

# Acceptance/Reverification According to VDI/VDE 2634, Part 3

## General Data

System: ATOS\_Core\_MV200\_SN-160300  
Measuring volume: MV200 (200x150x150) mm  
Date: 02-04-2019  
Inspector: Jeppe H Laursen  
Measurement temperature: 20.2 °C

## Artifact

### General

Name: PSA/P0173/400\_L6\_R6  
Calibration date: 13-11-2018  
Calibration ID: 1662/D-K-15007-02-00/2018-11  
Calibration temperature: 20.1 °C  
Expansion coefficient for sphere spacing:  $4.00 \cdot 10^{-6} \text{ K}^{-1}$   
Expansion coefficient for diameter:  $10.50 \cdot 10^{-6} \text{ K}^{-1}$

### Basic dimensions

Sphere spacing: 115 mm  
Diameter left sphere: 20 mm  
Diameter right sphere: 20 mm

### Calibrated nominal dimensions

Sphere spacing: 115.0001 mm  
Diameter left sphere: 20.0095 mm  
Diameter right sphere: 20.0051 mm

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## Measurement Parameters

### Measurement Settings

Number of exposure times:	1
Min. fringe contrast:	15 gray values
State: Avoid points at strong brightness differences?:	Yes
State: Avoid Triple Scan points?:	No
State: Avoid Triple Scan points at strong brightness differences?:	Yes
Max. residual:	0.20 pixel
Depth limitation mode:	Automatic depth limitation
Corner mask size:	35
Measurement resolution:	Full resolution

### Settings of Checks

State: Check "Sensor movement"?:	Yes
Max. sensor movement:	0.10 pixel
State: Check "Lighting change"?:	Yes

## Sensor Calibration

### General

Calibration date:	Tue Apr 2 14:57:46 2019
Measurement temperature:	20.1 °C

### Calibration Object

Calibration object type:	Panel (Triple Scan)
Calibration object name:	CP40-200-100516
Test distances:	360.0000 / 360.0000 mm
Certification temperature:	22.0 °C
Expansion coefficient:	$3.25 \cdot 10^{-6} \text{ K}^{-1}$

### Calibration Settings

Focal length (camera):	12.50 mm
Focal length (projector):	8.00 mm
Light intensity:	100%
Snap mode:	Double snap
Max. ellipse quality:	0.40 pixel

### Calibration Result

Calibration deviation:	0.051 pixel (Quality check: Good)
Calibration deviation (optimized):	0.017 pixel
Projector calibration deviation:	0.049 pixel (Quality check: Good)
Projector calibration deviation (optimized):	0.015 pixel
Camera angle:	24.25 °
Height variance:	147.012 mm
Measuring volume:	189 x 139 x 149 mm

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## Acceptance/Reverification Test

### General

Number of test positions (measurement series): 3  
 Nominal diameter of left sphere with temperature correction: 20.0095 mm  
 Nominal diameter of right sphere with temperature correction: 20.0051 mm  
 Nominal sphere spacing with temperature correction: 115.0001 mm

### Parameter Probing Error Form, Left Sphere

Pos <sup>2)</sup>	M <sup>3)</sup>	P <sup>4)</sup>	Min. deviation	Max. deviation	Range of deviation	Probing error form (sigma)
1	10	18671	-0.006 mm	0.005 mm	0.011 mm	0.001 mm
2	10	18583	-0.008 mm	0.007 mm	0.014 mm	0.002 mm
3	10	16248	-0.005 mm	0.005 mm	0.010 mm	0.001 mm

### Parameter Probing Error Form, Right Sphere

Pos <sup>2)</sup>	M <sup>3)</sup>	P <sup>4)</sup>	Min. deviation	Max. deviation	Range of deviation	Probing error form (sigma)
1	10	18966	-0.008 mm	0.007 mm	0.014 mm	0.002 mm
2	10	20382	-0.008 mm	0.008 mm	0.015 mm	0.002 mm
3	10	17534	-0.005 mm	0.005 mm	0.010 mm	0.001 mm

### Parameter Probing Error Size, Left Sphere

Pos <sup>2)</sup>	M <sup>3)</sup>	P <sup>4)</sup>	Diameter (actual)	Diameter (nominal) <sup>1)</sup>	Probing error (size)
1	10	18671	20.015 mm	20.010 mm	0.006 mm
2	10	18583	20.012 mm	20.010 mm	0.002 mm
3	10	16248	20.011 mm	20.010 mm	0.001 mm

### Parameter Probing Error Size, Right Sphere

Pos <sup>2)</sup>	M <sup>3)</sup>	P <sup>4)</sup>	Diameter (actual)	Diameter (nominal) <sup>1)</sup>	Probing error (size)
1	10	18966	20.008 mm	20.005 mm	0.003 mm
2	10	20382	19.998 mm	20.005 mm	-0.007 mm
3	10	17534	20.005 mm	20.005 mm	0.000 mm

### Sphere Spacing Error

Pos <sup>2)</sup>	M <sup>3)</sup>	Sphere spacing (actual)	Sphere spacing (nominal) <sup>1)</sup>	Sphere spacing error
1	10	115.006 mm	115.000 mm	0.006 mm
2	10	115.006 mm	115.000 mm	0.006 mm
3	10	115.005 mm	115.000 mm	0.005 mm

### Parameter Length Measurement Error

Pos <sup>2)</sup>	M <sup>3)</sup>	Length (actual)	Length (nominal) <sup>1)</sup>	Length measurement error
1	10	135.017 mm	135.007 mm	0.010 mm
2	10	135.010 mm	135.007 mm	0.003 mm
3	10	135.014 mm	135.007 mm	0.006 mm

<sup>1)</sup> With temperature correction

<sup>2)</sup> Test position

<sup>3)</sup> Number of measurements

<sup>4)</sup> Number of points

**Summary Acceptance/Reverification Test**

<b>Parameter</b>	<b>Maximum deviation</b>	<b>Limit</b>
Probing error form (sigma)	0.002 mm	0.004 mm
Probing error (size)	-0.007 mm	0.015 mm
Sphere spacing error	0.006 mm	0.012 mm
Length measurement error	0.010 mm	0.027 mm