
FLEX³PRO FLEYEplus version 6.x

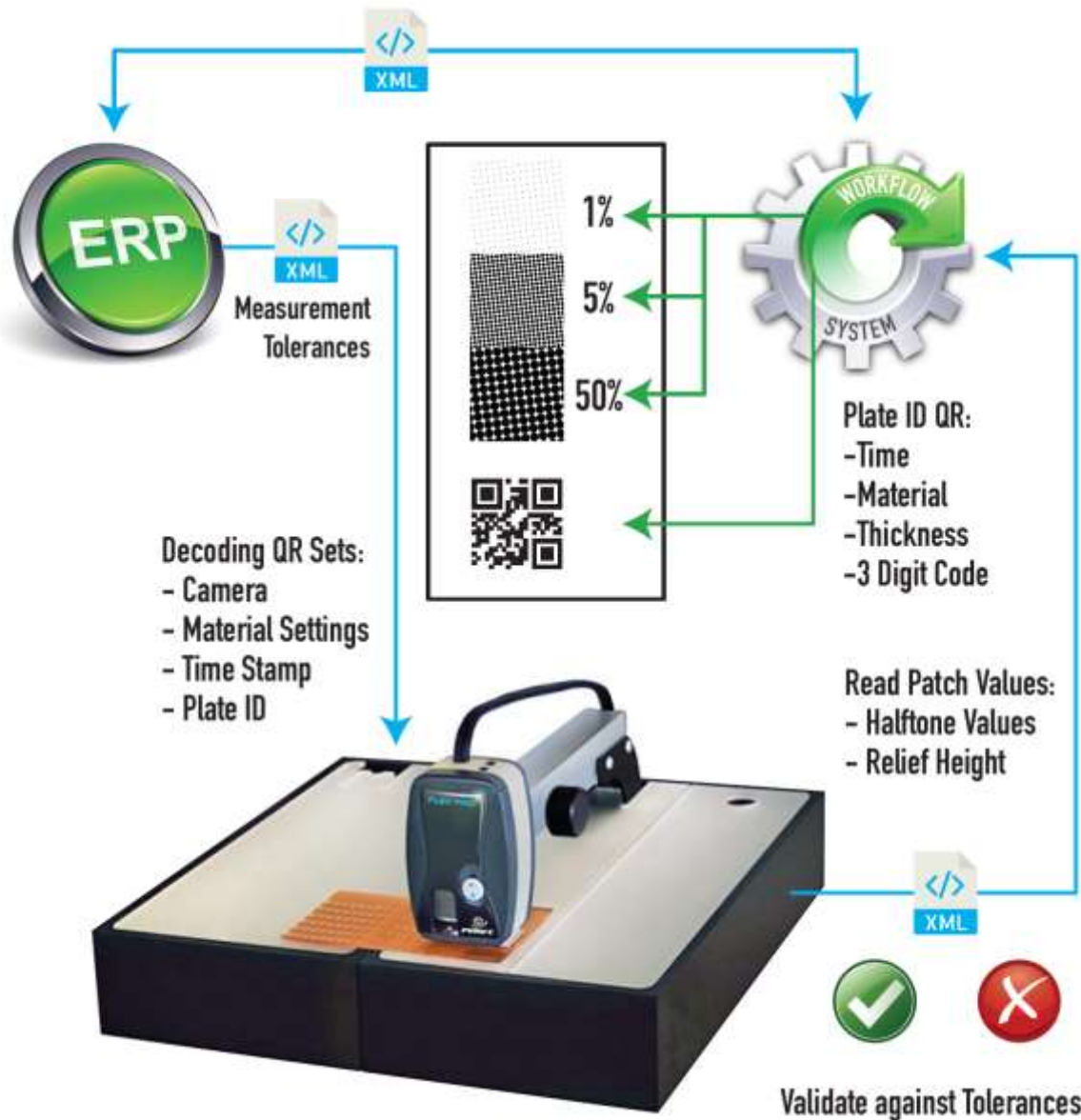
Seamless Workflow Integration

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Seamless Workflow Integration of FLEX³PRO based on QR Code

Version 6.x of the FLEYEplus Software has been designed to fully integrate the Plate Quality Control into existing workflows.



Up to version 5.x the Reports generated by the FLEYEplus Software could be saved automatically. The v6.x now implements XML interfaces to automatically exchange data between ERP, Workflow and FLEYEplus software.

Whenever appropriate, the FLEYEplus Software will automatically check a XML Input Hot Folder for eventual updates of References, Tolerances or Plate Type specifications, created by the ERP System. The FLEYEplus internal database will be updated accordingly. This makes sure references, tolerances and Plate Type specifications in use, are always up to date.

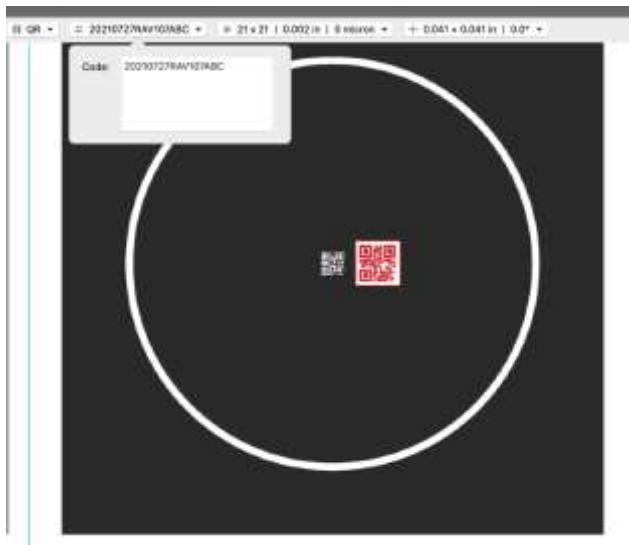
Once a Plate has been measured in FLEYEplus reports or Production log, not only is a PDF report created, but in parallel there is written an XML file containing all measurement data to the XML

Output Hot Folder. This XML can be automatically read by a Workflow System and used for further analysis, reporting etc.

This integration is supported by the use of a Micro QR Code, imaged on the physical plate and decoded by the FLEX3PRO device. The link to a Job and a Material Reference becomes operator independent. This eliminates the possibility of operator error in manually selecting camera settings or typing in plate identifications. The Micro QR Code can have up to 16 alphanumeric characters and contains the Job Identifier (up to 13 prefix characters) and the Reference ID (3 hexadecimal characters).

QRCode creation

If your system supports the creation of a Micro QRCode, you can use your System to create the Micro QRCode on the Plate



The Micro QRCode is composed of a preceding Plate Identifier and a final, 3 characters long Material Reference Identifier:



The Micro QRCode needs to fulfill the following specifications:

Micro QRCode : 21 x 21

Micro QRCode maximal Size : 0.055 x 0.055 inch² – 1.40 x 1.40mm²

Minimum Dot Size : 0.002 inch, 0.040mm

If your workflow does not support the creation of a Micro QRCode, you can use the tool available in the FLEYEplus Software. Select the <Create QRCode TIFF File> Menu Item to open the MicroQRCode TIFF creation Tool from the Reports Main Menu List.



Insert the Plate Identifier and the Material Reference Identifier QRCode ID. Select the Output resolution of your Image Setter.

The generated QRCode will be displayed in real time. The dimensions will also be updated in real time.



Click the Export to TIFF file to create a TIFF file.

Configure the FLEYEplus features in the settings

The FLEYEplus implements four additional features compared to the basic software

- Micro QRCode decoding on LAMS and transparent flexo plates
- LaserCheck and PlateCheck reports – a guided process to create Quality Control reports for every single plate
- Production LOG – a guided, quick process, to collect measurement data in a table
- Customized definition of Plate types, containing camera settings and analysis parameters to obtain the best possible and repeatable measurement result



MICRO QRCode decoding

Read ID and Platype from QRCode



Enable the QRCode decoding function on the FLEYE+ Page of the Settings Window. Select inverse QRCodes or standard QRCodes, depending on your usage.

The QRCode is aimed to be composed by a preceding Job ID number of up to a maximum of 13 alphanumeric characters, followed by 3 hex code characters, identifying the material reference to be used for the specific plate.

The QRCode will be decoded. The preceding JOB ID will automatically be copied into the proper fields. The last 3 characters will be used to search the references and tolerances in the material reference database.

FLEYE+ PDF reports



Select the number of patches that should be measured to create a Plate Quality report. As described above, one will always be referred to the PROCESS reference, the other (max.) two will be Reference 1 and 2 of the WORKFLOW references.

If the <Create XML File> flag is checked, an XML file will be written to the XML output Hot folder as shown below.

Production Log setting



The Production Log can be configured to request up to 5 tint percentage readings, zero or one 3D reading, and up to 5 Thickness/Relief readings. At the end of a measurement process, an XML File can be written to the XML Output Hot Folder. In addition, a PDF report can be created and written to the XML Output Hot Folder. If you need to view the report for printing – such that it can be attached to the plate, select the Preview PDF flag.

The file name will be composed by the Job ID (initial characters of QRCode reading) and .XML or .PDF respectively.

The Production Log Path is still used to store the measurement data of the Production Log as a complete table in a separate location, as done in v5.x and earlier.

Customized Plate Types

There can be created customized Plate Types containing camera, capture and analysis settings for measurements in Transmission, Reflection, 3D, and Print mode. The customized plate types created here are listed in the FLEYEplus Settings Window.



Write the selected customized plate type to an XML file



Read a customized plate type from an XML file



Create a new customized plate type using the current camera, capture and analysis settings.



Remove the selected customized plate type permanently from the list.

XML and PDF Hot Folder

The FLEYEplus Software v6.x now supports the use of two separate Hot folders to exchange XML files or to output PDF reports.

If a Path field is empty, no files will be created. Select the Hot Folder to be used for XML and PDF files exchange.

This page always displays the most recent XML file, written to the XML output folder. See this file to see the syntax that's used for the XML files.

The XML input syntax is identical to the XML output syntax, although the input XML may contain only one single section. You may, for example, write an XML file for a reference specification with one

FLEYEplus installation in one company site, and use the identical reference at another installation of FLEYEplus at a different company site. This assures coordination of plate measurement techniques.



The reference XML file name is composed of REF_ followed by the QRCode ID, followed by .XML

- REF_123.XML will be the file name for the QRCode ID 123.

A Plate Type XML file name composed of a Mode Specifier, followed by the Plate Type Name and .XML.

Mode Specifier:

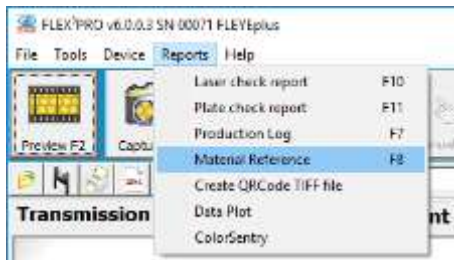
- TRP_ : for Plate Types to be used in Transmission mode
- REF_ : for Plate Types to be used in Reflection mode
- D3P_ : for Plate Types to be used in Dot Shape mode
- PRT_ : for Plate Types to be used in Print mode.

The reference input XML file does not need to contain all data. As long as the XML syntax is maintained correctly, even only a single value can be changed.

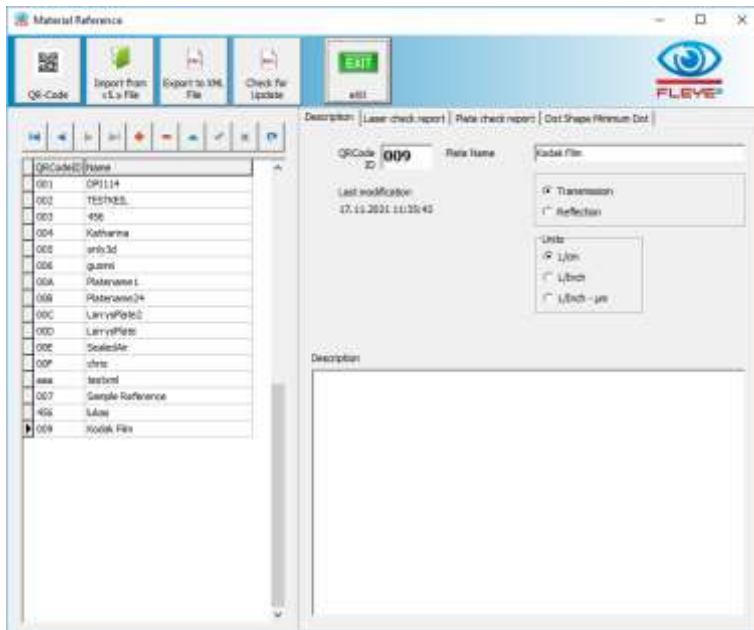
Common reference database for Reports and Production Log

Various Reporting features of the FLEYEplus software in v6.x are now using a common database. The identical references can be used for Plate Check Report and for Production Log. There is no need to create two identical material references any more. This makes it easier to keep the quality control consistent and to export or import material references.

The access to the FLEYEplus reporting functions has been moved to the main menu.



Select the Material Reference from the Main Menu or use function key F8 on your keyboard to open the Material reference Database.



Read the QRCode ID for a new Reference directly from a physical flexo plate using the QRCode decoding function of the FLEYEplus Software. If a QRCode is not available on a physical plate, the operator can type in a code directly. The QRCode ID is a unique hexadecimal digit from 000 to FFF and used to identify the reference record by QRCode decoding.

If the QRCode ID detected does already exist in the database, the proper record is automatically selected. If it does not exist, the QRCode ID is assigned selected Material reference.



Data may be imported from the existing reference files used by earlier FLEX³PRO Software versions. The software will prompt for confirmation for any single Reference specification.



The current reference can be exported to an XML file. The Software will prompt for an output folder and propose the QRCode Id as file name. Any other file name and folder can be used, if required.



Click this icon to check the XML Input Hot folder for an update of the currently selected record. The FLEYEplus Software will check for an XML file with the name REF_XXX.XML whereby the XXX is the QRCode ID. If an update exists, the references, tolerances and other information will be

updated in the database. After updating, the software will automatically search for an update of the Plate Type used in this reference definition. A Plate Type update needs to be available in the XML Input Hot folder with a file name composed of a Mode Specifier, followed by the Plate Type Name and .XML.

Definition Specifier:

TRP_ : for Plate Types to be used in Transmission mod

REF_ : for Plate Types to be used in Reflection mode

D3P_ : for Plate Types to be used in Dot Shape mode

PRT_ : for Plate Types to be used in Print mode.


Material Reference description


The first page contains the following information

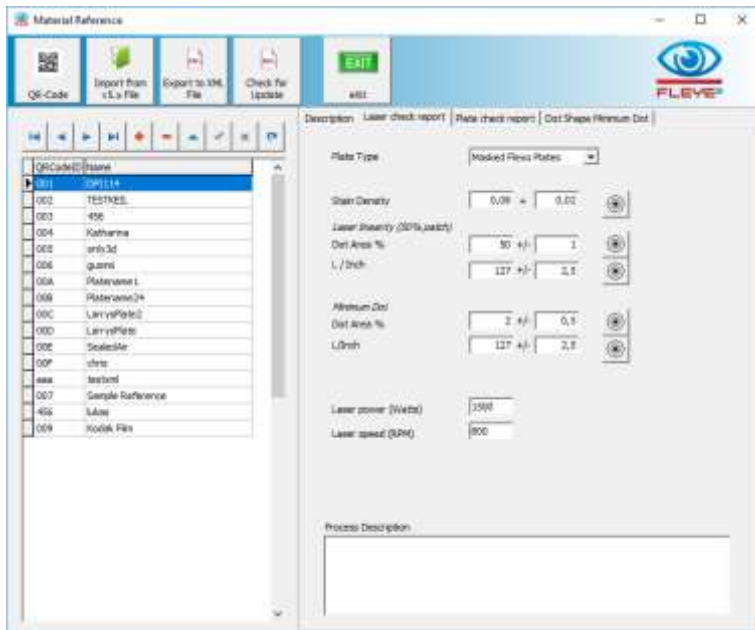
- 3 character ID that is used as Identification for the Material Reference definition in the QRCode. The QRCodeID can also inserted by reading a physical QRCode on a plate. The ID should be a hex code between 000 and FFF.
- The Plate Name is an operator- understandable name (for example DuPont DPS1067), that will be listed for selection in the drop-down lists of the report windows.
- A Material Reference can be defined for transparent plates or for non-transparent plates. This is used to preselect the measurement page 'TRANSMISSION' or 'REFLECTION' on the main Window, once a Material Reference is selected.
- Unit of Measure to be used Metric or Imperial or Mixed
- Description – any additional information
- This page will always show up the last modification date and time. This can help to verify, if any instance is using the most recent Material Reference specifications.

Laser Check Report

If you execute the function <Import from File>, all data on this page is imported from the reference file linked to the LaserCheck report.

Clicking the  will copy the most recent reading from the main Window into the proper database field.

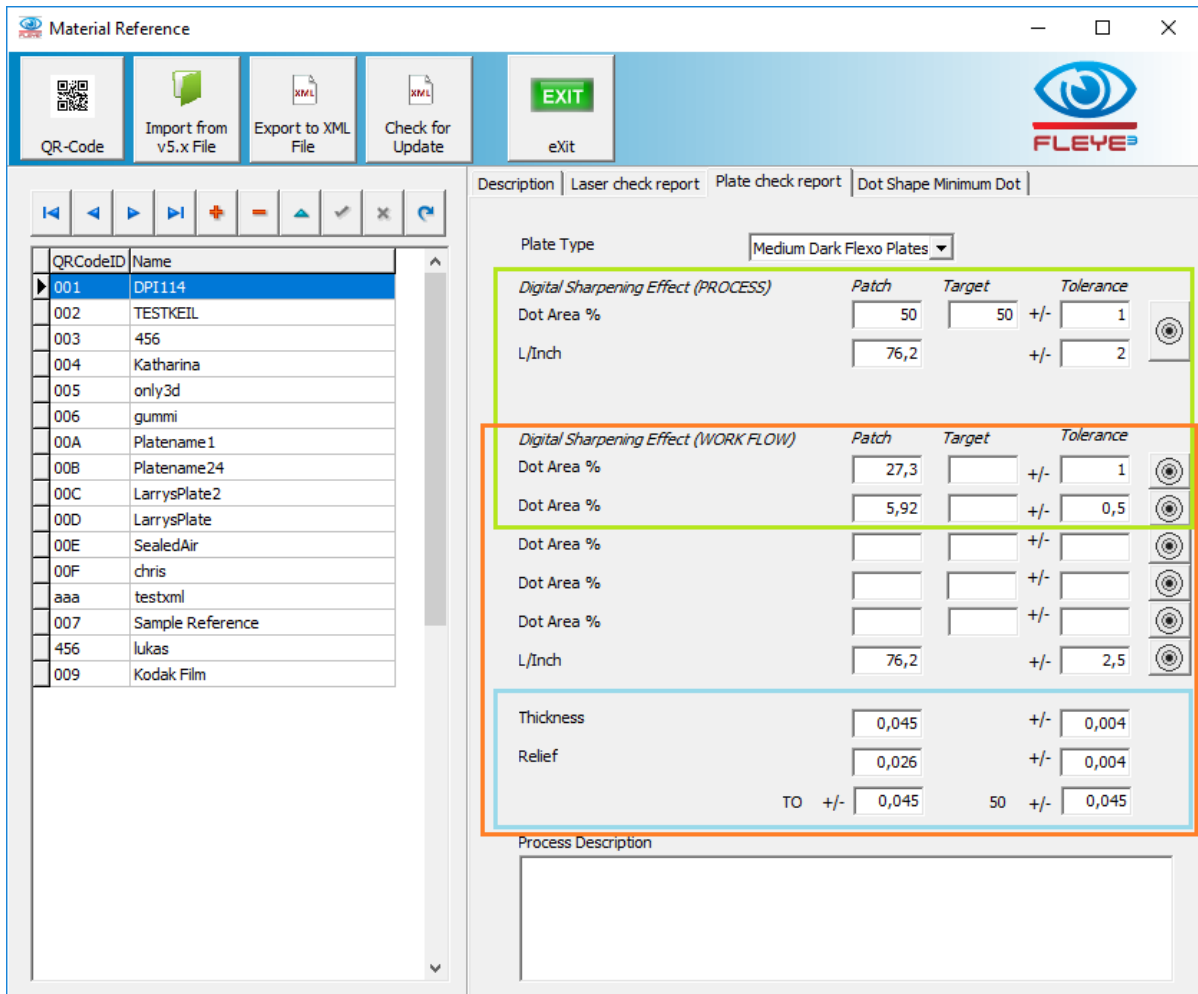
Any modification or a series of modifications must be confirmed by clicking the icon 



Please note that there can be different screen rulings specified for the Linearity Patch and the Minimum Dot. This is an important new feature, as the minimum dot is more sensitive to screen ruling than the 50% dot.

Plate Check Report

The new Database now contains six Dot Area references. The first reference (PROCESS) is aimed to control the repeatability of the exposure and washout process by always using the identical 50% TIFF file. The same patch is also used to control the linearity of the Laser. Therefore, it requires a separate screen ruling definition.



The Plate Check report can be configured to measure 1 to 3 Patches for a PDF report. This report is always using the PROCESS reference and as defined the first and second WORKFLOW references, highlighted in the green frame.

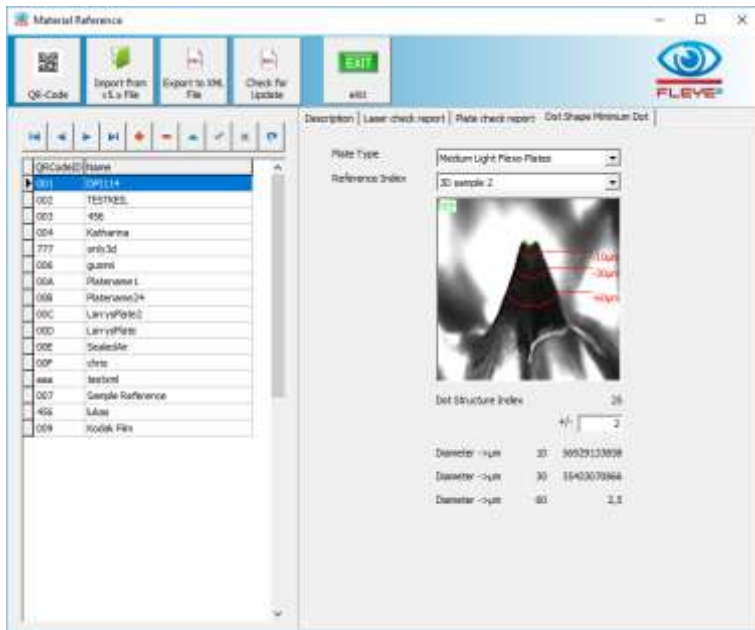
The Production Log can be configured to use 1 to 5 patches on a strip. This function is using the WORKFLOW references shown in the red frame.

The Thickness and Relief reference definitions are the same for both reporting functions shown in the blue frame. They are not Workflow dependent.

Additional Information to describe special process parameters may be added, if required.

Dot Shape Minimum Dot

The Dot Shape Reference specifies the Camera Settings to capture the image, contains a reference image and the reference measurement data. There can also be defined a tolerance for the Dot Structure Index.



One Dot Structure measurement is now also available for the Production Log.

Decode the QRCode captured using the FLEX³PRO

QRCode decoding is triggered by clicking the QRCode Icon, where ever it is available.

Main Window:



Material Reference Window:



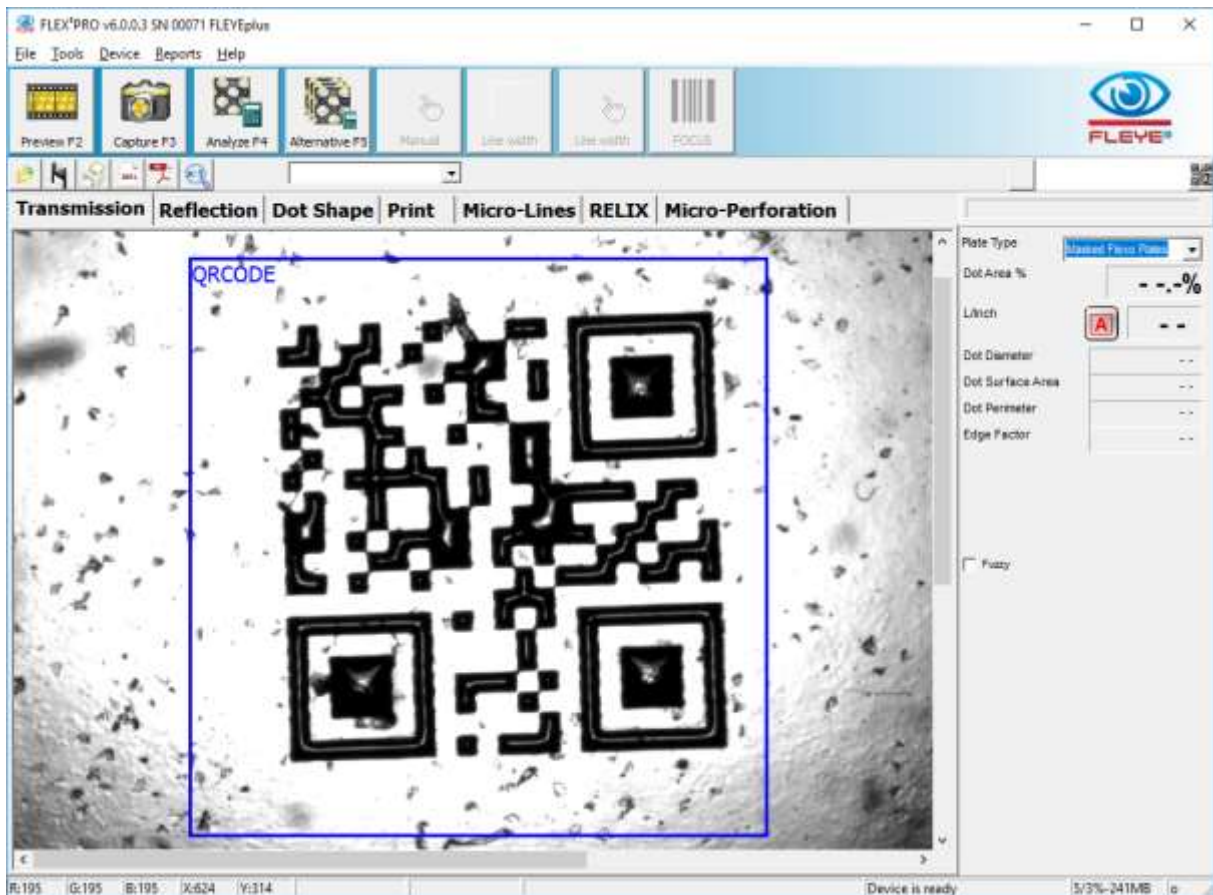
FLEYEplus Reports



Production Log Window



Clicking the QRCode Icon will set the camera for QRCode decoding and display a blue frame in the main Window preview area.



Position the QRCode inside the blue frame. Click the Capture Icon to capture the QRCode and to decode the code.

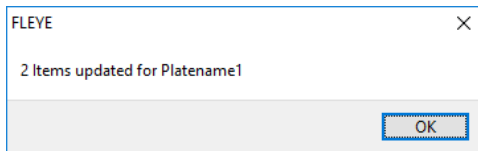
The QRCode is analyzed and the resulting code is displayed next to the QRCode Icon in the main Window:



Update by XML request

The Software will automatically check for eventual update request in the XML Input Hot folder, if the QRCode decoding is performed in the FLEYEplus reports Window or in the Production Log Window.

If the QRCode could be decoded, the Software will look into the Hot Folder for a Reference Update file for the Material Reference in charge. If any, the XML file will be read and the Reference Database will be updated accordingly. At the end of the Update a message will be displayed to inform the operator that an update has been performed.

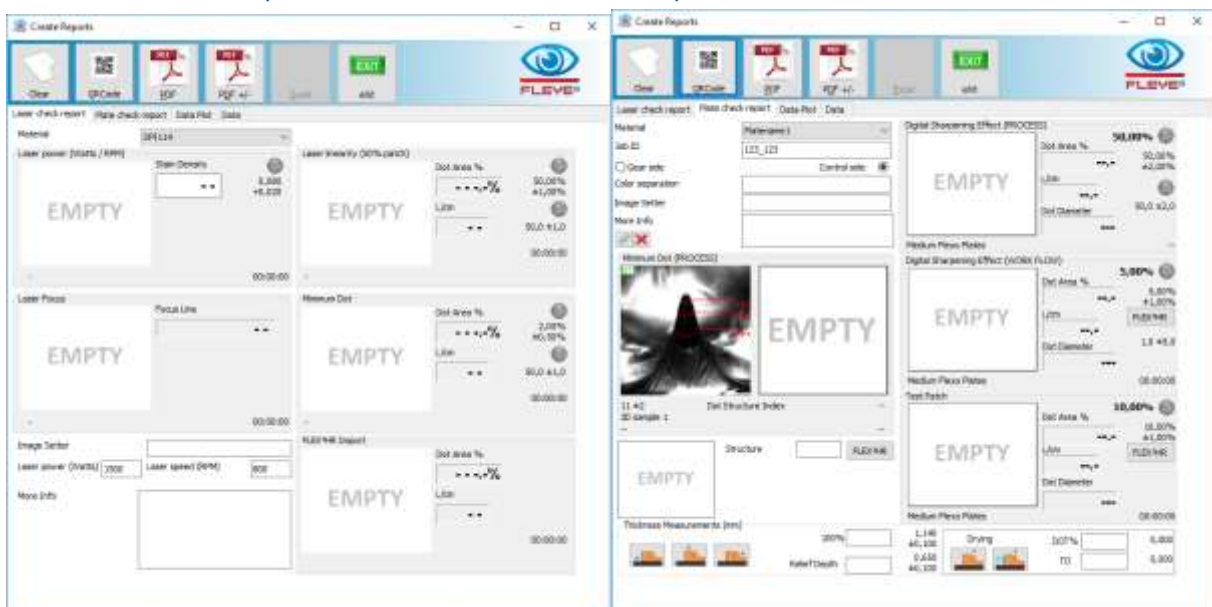


The REF_XXX.XML file will be removed from the Hot Folder after reading.

After updating the Reference Database, the Software will automatically check the XML Input Hot Folder for an eventual update request for the Plate Type, used by the updated Material Reference. If any, the Plate Type is updated automatically and the new settings will be used for subsequent plate measurements.

It does not make any difference whether the update is performed by reading the QRCode in the FLEVEplus Report Window or in the Production Log Window.

Laser Check Report and Plate Check Report



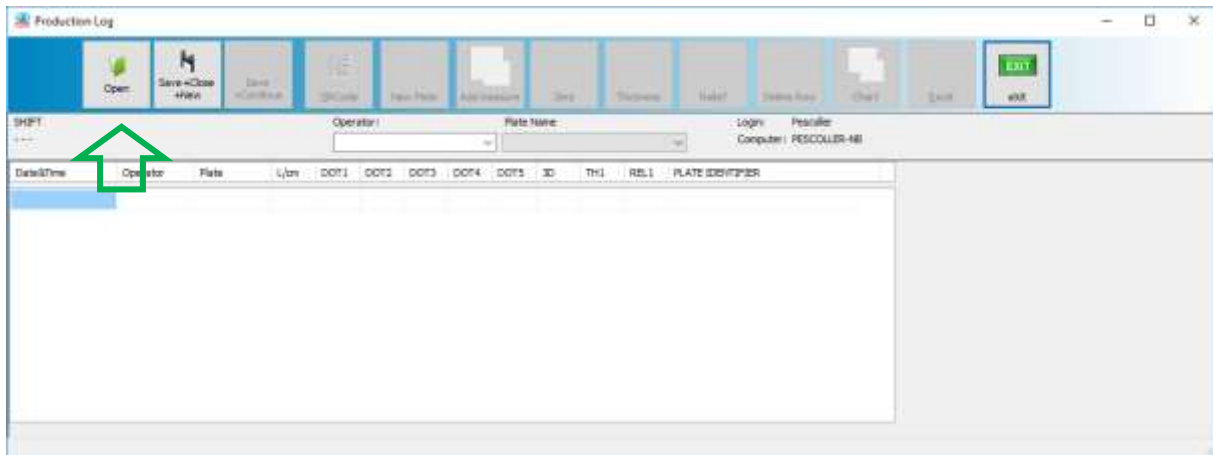
The QRCode function will read the QRCode directly from the plate. The software selects the Material Reference based on the 3 characters on the end of the code and checks the Hot Folder for eventual updates. The preceding characters are used as JOB ID and copied to the JOB ID field.

The Halftone dot area, Dot Structure, and Thickness measurements are taken as usual. At the end an XML File can be written to the Hot Folder if configured properly in the Settings.

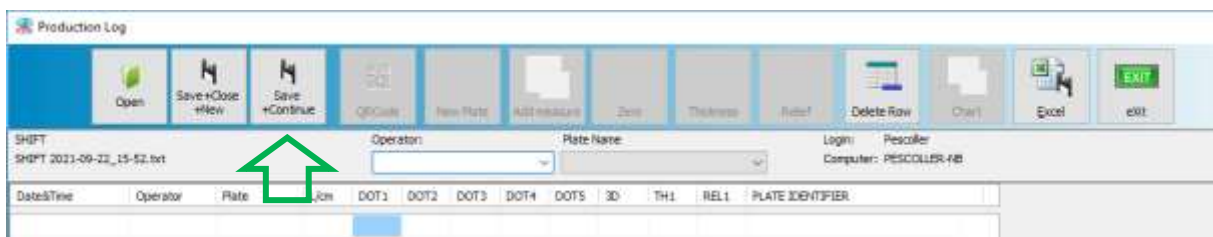
As the references are now common to all FLEVEplus measurement functions, there is no longer a local reference page required.

Production Log

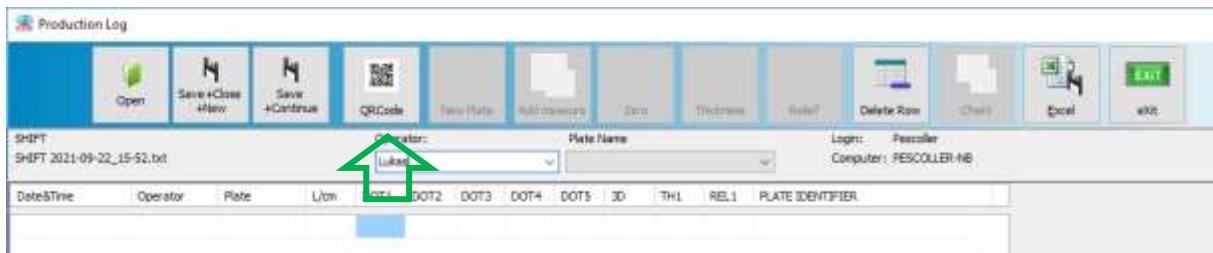
As the references are now common to all FLEVEplus measurement functions, there is no longer local access to the old reference page.



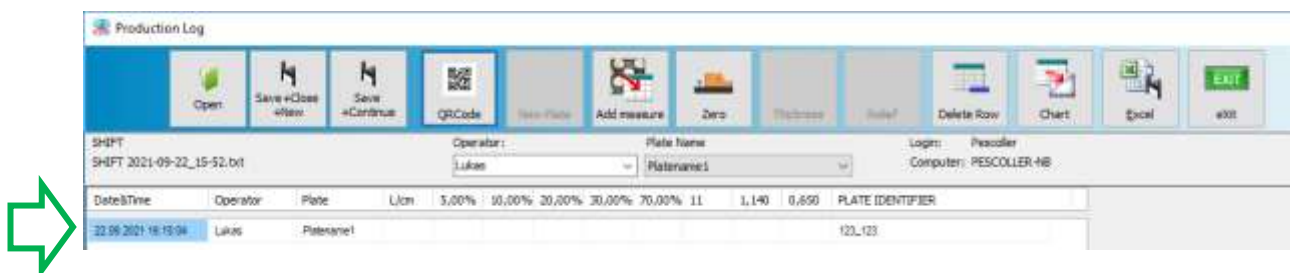
Open an existing Table or create a new Table



Insert the Operator name or select it from the List. This will enable the QRCode reading.

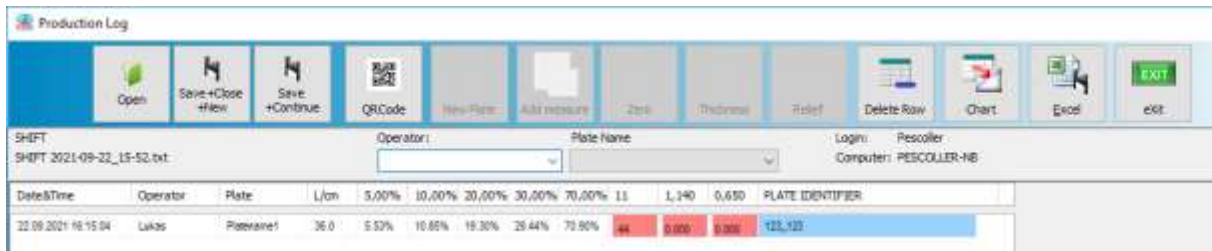


Read the QRCode or select the Plate Name manually.



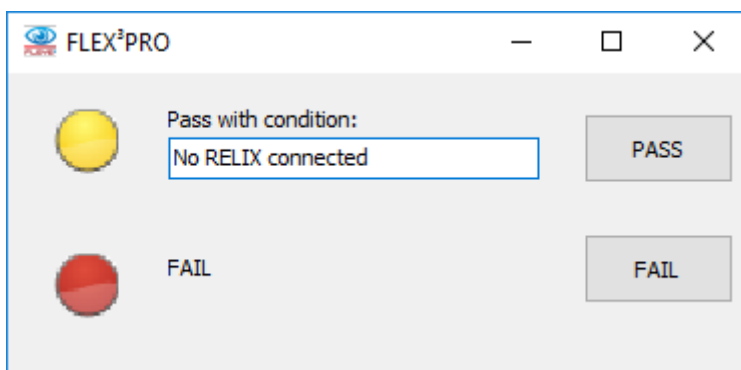
The time stamp is generated. The Head line is updated according to the references stored in the reference database.

Now the readings are taken as usual.



Once every required measurement has been added to the table, the software will check the quality of the Plate. If everything is in tolerance, the XML file and the PDF files are created and saved to the Hot Folder without any further action required by the user.

If at least one cell is out of tolerance, it is marked in red and the operator will be prompted to enter a comment.



The operator must now choose which button is clicked, and the final PDF will contain a PASS (everything in tolerance), a PASS with Condition, or a FAIL.

FLEX³PRO Plate Report

JOBID: 123-123

Forch Str. 6
39040 Vahrn
REPORT DATE: 23.09.2021



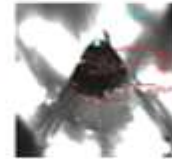
Target: 5.00% \pm 1.00%
Measured: 5.53%

Thickness: 1.140 \pm 0.100
0.000

Relief: 0.650 \pm 0.100
0.000



Target: 10.00% \pm 1.00%
Measured: 10.85%



Dot Structure Index:
11 \pm 2

Measured: 44



Target: 20.00% \pm 1.00%
Measured: 19.30%

Timestamp: 22.09.2021 16:15:04
Operator: Lukas
Material: Platenname1
Ulom: 36.0



Target: 30.00% \pm 1.00%
Measured: 29.44%



Target: 70.00% \pm 1.00%
Measured: 70.90%

PASS with condition:
No RELIX connected



FLEX³PRO v6.0.0.0 SN 0071 FLEYEplus

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The PDF report can be printed and attached to the plate.

The software now is again ready to insert the operator, read the QRCode on the next plate, etc.