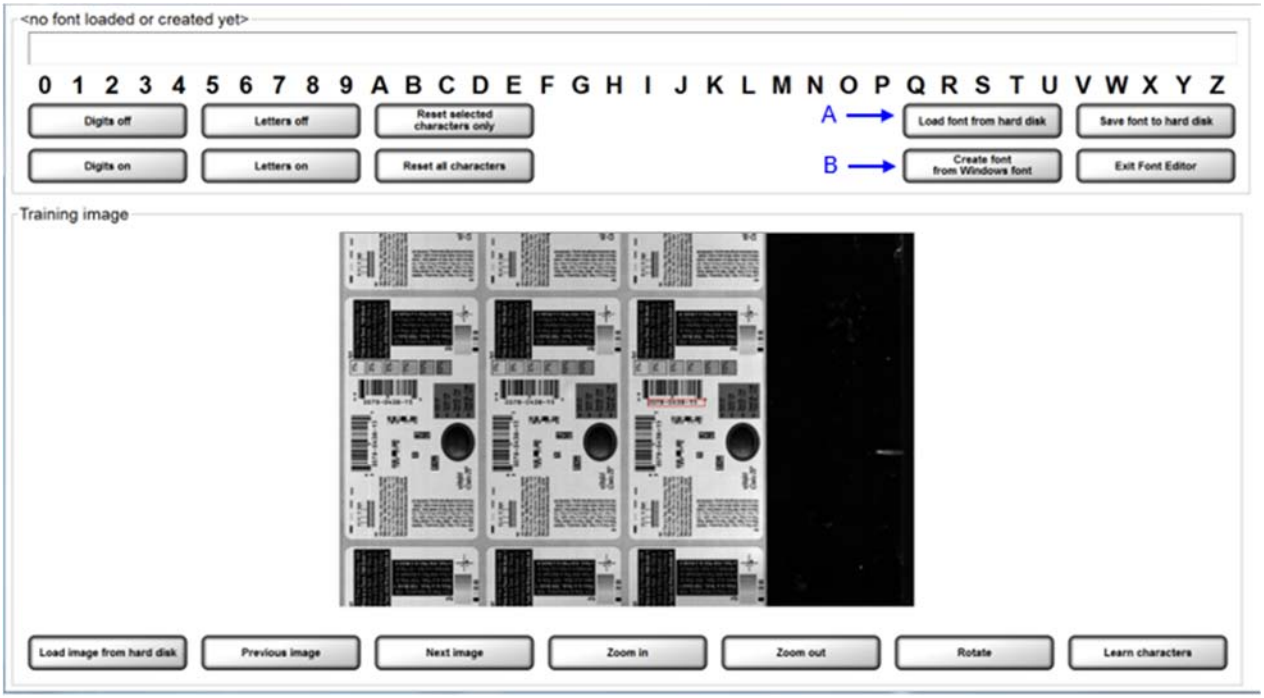
2. Select the desired direction.
3. Follow the steps below:
   a. Select the desired font by choosing one of the options below:
      - To choose a specific font, click the **Select font** button and select the desired font.
      - To create, train and edit fonts, click the **Create/Learn/Edit** button. See the section below for more information.
   b. Additional options include:
      - **Invert (white chars on black)** tells the sector to look for white characters on a dark background.
      - **PreProcess (for noise)** reduces noise and background contrast variances.
      - **Dilate (for breaks)** joins characters using a blurring and joining technique; it makes the characters bold and darker. This option is useful for Dot Matrix-type printing.
      - **Compare (font file to actual)** displays an Actual vs. Font File image in the lower half of the screen. The image shows the font file across the top of the image and the actual characters within the sector down the left side. Differences between a font file and an actual character are highlighted in white over black in the center of the screen. Each character is matched against the font file and given a score. The character with the highest score is then used as the result.



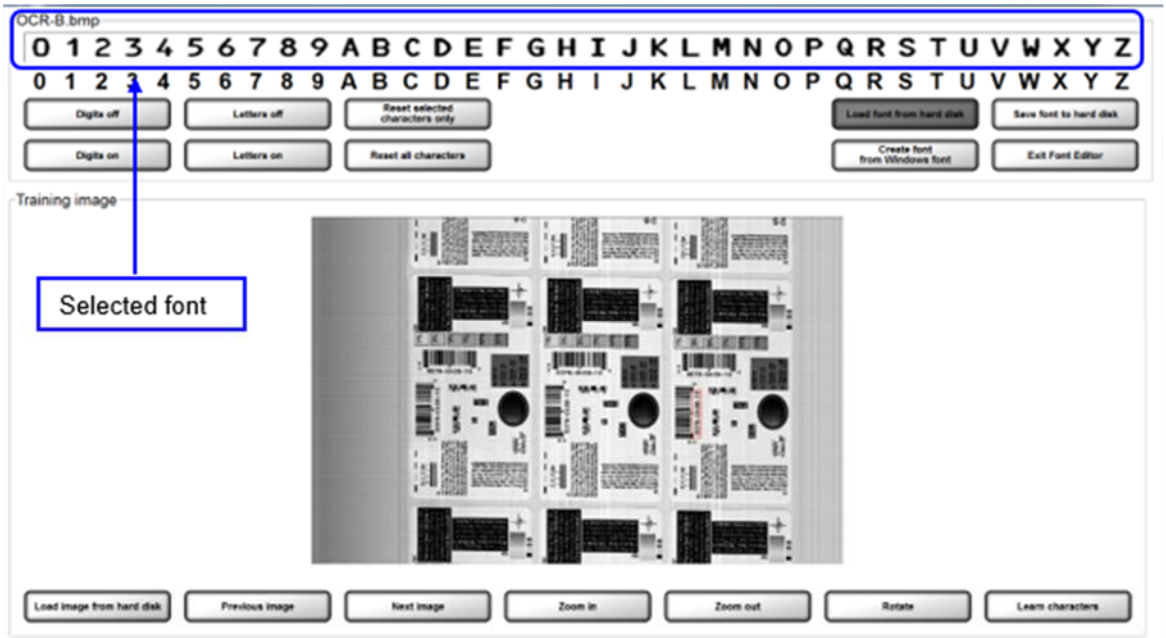
4. Click the **right arrow** button**.**

Create / Learn / Edit Fonts

1. Click the “Create/Learn/Edit” button. The Font Editor page appears.



2. The desired font must be loaded or created.
   - To load a font from a specific location, click the “Load font from hard disk” button (see “A” in the above screenshot). Locate the desired font, and then click “Open”.
   - To create a font using a Windows font, click the “Create font from Windows font” button (see “B” in the above screenshot). Select the desired font and then click “Ok”.
3. The selected font appears in the top text field (see below).



4. Use the buttons at the bottom of the screen to capture the desired image view. Buttons include:

Button	Description
Load image from hard disk	Click to load an image stored on a hard disk.
Previous Image	Click to view the previous image.
Next Image	Click to view the next image.
Zoom In	Click to view a magnified image of the label.
Zoom Out	Click to return to the original image view.
Rotate	Click to rotate the image. The image rotates each time the button is clicked.
Learn Characters	Used when training letters or numbers. This button is described in more detail in the following sections. An image must be in normal orientation (from left to right, and right side up) to be used for training (see example below). Use the **Rotate** button to rotate the image to the desired view.

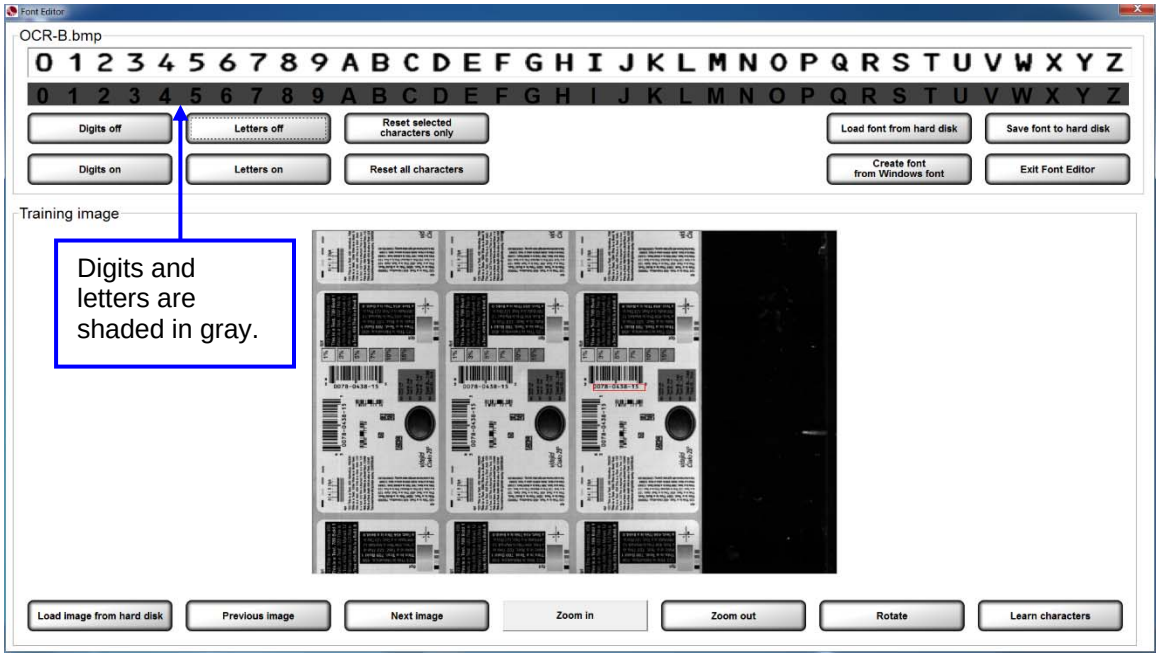
5. Click the “Exit Font Editor” button in the top right corner of the screen to discard changes.
6. An entire alphanumeric string (0-9 and A-Z), or specific digits or letters, can be trained. Read the sections below for further information.

Train an Entire Alphanumeric String:

- An image comprised of an entire alphanumeric string (0-9 and A-Z) must be present in the training image view.
- Use the left click button on your mouse to draw a box around the alphanumeric string in the training image view.
- Click the “Learn characters” button. The trained alphanumeric string appears in the top field.
- When all changes are complete, click the “Save font to hard disk” button. In the window, save the font to the desired folder.

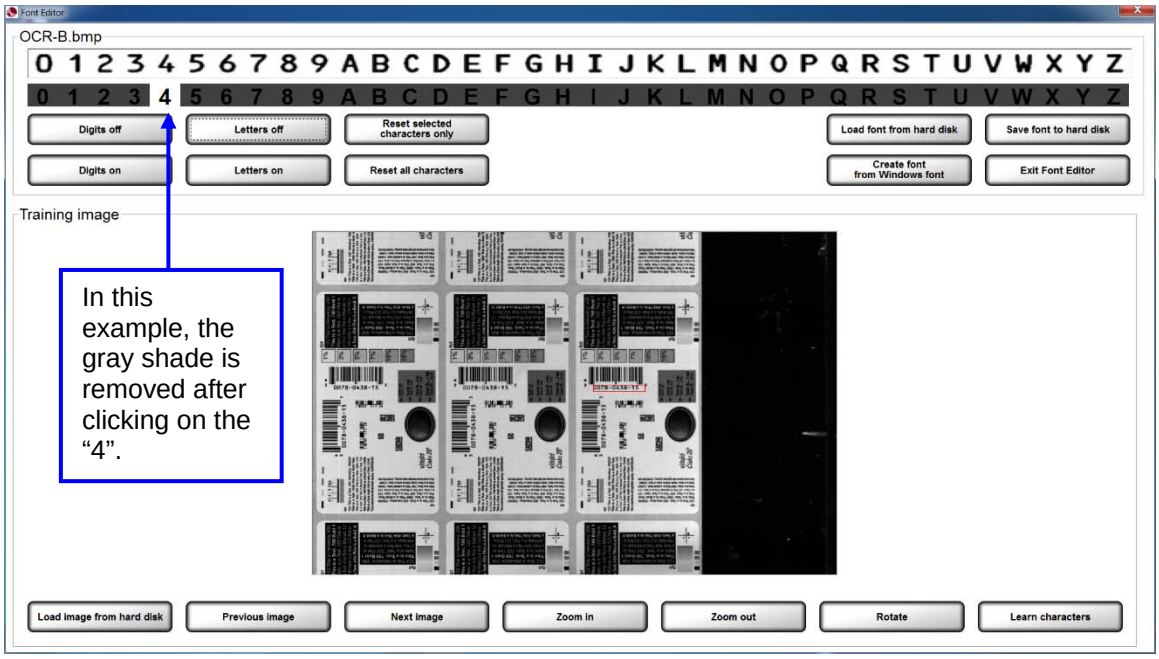
Train Specific Digits or Letters:

- All digits and letters must be shaded in gray. Do this by selecting the “Digits off” button and “Letters off” button; this shades all digits and letters (see below).

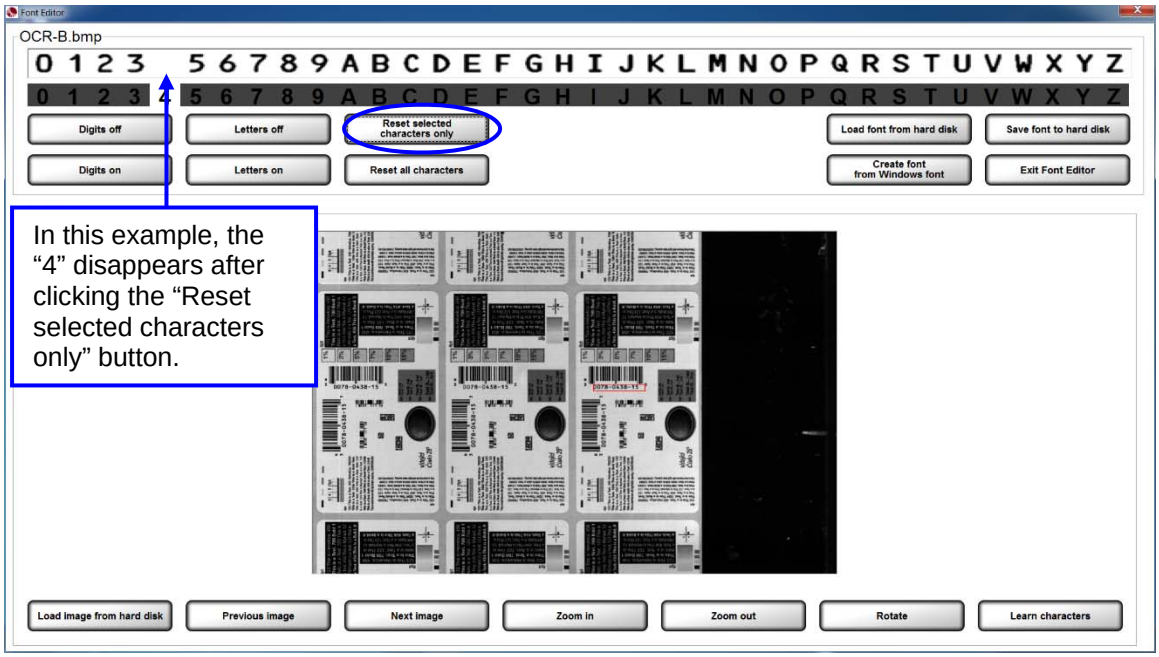


NOTE: All characters in a trained font must be defined.

- Click on the desired digit or letter; the gray shade is removed from the selected digit or letter. See example below.



- Click the "Reset selected characters only" button. The character disappears (see below).

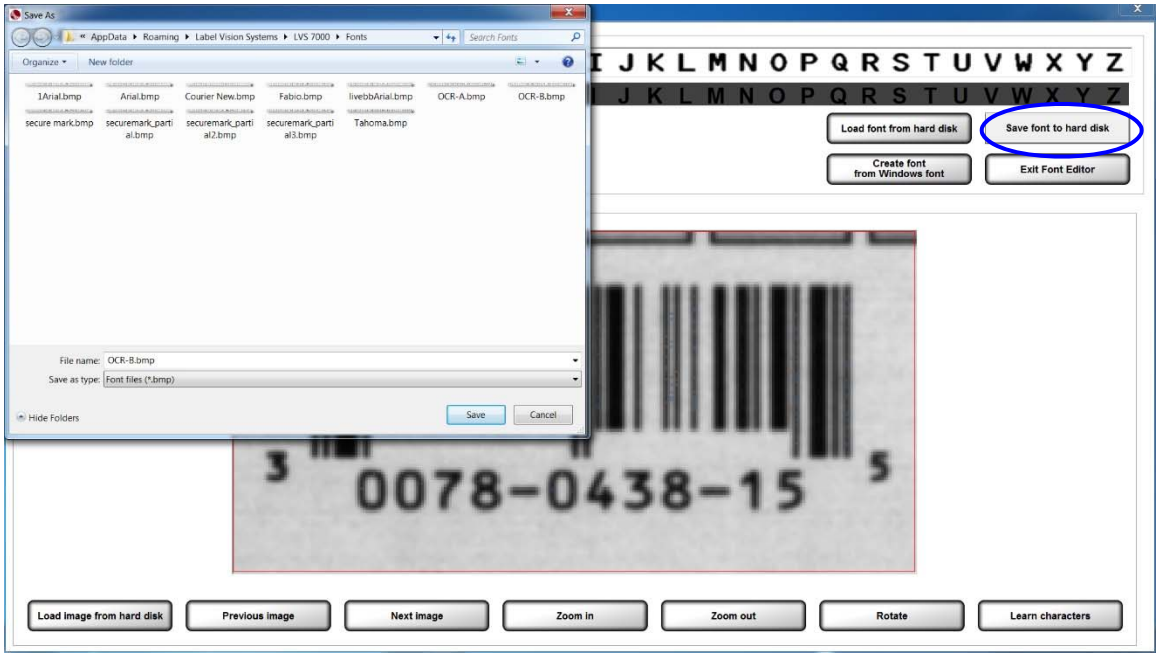


Note: If you do not select this button, the software averages the character in the top text field with the character in the training image.

- Use the left click button on your mouse to draw a box around the letter or digit in the training image view (see below). Note that the training image in the screenshot below appears larger after clicking the “Zoom In” button.

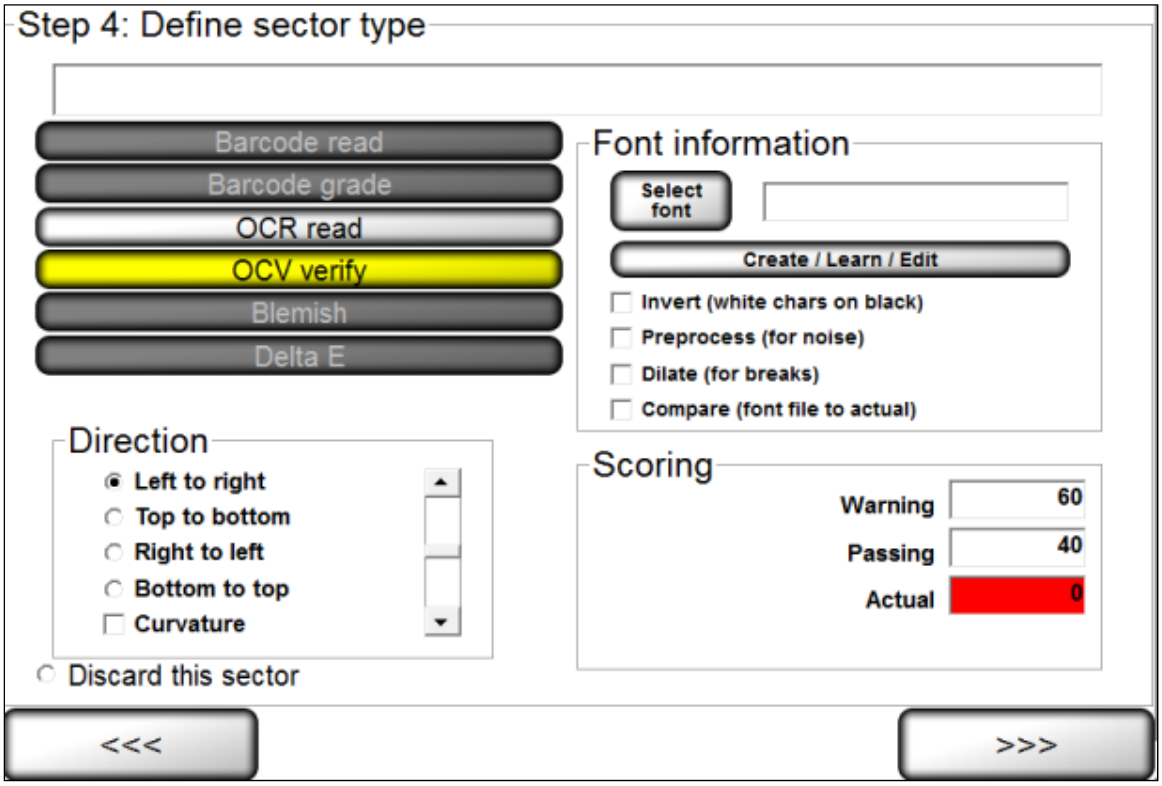
- Click the “Learn characters” button. The trained character appears in the top field (see below).

- When all changes are complete, click the “Save font to hard disk” button. In the window, save the font to the desired folder (see below).

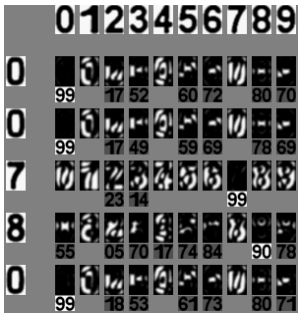


Sector Type 4: OCV Verify

The OCV (Optical Character Verification) sector type is used to score the print quality of the human readable characters within a drawn sector. This sector type may be used with a color or monochrome camera.



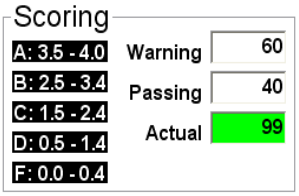
1. Select OCV verify.
2. Select the desired direction.
3. Follow the steps below:
   a. Select the desired font by choosing one of the options below:
      - To choose a specific font, click the **Select font** button and select the desired font.
      - To create, train and edit fonts, click the **Create/Learn/Edit** button. See the section above entitled "Create / Learn / Edit Fonts" for more information.
   b. Additional options include:
      - **Invert (white chars on black)** tells the sector to look for white characters on a dark background.
      - **PreProcess (for noise)** reduces noise and background contrast variances.
      - **Dilate (for breaks)** joins characters using a blurring and joining technique; it makes the characters bold and darker. This option is useful for Dot Matrix-type printing.
      - **Compare (font file to actual)** displays an Actual vs. Font File image in the lower half of the screen. The image shows the font file across the top of the image and the actual characters within the sector down the left side. Differences between a font file and an actual character are highlighted in white over black in the center of the screen. Each character is matched against the font file and given a score. The character with the highest score is then used as the result.



4. Determine a score (see **Scoring Box** below for additional information).

Scoring Box

The OCV Scoring box allows you to choose an acceptable score ranging from 0 to 99.



Three scores are available:

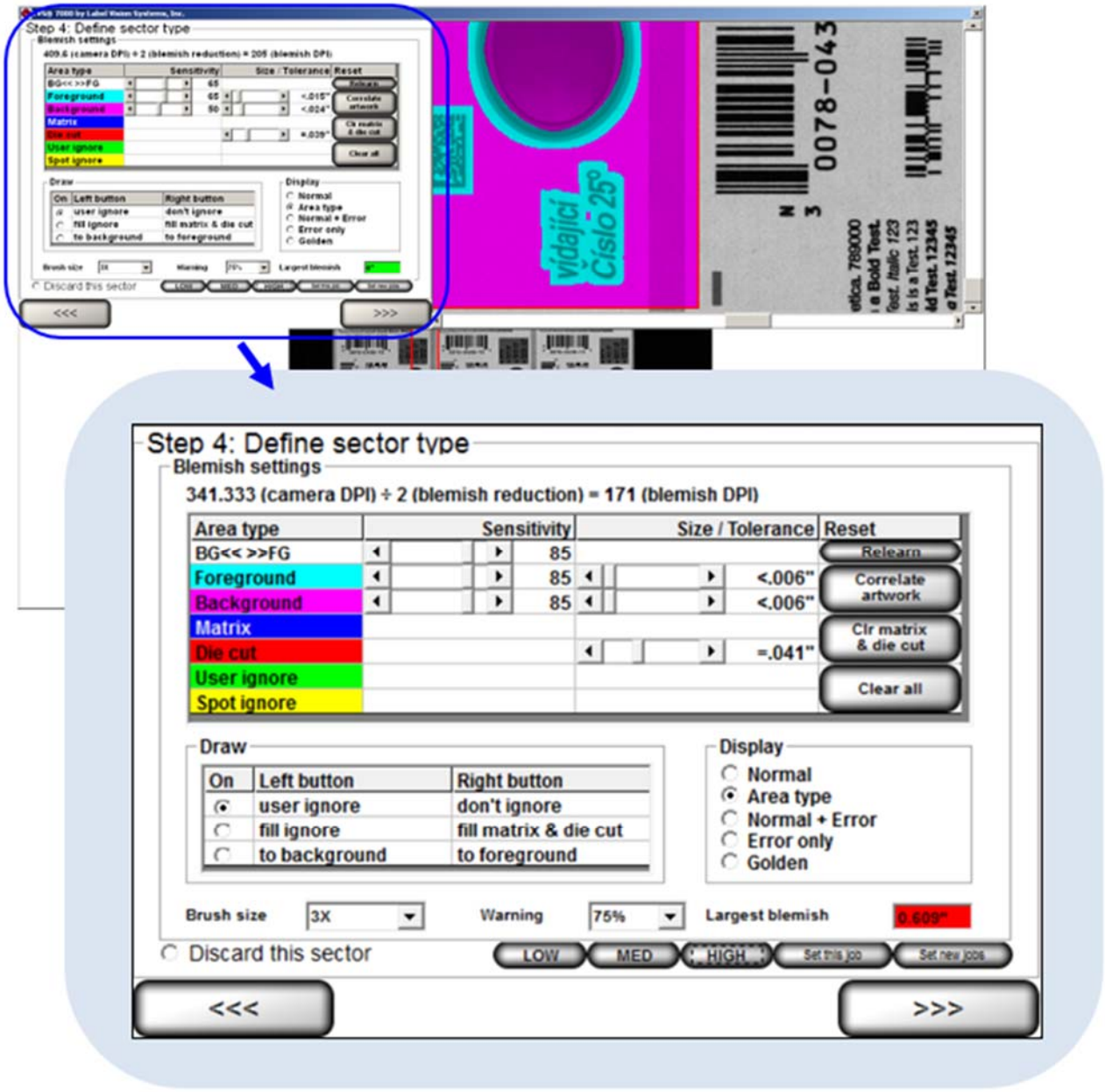
Score	Description
Passing	The **Passing** number is a threshold setting. All “Actual” scores greater than the “Passing” score is said to pass inspection (and vice versa). If the “Actual” score is less than the “Passing” score, then the inspection has failed and alarms can be set to alert the operator.
Actual	The **Actual** number represents a percentage of confidence. A 95 would indicate that there is a good chance that the characters within the drawn sector are correct. A 20 would indicate that there is a better chance that the characters do not match what was intended.
Warning	Indicates an early warning of diminishing print quality. The operator must take action to improve the grade score quality.

5. Click the **right arrow** button.

Sector Type 5: Blemish

To use the Blemish sector type, follow the steps below.

1. Select **Blemish** on the **Step 4: Define Sector Type** screen; the following screen appears.



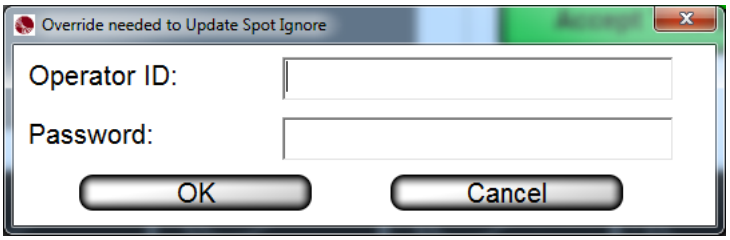
2. The software automatically learns the first image it sees after the first sector has been drawn. If the image is not the correct one, or you would like to put a different image into the field of view, click the **Relearn** button and the software will accept the next image it sees within that sector. This saved image is called the “Golden image”. The entire process of understanding blemishes is done by comparing the “Golden image” to the Job image.

Note: Ctrl+L is a keyboard shortcut for the **Relearn** button. After pressing **Ctrl+L**, the system will accept the next image it sees within each Blemish sector and saves the image as the Golden image. This shortcut is available only when the system is in Run mode.

After pressing Ctrl+L, a popup message will appear for users without administrative rights. The user must enter an administrator user name and password for the command to take effect. The golden image that is recorded is the image after the authorized user name and password is entered.

3. Within the Blemish Settings box (see above), adjust the following fields as needed:

Field	Description
BG<< >>FG << Background >> Foreground	Separates the Foreground from the Background. Increasing this number will define more print as Foreground and less as Background. Decreasing this number will define more of the label as Background and less as Foreground. A sensitivity of 0 will call everything Background and 100 will call everything Foreground.
Foreground Sensitivity	The Foreground Sensitivity setting is the system's allowable deviation in print color contrast after converting to gray scale. A sensitivity of **0 will accept all variations** from the original pixel's gray scale value, while **100 will allow no variation** of the gray scale values. In other words, a setting of 0 will pass everything that is defined as Foreground print and a setting of 100 will pass nothing. The operator will need to adjust this setting to find an acceptable value that does not cause false errors in the print. Foreground is shown in the light blue color when the Display is set to Area type. Label sections can be sent to the background or foreground through the Draw tool.
Background Sensitivity	The Background Sensitivity works the same way as Foreground but it is meant to find contrast differences in the label's background. Background is shown in the light purple color when the Display is set to Area type.
Size/Tolerance	These settings allow the user to increase or decrease the size of detected Blemishes. It is important to test the software so that a user understands what size Blemishes are acceptable.
Preset Configuration Settings	The Preset Configuration Settings buttons allow a user to adjust the following six blemish settings and to apply the settings to a particular job or to all new jobs created (based on administrator rights). See the "Preset Configuration Settings" section for more information on using the Preset Configuration Settings buttons. 1. BG<< >>FG sensitivity 2. Foreground sensitivity 3. Background sensitivity 4. Foreground Size/Tolerance 5. Background Size/Tolerance 6. Die Cut Size Tolerance
Matrix	Matrix detects the roll section between labels to insure the waste material is removed. Matrix is shown in Blue when the Display is set to Area type.

Field	Description
Die cut tolerance	This setting changes the size of the Red line that wraps around each label when using “fill here” under the Draw section. This area measures the movement of the outside edge of the label compared to the printing within for die movement.
User ignore	This option is enabled in the Draw section and allows the user to draw green ignore areas within the Blemish sector. This tool is useful when there is incrementing data or differences between each label.
Spot ignore	Ignore areas appear in yellow when the “Update Spot Ignore” button is used in the Operate Screen. Only operators granted the **Allow Accept / Replace Errors** permission are allowed to use the Spot ignore feature. When an operator without Administrator permissions clicks the “Update Spot Ignore” button, the following message appears:  The operator must enter an Administrator’s Operator ID and Password to continue, or the Spot ignore feature cannot be used. See the **Permissions** section, within the **Operators** section, for more information on permissions.
Brush Size	Allows the user to change how large or small the brush stroke will be when ignoring an area.
Warning	Select the warning percentage. If the current blemish is less than the Blemish Size / Tolerance setting and if the ratio of the current blemish size to the Blemish Size / Tolerance setting is greater than the warning percentage, then the inspection passes but a warning is flagged. For example, suppose you decide that a .25” blemish is considered an error. If the warning percentage is 75%, then a blemish of .25” x 75% = .1875” or larger is a warning. Blemish sizes less than .1875" is acceptable and passes the inspection. Blemish sizes .25” and greater will flag an error.
Largest blemish	Shows the largest blemish in inches
Discard this sector	Click this button to delete the sector. After this button is clicked, the “Step 4: Define Sector Type” screen appears allowing you to select another sector. Sectors can also be removed by pressing the “Delete” keyboard button while a sector(s) is active.
Relearn Button	The Relearn Button will re-train the Golden image with the image that is present. **Note: Ctrl+L** is a keyboard shortcut for the **Relearn** button. After pressing **Ctrl+L**, the system will accept the next image it sees within each Blemish sector and saves the image as the Golden image. This shortcut is available only when the system is in Run mode. After pressing Ctrl+L, a popup message will appear for users without administrative rights. The user must enter an administrator user name and password for the command to take effect. The golden image that is recorded is the image after the authorized user name and password is entered.

Field	Description
Clr matrix & die cut	Click this button to clear all matrix and die cut filled sections.
Clear all	Click this button to **Clear all** ignored and auto filled sections within a chosen sector.

4. The options in the **Display** box are shown below:

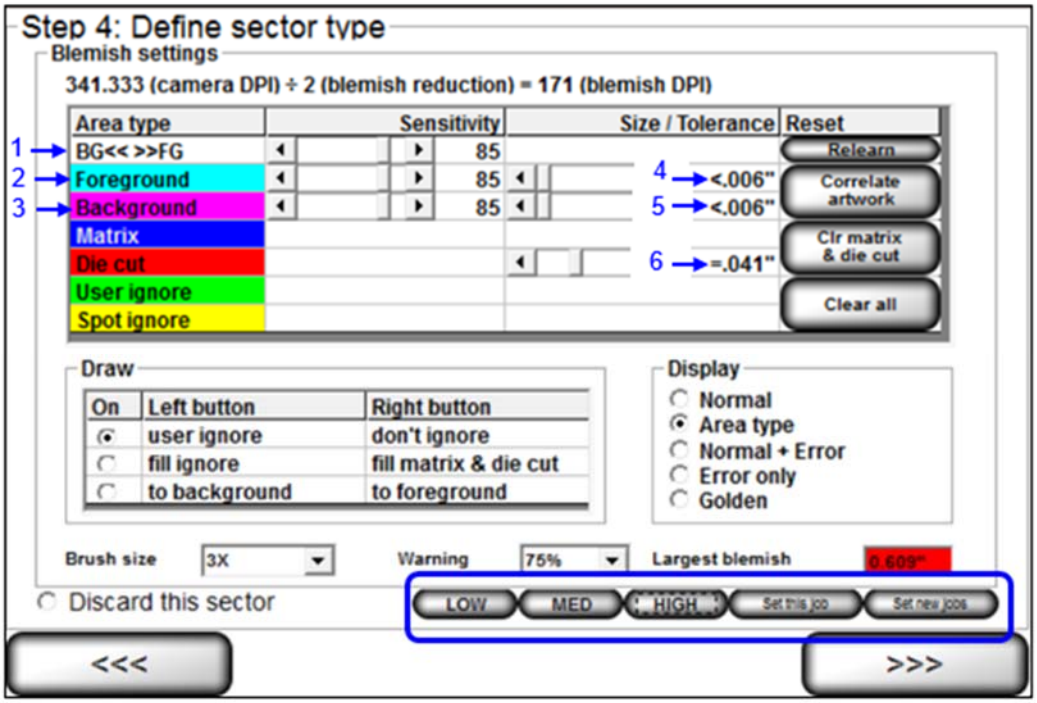
Field	Description
Normal	Shows the Actual image only.
Area Type	This view shows the label using the color codes for each blemish feature.
Normal + Error	This view allows the user to see errors as they occur. The user usually uses this screen to find the errors, and then goes to the Normal+Ignore screen to draw the ignore sections.
Error Only	This is a tool for the operator to use in order to understand what the software views as a difference between the Golden image and the Actual image. When this option is selected, the image will turn black and errors will be highlighted in white.
Golden	Shows an overlay of the Golden Image over the Actual Image.

5. Click the **Global copy** button to replicate the setting changes in the same sector across all labels. See the “Global Copy” section for more information.
6. Click the **right arrow** button.

Preset Configuration Settings

The preset configuration settings allow a user to adjust the following six blemish settings on the “Step 4: Define sector type (Blemish settings)” screen:

1. BG<< >>FG sensitivity
2. Foreground sensitivity
3. Background sensitivity
4. Foreground Size/Tolerance
5. Background Size/Tolerance
6. Die Cut Size Tolerance



The functionality of the preset configuration settings vary based on user permissions.

- Users with administrator rights can configure the preset configuration settings and apply the settings to a particular job or to all new jobs created. See the “Permissions” section for more information on administrator permissions (“Welcome Screen Overview” section > “Administration” section > “Operators” section > “Permissions” section).
- Users without administrator rights cannot configure preset configuration settings and can only select the “Low,” “Medium,” and “High” preset buttons to adjust the blemish settings on the “Step 4: Define sector type (Blemish settings)” screen.

See the sections below for more information on configuring and using the preset configuration settings.

Note: The preset configuration settings buttons are enabled in the LVS7000.ini file > [Preset] section > UseFeature setting.

- UseFeature=0 (default) – Disables the preset configuration settings buttons
- UseFeature=1 – Enables the preset configuration settings buttons

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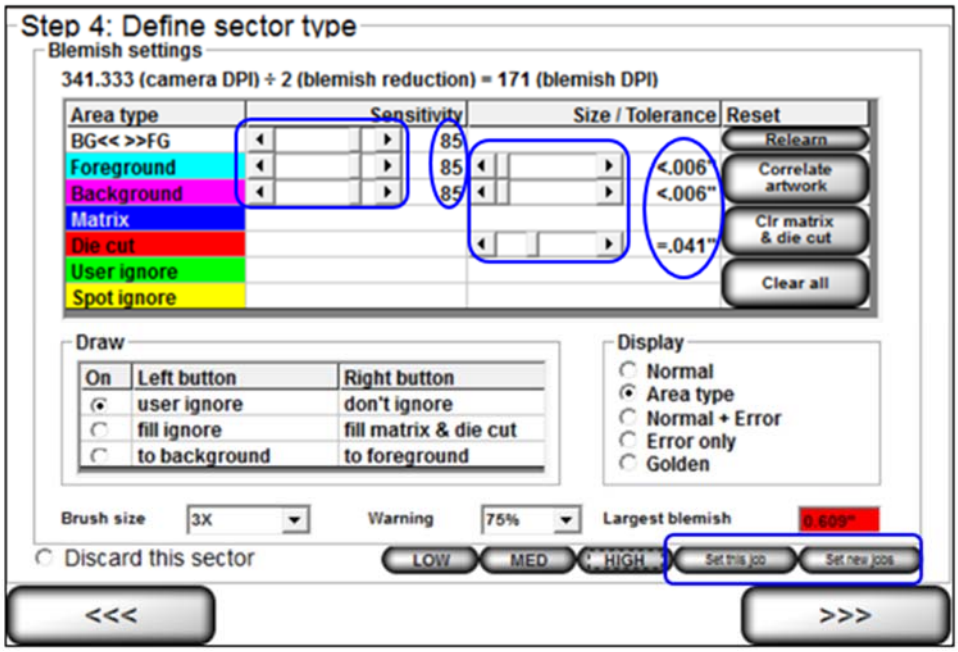
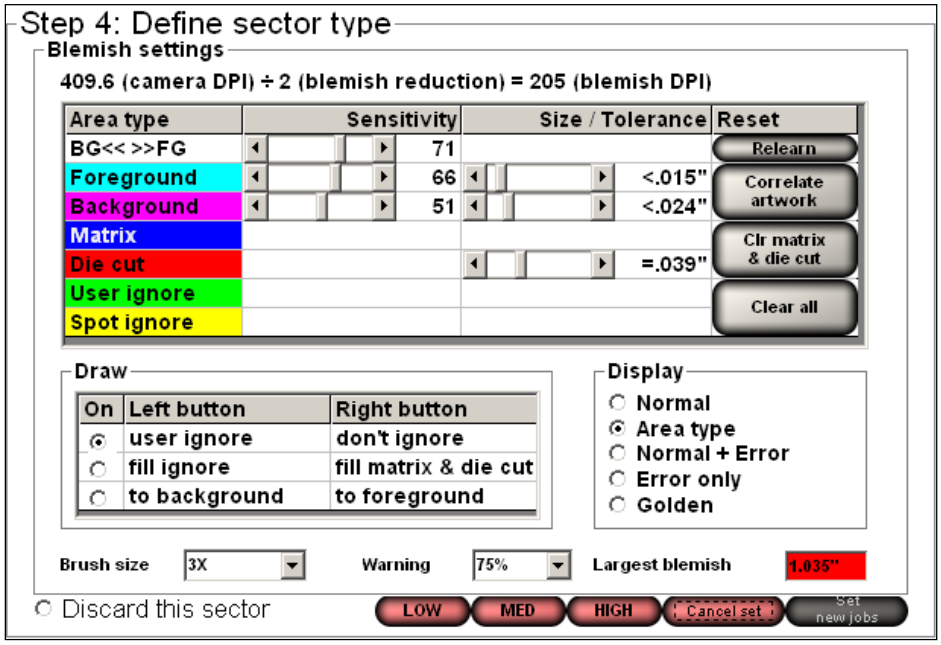
Configure the Preset Settings:

Follow the steps below to configure the blemish settings for the low, medium and high preset configuration settings. **Only users with administrator rights can configure the preset configuration settings.**

1. Use the slider bar to adjust the sensitivity or size/tolerance settings for the foreground, background, and die cut settings.



2. When settings are complete, click either the “Set this job” button to apply the settings to only that job, or click the “Set new jobs” button to apply the settings to all new jobs created. These buttons appear only to users with administrator rights.
3. The preset buttons (Low, Medium, High) turn red.



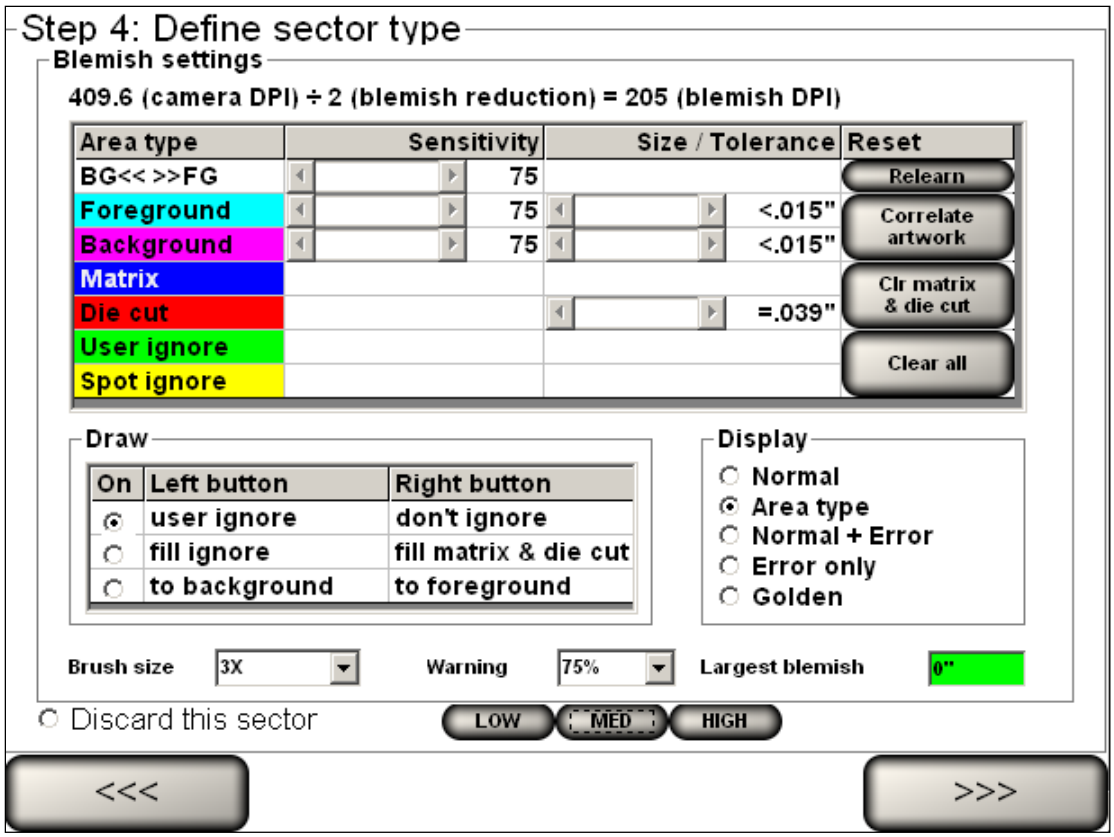
- Click “Low” to apply the blemish settings to the low preset configuration setting.
- Click “Med” to apply the blemish settings to the medium preset configuration setting.
- Click “High” to apply the blemish settings to the high preset configuration setting.
- Click the “Cancel set” button to cancel the blemish configuration settings.

4. Follow the above steps to set the configuration settings for each of the present configuration buttons (Low, Medium and High).

Use the Preset Settings:

Users without administrator rights can select the “Low,” “Medium,” and “High” preset buttons to view the image(s) on the “Step 4: Define sector type (Blemish settings)” screen.

- Click “Low” to adjust the blemish settings to the “Low” configuration settings as defined by a user with administrator rights.
- Click “Med” to adjust the blemish settings to the “Medium” configuration settings as defined by a user with administrator rights.
- Click “High” to adjust the blemish settings to the “High” configuration settings as defined by a user with administrator rights.

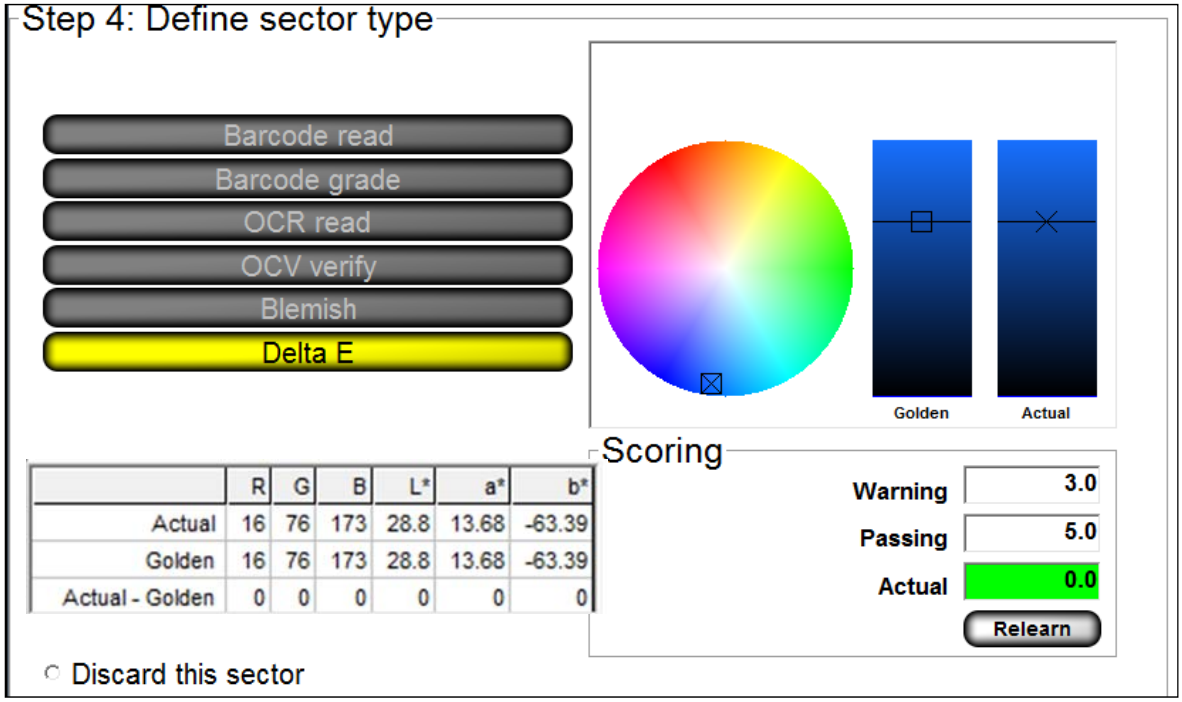


Sector Type 6: Delta E

The Delta E module detects color variations by comparing the trained color (also called the Golden color) to the image color currently displayed in the field of view. The Delta E module continuously calculates the average L*a*b* values of all the pixels within a sector according to CIE 2000 specifications. This sector type requires the use of a color camera.

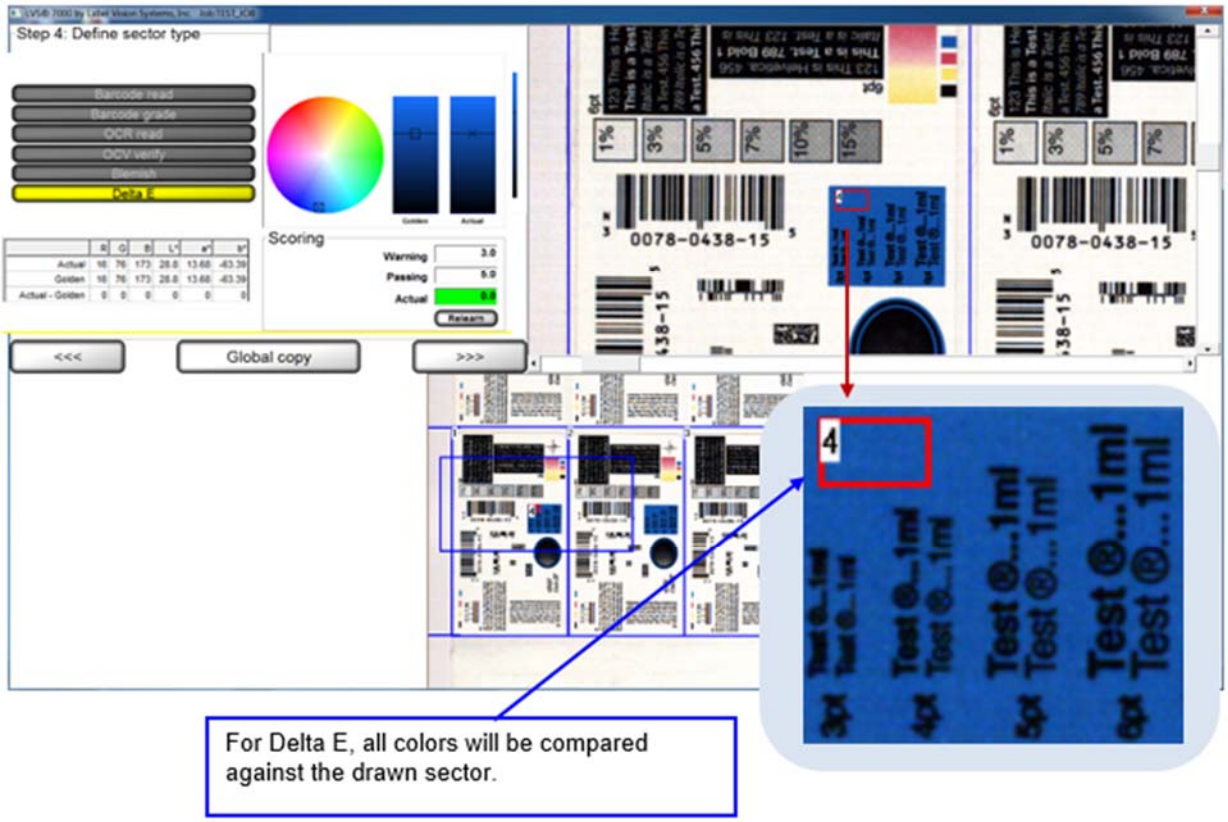
To use the Delta E sector type, follow the steps below.

1. Select “Delta E.” The Scoring box appears, allowing you to perform the following options (see below).



Warning	Indicates an early warning of diminishing quality in the color image. The operator must take action to improve the Delta E score. Minimum value is 0.0 and maximum value is 9.8 with one decimal place allowed.
Passing	Represents what Delta E grade is considered to “pass;” it is the maximum acceptable deviation of color. Any value higher than this setting is considered an error. Minimum value is 0.0 and maximum value is 9.8 with one decimal place allowed.
Actual	Represents the Delta E value calculated based on the currently measured L*a*b* value.
Relearn button	Click this button to re-train the Golden color image with the color image in the field of view. The web must be moving to use this option. **Note: Ctrl+L** is a keyboard shortcut for the **Relearn** button. After pressing **Ctrl+L**, the system will accept the next image it sees within each Blemish and Delta E sector and saves the image as the Golden image. This shortcut is available only when the system is in Run mode. **IMPORTANT:** After pressing Ctrl+L, a popup message will appear for users without administrative rights. The user must enter an administrator user name and password for the command to take effect. The golden image that is recorded is the image after the authorized user name and password is entered.

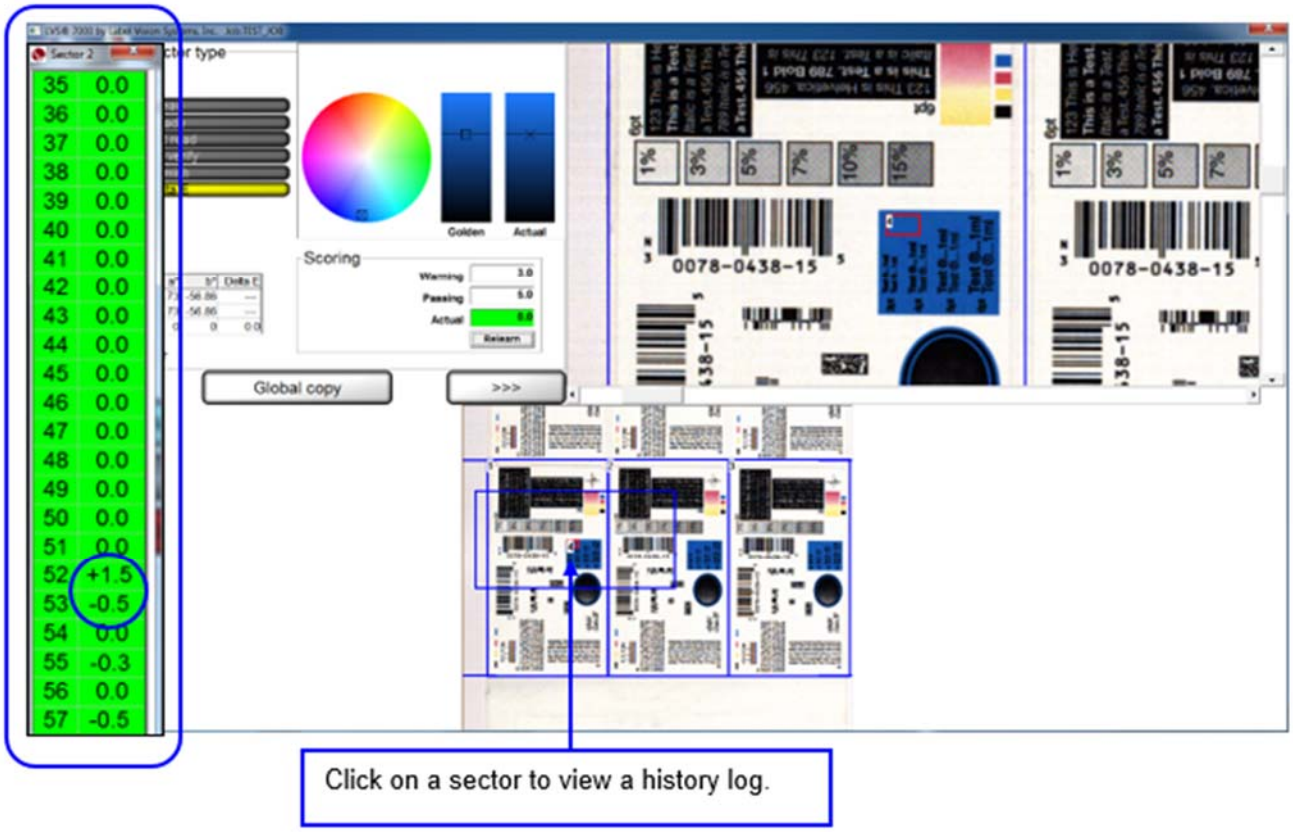
Important: When using the Delta E module, the sector drawn will be the color that all other colors are matched against (see below).



2. Click the **right arrow** button.

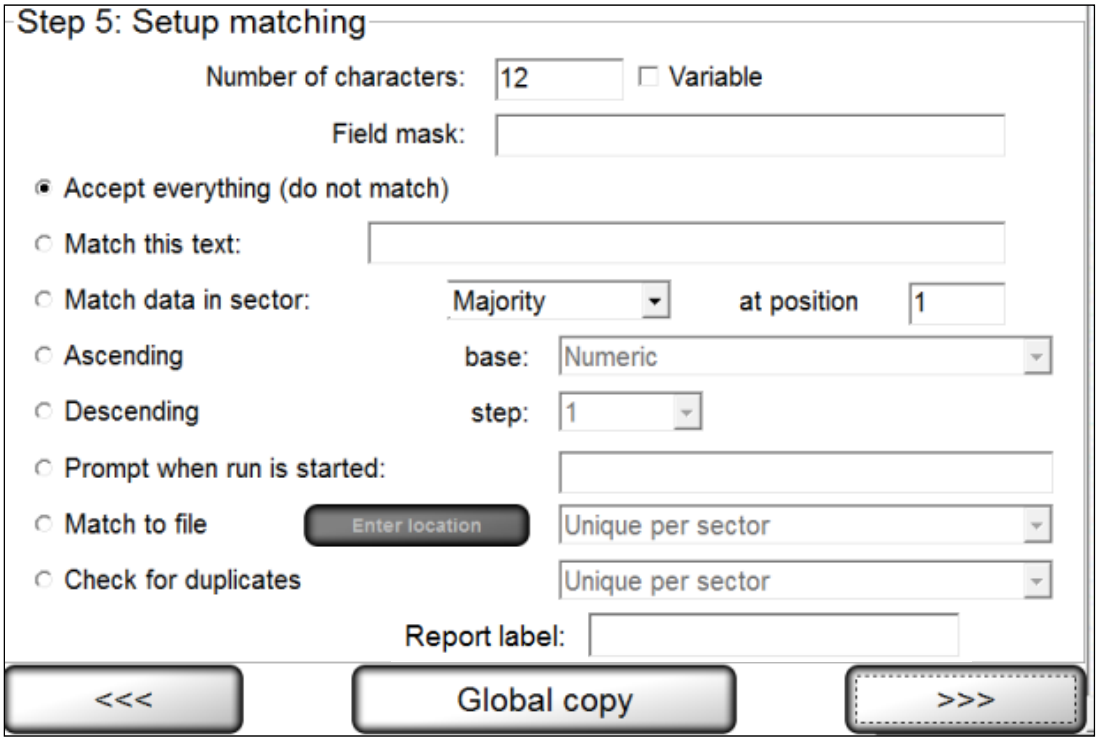
   Click on a sector to view a live history log which represents what the software is detecting inside the sector.

   - A plus sign (+) indicates a color lighter than the golden color.
   - A minus sign (-) indicates a color darker than the golden color.



Step 5: Setup Matching

Step 5: Setup Matching is used to set up sequential, matching or incremental information checking. This step does not apply to Blemish modules.



Complete the applicable fields and then click the **right arrow** button. Each field description is listed in the table below. The software reverts back to STEP 1 prompting you to set up another sector if desired. If another sector is not required, click the **right arrow** button and proceed with the next step.

Field	Description
Number of characters	Ensure the number of characters is correct for the string length or a “Wrong Length” error will constantly be encountered.
Field Mask	Teaches the sector what type of character to expect for each position within a string. There are three possibilities for each character: numeric (#), alphabetic (@), and alpha/numeric (*). Special characters can also be used by typing the exact character in the position where it will be present. The following informational format is to be used: Sample: = (AB)8C23 = (@@)*@## @ means 'A' to 'Z' * means 'A' to 'Z' or '0' to '9' # means '0' to '9' ( ) means ' (' and ') ' - Any characters that are not @ * # are assumed to be special characters. **IMPORTANT!** Do not include a space inside the mask. Also, OCR/OCV can handle up to 39 characters and an error will occur if there are more than 39 characters in the field mask box.
Accept everything (do not match)	If sequential or matching checking is not required, click the **Accept everything (do not match)** option and leave all other

Field	Description
	options on this page alone. This option will be grayed out when using OCV.
Match this text	To match a static (unchanging) number, select **Match this text** and enter the desired string into the text box.
Match data in sector	If you are using multiple sectors, you may wish to match the data in one sector to the data in another sector. To accomplish this, select **Match data in sector** and choose the desired sector from the drop-down list of previously trained sectors. The **Majority** feature looks at all sectors that are set to majority, takes the most popular result, and then matches the sectors to that popular result. The **At Position** feature tells the software where to start reading data within a sector. Take the string A1234 as an example, if you change **at position** to 3 then the software will only read 234. The **Global copy** feature will copy the logically located sector as compared to the original "From" and "To" sectors' positional relationship. Refer to the diagram below in the "Global Copy Diagram" section.
Ascending or Descending	When checking sequential data, you must select **Ascending** or **Descending**. • If the numbers are incrementing by a different amount, you can select the amount to increment in the **Step** list box. • If the sequence is a combination of alpha and numeric, then select the **Base** numbering system.
Prompt When Run is Started	When selected, this feature allows a "Match this text" string to be entered by the operator at the time of starting a run, allowing the "Match To" text to be changed without allowing job editing to that operator's permissions. When this option is selected the system will prompt at run time for the "Match to" string. Enter the string in the available text field. Note that each sector is labeled accordingly.
Match to File	This feature compares the data decoded within a sector to the data on a file created by the user. Options include: • Duplicates allowed – The system allows for repeated data within the same sector and/or file. • Unique per sector – The system does not allow any repeated data within the same sector and/or column within a file. • Unique per job – The system does not allow any repeated data within the same sector and/or file. See the **Match to File** section below for additional details about this feature. Click **Enter Location** to select the location of the file being matched.
Check for Duplicates	Checks data for any duplicates. Options include: • Unique per sector – The system does not allow any repeated data within the same sector.

Field	Description
	• Unique per job – The system does not allow any repeated data within the same sector or job/roll.
Report Label	Use this field to enter a report label, such as a name for the sector. The name entered in this field appears on the Summary Report and acts as a unique user-defined identifier of that particular sector. This field is not available for Blemish sectors.
Global Copy	Click the **Global copy** button to replicate the setting changes in the same sector across all labels.

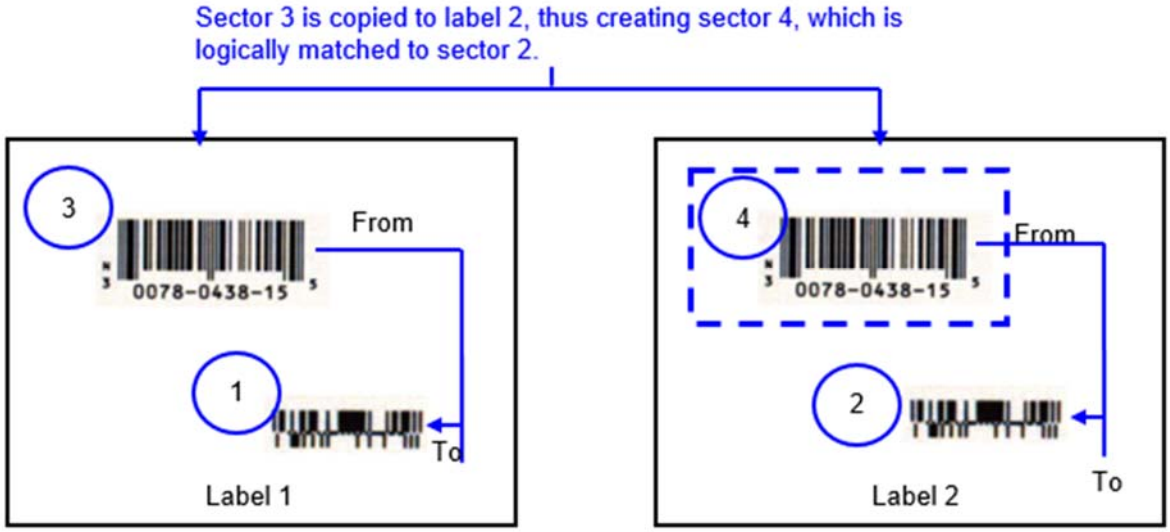
Global Copy Diagram

Labels BEFORE Global Copy

- In Label 1 below, sector 3 is matched to sector 1.
- In Label 2 below, there are no sectors matched to sector 2.

Labels AFTER Global Copy

- After sector 3 is copied to Label 2, sector 4 is created and matched to sector 2, which is the logically located sector as compared to the “From” and “To” sectors’ relationship in Label 1.



Match to File

This feature compares the data decoded within a sector to the data on a file created by the user. Note that the format of the file must be a comma-separated values (CSV) file.

Any number of sectors can be set to use “match to file”. If all “Match to file” sectors are marked as “Duplicates allowed”, the system will not be able to relocate within the data file if stopped during a run. This means the LVS-7000 is not able to automatically find its place within a run on a job if stopped and restarted. If this occurs, you must access your file and make the first number in the file be the first expected number in the camera’s field of view after pressing the run button. The associated hash files within the job heading must be deleted so they can be recompiled at run time.

> **IMPORTANT:** The “Match to file” feature has associated processing overhead; thus, it is recommended to review all your options and use the “Match to file” feature as a last resort.

You must create the file to “Match To” on a **per job basis**. Tools are not provided in the LVS-7000 software to accomplish this.

The format of the file must be as follows:

- The format of the file must be a comma-separated values (CSV) file.
- The order in which the data is stored is matched to the sector number in lowest to highest order that has been selected to “Match to file”.
- Headers are not allowed.

Example 1:

In the sample below, the LVS-7000 would expect to have two sectors per repeat that are “Matching to File”. The file would show that it expects only 11 repeats of the label. Neither sector is expected to have duplicates. Due to the processing overhead of “Matching to File”, the second sector could be set to perform a sequential check instead of “Matching to File”.

01111110, 11111110
01111117, 11111111
01111120, 11111112
01111142, 11111113
01111137, 11111114
01111101, 11111115
01111129, 11111116
01111138, 11111117
01111199, 11111118
01111172, 11111119
01111122, 11111120

Example 2:

In this sample, the LVS-7000 would expect to have two sectors per label repeat that are “Matching to File”. As with the above sector, only 11 repeats of the label are expected; however, this sector has duplicates. The LVS-7000 has processing penalties for “Matching to File”. Thus, with this example, it would be more cost effective to match only the first sector to a file, as the second sector can be set to a fixed match string without the extra processing required.

01111110, 11111110
01111117, 11111110

01111120, 11111110
01111142, 11111110
01111137, 11111110
01111101, 11111110
01111129, 11111110
01111138, 11111110
01111199, 11111110
01111172, 11111110
01111122, 11111110

Step 6: Alarm Matrix

The “Step 6: Alarm Matrix” screen has two different modes, depending on your setting in the LVS7000.ini file.

- The “Alarm Matrix: Error Condition View” (Figure 1) is the default configuration and displays error-specific I/O information. If using this configuration, see the “Alarm Matrix: Error Condition View” section below.

  This view is configured in the LVS7000.ini file > [Alarm matrix] section > UsePassFailMethod=0 (default setting).
- The “Alarm Matrix: Pass/Fail View” (Figure 2) is I/O based on the pass or fail status of the entire inspection. If using this configuration, see the “Error Condition: Pass/Fail View” section below.

  This view is configured in the LVS7000.ini file > [Alarm matrix] section > UsePassFailMethod=1.

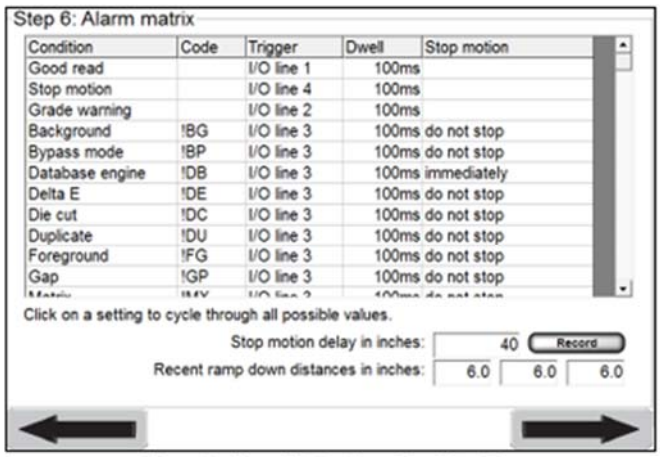


Figure 1: Alarm Matrix: Error Condition View

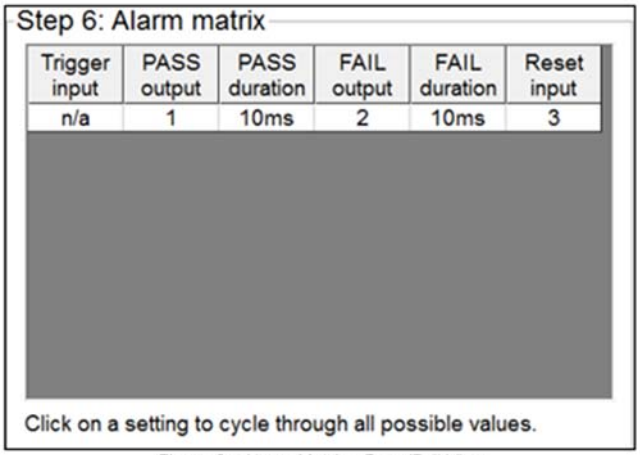
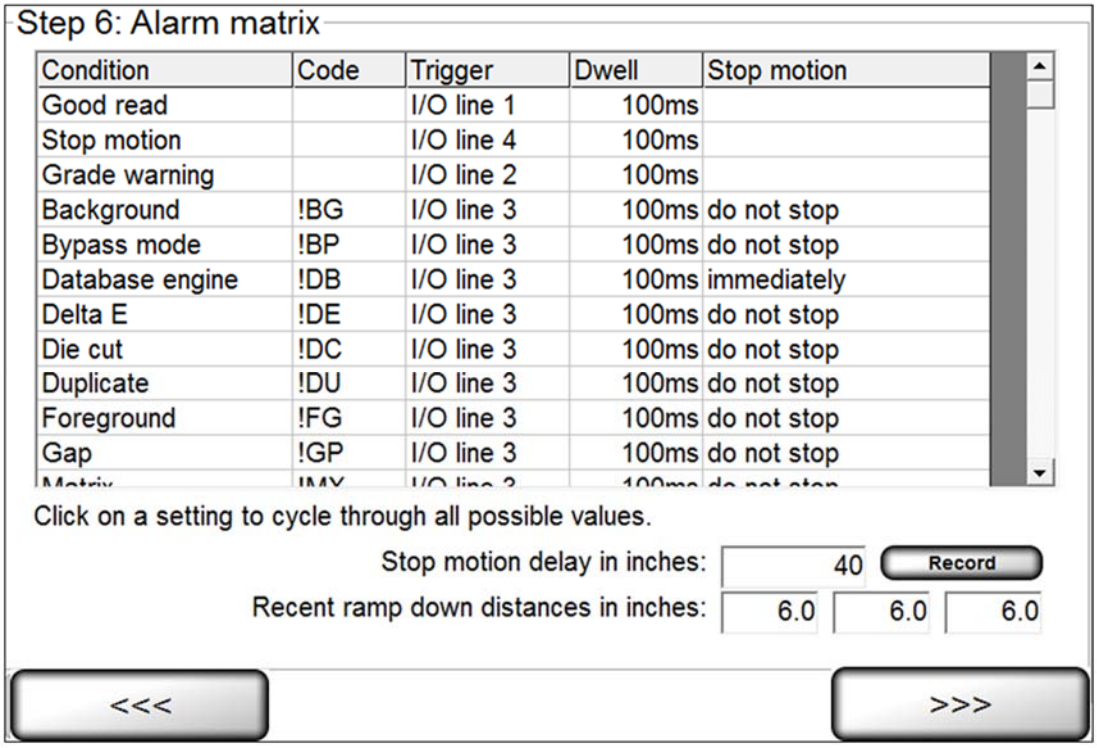


Figure 2: Alarm Matrix: Pass/Fail View

Alarm Matrix: Error Condition View

After all sectors have been established, you are prompted to determine an error condition. See the section below entitled “Error Conditions” for more information.



Condition	Code	Trigger	Dwell	Stop motion
Good read		I/O line 1	100ms	
Stop motion		I/O line 4	100ms	
Grade warning		I/O line 2	100ms	
Background	!BG	I/O line 3	100ms	do not stop
Bypass mode	!BP	I/O line 3	100ms	do not stop
Database engine	!DB	I/O line 3	100ms	immediately
Delta E	!DE	I/O line 3	100ms	do not stop
Die cut	!DC	I/O line 3	100ms	do not stop
Duplicate	!DU	I/O line 3	100ms	do not stop
Foreground	!FG	I/O line 3	100ms	do not stop
Gap	!GP	I/O line 3	100ms	do not stop

Depending on the supplied hardware, the following relay outputs can be triggered by any of the listed error conditions:

Line 1	Connected to the green light indicating a “good read.” It is not connected to a relay
Line 2	Connected to the yellow light. It is not connected to a relay
Line 3	Connected to the red light and a relay
Line 4	Connected to the Stop Motion relay

The five columns on this screen are listed below:

Column	Description
Condition	Lists the various error conditions that the system can detect.
Code	Lists the abbreviation of the error conditions detected by the system and used throughout the final reports. See the Troubleshooting section for more information on error codes.
Trigger	Lists any of the 4 Input/Output lines. Any listed error condition can be trained to activate any I/O line by clicking on the appropriate row box; this will change the path to another line. You can also choose “None”.
Dwell	Lists the duration of the output signal. You can choose from “10 ms” to “hold”.
Stop Motion	States when to activate the “Stop Motion” error condition. You can choose to stop immediately or to not stop at all. Or, you can choose to stop after a certain number of errors occur contiguously (from 1 to 10 errors in a row).

Additional options include:

Stop Motion Delay in Inches	This is a set distance that the LVS-7000 will output the stop motion signal. It has a minimum of 40” beyond where the read head is looking. This is used for precision placement of found errors and may increase if a high processing workload is present.
Record button	Clicking this button records the rewinder activity and saves the findings to the LVS7000.ini file.
Recent ramp down distances in inches	These distances are used for setup and troubleshooting; they indicate how long it took the press/rewinder to stop after the stop motion signal was given. **Example 1:** The stop motion was output at 250 fpm (feet per minute) and the following ramp down distances occurred: • Ramp down = 20 • Ramp down = 20.5 • Ramp down = 19.5 The above example shows a one inch (1”) variance in stop distance. **Example 2:** The stop motion was output at 500 fpm and the following ramp down distances occurred: • Ramp down = 35 • Ramp down = 40 • Ramp down = 45 The above example shows an increase in variances, as well as taking longer to stop. This is an example of a rewinder that does not deal with variable speed stopping.

Error Code Definitions

Error Code		Definition
N/A	Good Read	When the system is triggered, the camera takes a picture of the label. The system reads all sectors within the image and compares to the associated sector data in the datafile. All sectors match. The system logs to the report the data read from each sector with no error codes attached.
N/A	Stop Motion	This output is used as a special I/O that is sent at a fixed distance beyond the located error. It is used for machines that have accurate error placement capabilities.
N/A	Grade Warning	This output is used most commonly for the yellow light. It is triggered in conjunction with !QU (quality errors). When something fall into the quality warning zone this output is activated.
!BG	Background	This is a blemish error. The background is defined in the blemish sector setup. This means it is in the background portion of the sector.
!DC	Die Cut	Die Cut checks the print as compared to the outside edge of the label to track how much it moves.
!DE	Delta E	Represents a Delta E error which occurs when the color measured deviates too far from the predetermined Golden color threshold. Delta E settings are defined in the “Sector Type 8: Delta E” section.

Error Code		Definition
!DU	Duplicate	A !DU appears when the character string has been read before in the job that you are running. The Check for Duplicates option in the Matching screen will enable this error.
!FG	Foreground	This is a blemish error. The foreground (!FG) is defined in the blemish sector setup. This means it is in the foreground portion of the sector.
!GP	Gap	When the system is triggered, the camera takes a picture of the label. The system does not read any of the sectors within that image. The system does not continue to increment the next expected record within the datafile. The system logs to the report the !GP error code to the associated data.
!MX	Matrix	Matrix searches the areas between labels for unstripped waste.
MM!	Mismatch	When the system is triggered, the camera takes a picture of the label. The system reads all sectors within the image and compares to the associated Job/Sector data in the datafile. One or more sectors do not match to what the Job/Sector settings dictate that it should be. The system logs to the report the data read from each sector attaching the MM! error code to the associated sector's data. **Note:** Mismatch only applies when comparing the data to a match source. If running a Sequential type match, then a Mismatch error will be reported as a Sequence error.
!NA	Not Assessed	The incoming data is not being assessed due to a separate error.
!NS	Not Synced	The system has lost synchronization, and is therefore not processing any data outside of looking for a re-sync lock. It will auto log this run portion as “requested to splice”
!NR	No Read	When the system is triggered, the camera takes a picture of the label. The system does not read/decode one or more sectors within the image. The system compares to the associated Job/Sector data in the datafile. The system logs to the report the data read from each sector attaching the !NR error code to the associated sectors' data.
!QU	Quality	When the system is triggered, the camera takes a picture of the label. The system reads all sectors within the image. The system compares to the associated Job/Sector settings in the data file. If one or more characters/barcodes within a sector are found to be outside the pre-determined acceptable quality threshold, then the repeat is marked as an error and displayed in red in the log file. The actual score is appended to the end of the read data.
!RG	Range	The associated datafile is loaded the system then reads the first and last record in the sequential datafile. The system stores these values. When the system is triggered the camera takes a picture of the label. The system reads all sectors within the image. The system compares to the associated record in the datafile. Not only did the record not match the datafile, but it was also out of the range of numbers that the datafile contains. The system logs to the report the data read from each sector attaching the !RG error code to the associated sector's data.
!SQ	Sequence	When the system is triggered, the camera takes a picture of the label. The system reads all sectors within the image. The system compares to the associated Job/Sector in the datafile. One or more sectors are found to be

Error Code		Definition
		out of numerical sequence as compared to the associated record in the datafile. The system logs to the report the data read from each sector attaching the !SQ error code to the associated sector's data. **Note:** Sequence only applies when comparing the data to a know sequence of numbers. If running a Mismatch type match, then an error in Sequence will be reported as a Mismatch error.
!WL	Wrong Length	When the system is triggered, the camera takes a picture of the label. The system reads all sectors within the image. The system compares to the associated Job/Sector data in the datafile. One or more sectors do not match to the specified length of the character string that the Job/Sector settings dictate that it should be. The system logs to the report the data read from each sector attaching the !WL error code to the associated sector's data.

With the exception of **Good Read**, all above error conditions can be made to trigger the Stop Motion Relay immediately, or after a predetermined number of consecutive errors.

Common Causes for Error Conditions

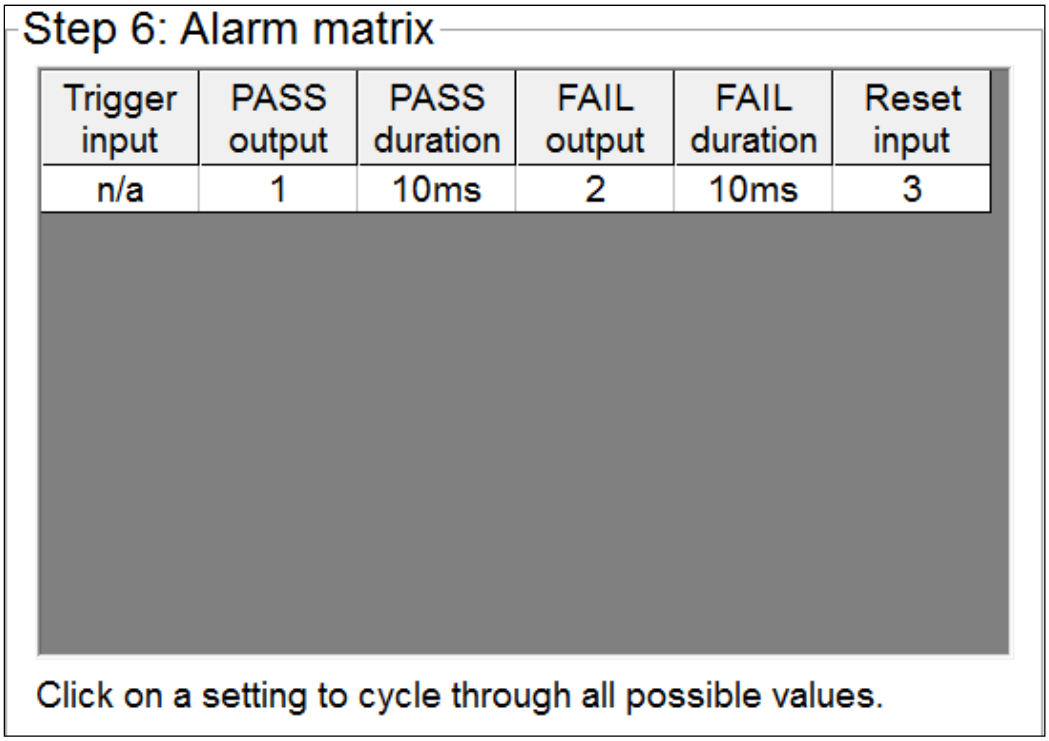
Error Condition	Possible Cause
Mismatch	The data read did not match to what was expected to be read. This can be caused by poor quality of print causing the system to identify one or more characters as good quality, yet still incorrect. It could also be caused by a character being gone. Either not printed, or somehow has gone outside the sector borders within the image.
No Read	The data within a sector was not read at all. This can be caused by missing print, poor contrast of print, or the expected data was outside of the sector borders within the image.
Quality	The character(s) within a string do not qualify to the standard entered into the OCV Threshold, or the barcode grade is not above the minimal passing score allowed. This can be caused by missing character portions, bad line definition of characters, or stretched/skewed characters, or any of the ISO/ANSI barcode grading parameters being below the acceptable level entered in the “PASS if ACTUAL >=” sector setting parameters.
Sequence	The data does not match to the previous number +/- one. This is most often caused be a miscommunication that causes one or more numbers within a sequence to be skipped or repeated, an unconnected RS-232 cable, or user error on starting number.
Range	The read number is larger or smaller than the file covers. This is usually caused by the incorrect data file being loaded to compare to.
GAP	No data was discernible in any sector. Most common causes are blank media coming through the line, or an erroneous triggering mechanism.
Wrong Length	For barcode reading the code has too many/few characters encoded. This could be from the incorrect code being printed, or the trained in length for the job was incorrectly set. For OCR/OCV characters the same conditions apply, with the addition of the possibility of characters being broken or touching. If a broken character is seen then one character will become two. If two characters are touching they will become one combined character. Also be

Error Condition	Possible Cause
	sure that no characters are touching the sector box. The system will ignore any characters that touch the sector box.
Not Assessed	Rewinder/Printer is going faster than what the Camera and PC can handle. LinesperInch or Camera MaxSpeed may be incorrectly set in the “Settings” menu (these settings must be changed by Omron Microscan only).
Duplicate	Character string has previously been seen in this job.

Alarm Matrix: Pass/Fail View

The Alarm Matrix Pass/Fail view displays the pass/fail status of the entire inspection. Click on a setting to cycle through all possible values. Each setting is described in the table below.

The Alarm Matrix Pass/Fail view is configured in the LVS7000.ini file > [Alarm matrix] section > UsePassFailMethod=1.



Setting	Description
Trigger input	This feature is currently unavailable.
PASS output	If the inspection passes, it will output on the specified I/O line for the specified duration.
PASS duration	The dwell time of the PASS output.
FAIL output	If any sector in the inspection fails for any reason, it will output a FAIL output on the specified channel for the specified duration.
FAIL duration	The dwell time of the FAIL output.
Reset input	If a pulse is detected on this channel, all outputs are deactivated.

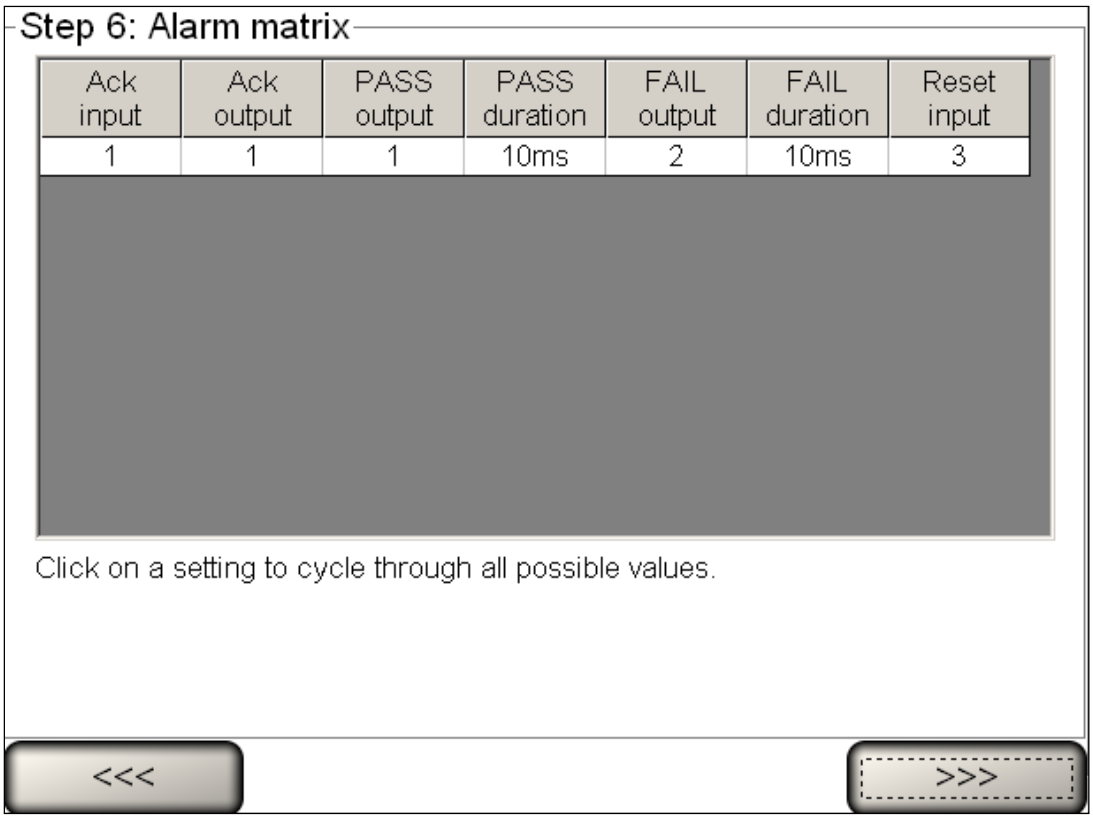
Below is a graphical representation of the Alarm Matrix Pass/Fail view settings:

	Repeat 1	**Repeat 2**	**Repeat 3**	**Repeat 4**	**Repeat 5**	**Repeat 6**	**Repeat 7**
Overall Inspection Results for Repeat Number	PASS	FAIL	PASS	PASS	PASS	FAIL	PASS
PASS Output	On	Off	On	On	On	Off	On
FAIL Output	Off	On	Off	Off	Off	On	Off

Within the Alarm Matrix Pass/Fail view, additional functionality is available when the following settings are enabled in the LVS7000.ini file: **UsePassFailMethod=1** and **UseAcknowledgementIO=1**. Example:

```
[Alarm matrix]
UseAcknowledgementIO=1
UsePassFailMethod=1
```

When the above settings are enabled, the Alarm Matrix appears as shown below.



Each column is described in the following table:

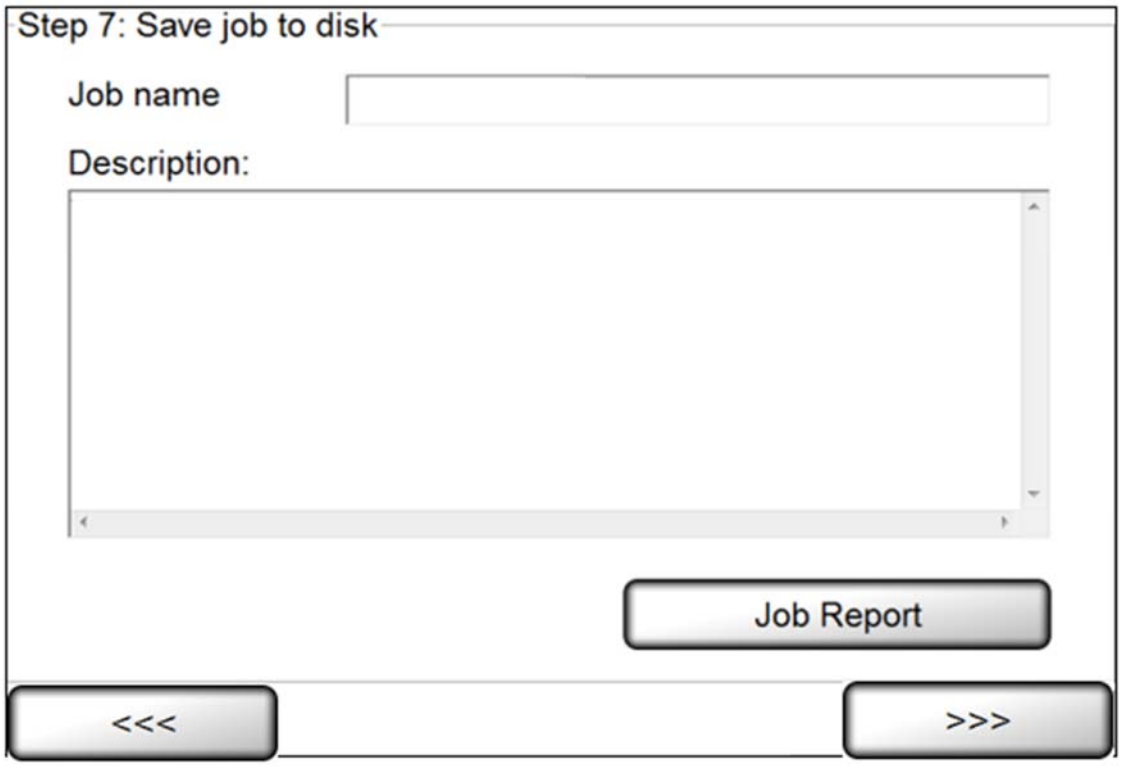
Setting	Description
Ack Input	This input is a request for the LVS-7000 to indicate the Ack Output channel and current run status.
Ack Output	This output is activated as long as the following conditions are met: • The Ack Input is active • The printer is printing • The LVS-7000 is actively inspecting (that is, the “Start New Run” button has been clicked on the “Operate: Running the Job” screen)
PASS Output	If the inspection passes, it will output on the specified I/O line for the specified duration.
PASS Duration	The dwell time of the PASS output.
FAIL Output	If any sector in the inspection fails for any reason, it will trigger a FAIL output on the specified channel for the specified duration. The PASS Output will be deactivated automatically once a fail is triggered. Additionally, once a fail has been triggered, every subsequent inspection will trigger a FAIL Output until reset is triggered. Even if the subsequent inspection passes, only the FAIL Output will be triggered until a Reset Input signal is detected.
FAIL Duration	The dwell time of the FAIL output.
Reset Input	If a pulse is detected on this channel, all outputs are deactivated and the Pass Output is enabled again.

Below is a graphical representation of the Alarm Matrix Pass/Fail view settings when **UsePassFailMethod=1** and **UseAcknowledgementIO=1** are set in the LVS7000.ini file.

	Repeat 1	**Repeat 2**	**Repeat 3**	**Repeat 4**	**Repeat 5**	**Repeat 6**	**Repeat 7**
Overall Inspection Results for Repeat Number	PASS	FAIL	PASS	PASS	PASS	FAIL	PASS
PASS Output	On	Off	Off	On	On	Off	Off
FAIL Output	Off	On	On	Off	Off	On	On
Reset Input	Off	Off	Off	On	Off	Off	Off

Step 7: Save Job to Disk

1. Enter a job name in the **Job Name** field; this saves the current setup.

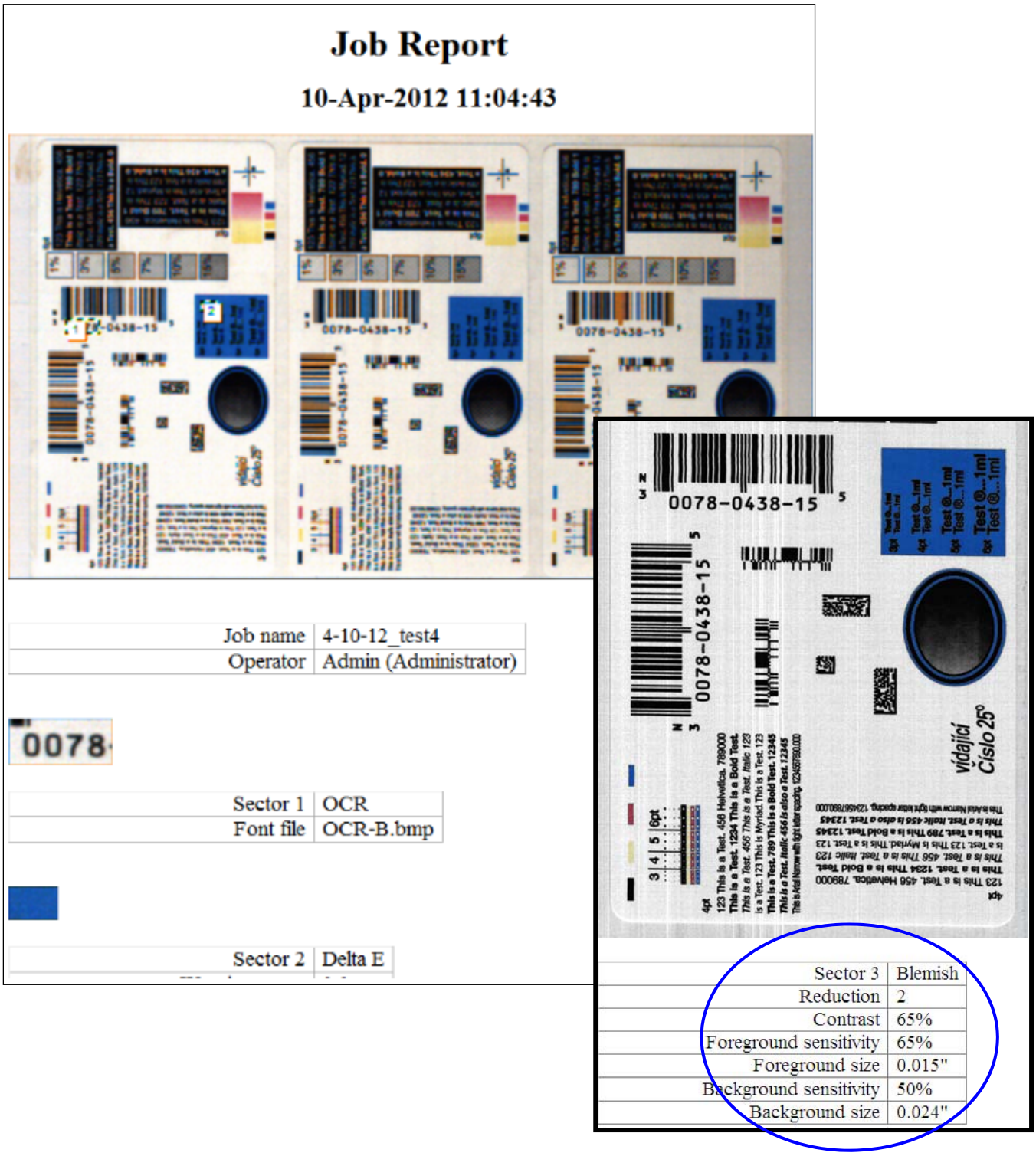


2. If desired, enter a description or additional job details in the **Description** field.
3. If desired, click the **Job Report** button to generate an LVS-7000 Job Report which shows the settings for all created sectors. See the next section entitled “LVS-7000 Job Report” for more information on the Job Report.
4. Click **Next**. The **Ready to Run** screen appears. See the section **Operate Screen: Ready to Run** for more information on this step.

LVS-7000 Job Report

The LVS-7000 Job Report shows the settings for all created sectors.

The LVS-7000 Job Report appears only in Internet Explorer or Firefox web browsers; no other web browser is supported.



Job Report

10-Apr-2012 11:04:43

Job name	4-10-12_test4
Operator	Admin (Administrator)

Sector 1	OCR
Font file	OCR-B.bmp

Sector 2	Delta E

Sector 3	Blemish
Reduction	2
Contrast	65%
Foreground sensitivity	65%
Foreground size	0.015"
Background sensitivity	50%
Background size	0.024"

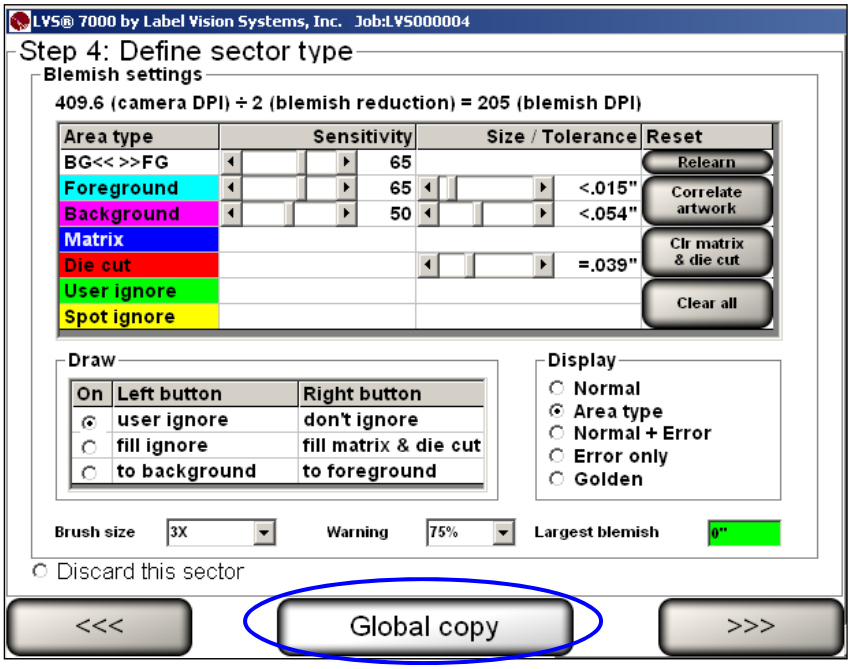
Global Copy

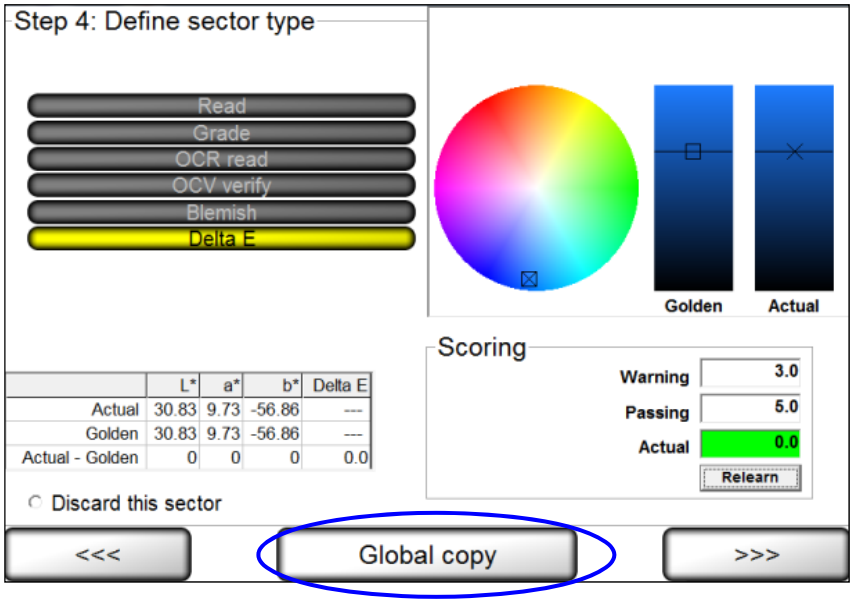
The Global Copy feature allows you to replicate the setting changes in the same sector across all labels. Global copy works with Automatic or Manual setup.

Location of Global Copy Button

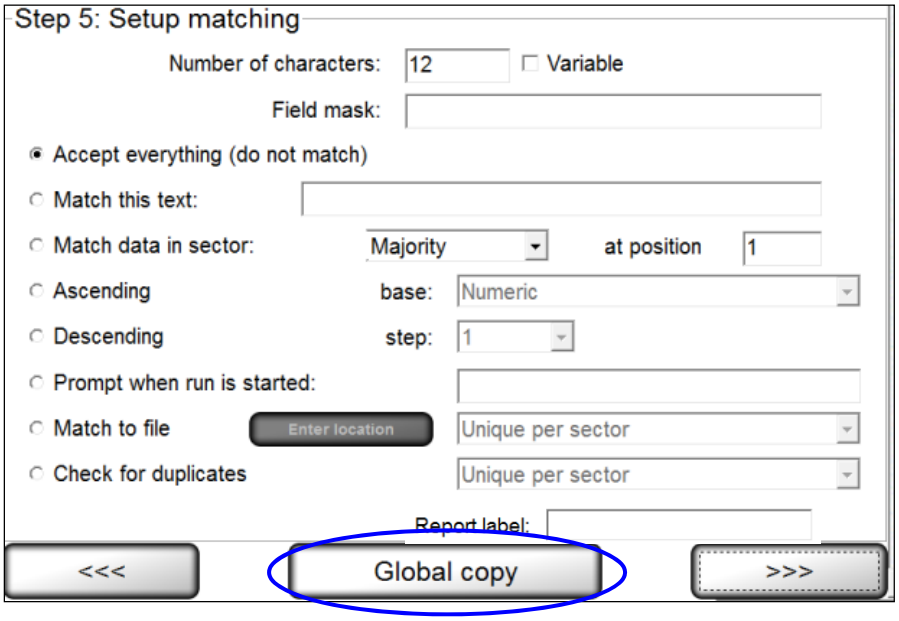
The “Global Copy” button is visible on the following screens:

- When using the **Blemish** and **Delta E** sector types, the **Global copy** button is visible on the “Step 4: Define Sector Type” screen (see below).





For all sector types other than **Blemish** and **Delta E**, the **Global copy** button is visible on the "Step 5: Setup Matching" screen (see below).



Global Copy Requirements

The Global copy button appears only if:

- There is more than one label per repeat.
- There are at least two sectors.
- There is at least one pair of comparable sectors (same sectors in different lanes)
- The user is on the final step of setting up the sector type.

To define comparable sectors (the same sectors in different lanes), the sectors must:

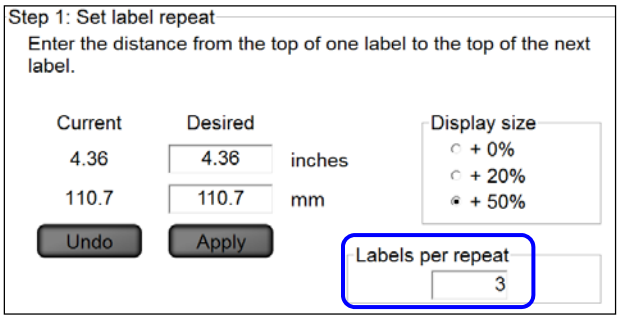
- Have the same sector type (such as Barcode Read, etc)
- Have the same width (within 20 pixels)
- Have the same height (within 20 pixels)
- Have the same distance from the top of the label (within 20 pixels).

Note: A simple solution to meet the above requirements is to copy and paste the first sector to the second sector. See the "Copy an Entire Sector" section (within the "Step 3: Create Sectors" section) for steps on copying sectors.

Use Global Copy to Add Sectors to All Labels Across the Screen

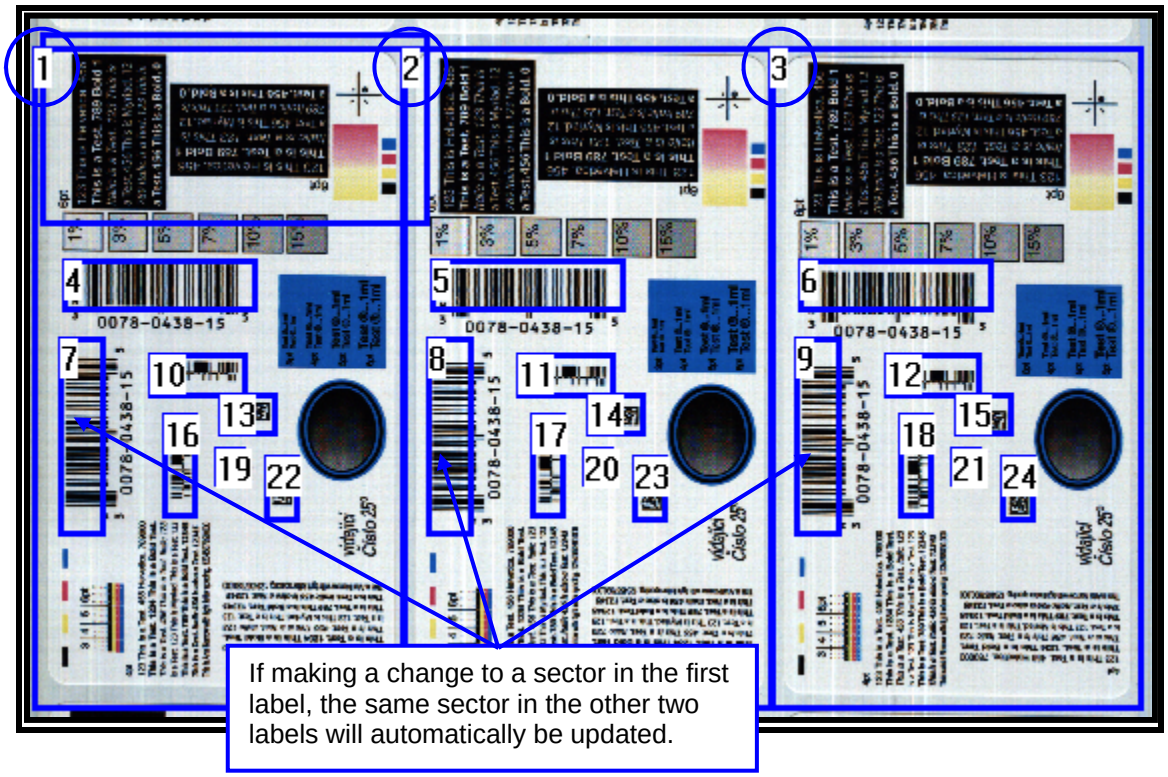
1. Create a sector in the left-most lane.
2. Click the **Global Copy** button.
3. A new sector is created with matching parameters of the first sector.

The LVS-7000 only creates the number of labels defined in the "Labels per repeat" field on the "Step 1: Set label repeat" screen (see below).



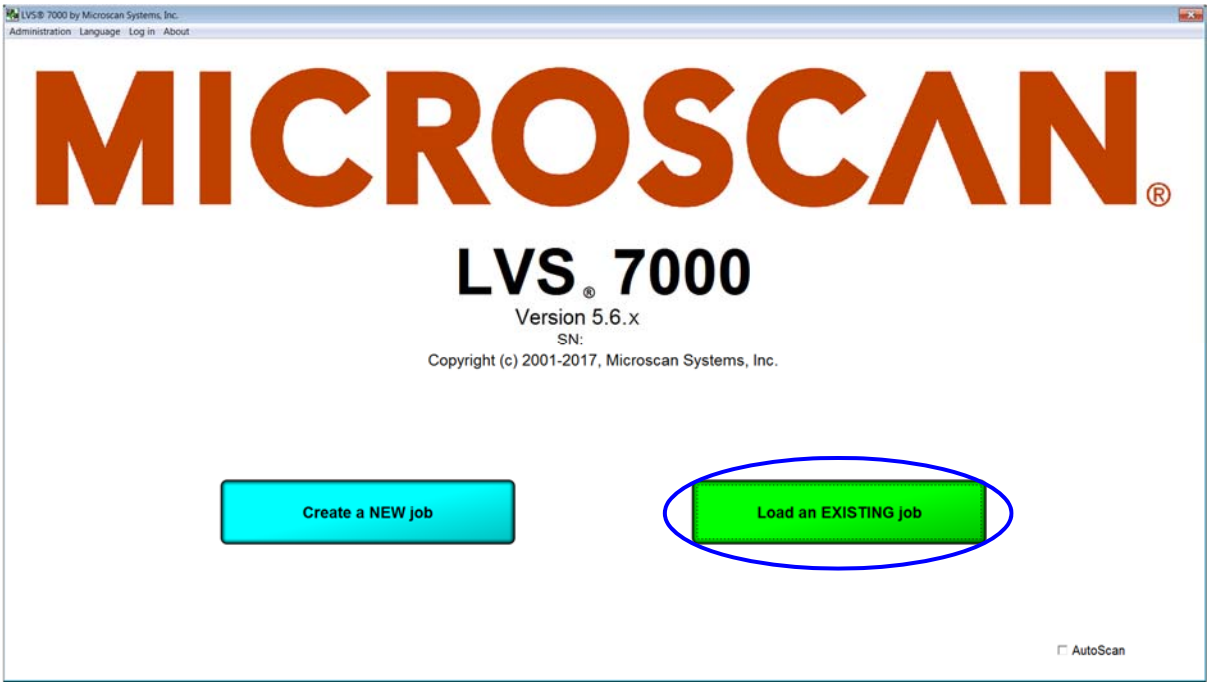
Use Global Copy to Edit Sectors

The example below displays three blemish sectors (1, 2 and 3). The Global copy feature allows you to make the same change to all three sectors without making the changes to each sector individually,



Load an Existing Job

1. To load an existing job, click **"Load an EXISTING job"** on the Welcome screen.



2. A list of existing jobs appears. Each column is described in the table below.

To select a file, double-click it. To cancel, click the red X on the upper right of this window.

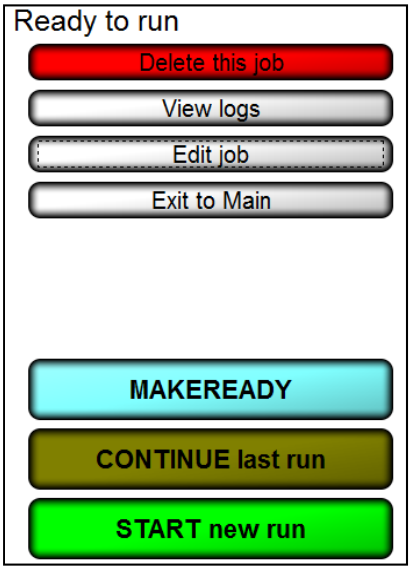
Job file	Description	Job file date	Last run file	Last run file date
B1		11-Jan-2007 18:32:38	13	11-Jan-2007 18:49:08
Blemish 9.4 inch FOV		12-Jan-2007 10:50:36	22	12-Jan-2007 10:52:51
Debug		11-Jan-2007 14:41:08	3	11-Jan-2007 14:42:08
Double Blemish 15 on		12-Jan-2007 14:54:36	3	12-Jan-2007 15:43:19
OneBlemish		11-Jan-2007 09:32:37	7	11-Jan-2007 09:54:12

Column	Description
Job file	List of the job file names.
Description	Description of each job file.
Job file date	The date the job file was created.
Last run file	Highest run number in the existing job.
Last run file date	Last run file date for the job.

3. Choose the job you want by double-clicking the job name.
4. You can sort by any column by clicking on the column header.
5. The **Ready to Run** screen appears with the same job parameters that were originally set for that job.
6. See the next section entitled **Operate Screen: Ready to Run** for further steps.

Operate Screen: Ready to Run

Each button on the **Operate Screen** (**Ready to Run)** is described in the table below.



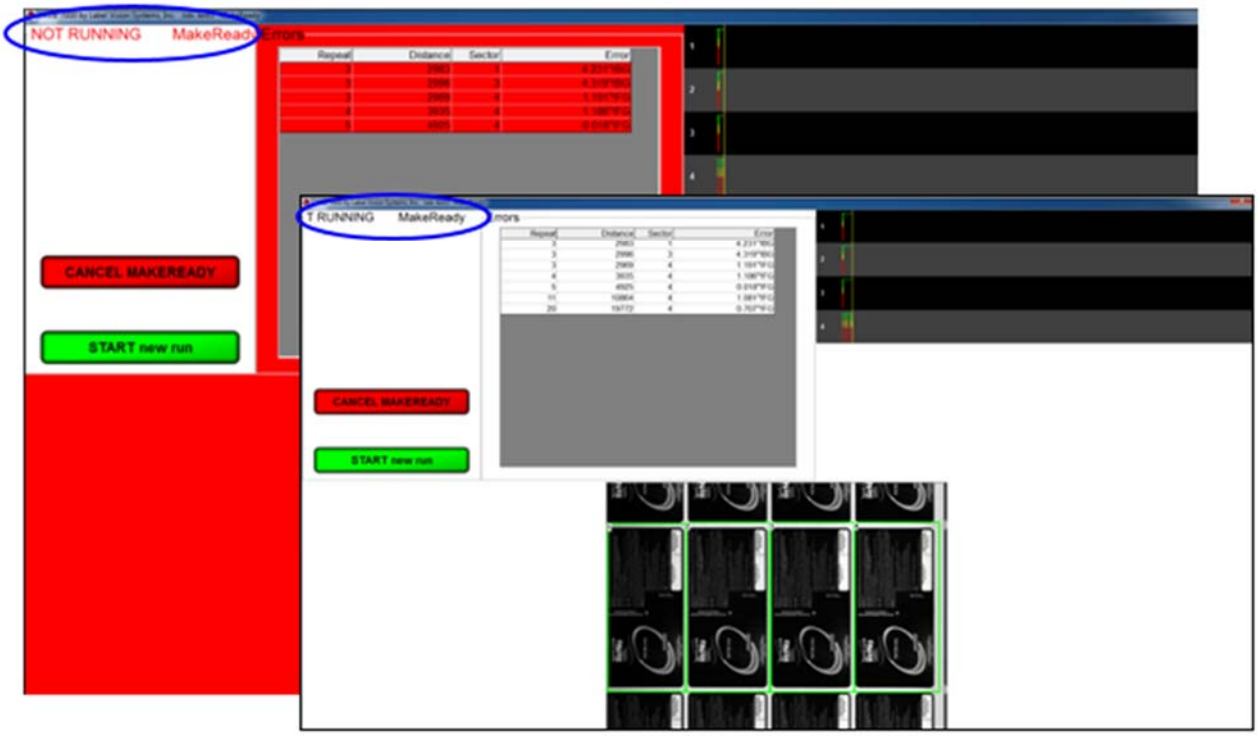
Button	Description
Delete This Job	Click to delete the job. Only operators who are granted the **Allow Create NEW Job** permission is allowed to delete a job. Refer to the **Permissions** section, within the **Operators** section, for more information on permissions.
View Logs	A Report Log is created for every job. Click this button to view all previous Reports. (See the Reports chapter for more information on reports.)
Edit Job	Click to change the current job settings. If a password was used, you must enter the correct password for the job. Only operators who are granted the **Allow Create NEW Job** permission is allowed to edit a job. Refer to the **Permissions** section, within the **Operators** section, for more information on permissions.
Exit to Main	Click to change to a previously set up job; this will bring you back to the Welcome Screen where you may select **Load a Job**.
Make Ready	Make Ready operates exactly as if the system were running normally with the exception that no data is stored and no I/O is triggered. See the section below titled “Make Ready Mode” for more information.
Continue Last Run	Select this option if you desire to append to the most recent run’s CSV file.
Start New Run	Click to begin a new run and new CSV file.

Make Ready Mode

Clicking the “MakeReady” button allows an operator to:

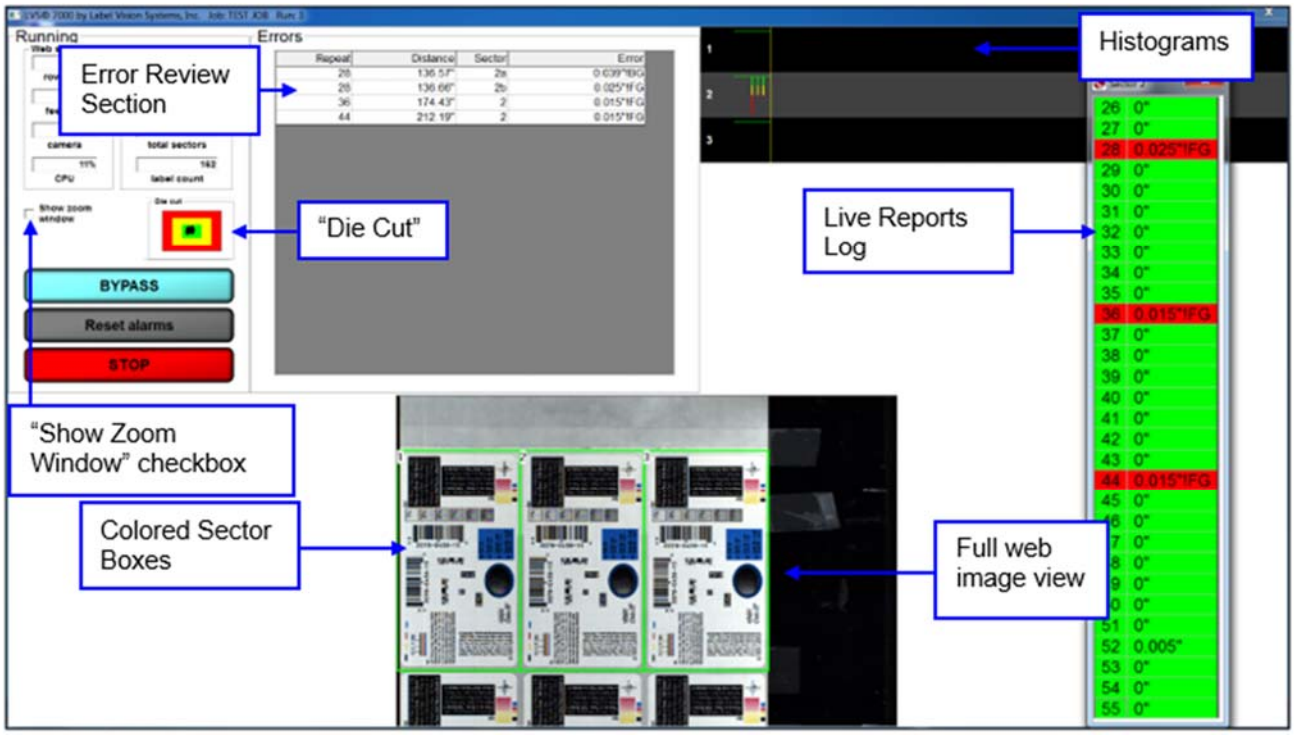
- Simulate how inspections will perform
- Simulate how the job created will work in live setting
- Test any changes made
- Test the system without triggering any output signals that might affect the rewinder/thermal printer

After clicking the “MakeReady” button, the screen flashes between red and white (see below) and the words “NOT RUNNING / Make Ready” scroll across the top, left corner of the screen indicating the system is in MakeReady mode.



Operate Screen: Running the Job

The **Operate Screen (Running the Job)** is typically what you monitor at all times. The features on this screen are described in the table below:

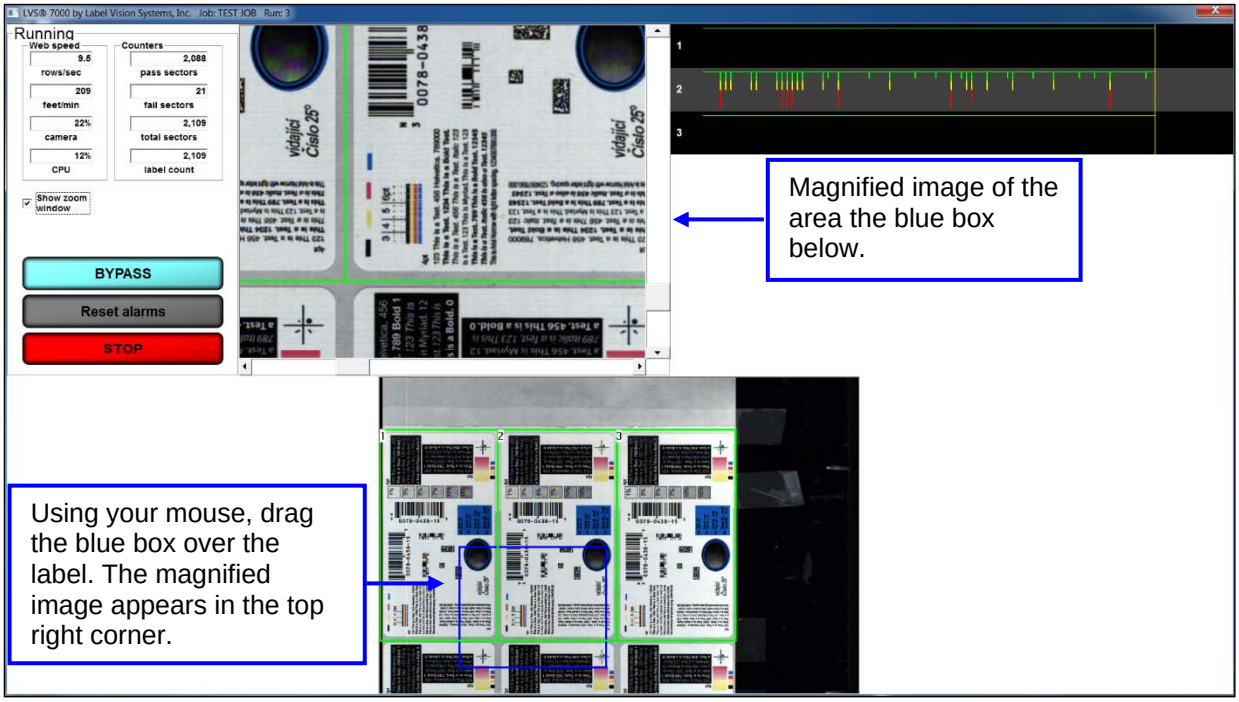


Field	Description
Web Speed	This gives the operator how many rows per second are being analyzed, as well as how many inches per second the printer is traveling. This calculation is based upon the Label Repeat data entered in Step 1.
Counters	There are two conditions being counted: All "passed" sectors and all "failed" sectors. These two conditions are totaled at the bottom of this column.
Camera	Shows a percentage of the Camera Speed. A warning message will pop-up if the speed is too high.
CPU	Shows the CPU Usage. A warning message appears if the CPU usage is too high.
Die Cut	The Die Cut is tracked for movement from the original position; this is in the green center. Movement is visually depicted by the moving black dot away from dead center. Movement in the yellow is ok as it is inside the set allowable movement. Movement out to the red zone will cause a !DC (Die Cut) error.
Reset Alarms	On the Alarm matrix, there is a "hold" function if/when an error occurs; this is indicated by the term "Hold" appearing in the "Dwell" column on the Alarm matrix. The **Reset Alarms** button releases the error condition and is visible only when the "Hold" function is activated in the Alarm matrix.
Stop	Press the **Stop** button to stop the inspection.
Error Display	This is a very helpful feature for the operator to analyze only the errors as they happen. Or, the operator may choose to study one error condition at a time. This feature is activated by clicking on the error. This causes the software to show an image of the next error as superimposed thumbnail images. The process of showing this error image can be performed while the system is in the Operate condition. A series of error images are stored in the log file of each job. Thumbnails

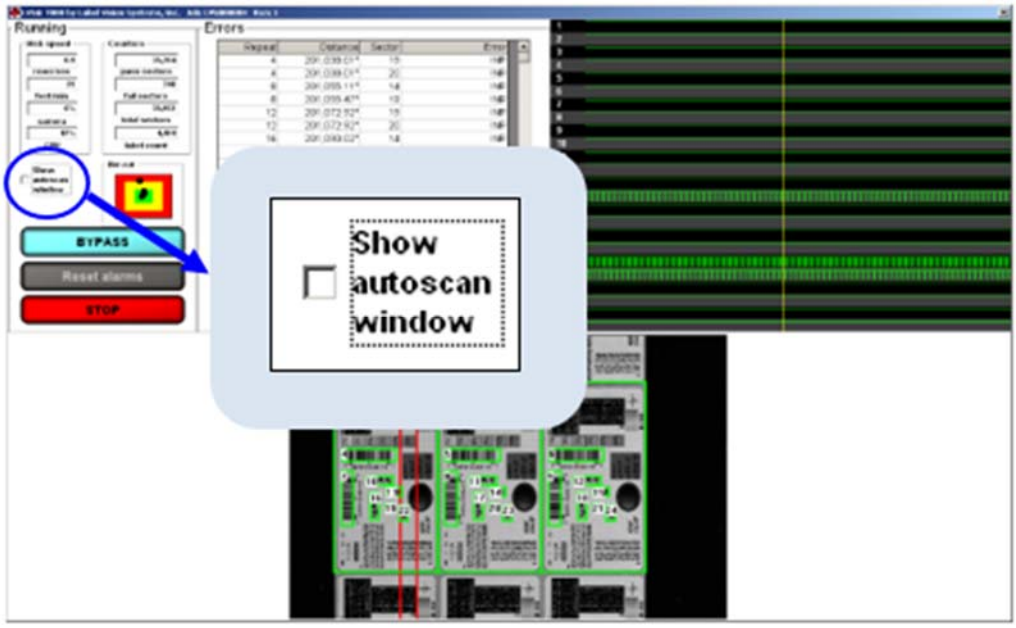
Field	Description
	of the actual errors can be viewed “offline”. See the **Error Display** section below for more information.
Full Web Image	The image at the bottom of the Operate Screen is the entire field of view and will update up to 10 images per second as the printer is running.
Live Reports Log	A log will appear overlaid onto the Operate Screen when the operator clicks inside a sector. This log represents what the software sees inside this sector. • A green box indicates a good read. • A red box indicates an error condition has occurred. This log can be moved to any position on the Operate Screen by left click and hold at the very top of the log screen. To get a *freeze frame* of this box click on any other non-sector part of the image. This will cause the box to stop updating. To resume the update, just click in the desired sector. Close by clicking the red X (Close) box in the top right corner.
Histograms	At the top of the Operate Screen is a section for displaying a histogram for every error condition the software is trained to analyze. It is color coded. • Green is “good’ • Red is “bad” Each sector “Type” will have its own graph. All sectors of a given type will be displayed within the graph designated for that “Type”.

Show Zoom Window

Check the “Show Zoom Window” box to view a magnified image of the label. After checking this box, a blue box appears in the full web image view. Use your mouse to move the blue box over any portion of the label, and then a magnified image appears in the top right corner of the screen.



Note: The name of this checkbox will display “Show AutoScan Window” for systems running the AutoScan program. Refer to “Appendix F: AutoScan” for more information on the AutoScan program.



Bypass Button

Click the “Bypass” button to suspend any outputs (such as the stop motion signal) from the LVS-7000.

The screen flashes between yellow and white when activated in the settings (ShowStatusAlert =1), and the word “Bypass” scrolls across the top, left corner of the screen indicating the system is in Bypass mode. All repeats during Bypass appear in pink in the Reports\QC File Viewer.

IMPORTANT: The **DontProcessDuringBypass** setting (within the [System] section) in the LVS7000.ini file allows you to configure the LVS-7000 to process or not process sectors during bypass.

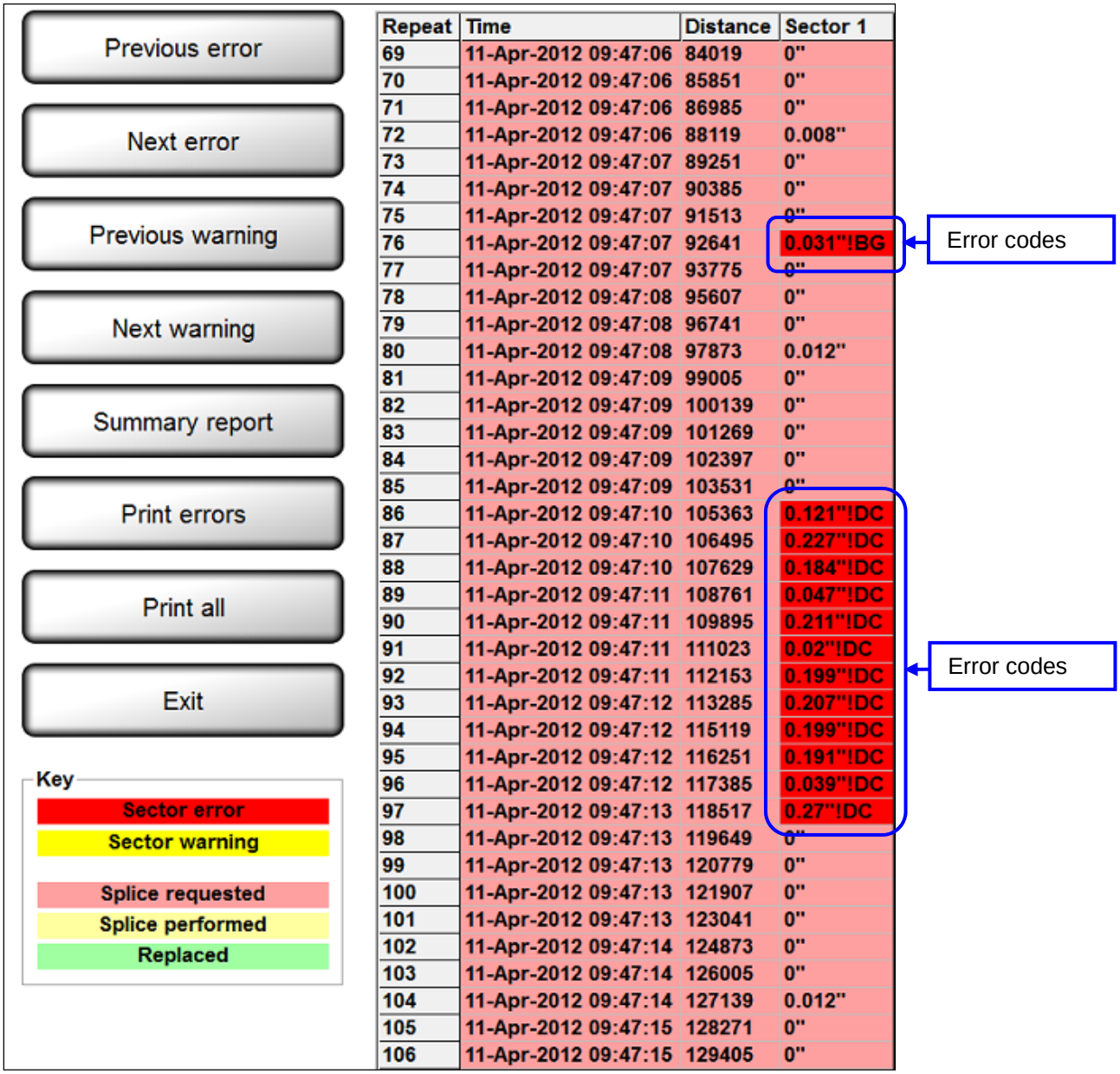
Example LVS7000.ini file

```
[System]

ConsecutiveReadLines=5
CpuUtilizationWarning=75
DontProcessDuringBypass=0
ePedigree=0
```

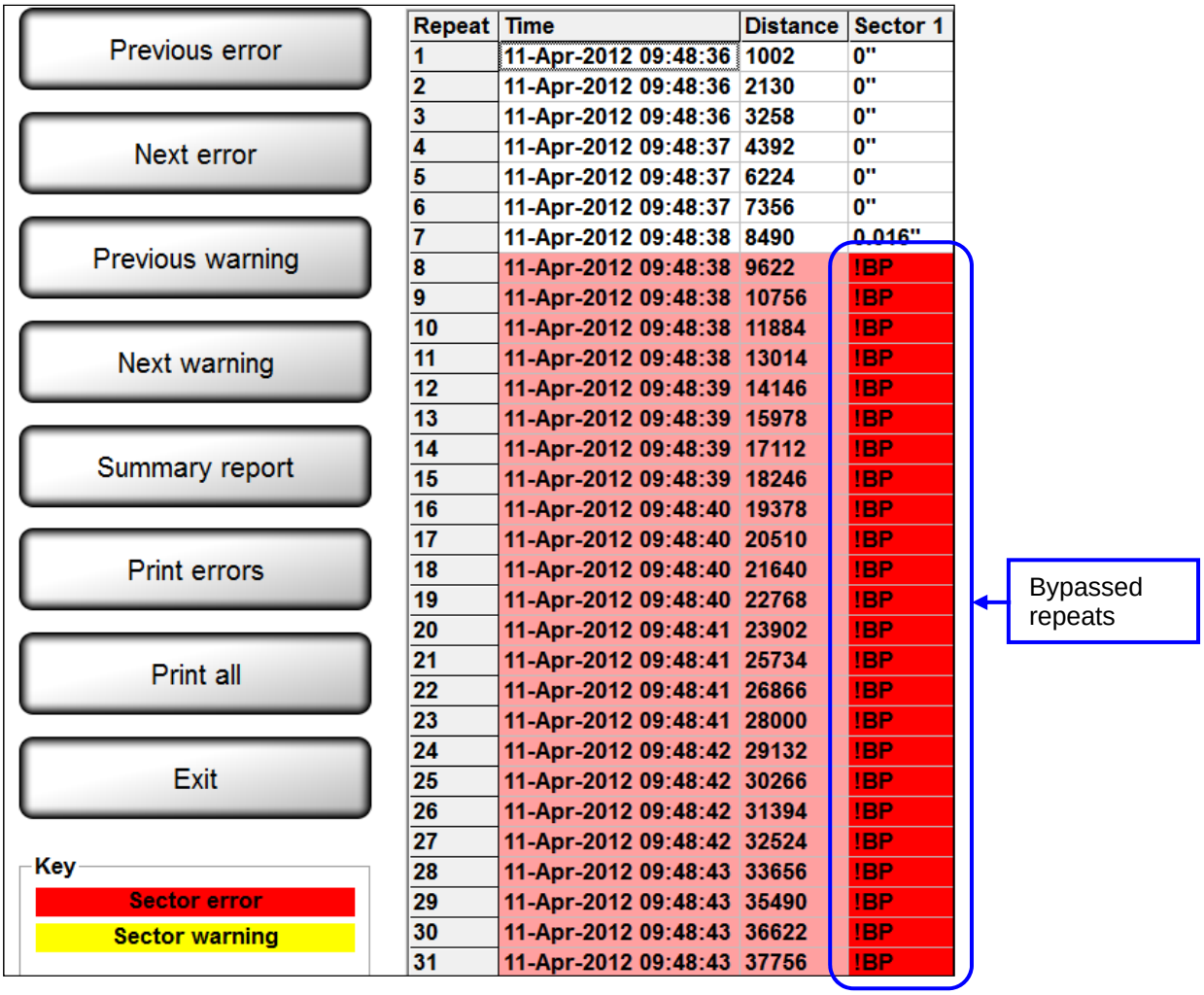
See examples on next two pages.

- **DontProcessDuringBypass=0** indicates the LVS-7000 **will** process sectors during bypass and will highlight all errors in the Reports\QC File Viewer.



Repeat	Time	Distance	Sector 1
69	11-Apr-2012 09:47:06	84019	0"
70	11-Apr-2012 09:47:06	85851	0"
71	11-Apr-2012 09:47:06	86985	0"
72	11-Apr-2012 09:47:06	88119	0.008"
73	11-Apr-2012 09:47:07	89251	0"
74	11-Apr-2012 09:47:07	90385	0"
75	11-Apr-2012 09:47:07	91513	0"
76	11-Apr-2012 09:47:07	92641	0.031"!BG
77	11-Apr-2012 09:47:07	93775	0"
78	11-Apr-2012 09:47:08	95607	0"
79	11-Apr-2012 09:47:08	96741	0"
80	11-Apr-2012 09:47:08	97873	0.012"
81	11-Apr-2012 09:47:09	99005	0"
82	11-Apr-2012 09:47:09	100139	0"
83	11-Apr-2012 09:47:09	101269	0"
84	11-Apr-2012 09:47:09	102397	0"
85	11-Apr-2012 09:47:09	103531	0"
86	11-Apr-2012 09:47:10	105363	0.121"!DC
87	11-Apr-2012 09:47:10	106495	0.227"!DC
88	11-Apr-2012 09:47:10	107629	0.184"!DC
89	11-Apr-2012 09:47:11	108761	0.047"!DC
90	11-Apr-2012 09:47:11	109895	0.211"!DC
91	11-Apr-2012 09:47:11	111023	0.02"!DC
92	11-Apr-2012 09:47:11	112153	0.199"!DC
93	11-Apr-2012 09:47:12	113285	0.207"!DC
94	11-Apr-2012 09:47:12	115119	0.199"!DC
95	11-Apr-2012 09:47:12	116251	0.191"!DC
96	11-Apr-2012 09:47:12	117385	0.039"!DC
97	11-Apr-2012 09:47:13	118517	0.27"!DC
98	11-Apr-2012 09:47:13	119649	0"
99	11-Apr-2012 09:47:13	120779	0"
100	11-Apr-2012 09:47:13	121907	0"
101	11-Apr-2012 09:47:13	123041	0"
102	11-Apr-2012 09:47:14	124873	0"
103	11-Apr-2012 09:47:14	126005	0"
104	11-Apr-2012 09:47:14	127139	0.012"
105	11-Apr-2012 09:47:15	128271	0"
106	11-Apr-2012 09:47:15	129405	0"

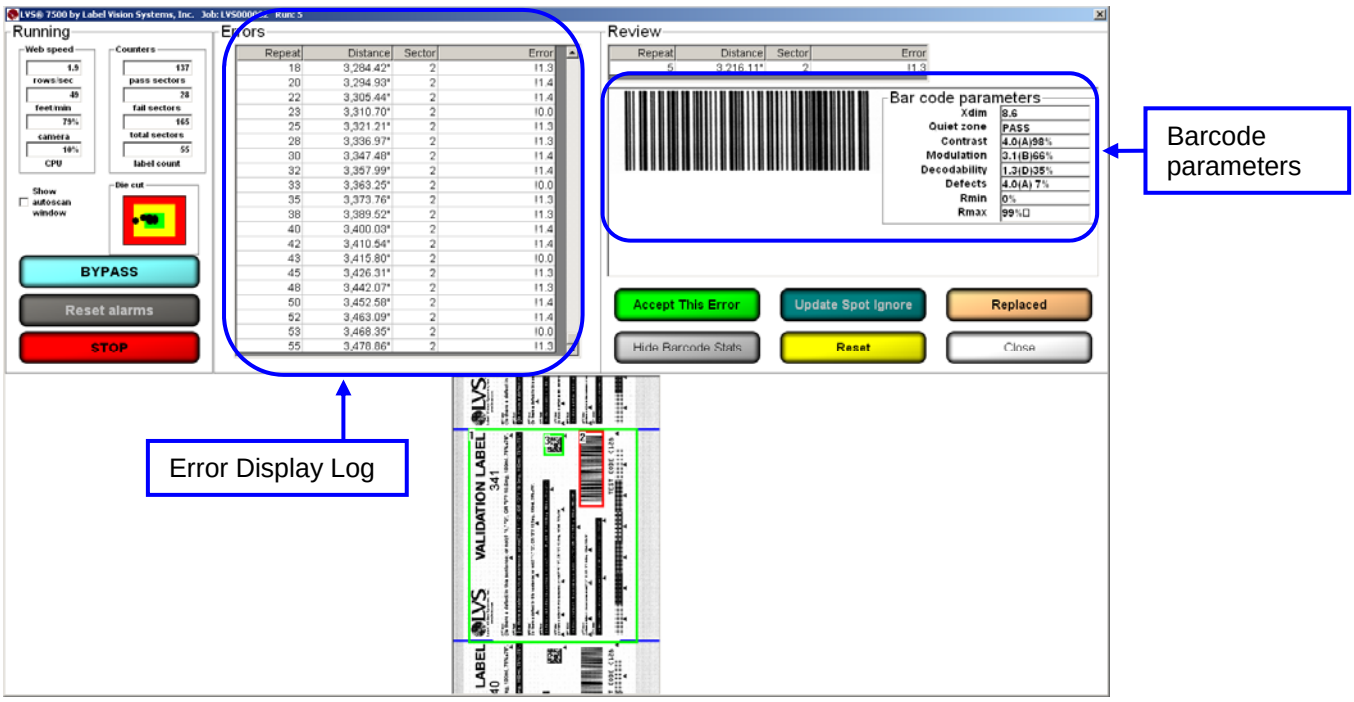
- **DontProcessDuringBypass=1** indicates the LVS-7000 **will not** process sectors during bypass and will not check for errors.
  All bypassed repeats in the Reports/QC File Viewer appear with an !BP error code.



Repeat	Time	Distance	Sector 1
1	11-Apr-2012 09:48:36	1002	0"
2	11-Apr-2012 09:48:36	2130	0"
3	11-Apr-2012 09:48:36	3258	0"
4	11-Apr-2012 09:48:37	4392	0"
5	11-Apr-2012 09:48:37	6224	0"
6	11-Apr-2012 09:48:37	7356	0"
7	11-Apr-2012 09:48:38	8490	0.016"
8	11-Apr-2012 09:48:38	9622	!BP
9	11-Apr-2012 09:48:38	10756	!BP
10	11-Apr-2012 09:48:38	11884	!BP
11	11-Apr-2012 09:48:38	13014	!BP
12	11-Apr-2012 09:48:39	14146	!BP
13	11-Apr-2012 09:48:39	15978	!BP
14	11-Apr-2012 09:48:39	17112	!BP
15	11-Apr-2012 09:48:39	18246	!BP
16	11-Apr-2012 09:48:40	19378	!BP
17	11-Apr-2012 09:48:40	20510	!BP
18	11-Apr-2012 09:48:40	21640	!BP
19	11-Apr-2012 09:48:40	22768	!BP
20	11-Apr-2012 09:48:41	23902	!BP
21	11-Apr-2012 09:48:41	25734	!BP
22	11-Apr-2012 09:48:41	26866	!BP
23	11-Apr-2012 09:48:41	28000	!BP
24	11-Apr-2012 09:48:42	29132	!BP
25	11-Apr-2012 09:48:42	30266	!BP
26	11-Apr-2012 09:48:42	31394	!BP
27	11-Apr-2012 09:48:42	32524	!BP
28	11-Apr-2012 09:48:43	33656	!BP
29	11-Apr-2012 09:48:43	35490	!BP
30	11-Apr-2012 09:48:43	36622	!BP
31	11-Apr-2012 09:48:43	37756	!BP

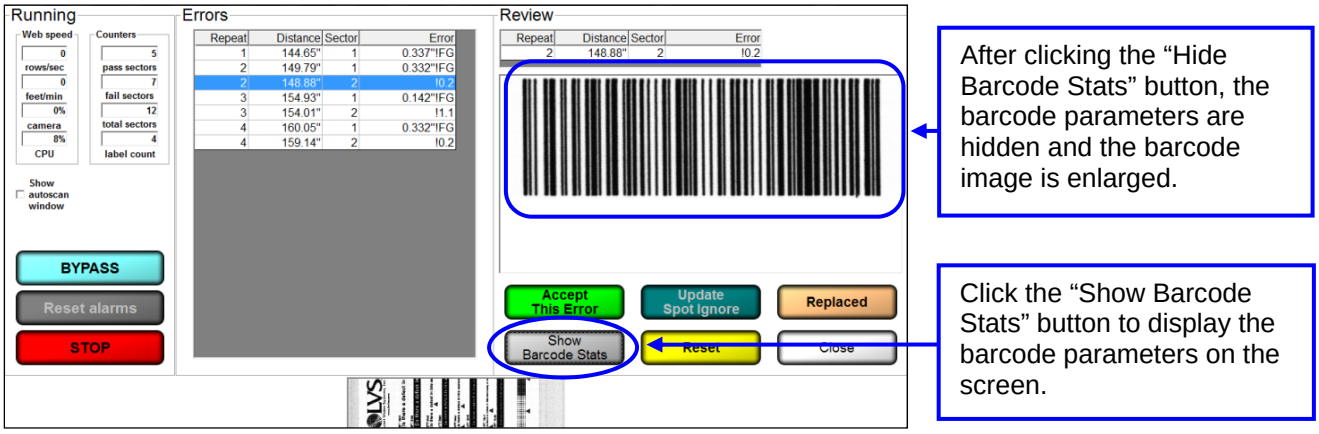
Error Display

The Error Display log can be accessed on the Operate screen while you are running the job or after you stop the job. Click on an error to view the barcode image and barcode parameters.

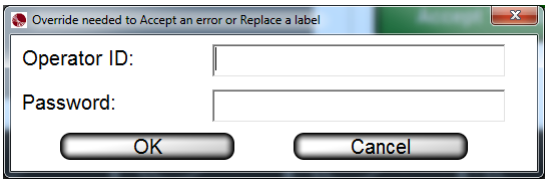
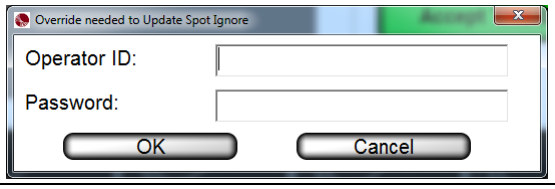
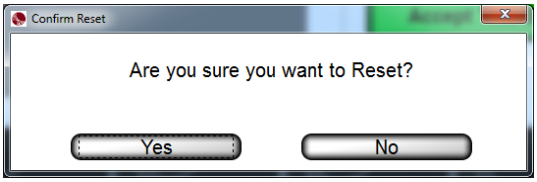


To hide the barcode parameters, click the “Hide Barcode Stats” button; this removes the barcode parameters from the screen and enlarges the barcode image.

Note: After clicking the “Hide Barcode Stats” button, the name changes to “Show Barcode Stats.” Click this button to display the barcode parameters on the screen.



Additional error display options include:

Button	Description
Accept This Error	Click this button to approve the error; the error is marked as OK in the error log file and removed from the errors list. The button is active when the job is in run mode. Only operators granted the **Allow Accept / Replace Errors** permission are allowed to accept the error. The following message appears for operators without permission to accept the error (see screenshot below). An authorized Operator ID and Password must be entered or the operator will not be allowed to approve the error. See the **Permissions** section, within the **Operators** section, for more information on permissions. 
Update Spot Ignore	Draws an ignore box around the error so that it will not appear again and every instance of the error will be removed from the errors list. The log file will also show an OK for every instance of this error. The ignore area is yellow if you edit the blemish sector. In the “Settings” menu, when **RelearnAuthorization=0**, any operator granted the “Allow Accept/Replace Errors” permission can use this feature. When **RelearnAuthorization=1**, the operator must have “Allow Administration” rights to use this feature. The following message appears for operators without permission to use the “Update Spot Ignore” feature (see screenshot below). An administrator’s Operator ID and Password must be entered or the operator will not be allowed to ignore the areas. See the **Permissions** section, within the **Operators** section, for more information on permissions. 
Reset	Places previously accepted and replaced errors back into the errors list and restores their original error codes in the log file. This feature also removes all spot ignore updates. The button is active when the job is in run mode. After clicking the “Reset” button, the following message appears. Click **Yes** to reset or **No** to cancel. 

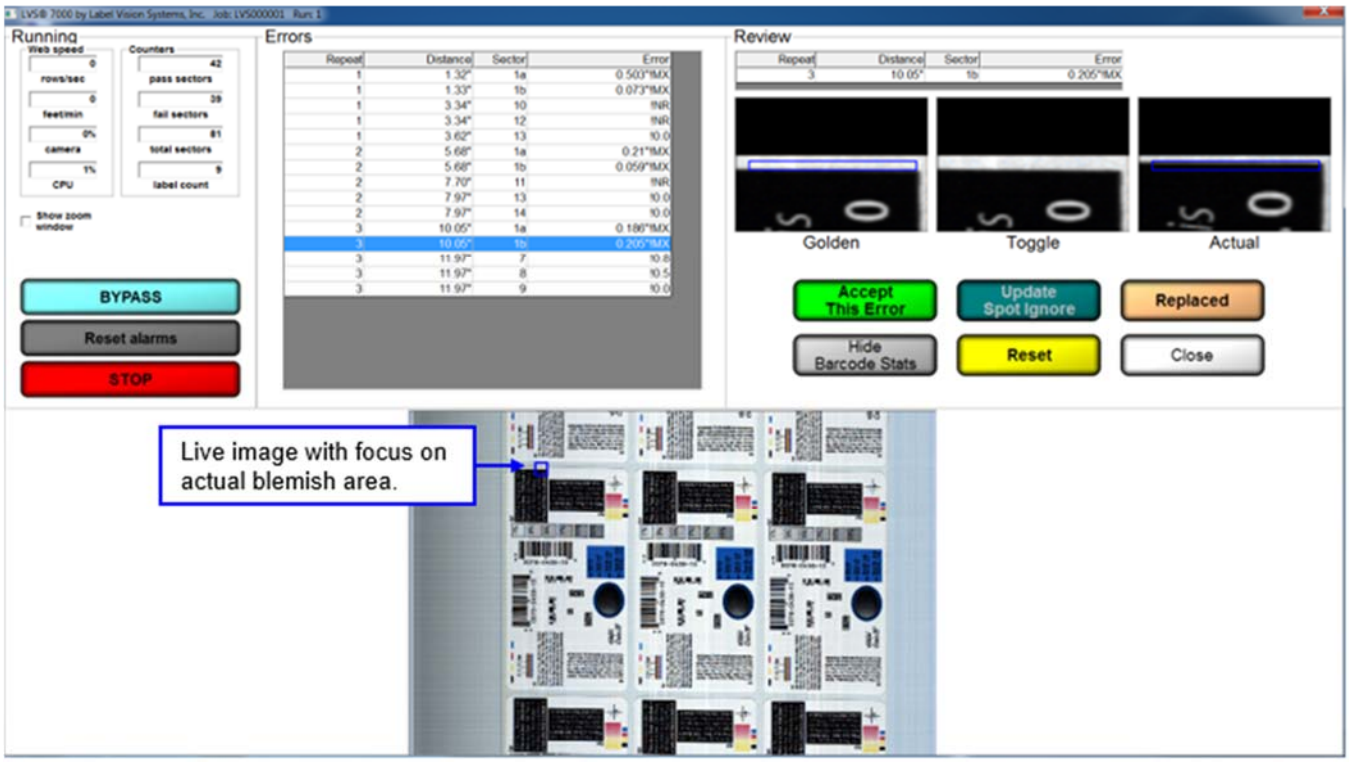
Button	Description
Replaced	Click this button when a label with detected errors is replaced with a known good label. This action marks the label as !RP (replaced) in the error log file and is removed from the errors list. The button is active when the job is in run mode. Only operators granted the **Allow Accept / Replace Errors** permission are allowed to use this feature. See the **Permissions** section, within the **Operators** section, for more information on permissions.
Hide Barcode Stats	Click this button to hide the barcode parameters on the screen and enlarge the barcode image. After clicking this button, the button name changes to “Show Barcode Stats.” Click this button for the barcode parameters to appear on the screen. The settings for this button are controlled in the “Settings” menu > [System] section > ShowRuntimeGradeStats. • ShowRuntimeGradeStats=0 (default) – Disables the “Hide Barcode Stats” button. • ShowRuntimeGradeStats=1 – Enables the “Hide Barcode Stats” button.
Close	Click the “Close” button to close the error display window and return to the “Running the Job” screen.

Blemish Error Display

When viewing a blemish error, three views are available on the screen:

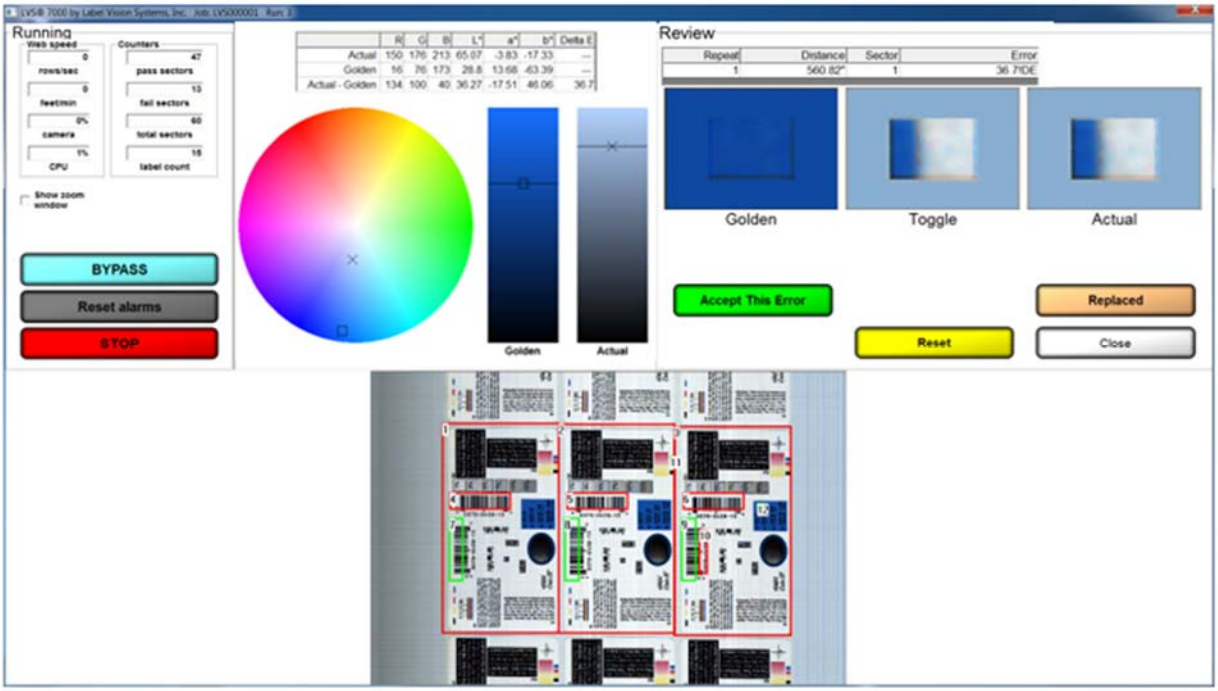
- **Golden** – Displays the golden image
- **Toggle** – Toggles between the golden image and actual image
- **Actual** – Displays the actual blemish image

Only a single image of the error is displayed when viewing other types of errors. For example, a No Read error on a barcode would only show an image of the barcode so that you can examine the problem.

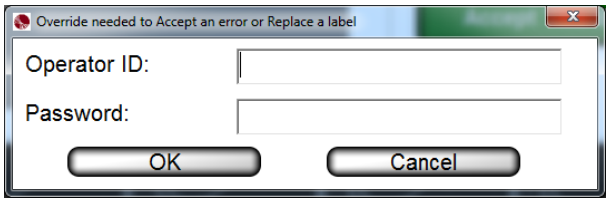


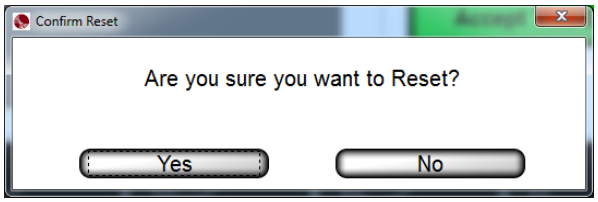
Delta E Error Display

1. Double-click on the Delta E error to view error details. The Delta E review window appears (see below).

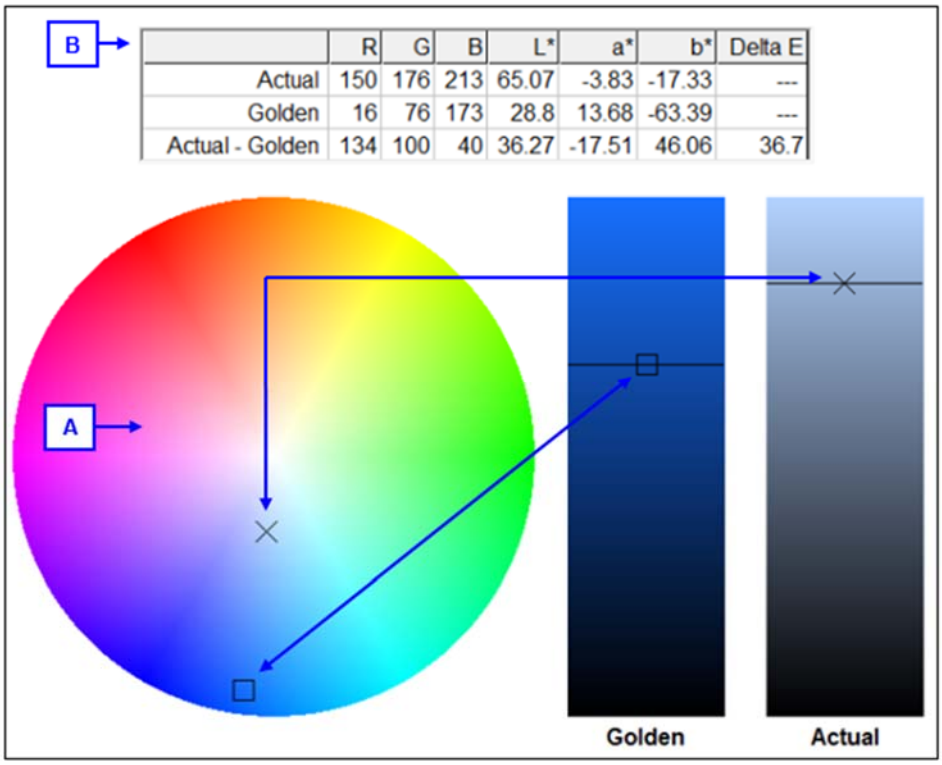


2. The top, right portion of the screen displays an image of the Golden color, Actual color, and a toggled view of both colors. The following options are available:

Button	Description
Accept this Error	Click this button to approve a single error; the error is marked as OK in the error log file and removed from the errors list. The button is active when the job is in run mode. Only operators granted the **Allow Accept / Replace Errors** permission are allowed to accept the error. The following message appears for operators without permission to accept the error (see screenshot below). An Administrator's Operator ID and Password must be entered or the operator will not be allowed to accept the error. See the **Permissions** section, within the **Operators** section, for more information on permissions. 
Replaced	Click this button when a label with detected errors is replaced with a known good label. This action marks the label as !RP (replaced) in the error log file and is removed from the errors list. The button is active when the job is in run mode.

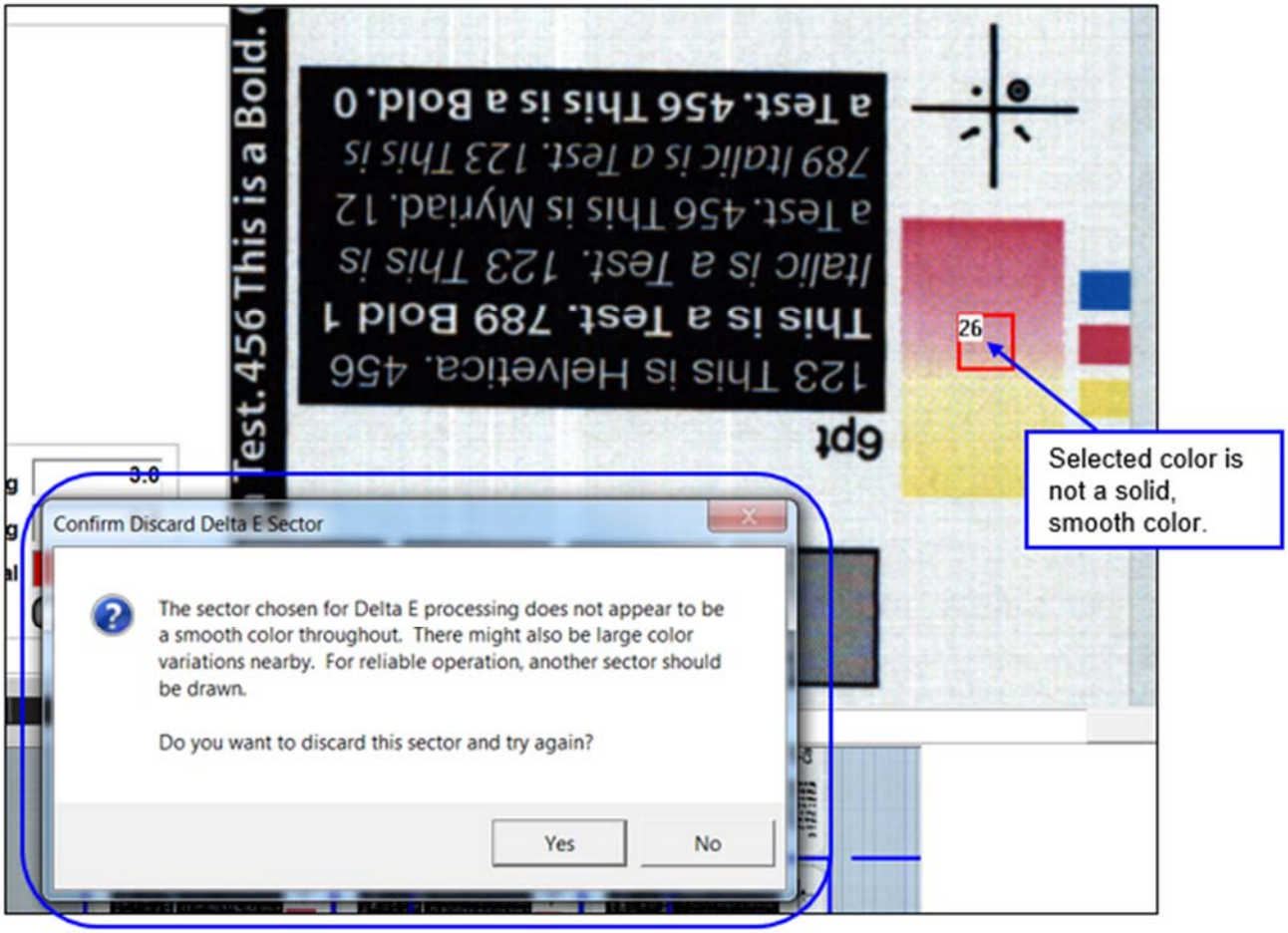
Button	Description
Reset	Places previously accepted and replaced errors back into the errors list and restores their original error codes in the log file. The button is active when the job is in run mode. After clicking the “Reset” button, the following message appears. Click **Yes** to reset or **No** to cancel. 
Close	Click the “Close” button to close the error display window and return to the “Running the Job” screen.

3. The middle portion of the screen shows the following:
   - A visual illustration of where the Golden and Actual colors exist within the color spectrum (see “A”).
     - The X highlights the Actual color.
     - The square box highlights the Golden color.
   - RGB and L*a*b* coordinates of the Golden and Actual color (see “B”).



	R	G	B	L*	a*	b*	Delta E
Actual	150	176	213	65.07	-3.83	-17.33	---
Golden	16	76	173	28.8	13.68	-63.39	---
Actual - Golden	134	100	40	36.27	-17.51	46.06	36.7

The Delta E functionality works best with solid colors. If a color is selected that is not a solid color, the following message appears.



Reports / QC File Viewer

The Reports Screen is detailed and navigation tools have been added to help the operator locate errors. The operator can also print a report for an entire “run” or choose to print a report of just the errors. The Labeled Column Headers are used to locate the report desired. Click on the Run Log to see all sectors overall data for that particular run. When using the Barcode Verifier software, all ANSI/ISO parameters are reported under 1D, 2D grade details. To view these click on the appropriate run under that header. The data is stored in a file format commonly known as a CSV (Comma Separated Values). It is sometimes referred to as a Comma Separated File. This format is a text file where fields are delimited by commas and records are delimited by a <CR><LF> pair. It is a standard interchange format for taking raw data and populating a database or spreadsheet. By default these files are stored in the following directories:

- **Windows® XP:** C:\Program Files\Label Vision Systems\LVS 7000\Jobs
- **Windows® 7:** C:\Users\[User Login Name]\AppData\Roaming\Label Vision Systems\LVS 7000\Jobs

The **Reports Screen** (see below) shows a report for each sector. Each line of data starts with the gate number followed by a date/time stamp, decoded string, error code (if any), and other data associated with the image being inspected.

See the “Error Code Definitions” section for a full list of error codes.

To select a file, double-click it. To cancel, click the red X on the upper right of this window.

Run number	Date and time	Run log	Errors only	1D grade details	DM grade details
1	08-Feb-2007 15:31:10	647,955	124,224	4,424,157	

Sample Reports

Errors Only Report

Previous error

Next error

Previous warning

Next warning

Summary report

Print errors

Print all

Exit

Key

Sector error

Sector warning

Splice requested

Splice performed

Replaced

Repeat	Time	Distance	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	Sector 7	Sector 8
10	30-Mar-2012 16:02:47	47.84"	0"	0.234"-OK	2.238"-OK	0.3	0.5	0.9	300780438155	300780438155
11	30-Mar-2012 16:02:47	55.02"	0.078"-OK	0"	0"	0.5	1.0	1.7	300780438155	300780438155
16	30-Mar-2012 16:02:48	77.13"	0"	0"-OK 66"-OK	0.9	1.7	2.2	300780438155	300780438155	300780438155
17	30-Mar-2012 16:02:48	81.52"	0"	0.004"	2.238"!UN	0.3	0.3	0.1	300780438155	300780438155
18	30-Mar-2012 16:02:48	85.95"	0"	0.176"!BG	2.238"!BG	0.1	0.5	1.2	300780438155	300780438155
19	30-Mar-2012 16:02:49	93.13"	0.07"!BG	0"	0"	0.8	1.3	1.8	300780438155	300780438155
24	30-Mar-2012 16:02:50	115.22"	0"	0.074"!BG	2.238"!FG	0.8	1.6	2.0	300780438155	300780438155
25	30-Mar-2012 16:02:50	119.63"	0"	0"	2.238"!BG	0.1	0.3	0.3	300780438155	300780438155
26	30-Mar-2012 16:02:50	124.04"	0"	0.031"!BG	2.238"!BG	0.2	0.6	0.6	300780438155	300780438155
27	30-Mar-2012 16:02:59	131.23"	0"	0"	0"	0.0!DE	0.0!DE	0.0!DE	300780438155	300780438155
28	30-Mar-2012 16:03:00	135.66"	0.039"!FG	0"	0"	1.7	1.4	0.8	300780438155	300780438155
29	30-Mar-2012 16:03:00	140.09"	0.137"!FG	0"	0"	1.1	0.6	0.3	300780438155	300780438155
30	30-Mar-2012 16:03:00	144.51"	0.031"!FG	0"	0"	0.6	0.5	0.6	300780438155	300780438155
31	30-Mar-2012 16:03:00	148.93"	0.043"!FG	0"	0"	0.8	0.1	1.1	300780438155	300780438155
32	30-Mar-2012 16:03:00	153.33"	0.059"!FG	0"	0.246"!FG	0.2	0.3	0.5	300780438155	300780438155
33	30-Mar-2012 16:03:00	157.73"	0.023"!FG	0"	0.438"!BG	0.7	1.6	1.7	300780438155	300780438155
34	30-Mar-2012 16:03:00	162.15"	0.055"!FG	0.141"!BG	2.242"!FG	0.5	0.9	1.2	300780438155	300780438155
36	30-Mar-2012 16:03:01	173.76"	0.051"!FG	0"	0"	1.7	1.4	0.8	300780438155	300780438155
37	30-Mar-2012 16:03:01	178.19"	0.074"!FG	0"	0"	1.2	0.6	0.3	300780438155	300780438155
38	30-Mar-2012 16:03:01	182.61"	0.027"!FG	0"	0"	0.5	0.4	0.7	300780438155	300780438155
39	30-Mar-2012 16:03:01	187.04"	0.051"!FG	0"	0"	0.8	0.2	1.1	300780438155	300780438155
40	30-Mar-2012 16:03:02	191.43"	0.055"!FG	0"	0.344"!BG	0.5	0.2	0.5	300780438155	300780438155
41	30-Mar-2012 16:03:02	195.83"	0.027"!FG	0"	2.242"!FG	0.6	1.6	2.0	300780438155	300780438155
42	30-Mar-2012 16:03:02	200.25"	0.047"!FG	0.141"!BG	2.242"!FG	0.5	0.9	1.1	300780438155	300780438155
44	30-Mar-2012 16:03:02	211.86"	0.035"!FG	0"	0"	1.7	1.2	0.8	300780438155	300780438155
45	30-Mar-2012 16:03:03	216.29"	0.098"!FG	0"	0"	0.9	0.6	0.3	300780438155	300780438155
46	30-Mar-2012 16:03:03	220.71"	0.023"!FG	0"	0"	0.6	0.5	0.6	300780438155	300780438155
47	30-Mar-2012 16:03:03	225.14"	0.055"!FG	0"	0"	0.9	0.1	0.8	300780438155	300780438155
48	30-Mar-2012 16:03:03	229.54"	0.047"!FG	0"	0.145"!BG	0.2	0.3	0.3	300780438155	300780438155
49	30-Mar-2012 16:03:04	233.93"	0.039"!FG	0"	2.242"!FG	0.3	1.3	1.7	300780438155	300780438155
50	30-Mar-2012 16:03:04	238.35"	0.039"!FG	0.078"!BG	2.242"!FG	0.5	0.8	0.8	300780438155	300780438155
52	30-Mar-2012 16:03:05	249.96"	0"	0"	0"	0.0!DE	0.0!DE	0.0!DE	300780438155	300780438155
57	30-Mar-2012 16:03:06	272.03"	0"	0"	2.238"!BG	1.5	0.5	0.9	300780438155	300780438155
58	30-Mar-2012 16:03:06	276.45"	0"	0"	2.238"!BG	1.1	0.4	0.0	300780438155	300780438155
59	30-Mar-2012 16:03:06	283.63"	0.082"!BG	0"	0"	1.8	0.9	0.8	300780438155	300780438155
65	30-Mar-2012 16:03:07	310.13"	0"	0.004"	0.309"!FG	1.5	0.4	0.8	300780438155	300780438155
66	30-Mar-2012 16:03:07	314.55"	0"	0.555"!BG	2.238"!BG	1.3	0.5	1.3	300780438155	300780438155
67	30-Mar-2012 16:03:07	321.73"	0.086"!BG	0"	0"	1.7	0.8	0.5	300780438155	300780438155
73	30-Mar-2012 16:03:09	348.23"	0"	0"	0.309"!FG	1.2	0.3	1.1	300780438155	300780438155
74	30-Mar-2012 16:03:09	352.65"	0"	0.484"!BG	2.238"!BG	1.1	0.4	1.9	300780438155	300780438155
75	30-Mar-2012 16:03:09	359.84"	0.07"!BG	0"	0"	1.7	1.0	0.8	300780438155	300780438155

Run Log

Previous error

Next error

Previous warning

Next warning

Summary report

Print errors

Print all

Exit

Key

Sector error

Sector warning

Splice requested

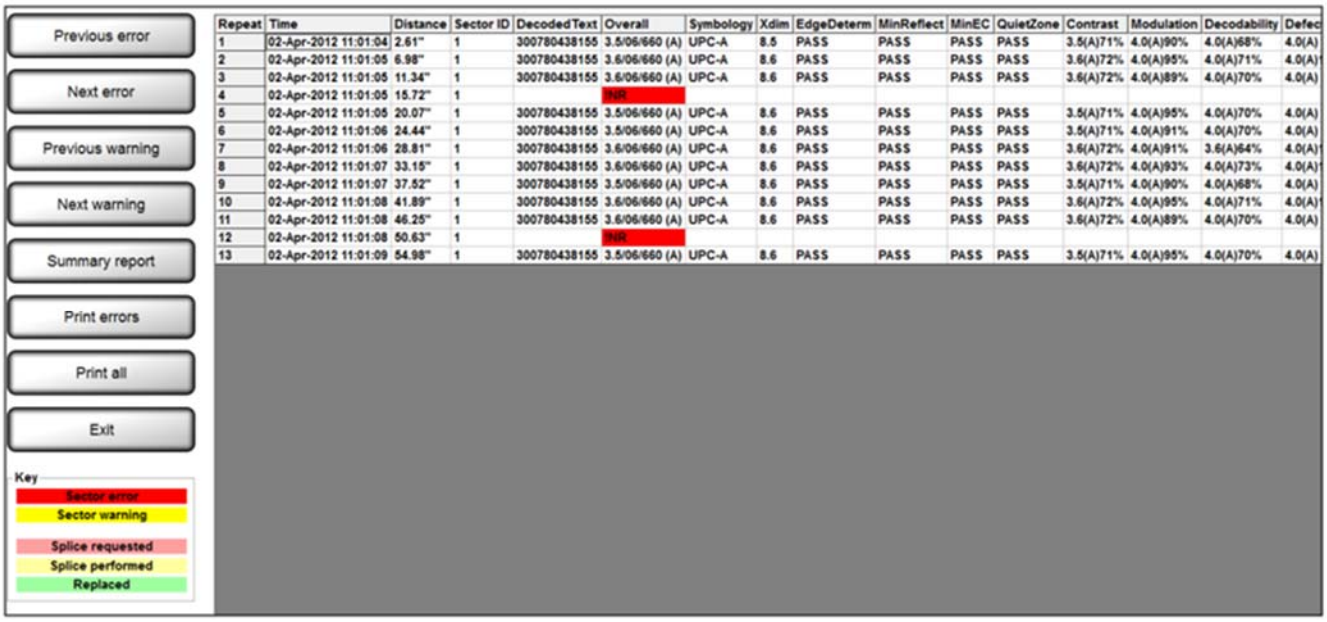
Splice performed

Replaced

Repeat	Time	Distance	Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	Sector 7
37	30-Mar-2012 16:03:01	178.19"	0.074"!FG	0"	0"	1.2	0.6	0.3	30078043
38	30-Mar-2012 16:03:01	182.61"	0.027"!FG	0"	0"	0.5	0.4	0.7	30078043
39	30-Mar-2012 16:03:01	187.04"	0.051"!FG	0"	0"	0.8	0.2	1.1	30078043
40	30-Mar-2012 16:03:02	191.43"	0.055"!FG	0"	0.344"!BG	0.5	0.2	0.5	30078043
41	30-Mar-2012 16:03:02	195.83"	0.027"!FG	0"	2.242"!FG	0.6	1.6	2.0	30078043
42	30-Mar-2012 16:03:02	200.25"	0.047"!FG	0.141"!BG	2.242"!FG	0.5	0.9	1.1	30078043
43	30-Mar-2012 16:03:02	207.43"	0"	0"	0"	0.1	0.4	0.4	30078043
44	30-Mar-2012 16:03:02	211.86"	0.035"!FG	0"	0"	1.7	1.2	0.8	30078043
45	30-Mar-2012 16:03:03	216.29"	0.098"!FG	0"	0"	0.9	0.6	0.3	30078043
46	30-Mar-2012 16:03:03	220.71"	0.023"!FG	0"	0"	0.6	0.5	0.6	30078043
47	30-Mar-2012 16:03:03	225.14"	0.055"!FG	0"	0"	0.9	0.1	0.8	30078043
48	30-Mar-2012 16:03:03	229.54"	0.047"!FG	0"	0.145"!BG	0.2	0.3	0.3	30078043
49	30-Mar-2012 16:03:04	233.93"	0.039"!FG	0"	2.242"!FG	0.3	1.3	1.7	30078043
50	30-Mar-2012 16:03:04	238.35"	0.039"!FG	0.078"!BG	2.242"!FG	0.5	0.8	0.8	30078043
51	30-Mar-2012 16:03:04	245.53"	0"	0"	0"	0.0	0.4	0.1	30078043
52	30-Mar-2012 16:03:05	249.96"	0"	0"	0"	0.0!DE	0.0!DE	0.0!DE	30078043
53	30-Mar-2012 16:03:05	254.39"	0"	0"	0"	0.6	0.8	1.1	30078043
54	30-Mar-2012 16:03:05	258.82"	0"	0"	0"	1.3	0.6	1.4	30078043
55	30-Mar-2012 16:03:05	263.24"	0"	0"	0"	1.0	1.2	0.3	30078043
56	30-Mar-2012 16:03:05	267.64"	0"	0"	0"	1.9	1.5	1.0	30078043
57	30-Mar-2012 16:03:06	272.03"	0"	0"	2.238"!BG	1.5	0.5	0.9	30078043
58	30-Mar-2012 16:03:06	276.45"	0"	0"	2.238"!BG	1.1	0.4	0.0	30078043
59	30-Mar-2012 16:03:06	283.63"	0.082"!BG	0"	0"	1.8	0.9	0.8	30078043
60	30-Mar-2012 16:03:06	288.06"	0"	0"	0"	0.4	0.3	0.3	30078043
61	30-Mar-2012 16:03:06	292.49"	0"	0"	0"	0.9	0.8	1.1	30078043
62	30-Mar-2012 16:03:06	296.92"	0"	0"	0"	1.3	0.6	1.1	30078043
63	30-Mar-2012 16:03:07	301.34"	0"	0"	0"	0.9	1.2	0.3	30078043
64	30-Mar-2012 16:03:07	305.74"	0"	0"	0"	1.9	1.5	1.0	30078043
65	30-Mar-2012 16:03:07	310.13"	0"	0.004"	0.309"!FG	1.5	0.4	0.8	30078043
66	30-Mar-2012 16:03:07	314.55"	0"	0.555"!BG	2.238"!BG	1.3	0.5	1.3	30078043
67	30-Mar-2012 16:03:07	321.73"	0.086"!BG	0"	0"	1.7	0.8	0.5	30078043
68	30-Mar-2012 16:03:08	326.16"	0"	0"	0"	0.4	0.4	0.3	30078043
69	30-Mar-2012 16:03:08	330.59"	0"	0"	0"	0.8	0.8	1.3	30078043
70	30-Mar-2012 16:03:08	335.02"	0"	0"	0"	1.3	0.9	1.5	30078043
71	30-Mar-2012 16:03:08	339.43"	0"	0"	0"	0.9	1.2	0.3	30078043
72	30-Mar-2012 16:03:09	343.84"	0"	0"	0"	1.9	1.4	1.0	30078043
73	30-Mar-2012 16:03:09	348.23"	0"	0"	0.309"!FG	1.2	0.3	1.1	30078043
74	30-Mar-2012 16:03:09	352.65"	0"	0.484"!BG	2.238"!BG	1.1	0.4	1.9	30078043

1D Grade Details

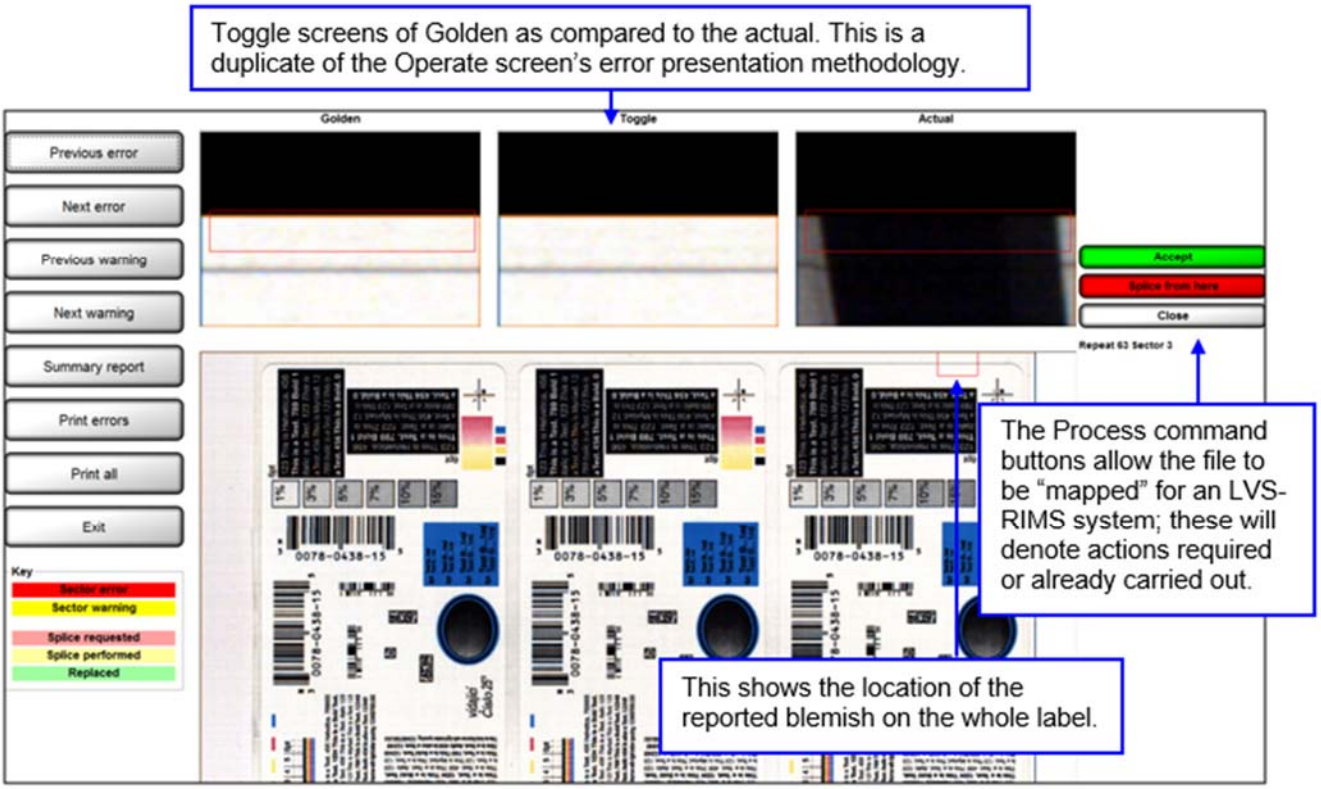
View 1D grade details by double-clicking on a job in the 1D grading column.



Repeat	Time	Distance	Sector ID	DecodedText	Overall	Symbology	Xdim	EdgeDeterm	MinReflect	MinEC	QuietZone	Contrast	Modulation	Decodability	Defec
1	02-Apr-2012 11:01:04	2.61"	1	300780438155	3.5/06/660 (A)	UPC-A	8.5	PASS	PASS	PASS	PASS	3.5(A)71%	4.0(A)90%	4.0(A)68%	4.0(A)
2	02-Apr-2012 11:01:05	6.98"	1	300780438155	3.6/06/660 (A)	UPC-A	8.6	PASS	PASS	PASS	PASS	3.6(A)72%	4.0(A)95%	4.0(A)71%	4.0(A)
3	02-Apr-2012 11:01:05	11.34"	1	300780438155	3.6/06/660 (A)	UPC-A	8.6	PASS	PASS	PASS	PASS	3.6(A)72%	4.0(A)89%	4.0(A)70%	4.0(A)
4	02-Apr-2012 11:01:05	15.72"	1		INR										
5	02-Apr-2012 11:01:05	20.07"	1	300780438155	3.5/06/660 (A)	UPC-A	8.6	PASS	PASS	PASS	PASS	3.5(A)71%	4.0(A)95%	4.0(A)70%	4.0(A)
6	02-Apr-2012 11:01:06	24.44"	1	300780438155	3.5/06/660 (A)	UPC-A	8.6	PASS	PASS	PASS	PASS	3.5(A)71%	4.0(A)91%	4.0(A)70%	4.0(A)
7	02-Apr-2012 11:01:06	28.81"	1	300780438155	3.6/06/660 (A)	UPC-A	8.6	PASS	PASS	PASS	PASS	3.6(A)72%	4.0(A)91%	3.6(A)64%	4.0(A)
8	02-Apr-2012 11:01:07	33.15"	1	300780438155	3.6/06/660 (A)	UPC-A	8.6	PASS	PASS	PASS	PASS	3.6(A)72%	4.0(A)93%	4.0(A)73%	4.0(A)
9	02-Apr-2012 11:01:07	37.52"	1	300780438155	3.5/06/660 (A)	UPC-A	8.6	PASS	PASS	PASS	PASS	3.5(A)71%	4.0(A)90%	4.0(A)68%	4.0(A)
10	02-Apr-2012 11:01:08	41.89"	1	300780438155	3.6/06/660 (A)	UPC-A	8.6	PASS	PASS	PASS	PASS	3.6(A)72%	4.0(A)95%	4.0(A)71%	4.0(A)
11	02-Apr-2012 11:01:08	46.25"	1	300780438155	3.6/06/660 (A)	UPC-A	8.6	PASS	PASS	PASS	PASS	3.6(A)72%	4.0(A)89%	4.0(A)70%	4.0(A)
12	02-Apr-2012 11:01:08	50.63"	1		INR										
13	02-Apr-2012 11:01:09	54.98"	1	300780438155	3.5/06/660 (A)	UPC-A	8.6	PASS	PASS	PASS	PASS	3.5(A)71%	4.0(A)95%	4.0(A)70%	4.0(A)

Run Log with Images

Blemish, barcode, and OCR/OCV error images can be viewed by clicking on the red blemish cell in the log file. An error display screen will then pop-up. If the error is a blemish, the Golden Image will show on the Left; a Toggle between Golden and Actual in the center; and the Actual Blemish image is on the right.



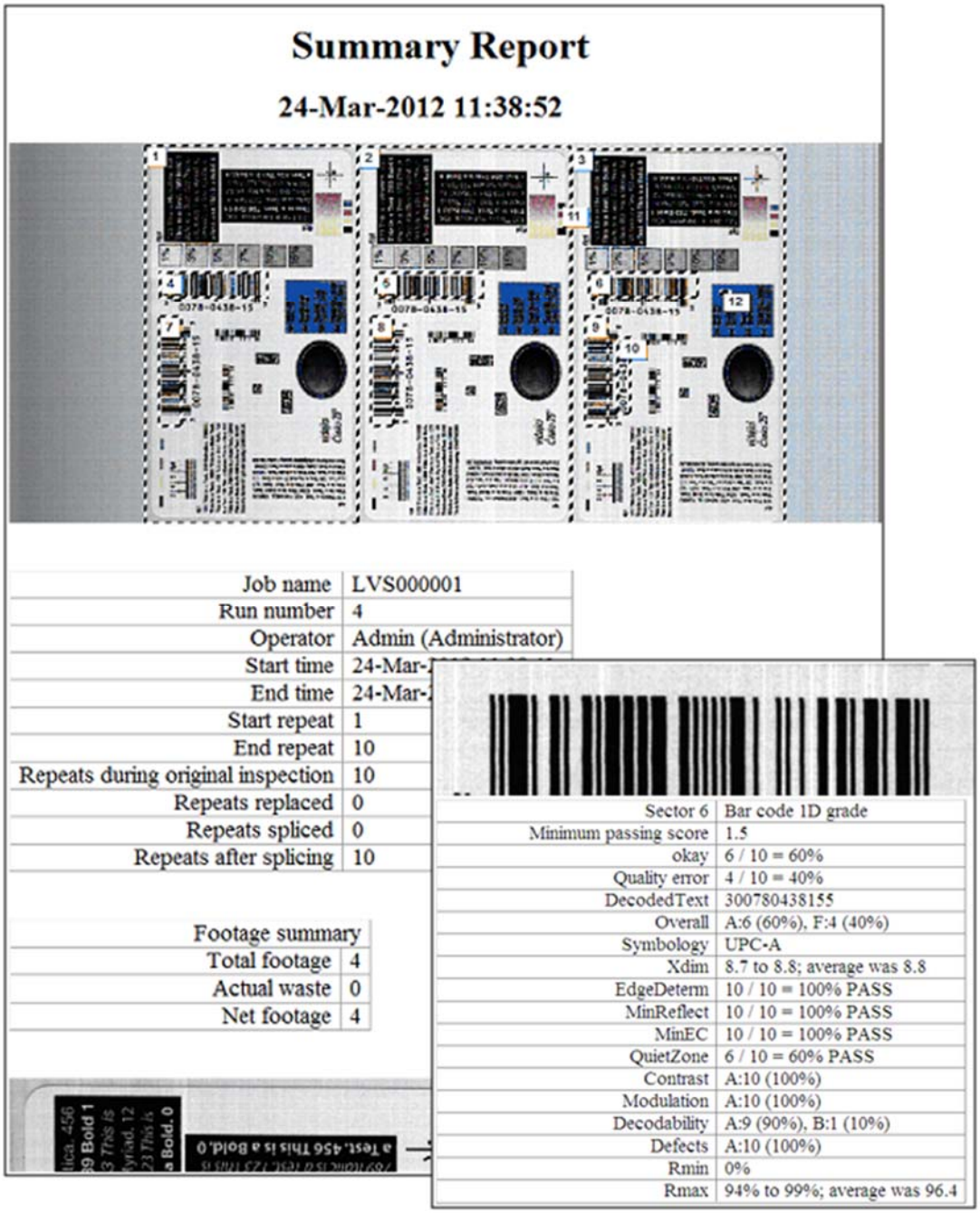
Button Definitions

Button	Description
Previous Error	Moves upward from the current file location to the next error.
Next Error	Moves downward from the current file location to the next error.
Previous Warning	Moves upward from the current file location to the next warning.
Next Warning	Moves downward from the current file location to the next warning.
Summary Report	Click to view the Summary Report.
Print errors	Click to print the errors only.
Print All	Click to print all information for the run.
Exit	Click to close the QC File Viewer and return to the LVS-7000.

Summary Report

The LVS-7000 Summary Report can be accessed by clicking on the **Summary Report** button when viewing a log file. The report gives a summation of the entire job and each sector's settings and parameters. It also shows example images where sectors were drawn.

The LVS-7000 Summary Report appears only in Internet Explorer or Firefox web browsers; no other web browser is supported.



Summary Report

24-Mar-2012 11:38:52

Job name	LVS000001
Run number	4
Operator	Admin (Administrator)
Start time	24-Mar-
End time	24-Mar-
Start repeat	1
End repeat	10
Repeats during original inspection	10
Repeats replaced	0
Repeats spliced	0
Repeats after splicing	10

Footage summary	
Total footage	4
Actual waste	0
Net footage	4

Sector 6	Bar code 1D grade
Minimum passing score	1.5
okay	6 / 10 = 60%
Quality error	4 / 10 = 40%
DecodedText	300780438155
Overall	A:6 (60%), F:4 (40%)
Symbology	UPC-A
Xdim	8.7 to 8.8; average was 8.8
EdgeDeterm	10 / 10 = 100% PASS
MinReflect	10 / 10 = 100% PASS
MinEC	10 / 10 = 100% PASS
QuietZone	6 / 10 = 60% PASS
Contrast	A:10 (100%)
Modulation	A:10 (100%)
Decodability	A:9 (90%), B:1 (10%)
Defects	A:10 (100%)
Rmin	0%
Rmax	94% to 99%; average was 96.4

Preventive Maintenance

Timeframe	Maintenance
Weekly	Clean the backplate free from any adhesive build up; this may need to be performed more frequently if adhesive build up is excessive.
Monthly	• Clean the lens with an air hose (50 to 70 PSI) or (345 to 480 kPa). • Do not touch the lens; this could leave fingerprints on the lens or misadjust the focus. • Clean off the light lens using alcohol and a lint free cloth if required.
Annually	If you have the Barcode Verification feature, replace the Calibration Card every year. A new calibration card needs to be purchased through Omron Microscan. Omron Microscan does not give a schedule as to when you need to calibrate; this is left up to the customer. However, we recommend that you calibrate no less than once a month or if the environment has changed in some way, such as lighting, movement of the system, etc. **WARNING:** Do not attempt to clean the Calibration Card as it will destroy the image. Keep the Calibration Card out of the sun and in a clean environment. Use extreme care to avoid fingerprints.

Troubleshooting

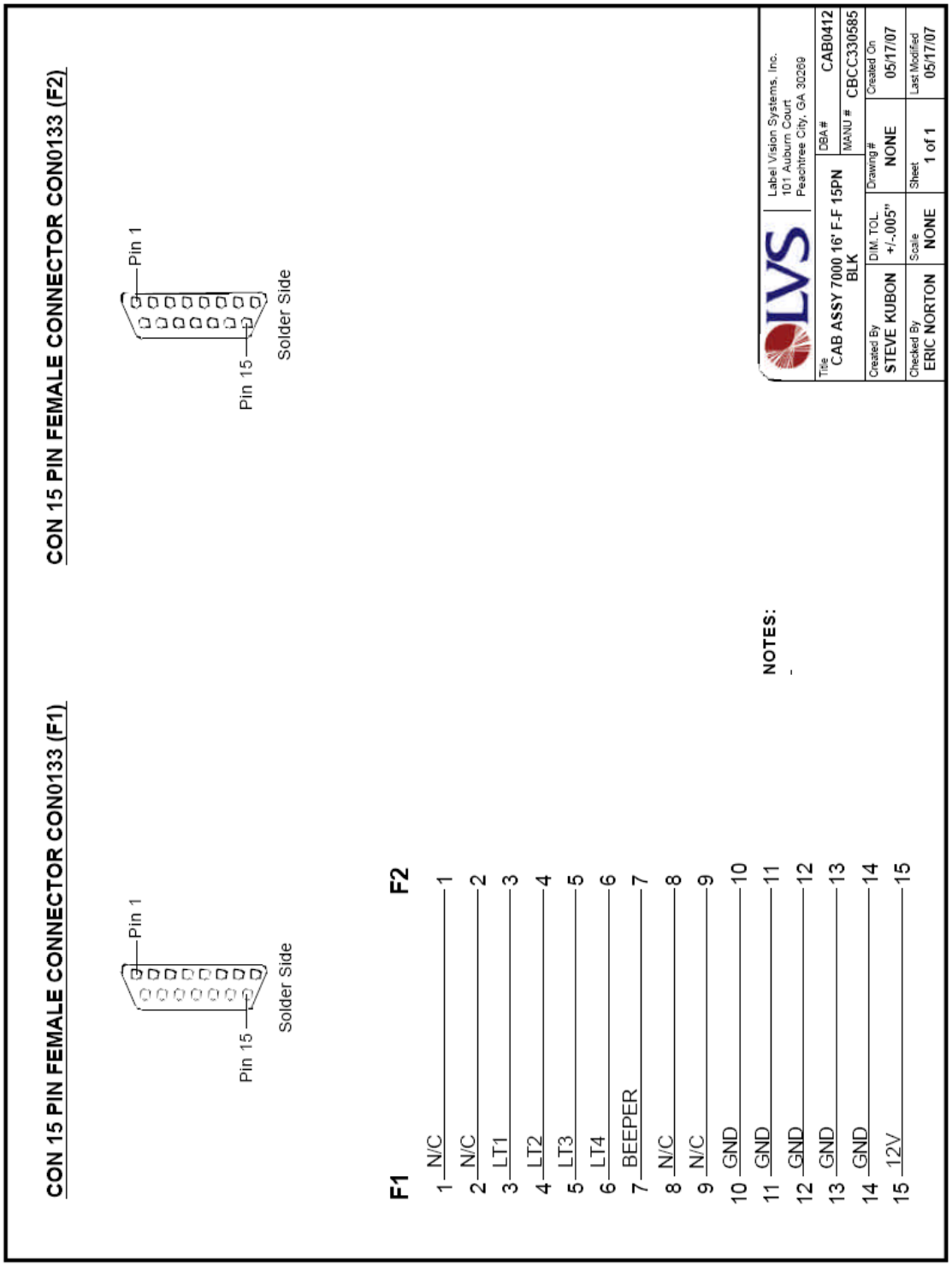
Problem Description	Possible Causes
System will not acquire images	• The web is not moving • Encoder is not in contact with moving web or idler • Encoder cable is not plugged in or is damaged • The Readhead has lost power • The Readhead to LVS-7000 interface cables are not plugged in, or are damaged
System is acquiring every other label	The label repeat is set too large
Image has uneven lighting	• The line lights have moved • An LED may have burned out in the Line Light • The line light may have a label stuck to it
Image is black	• Line Lights have lost power • Line Lights are obstructed • Camera view is obstructed

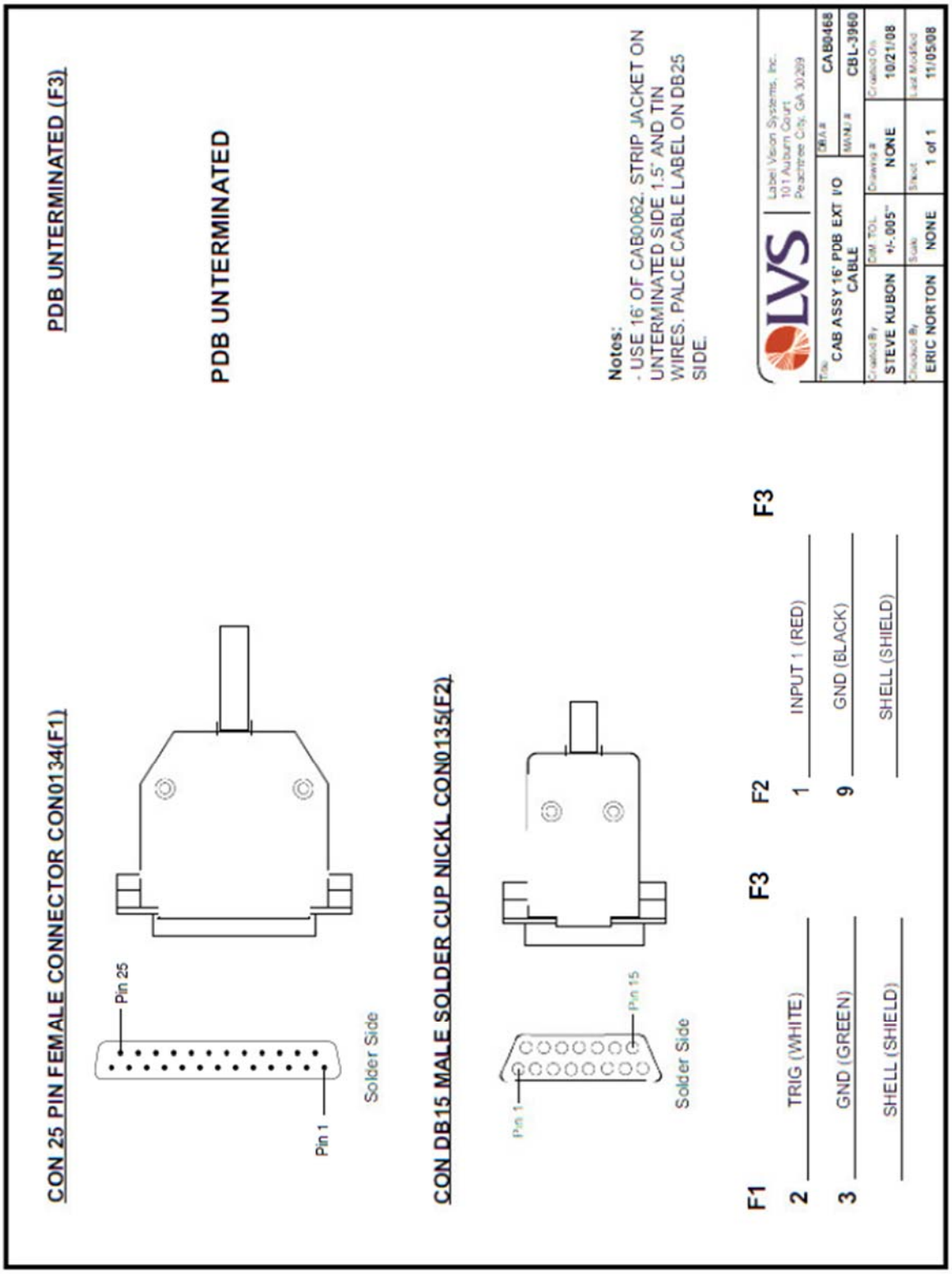
For Error Condition issues, refer to the “Step 6: Alarm Matrix” section and review the following sections:

- Error Code Definitions
- Common Causes for Error Conditions

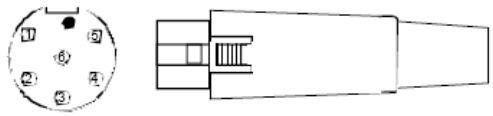
Mechanical Diagrams

All technical drawings are copyrighted in respect to their manufacture. All respected trademark rights are reserved.




PDB UNTERMINATED (F3)
PDB UNTERMINATED
CON 25 PIN FEMALE CONNECTOR CON0134(F1)
Pin 25
Pin 1
Solder Side
CON DB15 MALE SOLDER CUP NICKL CON0135(F2)
Pin 1
Pin 15
Solder Side
F1
2 TRIG (WHITE)
3 GND (GREEN)
SHELL (SHIELD)
F3
F2
1 INPUT 1 (RED)
9 GND (BLACK)
SHELL (SHIELD)
F3
Notes:
- USE 16' OF CAB0062. STRIP JACKET ON UNTERMINATED SIDE 1.5' AND TIN WIRES. PALCE CABLE LABEL ON DB25 SIDE.
LVS
Label Vision Systems, Inc.
101 Auburn Court
Peachtree City, GA 30269
Title: CAB ASSY 16' PDB EXT I/O CABLE
DWG # CAB0468
MNU # CBL-3960
Drawn By STEVE KUBON
DIM TOL +/-.005"
Drawing # NONE
Created On 10/21/08
Checked By ERIC NORTON
Scale NONE
Sheet 1 of 1
Last Modified 11/05/08

6Pin Recetacle Connector CON0237 (F1)



Soder Side

Un-Terminated End (F2)

Un-Terminated End
(Strip back 3" and tint ends)

BLUE LIGHT
N.O (BLUE)
C (BLACK)
N.C (GREEN)

RED LIGHT
N.O (BROWN)
C (RED)
N.C (WHITE)

F1	F2
1	N.O (BLUE)
2	N.O (BROWN)
3	C (RED)
4	N.C (WHITE)
5	N.C (GREEN)
6	C (BLACK)

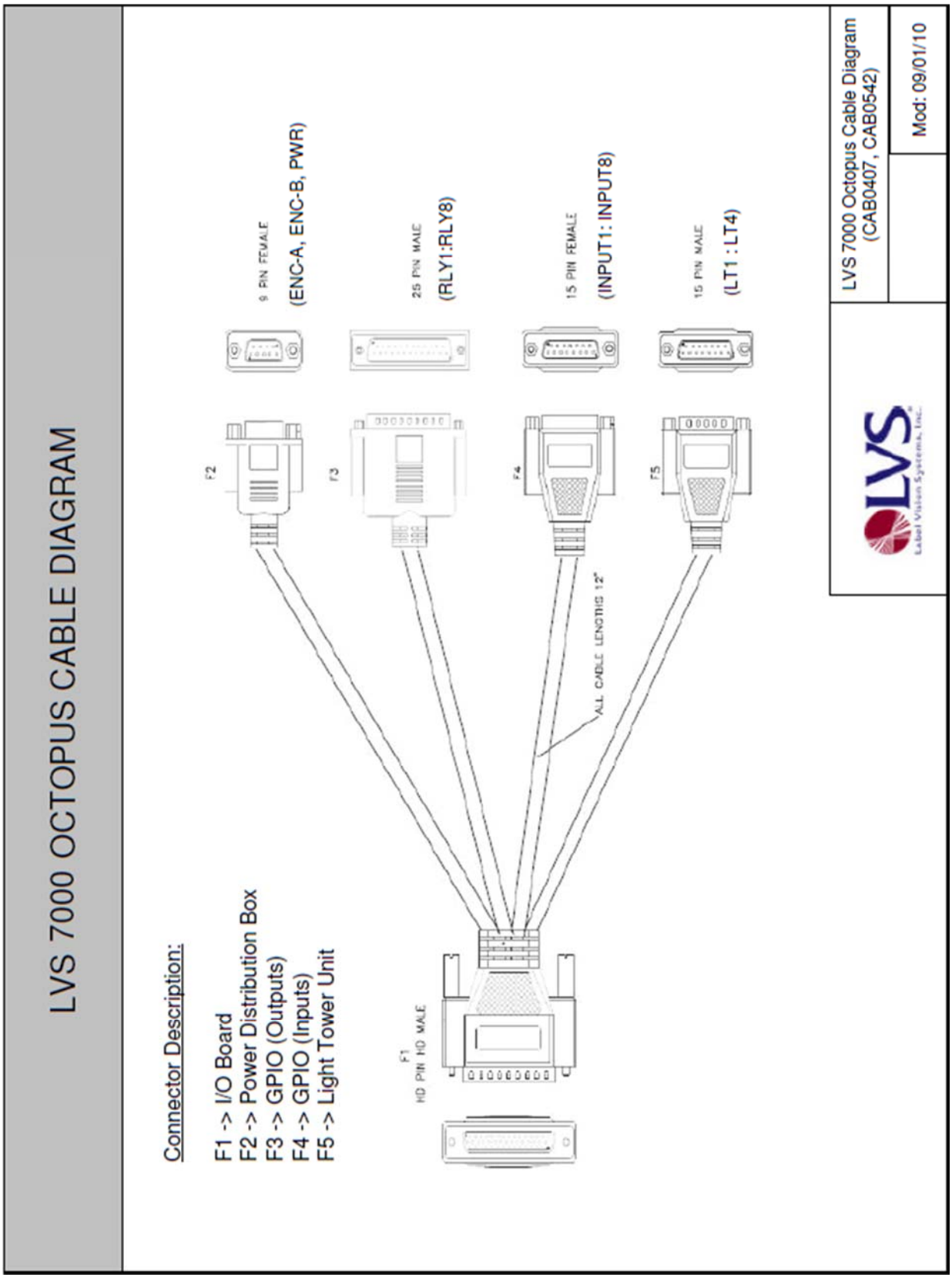
Notes:
- Un-Terminated end must be stripped and tinned. Use heavy duty 3 conductor cable.

Cable Part Number:
1177C

LVS
Label Vision Systems, Inc.
101 Auburn Court
Peachtree City, GA 30269

Title: LVS CAB LTIU DUAL STOP MOTION		DBA # LVS0134	MANU # 2108REVB
Created By: Steve Kubon	DIM. TOL.: +/-.005"	Drawing #: NONE	Created On: 10/29/01
Checked By: Eric Norton	Scale: NONE	Sheet: 1 of 1	Last Modified: 03/30/06

LVS-7000 Operations Manual Version 5.6.X


LVS 7000 OCTOPUS CABLE DIAGRAM
Connector Description:
F1 -> I/O Board
F2 -> Power Distribution Box
F3 -> GPIO (Outputs)
F4 -> GPIO (Inputs)
F5 -> Light Tower Unit
F1
HD PIN HD MALE
F2
9 PIN FEMALE
(ENC-A, ENC-B, PWR)
F3
25 PIN MALE
(RLY1:RLY8)
F4
15 PIN FEMALE
(INPUT1: INPUT8)
F5
15 PIN MALE
(LT1 : LT4)
ALL CABLE LENGTHS 12"
LVS
Label Vision Systems, Inc.
LVS 7000 Octopus Cable Diagram
(CAB0407, CAB0542)
Mod: 09/01/10

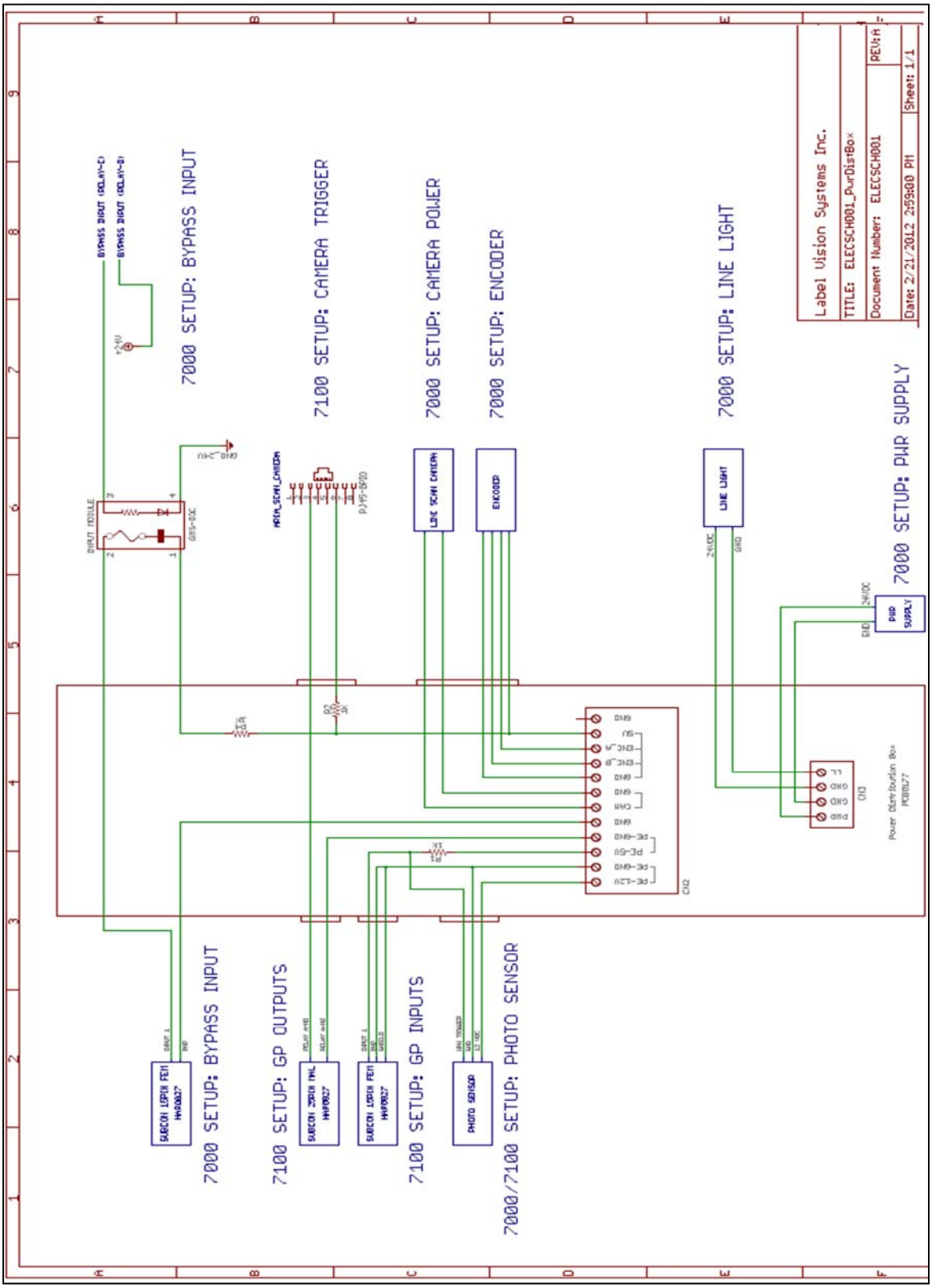
OCTOPUS CABLE PINOUT/COMPATIBILITY CHART

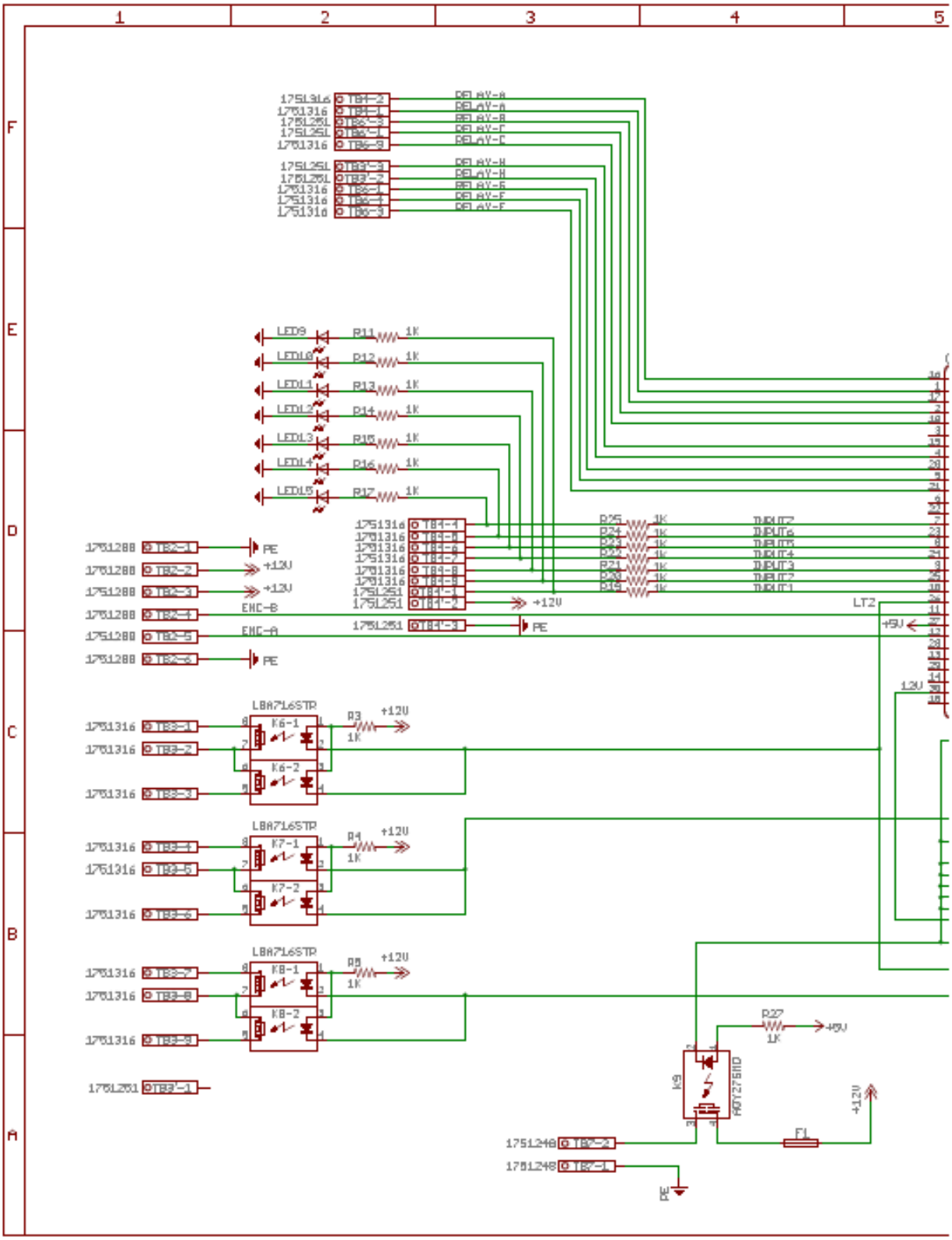
I/O BOARD PINOUT			OLD OCTOPUS CABLE (CAB0407) PINOUT				NEW OCTOPUS CABLE (CAB0542) PINOUT			
DB 44 MALE (F1)	OLD VER. (PCB0152)	NEW VER. (PCB0182-E)	DB9 FEM (F2)	DB15 MAL (F5)	DB15 FEM (F4)	DB25 MAL (F3)	DB9 FEM (F2)	DB15 MAL (F5)	DB15 FEM (F4)	DB25 MAL (F3)
pin 1	RELAY A-NO	RELAY A-NO				2				2
pin 2	RELAY C-NO	RELAY C-NO				6				6
pin 3	GND	5V				25				1,25
pin 4	RELAY H-NO	RELAY H-NO				16				16
pin 5	RELAY F-NO	RELAY F-NO				13				13
pin 6	GND	GND				24				22,23,24
pin 7	INPUT 7	INPUT 7			7				7	
pin 8	INPUT 5	INPUT 5			5				5	
pin 9	INPUT 3	INPUT 3			3				3	
pin 10	INPUT 1	INPUT 1			1				1	
pin 11	ENC B	ENC B	7				7			
pin 12	ENC A	ENC A	2				2			
pin 13	CAM PWR	CAM PWR	3				3			
pin 14	LL2 (24V)	12V	5						11,12	
pin 15	LL1 (24V)	5V	4						14,15	
pin 16	RELAY A-NO	RELAY A-NO				3				3
pin 17	RELAY B-NO	RELAY B-NO				4				4
pin 18	RELAY C-NO	RELAY C-NO				7				7
pin 19	RELAY H-NO	RELAY H-NO				17				17
pin 20	RELAY G-NO	RELAY G-NO				14				14
pin 21	RELAY F-NO	RELAY F-NO				12				12
pin 22	GND	GND			9 to 15				9,10	
pin 23	INPUT 6	INPUT 6			6				6	
pin 24	INPUT 4	INPUT 4			4				4	
pin 25	INPUT 2	INPUT 2			2				2	
pin 26	LT2-YellowLg	LT2-YellowLg		4				4		
pin 27	5V	5V	1				1			
pin 28	GND	GND	6				6			
pin 29	N/C	12V	-	-	-	-				18,19
pin 30	LT 12V	LT 12V		15				15		
pin 31	RELAY B-NO	RELAY B-NO				5				5
pin 32	RELAY D-NO	RELAY D-NO				8				8
pin 33	RELAY D-NO	RELAY D-NO				9				9
pin 34	RELAY G-NO	RELAY G-NO				15				15
pin 35	RELAY E-NO	RELAY E-NO				11				11
pin 36	RELAY E-NO	RELAY E-NO				10				10
pin 37	INPUT 8	INPUT 8			8				8	
pin 38	BEEPER	BEEPER		7				7		
pin 39	LT4-BlueLg	LT4-BlueLg		6				6		
pin 40	LT3-RedLg	LT3-RedLg		5				5		
pin 41	LT1-GreenLg	LT1-GreenLg		3				3		
pin 42	GND	GND	8				8			
pin 43	GND	GND	9				9			
pin 44	LT GND	LT GND		10 to 14				10 to 14		

Note: DB25 pins 1, 18 to 23 are N/C
DB15 MAL pins 1,2,8,9 are N/C

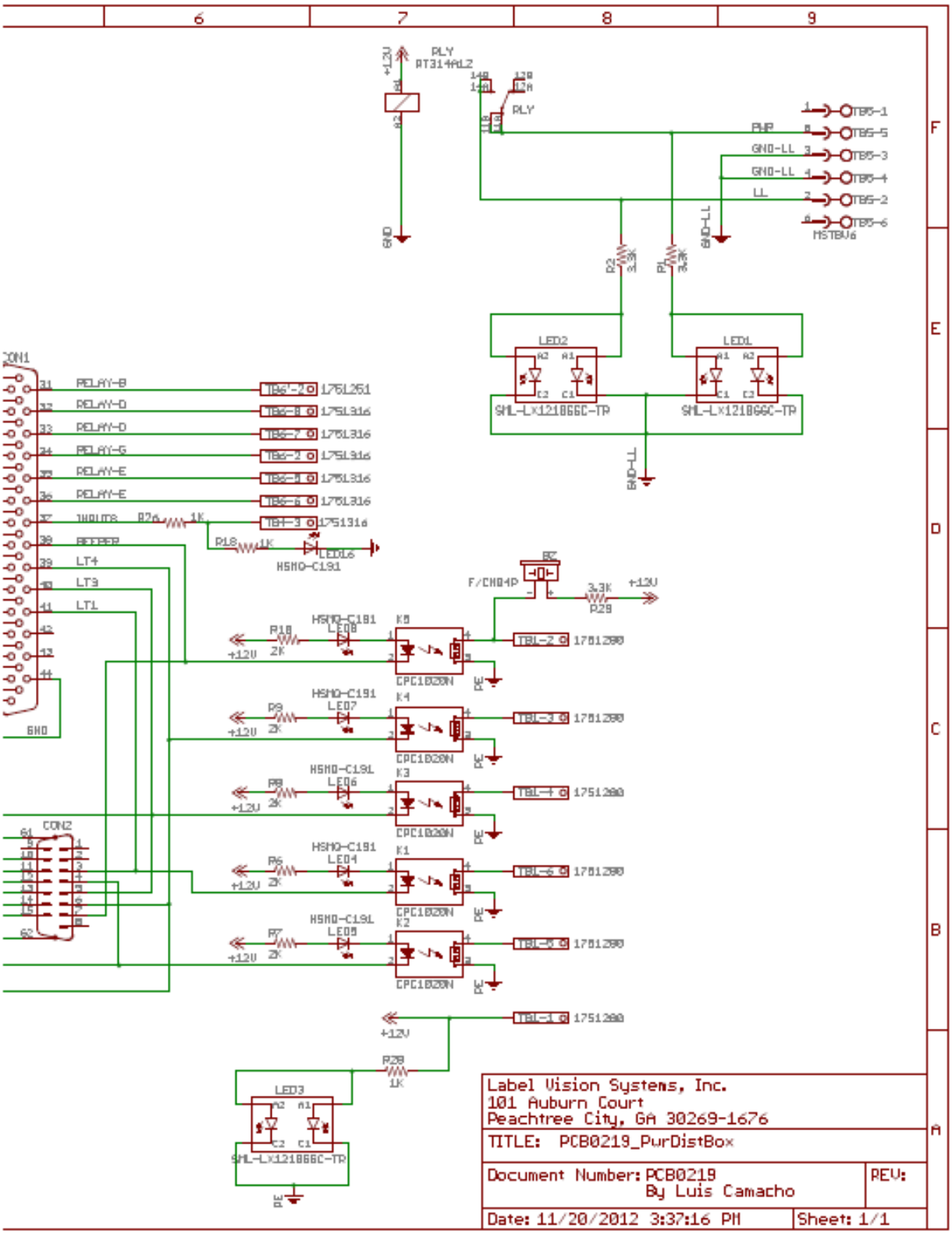
Note: DB9 pins 4,5 are N/C (not connected)
DB15 FEM pin 13 is N/C
DB25 pins 20,21 are N/C

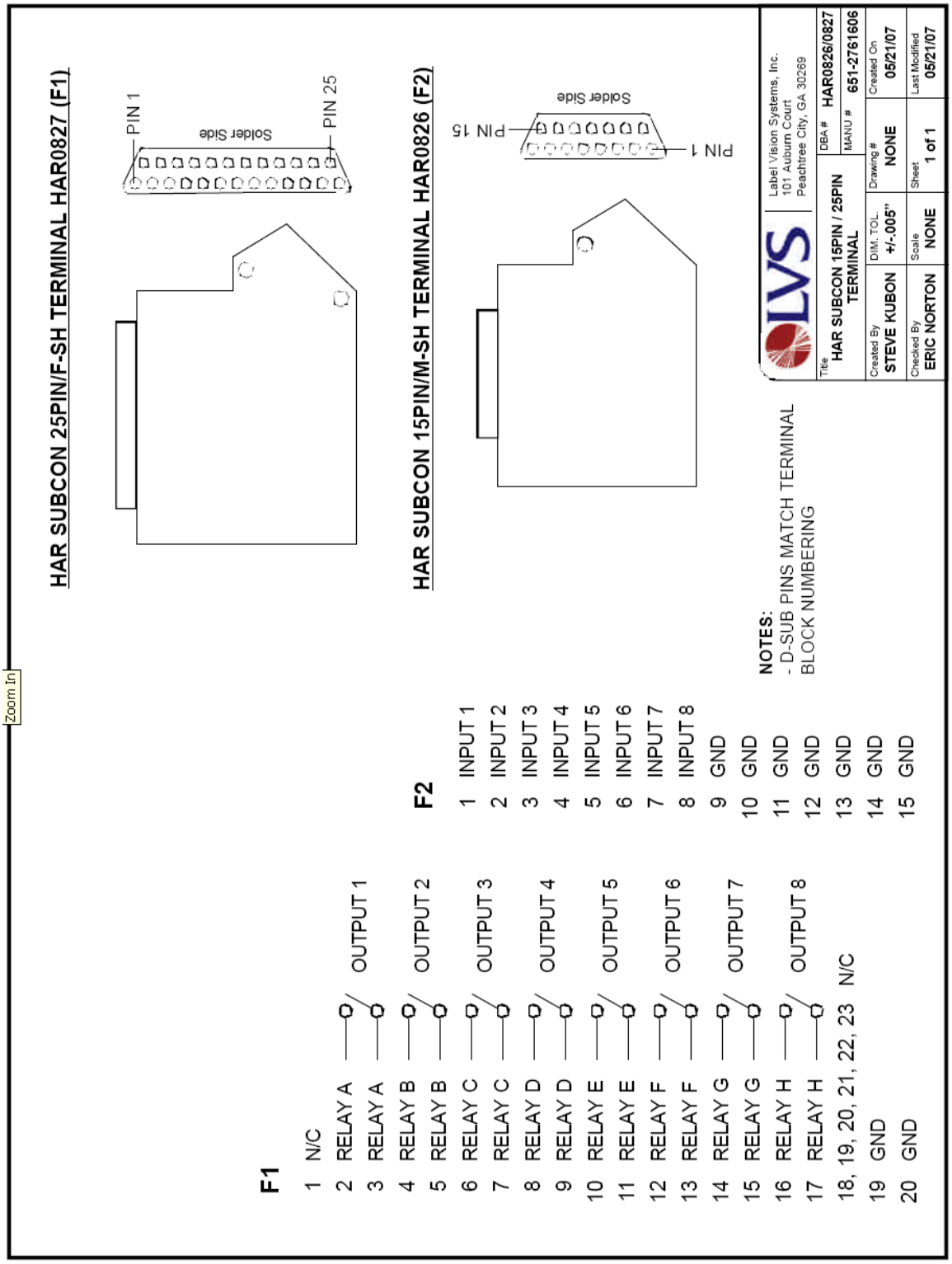
Doc #: CAB0542CCHART | Mod: 09/03/10

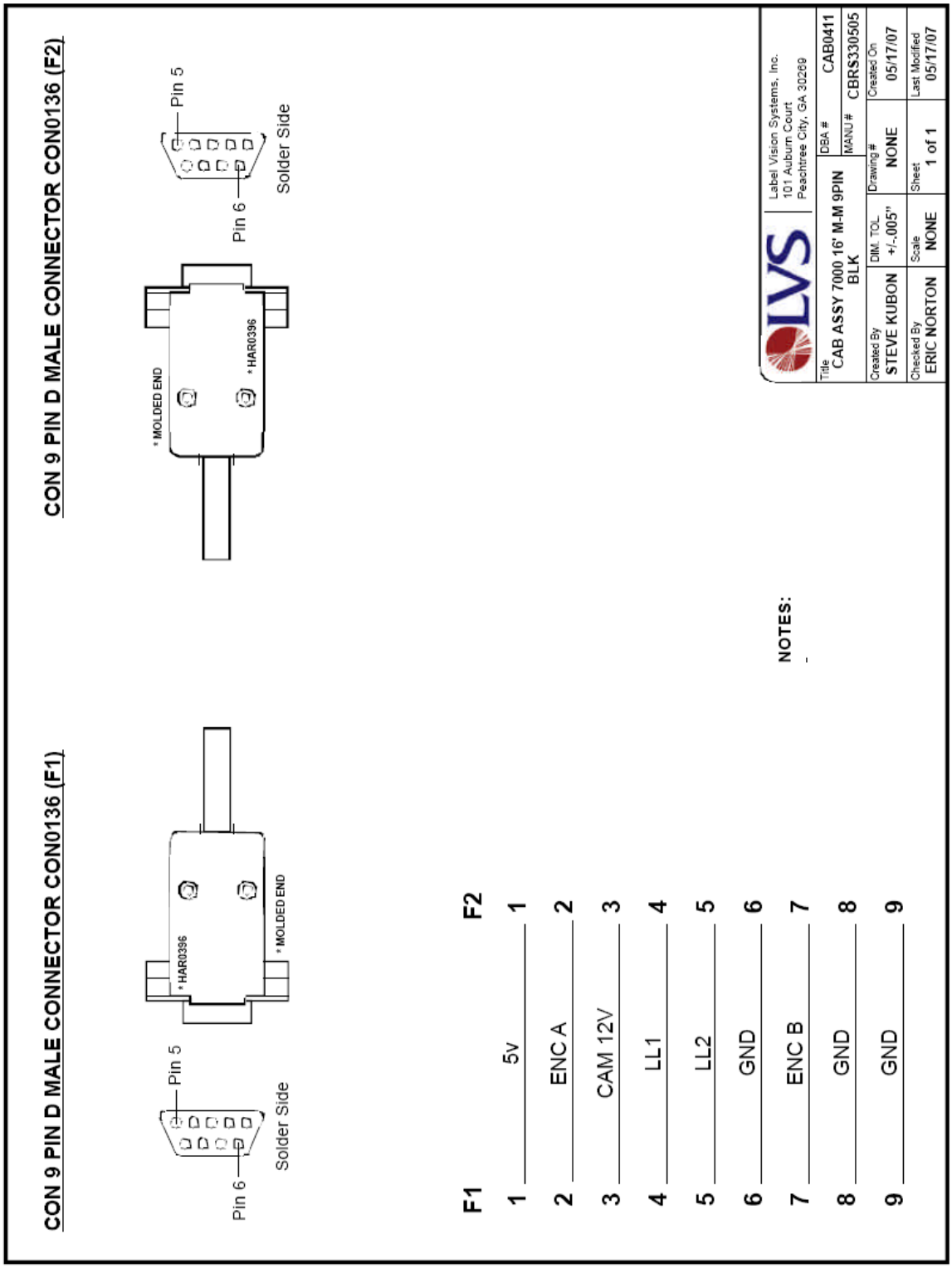

7000 SETUP: BYPASS INPUT
7100 SETUP: CAMERA TRIGGER
7000 SETUP: CAMERA POWER
7000 SETUP: ENCODER
7000 SETUP: LINE LIGHT
7000 SETUP: PWR SUPPLY
7000 SETUP: BYPASS INPUT
7100 SETUP: GP OUTPUTS
7100 SETUP: GP INPUTS
7000/7100 SETUP: PHOTO SENSOR
Label Vision Systems Inc.
TITLE: ELECSCH001_PwrDistBox
Document Number: ELECSCH001
REV:A
Date: 2/21/2012 2:59:00 PM
Sheet: 1/1



Other half of diagram displayed on next page.

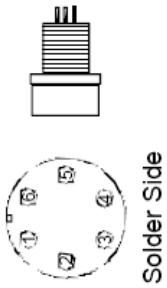

Label Vision Systems, Inc.
101 Auburn Court
Peachtree City, GA 30269-1676
TITLE: PCB0219_PurDistBox
Document Number: PCB0219
By Luis Camacho
REV:
Date: 11/20/2012 3:37:16 PM
Sheet: 1/1


HAR SUBCON 25PIN/F-SH TERMINAL HAR0827 (F1)
PIN 1
Solder Side
PIN 25
HAR SUBCON 15PIN/M-SH TERMINAL HAR0826 (F2)
PIN 15
Solder Side
PIN 1
F1
1 N/C
2 RELAY A OUTPUT 1
3 RELAY A
4 RELAY B OUTPUT 2
5 RELAY B
6 RELAY C OUTPUT 3
7 RELAY C
8 RELAY D OUTPUT 4
9 RELAY D
10 RELAY E OUTPUT 5
11 RELAY E
12 RELAY F OUTPUT 6
13 RELAY F
14 RELAY G OUTPUT 7
15 RELAY G
16 RELAY H OUTPUT 8
17 RELAY H
18, 19, 20, 21, 22, 23 N/C
19 GND
20 GND
F2
1 INPUT 1
2 INPUT 2
3 INPUT 3
4 INPUT 4
5 INPUT 5
6 INPUT 6
7 INPUT 7
8 INPUT 8
9 GND
10 GND
11 GND
12 GND
13 GND
14 GND
15 GND
NOTES:
- D-SUB PINS MATCH TERMINAL BLOCK NUMBERING
LVS
Label Vision Systems, Inc.
101 Auburn Court
Peachtree City, GA 30269
Title
HAR SUBCON 15PIN / 25PIN TERMINAL
DBA # HAR0826/0827
MANU # 651-2761606
Created By STEVE KUBON
DIM. TOL. +/-.005"
Drawing # NONE
Created On 05/21/07
Checked By ERIC NORTON
Scale NONE
Sheet 1 of 1
Last Modified 05/21/07
Zoom In


CON 9 PIN D MALE CONNECTOR CON0136 (F1)
Pin 5
Pin 6
Solder Side
* HAR0396
* MOLDED END
CON 9 PIN D MALE CONNECTOR CON0136 (F2)
Pin 5
Pin 6
Solder Side
* MOLDED END
* HAR0396
F1
F2
1 5v 1
2 ENC A 2
3 CAM 12V 3
4 LL1 4
5 LL2 5
6 GND 6
7 ENC B 7
8 GND 8
9 GND 9
NOTES:
-
LVS
Label Vision Systems, Inc.
101 Auburn Court
Peachtree City, GA 30269
Title
CAB ASSY 7000 16' M-M 9PIN BLK
DBA # CAB0411
MANU # CBRS330505
Created By STEVE KUBON
DIM. TOL. +/-.005"
Drawing# NONE
Created On 05/17/07
Checked By ERIC NORTON
Scale NONE
Sheet 1 of 1
Last Modified 05/17/07

6 CNTACT PLUG W/SOCKT INSRT CON0383 (F1)

UN-TERMINATED (F2)



UN-TERMINATED

F1		F2
2	+12V (RED)	+
5	GND (BLACK)	-

NOTES:
- Use 10' of WIR0022.
- Epoxy internal barrell.

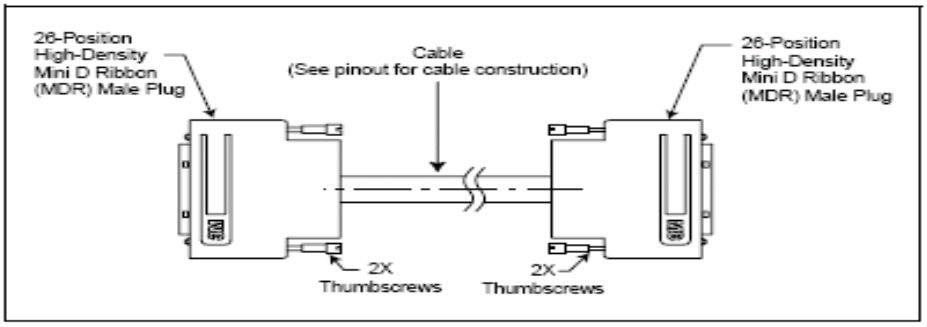
LVS
Label Vision Systems, Inc.
101 Auburn Court
Peachtree City, GA 30269

Title: CAB ASSY 7000 10' DLSA PWR UNTERMINATED		DBA #	CAB0417
		MANU #	CBL-3985
Created By: STEVE KUBON	D.IM. TOL. +/-.005"	Drawing # NONE	Created On 05/17/07
Checked By: ERIC NORTON	Scale NONE	Sheet 1 of 1	Last Modified 05/17/07

Camera Link Cable Pinout

Table 5-1. MDR-26 Connector Assignments

Medium and Full Configurations				Base Configuration (with Camera Control and Serial Communication)		
Camera Connector	Frame Grabber Connector	Channel Link Signal	Cable Name	Camera Connector	Frame Grabber Connector	Channel Link Signal
1	1	inner shield	Inner Shield	1	1	inner shield
14	14	inner shield	Inner Shield	14	14	inner shield
2	25	Y0-	PAIR1-	2	25	X0-
15	12	Y0+	PAIR1+	15	12	X0+
3	24	Y1-	PAIR2-	3	24	X1-
16	11	Y1+	PAIR2+	16	11	X1+
4	23	Y2-	PAIR3-	4	23	X2-
17	10	Y2+	PAIR3+	17	10	X2+
5	22	Yclk-	PAIR4-	5	22	Xclk-
18	9	Yclk+	PAIR4+	18	9	Xclk+
6	21	Y3-	PAIR5-	6	21	X3-
19	8	Y3+	PAIR5+	19	8	X3+
7	20	100 Ω	PAIR6+	7	20	SerTC+
20	7	terminated	PAIR6-	20	7	SerTC-
8	19	Z0-	PAIR7-	8	19	SerTFG-
21	6	Z0+	PAIR7+	21	6	SerTFG+
9	18	Z1-	PAIR8-	9	18	CC1-
22	5	Z1+	PAIR8+	22	5	CC1+
10	17	Z2-	PAIR9+	10	17	CC2+
23	4	Z2+	PAIR9-	23	4	CC2-
11	16	Zclk-	PAIR10-	11	16	CC3-
24	3	Zclk+	PAIR10+	24	3	CC3+
12	15	Z3-	PAIR11+	12	15	CC4+
25	2	Z3+	PAIR11-	25	2	CC4-
13	13	inner shield	Inner Shield	13	13	inner shield
26	26	inner shield	Inner Shield	26	26	inner shield



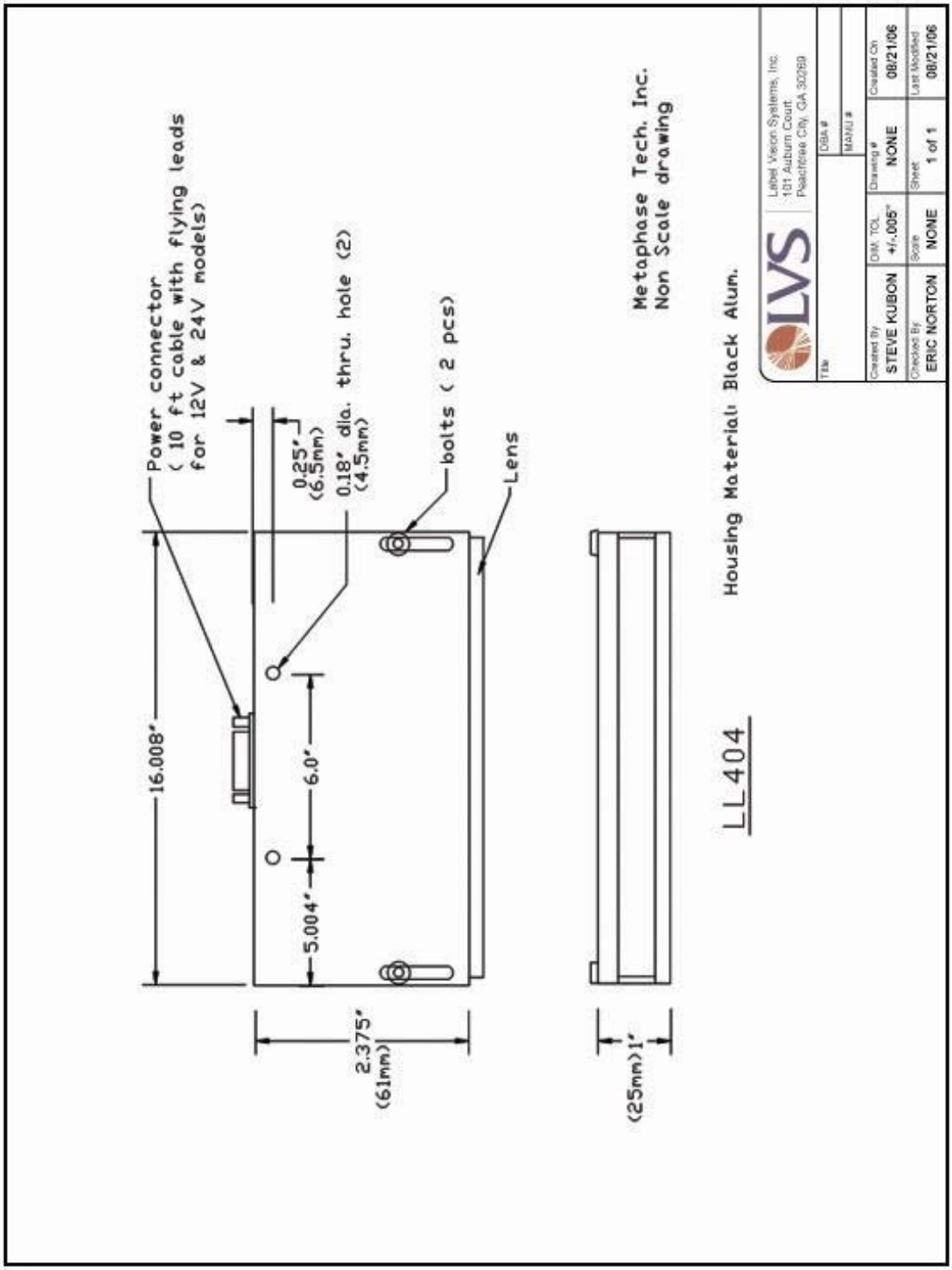
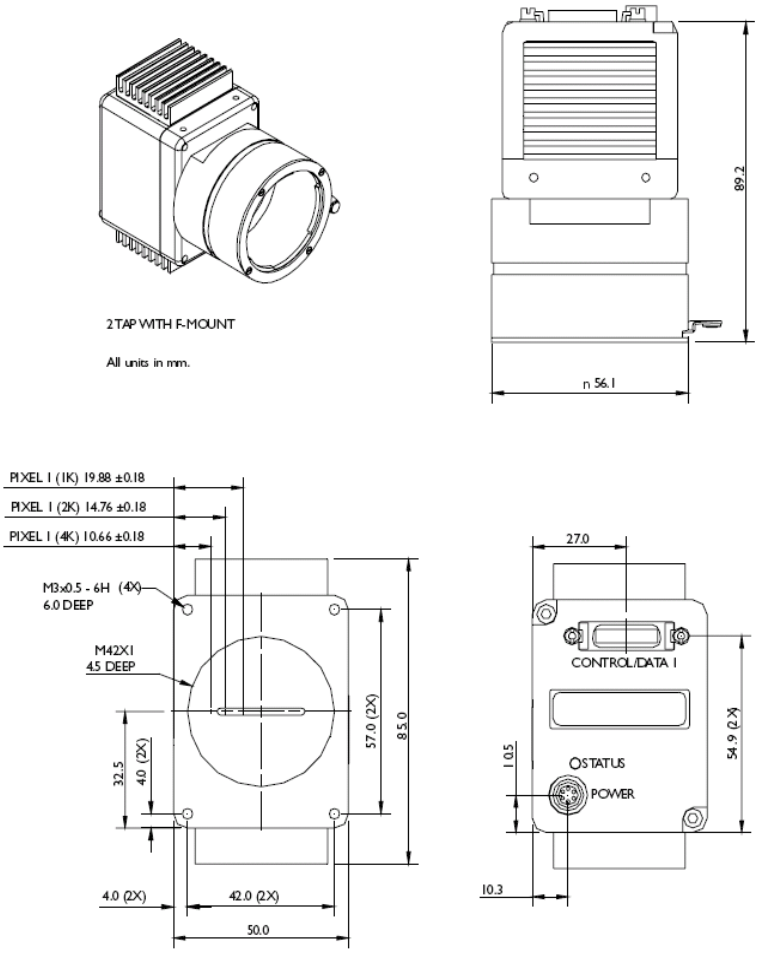
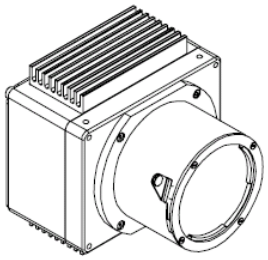
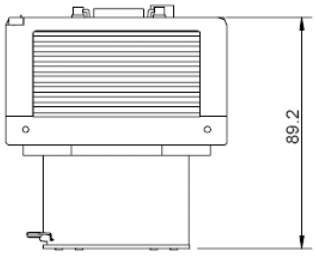

Power connector
(10 ft cable with flying leads
for 12V & 24V models)
0.25"
(6.5mm)
0.18" dia. thru. hole (2)
(4.5mm)
bolts (2 pcs)
Lens
16.008"
6.0"
5.004"
2.375"
(61mm)
(25mm)1"
Metaphase Tech. Inc.
Non Scale drawing
Housing Material: Black Alum.
LL404
LVS
Label Vision Systems, Inc.
101 Auburn Court
Peachtree City, GA 30269
Title
DBA #
NANU #
Created By
STEVE KUBON
DIM. TOL.
+/-.005"
Drawing #
NONE
Created On
08/21/06
Checked By
ERIC NORTON
Scale
NONE
Sheet
1 of 1
Last Modified
08/21/06

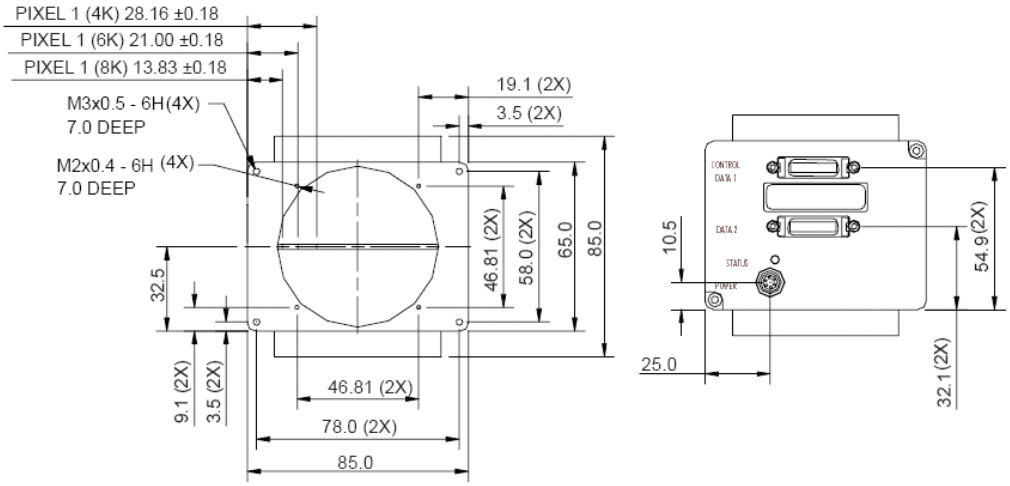
Figure 7. Piranha2 Small Body Mechanical Interface



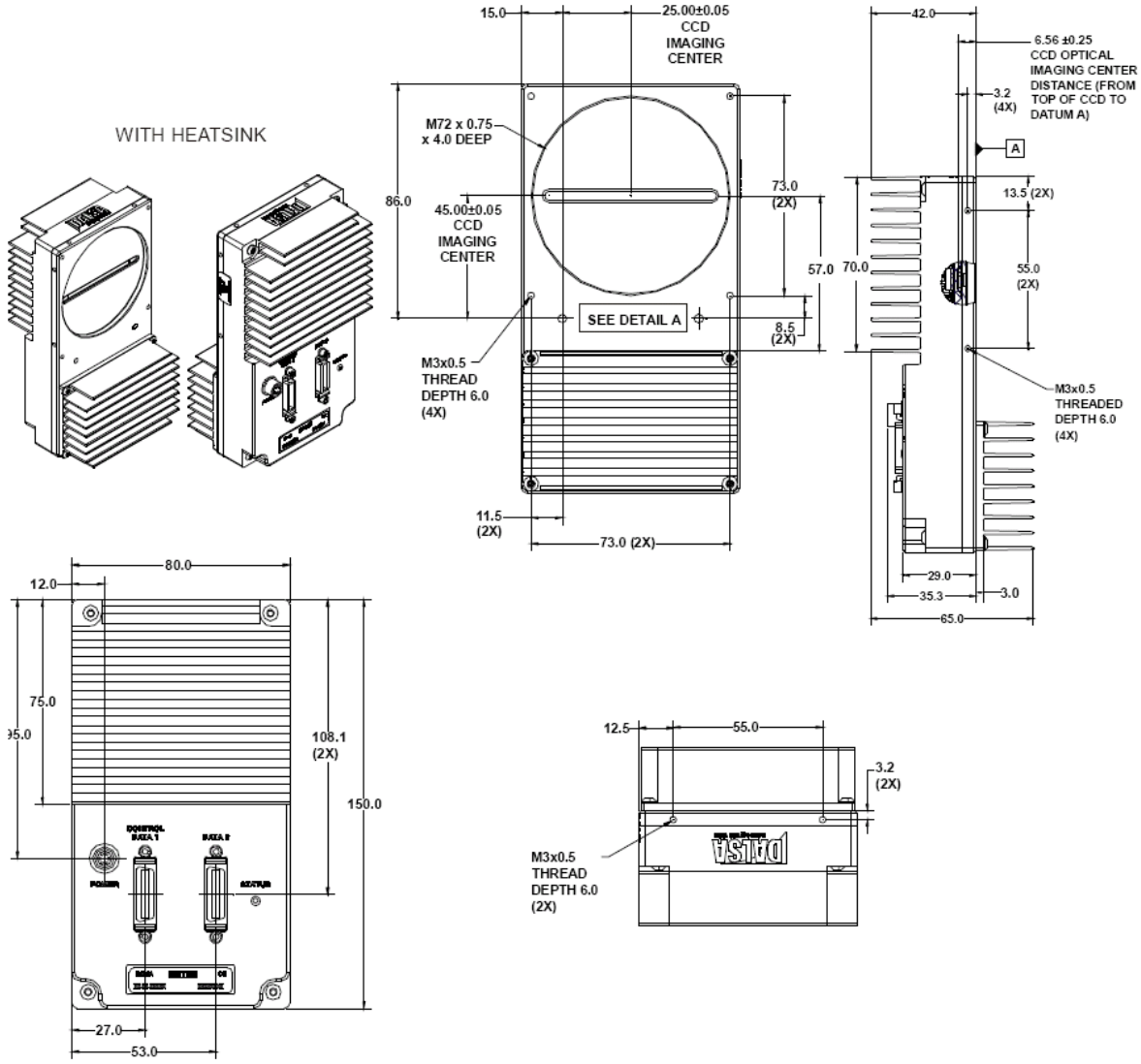
STANDARD 4K/6K 4 TAP WITH F MOUNT



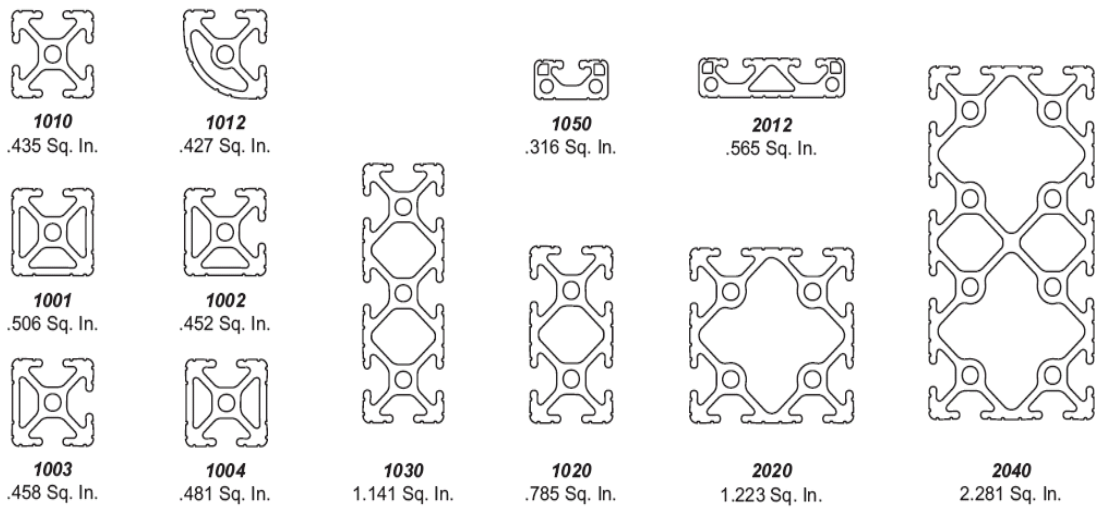




8k Resolution



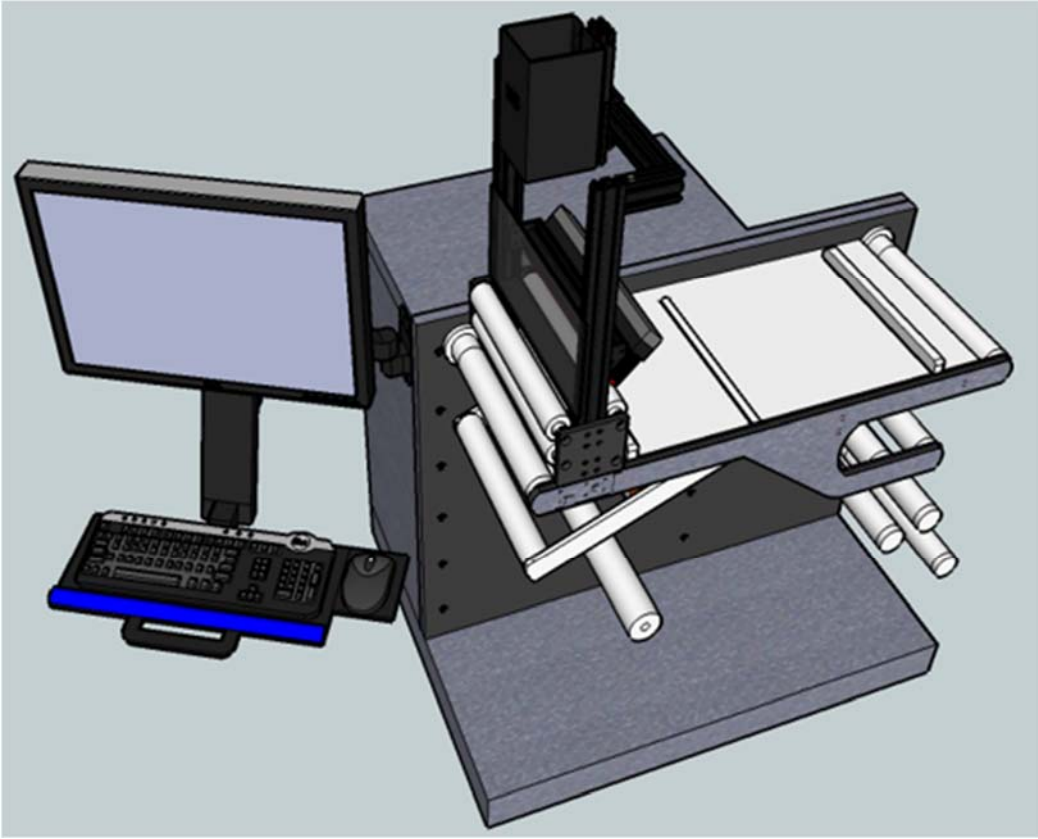
80/20 Aluminum Extrusion

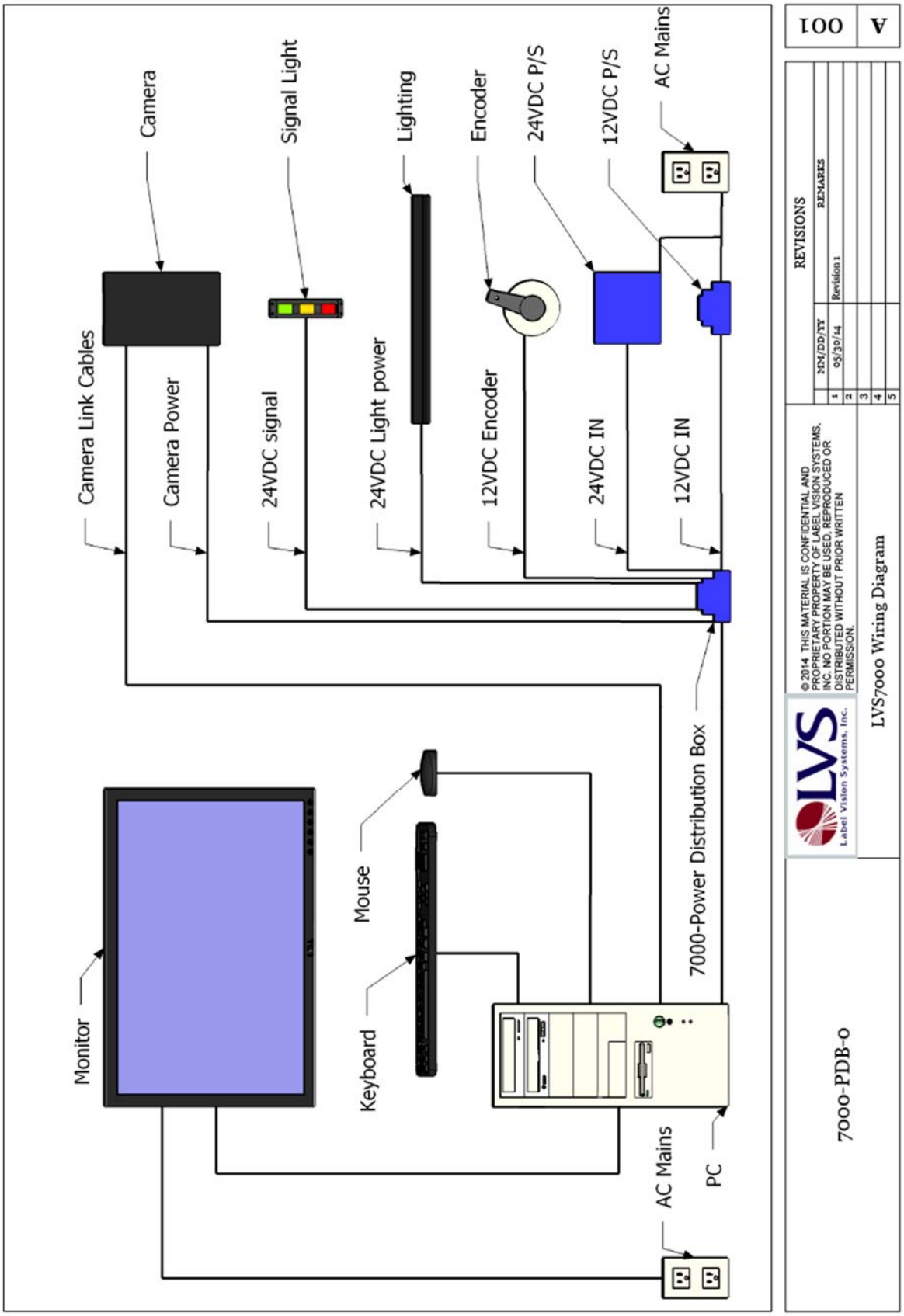


10 SERIES Extrusions

Part Number	1010	1001	1002	1003	1004	1012
Material	6105-T5 Aluminum					
Finish	Clear Anodize #204-R1					
Weight Per Foot	.5097 Lbs.	.5900 Lbs.	.5627 Lbs.	.5333 Lbs.	.5609 Lbs.	.4982 Lbs.
Stock Length *	97", 145", and 242"	145" or 242"	145" or 242"	145" or 242"	145" or 242"	145" or 242"
Moment of Inertia	IX=.0442"^{4}	IX=.0493"^{4}	IX=.0492"^{4}	IX=.0441"^{4}	IX=.0443"^{4}	IX=.0400"^{4}
	IY=.0442"^{4}	IY=.0542"^{4}	IY=.0492"^{4}	IY=.0491"^{4}	IY=.0541"^{4}	IY=.0400"^{4}
Estimated Area	.4379 Sq. In.	.5069 Sq. In.	.4834 Sq. In.	.4582 Sq. In	.4819 Sq. In	.4280 Sq. In
Modulus of Elasticity	10,200,000 Lbs./Sq. In.					

Part Number	1050	2012	1020	1030	2020	2040
Material	6105-T5 Aluminum					
Finish	Clear Anodize #204-R1					
Weight Per Foot	.3679 Lbs.	.6580 Lbs.	.9212 Lbs.	1.3498 Lbs.	1.4060 Lbs.	2.6146 Lbs.
Stock Length *	145"	145"	97", 145", and 242"	145" or 242"	145" or 242"	145" or 242"
Moment of Inertia	IX=.0074"^{4}	IX=.2250"^{4}	IX=.3078"^{4}	IX=.9711"^{4}	IX=.5509"^{4}	IX=3.5168"^{4}
	IY=.0323"^{4}	IY=.0146"^{4}	IY=.0833"^{4}	IY=.1238"^{4}	IY=.5509"^{4}	IY=1.0513"^{4}
Estimated Area	.3161 Sq. In.	.5653 Sq. In.	.7914 Sq. In.	1.1596 Sq. In	1.2079 Sq. In	2.2462 Sq. In
Modulus of Elasticity	10,200,000 Lbs./Sq. In.					




Camera
Signal Light
Lighting
Encoder
24VDC P/S
12VDC P/S
AC Mains
Camera Link Cables
Camera Power
24VDC signal
24VDC Light power
12VDC Encoder
24VDC IN
12VDC IN
7000-Power Distribution Box
Monitor
Mouse
Keyboard
AC Mains
PC
7000-PDB-0
REVISIONS
MM/DD/YY
REMARKS
1 05/30/14 Revision 1
2
3
4
5
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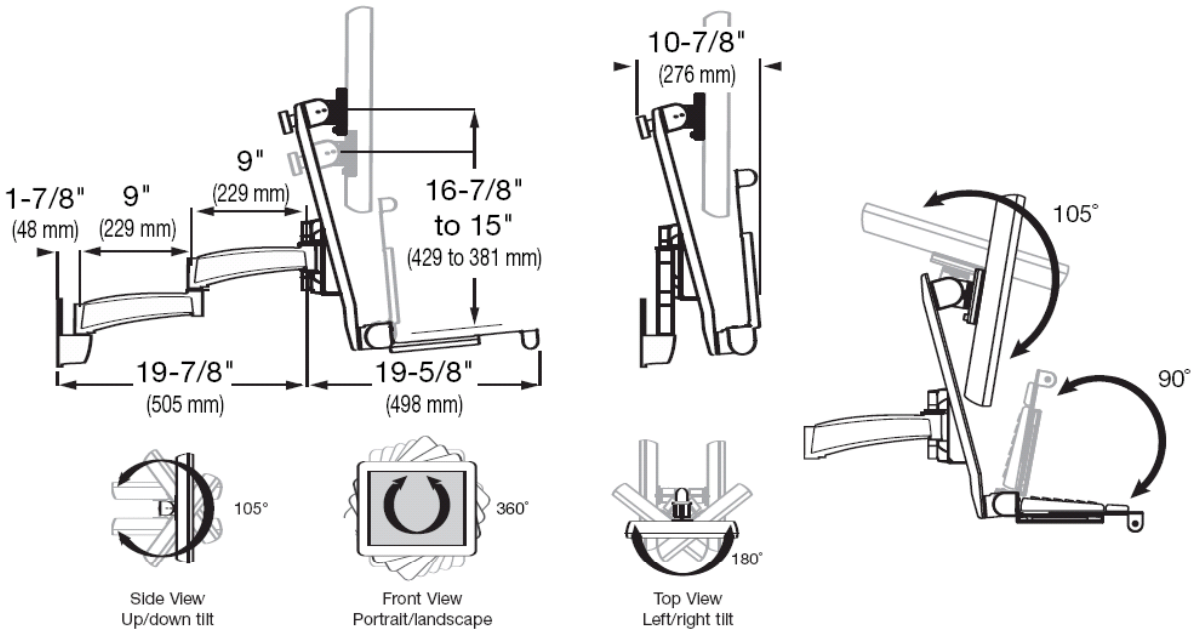
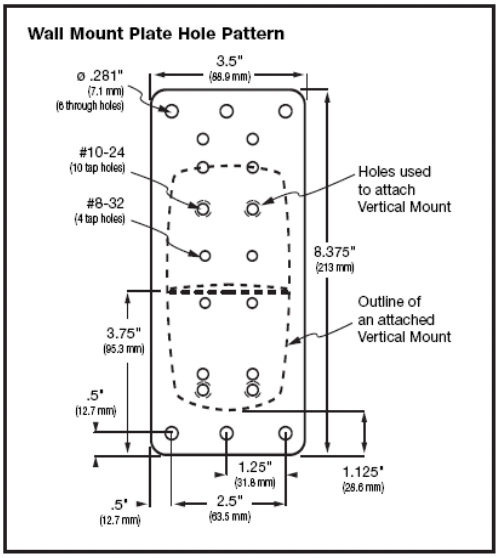
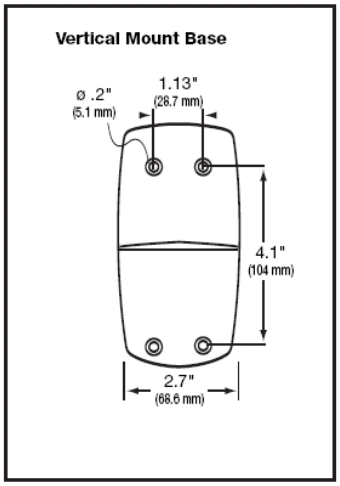
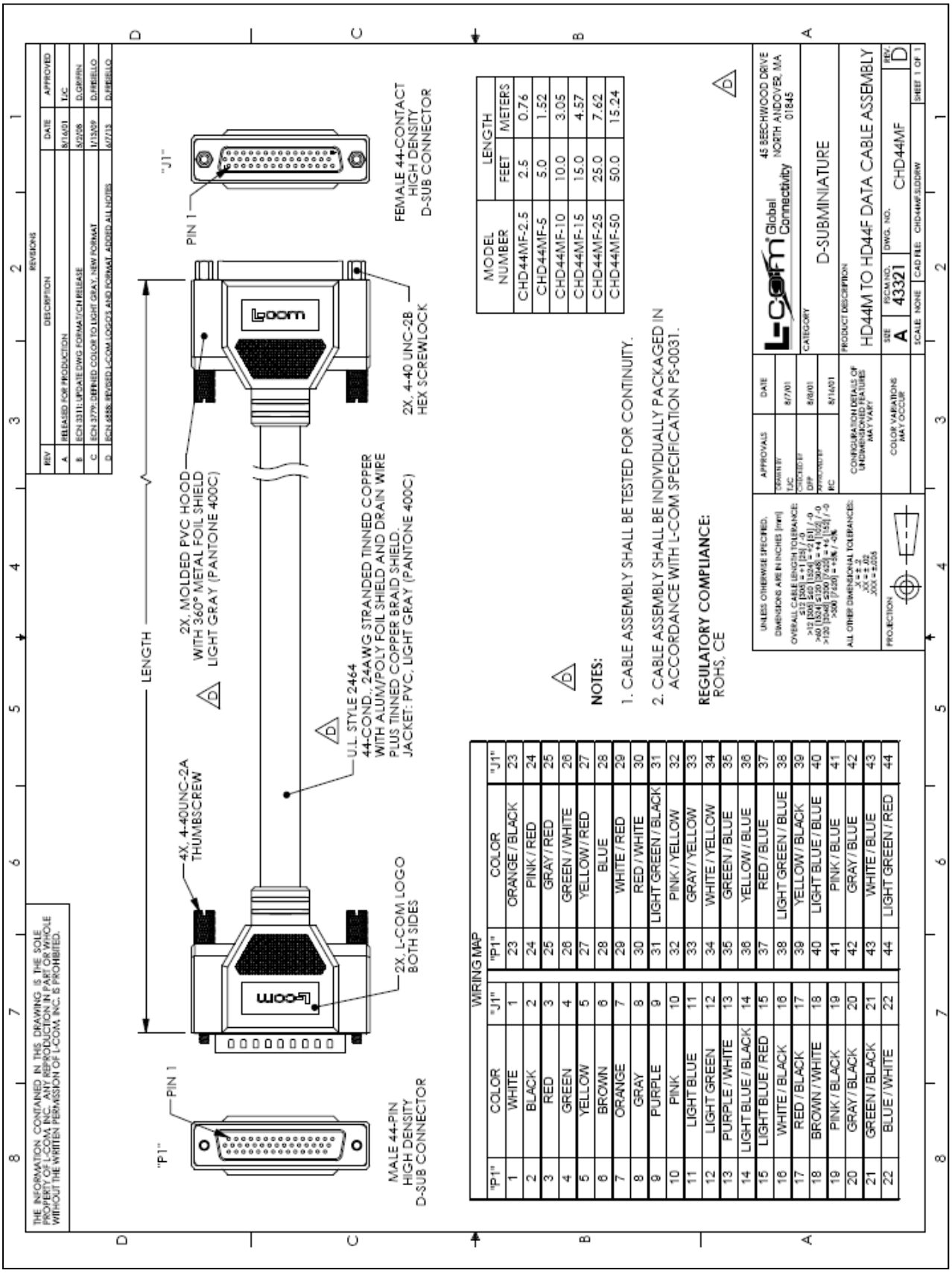
LVS
Label Vision Systems, Inc.
LVS7000 Wiring Diagram
A
001

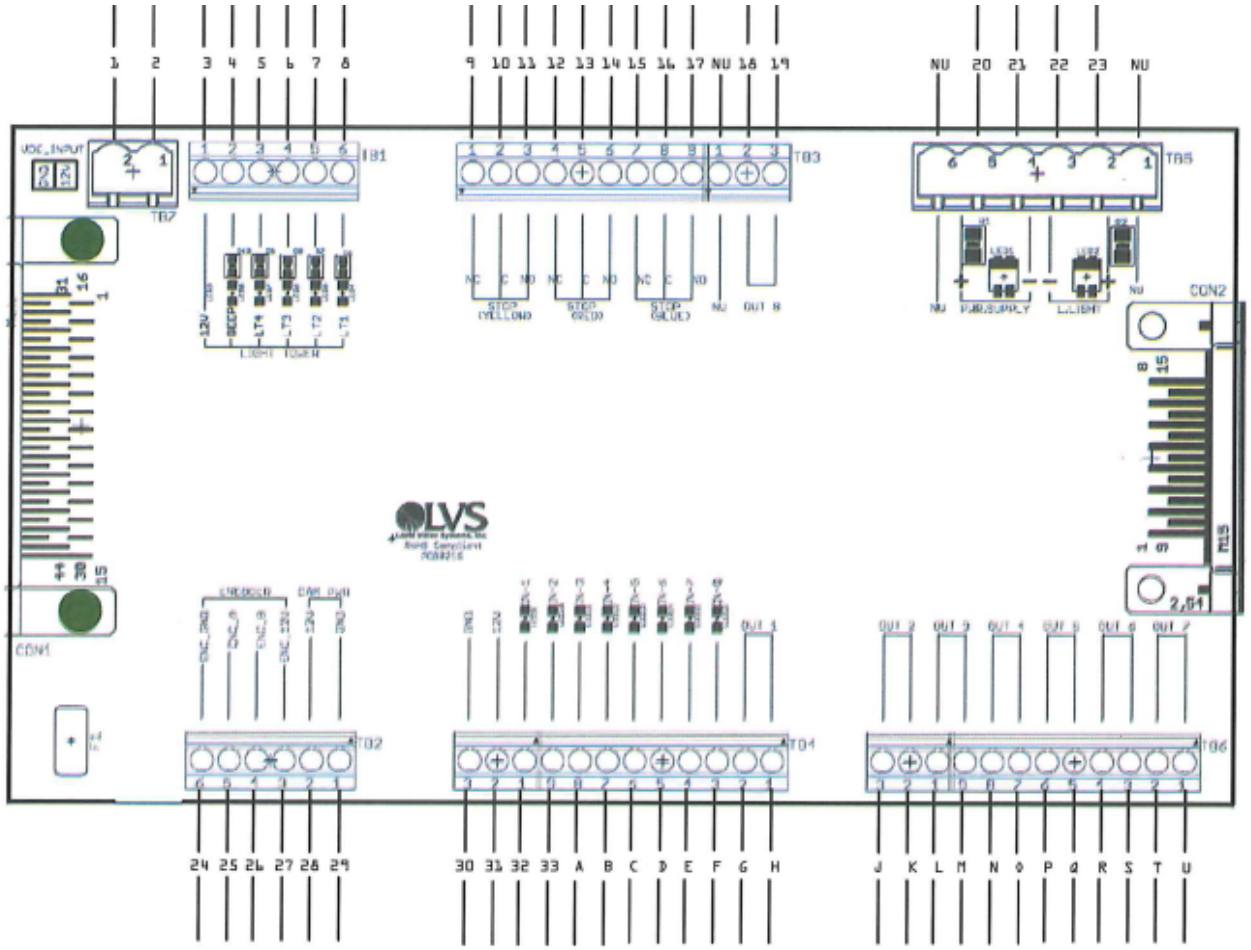
Ergotron® 200 Series Dimensional Illustrations








REVISIONS
REV DESCRIPTION DATE APPROVED
A RELEASED FOR PRODUCTION 8/16/01 TJC
B ECN 3311: UPDATE DWG FORMAT/CH RELEASE 3/2/06 D.GRIFFIN
C ECN 3779: DEFINED COLOR TO LIGHT GRAY, NEW FORMAT 1/13/09 D.FRIBELLO
D ECN 4886: REVISED L-COM LOGOS AND FORMAT, ADDED ALL NOTES 6/27/13 D.FRIBELLO
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF L-COM, INC. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF L-COM, INC. IS PROHIBITED.
"P1"
PIN 1
MALE 44-PIN HIGH DENSITY D-SUB CONNECTOR
4X. 4-40UNC-2A THUMBSCREW
2X. L-COM LOGO BOTH SIDES
LENGTH
2X. MOLDED PVC HOOD WITH 360° METAL FOIL SHIELD LIGHT GRAY (PANTONE 400C)
U.L. STYLE 2464 44-COND., 24AWG STRANDED TINNED COPPER WITH ALUM/POLY FOIL SHIELD AND DRAIN WIRE PLUS TINNED COPPER BRAID SHIELD. JACKET: PVC, LIGHT GRAY (PANTONE 400C)
"J1"
PIN 1
FEMALE 44-CONTACT HIGH DENSITY D-SUB CONNECTOR
2X. 4-40 UNC-2B HEX SCREWLOCK
WIRING MAP
"P1" COLOR "J1" "P1" COLOR "J1"
1 WHITE 1 23 ORANGE / BLACK 23
2 BLACK 2 24 PINK / RED 24
3 RED 3 25 GRAY / RED 25
4 GREEN 4 26 GREEN / WHITE 26
5 YELLOW 5 27 YELLOW / RED 27
6 BROWN 6 28 BLUE 28
7 ORANGE 7 29 WHITE / RED 29
8 GRAY 8 30 RED / WHITE 30
9 PURPLE 9 31 LIGHT GREEN / BLACK 31
10 PINK 10 32 PINK / YELLOW 32
11 LIGHT BLUE 11 33 GRAY / YELLOW 33
12 LIGHT GREEN 12 34 WHITE / YELLOW 34
13 PURPLE / WHITE 13 35 GREEN / BLUE 35
14 LIGHT BLUE / BLACK 14 36 YELLOW / BLUE 36
15 LIGHT BLUE / RED 15 37 RED / BLUE 37
16 WHITE / BLACK 16 38 LIGHT GREEN / BLUE 38
17 RED / BLACK 17 39 YELLOW / BLACK 39
18 BROWN / WHITE 18 40 LIGHT BLUE / BLUE 40
19 PINK / BLACK 19 41 PINK / BLUE 41
20 GRAY / BLACK 20 42 GRAY / BLUE 42
21 GREEN / BLACK 21 43 WHITE / BLUE 43
22 BLUE / WHITE 22 44 LIGHT GREEN / RED 44
MODEL NUMBER LENGTH FEET METERS
CHD44MF-2.5 2.5 0.76
CHD44MF-5 5.0 1.52
CHD44MF-10 10.0 3.05
CHD44MF-15 15.0 4.57
CHD44MF-25 25.0 7.62
CHD44MF-50 50.0 15.24
NOTES:
1. CABLE ASSEMBLY SHALL BE TESTED FOR CONTINUITY.
2. CABLE ASSEMBLY SHALL BE INDIVIDUALLY PACKAGED IN ACCORDANCE WITH L-COM SPECIFICATION PS-0031.
REGULATORY COMPLIANCE:
ROHS, CE
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES [mm]
OVERALL CABLE LENGTH TOLERANCE:
≤12 [305] = +1 [25] / -0
>12 [305] ≤60 [1524] = +2 [51] / -0
>60 [1524] ≤120 [3048] = +4 [102] / -0
>120 [3048] ≤300 [7620] = +4 [102] / -0
>300 [7620] = +2%
ALL OTHER DIMENSIONAL TOLERANCES:
X = ± .1
XX = ± .02
XXX = ± .005
PROJECTION:
APPROVALS DATE
DRAWN BY TJC 8/7/01
CHECKED BY DFP 8/8/01
APPROVED BY RC 8/16/01
CONFIGURATION DETAILS OF UNDIMENSIONED FEATURES MAY VARY
COLOR VARIATIONS MAY OCCUR
L-COM Global Connectivity
45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845
CATEGORY
D-SUBMINIATURE
PRODUCT DESCRIPTION:
HD44M TO HD44F DATA CABLE ASSEMBLY
SIZE A
REC'M NO. 43321
DWG. NO. CHD44MF
REV. D
SCALE: NONE
CAD FILE: CHD44MF.SLDDRW
SHEET 1 OF 1



Wire Number	Signal	NOTES
1	GROUND (12VDC P/S)	
2	12VDC (P/S)	
3	STACK LIGHT 12VDC	
4	STACK LIGHT BEEP	
5	STACK LIGHT BLUE	
6	STACK LIGHT RED	
7	STACK LIGHT YELLOW	
8	STACK LIGHT GREEN	
9	YELLOW RELAY (NC)	
10	YELLOW RELAY (C)	
11	YELLOW RELAY (NO)	
12	RED RELAY (NC)	
13	RED RELAY (C)	
14	RED RELAY (NO)	
15	BLUE RELAY (NC)	
16	BLUE RELAY (C)	
Unused Terminal (NU)		
17	BLUE RELAY (NO)	
18	O/P 8	
19	O/P 8	
Unused Terminal (NU)		
20	24VDC (FROM P/S)	
21	GROUND (FROM P/S)	
22	LIGHT GROUND	
23	LIGHT 24VDC	
Unused Terminal (NU)		

Wire Number	Signal	NOTES
24	GROUND (ENCODER)	
25	ENCODER A SIGNAL	
26	ENCODER B SIGNAL	
27	+12VDC ENCODER	
28	+12VDC (CAMERA)	
29	GROUND (CAMERA)	
30	GROUND	
31	+12VDC	
32	I/P 1 (HI TO ACTIVATE)	
33	I/P 2 (HI TO ACTIVATE)	
A	I/P 3 (HI TO ACTIVATE)	
B	I/P 4 (HI TO ACTIVATE)	
C	I/P 5 (HI TO ACTIVATE)	
D	I/P 6 (HI TO ACTIVATE)	
E	I/P 7 (HI TO ACTIVATE)	
F	I/P 8 (HI TO ACTIVATE)	
G	O/P 1	
H	O/P 1	
J	O/P 2	
K	O/P 2	
L	O/P 3	
M	O/P 3	
N	O/P 4	
O	O/P 4	
P	O/P 5	
Q	O/P 5	
R	O/P 6	
S	O/P 6	
T	O/P 7	
U	O/P 7	

Appendix A: LVS7000.ini File

The LVS-7000 uses the LVS7000.ini file to configure variable/default values when the program loads. The file is located in the following directory:

- **Version 5.6.9:** C:\Users\<username>\AppData\Roaming\Microscan\LVS 7000\Lvs7000.ini

(Pre-5.6.9 Folders)

- **Windows® 7:** C:\Users\<username>\AppData\Roaming\Label Vision Systems\LVS 7000\Lvs7000.ini
- **Windows® XP:** C:\Program Files\Label Vision Systems\LVS7000\Lvs7000.ini

Below is a sample LVS7000.ini file with descriptions:

System Configuration Settings:

The SystemConfiguration settings are not user configurable and should not be altered unless requested by a qualified Omron Microscan representative.

- CameraPort is designated as 0 for the LVS-7000 software.
- ColorMode is for Omron Microscan technician use only; it identifies the type of camera being used by the LVS-7000.
    - ColorMode=0 is a monochrome camera
    - ColorMode=1 is a color camera
- DistanceMethod=0 – I7000 shows Encoder Triggers; DistanceMethod=1 – Encoder distance is shown in inches.
- EncoderPort is determined by the encoder board's serial port in Device Manager.
- MaxSpeed is determined by the camera's top speed
- LinesPerInch is the product of dividing the encoder's pulses per revolution by the circumference of the encoder wheel. This number is used to correctly gauge label repeat.
- PageBreaks are used to let the system know if there are expected non-uniformities of label repeats. 0 = none expected, 1=expected. If the system expects these repeats then it will not log those as errors once seen. This is dangerous as the system in this mode can be fooled by a missing label. It can let a missing label go by and never call out an error.
- RIMSBarcodePlacement is an offset for the barcode placement in an LVS-7000 RIMS system from the camera viewing point.
- ShowPrintBarcode is the press Identifier for multiple presses in a LVS-7000 RIMS system.

```
[SystemConfiguration]
CameraPort=0
ColorMode=1
DistanceMethod=1
EncoderPort=4
MaxSpeed=500
LinesPerInch=341.333
PageBreaks=1
RimsBarcodePlacement=0
ShowPrintBarcode=0
```

Alarm Matrix:

Default settings for the Alarm Matrix. These settings are entered by the Installation Technician at the time of system installation.

- UseAcknowledgementIO=1 – When this setting is set to 1, and UsePassFailMethod=1, the Alarm Matrix Pass/Fail view is displayed along with the “Ack Input” and “Ack Output” columns.
- UsePassFailMethod indicates how the Alarm Matrix is displayed.
    - UsePassFailMethod=0 (default) – Displays the Alarm Matrix in the “Error Condition View,” which displays error-specific I/O information.
    - UsePassFailMethod=1 – Displays the Alarm Matrix in the “Pass/Fail View” which is I/O based on the pass or fail status of the entire inspection.

```
[Alarm matrix]
Line01=Good read    ,I/O line 1,100ms,
Line02=Stop motion  ,I/O line 4,100ms,
Line03=Grade warning,   I/O line 2,100ms,
Line04=Background   ,I/O line 3,100ms,do not stop
Line05=Bypass mode   ,I/O line 3,100ms,do not stop
Line06=Database engine,  I/O line 3,100ms,immediately
Line07=Delta E        ,I/O line 3,100ms,do not stop
Line08=Die cut      ,I/O line 3,100ms,do not stop
Line09=Duplicate    ,I/O line 3,100ms,do not stop
Line10=Foreground   ,I/O line 3,100ms,do not stop
Line11=Gap          ,I/O line 3,100ms,do not stop
Line12=Matrix       ,I/O line 3,100ms,do not stop
Line13=Mismatch     ,I/O line 3,100ms,do not stop
Line14=Not assessed ,I/O line 3,100ms,do not stop
Line15=Not synced   ,I/O line 3,100ms,do not stop
Line16=No read      ,I/O line 3,100ms,do not stop
Line17=Quality      ,I/O line 3,100ms,do not stop
Line18=Range        ,I/O line 3,100ms,do not stop
Line19=Sequence     ,I/O line 3,100ms,do not stop
Line20=Wrong length ,I/O line 3,100ms,do not stop
UseAcknowledgementIO=1
UsePassFailMethod=0
```

Aperture Settings:

The aperture settings are used to calculate barcode grading. These should not be changed by a customer unless requested by a qualified Omron Microscan representative.

```
[Aperture]
ApertureScaling1D=1.0
ApertureScaling2D=0.8
IgnoreGS1Rules=0
SharpenMatrixSize=5
SharpenValue=35

[ApertureReading]
ApertureScaling1D=1.0
ApertureScaling2D=0.8
SharpenMatrixSize=5
SharpenValue=35
```

Blemish Settings:

The Blemish Settings are user configurable.

- ColorCode, Debug (default is 0), FloodDiff and FloodSize are only to be used when requested by a qualified Omron Microscan representative.
- MaxErrorsBeforeQuit – When a given sector reaches more than the number of errors defined in this field, the LVS-7000 stops reporting the errors. For example, If MaxErrosBeforeQuit=20, the LVS-7000 stops reporting errors after a given sector reaches 20 errors. **NOTE:** This value is configurable; however, the value must limited to keep from causing processing overflow.
- MaxThumbnailsPerSector limits how many thumbnails are used for a single sector's errors.
- ScrollMax controls the maximum size of a blemish. Value is in inches.
- ShowMatrixDieCutControls is used to make the sensitivity controls for Matrix and Die Cut available during setup.
- SquareSize is the size of boxes that any given Blemish sector will be cropped into.
- TargetDPI is used for Blemish quality. Lower settings help the system to run faster but fewer errors are found. Higher settings slow the system but more errors will be found. It is advised to leave this setting as is unless instructed by an Omron Microscan representative.
- Wander is used to align pixels within the Blemish sector FOREGROUND Only. It will hunt for the best matching pixel values in an array size equal to the WanderX,Y value.

[Blemish]

ColorCode=0
Debug=0
FloodDiff=2.0
FloodSize=2
MaxErrorsBeforeQuit=50
MaxThumbnailsPerSector=4
ScrollMax=0.125
ShowMatrixDieCutControls=0
SquareSize=4
TargetDPI=204.8
WanderX=6
WanderY=6

Blemish Extra:

These settings control the Blemish defaults in the LVS-7000 software.

[BlemishExtra]

Contrast=65
ForegroundSensitivity=65
ForegroundSize=0.015
BackgroundSensitivity=50
BackgroundSize=0.024
MatrixSensitivity=25
MatrixSize=0.06
DieCutSensitivity=50
DieCutTolerance=0.039

Calibration Settings:

Calibration setting data is updated by the main program with the exception of “Max DaysBeforeRequired=10”. This number is customer configurable. It will make the operator calibrate the system after “X” amount of days. All other parameters under this heading should not be altered.

[Calibration]

GainOffset=-20
GainSlope=0.33
MaxDaysBeforeRequired=0
MilsPerPixel=2
SAG=1.2
SAO=640
SmoothGraininess=40
SSG=96

Calibration Card Settings:

The Calibration Card settings may need to be changed depending on the LVS-7000 calibration card used to calibrate the system and customer specified settings.

- Barcodes is the minimum number of barcodes that must be present on the Calibration screen to complete calibration.
- Data, Rmax, Rmin and Xdim are marked on the card and should be entered to match those values.
- MaxWhite is the highest reflectance value allowed when shining the light on the designated white standard. This is the top of the green bar seen during the calibration procedure.
- MinWhite is the minimum reflectance value allowed when shining the light on the designated white standard. This is the bottom of the green bar seen during the calibration procedure.
- Min Overall is the minimum overall grade of any barcode used to calibrate.

[Calibration card]

Barcodes=0
Data=1234
MaxWhite=90
MinWhite=80
MinOverall=2.0
Rmax=89
Rmin=5
Xdim=21.3

Camera Parameters:

The Camera parameters are not user configurable and should not be altered unless requested by a qualified Omron Microscan representative.

[Camera]

CalSpeed=44
Flip=0
MinSpeed=0
SAO=0 to 1023
SAG=-10.0 to 10.0
SSG=0 to 511

CharSet Parameters:

The CharSet parameters are for OCR/OCV and are customer configurable. They dictate which characters are to be used or omitted within a sequential number system.

[CharSet]
Numeric=0123456789
AlphaNumeric=ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789
NumericAlpha=0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ

Color Parameters:

The Color parameters are the Red, Green and Blue values calculated during calibration. These settings should only be configured by an Omron Microscan technician.

[Color]

BalanceMatrix=3
RedBalance=1.00
GreenBalance=1.00
BlueBalance=1.00
RedTarget=250
GreenTarget=250
BlueTarget=250
RGBGGain=1.0

Database:

The Database parameter lists the connection string of the database being used.

[Database]

ConnectionString=Provider=Microsoft.Jet.OLEDB.4.0;Data Source="%.mdb"
LimitDuplicateCheckingSize=X will limit duplicate checking to the leftmost X characters.

Debug:

Debug is not user configurable and should not be altered unless requested by a qualified Omron Microscan representative.

[Debug]

Mode=0

Encoder Parameters:

The Encoder parameters are used as instructions sent to the External Control Unit of the LVS-7000.

- AcceptReplaceOutputString defines the output signal sent when the “Accept” or “Replace” buttons are selected when reviewing errors on the Operate screen.
- ArrowOffset should not be altered as this is a result of changing the arrow’s position when using the ShowRollerOnReverse feature.
- AutoRejectDistance sets a distance that the system will send a BAD signal.
- CameraToInspection is the distance from the camera to the downstream inspection table.
- EncoderDirection defines the quadrature encoder direction for the LVS-7000.
    - EncoderDirection=0 – A leads B
    - EncoderDirection=1 – B leads A
- InitialCommand should only be configured by a qualified Omron Microscan representative.
- The OverrideLine setting is used if a customer requires one of the I/O ports to change states at program start up. It will hold this line high until the program is closed. Most commonly used as a handshaking to a

rewinder. Multiple ports can be triggered by adding the numbers into a string. 345 would activate ports (3), (4), (5) at software start up.

- Preset is the default starting location of the encoder pulse count.
- RegradeOnReverse tells the software if labels needs to be re-graded when a Rewinder winds the labels back to a point then forward again.
    - RegradeOnReverse=0 – No previously checked labels are re-graded. Do not re-grade after moving in reverse.
    - RegradeOnReverse=1 – Re-grades images after moving in reverse and advancing if operator has pressed Replaced.
    - RegradeOnReverse=2 – All repeats are re-graded and put into log.
    - RegradeOnReverse=3 – (Must have StopLoggingOnErrors set to 1) Will re-grade only the repeats that have been marked Replaced; otherwise, re-grading will begin with the first repeat after the (one and only one) defect label not marked as replaced has passed the camera (any subsequent repeat defects prior to the stop motion signal will appear in the error log, but be deleted after the stop motion signal has been sent).
    - RegradeOnReverse=4 – LinesPerInch must be exactly 400.0 not 409.6. Error log entries will be color coded as follows:
        - **White** – Next error at the inspection table when stopped (Accept enabled; Replaced not enabled)
        - **Yellow** – Next error, web moving or stopped but not at inspection table (buttons not enabled)
        - **Cyan** – NOT Next error, but stop motion has been sent (buttons not enabled)
        - **Gray** – NOT Next error, but web stopped and error is at splice table (buttons not enabled)
        - **Red** – Next error at splice table, web stopped (accept not enabled, replaced enabled) System will begin inspecting once error has reached camera all other errors will be deleted and re-inspected.
- SetRunStatusOutput sets an output signal to high when the system is running. Enter any number from 0 to 8. Zero disables the output signal and any number from 1 to 8 sets the output signal high when the system is running and low when the system is not running.
    - SetRunStatusOutput=0 disables the output signal.
    - SetRunStatusOutput=1 [and any number up to 8] sets the output signal to high.
- ShowRollerOnReverse determines if a Roll-to-Roll will be displayed when running in reverse.
    - ShowRollerOnReverse=0 – Shows the actual image when running in reverse
    - ShowRollerOnReverse=1 – Shows the Roll-to-Roll image when running in reverse.
- SimulateStopMotion should only be configured by a qualified Omron Microscan representative.
- SpliceToCamera is the distance from the camera to the upstream splice table.
- StopLoggingOnError=0 – When a single error occurs, all logging stops until the rewinder is backed up. Then, the LVS-7000 re-inspects the label after it moves back under the camera and continues logging from that point.
- The StopMotionDelay is the minimum allowed distance that Omron Microscan has determined that the Stop Motion Output signal can be sent without missing any outputs. This should not be changed unless instructed by a qualified Omron Microscan representative.
- UseVSyncInput – the system uses V-SYNC on input 8 of I/O board from the Framegrabber.

[Encoder]

AcceptReplaceOutputString=G10250
ArrowOffset=0
AutoRejectDistance=0
CameraToInspection=100
EncoderDirecton=0
InitialCommand=E0
OverrideLine=0
Preset=0

RegradeOnReverse=0
SetRunStatusOutput=0
ShowRollerOnReverse=0
SimulateStopMotion=0
SpliceToCamera=100
StopLoggingOnError=0
StopMotionDelay=40
UseVSyncInput=0

Grading:

Grading is the default value the LVS-7000 uses when a grading sector has been created. This will make the creation of multiple sectors quicker as the operator can just accept the default value and move on.

- AutoSetupGrade1D
    - AutoSetupGrade1D=0 – Tells AutoSetup to Read 1D barcodes
    - AutoSetupGrade1D=1 – Tells AutoSetup to Grade 1D barcodes
- AutoSetupGrade2D
    - AutoSetupGrade2D=0 – Tells AutoSetup to Read 2D barcodes
    - AutoSetupGrade2D=1 – Tells AutoSetup to Grade 2D barcodes
- LightFrequency tells the software what color line light to expect
    - LightFrequency=0 indicates the LVS-7000 will report the use of red light (660nm).
    - LightFrequency=1 indicates the LVS-7000 will report the use of white light.
- MaxDecodesToGrade is the amount of decodable scan lines it takes to grade a barcode. ANSI standards require at least 10 lines.
- MinimumPassScore activates an error signal and logs an error in the log.
- MinimumWarningScore activates a warning that alerts an operator without generating an error in the log. This value is user configurable.
- Override1DAperture should only be configured by a qualified Omron Microscan representative.

[Grading]

AutoSetupGrade1D=1
AutoSetupGrade2D=1
LightFrequency=1
MaxDecodesToGrade=10
MinimumPassScore=1.5
MinimumWarningScore=2.5
Override1DAperture=0

Image Saver:

Image Saver is a path to be specified to store images to. A target folder must be made and the path to that target folder is to be put directly after the path=. As an example *Path=C:\Images* would need a folder called *Images* under the C:\ drive. It will store all incoming images to that directory. This will show a Pop up window reminding the operator that it was set as it will consume massive processing power and HDD space if left with a path specified.

SaveLabelRepeat 0=save every unsynchronized label, 1= Save every synchronized label, 2,3,4,5= Save every label multiple of (ex 2 every other, 3 every third,…etc) synchronized.

[ImageSaver]

Path=
SaveLabelRepeat=0

Store Jobs to a Different Location:

To store jobs to a different location other than the default, a new path can be specified to the system & it will store the jobs to that location. It is done exactly like the [ImageSaver]. The default path is =.\Jobs. This stores the Jobs to the same directory that the I7000.exe is running from to a folder called Jobs.

[Jobs]

Path=.\Jobs

Lumenera:

The Lumenera settings are used for Lumenera specific area scan camera's and should not be altered unless requested by a qualified Omron Microscan representative.

- Exposure is the exposure setting of a Lumenera USB camera.
- FixedSpeed is the speed of an external belt or conveyor in feet per minute.
- Gain0, Gain1, Gain2 and Gain3 are the four gain values for the 8" Lumenera USB camera sensor.
- MaxGainPercent is the maximum allowed gain the LVS-7000 will use to calibrate in the automatic calibration procedure.
- MaxLumeneraSpeed is the maximum frames that a Lumenera USB camera can run at per second.
- MultiCamera is turning the camera on or off. The LVS-7000 only supports either one or two cameras.
    - MultiCamera=0 turns off the camera.
    - To turn on a second camera, specify the camera's serial number (example: MultiCamera=[camera serial number]
- PhotoeyeSkip=0 means that every photoeye trigger is used
    - PhotoeyeSkip=N If N is a positive number, the photoeye will use the first trigger and skip to the "Nth" of photoeye trigger. For instance, if N=1, the first trigger is used then every other photoeye trigger that follows is used.
    - PhotoeyeSkip=-N If N is a negative number, the photoeye will not use the first trigger and it will start at the "Nth" photoeye trigger.
- SerialNumber=0. This can be 0 if you have 0 or 1 Lumenera cameras. If you have more than 1 Lumenera camera, then this is the serial number of the right half of the split screen image.
- StrobeDelay=0. Delay the strobe pulse by this number of milliseconds.
- StrobeLen=0.1. Length of the strobe pulse in milliseconds.

[Lumenera]

Exposure=0.3
FixedSpeed=0
Gain0=1.0
Gain1=1.0
Gain2=1.0
Gain3=1.0
MaxGainPercent=85
MaxLumeneraSpeed=60
MultiCamera=0
PhotoeyeSkip=0
SerialNumber=0
StrobeDelay=0.0
StrobeLen=0.1

OCR:

- Debug=0 is the default and will not save OCR images
    - Debug=-1 saves OCR images as cropped images without scores
    - Debug=1 saves only OCR error images with scores
    - Debug=2 saves all OCR images with scores
- MaxHorizontalShift follows the movement of printed characters.

- RatioMethod=2 should only be configured by a qualified Omron Microscan representative.
- TouchMode=1 – OCR and OCV will perform extra processing to handle the case in which characters are touching. The characters must be the same height and width and all characters must be evenly spaced.

[OCR]

Debug=0
MaxHorizontalShift=0
RatioMethod=2
TouchMode=0

OCV:

- MinimumPassScore sets the default pass score for OCV
- MinimumWarningScore sets the default warning score for OCV

[OCV]

MinimumPassScore=40
MinimumWarningScore=60

PLC:

- DataValidOutputLine should only be configured by an Omron Microscan representative.
- DataValidDwell should only be configured by an Omron Microscan representative.
- PassOutputLine should only be configured by an Omron Microscan representative.
- FailOutputLine should only be configured by an Omron Microscan representative.

[PLC]

DataValidOutputLine=0
DataValidDwell=0
PassOutputLine=0
FailOutputLine=0

Preset:

When enabled, allows the preset configuration settings buttons to appear on the “Step 4: Define Sector Type” (Blemish settings) screen. Buttons include: “Low,” “Medium,” “High,” “Set this Job,” and “Set new jobs.”

- UseFeature=0 – Default setting. Disables the preset configuration settings buttons.
- UseFeature=1 – Enables the preset configuration settings buttons.
- Low, Med, and High are set via the LVS-7000 system.
- Default=”Med” – This is the default setting for new blemish sectors. Valid entries for this setting are “Low,” “Med,” and “High.”

[Preset]

UseFeature=1
Low=65,65,15,65,24,25,59,50,39
Med=75,75,15,75,15,25,59,50,39
High=85,85,5,85,5,25,59,50,39
Default=”Med”

PopUp:

- ShowCameraWarning allows the software to show a popup message when the number specified in the CpuUtilizationWarning is reached.

- ShowNotAssessedWarning allows the software to show a popup message when labels are not being inspected.
- ShowNotSyncedWarning allows the software to show a popup message when the LVS-7000 goes out of sync.

[PopUp]

ShowCameraWarning=1
ShowNotAssessedWarning=0
ShowNotSyncedWarning=0

Printer:

"Width=" tells the software where to print a barcode when tagging the end of a roll.

[Printer]

Width=700

Simulation:

Simulation is a tool for training or demonstration of system capabilities by using stored images instead of live material.

- HealthCheck=1 demonstrates the health check option for barcodes instead of grading to standards.
- The path is set to a directory of stored images.
- Speed is how fast the system will simulate web motion. A negative value in this field specifies the maximum CPU percentage to use.
- StopOnWrap stops the LVS-7000 when in simulation mode after one time though the associated image file.

[Simulation]

HealthCheck=0
Path=
Speed=50
StopOnWrap=0

Skew Blemish Parameters:

These settings affect the ability of the LVS-7000 to process cartons on a conveyor that may not be perfectly in line. These settings should only be configured by an Omron Microscan representative.

[SkewBlemish]

CollectDevImages=0
CloseEnoughAngle=0.05
MaxAngle=2.0
RamPath=
TriangleBorder=5

StreakVoid Parameters:

- Contrast separates the Foreground from the Background. Increasing this number will define more print as Foreground and less as Background. Decreasing this number will define more of the label as Background and less as Foreground. A sensitivity of 0 will call everything Background and 100 will call everything Foreground.
- ForegroundSensitivity is the system's allowable deviation in print color contrast after converting to gray scale. A sensitivity of 0 will accept all variations from the original pixels gray scale value, while 100 will allow no variation of the gray scale values. In other words, a setting of 0 will pass everything that is defined as Foreground print and a setting of 100 will pass nothing.

- ForegroundSize allows the user to increase or decrease the size of detected Blemishes.
- BackgroundSensitivity works the same way as ForegroundSensitivity but it is meant to find contrast differences in the label's background.
- BackgroundSize allows the user to increase or decrease the size of detected Blemishes.
- WanderX and WanderY - Control how far individual pixels are allowed to move in relation to the rest of the streak/void line. This is different from controlling how far the entire streak/void line can move in relation to the rest of the image. Motion of the entire line is controlled with the following settings: StreakVoidX and StreakVoidY.
- StreakVoidX controls how far the streak/void line is allowed to move in the X direction (default is 1/8").
- StreakVoidY controls how far the streak/void line is allowed to move in the Y direction (default is 1/8").

[StreakVoid]

Contrast=80
ForegroundSensitivity=80
ForegroundSize=0.002
BackgroundSensitivity=80
BackgroundSize=0.002
WanderX=2
WanderY=2
StreakVoidX=0.125
StreakVoidY=0.125

Sync Parameters:

The Sync Parameters are used for setting the system to be able to lock onto the customers' labels.

- FastSync tells the system to not resync when the "Start" button in pushed. This is needed on LVS-7000 systems to not miss the first label. 0 is off. 1 is on.
- HopX and HopY tracks the movement of the labels in the horizontal and vertical direction.
- Log is to be used by a qualified Omron Microscan technician only.
- SyncErrorsInARowBeforeResync. If the 7000 loses synchronization, this is the number of repeats allowed to pass before the 7000 attempts to sync agan.

[Sync]

FastSync=0
HopX=0.0625
HopY=0.125
Log=
SyncErrorsInARowBeforeResync=3

System Parameters:

The system parameters control some of the user interface.

- A5Follows tells the software what I/O Line the system should use to trigger a beep.
- AcceptReplaceInputTimer – Setting this to anything greater than zero will activate the ability of the customer to click the "Accept" or "Replaced" buttons remotely using user inputs 7 and 8. The value entered dictates the time in milliseconds between input pulses when triggering these buttons remotely. A value of 500, for instance, means that the buttons cannot be clicked via user inputs any faster than twice a second (500 millisecond delay). User input 7 is linked to the "Accept" button and user input 8 is linked to the "Replaced" button.
- AddMissingTriggers - When enabled (set to some value other than zero), the system will estimate where photoeye triggers should have occurred and create phantom triggers. This enables customers to have photoeye triggers on every plate repeat instead of on every label
- AutoBreakRoll should be enabled when used with turrets.

- AutoLogin allows a user to automatically log in to the software without entering a user name and password.
    - AutoLogin=0 (default) – Disables AutoLogin
    - AutoLogin=1 – Enables AutoLogin.
- AutoMakeReady puts the LVS-7000 into Make Ready mode when the text specified in this field is read by the LVS-7000.
    - AutoMakeReady=0 is off
    - **Example:** AutoMakeReady=[enter desired text here]
    - **Example:** AutoMakeReady=SETUPLABEL
- AutoSetup tells the software when to use the LVS-7000 automated process when creating a new job
    - AutoSetup=0 – Turns on manual setup when creating a new job
    - AutoSetup=1 – Shows a pop-up that allows a user to choose if they want to use Auto or Manual setup when creating a new job.
    - AutoSetup=2 – Uses Auto-Setup when creating a new job
- AutoSetup3Margin should only be configured by an Omron Microscan representative.
- AutoSetupSideMatch should only be configured by an Omron Microscan representative.
- AutoStop turns on autostop for stopping after a specified label count.
- Base64Trailer is the final number of binary characters in an Aztec code that will have binary base 64 data encrypted.
- Border Indent makes the LVS-7000 window smaller or larger. This helps in making navigation easier when using a touch screen monitor.
- BypassSignalDelay sets delay (in inches) from the moment the bypass signal is received, until the bypass command is activated.
- CameraSpeedWarning tells the software when to show a warning message if the camera gets to the specified speed.
- CameraToError is a special function used as of version 5.1.0 and is the distance past the camera to the splice table.
- CameraToRollCount is a special function used as of version 5.1.0 and is the distance from the camera to the second splice location on the mandrel.
- ChangeRollOnFly is used only if directed by an Omron Microscan technician.
- ClearPrompts - If set to zero (default), the system will re-use the most recently entered data for prompts. If set to non-zero, the computer will start with blanks and the operator must fill in all data.
- ConsecutiveReadLines is how large a gap must be between 2 adjacent barcodes during autosetup to separate them into 2 separate sectors.
- CpuUtilizationWarning tells the software when to show a warning message if the CPU usage gets to the specified value.
- DontProcessDuringPypass makes the LVS-7000 not process any sectors during bypass; this minimizes processor usage when the vision system does not need to be inspecting.
- DontStopWhileInMotion determines if the LVS-7000 can stop while the web is in motion. If enabled, a warning message appears if the LVS-7000 attempts to be stopped (by pressing the “Stop” button on the Operate screen) while the web is in motion.
    - DontStopWhileInMotion=0 disables the warning message and allows the user to stop the LVS-7000 while the web is in motion.
    - DontStopWhileInMotion=1 indicates the LVS-7000 cannot be stopped while the web is in motion. If the “Stop” button is pressed, a warning message will appear indicating the system cannot be stopped while the web is in motion.
- ePedigree switches between normal LVS-7000 checking and ePedigree checking
- The Gap=OFF/ON is a specialized reporting ability that if turned on, any jump in a sequential number in a positive direction is called a GAP and is allowed. If the GAP is turned off then this same condition would result in a Sequence error.
- HideAlarmMatrix displays or hides the “Step 6: Alarm Matrix” screen.
    - HideAlarmMatrix=0 (default) displays the Alarm Matrix screen.

    - HideAlarmMatrix=1 hides the Alarm Matrix screen. The software will skip “Step 6: Alarm Matrix” and the user will never see this screen.
- IgnoreHealthCheck is for Omron Microscan technician use only.
    - IgnoreHealthCheck=0 (default) performs HealthCheck on 1D and 2D codes
    - IgnoreHealthCheck=1 performs HealthCheck on 2D codes and grading on 1D codes.
    - IgnoreHealthCheck=2 performs HealthCheck on 1D codes and grading on 2D codes.
    - IgnoreHealthCheck=3 ignores the HealthCheck code.
- Inactivity Timeout automatically logs out any user if the system is left idle for the defined amount of time. This value is defined in minutes.
- IncludeRimsBarcodeInJobName=0
    - IncludeRimsBarcodeInJobName=0 feature is off.
    - IncludeRimsBarcodeInJobName=1 indicates the ShowPrintBarcode="STRING" will automatically be appended to the autosetup job name to ensure there are no duplicate job names in a RIMS system.
- JobQRCode should only be configured by an Omron Microscan representative.
- LaneDivision splits a job into its separate lanes for RIMS systems in case they were slit on the press; it prints a barcode per lane as well. Note that LaneDivision does not function in conjunction with the Turret signal.
    - LaneDivision=0 means the feature is disabled.
    - LaneDivision=1 means the feature is optional -- prompt the operator whether or not to split lanes.
    - LaneDivision=2 means the feature is required -- do not prompt the operator.
    - LaneDivision=3 is for non-RIMS applications where "channel" information is uploaded via Tcp/Ip.
    - LaneDivision=4 divides the web into lanes to make separate log files per lane.
- LastBCLCode is active when LaneDivision=4. A unique roll number given
- LastBCLRoll is active when LaneDivision=4.
- LvsContactSensor is for Omron Microscan technician use only. It designates the type of contact sensor used with LVS-7000 systems.
    - LvsContactSensor=0 is off
    - LvsContactSensor=5 is the 5” sensor
    - LvsContactSensor=8 is the 8” sensor
- LvsContactSizeY is for Omron Microscan technician use only.
- MakeReady is used when the operator needs to ignore a specified string in a sector at the beginning of a job. For instance, type in the word VOID and the software will ignore that word at the beginning of the job only.
- MaxCpuBusyPercent is the maximum allowable CPU usage as a percentage. If the CPU usage exceeds this value, sectors will be Not Assessed (NA) until the CPU utilization drops to a point equal to this value. Default is 100.
- MaxErrPerSec prevents the software from failing when inundated with errors; it will not create more than 30 thumbnails of errors per second. After 30 errors, no more thumbnails will be collected until the next second.
- MaxThumbnails is the amount of thumbnail images that will be stored.
- MaxTriggerGap causes an error if photo-eye triggers have stopped after a certain distance. Do not alter this setting unless instructed by an Omron Microscan technician.
- MinimumPreserveLength
- MonitorInterval
- MonthsBeforePasswordChange prompts users for passwords to be changed after the number of months entered.
- NumGrabImages=0
- NumPacketThreads is the number of threads; it is set by how many processing CORES are available per PC.
- OneBigBlemishSector make the autosetup feature not separate label lanes.
- PDF417UEC stops PDF from using ISO. PDF417UEC =1 only uses UEC as grade.

- Pharmacode indicates whether pharmacode is included in the automatic 1D barcode reading/discrimination:
    - Pharmacode=0 means pharmacode **is not** included in the automatic 1D barcode reading/discrimination.
    - Pharmacode=1 indicates pharmacode **is** included in the automatic 1D barcode reading/discrimination.
- PhotoeyeSignalDelay is utilized to externally synchronize a line scan, or trigger an area scan LVS-7000.
- RelearnAuthorization – When enabled, prevents the operator from using the “Ctrl+L” shortcut key or “Update Spot Ignore” feature unless the operator has administrative rights. If the operator does not have administrative rights, a pop-up message will appear requiring the operator to enter an authorized user name and password.
    - RelearnAuthorization=0 indicates a pop-up message will not appear. Any user can press Ctrl+L and any user with “Allow Accept/Replace Errors” privileges can press “Update Spot Ignore”
    - RelearnAuthorization=1 indicates a pop-up message will appear when an operator attempts to use Ctrl+L or “Update Spot Ignore”. The operator must enter an administrator user name and password to continue.
- ReportUnusedCodes - If enabled, a button entitled “Report unused codes” appears. This is used to generate a report of codes that were in the match file, but never seen by the system.
- ResyncMatchFileOnMismatch - If enabled, whenever a mismatch error occurs, the system will assume it is possibly not in the right location in the match file and try to find where it is again. This allows the system to recover instead of generating non-stop mismatch errors after an inserted or deleted label.
- RollOutputFilePath is used in conjunction with the AutoBreakRoll feature. The path is where to store the roll output files.
- RollsPerCase is used in conjunction with LaneDivision=4. It is the number of rolls in a case. Once this number is reached, the case number is incremented, and the roll number goes back to 1.
- SerialNumber is the LVS-7000 serial number and should never be changed.
- ShowAdditionalCounters=0
    - ShowAdditionalCounters=0 feature is off.
    - ShowAdditionalCounters=1 shows good and waste footage on the Operation screen.
- ShowBlemishMotion should only be changed by an Omron Microscan Technician.
- ShowElapsedTime is not user configurable and should not be altered unless requested by a qualified Omron Microscan representative.
- ShowJobReportButton=0
    - ShowJobReportButton=0 feature is off.
    - ShowJobReportButton=1 prints a Job Summary report at time of job naming.
- ShowReportLabel enables or disables the “Report label” field on the “Step 5: Setup Matching” screen. The Report label field acts as a unique user-defined identifier of a sector.
    - ShowReportLabel=0 (default) – disables the “Report label” field on the “Step 5: Setup Matching” screen.
    - ShowReportLabel=1 – enables the “Report label” field on the “Step 5: Setup Matching” screen.
- ShowRuntimeGradeStats enables or disables the “Hide Barcode Stats” button on the Error Display screen.
    - ShowRuntimeGradeStats=0 (default) – Disables the “Hide Barcode Stats” button.
    - ShowRuntimeGradeStats=1 – Enables the “Hide Barcode Stats” button.
- ShowSnapshotButton=1 enables the “Snapshot” button to appear on the “Operate: Running the Job” screen that enables a snapshot to be taken of the next repeat. This setting should not be altered unless instructed by an Omron Microscan representative.
    - ShowSnapshotButton=0 disables the “Snapshot” button.
- ShowStatusAlert enables the Bypass and MakeReady screens to flash colors (Bypass screen flashes yellow/white; MakeReady screen flashes red/white), and enable the scrolling message (“Bypass” or “MakeReady”) to appear across the top, left corner of the screen.
    - ShowStatusAlert=0 disables the flashing screens and scrolling text.
    - ShowStatusAlert=1 enables the flashing screens and scrolling text.

- SkipAutoSetupShrink indicates whether rectangular borders around labels or space in-between labels are detected when using Automatic Setup.
    - SkipAutoSetupShrink=0 (default). When drawing a sector around a label, the software automatically detects rectangular borders around labels and space in-between labels.
    - SkipAutoSetupShrink=1 - When drawing a sector around a label, the software does not detect rectangular borders around labels or space in-between labels. Sectors drawn become expanded to fill a horizontal and vertical repeat. There are no gaps between labels.
- SpotVoidCheck will error any spot anywhere within a barcode. Do not use unless instructed by an Omron Microscan technician.
- StripParentheses takes parentheses off decoded data strings from symbologies such as GS1 databar or Data Matrix.
- Strobe allows the system to be used in viewing mode like a strobe light. There must be a consistent sync mark on the web to use this feature.
    - Strobe=0 allows the software to be used in its Normal mode.
    - Strobe=1 allows the software to be used in Strobe Mode.
    - Strobe=2 allows the software to be used in an Advanced strobe mode. Only use this setting if advised by an Omron Microscan Technician.
- TakeSecondPicture should only be configured by an Omron Microscan representative.
- ThreadLockTimeout should only be configured by an Omron Microscan representative.
- TiltedRead attempts to read a short in height barcode by applying a slight rotation.
- TriggerStopMotionOnLearnBlemish tells the software to send a stop motion signal when a Blemish sector has been defined. This helps to stop the Rewinder to visually inspect label(s) that are used as a Golden image.
    - TriggerStopMotionOnLearnBlemish=0 – Feature is off.
    - TriggerStopMotionOnLearnBlemish=1 – Signal will be sent to stop Rewinder after Blemish sector is defined or Golden Image is relearned.
- TurretSignalDelay sets delay (in inches) from the moment the turret signal is received, until the Change Roll on the fly command is activated.
- UseBypassSignal turns on the monitoring of the Bypass signal Input line. Activated on LOW signal.
- UsePhotoeyeSignal turns on the monitoring of the Photo optic signal Input line. Activated on LOW signal. This is special as it can use any available port via the integer used. Also, the polarity can be switched by making the integer a negative number. For example, UsePhotoeyeSignal=-3 makes it respond to an active HIGH signal on input #3.
- UseSectorTags
    - UseSectorTags=0 feature is off.
    - UseSectorTags=1 allows a sector's decoded information to be displayed above any thumbnail referencing the tagged sector.
- UseTurretSignal turns on the monitoring of the Turret Cutsignal Input line. Activated on LOW signal. It will effectively stop logging for a roll and begin another.

[System]

A5Follows=34
AcceptReplaceInputTimer=0
AddMissingTriggers=0
AutoBreakRoll=0
AutoLogin=0
AutoMakeReady=0
AutoSetup=1
AutoSetup3Margin=1
AutoSetupSideMatch=32
AutoStop=0
Base64Trailer=0
BorderIndent=0

BypassSignalDelay=0
CameraSpeedWarning=90
CameraToError=54
CameraToRollCount=64
ChangeRollOnFly=
ClearPrompts=0
ConsecutiveReadLines=5
CpuUtilizationWarning=75
DontProcessDuringBypass=0
DontStopWhileInMotion=0
ePedigree=0
Gap=Off
HideAlarmMatrix=0
IgnoreHealthCheck=0
InactivityTimeout=0
IncludeRimsBarcodeInJobName
JobQRCode=0
LaneDivision=0
LastBCLCode=000001
LastBCLRoll=000
LvsContactSensor=0
LvsContactSizeY=96
MakeReady=
MaxCpuBusyPercent=100
MaxErrPerSec=30
MaxThumbnails=1000
MaxTriggerGap=0
MinimumPreserveLength=10
MonitorInterval=10000
MonthsBeforePasswordChange=0
NumGrabImages=0
NumPacketThreads=8
OneBigBlemishSector=0
PDF417UEC=0
Pharmacode=0
PhotoeyeSignalDelay=0
RelearnAuthorization=0
ReportUnusedCodes=0
ResyncMatchFileOnMismatch=0
RollOutputFilePath=
RollsPerCase=4
SerialNumber=0
ShowAdditionalCounters=0
ShowBlemishMotion=0
ShowElapsedTime=0
ShowJobReportButton=0
ShowReportLabel=0
ShowRuntimeGradeStats=0
ShowSnapshotButton=0
ShowStatusAlert=0
SkipAutoSetupShrink=0
SpotVoidCheck=0
StripParentheses=0
Strobe=0

TakeSecondPicture=0
ThreadLockTimeout=0
TiltedRead=0
TriggerStopMotionOnLearnBlemish=0
TurretSignalDelay=0
UseBypassSignal=0
UsePhotoeyeSignal=0
UseSectorTags=0
UseTrackingSignal=0
UseTurretSignal=0

Tcplp Parameters:

These parameters are used when the LVS-7000 is connecting to another system.

- Mode indicates if the LVS-7000 is connecting to another system. Options include:
  - Enter **<Remote>** if the LVS-7000 is connecting with a remote computer, such as the Omron Microscan HMI Command Center or a non-Omron Microscan system.
  - Enter **<off>** if the LVS-7000 is not connecting to another system. Note that all remaining settings (such as Host, Port1, Port2, etc.) do not apply if the LVS-7000 is not connecting to another system.
- Host: Do not change this setting; leave as is.
- Port1: Enter the port where the first system will be listening for Omron Microscan data.
- Port1Filter: Do not change this setting; leave as is.
- Port2: Enter the port where the second system will be listening for Omron Microscan data.
- Port2Filter specifies the type of information received from the non-Omron Microscan system.
  - Enter **<Blank>** to receive all information.
  - Enter **<7>** to receive error only information.

[Tcplp]
Mode=off
Host=0.0.0.0
Port1=0
Port1Filter=
Port2=0
Port2Filter=

Appendix B: ePedigree

Systems with ePedigree enabled are using the normal LVS-7000 software with enhanced tracking features. Below are a couple of steps that highlight the LVS-7000 ePedigree process.

1. When drawing a sector over a 2D Data Matrix code, make sure that the center of the X within the sector is close to the center of the 2D code. This helps the software to determine the position of the barcode.

2. Choose the Check for Duplicates option to make sure that the barcode's encoded data is unique for this job or the sect. When running the job, a !DU error will show up if the software finds a duplicate of the barcode.

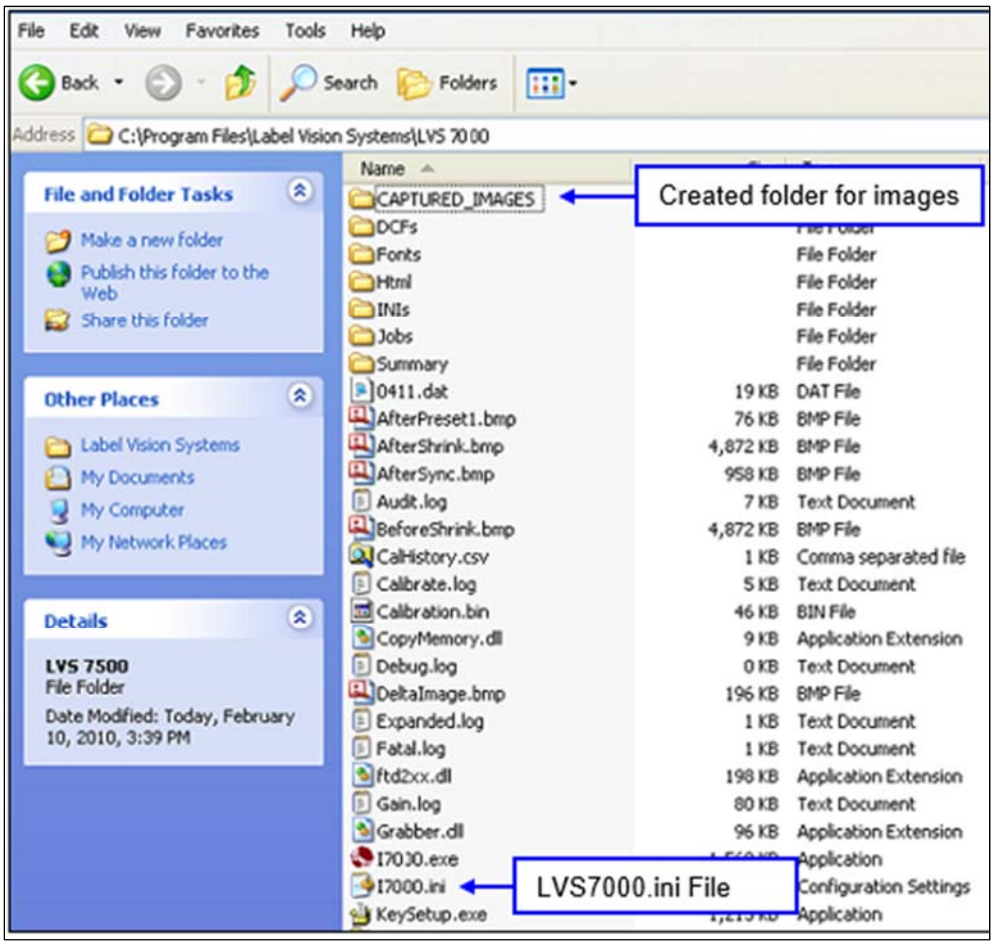
3. Draw an OCR sector around the human readable characters and let it match its corresponding barcode.

   In this example, we have to start matching OCR at position 17 of the barcode, because the barcode is 28 characters long and the human readable characters match the last 12 characters of the barcode.

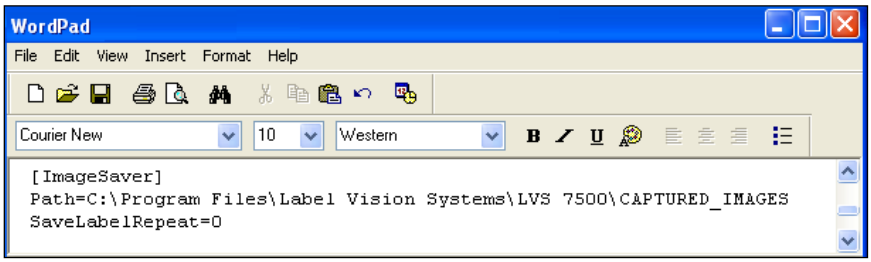
Appendix C: ImageSaver Instructions

Saving Raw Images Without a Label Repeat

1. Navigate to the LVS-7000 Directory:
   - **Windows® 7:** C:\Users\[User Login Name]\AppData\Roaming\Label Vision Systems\LVS 7000
   - **Windows® XP:** C:\Program Files\Label Vision Systems\LVS 7000
2. Create and name a target folder where images can be saved (see below).

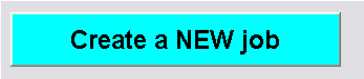


3. Open the Lvs7000.ini file (see above image) and follow the steps below:
   - Scroll down to the section called [ImageSaver].
   - In the "Path=" section, insert the directory of the folder that was just created with no spaces (see image below).
   - Directly under "Path=" type "SaveLabelRepeat=0”.

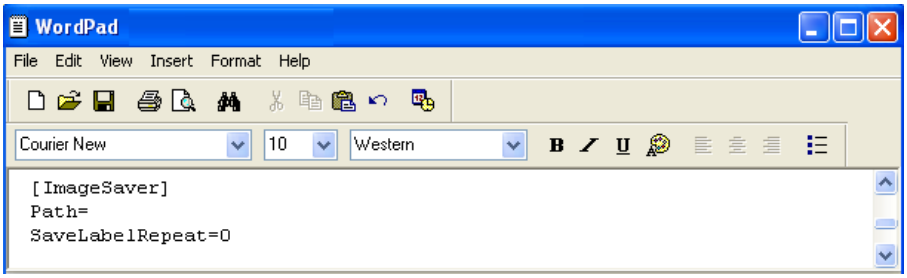


4. Save changes and close the Lvs7000.ini file.
5. Open the LVS-7000 program.
6. Click **OK** at the Image Saver warning (see below).

7. Click the **Create a New Job** button and stay at the Label Repeat screen.



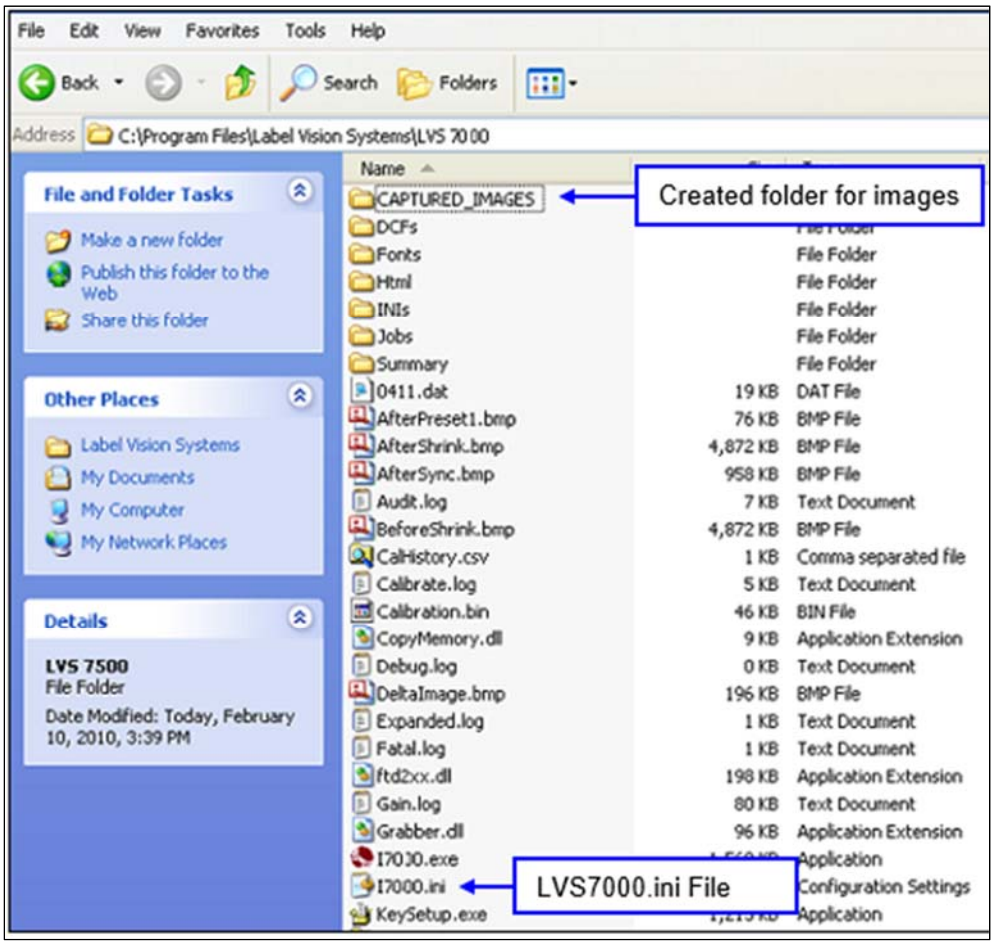
8. Run the printer to obtain a desired amount of images. The system is capturing images although the on-screen images may not immediately update.
9. Stop the Job and close the software; then, stop the printer.
10. Navigate to the **Image Capturing** folder that was created earlier and the images should appear from the last job.
11. When image capturing is complete, go to the Lvs7000.ini file, remove the Path and leave SaveLabelRepeat at 0 (see below).



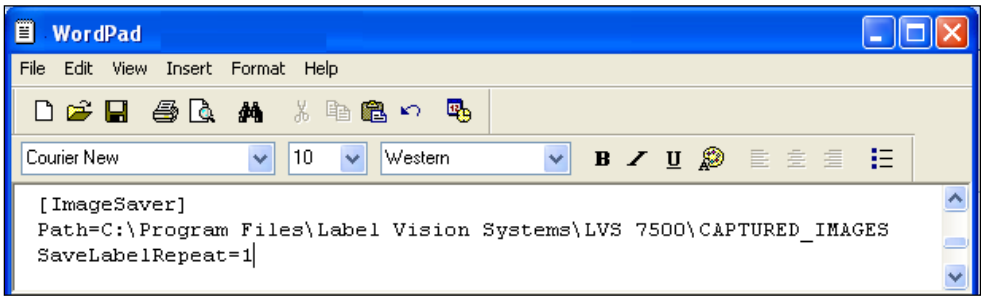
12. If you were using the Strobe feature, then scroll down to the [System] section and switch Strobe=0 back to its original setting.
13. Remember to remove all excess images as they quickly take up space on the Hard Drive.

Saving Images With a Label Repeat

1. Open the LVS-7000 program and create a new job with the labels that you would like to capture.
2. Correctly synchronize the labels, define any sector, and Save the job.
3. After the job is created, close the LVS-7000 program and stop the printer.
4. Navigate to the LVS-7000 folder:
   - **Windows® 7:** C:\Users\[User Login Name]\AppData\Roaming\Label Vision Systems\LVS 7000
   - **Windows® XP:** C:\Program Files\Label Vision Systems\LVS 7000
5. Create and name a target folder where images can be saved (see below).



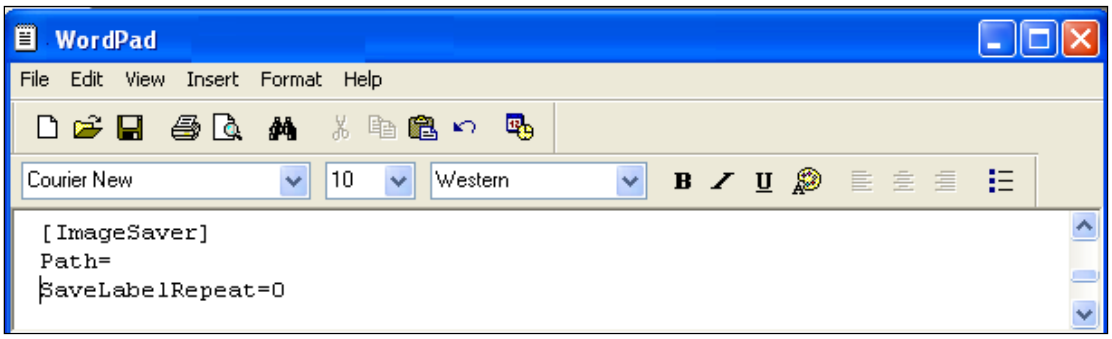
6. Open the Lvs7000.ini file (see above image) and follow the steps below:
   - Scroll down to the section called [ImageSaver].
   - In the "Path=" section, insert the directory of the folder that was just created with no spaces.
   - Directly under "Path=", type "SaveLabelRepeat=1" (see below).



7. Save changes and close the Lvs7000.ini file.
8. Open the LVS-7000 program.
9. Click **OK** at the Image Saver warning (see below).

10. Click the **Load an Existing Job** button and choose the job that was created for image capturing.

11. After the job is loaded, click the **Start New Run** button and jog the printer for a desired amount of images. Each label repeat should be a full image.
12. Stop the printer.
13. Stop the Job and close the software.
14. Navigate to the **Image Capturing** folder that we created earlier and the images should appear from the last job.
15. When image capturing is complete, go to the Lvs7000.ini file, remove the Path and change SaveLabelRepeat to 0 (see below).



16. Remember to remove all excess images as they will quickly take up space on the Hard Drive.

Appendix D: Activating Modules

The LVS-7000 offers the following modules which can be purchased at any time:

- Barcode Read (1D and 2D Barcodes)
- Barcode Grade (1D and 2D Barcodes)
- Optical Character Recognition (OCR)
- Optical Character Verification (OCV)
- Blemish Detection
- Delta E
- Barcode 1D and 2D Health Check

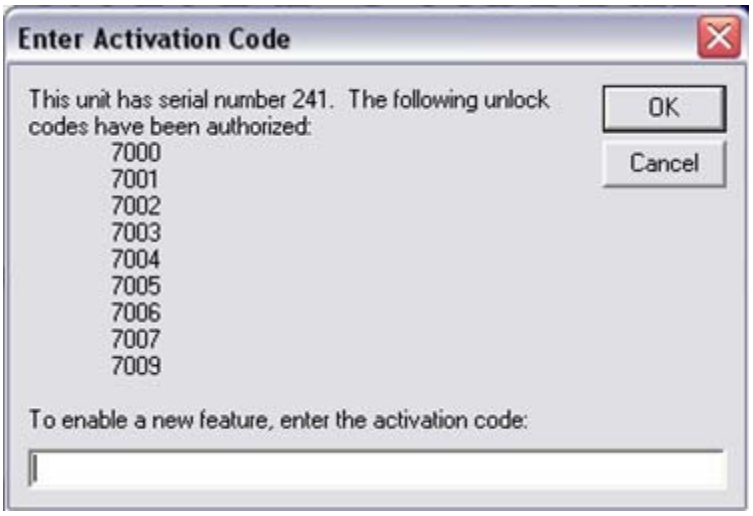
To purchase a software module, contact your Omron Microscan representative.

After purchasing a module, your Omron Microscan representative will provide you with an activation code. After you receive this code, follow the steps below.

1. Log in to the LVS-7000.

2. The Welcome Screen appears:

3. Press **Ctrl + A** on your keyboard. The *Enter Activation Code* window appears (see below). The window displays your system's dongle number (referred to as the serial number below) as well as the codes that have already been authorized and unlocked on your system.

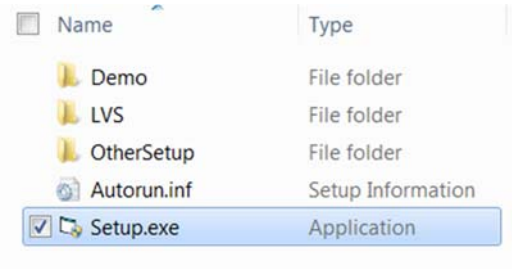


4. Enter the activation code that you received from your Omron Microscan representative in the text field at the bottom of the window, and then click OK. The new feature is enabled.

Appendix E: Upgrading Software

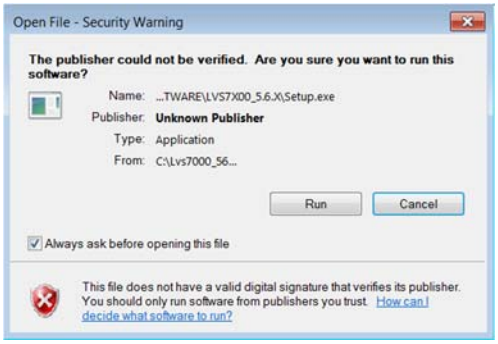
NOTE: Make sure to completely back up your system prior to upgrade. Recommended for installation on Windows® 7 operating system.

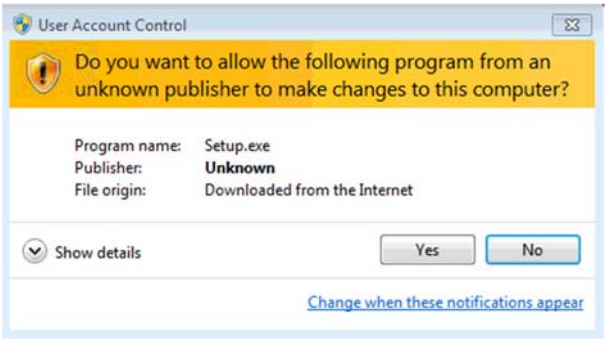
1. After receiving the LVS-7000 software files to download, extract the zip file contents to the 7000 system's hard drive. Navigate to this folder and double-click the **"Setup.exe"** icon:



2. Minimize any open windows, in order to see the Installation Wizard pop-ups as they appear.

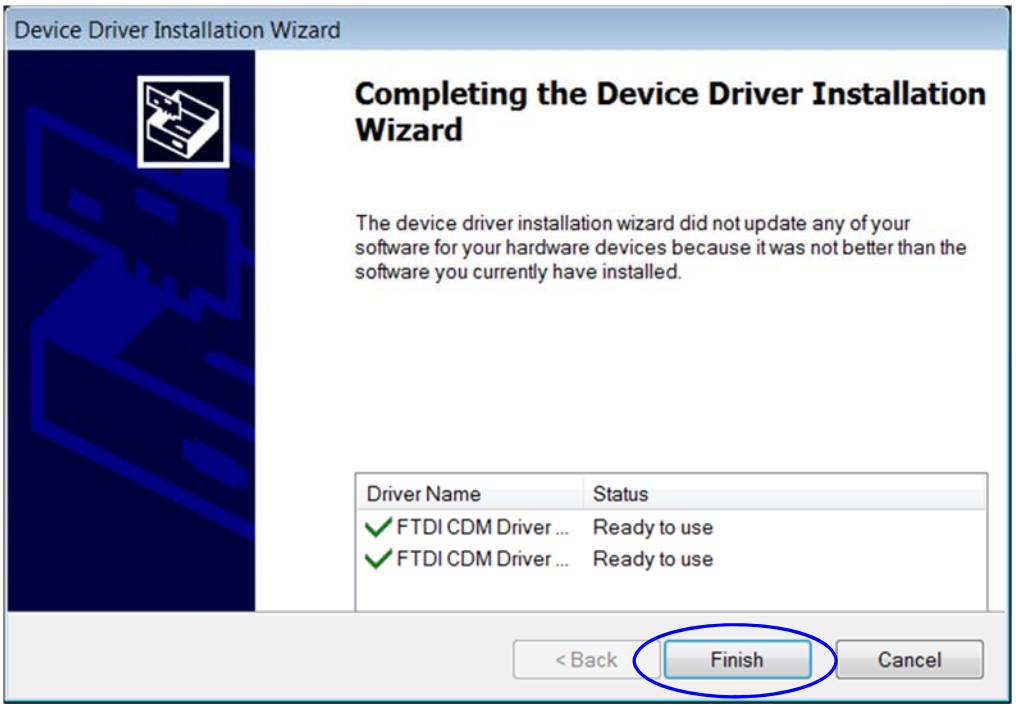
3. Click **"Run"** or **"Yes"** to acknowledge either of these screens should they appear:



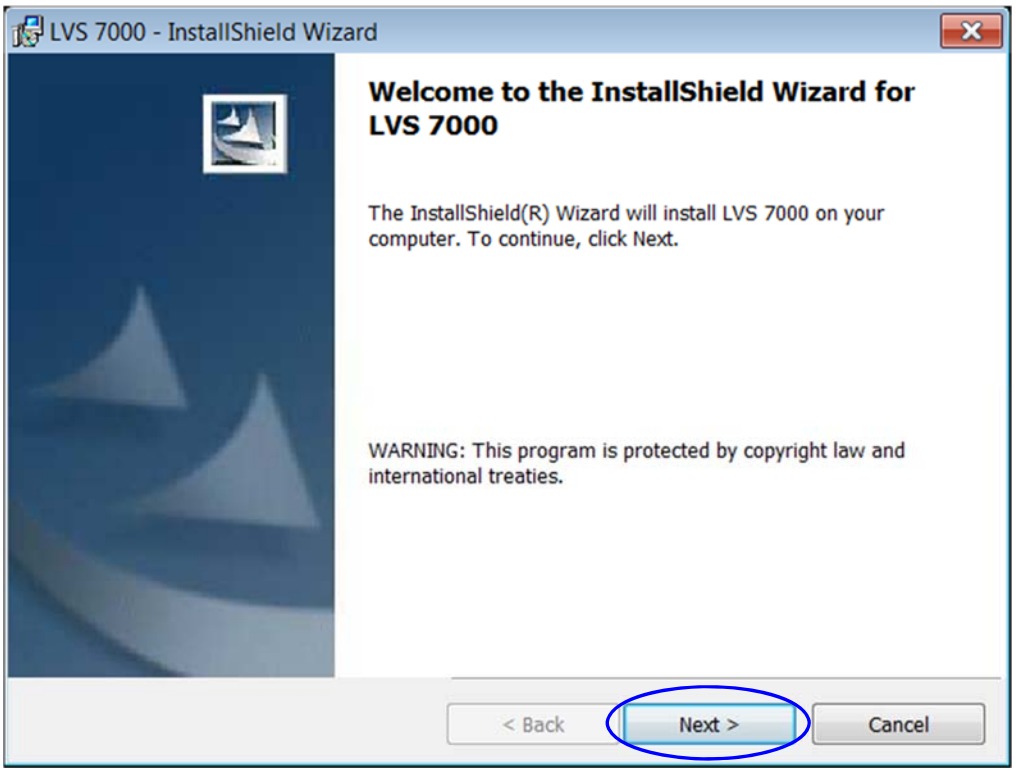


4. When the **Installation Wizard** appears, click **"Next"**:

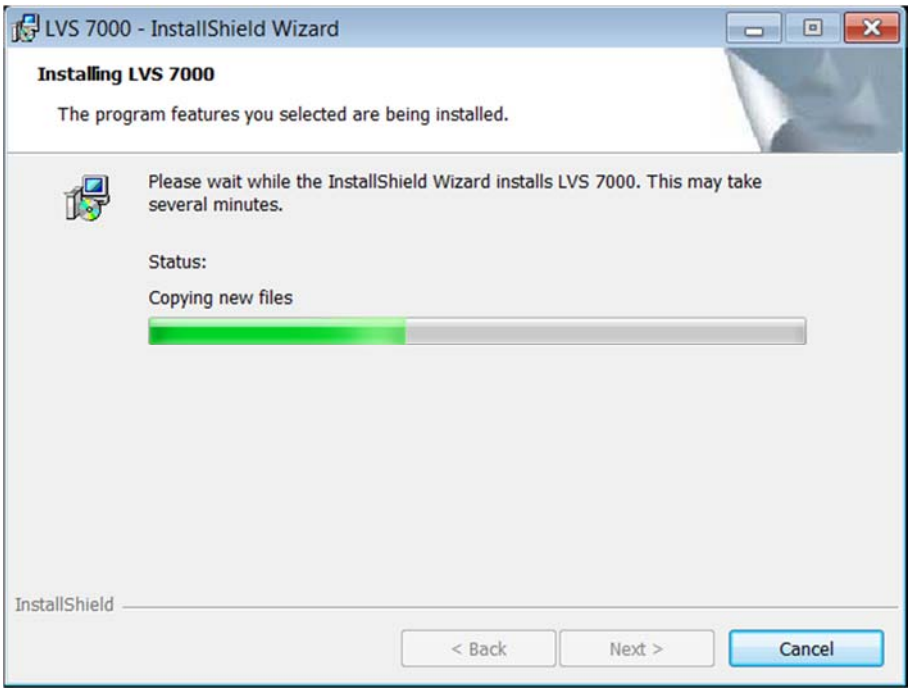
5. Device Drivers may now be updated. Click **"Finish"** to continue with the 7000 installation:



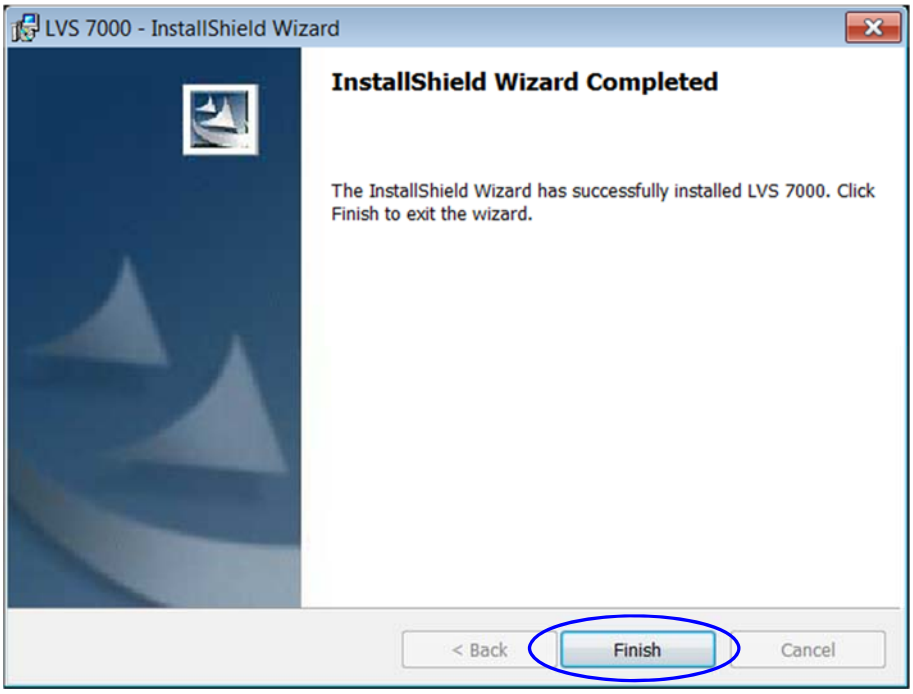
6. The InstallShield Wizard now pops up. Click **"Next"** to continue:



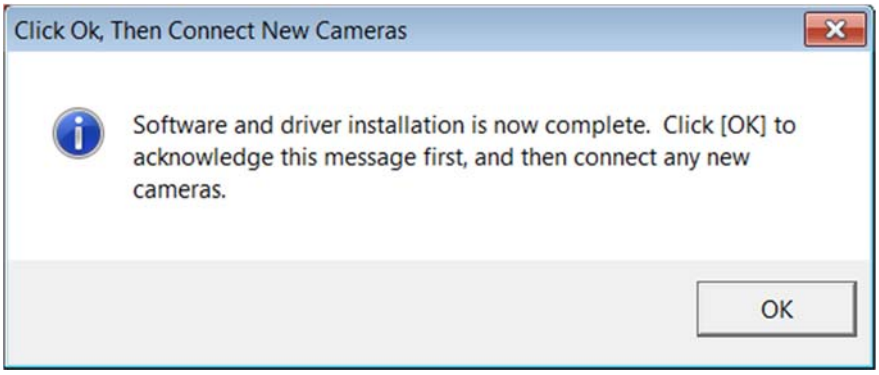
7. The InstallShield Wizard begins installation and shows a status bar.



8. After installation is complete, the window below appears; click **"Finish"**:



9. Click **"OK"** on the box below to complete the software installation:



10. Copy all files from the prior user folder, to the new user folder. (Note that if your "Jobs" folder is in this user area, copying these files could take some time.)
    - **New LVS-7000 Version 5.6.9 user folder:** C:\Users\<username>\AppData\Roaming\Microscan\LVS 7000\

    (Pre-5.6.9 Folders)
    - **Windows® 7 user folder:** C:\Users\<username>\AppData\Roaming\Label Vision Systems\LVS 7000\
    - **Windows® XP user folder:** C:\Program Files\Label Vision Systems\LVS7000\

11. Locate the "Lvs7000.ini" file (in the new user folder), and rename the file to "Original-Lvs7000.ini".

12. **Copy** the system default "Lvs7000.ini" file to the new user folder:

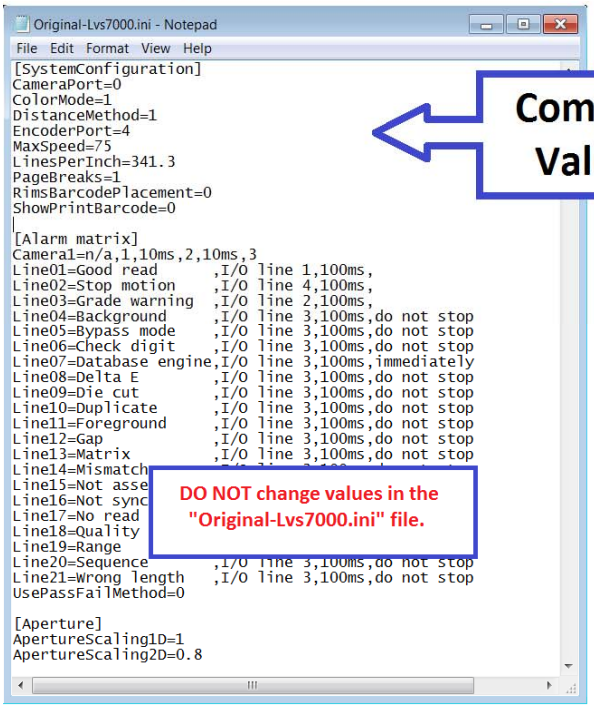
    a. **FROM:** C:\Users\<username>\AppData\Roaming\Microscan\LVS 7000\INIs\Lvs7000.ini
    b. **TO:** C:\Users\<username>\AppData\Roaming\Microscan\LVS 7000\Lvs7000.ini

13. In the user folder, open both the newly copied "Lvs7000.ini" file and "Original-Lvs7000.ini" file. (Note that the files should open in WordPad or Notepad.)

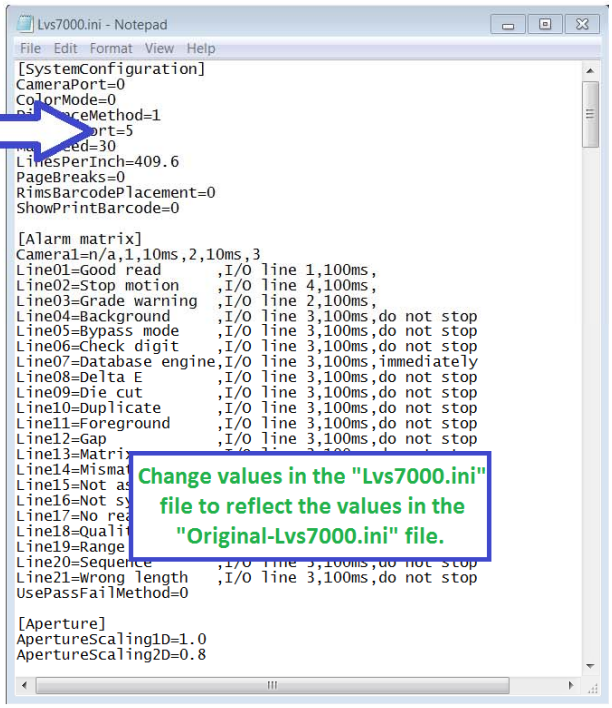
14. Resize both files so you can compare the files line-by-line against each other (see below). Change the values in the newly copied “Lvs7000.ini” file to reflect the same values in the “Original-Lvs7000.ini” file.

    - **DO NOT** change values in the “Original-Lvs7000.ini” file.
    - Values in the LVS7000.ini file can be changed, but do not delete any extra line items in the file.

"Original-Lvs7000.ini" file



"Lvs7000.ini" file



15. When all values are the same, close the “Original-Lvs7000.ini” file.

16. Save the “Lvs7000.ini” file (in the new user folder it should have been opened from):

    - C:\Users\<username>\AppData\Roaming\Microscan\LVS 7000\Lvs7000.ini

Appendix F: AutoScan Program

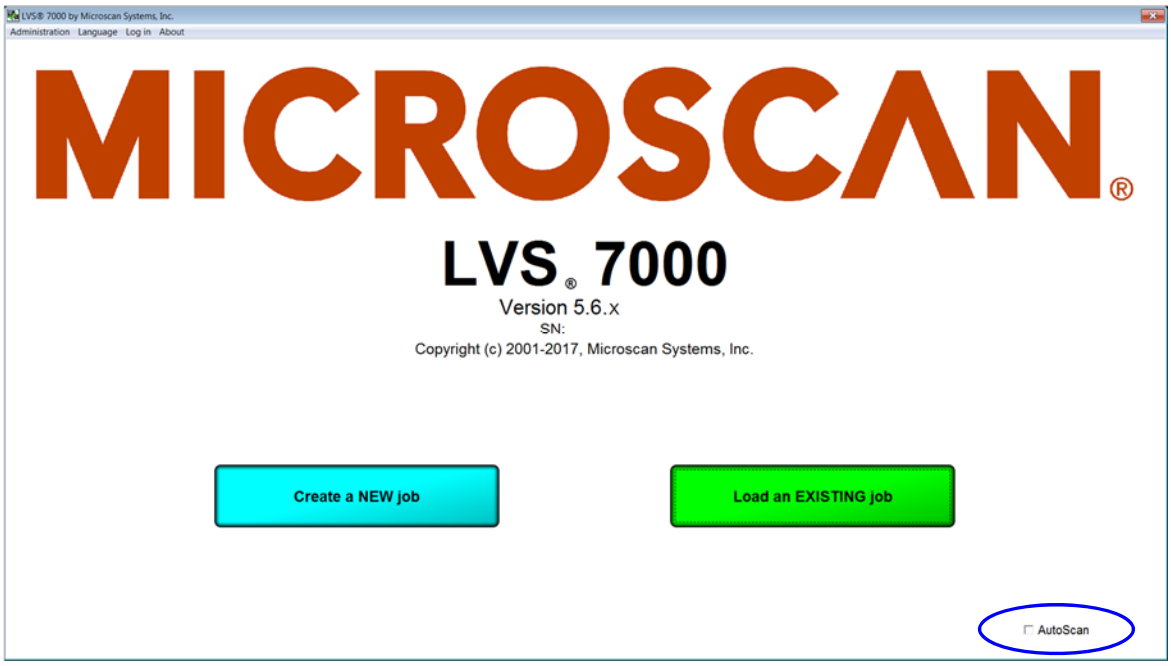
The AutoScan program allows an operator to simultaneously monitor and analyze up to 16 areas of interest per job on the web without having to manually move between each area of interest. While a job is running, an operator can choose to view all of the areas at once, or cycle between full image views of each location. This allows the operator to keep track of the printing process while the LVS-7000 is inspecting all of the labels for defects. If defects are detected, AutoScan can help the operator quickly identify what is going wrong by finding the affected area of the web and going into “Freeze” mode to concentrate on that area of the image for analysis. Detailed instructions for configuring AutoScan settings are listed below.

The AutoScan program is activated through the dongle assigned to your Omron Microscan system, so you must have an LVS-7000 software license to activate the AutoScan program.

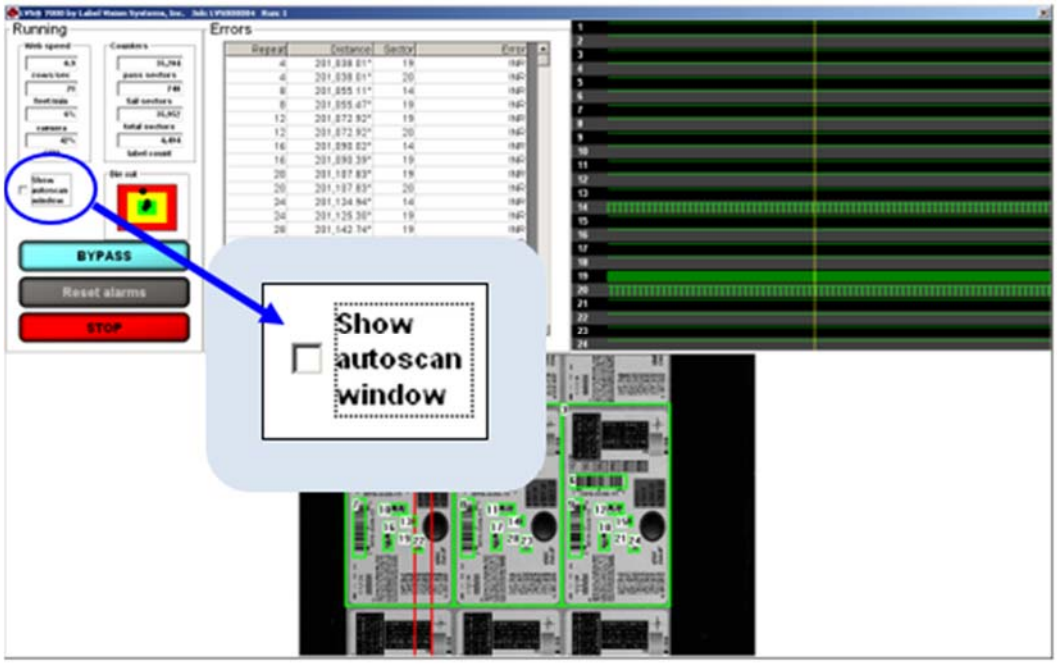
To configure AutoScan settings:

1. Log in to the LVS-7000 software.

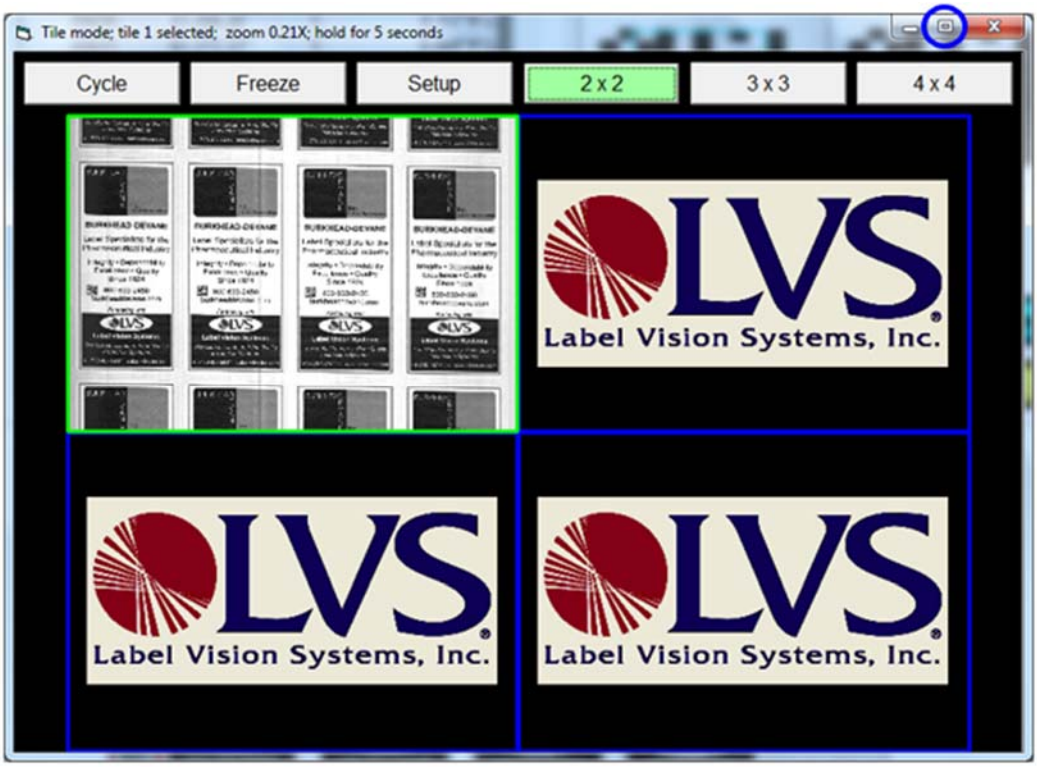
2. The AutoScan program can be accessed in two areas of the software:
   - The “AutoScan” checkbox on the Welcome screen (checkbox appears only for systems using external synchronization):



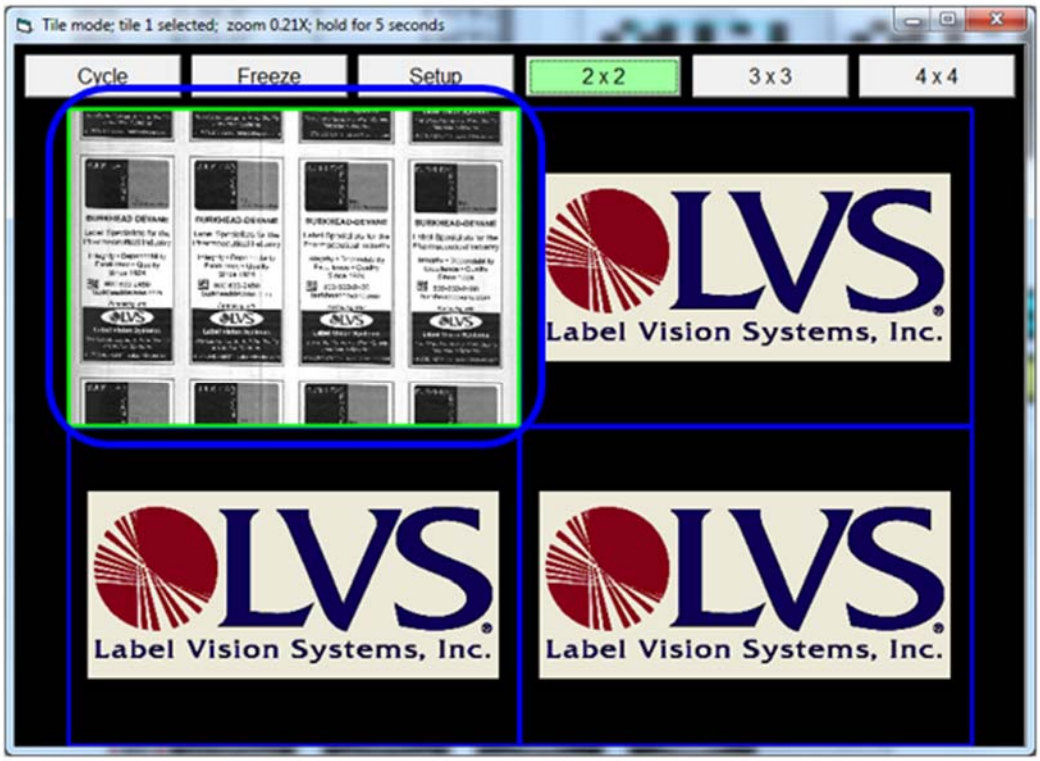
- The “Show AutoScan Window” on the “Running the Job” screen:



3. Click on one of the above checkboxes to open the AutoScan program.
   When the AutoScan program opens, click the maximize button in the title bar to enlarge the AutoScan window, if desired. This window can also be moved to a second monitor if one is connected.



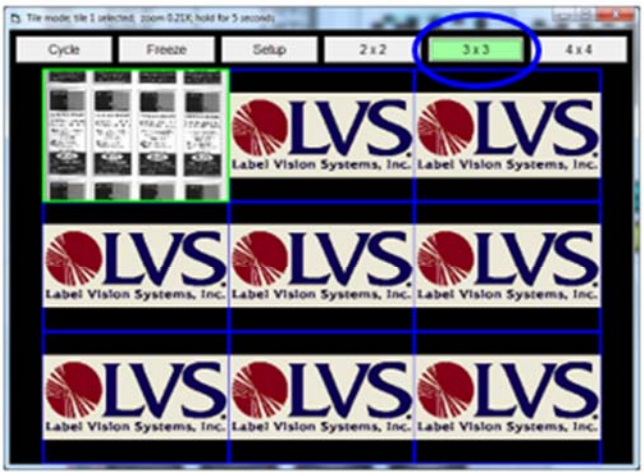
4. Four tiles, also referred to as “areas of interest,” are displayed on the AutoScan window. Each unconfigured tile is a live image of the web.



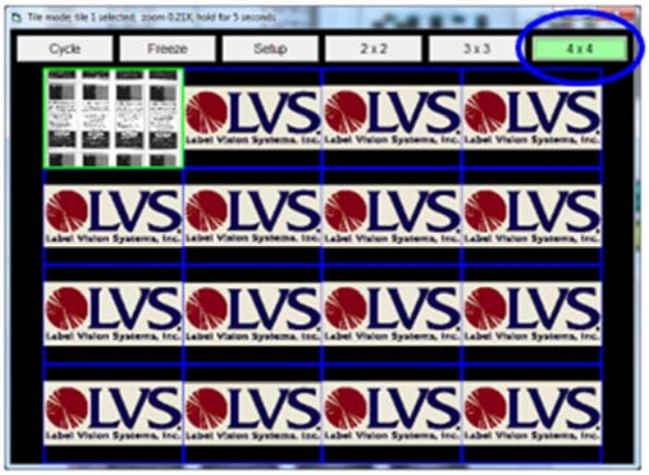
5. Select the number of tiles (areas of interest) to be inspected by clicking one of the following buttons:
   - **2 x 2 –** Inspects up to 4 areas of interest (default setting when AutoScan is opened)
   - **3 x 3 –** Inspects up to 9 areas of interest
   - **4 x 4 –** Inspects up to 16 areas of interest

   Not all tiles have to be configured for AutoScan; tiles not configured will display the default live web image, and will not be a part of the AutoScan process.

2 x 2 button displaying 4 areas of interest

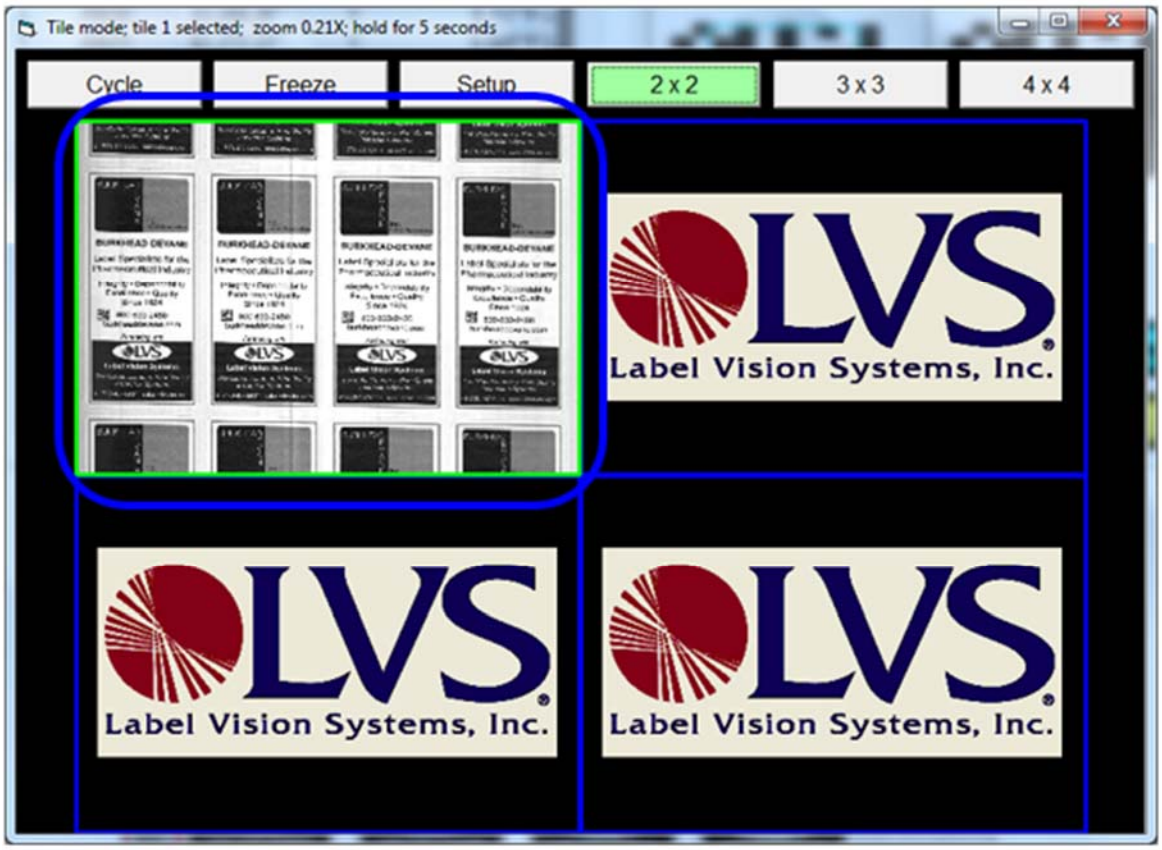


3 x 3 button displaying 9 areas of interest



4 x 4 button displaying 16 areas of interest

6. Click the tile to be configured. The selected tile is outlined in a green border.
   By default, the first tile is selected and highlighted in green. Select a different tile to configure, if desired.



7. Click the “Setup” button. The Setup mode window appears with the image maximized (see below).

   Double-clicking on the screen automatically switches between Setup mode and the selected tile mode (2 x 2, 3 x 3, or 4 x 4).

   Configure the image settings (hold time, image location, and zoom) by following the steps on the next page.

a. Set Hold Time

Set the hold time (amount of time the image will display in “Cycle” mode) by sliding the left vertical scroll bar to the desired duration. Values range from zero (0) seconds (off) to 60 seconds.

Tiles with a hold time set to zero seconds will not be analyzed by the AutoScan program and the LVS logo appears over the tile as an indicator that the tile is not being cycled through the AutoScan program.

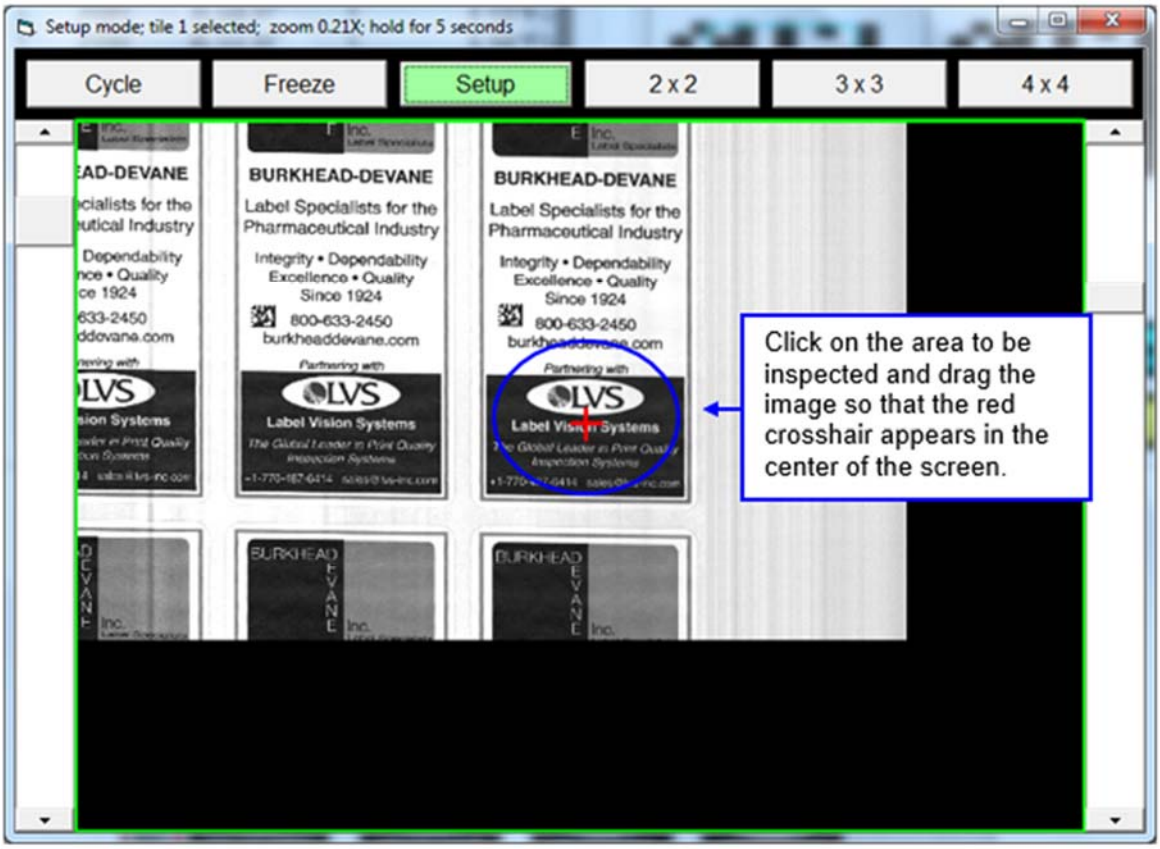
By default, the hold time of the first tile is set to 5 seconds; adjust the hold time as desired.

The hold time value is displayed in the window title bar.

b. Set Image Location

Set the image location (the area of the image to be inspected and displayed in “Cycle” mode) by left clicking your mouse on the area of interest in the image (the red crosshair will move to that area) and while pressing down the left mouse button, drag the image so that the red crosshair appears in the center of the AutoScan screen. Then, release the left mouse button.

The zoom function (which is configured in the next step) will center and zoom in on the red crosshair.



c. Set Zoom

Set the zoom (the size the image will display in “Cycle” mode) by sliding the right vertical scroll bar to the desired size. Values range from 0.06X (smallest zoom) to 16X (largest zoom).

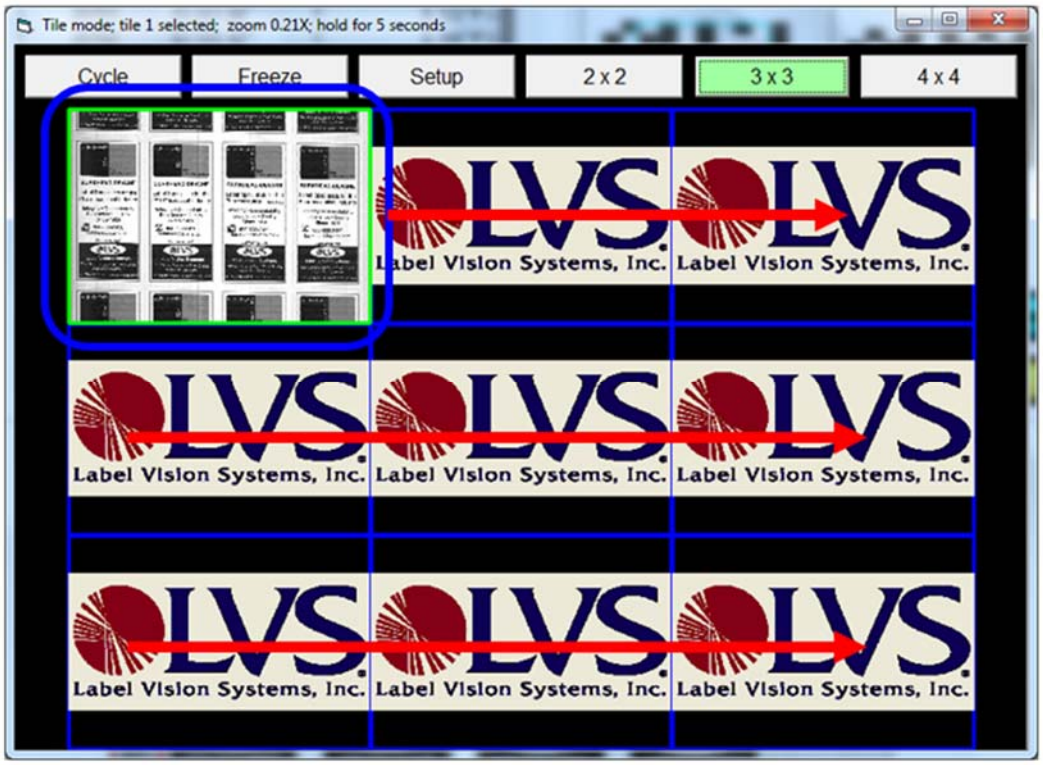
The value is displayed in the window title bar.

d. When the tile settings are complete, return to the main tile display by clicking either the 2 x 2, 3 x 3, or 4 x 4 buttons. The updated image is visible in the tile display.

e. Follow the above steps for each tile to be inspected by the AutoScan program. Tiles not configured for AutoScan will display the LVS logo.

8. When the settings for each desired tile are complete, perform the steps below in any order:
   a. View all of the tiles at once by clicking either the 2 x 2, 3 x 3 or 4 x 4 buttons.
   b. Cycle through the tiles by clicking the “Cycle” button. This displays a maximized view of each time one at a time for the specified duration of each tile. Tiles with a hold time set to zero (0) will not appear.

      Tiles are cycled row by row, from left to right, starting with the upper left tile:



   c. Click the “Freeze” button to freeze a single tile. Pressing the “Freeze” button does not stop image updates; it keeps the current tile maximized and will not move to the next tile.

Tip: Double-clicking on the screen automatically switches between Cycle mode and Freeze mode.

---

9. When analysis is complete, shut down the AutoScan program by clicking the red X in the top right corner of the screen.

10. A “Save Changes” message appears indicating that AutoScan settings have changed and prompts you to save or not save the changes with the job.
    - Click “Yes” to save the changes. If a job is running, the changes are stored with the job.
    - If no job is loaded and the web is running with external synchronization, the changes are stored to a default file that will load the next time AutoScan is opened from the Welcome screen.
    - Click “No” to discard the changes.
    - Click “Cancel” to cancel the message and continue running the AutoScan program.

Appendix G: Automatic Login

The Automatic Login feature allows a user to automatically log in to the LVS-7000 software without entering an Operator ID and Password.

The settings for Automatic Login are controlled in the LVS7000.ini file > [System] section > AutoLogin setting.

- AutoLogin=0 (default) disables Automatic Login
- AutoLogin=1 enables Automatic Login

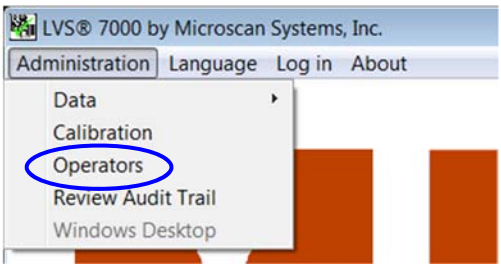
When enabled, the LVS-7000 compares the current Windows user name to the list of LVS-7000 operator names. If there is a match, and if the operator's LVS-7000 password is set to "AUTO," then the user will automatically be logged in to the LVS-7000 software.

Automatic Login is attempted only when the LVS-7000 is first opened. If a user logs out of the LVS-7000, then the next user is required to log in manually. If the operator closes the LVS-7000 entirely, then Automatic Login will be attempted the next time the LVS-7000 software is launched.

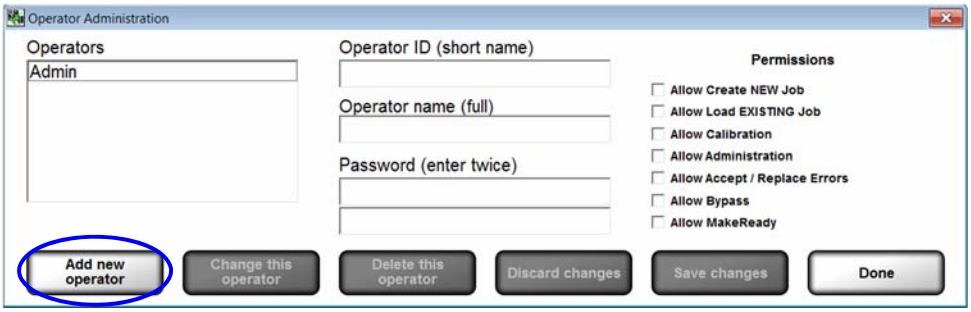
Note: See the "Create a New Job" section in this manual for detailed instructions on creating a new job. See the "Load an Existing Job" section for detailed instructions on loading an existing job.

To setup an operator to allow Automatic Login, follow the steps below.

1. Click “Administration” and then “Operators” from the menu bar.



2. On the “Operator Administration” screen, click the “Add new operator” button.



3. Enter the operator name in the “Operator ID (short name)” field and “Operator name (full)” field. **The Operator name must match the Windows user name.**
4. Enter “AUTO” (all uppercase letters) in the “Password” field. Enter this password in each of the two “Password” fields.
5. Select the desired operator permissions in the “Permissions” section.
6. Click the “Save Changes” button, and then click the “Done” button.
7. Close the LVS-7000 software by clicking the X in the top, right corner of the screen.
8. Log in to Windows as the user you just setup in the LVS-7000 software.
9. Open the LVS-7000 software. The user should automatically be logged in and the “Create a New Job” or “Load an Existing Job” screen is visible. The user is not prompted to enter a user name or password.

   See the “Create a New Job” section in this manual for detailed instructions on creating a new job. See the “Load an Existing Job” section for detailed instructions on loading an existing job.
10. Close the LVS-7000 when work is complete.
11. Log off of Windows.

IMPORTANT: Automatic Login is only attempted when the LVS-7000 is first opened. If the operator logs out of the LVS-7000, then the next user must log in manually. If the operator closes the LVS-7000 entirely, then Automatic Login will be attempted the next time the LVS-7000 software is launched. In practice, an operator would follow the steps below.

1. Log in to Windows
2. Launch the LVS-7000. Automatic Login executes for that Windows user name
3. Run the LVS-7000 as needed
4. Close the LVS-7000
5. Log off of Windows
6. The next operator repeats the above steps

Appendix H: Using the LVS-7000 PDF Comparator

NOTE: Use of the LVS-7000 PDF Comparator requires LVS-7000 Software version 5.6.9 or later.

Prior to using the PDF Comparator function, the 8-digit activation code for LVS-7000 must be entered. The 8-digit activation code is unique for each LVS-7000 software serial number. It is provided by Omron Microscan after installing LVS-7000 software (LVS-7000 version 5.6.9 or later) on your PC. To enter the code, open the LVS-7000 home screen and click CTRL + A to open the code activation screen. After entry of the 8-digit activation code for Feature Code 7014 (PDF Comparator), the LVS-7000 is ready to be used with the ScanProof software.

Contact Omron Microscan Technical Support if further assistance is needed:

- Americas: Americas_support@microscan.com
- Europe: EMEA_support@microscan.com
- China: China_support@microscan.com
- Other Asia-Pacific Areas: APAC_support@microscan.com

NOTE: This user guide provides instructions on installation of ScanProof software. For the LVS-7000, the PDF Comparator is designed for use within the normal job creation process.

INSTALLING SCANPROOF™ SOFTWARE

Step 1 — Install Software

NOTE: Windows **Administrator Access is mandatory** to perform this installation. See the ArtProof-ScanProof Installation Guide included on the USB drive shipped with this product (98-9000079-01).

1. Turn off User Access Control (UAC) settings in Windows. Click the Windows button. Type UAC in the search field and click enter.
2. Select Control Panel, then select User Accounts Control Settings.
3. Select Never Notify and click OK.
4. Reboot the computer.
5. Copy the zip file (“ScanProof.zip”) from the supplied USB drive to the PC running LVS-7000 software.
6. Decompress the zip file and right click on the installation file, as described on page 29 of the ScanProof Installation Guide.
7. While installing Microsoft .NET Framework 4.5, a message will appear requesting a reboot. Click Restart Later.

See the ScanProof Installation Guide for details on the sequence of screens that are shown during a typical installation and required installation steps.

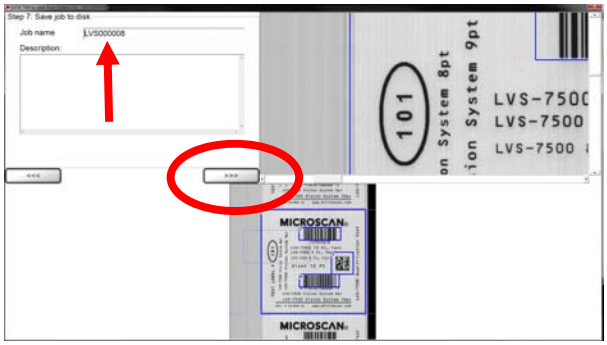
Step 2 — Initial Configuration

To create a configuration setup for an Omron Microscan LVS-7000 system, locate the “Microscan.ini” file on the USB drive and copy it to: C:\Users\Public\ScanProof\Setups. NOTE: The ScanProof software must be installed (see Step 1 above) before this path is valid. Follow the adjustment instructions in the ScanProof Software User Manual.

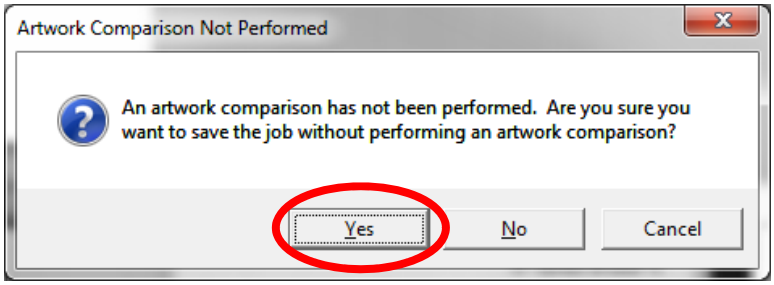
LAUNCHING SCANPROOF™ SOFTWARE

Step 1 — Save Job

Create a NEW job in LVS software. In the Step 7 screen, enter a name for the new job. A description can also be entered. Click the “>>>” button to save the job.

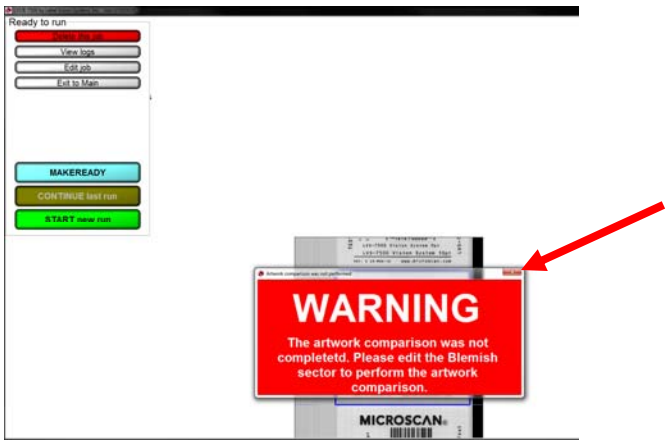


Click Yes when you see the dialog box shown at right:



Step 2 — Edit Job

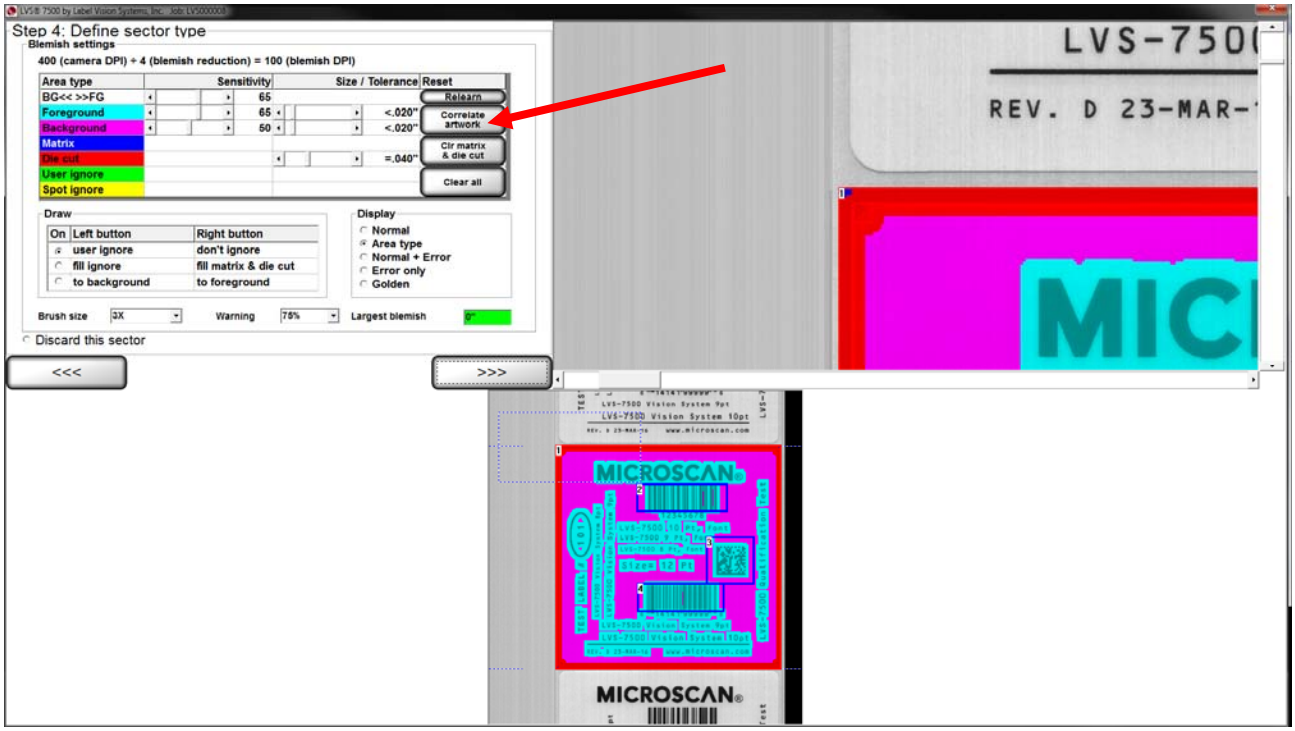
The Ready to run screen will appear. Click the upper right button of the Warning dialog box to close it. Then click Edit Job.



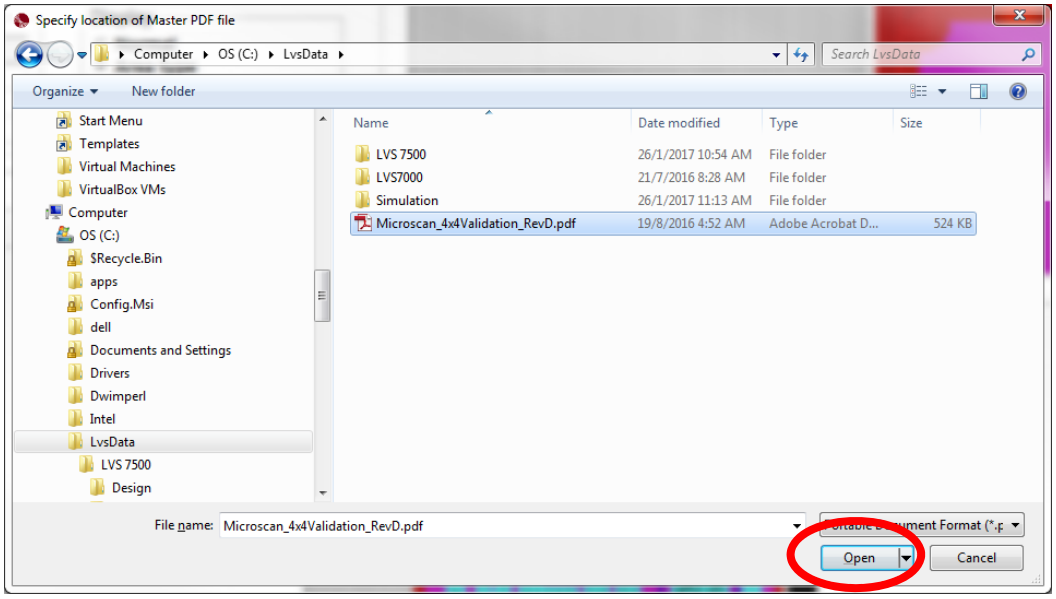
This will reopen the screen to create sectors. Click the “>>>” button to advance to the next screen.

Step 3 — Select the Master PDF

In the Step 4 screen, “Blemish settings”, click the Correlate artwork button.

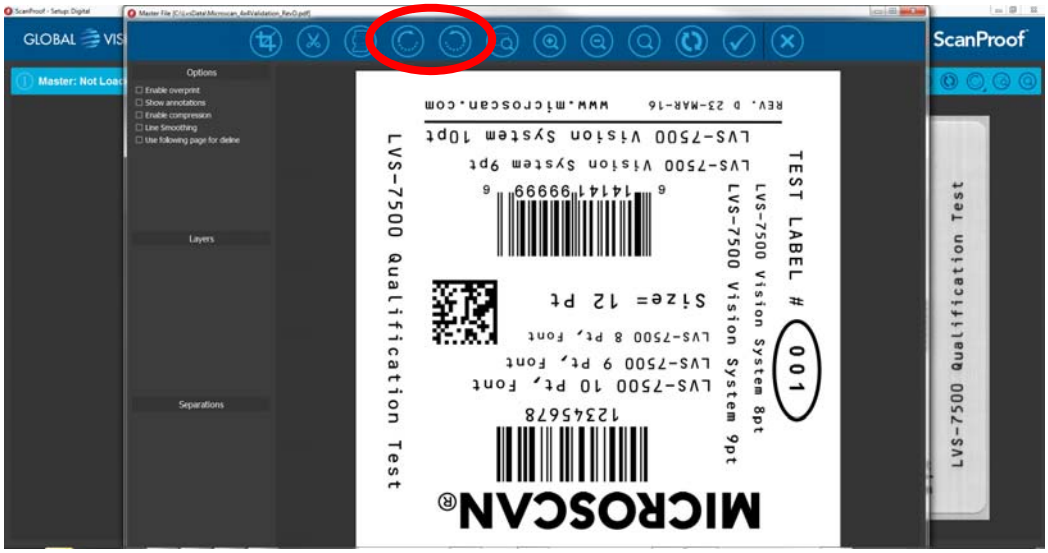


A browser window will open for you to select the Master PDF artwork file. Browse to the location of your Master PDF, select the file, and click Open.

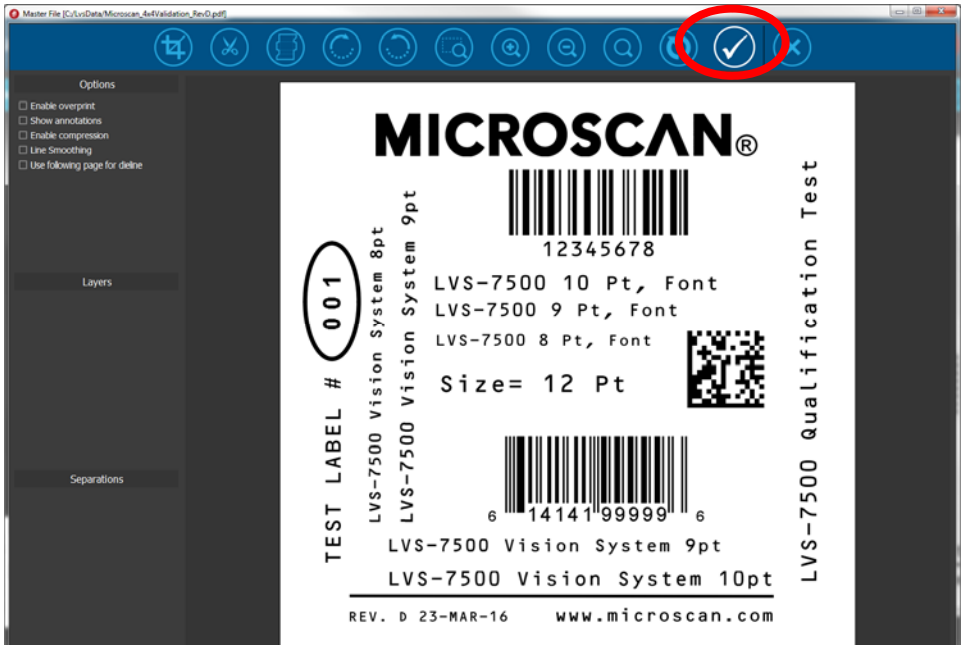


Step 4 — Open Master PDF in ScanProof

LVS-7000 software becomes hidden. ScanProof™ application will open and display the Master PDF artwork. If needed, use the Rotate buttons to orient the image.

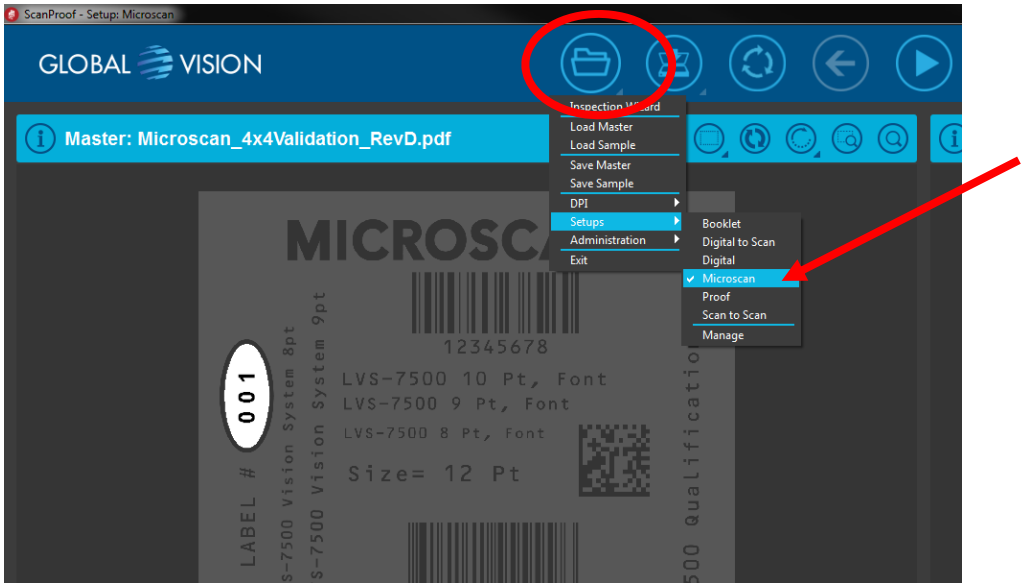


Click the Check Mark icon to confirm the Master PDF.

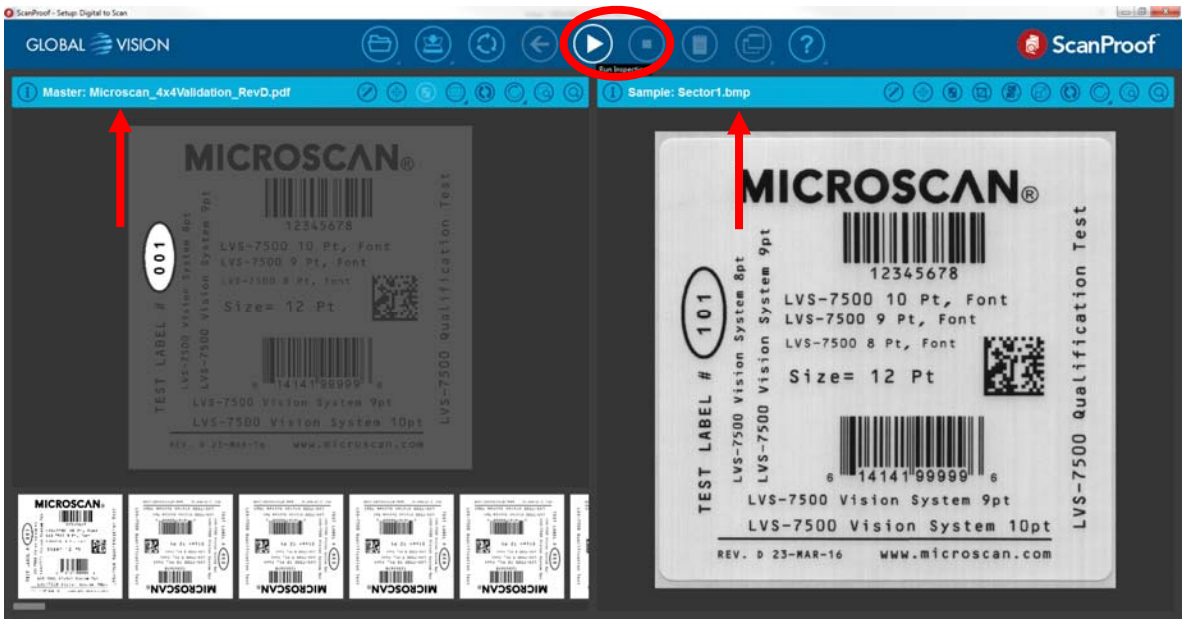


Step 5 — Run Comparison

Under the File Folder icon, select Setup, then Microscan.

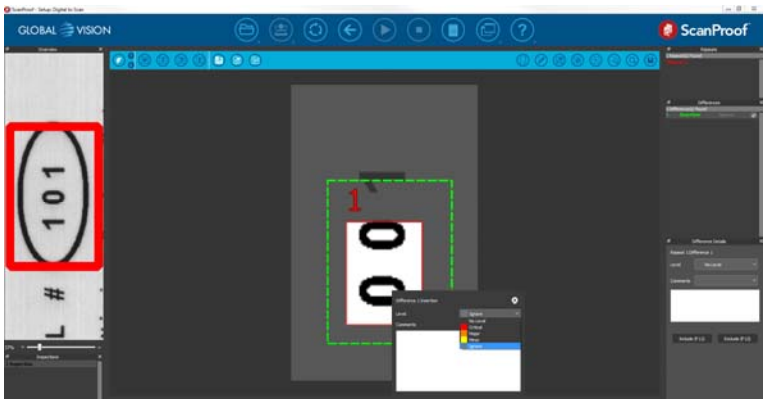


Click the Run icon to run the comparison between the Master PDF and the .BMP image of the sector created earlier.

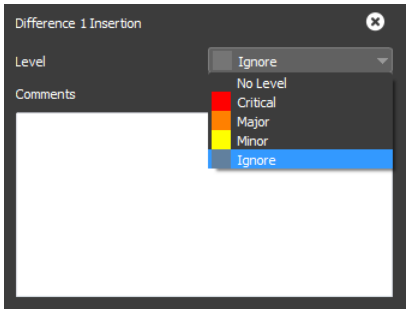


Step 6 — Review Differences

A list of differences between the labels, if any are found, will appear. You can review the details of each difference and enter a classification.

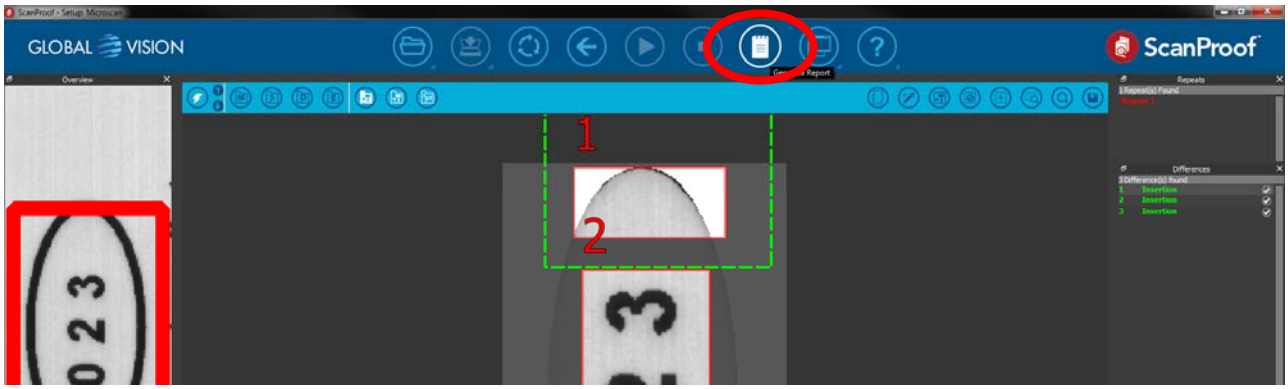


There are 4 classification levels: Critical, Major, Minor, and Ignore.

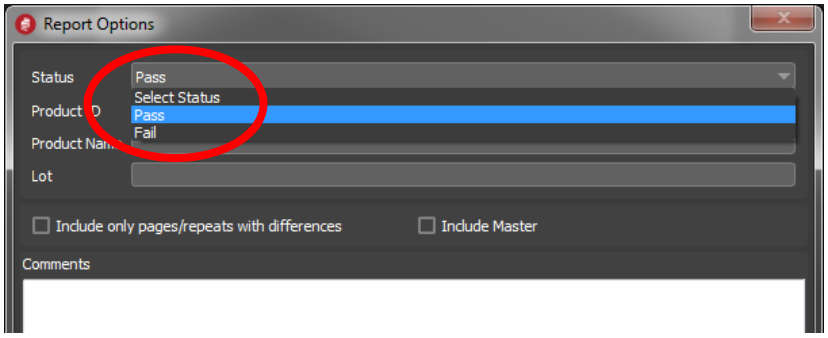


Step 7 — Set Status and Generate Report

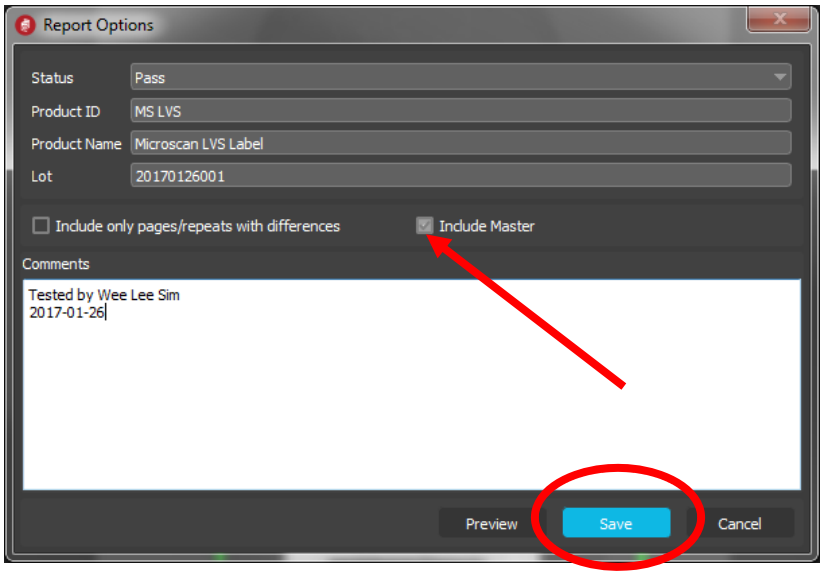
Once you have completed the review, click the Generate Report icon.



In the open dialog box, select a status of PASS or FAIL for the comparison.



You may also complete additional fields such as Product ID, Product Name and Lot. Check the box to include an image of the Master PDF in the report. Click Save.



A browser window will open to select the folder location and file name of the report.

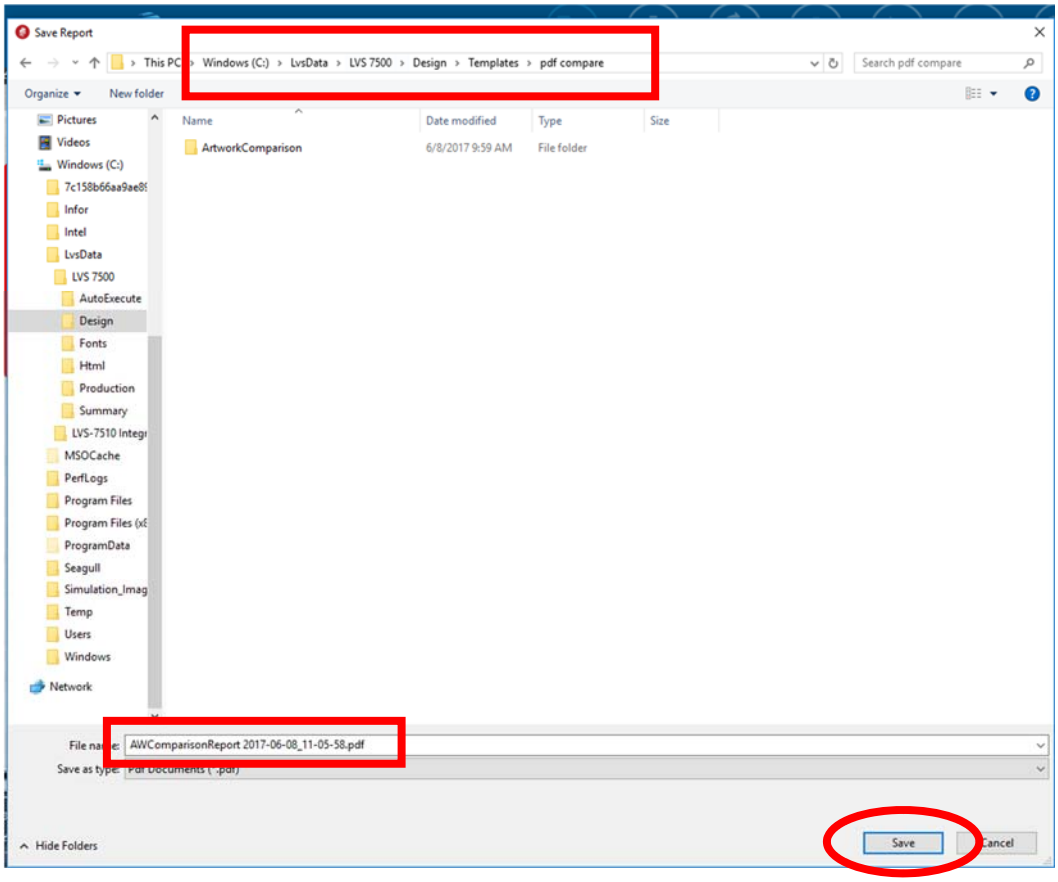
The report must be saved in the Jobs folder, typically in the following location:

C:\Users\<username>\AppData\Roaming\Microscan\LVS 7000\Jobs\<filename>\ArtworkComparison

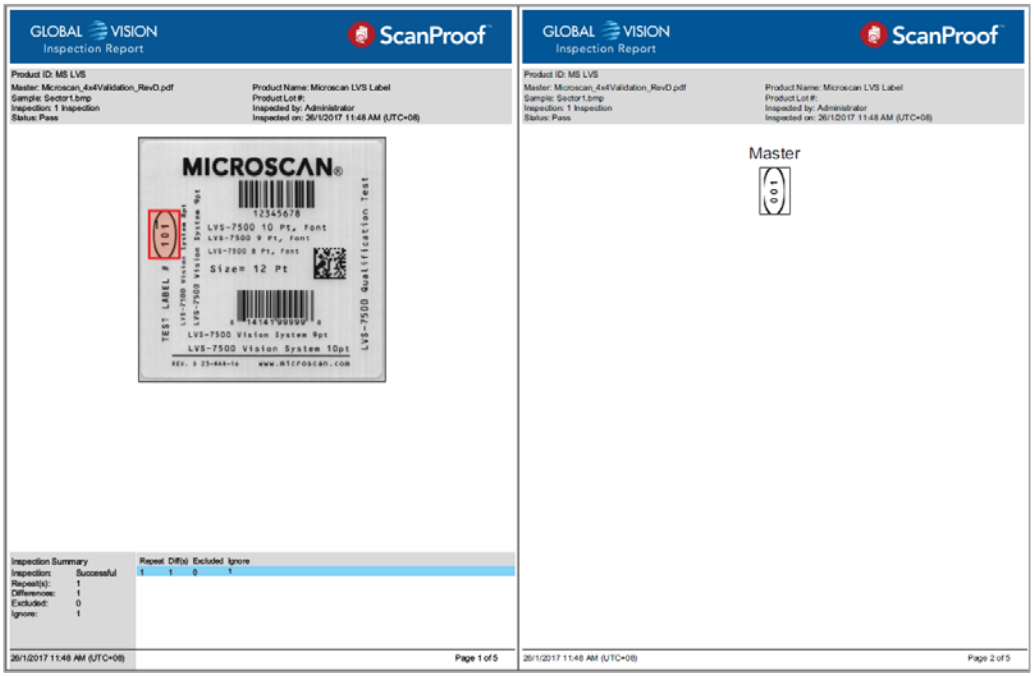
(where "filename" = the job name that is entered).

Keep the report with the inspection job to ensure the LVS-7000 software is able to locate the report.

Click Save to save the report.

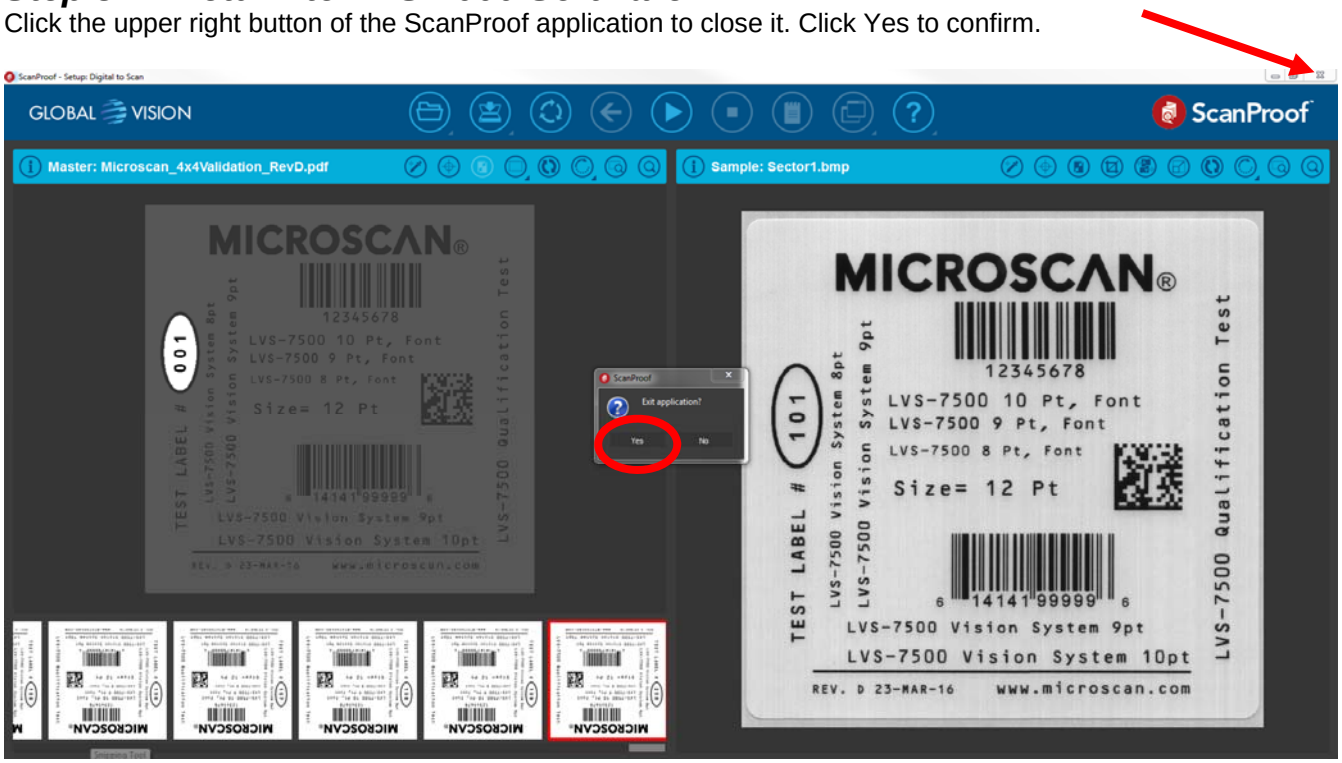


See an example of a ScanProof report below (pages 1-2 of a 5-page report):

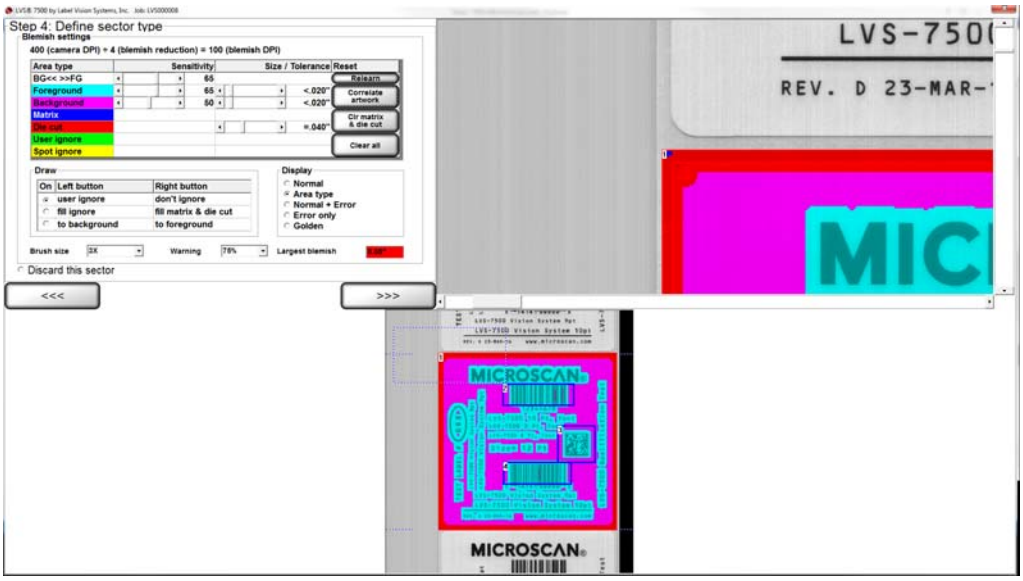


Step 8 — Return to LVS-7000 Software

Click the upper right button of the ScanProof application to close it. Click Yes to confirm.

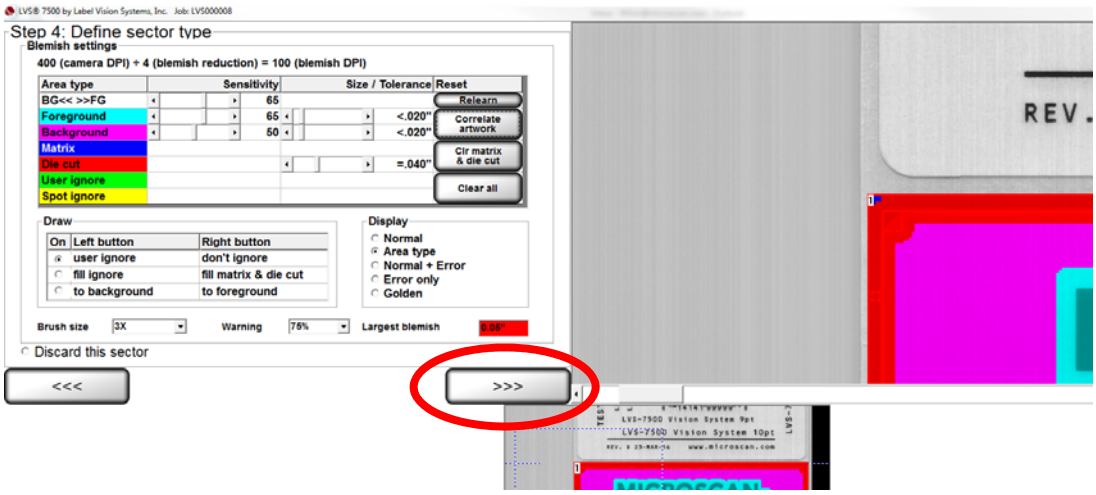


LVS-7000 software and Blemish settings screen will reappear once ScanProof closes.

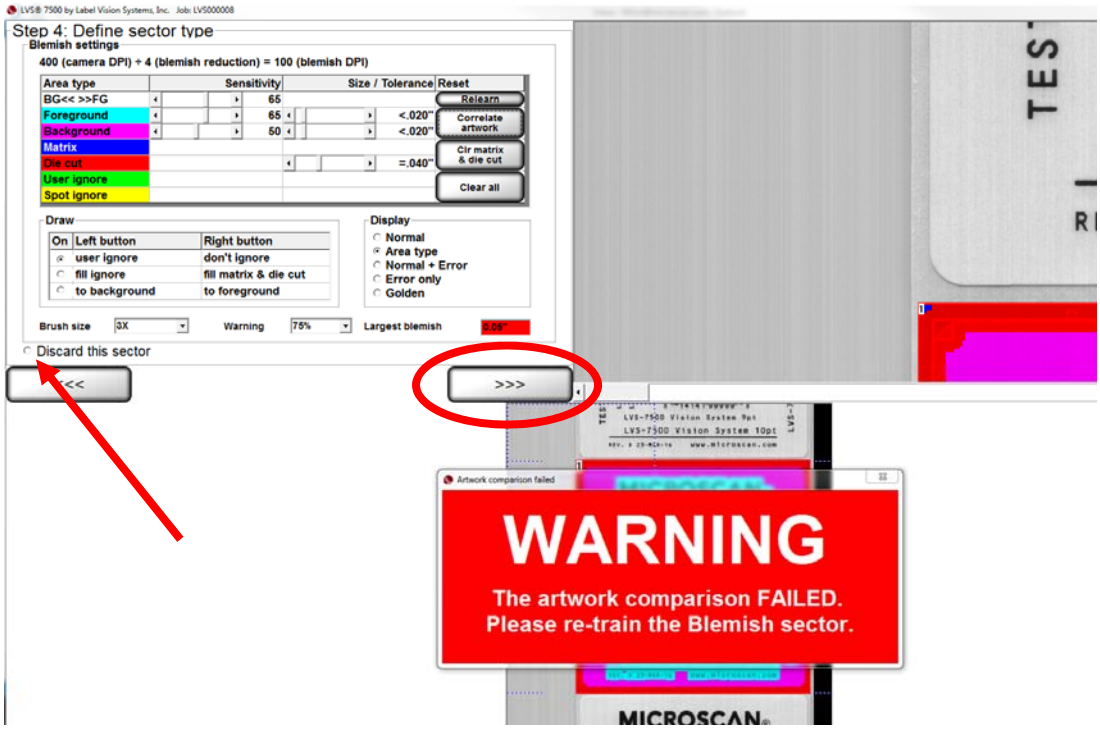


Step 9 — PASS or FAIL

LVS-7000 software will automatically access the ScanProof report saved into the job folder. If the report status is set to PASS, you will continue to complete the Blemish Tool setup and save the job.



If the report status is set to FAIL, a warning message will appear to request creation of a new Blemish sector. Select Discard this sector. Click the “>>>” button to continue to a screen to re-train the sector.



NOTE: This appendix is intended only to provide instructions for the PDF Comparator. For more detailed setup and configuration instructions for the LVS-7000, consult the new job creation section of this manual.

Appendix I: AutoStop

NOTE: Use of the AutoStop feature requires LVS-7000 Software version 5.6.9 or later.

The AutoStop feature allows for a RUN to continue logging uninterrupted, but will report data to the GUI as well as output an immediate STOP signal at the designated COUNT.

Settings for AutoStop are controlled in the LVS7000.ini file > [System] section > AutoStop settings.

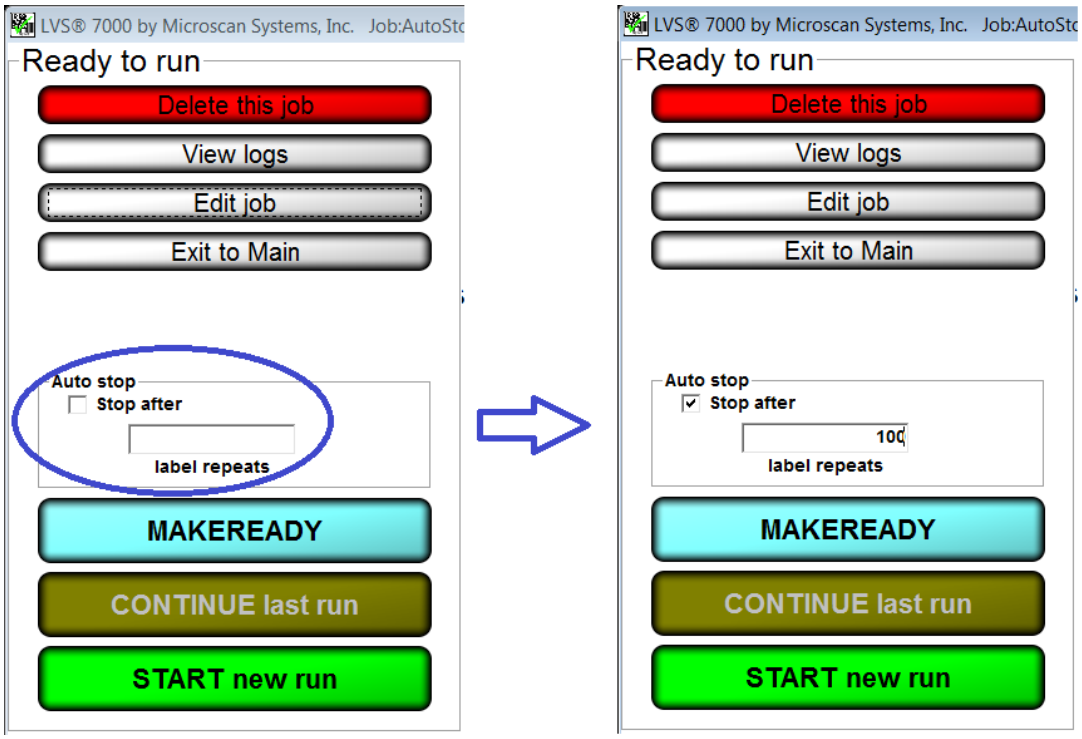
- AutoStop=0 (default) disables AutoStop feature
- AutoStop=3 enables AutoStop feature
- AutoStop3Output=N Where "N" is the output line (1-8) that sends the immediate STOP signal (not constrained by StopMotionDelayDistance)
- AutoStop3DwellTime=N Where "N" is the dwell time for the stop signal in milliseconds

Using AutoStop:

1. Create a new job, or load an existing job as usual.

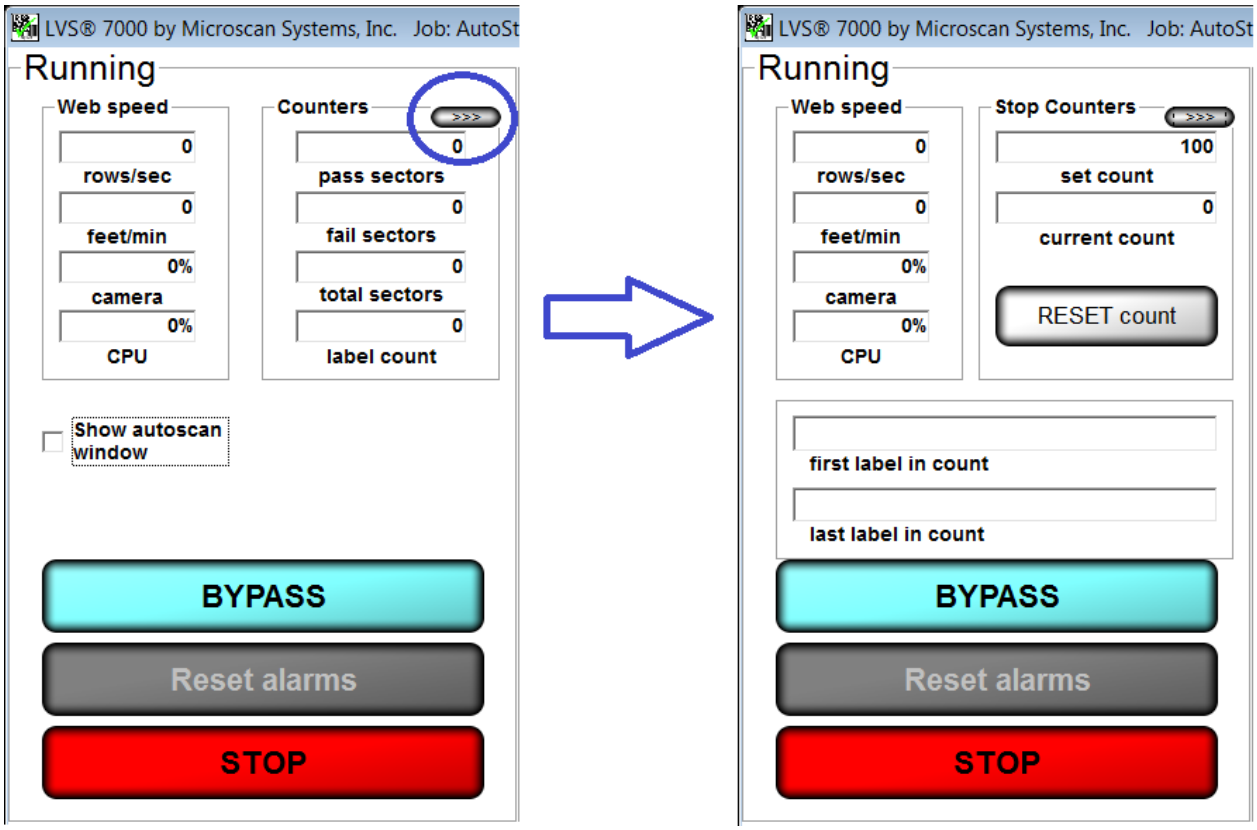
    a. NOTE:
        i. When using the AutoStop feature, sector 1 of any job must be a 1D or 2D symbol.
        ii. Only sector 1 is used for the count, as this feature is per repeat. Multiple labels across a repeat do not add to the count.

2. On the "Ready to run" screen:
    a. Click the "Stop after" box
    b. Enter the number of repeats you wish to stop after in the "label repeats" box

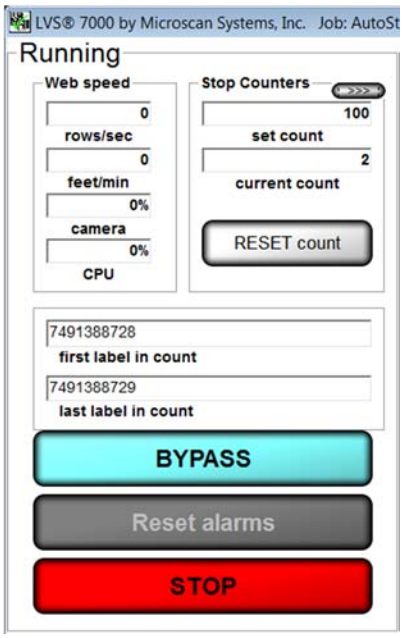


3. Click “START new run”.

4. On the “Running” screen, click the “>>>” button in the Counters section.
    a. The “Counters” section will now be replaced with “Stop Counters”, containing:
        i. “set count” box, containing the value entered in step 2b
        ii. “current count” box, containing a running count of labels processed
        iii. “RESET count” button
        iv. “first label in count” box
        v. “last label in count” box



5. Once the web has been started, the first label and last label boxes will populate with the values read from sector 1:



6. When the LVS7000 system reaches the specified stop count, an immediate stop signal will be output on the designated line, for the designated dwell time (both defined in the .ini file). After the roll with the specified count is removed, and a new core loaded, click the “RESET count” button to repeat the process.

7. Click the “STOP” button when finished with a run.