

LVS® 9580/9585 Operating Instructions

English



LVS-9580



LVS-9585

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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.

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Warranty

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Important Information

- The LVS-9580/9585 arrives site packaged in a specially designed shipping carton. DO NOT discard this shipping carton in case the system needs to be shipped or stored for any reason. Failure to use this carton when returning the product to Omron Microscan will void the warranty.
- This guide is intended to help the user understand the features and functionality of the LVS-9580/9585. Be sure to reference the following additional resources:
 - Refer to the “LVS-95XX Series Software Installation Guide” for steps on installing LVS-95XX Software. A hard copy version of the “LVS-95XX Series Software Installation Guide” is packaged with the 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 LVS-95XX Software. This manual is located on the installation media packaged with the system.
- For questions or concerns about the performance of the LVS-9580/9585, please contact a local Omron Microscan Distributor or Omron Microscan Technical Support:
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EMEA_support@microscan.com
APAC_support@microscan.com
China_support@microscan.com
Phone: 1.425.203.4841
Toll Free: 1.800.762.1149

Safety Instructions

The LVS-9580/9585 has been carefully designed to provide years of safe, reliable performance. However, as with all electrical equipment, there are some basic precautions 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 the 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 Omron Microscan or an Omron Microscan Distributor.

About the LVS-9580/9585

The LVS-9580/9585 is a portable, handheld barcode verifier designed for off-line verification of barcodes to ISO/IEC standards. The LVS-9580/9585 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-9580/9585 verifies barcode labels located on a variety of surfaces including corrugated cardboard boxes, shipping containers, and on a static (non-moving) web. The LVS-9580/9585 grades barcodes in either picket fence or ladder orientation.

Picket Fence Orientation



Ladder Orientation



The LVS-9580/9585 is 21 CFR Part 11 Compliant-Ready.

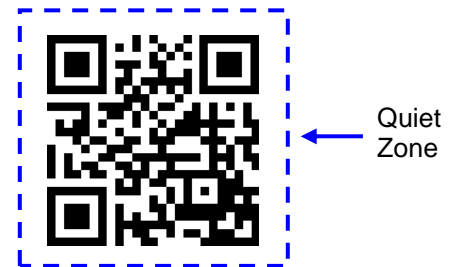
Quiet Zone

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, adequate space for the quiet zone must be allowed. 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-9580/9585 is comprised of the following hardware components:



LVS-9580/9585 with USB cable and software installation flash drive.

Note: The image below shows the device *approaching* the symbol to be verified. The four rubber feet at the corners of the verifier window must be placed on the surface where the symbol is printed or marked.

The position of the device shown at left more closely approximates the orientation required in an application setting.



Important: The label shown above is 4" x 4". The long linear symbol on the label would not fit in the field of view without using the Stitching Feature described in the LVS-95XX Series Operations Manual.

LVS-95XX Software Steps

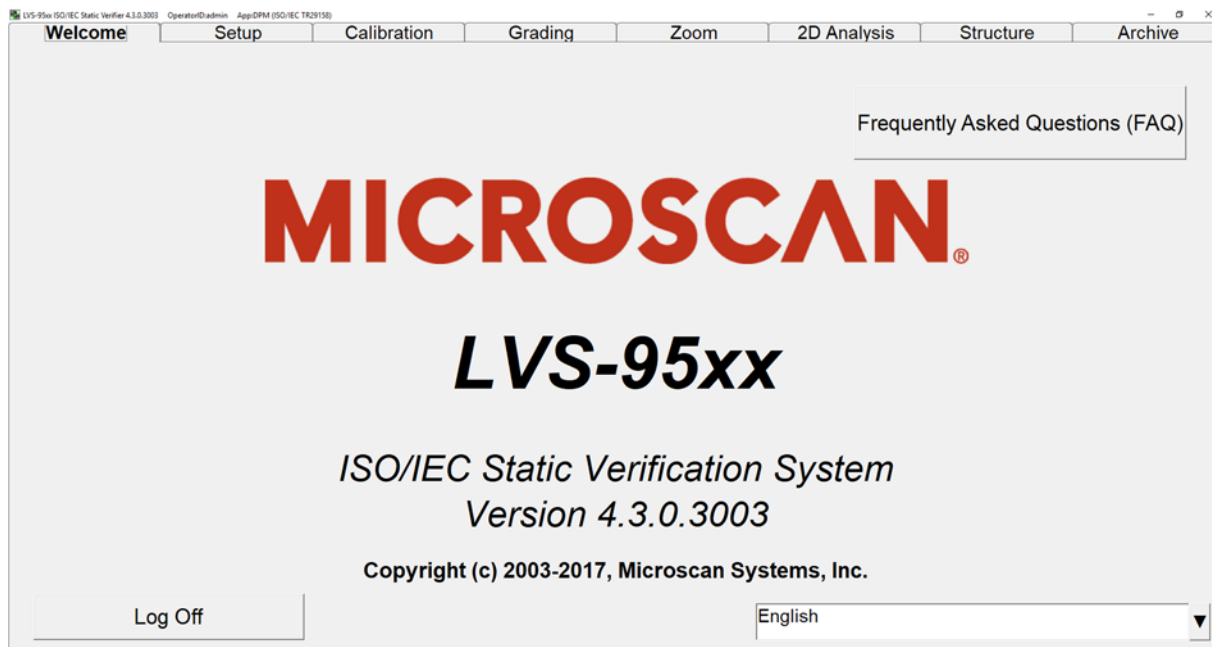
Refer to the sections below for steps on:

- Logging in to LVS-95XX Software
- Turning on the LVS-9580/9585 camera
- Calibrating the LVS-9580/9585

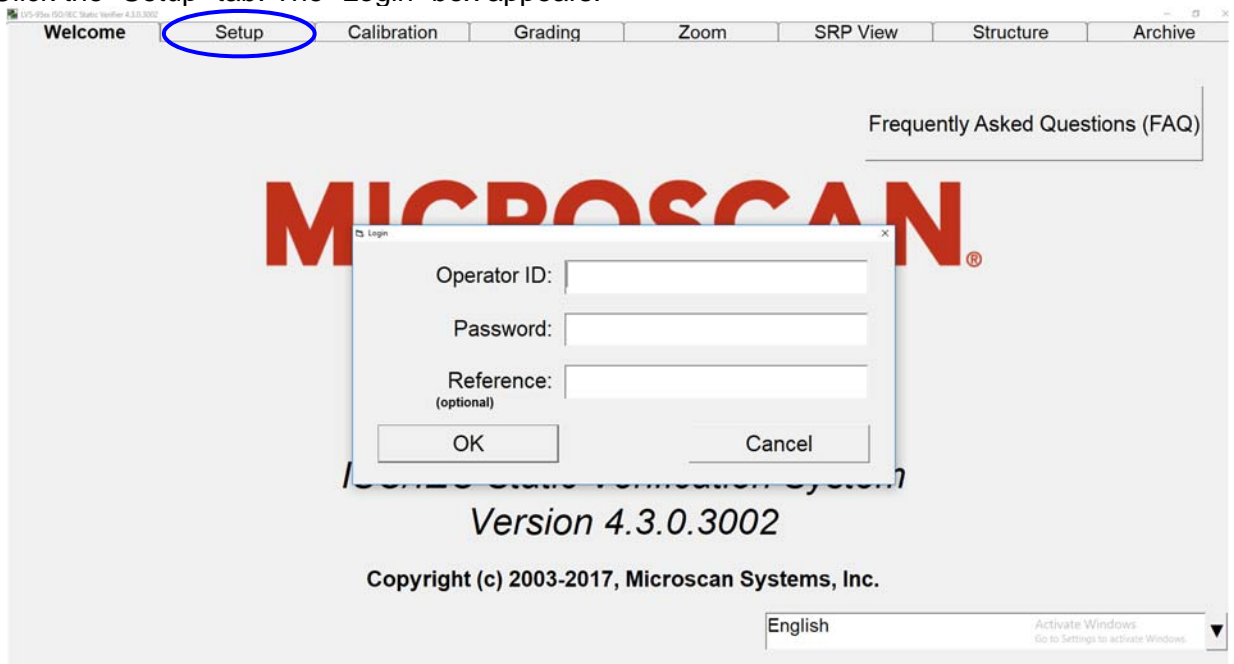
Note: Refer to the “LVS-95XX Series Software Installation Guide” for step-by-step instructions on installing LVS-95XX Software; a hard copy version of this guide is packaged with the system and an electronic version is located on the installation media.

Log In to LVS-95XX Software

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



2. Click the “Setup” tab. The “Login” box appears.



2. Enter **admin** (not case sensitive) in the **Operator ID** field and in the **Password** field.
3. Click “OK.” LVS-95XX Software will open.
4. Turn on the LVS-9580/9585 camera by following the steps in the next section entitled “Turn on the LVS-9580/9585 Camera.”

Turn On the LVS-9580/9585 Camera

1. Click the “Setup” tab and select “9580/9585” in the “Camera” section (see below).

The screenshot shows the 'Setup' tab of the LVS-9580/9585 interface. The 'Camera' section is highlighted with a blue box, showing 'Off' selected and '9580' and '#2 (5MP)' as options. The 'Grading mode' section is also highlighted with a blue box, showing 'Automatic' selected and 'Manual' and 'Auto-sector' as options. A blue arrow points from the 'Auto-sector' option to the 'Optional features' section, specifically to the 'List of options (choose one):' dropdown, which is set to 'Single sector verification (normal)'. Another blue arrow points from the '9580' option in the 'Camera' section to the 'Additional camera' label. A third blue arrow points from the 'Auto-sector' option to the 'Select the "Auto-Sector" option' label. The 'System Settings' section on the right includes fields for 'Current information' (Local Time, GMT, Time Zone) and 'System Settings' (Minimum passing score, Days before password expires, Minutes before auto logoff, Days before calibration needed, Allow non-ISO blemish to affect grade, QRCode quiet zone >1X, Automatically start program, Lock language when decoding, Reference, Additional reference, Company name on reports, Setup operators, Product lookup, Distributor information).

LVS-9580 / LVS-9585

Additional camera

Select the “Auto-Sector” option

Note: When using only the LVS-9580/9585 (with no other LVS-95XX barcode verifier, such as the LVS-9510), “9580/9585” will be the only camera listed in the “Camera” section. When using the LVS-9580/9585 with the LVS-9510 (5 MP), both cameras appear in the “Camera” section. Select “9580/9585.”

2. Select “Auto-Sector” in the “Grading Mode” section (see screenshot above). This allows LVS-95XX Software to locate a barcode within the field of view and automatically draw a sector around the barcode.
3. Next, calibrate the LVS-9580/9585 (if using for the first time). See the next section for calibration steps.

Calibrate the LVS-9580/9585

IMPORTANT:

The LVS-9580/9585 should be calibrated regularly. The entire calibration process takes less than 30 seconds to complete and ensures the LVS-9580/9585 is certified according to industry standards.

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

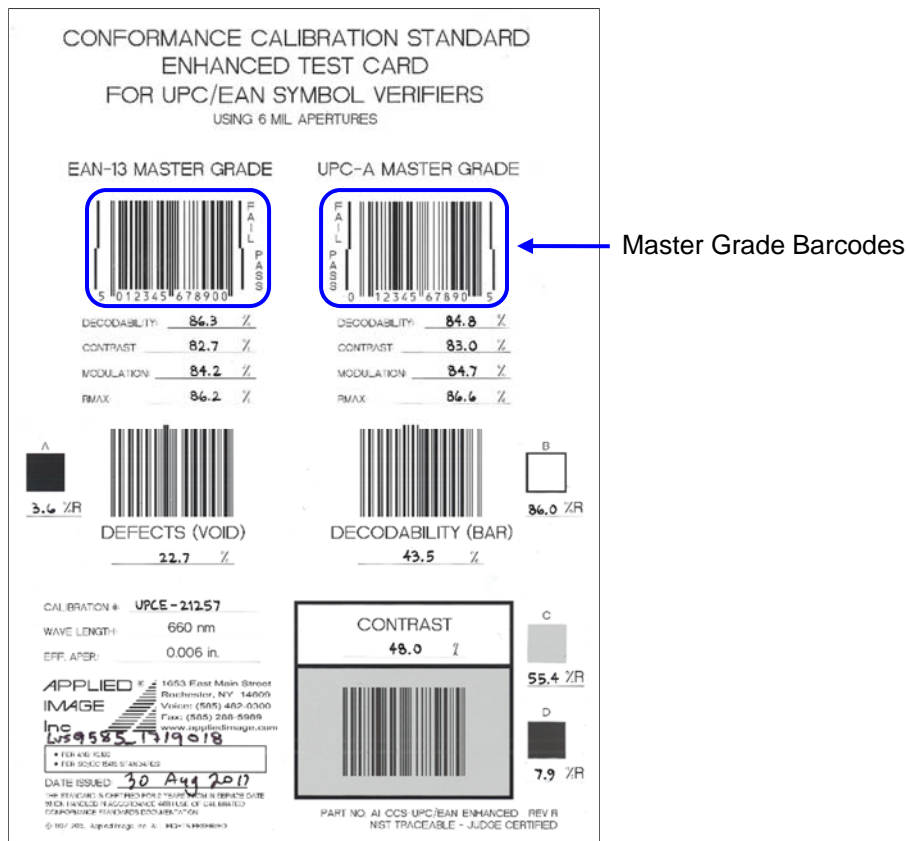
It is recommended to clean the LVS-9580/9585 window prior to calibration. See the “Cleaning Instructions” section for more information.

1. To calibrate the LVS-9580/9585, click the “Calibration” tab.
2. Locate the Calibrated Conformance Standard Test Card (“test card”) that was packaged with the system and place the test card on a flat surface.

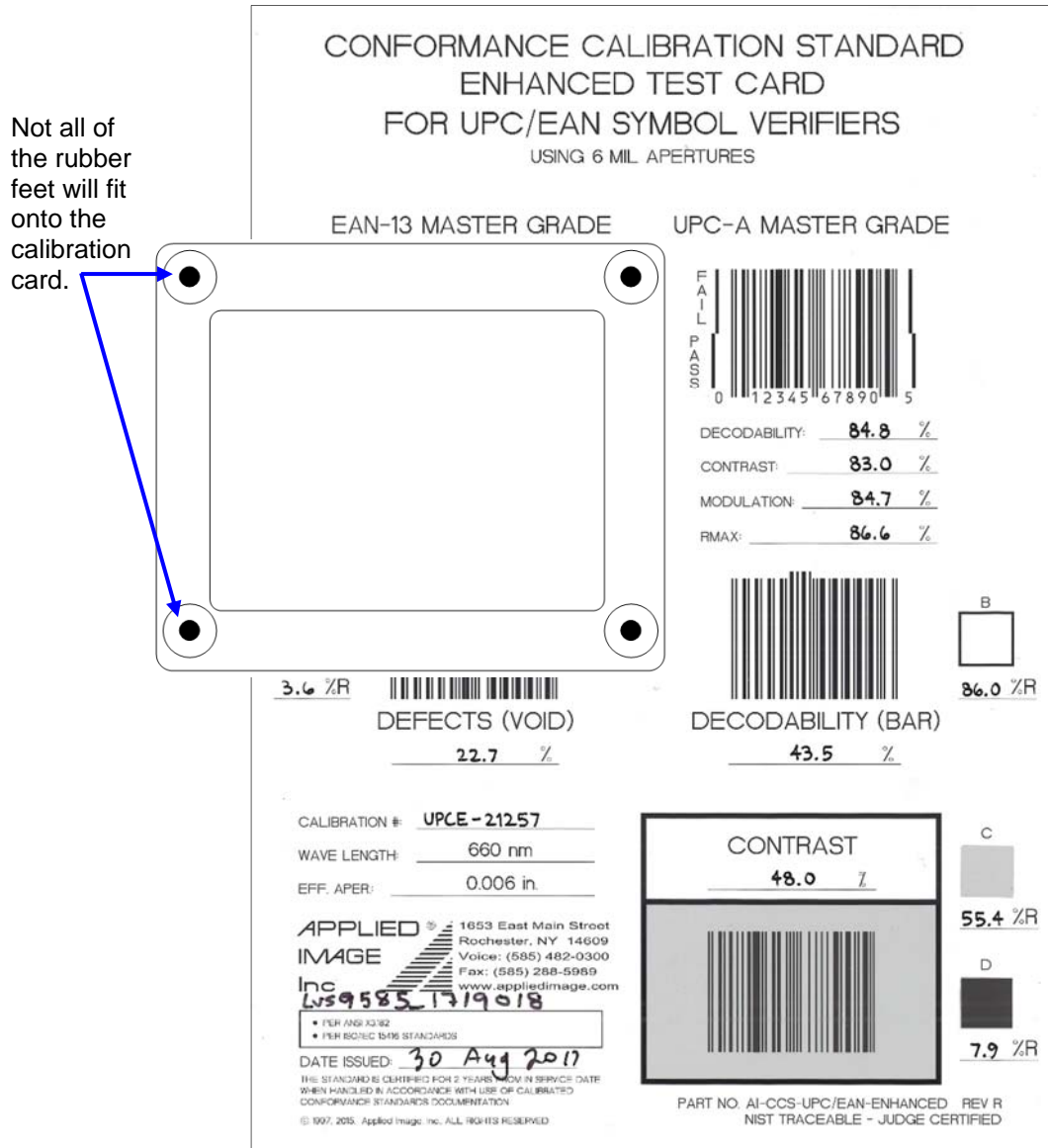
Calibration Card Reference

Model	Calibration Card Type	Replacement Part Number
LVS-9580 HD	Data Matrix	98-CAL010
LVS-9585 HD		
LVS-9510 6.25"	GS1-128	98-CAL021
All Other LVS-95XX Products	EAN/UPC (Shown Below)	98-CAL020

Example of a UPC/EAN test card:



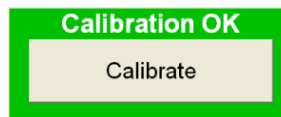
3. Firmly grip the LVS-9580/9585 handle. There is no need to pull the trigger at this time (pulling the trigger causes the LVS-9580/9585 to capture a live image; however, the image is automatically live while the system is in Calibration mode).
4. Place the LVS-9580/9585 window over one of the Master 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.



5. On the “Calibration” tab, make sure the blue line travels through the middle of the PASS portion of the barcode as shown below.

The blue line must pass through the “PASS” portion of the barcode.

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.



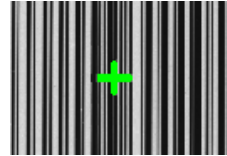
7. If calibration fails:
- Re-scan the Master Grade barcode and follow the above steps to calibrate. It may take two or three attempts before calibration is complete.
 - If calibration continues to fail, contact Omron Microscan or an Omron Microscan representative for further instructions.

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

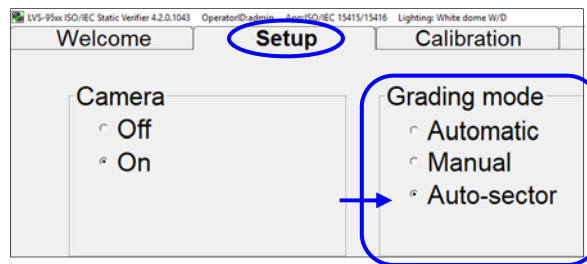
8. When calibration is complete, click the “Grading” tab to grade barcodes. See the next section for steps on grading barcodes.

Grading Barcodes (Excluding DPM Grading)

1. Click the “Grading” tab.
2. Firmly grip the LVS-9580/9585 handle and press and hold the trigger (do not release the trigger).
3. Place the LVS-9580/9585 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-9580/9585 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-9580/9585. Position the center of the LVS-9580/9585 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, when the camera is moved to the right, the image moves left. If the camera is moved up, the image moves down.

6. 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.

4.0/05/660/D

0.0/05/660/D

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 the system.

Cleaning Instructions

The LVS-9580/9585 window may need to be cleaned daily, depending on use. Debris on the window may cause the LVS-9580/9585 to not grade accurately.

Locate the following supplies:

- Commercially available household glass cleaner, such as Windex®, Glassex®, 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.

Please contact an Omron Microscan Distributor or Omron Microscan Technical Support with questions or concerns about the performance of the LVS-9580/9585:

Americas_support@microscan.com

EMEA_support@microscan.com

APAC_support@microscan.com

China_support@microscan.com

Phone: 1.425.203.4841

Toll Free: 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 = 1 lb. 8 oz. (0.68 kg) Shipping weight (includes all items packaged in shipping box, such as cables, manuals, etc.) = Approx. 3 pounds 5 oz. (1.51 kg) 	

Imaging Device

- 5 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
- 1.3" x 1.0" (33 mm x 25 mm) for LVS-958X HD models

Minimum Barcode X Dimension

- 1D = 4.0 mils (0.10 mm)
- 2D = 5.9 mils (0.15 mm)
- LVS-958X HD can verify a DPM Data Matrix symbol down to 2.0 mil (0.05 mm) and a standard Data Matrix down to 5.0 mil (0.127 mm).

Minimum PC Requirements

(PC Supplied by Customer)

- Windows® 7 Pro SP1, Windows® 10 Pro
- Intel® Core™ i3 Processor or equivalent
- 4 GB RAM
- 800 x 600 Resolution
- One available USB 2.0 port

Power Requirements

- USB-Powered 5VDC @ 400mA

Light Source

- LVS-9580: Red 660 nm filter
- LVS-9585: Red dome (660 nm); White dome, 30° angle

Communication

- USB 2.0 A/MINI-B cable 2.0 m (6.5 ft.)



Operating Temperature

- -5° C (23° F) to 45° C (113° F)

Storage Temperature

- -20° C (-4° F) to 60° C (140° F)

Relative Humidity

- Operating: 20% to 80% (non-condensing)
- Storage: 20% to 95% (non-condensing)

Calibration

- EAN/UPC Calibrated Conformance Test Card
- Data Matrix Calibration Conformance Test Card (HD models only)

Safety Compliant

- RoHS/WEEE compliant
- CE

Specifications and images subject to change.

Supported Symbolologies and Standards

Below are just a few of the Symbolologies and Standards supported by the LVS-9580/9585. Contact Omron Microscan for a full list of supported Symbolologies and Standards.

Supported Symbolologies

- 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) 4-State (4SB)
 - French CIP
 - GS1-128
 - 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
- ISO/IEC TR29158 (DPM models only) / AIM DPM-1-2006

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
- ISO/IEC TR29158
- DHL
- FPMAJ
- GS1 General Specifications
- HDMA Guidelines
- Health Industry Barcode (HIBC)
- ISO/IEC 15415/15416
- Japan Codabar
- Laetus Miniature Pharmacode
- Laetus Pharmacode
- Laetus Standard
- MIL-STD-130N Change 1

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 or QR Code 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 can grade a direct part mark on most surfaces. The usable field of view is now limited to **1.75" (44 mm) by 1.75" (44 mm)**.
- The LVS-9580 HD has a usable field of **1.3" (33 mm) by 1.0" (25 mm)**.
- **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:

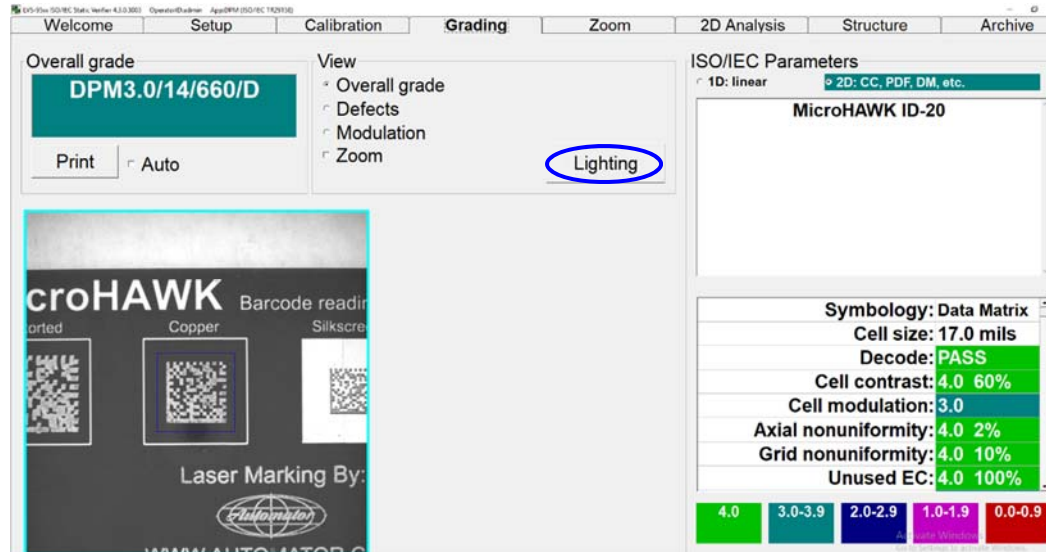
DPM4.0/12/660/D

- **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.

Grading

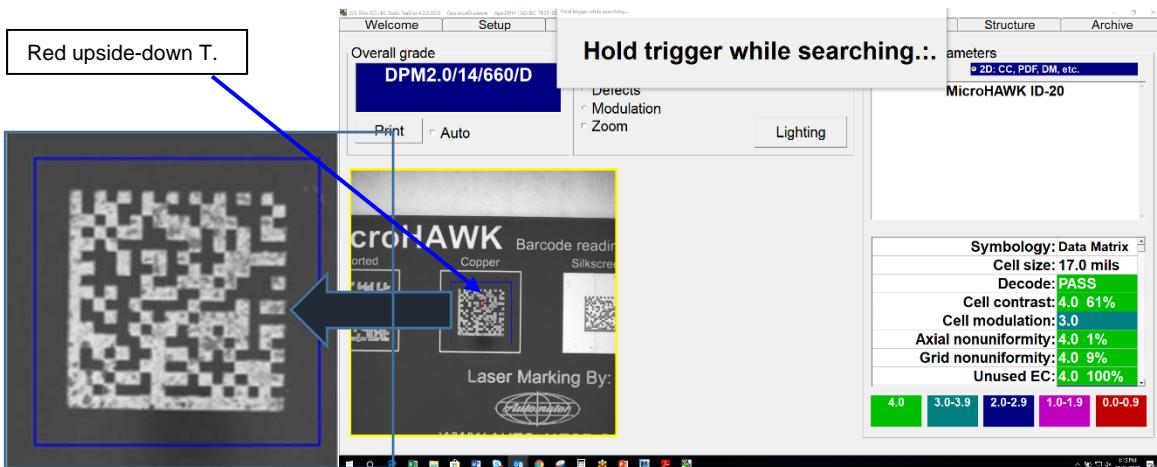
The **LVS-9580 Grading Screen** shows 6 boxes on the right side of the viewing window. These will represent which lighting modes are being used to Grade the DPM code. The LVS-9580 will only use Red Dome.

There is also a button on this screen titled **Lighting**. This is not authorized for use with the LVS-9580.



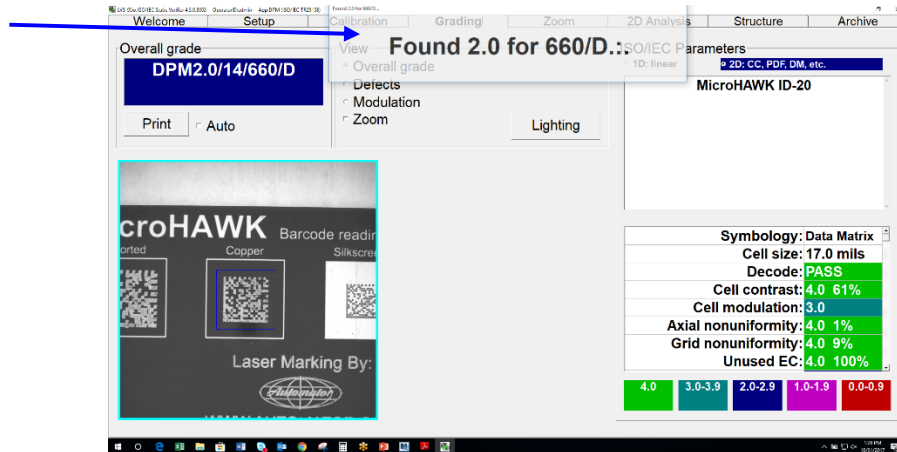
Grading a DPM Symbol

On the **Grading Screen** hold down the trigger switch. The target DPM indicator (an upside-down red letter 'T') then appears in the viewing window. A pop-up window appears at the top of the screen which says "Hold trigger while searching". Position the target DPM indicator so that it is in contact with the DPM symbol being graded. (Note: Positioning the target DPM indicator near the bottom of the symbol as show below is preferred for reflective metal parts to avoid the camera reflection interfering with the grading results.) Be sure the symbol is square to the field of view. Then hold the LVS-9580 steady. (The software does not grade the code until there is no motion detected.) After the symbol is found, the blue box will outline the symbol.

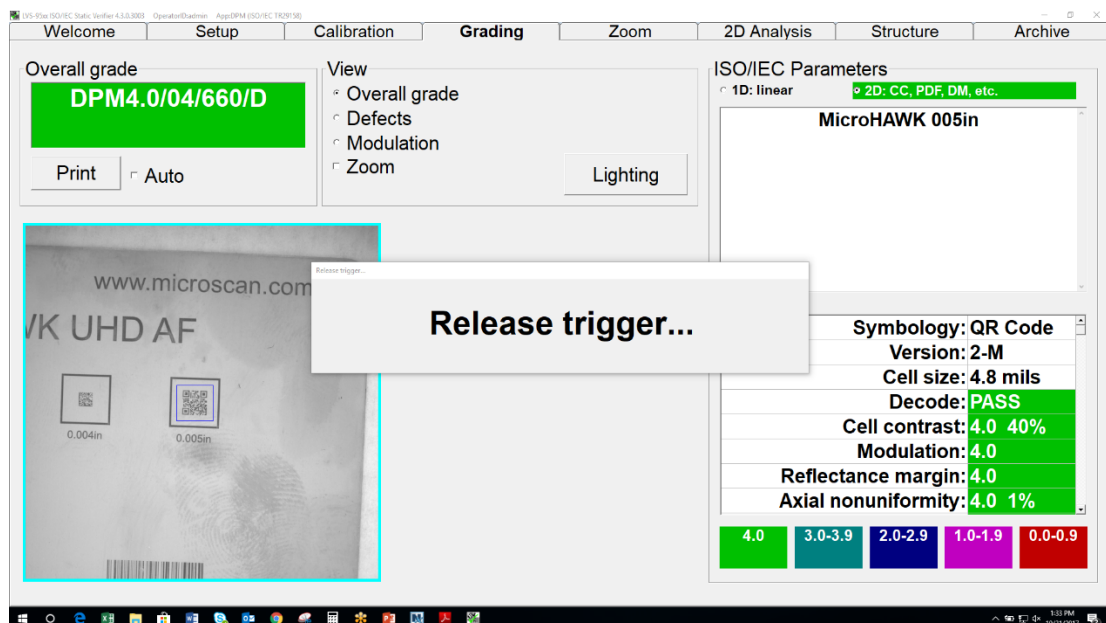


Once the software has found the DPM symbol, it will report what grade has been detected. There is a pop-up window at the top of the screen that reports the best grade found. It will not stop looking for a better grade until either an A Grade has been reached or the user releases the trigger.

Best DPM Grade being reported.



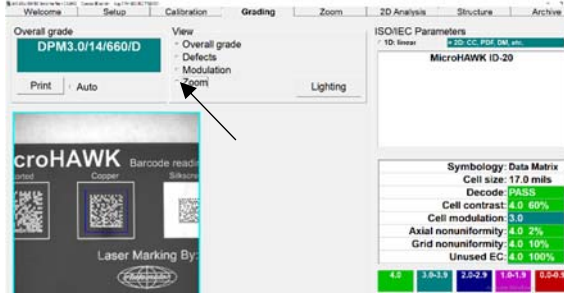
If an A Grade is found, a pop-up window advises the user to “Release trigger”.



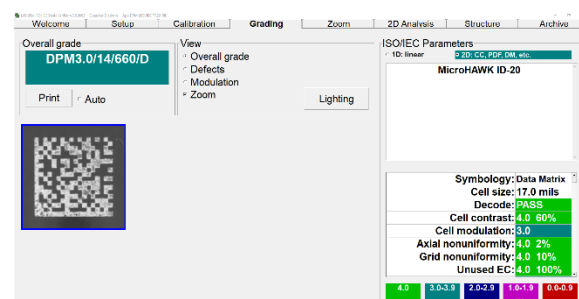
The software will continue to change exposure (brightness) in an attempt to decode the symbol. The software will not stop looking or attempting to find the best grade until the trigger is released. If a symbol is not found after 20 seconds then the DPM mark should be re-oriented within the field of view and another attempt to grade should be made.

The Zoom Feature

A user can select the “Zoom” button located within the View Box. Then, after the grading process is done, the DPM symbol will be magnified. This will help in viewing small codes.



Before Zoom Is Applied



Zoomed-In Image

Remote Grading of a DPM Symbol

A user can push CTRL + SHFT and the software will interpret this as a trigger switch command. This is useful when the optional stand is used.

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

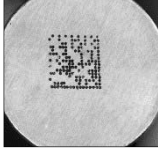
This feature is not allowed when grading a DPM symbol.

Try Re-Grading

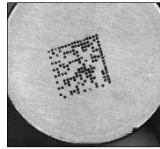
When a direct part mark fails to read, position the symbol in a different part of the field of view. The software is sensitive to motion and may capture a slightly blurred image, which will cause the software not to grade it correctly. The optional accessory stand, part # 98-9000125-01, can be used to hold the LVS-9580 in a fixed position.

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, the operator 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.

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>			

Reports


All results measured by the software are available in a printed report. These reports are also archived for future examination. An image of the direct part mark is attached to the printed report.

Microscan Systems, Inc.
LVS-95xx Verification Report

Overall: DPM4.0/04/660/D

Operator signature

Second signature



2D		Other information	
Symbolology	QR Code	ReportID	558
Version	2.0	Operator	admin (LVS Administrator)
Decoded text	MicroHAWK 003in	Application standard	DPM (ISO/IEC TR 24733)
Cell size	4.8 mils	Effective aperture	Reference number: 94 (4 mil)
Decode	PASS	Lighting	660 D
Cell contrast	4.0 40%	Date and time	31-Oct-2017 13:33 local; 31-Oct-2017 20:53 GMT
Module size	4.0	Time zone	GMT -7
Performance margin	4.0	Sector size	0.18" by 0.18"
Actual nonuniformity	4.0 1%	Last calibration	14-Oct-2017 11:07 local; 34-Oct-2017 18:07 GMT
Grid nonuniformity	4.0 4%	Field of view	1.73" (camera is 1346x1346)
Unused ECC	4.0 88%	Serial number	Viper: 1117933; On: #3501006
Rated pattern damage	4.0	Software product and version	LVS-95xx Version 4.3.0.3003
Segment A1	4.0	LVS-95xx manufactured by	Microscan Systems, Inc. 700 SW 39th Street, Ste. 100 Renton, WA 98057 USA http://www.microscan.com
Segment A2	4.0		
Segment A3	4.0		
Segment B1	4.0		
Segment B2	4.0		
Segment C	4.0		
Format info	4.0		
Cell length	4.8 mils		
Cell width	4.8 mils		
Angle	7 degrees		
X-axis growth	44%		
Y-axis growth	44%		
Total C/W	44		
Data C/W	18		
Corrections	0		
Size	25x25		
Mean	21%		
Peak	10%		

2D Structure

file:///C:/Users/Public/LVS-95XX/Report.htm

LVS-95xx Verification Report

10/31/2017

Page 2 of 2

Embedded data	Description	Value
-Mode 4-		
-Count 17-		
MicroHAWK-Space-003in		
-CR-		
-LF-		
-Mode 0-		

Appendix B – Operating the LVS-9585 Verifier

Grading DPM Symbols with the LVS-9585 Verifier

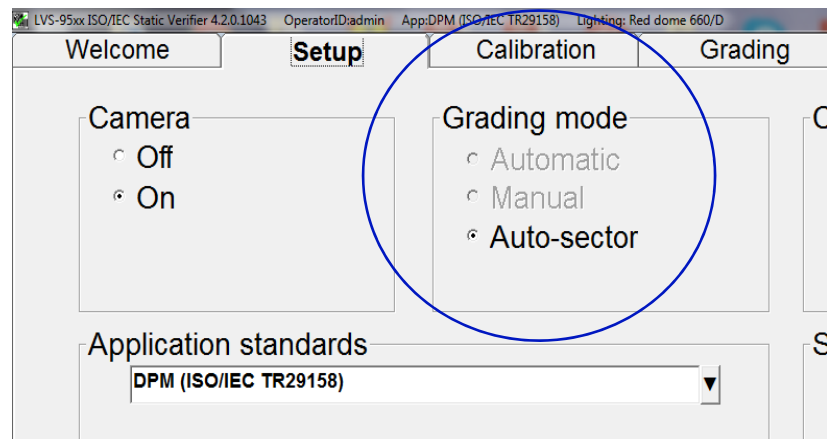
The **LVS-9585 DPM Verifier** is different from the LVS-9580 DPM Verifier due to the addition of 9 different lighting modes:

- RED Dome
- WHITE Dome
- RED 30 degree N + S+ E + W
- RED 30 degree N + S
- RED 30 degree E + W
- RED 30 degree N
- RED 30 degree S
- RED 30 degree E
- RED 30 degree W

These lighting modes are only available when using DPM Application Standards. They are not used for traditional 1D and 2D verification.

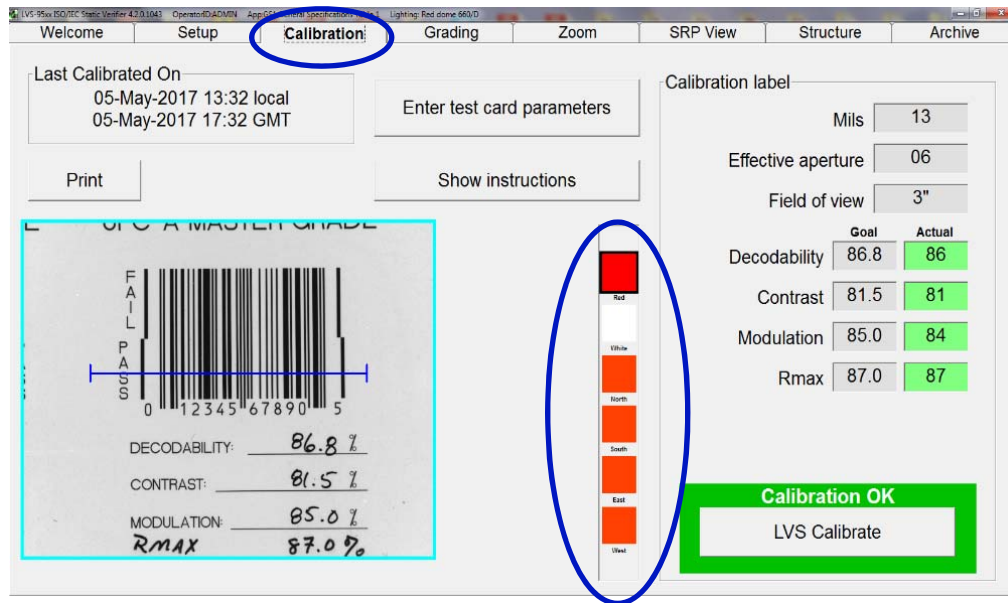
Setup Screen

After choosing any of the DPM Application Standards, Automatic and Manual are grayed out within the **Grading mode** section. **Auto-sector** is the only choice.



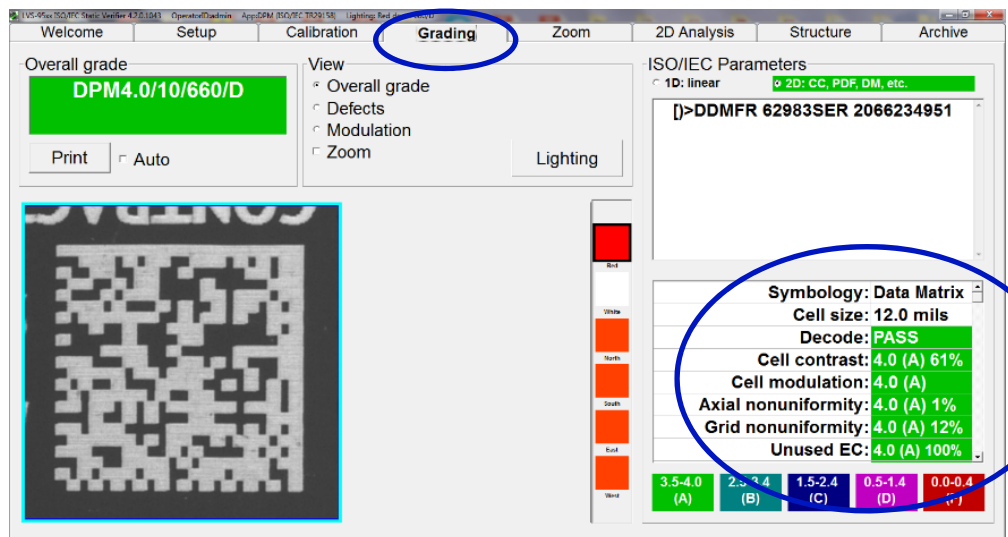
Calibration Screen

Follow the calibration procedure described on page 10. The **Calibration Screen** shows 6 lighting mode boxes on the right side of the viewing screen. During calibration, the Red and White box activates when that light mode is being calibrated. The individual N, S, E, and W light boxes do not activate during the calibration process. Clicking on the Red or White box confirms proper calibration for that lighting mode.



Grading Screen

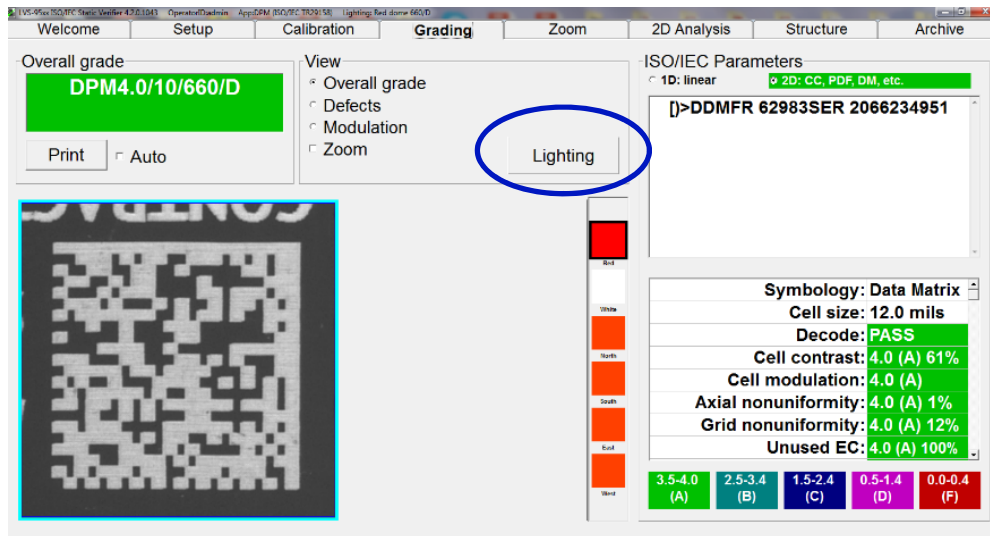
The **LVS-9585 Grading Screen** shows 6 boxes on the right side of the viewing window. These will represent which lighting modes are being used to grade the DPM code.



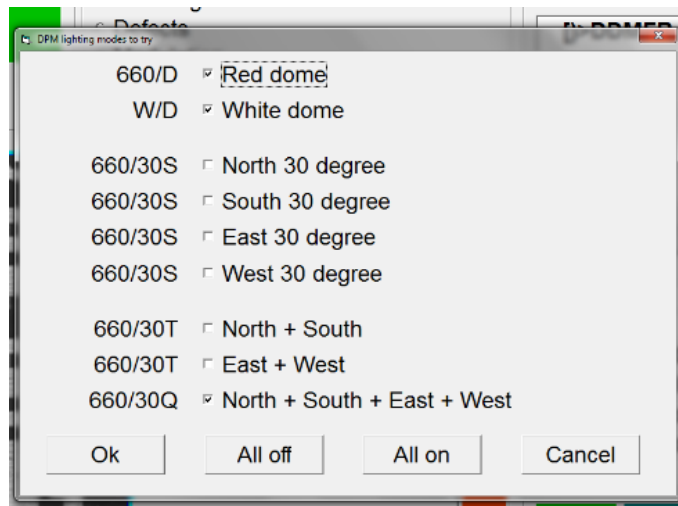
Choose the Lighting Modes

To choose the lighting modes:

1. Select the **Lighting** button on the **Grading Screen**.



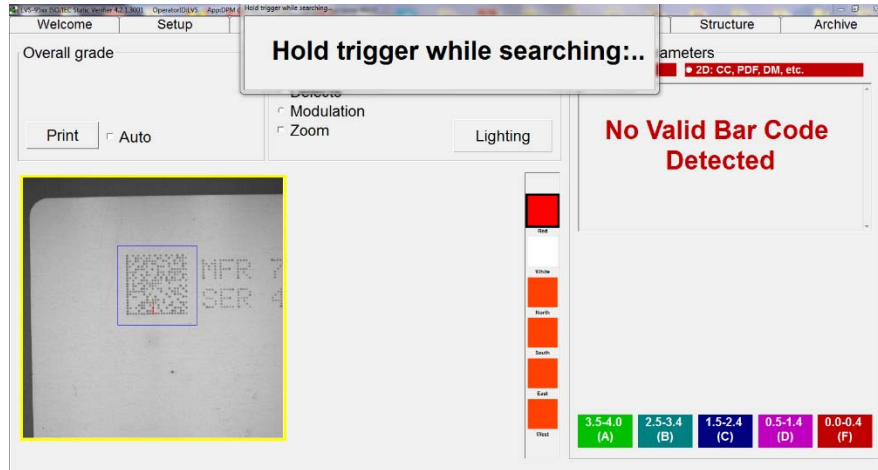
2. Select the lighting mode. The default lighting modes are Red dome and 30 degree N + S + E + W. The operator may choose to add or subtract any of the lighting modes listed. The software uses the selection as the new default.



Grading a DPM Symbol

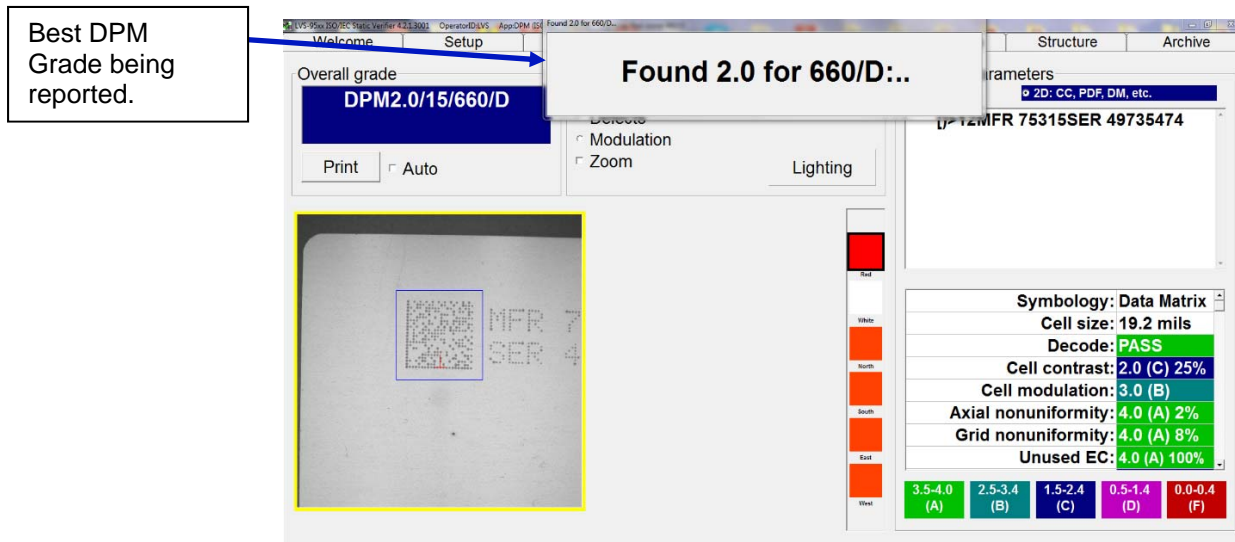
To grade a DPM symbol:

1. While viewing the **Grading Screen**, hold the verifier trigger switch in. The target DPM symbol then appears in the viewing window. A pop-up window appears at the top of the screen which says “Hold trigger while searching.”

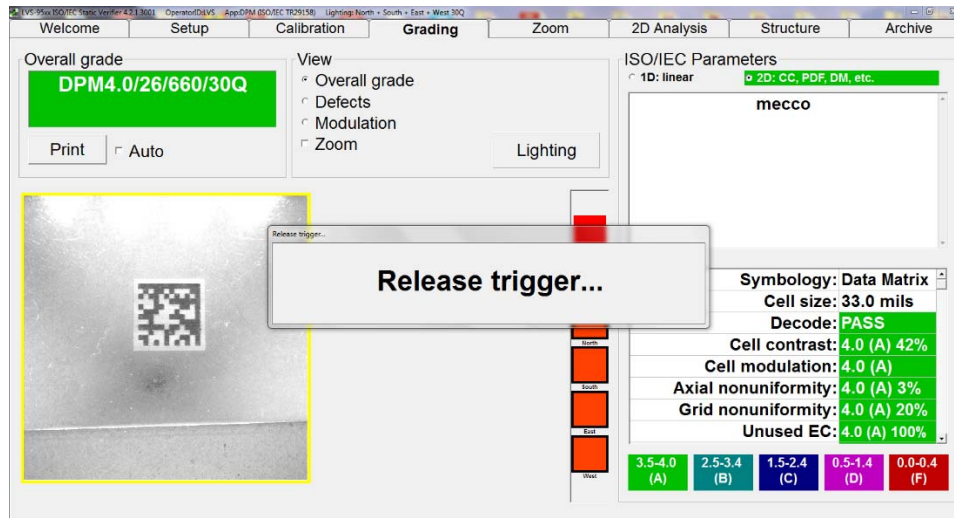


2. Position the DPM symbol so that it is square to the field of view and resting on the upside-down red 'T'. Then hold the LVS-9585 steady. (The software does not grade the code until there is no motion detected.)

Once the software has found the DPM symbol, the screen will report what grade has been detected. There is a pop-up window at the top of the screen that reports the best grade found. It will not stop looking for a better grade until either an A Grade has been reached or you release the trigger.



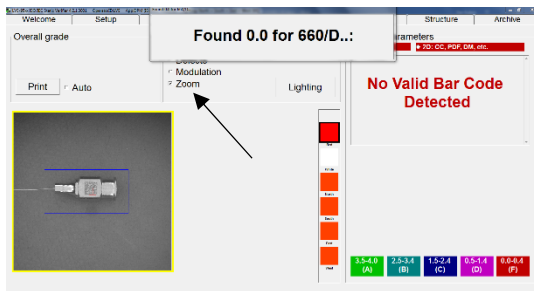
- If an A Grade is found, a pop-up window advises you to “Release trigger”.



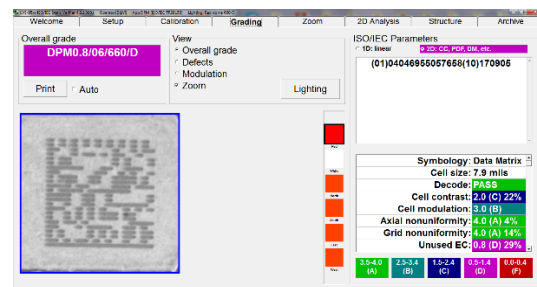
- If the “Found” or “Adjusting” message is not shown after 20 seconds, reorient the mark within the field of view and grade it again.

The Zoom Feature

A user can select the “Zoom” button located within the View Box. Then, after the grading process is done, the DPM symbol will be magnified. This will help in viewing small codes.



Before Zoom Is Applied



Zoomed-In Image

Remote Grading of a DPM Symbol

To grade a DPM symbol remotely, push CTRL + SHFT. The software will interpret this as a trigger switch command. This is useful when the optional stand is used.