

MICROSCAN.

LVS[®] 9580 Operating Instructions

English



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GS1 Solution Partner



Disclaimer

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

Latest Manual Version

For the latest version of this manual, see the Download Center on our web site at:
www.microscan.com.

Technical Support

For technical support, e-mail: helpdesk@microscan.com.

Warranty

For current warranty information, see: www.microscan.com/warranty.

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Important Information

- The LVS-9580 arrives to your site packaged in a specially designed shipping carton. DO NOT discard this shipping carton in case you must ship or store the system for any reason. Failure to use this carton when returning your product to Microscan will void warranty.
- This guide is intended to help you understand the features and functionality of the LVS-9580. Be sure to reference the following additional resources:
 - Refer to the “LVS-95XX Series Software Installation Guide” for steps on installing the LVS-95XX software. A hard copy version of the “LVS-95XX Series Software Installation Guide” is packaged with your system and an electronic version is located on the installation media.
 - Refer to the “LVS-95XX Series Barcode Quality Station Operations Manual” for comprehensive steps on operating the LVS-95XX software. This manual is located on the installation media packaged with your system.
- If you have any questions or concerns about the performance of the LVS-9580, please call your local Microscan Distributor or Microscan technical support:

Microscan Technical Support:

+1-425-203-4841 | +1-800-762-1149 | helpdesk@microscan.com

Safety Instructions

The LVS-9580 has been carefully designed to provide years of safe, reliable performance. However, as with all electrical equipment, there are some basic precautions 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.
- Never insert anything into the openings of the system.
- Do not use the system near water or spill liquid into it.
- All components used to create your system are CE approved. 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 USB cable connected.
- To avoid damaging the system, unplug the USB cable before cleaning.
- If the system ever needs repair, consult Microscan or your Microscan Distributor.

About the LVS-9580

The LVS-9580 is a portable, handheld barcode verifier designed for off-line verification of barcodes to ISO/IEC standards. The LVS-9580 is a 5.0 megapixel camera-based system that grades linear (1D) and two-dimensional (2D) codes up to 3 inches (76 mm) wide and up to 2 inches (51 mm) tall (including the quiet zone). See the “Quiet Zone” section below for more information on quiet zones.

The LVS-9580 verifies barcode labels located on a variety of surfaces including corrugated cardboard boxes, shipping containers, and on a static (non-moving) web. The LVS-9580 grades barcodes in either picket fence or ladder orientation.

Picket Fence Orientation



Ladder Orientation



The LVS-9580 is 21 CFR Part 11 Compliant-Ready.

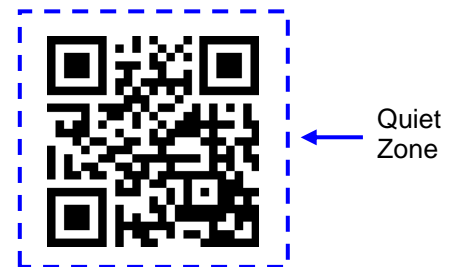
Quiet Zone

The **Quiet Zone** is a clear space preceding the start character of a barcode symbol and follows the stop character. When reading/grading a barcode symbol, you must allow enough space for the Quiet Zone. The required Quiet Zone space for each barcode varies by symbology. An error message appears on the computer screen if not enough space has been allowed for the Quiet Zone.

1D Barcode Quiet Zone



2D Barcode Quiet Zone



Hardware Overview

The LVS-9580 is comprised of the following hardware components:



Additional images:



LVS-95XX Software Steps

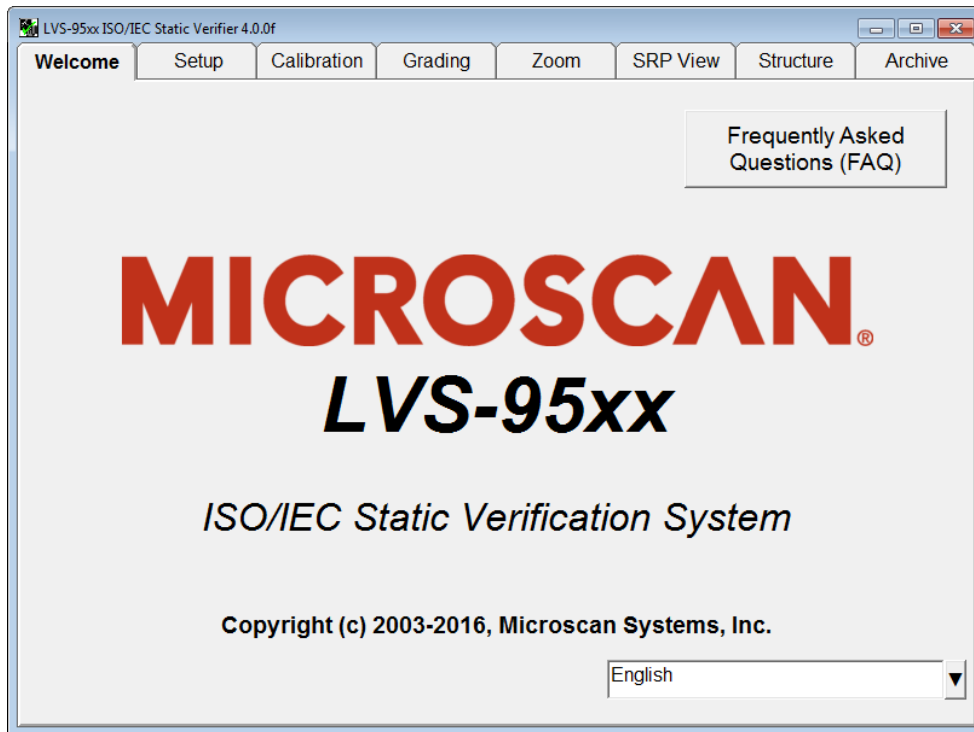
Refer to the sections below for steps on:

- Logging on to the LVS-95XX software
- Turning on the LVS-9580 camera
- Calibrating the LVS-9580

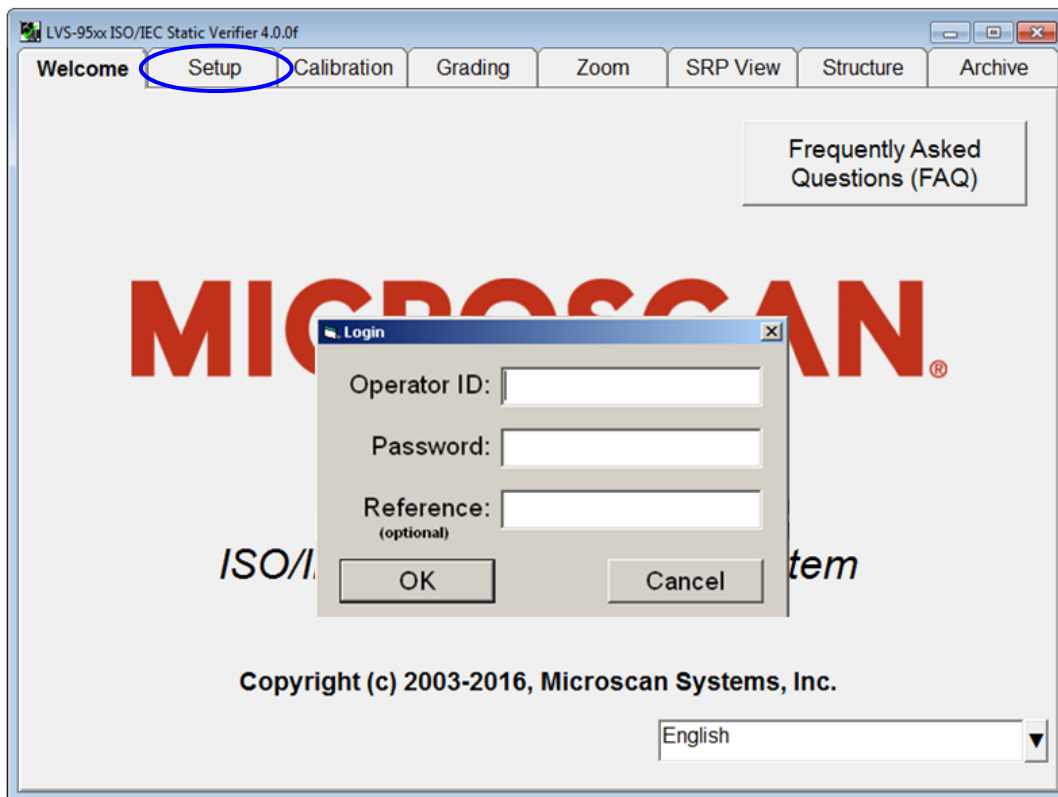
Note: Refer to the “LVS-95XX Series Software Installation Guide” for step-by-step instructions on installing the LVS-95XX software; a hard copy version of this guide is packaged with your system and an electronic version is located on the installation media.

Log On to the LVS-95XX Software

1. Start the LVS-95XX software. The “Welcome” screen appears (see below).



2. Click the "Setup" tab. The "Login" box appears.



3. Enter **admin** (not case sensitive) in the **Operator ID** field and in the **Password** field.
4. Click "OK." You are logged in to the LVS-95XX software.
5. Turn on the LVS-9580 camera by following the steps in the next section entitled "Turn on the LVS-9580 Camera."

Turn on the LVS-9580 Camera

1. Click the "Setup" tab and select "9580" in the "Camera" section (see below).

The screenshot shows the 'Setup' tab selected in the top navigation bar. The 'Camera' section is circled in blue, with two arrows pointing to the '9580' option: one labeled 'Additional camera' and another labeled '9580 camera'. The 'Grading mode' section is also circled in blue, with an arrow pointing to the 'Auto-sector' option labeled 'Select the "Auto-sector" option'. The 'Current information' section displays local time, GMT, and time zone. The 'System Settings' section includes options for minimum passing score, password expiration, and quiet zone processing. The 'Optional features' section has a dropdown for 'Single sector verification (normal)' and a button for 'Optional Features Activation'. A 'Change password' button is at the bottom left. Navigation buttons for 'Setup operators', 'Product lookup', and 'Distributor information' are at the bottom right.

Note: If you are using only an LVS-9580 (with no other LVS-95XX barcode verifier, such as an LVS-9510), then "9580" will be the only camera listed in the "Camera" section. If you are using an LVS-9580 with an LVS-9510 (1.3 mp or 5.5 mp cameras) or LVS-9505 (1.3 mp or 2.1 mp cameras), then all system cameras appear in the "Camera" section. Select "9580."

2. Select "Auto-sector" in the "Grading mode" section (see screenshot above). This allows the LVS-95XX software to locate a barcode within the field of view and automatically draw a sector around the barcode.
3. Next, you need to calibrate the LVS-9580 (if using the LVS-9580 for the first time). See the next section for calibration steps.

Calibrate the LVS-9580

IMPORTANT:




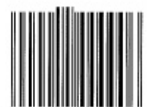


The LVS-9580 should be calibrated regularly. The entire calibration process takes less than 30 seconds to complete and ensures the LVS-9580 is certified according to industry standards.

The Calibrated Conformance Standard Test Card should be replaced every two years.

It is recommended to clean the LVS-9580 window prior to calibration. See the "Cleaning Instructions" section for more information.

1. To calibrate the LVS-9580, click the "Calibration" tab.
 2. Locate the Calibrated Conformance Standard Test Card ("test card") that was packaged with your system and place the test card on a flat surface.
- Below is an example of an "EAN/UPC" test card.

Master Grade
barcodes

CALIBRATED CONFORMANCE STANDARD TEST CARD FOR EAN/UPC SYMBOL VERIFIERS USING 6 MIL APERTURES	
EAN-13 MASTER GRADE  DECODABILITY: <u>83.6 %</u> CONTRAST: <u>82.6 %</u> MODULATION: <u>83.7 %</u>	UPC-A MASTER GRADE  DECODABILITY: <u>84.3 %</u> CONTRAST: <u>82.7 %</u> MODULATION: <u>85.1 %</u>
 DEFECTS (VOID) <u>22.1 %</u>	 DECODABILITY (BAR) <u>43.2 %</u>
CALIBRATION #: <u>UPC2-3350</u> WAVE LENGTH: <u>670 nm</u> EFF. APERT: <u>0.006 in.</u>	CONTRAST <u>48.1 %</u> 
 BarCodes and eCom™ US • PERMANENT • PERIODIC USE STANDARDS	PART NO. CCSV-1 REV Q-2

DATE ISSUED: _____
 THIS STANDARD IS CERTIFIED FOR 2 YEARS FROM IN SERVICE DATE.
 WHEN HANDLED IN ACCORDANCE WITH USE OF CALIBRATED
 CONFORMANCE STANDARDS DOCUMENTATION.
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3. Firmly grip the LVS-9580 handle. There is no need to press the trigger at this time (pressing the trigger causes the LVS-9580 to capture a live image; however, the image is automatically live while the system is in Calibration mode).
4. Place the LVS-9580 window over one of the Master Grade barcodes making sure the four rubber feet surrounding the window rest firmly on a flat, stable surface. The rubber feet hold the test card in place and prevent movement of the test card. See example of Master Grade barcodes above. It is important to note that not all of the rubber feet will fit onto the calibration card.

Not all of the rubber feet will fit onto the calibration card.

**CALIBRATED CONFORMANCE STANDARD
TEST CARD
FOR EAN/UPC SYMBOL VERIFIERS
USING 6 MIL APERTURES**

VERIFIER WINDOW

UPC-A MASTER GRADE

F
A
I
L

P
A
S
S

DECODABILITY: 84.3 %

CONTRAST: 82.7 %

MODULATION: 85.1 %

DEFECTS (VOID)

22.1 %

CALIBRATION #: UPC2-3350

WAVE LENGTH: 670 nm

EFF. APERTURE: 0.006 in.

GS1 BarCodes and eCom™

• FOR ANSI X3122
• FOR ISO 15415 STANDARDS

DATE ISSUED:
THIS STANDARD IS CERTIFIED FOR 1 YEAR FROM DATE OF SERVICE DATE.
WHEN HANDLED IN ACCORDANCE WITH USE OF CALIBRATED
CONFORMANCE STANDARD DOCUMENTATION

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DECODABILITY (BAR)

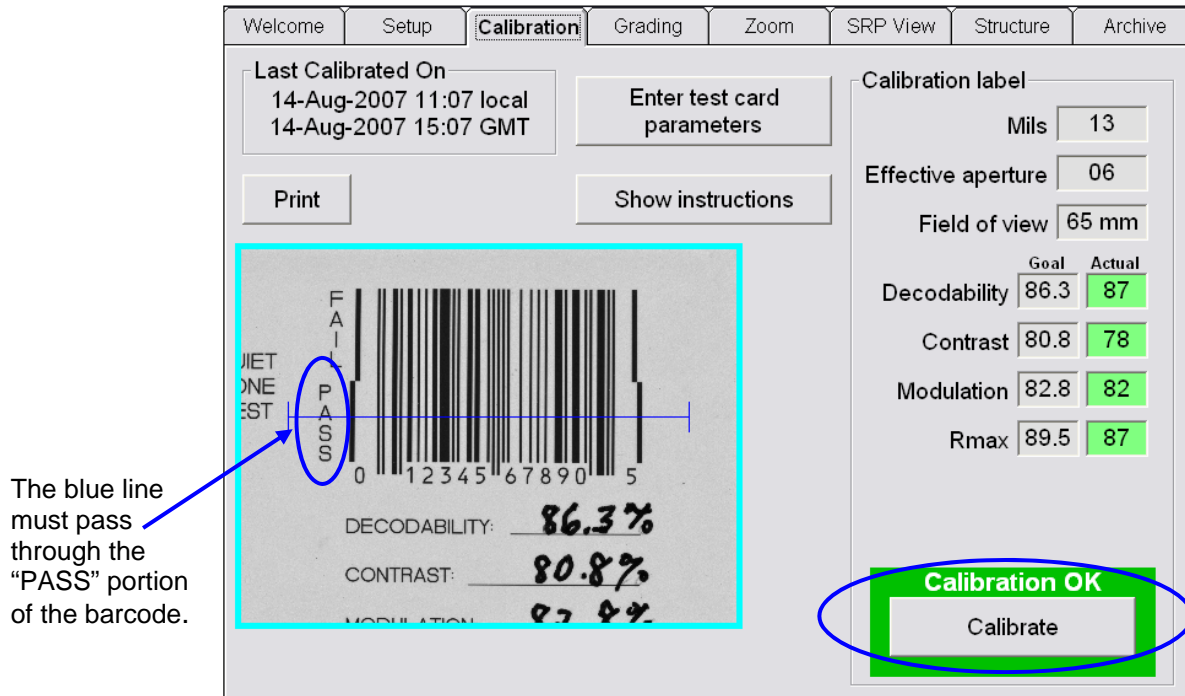
43.2 %

CONTRAST

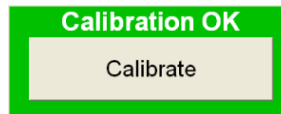
48.1 %

PART NO. CCSV-1 REV Q-2

5. On the "Calibration" tab, make sure the blue line travels through the middle of the PASS portion of the barcode (see Figure below).



6. Click the "Calibrate" button.
- Successful calibration is indicated by a green "Calibration OK" message.



- Failed calibration is indicated by a red "Calibration Needed" message.



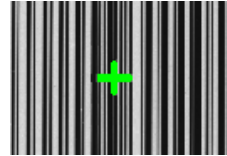
7. If calibration fails:
- Re-scan the Master Grade barcode and follow the above steps to calibrate. It may take two or three attempts before calibration is complete.
 - If calibration continues to fail, contact Microscan or your Microscan representative for further instructions.

IMPORTANT: The calibration score will hardly ever match exactly; this is normal and acceptable as long as the scores are within +/- 3 percent.

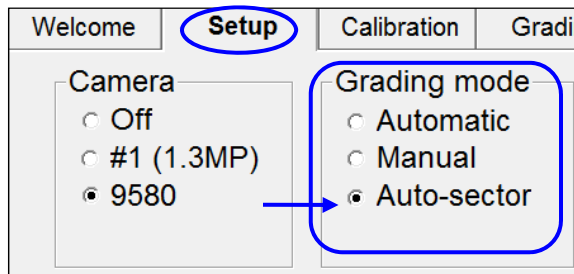
8. When calibration is complete, click the "Grading" tab to grade barcodes. See the next section for steps on grading barcodes.

Grading Barcodes

1. Click the "Grading" tab.
2. Firmly grip the LVS-9580 handle and press and hold the trigger (do not release the trigger).
3. Place the LVS-9580 window over the barcode ensuring the four rubber feet surrounding the window rest on the substrate (media/label material). The rubber feet hold the substrate in place and minimize movement of the substrate.
4. The barcode image appears on the customer-supplied computer screen with a green plus symbol (+) located on the barcode image.



Note: If the green plus symbol (+) is not appearing on the barcode image, click the "Setup" tab and make sure "Auto-sector" is selected in the "Grading mode" section (see below).



5. Slowly move the LVS-9580 as needed to place the green plus symbol over the center of the barcode image (make sure the rubber feet rest on the substrate). Then, release the trigger.

Tip: Positioning the green plus symbol over the center of the barcode image may take a few moments when first learning to use the LVS-9580. Position the center of the LVS-9580 window as close as possible to the center of the barcode image. Please note that when moving the system, the camera reads in a mirrored view. For example, if you move the camera right, the image moves left. If you move the camera up, the image moves down.

6. The LVS-95XX software analyzes the barcode and reports a grade score between 4.0 (A grade) and 0.0 (F grade) on the "Grading" tab.

4.0/06/660
(A)

0.0/25/660
(F)

Refer to the "Grading Tab" section in the "LVS-95XX Series Barcode Quality Station Operations Manual" for more information on grading barcodes; this manual is located on the installation media packaged with your system.

Cleaning Instructions

The LVS-9580 window may need to be cleaned daily, depending on use. Debris on the window may cause the LVS-9580 to not grade accurately.

Locate the following supplies:

- Commercially available household glass cleaner, such as Windex®, Glassex®, VISS®, or Mr. Muscle®.
DO NOT use an industrial-strength glass cleaner.
- Soft, lint-free, non-abrasive towel or cloth

Dampen the cloth with the household glass cleaner and gently wipe the window. Inspect the window closely, looking for any label debris that may be stuck on the window. Do not scrape the window with a sharp object as this may damage the window. Any damage to the window will be detected during the calibration process.

IMPORTANT:

DO NOT directly spray the window with glass cleaner; always spray a towel or cloth with household glass cleaner and then gently wipe the window.

DO NOT use an industrial-strength glass cleaner.

If you have any questions or concerns about the performance of your LVS-9580, please call your local Microscan Distributor or Microscan Headquarters.

Microscan Headquarters

helpdesk@microscan.com | +1-425-226-5700 | +1-800-762-1149

Engineering Specifications

Physical Properties

Height	8.5"	215.9 mm
Width	4.75"	120.6 mm
Depth	5.5"	139.7 mm
Weight	<ul style="list-style-type: none"> Unpackaged Weight = 15.5 oz (.44 kg) Shipping weight (includes all items packaged in shipping box, such as cables, manuals, etc.) = Approx 4 pounds (1.81 kg) 	

Imaging Device

- 5.0 megapixel camera
- Object Distance: Contact

Field of View

- 3.0" (76.19 mm) horizontally
- 2.25" (57.15 mm) vertically
- 1.75" x 1.75" (44 mm x 44 mm) for DPM (direct part mark) software selection

Minimum Barcode X Dimension

- 1D = 4.0 mils (0.10 mm)
- 2D = 5.9 mils (0.15 mm)

Minimum PC Requirements

(PC Supplied by Customer)

- Windows® XP Professional or Windows® 7 (Windows® Vista is not supported)
- Intel® Core™ 2 Duo Processor (or equivalent)
- 2 GB RAM
- 800 x 600 Resolution
- One available USB 2.0 port

Power Requirements

- USB Powered 5VDC @ 180mA

Light Source

- Red 660 nm filter



Communication

- USB 2.0 A/MINI-B cable 10 feet (3048 mm)

Operating and Storage Temperature

- 4° C (40° F) to 46° C (115° F)

Relative Humidity

- 5% to 95% (non-condensing)

Calibration

- EAN/UPC Calibrated Conformance Test Card

Safety Compliant

- RoHS/WEEE compliant
- CE

Specifications and photos subject to change.

Supported Symbologies and Standards

Below are just a few of the Symbologies and Standards supported by the LVS-9580. Contact Microscan for a full list of supported Symbologies and Standards.

Supported Symbologies

- 1D (Linear) Codes:
 - Aztec Code
 - Codabar
 - Code 128
 - Code 39
 - Code 93
 - DataBar expanded
 - DataBar limited
 - DataBar omnidirectional
 - DataBar stacked
 - DataBar truncated
 - DataBar
 - EAN/JAN-13
 - EAN/JAN-8
 - Enterprise Intelligent Barcode (EIB) 4State (4SB)
 - French CIP
 - GS1-128
 - Hanxin Code
 - HIBC
 - Interleaved 2 of 5 (ITF)
 - ITF-14
 - Japan Post
 - MaxiCode
 - MSI Plessey
 - Pharmacode – Italian
 - Pharmacode – Laetus
 - PZN 7 and PZN 8
 - UPC-A
 - UPC-E
 - USPS-128
 - USPS Intelligent Mail Barcode (also referred to as 4-State Barcode)
- 2D (Two-Dimensional) Codes:
 - Below are 2D codes (including 2D Composite Components abbreviated as CC) available for use with the “1D and 2D Barcode Verification” option:
 - DataBar with CC-A, CC-B, or CC-C
 - EAN/JAN-13 with CC-A, CC-B, or CC-C
 - EAN/JAN-8 with CC-A, CC-B, or CC-C
 - ECC-200 (Data Matrix)
 - Enterprise Intelligent Barcode (EIB) Complex Mail Data Marks (CMDM)
 - GS1-128 with CC-A, CC-B, or CC-C
 - Micro QR Code
 - MicroPDF417
 - PDF417
 - QR Code
 - UPC-A with CC-A, CC-B, or CC-C
 - UPC-E with CC-A, CC-B, or CC-C

Supported Standards

ISO Conformance Standards:

- ISO/IEC 15415
- ISO/IEC 15416
- ISO/IEC 15426-1
- ISO/IEC 15426-2

GS1 US Certification:

- Data Matrix for Healthcare
- Data Matrix (ECC 200)
- EAN/UPC
- EAN/UPC and extended codes
- EAN/UPC with CC
- GS1 DataBar Omnidirectional
- ITF-14
- GS1 Databar-14 with CC (formerly RSS-14 with CC)
- UCC/EAN with Supplementals
- UCC/EAN-128
- UCC/EAN-128 with CC

Application Standards:

- AIAG/DAMA/JAPIA/Odette
- ALDI
- ISO/IEC 29158 TR
- DHL
- FPMAJ
- GS1 General Specifications
- HDMA Guidelines
- Health Industry Barcode (HIBC)
- IFAH
- ISO/IEC 15415/15416
- Italian Pharmacode
- Japan Codabar
- Laetus Miniature Pharmacode
- Laetus Pharmacode
- Laetus Standard
- MIL-STD-130

Appendix A – Operating the LVS-9580 DPM Verifier

The **LVS-9580 DPM Verifier** is a Direct Part Mark (DPM) verifier. The LVS-9580 DPM Verifier can be used to verify the symbol quality and structure of a Data Matrix symbol that is permanently affixed to a manufactured item. Correct application standards must be used to verify the structure of the data contained in the direct part mark. This list of available standards is located on the Setup Screen. The software is programmed to use the following application standards:

- DPM ISO/IEC TR29158:2011(E)
- DPM + MIL-STD-130N w/Change 1 (16NOV2012)
- DPM + UII + MIL-STD-130N w/Change 1 (16NOV2012)
- GS1 TABLE 7 DPM (non-medical)
- GS1 TABLE 7 DPM (medical-ink)
- GS1 TABLE 7 DPM (medical, Direct A, connected)
- GS1 TABLE 7 DPM (medical, Direct B, not connected)

The LVS-9580 DPM Verifier can be used as a print quality verifier (15415/15416, GS1) and can verify according to DPM verification standards (ISO/IEC TR29158, MIL-STD-130, UII, and GS1) provided that those upgrades have been purchased.

The LVS-9580 DPM Verifier can also operate in conjunction with the LVS-9510 Verifier. Both the LVS-9580 DPM and LVS-9510 can be connected to the same computer, allowing you to switch between devices.

Note: The LVS-9510 does not support DPM verification.

DPM Verification

DPM verification does not follow the same rules as traditional 1D and 2D verification. Differences:

- All dot peen symbols must now be read with the L-pattern placed squarely in the field of view.
- **Symbol Contrast** is no longer measured. SC (Symbol Contrast) has been replaced with a new parameter called **Cell Contrast (CC)**. A cell contrast value of **30%** is now an **A Grade**.
- **Modulation** and **Reflectance Margin** are no longer measured. These two parameters are replaced with a new parameter called **Cell Modulation (CM)**.
- The LVS-9580 DPM Verifier is capable of grading a direct part mark on most surfaces. The usable field of view is now limited to **1.75" (44mm) by 1.75" (44mm)**.
- **Average Grade (AG)** is no longer reported. A parameter called **Distributed Damage Grade (DDG)** has taken its place. DDG indicates the average of the notional damage grade at the D Grade level.
- A parameter has been created called **Minimum Reflectance**. A Minimum Reflectance greater than or equal to **5%** is considered to be an **A Grade (4.0)**. If it is less than 5% then it is an F Grade (0.0).
- The final grade now reports additional information:

DPM4.0/12/660/D

- **DPM** = Indicates that the DPM rules have applied to the final grade.
- **4.0** = Indicates the final grade point average. This final grade will always be a whole number. 4.0 = A Grade, 3.0 = B Grade, 2.0 = C Grade, 1.0 = D Grade, 0.0 = F Grade.
- **12** = Aperture Size
- **660** = Color of the light. 660 = red.
- **D** = Angle of the light source. A D angle indicates a dome light.

Calibration

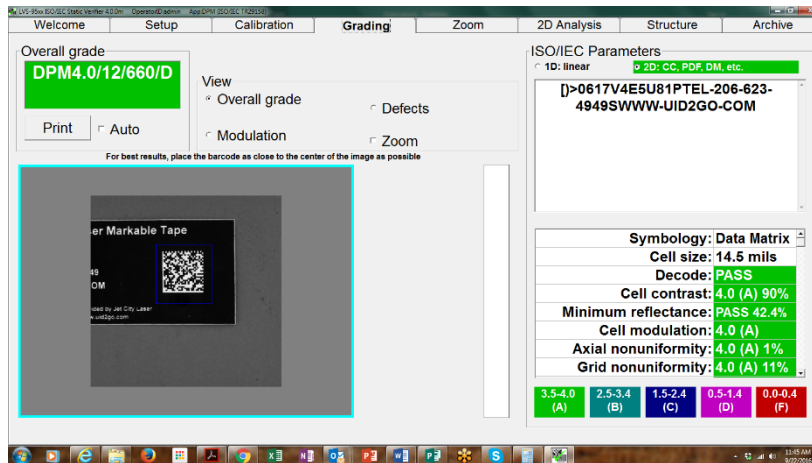
Calibration is achieved by using a **NIST-Traceable Calibration Standard** for Reflectance and Linear Measurements. The **GS1 1D Calibrated Conformance Standard Test Card** for **EAN/UPC** is how the system is calibrated. Using a GS1 DataMatrix Calibration Card is not allowed.

All calibration documentation is available on the **Archive Screen**.

Grading

Verification of direct part marks is performed in a typical manner. Pull the trigger located on the handle and place the image in the center of the field of view. Then release the trigger and the software will verify that specific mark. This reader is a fixed focus system but the focal range can be extended to **.25" (6.35mm)** away from the window. Curved surfaces with a radius no greater than **.4" (10mm)** is acceptable.

Rectangular Data Matrix is acceptable.



Grading with a Shiny Surface

Some direct part marks are created on a shiny metallic surface. When this occurs, the image of the camera can be seen in the center of the field of view. The operator needs to move the direct part mark away from the center of the screen so that the dark circle does not interfere with the grading process.

Drawing a Blue Sector

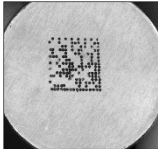
Sometimes the **Auto-Sector** feature cannot find the direct part mark and draws a very large blue sector. This typically results in no symbol being detected. This requires the operator to draw a square manually around the intended direct part mark. Be sure to leave room for the quiet zone. If you draw the blue sector too close to the symbol, QLZ1 and QLZ2 errors will occur.

Try Re-Grading

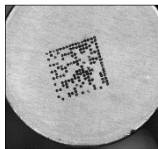
When a direct part mark fails to read, position the symbol in a different part of the field of view. The software is sensitive to motion and may capture a slightly blurred image, which will cause the software not to grade it correctly. Keep a steady hand when grading a symbol.

Keep the “L” pattern square to the field of view.

For most dot peen DPM symbols, the cells are formed by dots and are not connected to each other. This will prompt the software to enhance the image by “connecting the dots”. However, you must keep the L-pattern square to the field of view in order for the software to grade the symbol correctly.



Correct:
DPM symbol
is square to
the FOV



Incorrect:
DPM symbol
is not square
to the FOV

Structure

This system is designed to check the **Data Structure** for compliance to industry standards for MIL-STD-130, UII, and GS1. The embedded data is listed along with a description of what it stands for and reports the value used to determine what the embedded data is. The Data Structure Analysis can be printed.

LVS-95xx ISO/IEC Static Verifier 4.0.0m OperatorID:admin App:DPM (ISO/IEC TR29158)

Welcome Setup Calibration Grading Zoom 2D Analysis **Structure** Archive

Data Structure Analysis

Print

Embedded data	Description	Value
[]>		
<RS>		
06		
<GS>		
17	U.S. DoD CAGE Code	(17V)
<230>	Latch to C40	
V4E5U8	Value for (17V)	4E5U8
<GS>		
1P	Item Identification Code assigned by Supplier	(1P)
TEL-206-623-4949	Value for (1P)	TEL-206-623-4949
<GS>		
S	Traceability Number for an Entity	(S)
WWW-UID2GO.COM	Value for (S)	WWW-UID2GO.COM
<254>	Unlatch	
<RS>		
<EOT>		

