



BetaFlex Pro FlexoEyePlus Preliminary User Manual

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Introduction

FlexoEyePlus is an optional software Module that makes the BETAFLEX PRO a fast quality control device for daily manufacturing. FlexoEyePlus adds reporting functions to the existing BETAFLEX PRO software.

Important: *This manual describes the current version of the FLEX³ hardware and software. Future enhancements or modifications are reserved.*

FlexoEyePlus philosophy

FlexoEyePlus is based on the idea that the plate manufacturing process is black box that has to be kept constant and repeatable. All job specific variations required in plate making are done in image setup before downloading the digital image to the plate making process.

The plate making process (Image Setter, Exposure, washout) is optimized for a specific material (plate type) and tested using the DFTA-Control Wedge or similar in pixel format. The pixel format makes sure that no job specific settings (screen ruling, DGC -curve) will have an impact on the result. As a result of this initial test step the following reference information is stored for a specific material:

Imaging process (Laser)

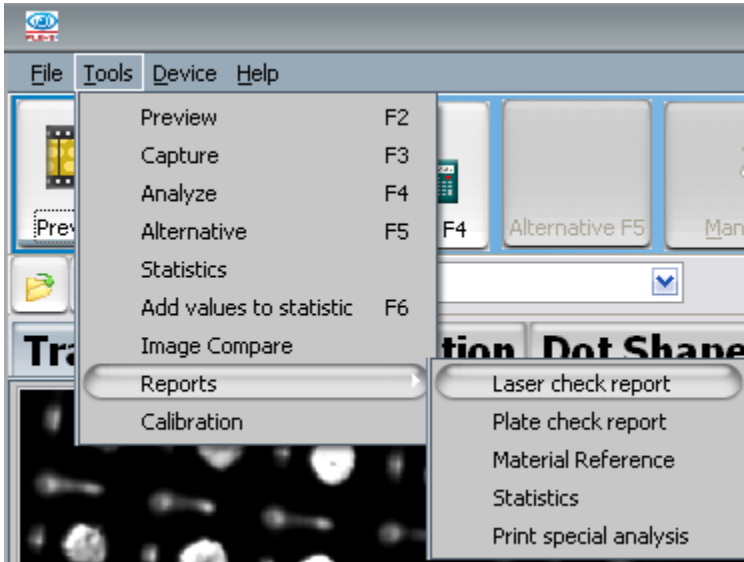
- Maximum Stain density - During daily work the stain density should never be higher than this reference. Stain density can be lowered by adjusting the laser power or the laser focus.
- Dot area value of the 50% patch in pixel format measured on the mask before washout - This value is an indicator for the linearity of the imaging process and typically will be close to a real 50% dot.

Plate making process (Exposure, washout, finishing)

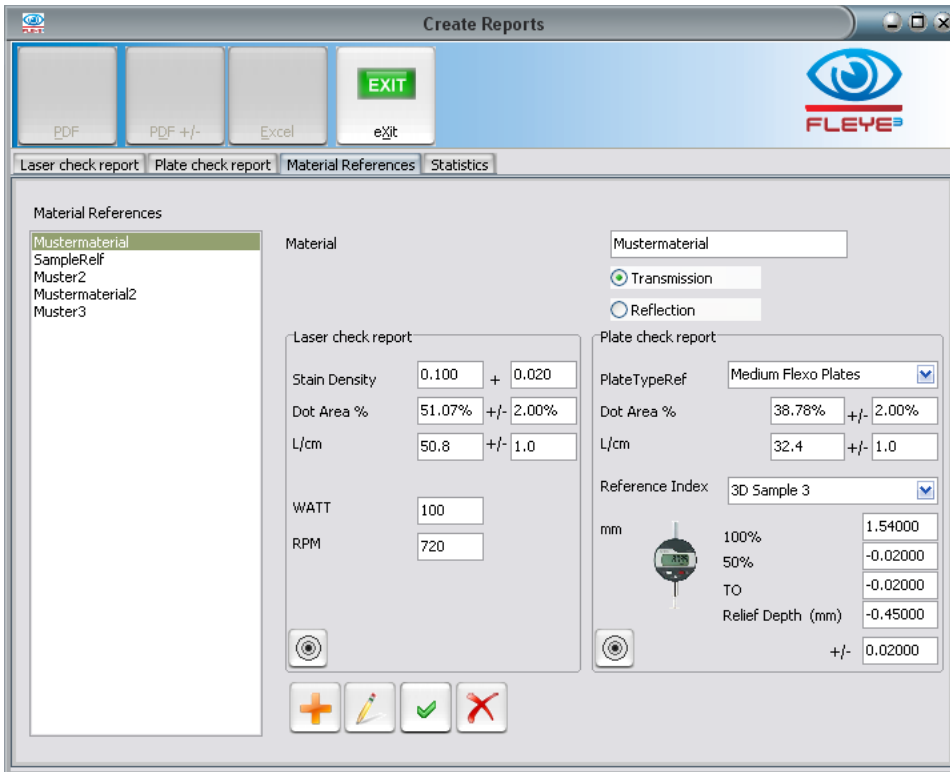
- Dot area value of the 50% in pixel format measured on the finished plate - This measurement value typically is smaller than the value measured on the mask depending on the process and the plate material. It is important that the dot loss is kept constant, i.e. the measured value is the same over time
- Minimum dot shape control - The minimum dot is selected once during the plate making process characterization (for example one of the patches of the DFTA-control wedge) and a patch in pixel format is provided on every single plate. In case of minimum dots the shape is more important than the flat top dot. Therefore a reference of the shape is saved.
- Dot area value of the 50% in vector format - This patch shows all job specific variations in plate making like screen ruling or DGC-curve.
- In addition it is possible to directly add relief depth characteristic measurements to the reports
 - 100% - measures the thickness of the plate
 - 50% - measures the thickness reduction on a tint percentage
 - TO – measures the thickness reduction on a line element
 - Relief depth – measures the maximum Relief depth

FlexoEyePlus functions

The FlexoEyePlus functions can be accessed clicking the proper main menu items:



Material References



Up to 64 Material references can be stored.



Click the ADD icon to create a new record. Type in a Material name and select if it is a transparent plate (Transmission) or a non transparent plate (Reflection). Laser Check functions are available only for transparent plates.



Click the EDIT icon to edit an existing record.



Click the OK icon to confirm modifications and to permanently save the current record



Click the DELETE icon to delete the current record or to cancel the modifications.



Click the Bulls Eye Icon to copy the most recent laser check or the most recent plate check into the reference

Execute a Laser Check

Select the Material from the Materials list.

The screenshot shows the 'Create Reports' window in the FLEYE software. The interface includes a top toolbar with buttons for PDF, PDF +/-, Excel, and EXIT. Below the toolbar are tabs for 'Laser check report', 'Plate check report', 'Material References', and 'Statistics'. The main area displays a laser check report for the material 'Mustermaterial'. It features two side-by-side images: a grayscale image of a plate on the left and a yellow/red laser check image on the right. Below the images are various data fields and controls.

Parameter	Value	Indicator	Target/Range
Stain Density	0.056	Green circle	0.100
Dot Area %	51.15%	Green circle	51.07%
L/cm	50.7	Green circle	50.8
Masked Flexo Plates			12:28:31

Additional controls include an 'Image Setter' field with 'CDI' selected, and input fields for 'Laser power (Watt)' set to 100 and 'Laser speed (RPM)' set to 720. A 'More Info' button is also present.

Click inside the Laser Power Image to start a Stain density measurement. The Reports window will close and the main BETAFLEX PRO application will automatically be set to Stain Density measurement. Zero and measure Stain as usual. The Result is automatically copied to the Reports Window. The Reports Window will automatically re-open.

Click inside the Laser Linearity Image to start a Laser Linearity measurement. The Reports window will close and the main BETAFLEX PRO application will automatically be set to MASK measurement. Measure the 50% patch on the mask as usual. The Result is automatically copied to the Reports Window. The Reports Window will automatically re-open.

Add additional Information like Image Setter or other comments.

Create a Laser Check Report

There are two different reports that can be created: one including reference and tolerance information. One Report without reference and tolerance information and one Report with tolerance Information.



Click the PDF Icon to create a report without references



Click the PDF+/- Icon to create a report including references



The report is created as a PDF file and displayed using the Windows Browser. Sometimes Windows is not fast enough in running the browser. Click the refresh Icon in this case until you get the report displayed.

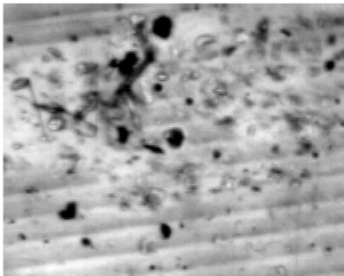
FLEX³PRO REPORT

EXIT
exit

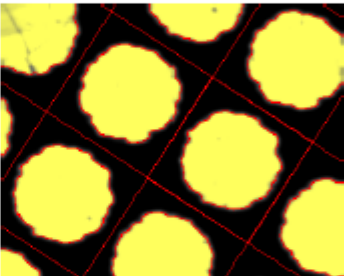
FLEX³ REPORT
 PERET GmbH
 Vahmer See Weg 17, 39040 Vahm, Italy

Laser check report 19.08.2011

Stain Density	0.056 (-0.044)	Dot Area %	51.15% (0.08%)
		L/cm	50.7 (-0.1)



Stain Density
12:27:48



Masked Flexo Plates
12:28:31

Image Setter	CDI
Material	Mustermaterial
Laser power (Watt)	100
Laser speed (RPM)	720

1 / 1

19.08.2011
 11:32:00 (UTC+01)

C:\PERET\ENTWICKLUNG\DELPHI\PROJECTS\FLEX3\SOURCE\Reports\LASERCHECK\LC20110819_123409.pdf

The report is automatically saved as PDF file in the subdirectory
 ...\\FLEX3PRO\\Reports\\LASERCHECK

Execute a Plate Check

Select the material from the Materials list

The screenshot shows the 'Create Reports' window with the following data:

- Material:** Mustermaterial
- Side:** Drive side (selected), Control side
- Dot Loss (Pixel):**
 - Dot Area %: 38.84% (Target: 38.78%)
 - L/cm: 32.5 (Target: 32.4)
- Dot Loss (Vector):**
 - Dot Area %: 39.35%
 - L/cm: 58.4
- Minimum Dot:**
 - Dot Structure Index: 17 (Target: 29)
 - 3D Sample 3
 - Medium Flexo Plates
- Thickness Measurements:**

Drying (mm)	100%	1.54	1.54000
	50%	-0.02	-0.02000
	TO	-0.02	-0.02000
Relief Depth (mm)		-0.45	-0.45000
- Color separation:** Cyan
- Image Setter:** CDI

Click inside the Dot Loss Image to start a Dot Loss measurement on the Pixel variant of the 50% patch. The Reports window will close and the main BETAFLEX PRO application will automatically be set to dot area measurement. Measure the 50% pixel oriented patch as usual. The Result is automatically copied to the Reports Window. The Reports Window will automatically re-open.

Click inside the Dot Loss (Vector) Image to start a Dot Loss measurement on the vector variant of the 50% patch. The Reports window will close and the main BETAFLEX PRO application will automatically be set to dot area measurement. Measure the 50% vector oriented patch as usual. The Result is automatically copied to the Reports Window. The Reports Window will automatically re-open.

Click inside the Minimum Dot Image to start a 3D Minimum Dot analysis. The Reports window will close and the main BETAFLEX PRO application will automatically be set to Dot Shape measurement. Measure the minimum Dot as usual. The Result is automatically copied to the Reports Window. The Reports Window will automatically re-open.

Add additional Information like Image Setter, Color separation, Job Number or other comments.

Create a Plate Check Report

There are two different reports that can be created: One Report without reference and tolerance information and one Report with tolerance Information.



Click the PDF Icon to create a report without references



Click the PDF+/- Icon to create a report including references



The report is created as a PDF file and displayed using the Windows Browser. Sometimes Windows is not fast enough in running the browser. Click the refresh Icon in this case until you get the report displayed.

FLEX³ PRO REPORT

EXIT

exit





FLEX³ REPORT
 PERET GmbH
 Vahmer See Weg 17, 39040 Vahm, Italy


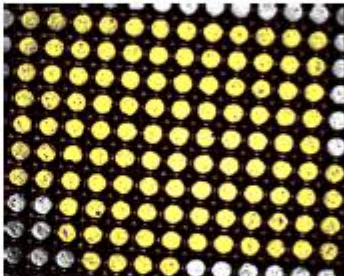


Plate check report 19.08.2011 ●

Dot Area %	38.84% (0.06%)	39.35%
L/cm	32.5 (0.1)	58.4

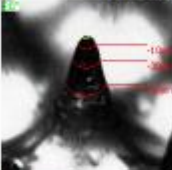


Medium Flexo Plates
12:41:54



(Vector oriented)

17	Dot Structure Index	29
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3D Sample 3
Medium Flexo Plates
12:42:55

Thickness Measurements

Drying (mm)	100%	1.54
	50%	-0.02
	TO	-0.02
Relief Depth (mm)		-0.45

Material
Image Setter
Color separation

Mustermaterial
CDI
Cyan
Control side

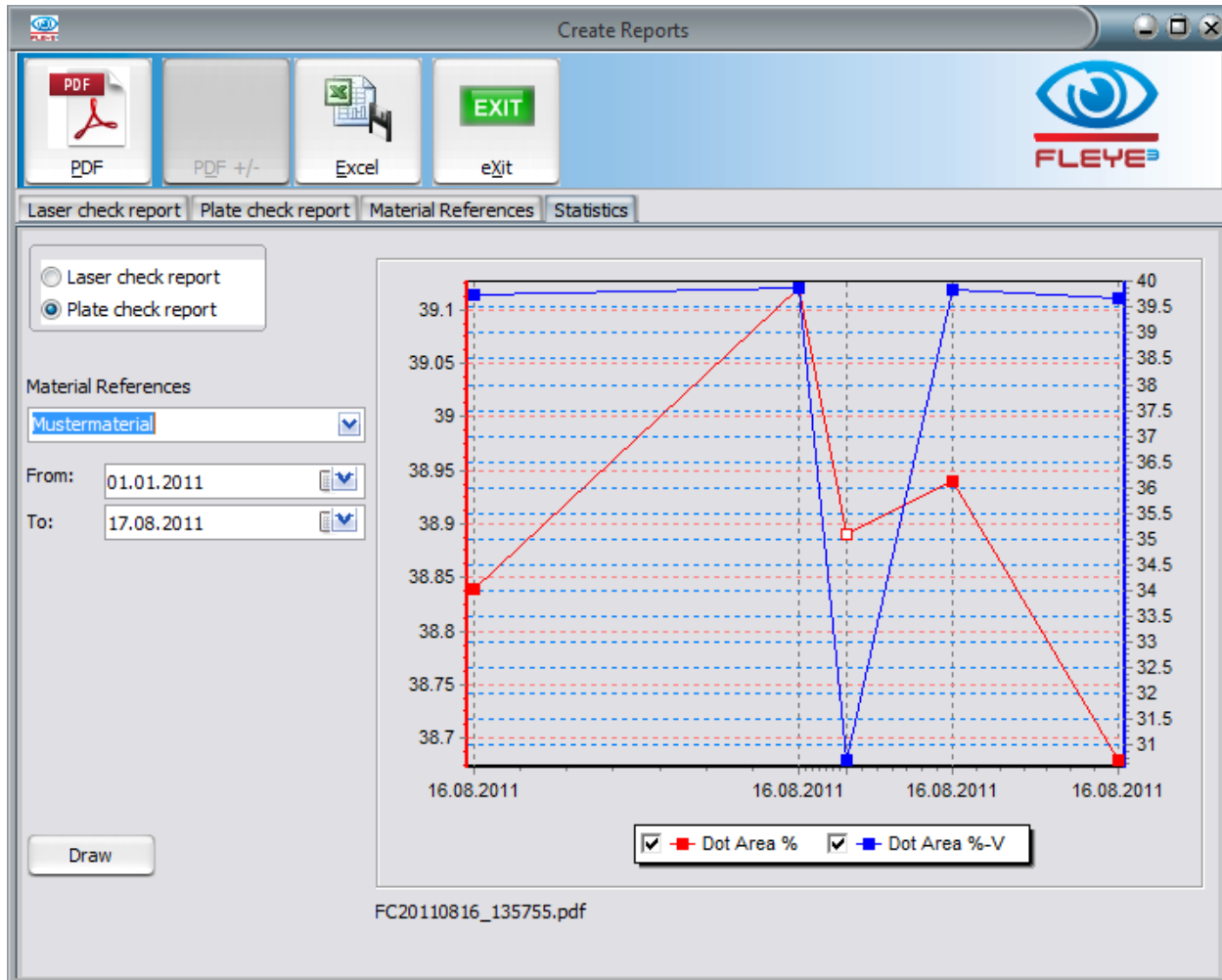


C:\PERET\ENTWICKLUNG\DELPHI\PROJECTS\FLEX3\SOURCE\Reports\PLATECHECK\FC20110819_124818.pdf

The report is automatically saved as PDF file in the subdirectory

...\FLEX3PRO\Reports\PLATECHECK

Report Statistics



- Select Laser Check reports if you would like to analyze the behaviour of your Laser over time.
- Select Plate Check Reports if you would like to analyze your plate production
- Select the Material from the Materials list you would like to analyse
- Select the time frame you would like to analyse
- Click Draw to draw the graph
- Click on an Item of the graph to show the proper report file name. Click on the filename to open the report.
- Click on the PDF Icon to create a Summary Report.
- Click on the EXCEL Icon to export data to EXCEL