

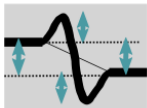


## 5 - S35 CALC Geometry Ablation – Cavvex inside

### ■ Description

Calculate the seam geometry measurements width and roundness. Concav, convex and mismatch is calculated with the "Reference" inside the ablation area.

### ■ Icon


















#### 5 S35 CALC Geometry Ablation - Cavvex inside

Calculate the seam geometry measurements width and roundness. Mismatch is calculated outside the ablation borders. Concav, convex is calculated inside the ablation borders

### ■ Parameters

#### Filters of 5 S35 CALC Geometry Ablation - Cavvex inside

-  01 Geometry Angle
-  03 Line Median for LineFit
-  05 Calc Cavvex
-  05.0 Offset Seam pos
-  05.1 Line fit IN left
-  05.2 Line fit IN right
-  06 Calc Mismatch
-  06.0 Offset Ablation pos
-  06.1 Line fit OUT left
-  06.2 Line fit OUT right
-  11 Averaging Seam width
-  21 Averaging Mismatch
-  31 Averaging Convexity
-  41 Averaging Concavity
-  51 Averaging Roundness pos.
-  52 Averaging Roundness neg.
-  91 Plausibility min line intensity

Attributes of  
01 Geometry Angle

Number

0.000

Parameter	Comment
Number	Min. angle of the laser line shape to set a "seam border". [Degree]

Attributes of  
03 Line Median for LineFit

Verbosity level

None

Filter length

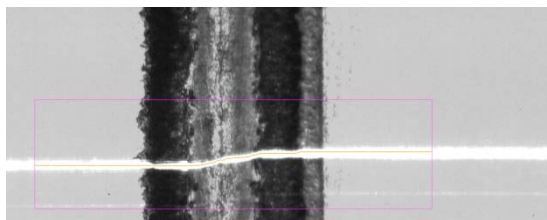
50

N Pixel

Parameter	Comment
Verbosity level	Selection of verbosity level. Larger verbosity levels offer more overlay information.
Filter length	To define a reference position the vertical positions of the found laser line shape are averaged over "Filter length" pixel. [Pixel]

### Verbosity example:

The magenta rectangle shows the centered laser line ROI. The red line on the laser line shows the shape from the laser line tracking.





Attributes of  
05 Calc Cavvex

Verbosity level

None

Parameter	Comment
Verbosity level	Selection of verbosity level. Larger verbosity levels offer more overlay information.

Attributes of  
05.0 Offset Seam pos

Number

10.000

Parameter	Comment
Number	Number of pixels to shift the found left seam border leftwards, and the found right seam border rightwards to set the start/end point of the range where to check for 'concavity/convexity/mismatch'. [Pixel]

Attributes of  
05.1 Line fit IN left

Verbosity level

None

Length

Pixel

50

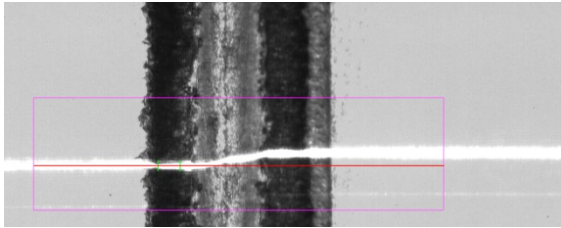
Fit horizontal


☒ On/Off

Parameter	Comment
Verbosity level	Selection of verbosity level. Larger verbosity levels offer more overlay information.
Length	Number of points on the laser line shape, starting at the "shifted" left seam border leftwards, to fit a straight line for the "laser line part on left blank". [Pixel]
Fit horizontal	If active, the left side "Reference" line is expected/searched to be horizontal.

### Verbosity example:

The magenta rectangle shows the centered laser line ROI. The red line shows the fitted straight line on the left side. The two green crosses mark the (horizontal) range where the line fit was made.



 Attributes of  
05.2 Line fit IN right

Verbosity level  
None

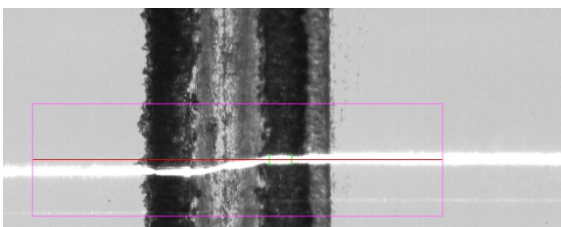
Length  
50 Pixel

Fit horizontal  
☒ On/Off

Parameter	Comment
Verbosity level	Selection of verbosity level. Larger verbosity levels offer more overlay information.
Length	Number of points on the laser line shape, starting at the "shifted" right seam border rightwards, to fit a straight line for the "laser line part on right blank". [Pixel]
Fit horizontal	If active, the right side "Reference" line is expected/searched to be horizontal.

### Verbosity example:

The magenta rectangle shows the centered laser line ROI. The red line shows the fitted straight line on the right side. The two green crosses mark the (horizontal) range where the line fit was made.





**Attributes of**  
06 Calc Mismatch

Verbosity level

None

Parameter	Comment
Verbosity level	Selection of verbosity level. Larger verbosity levels offer more overlay information.

**Attributes of**  
06.0 Offset Ablation pos

Number

50.000

Parameter	Comment
Number	Number of pixels to shift the found left ablation border leftwards, and the found right ablation border rightwards to set the start point for the "laser line part on blank". [Pixel]

**Attributes of**  
06.1 Line fit OUT left

Verbosity level

None

Length

100 (200)

Pixel

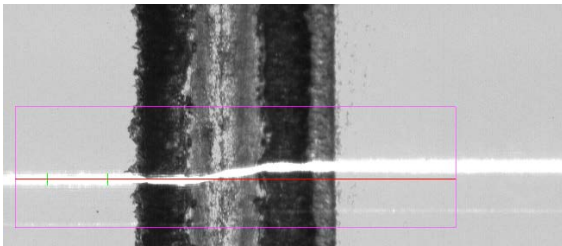
Fit horizontal

☒ On/Off

Parameter	Comment
Verbosity level	Selection of verbosity level. Larger verbosity levels offer more overlay information.
Length	Number of points on the laser line shape, starting at the "shifted" left ablation border leftwards, to fit a straight line for the "laser line part on left blank". [Pixel]
Fit horizontal	If active, the left side "Reference" line is expected/searched to be horizontal.

### Verbosity example:

The magenta rectangle shows the centered laser line ROI. The red line shows the fitted straight line on the left side. The two green crosses mark the (horizontal) range where the line fit was made.



 Attributes of  
06.2 Line fit OUT right

Verbosity level  
None

Length  
100 (200)

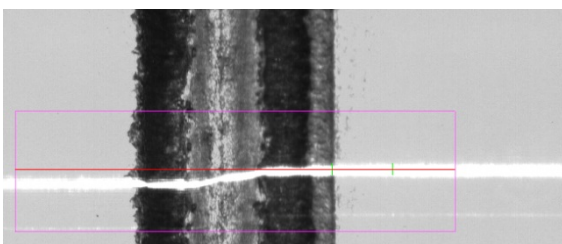
Pixel

Fit horizontal  
☒ On/Off



Parameter	Comment
Verbosity level	Selection of verbosity level. Larger verbosity levels offer more overlay information.
Length	Number of points on the laser line shape, starting at the "shifted" right ablation border rightwards, to fit a straight line for the "laser line part on right blank". [Pixel]
Fit horizontal	If active, the right side "Reference" line is expected/searched to be horizontal.

### Verbosity example:

The magenta rectangle shows the centered laser line ROI. The red line shows the fitted straight line on the right side. The two green crosses mark the (horizontal) range where the line fit was made.







**Attributes of**  
**11 Averaging Seam width**


Filter length
N values

Parameter	Comment
Filter length	Number of camera images to average the measured seam width values. [Images].


**Attributes of**  
**21 Averaging Mismatch**


Filter length
N values

Parameter	Comment
Filter length	Number of camera images to average the measured blank mismatch values. [Images].


**Attributes of**  
**31 Averaging Convexity**


Filter length
N values

Parameter	Comment
Filter length	Number of camera images to average the measured convexity values. [Images].


**Attributes of**  
**41 Averaging Concavity**


Filter length
N values

Parameter	Comment
Filter length	Number of camera images to average the measured concavity values. [Images].


**Attributes of**  
**51 Averaging Roundness pos.**


Filter length

1

+

N values

Parameter	Comment
Filter length	Number of camera images to average the measured <i>positive</i> seam roundness values. [Images].


**Attributes of**  
**52 Averaging Roundness neg.**




Filter length

1

+

N values

Parameter	Comment
Filter length	Number of camera images to average the measured <i>negative</i> seam roundness values. [Images].


**Attributes of**  
**91 Plausibility min line intensity**


Number

50.000

Parameter	Comment
Number	Only tracked laser line points with this min. intensity are real laser line points. [Greylevel].









## ■ Measured values for plotter

556	0 / 1	Plausibility GEO error
572	0 ... 255	Intensity Line
703	0 ... xxx	Seam width
709	-xxx ... +xxx	Height difference
711	0 ... xxx	Concavity
712	0 ... xxx	Convexity
713	0 ... xxx	Roundness pos.
714	0 ... xxx	Roundness neg.

## ■ Subgraphs interface

### IN bridges

### OUT bridges

 <b>image</b>	Img	 <b>value</b>	PlausError line
 <b>Line</b>	Line		Seam width
 <b>value</b>	Seam pos left filtered		Seam roundness pos
	Seam pos right filtered		Seam roundness neg
	Start end active		Seam concav
	Line intensity		Seam convex
	ROI line valid		Seam height diff
	Ablation out X left		
	Ablation out X right		

- **Graph block diagram**

