

Appendix L: LVS[®] 95XX Data Matrix Calibrated Conformance Standard Test Card

Copyright ©2020
Omron Microscan Systems, Inc.
Tel: +1.425.226.5700 / 800.762.1149
Fax: +1.425.226.8250

All rights reserved. The information contained herein is proprietary and is provided solely for the purpose of allowing customers to operate and/or service Omron Microscan-manufactured equipment and is not to be released, reproduced, or used for any other purpose without written permission of Omron Microscan.

Throughout this manual, trademarked names might be used. We state herein that we are using the names to the benefit of the trademark owner, with no intention of infringement.

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:
Americas_support@microscan.com
EMEA_support@microscan.com
APAC_support@microscan.com
China_support@microscan.com

Warranty

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

Omron Microscan Systems, Inc.

United States Corporate Headquarters
+1.425.226.5700 / 800.762.1149

United States Northeast Technology Center
+1.603.598.8400 / 800.468.9503

European Headquarters
+31.172.423360

Asia Pacific Headquarters
+65.6846.1214

IMPORTANT NOTE – PLEASE READ

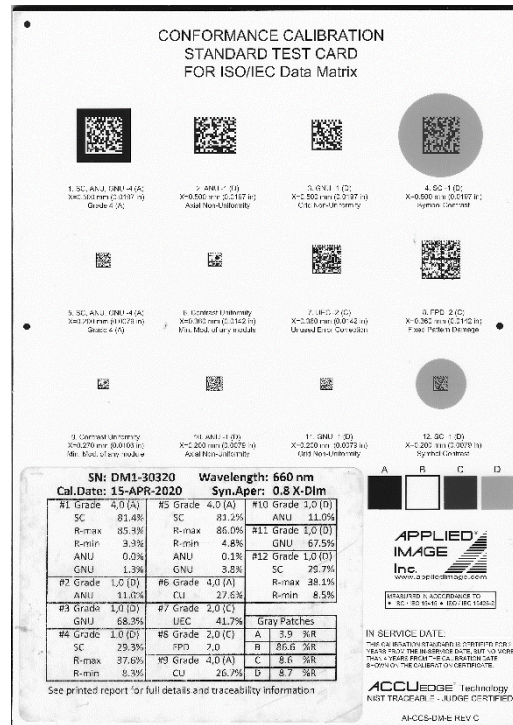
The Data Matrix Calibrated Conformance Standard Test Card (CCSTC) has changed from 7 symbols to 12 symbols. This new Test Card now supports X-Dimensions as low as 7.9 mils (0.200 mm). Not all LVS-95XX systems can grade symbols this small. Please check the CCSTC Data Matrix Resolution Limit Table below to confirm the resolution limits of your verifier. Also, this Data Matrix Conformance Test Card is now used to calibrate all LVS-95XX-HD verification systems.

Using the Data Matrix CCSTC

The Data Matrix CCSTC has specific parameter measurements for ANU, GNU, UEC, FPD, CU, Rmax, and Rmin. The 2D Primary Reference Test Symbols are JUDGE-CERTIFIED as specified in ISO-15426-2:2015 and ISO-15415 for Reflectivity and Linear Dimensions.

Before using this CCSTC, the LVS-95XX must be calibrated using the appropriate calibration card packaged with the system.* The CCSTC is then used as a reference point for Data Matrix grading accuracy by comparing the stated parameter grades to the values reported by the LVS-95XX. All reported grades established by any LVS-95XX Verification System should maintain an accuracy within the stated Parameter Tolerances (See Parameter Tolerances Table below). Contact Omron Microscan technical support if the results are not within Allowable Tolerances.

| PARAMETER TOLERANCES TABLE | |
|-------------------------------|---------------------|
| Parameter | Allowable Tolerance |
| Rmax | ±5% |
| Rmin | ±3% |
| Unused Error Correction (UEC) | ±0.0% |
| Grid Nonuniformity (GNU) | ±6% |
| Axial Nonuniformity (ANU) | ±2% |
| Contrast Uniformity (CU) | ±8% |
| Fixed Pattern Damage (FPD) | ±0.0 GPA |



Data Matrix Conformance Calibration Standard Test Card (CCSTC)

***Note:** If you have purchased an LVS-958X-DPM-HD Verification system (1.35" FOV (34.29 mm)), Symbol 1 on this Calibration Card is used to calibrate your system.

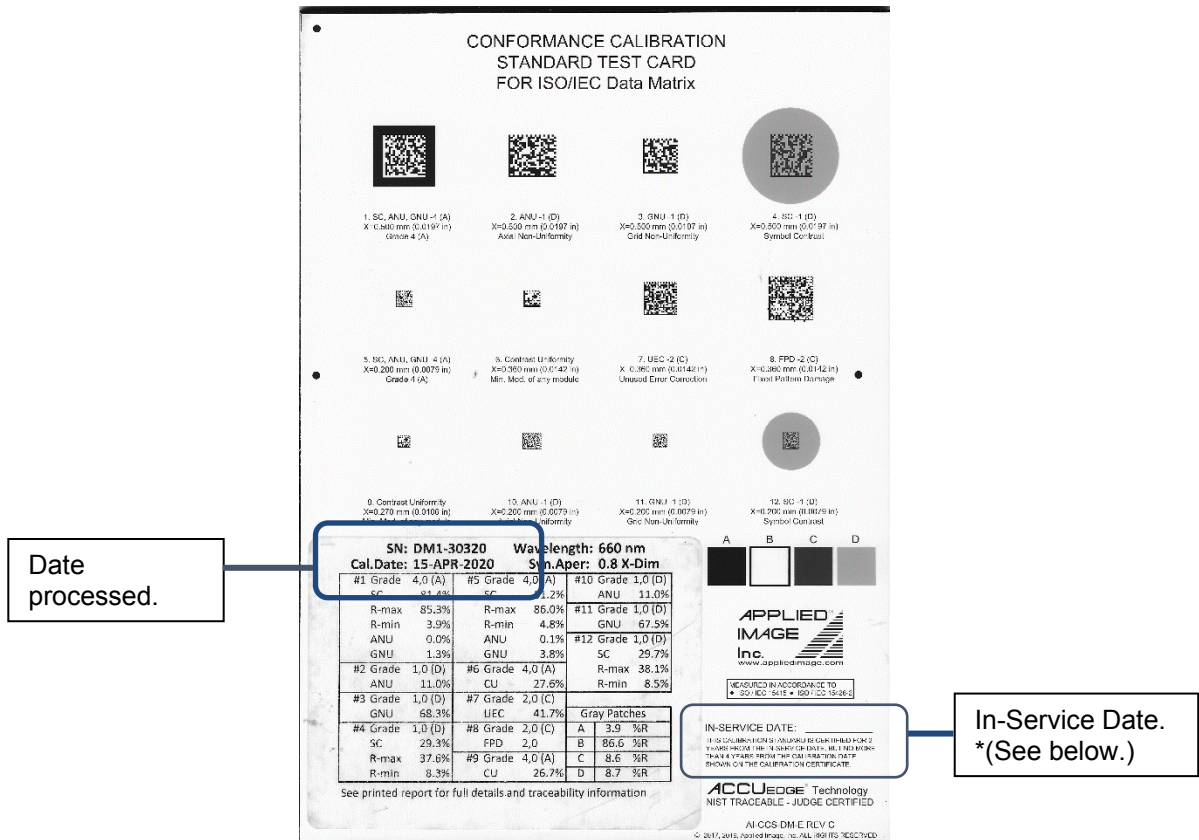
LVS-95XX Product Limitations

The new CCSTC has certain symbols that are smaller in size (0.0079 mils (0.200 mm)). Not all 12 symbols on this Test Card can be graded by all LVS-95XX Verification Systems. Please follow the table below to understand which symbols are valid when using your specific LVS-95XX Verification System. The sections marked in light red indicate limitations.

| LVS-95XX CCSTC RESOLUTION LIMIT TABLE | | |
|--|---|--|
| LVS PRODUCT | Required Calibration Test Card | Data Matrix Calibration Card 98-CAL022 Test Symbols Grading Limits |
| 9510-5-1.75 | 98-CAL020 (dated) 98-CAL020-01 (undated) | ALL Symbols 1 through 12 |
| 9510-5-3.0 | 98-CAL020 (dated) 98-CAL020-01 (undated) | ALL Symbols 1 through 12 |
| 9510-5-4.0 | 98-CAL020 (dated) 98-CAL020-01 (undated) | Symbols 1, 2, 3, 4, 6, 7, 8, 9 only |
| 9510-5-4.5 | 98-CAL020 (dated) 98-CAL020-01 (undated) | Symbols 1, 2, 3, 4, 6, 7, 8, 9 only |
| 9510-5-6.250 | 98-CAL021 (dated) 98-CAL021-01 (undated) | Symbols 1, 2, 3, 4, 6, 7, 8, only |
| 9580-5-3.0 | 98-CAL020 (dated) 98-CAL020-01 (undated) | ALL Symbols 1 through 12 |
| 9585-3.0 | 98-CAL020 (dated) 98-CAL020-01 (undated) | ALL Symbols 1 through 12 |
| 9585-DPM-HD | 98-CAL022 (dated) 98-CAL022-01 (undated) | ALL Symbols 1 through 12 |
| 9570-5-5.4 | 98-CAL020 (dated) 98-CAL020-01 (undated) | Symbols 1, 2, 3, 4, 6, 7, 8, only |

Purchasing a Data Matrix CCSTC

Contact your Omron Microscan sales representative or distributor to purchase a Data Matrix CCSTC. Purchased cards are certified for up to two years from the “In-Service Date” and no more than four years from the “Date Processed,” both of which are shown on the CCSTC (see below).



Data Matrix CCSTC 98-CAL022

* When using 98-CAL022, the In-Service Date will be the date the card was issued by Omron. When using 98-CAL022-01, the In-Service Date will be blank and will require the user to record the date the card is first used.