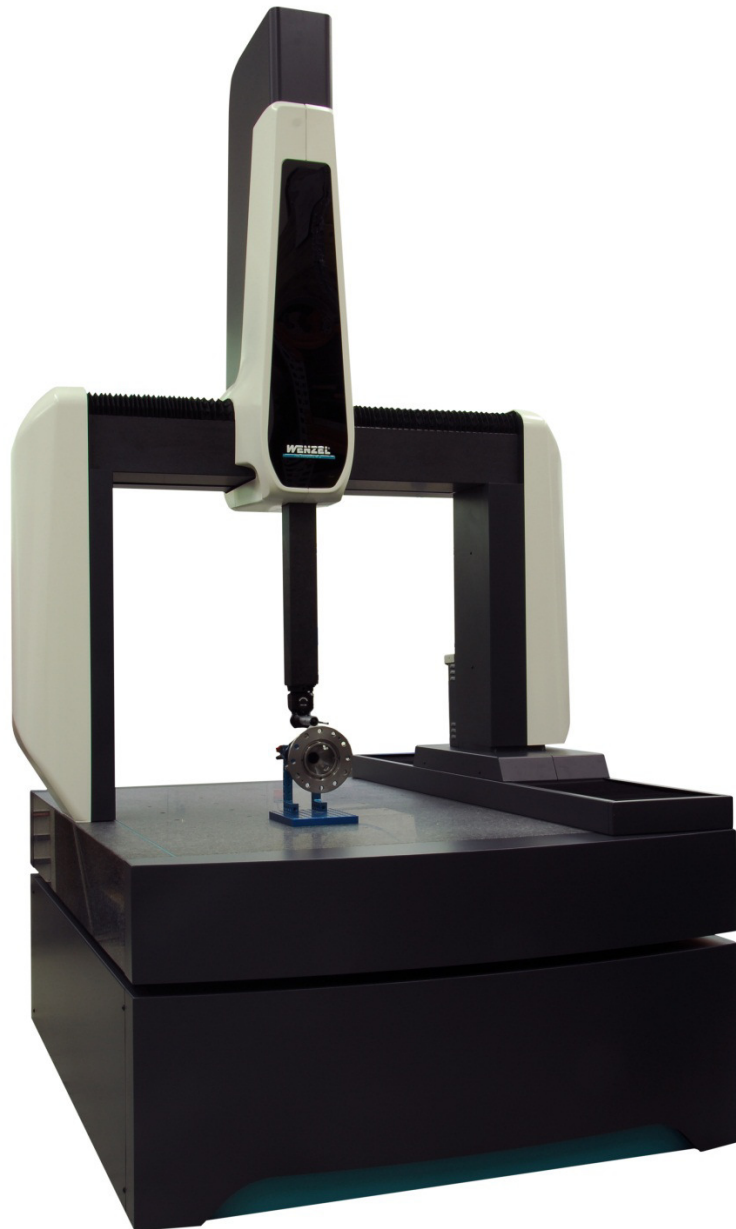


# 3D-Coordinate Measuring Machine (CMM)

## LH 108

STANDARD / PREMIUM / PREMIUM-SELECT

### Technical Data



# Technical Data LH 108 STANDARD / PREMIUM / PREMIUM-SELECT

## Short description

- CNC-bridge design measuring machine capable for touch-trigger and scanning probes; for optical or continuous and indexing probe systems
- Dynamic and high precision series with air bearings in all axis
- All granite guideways accurately hand-lapped
- Compact design. Operator workstation with integrated controller and computer
- CMM available in multiple sizes for the optimal selection of the required measurement volume

## Application areas

- In production, quality control, process and production control; in reverse engineering and model making
- Geometric and free-form components
- Both series and individual measurements
- Palletized operation possible

## Features

- The Y-axis guideway is machined directly in the base plate, providing optimal long-term stability
- Pre-stressed, encompassing air bearings in all axes
- Passive vibration dampers
- Active pneumatic vibration damping optionally available and field retrofittable
- Compact control panel with central, logarithmic joystick, "mouse function" and context-sensitive function buttons. Selectable joystick's axis assignment. Wireless version optionally available.
- The X- and Y-guideways feature bellows protections against contamination
- High-speed-dynamic servo drives with position monitoring, combined friction power transmission
- Three-axis contouring controller with intelligent "lookahead" function for application-optimized trajectory
- Manual temperature compensation in Standard version
- Premium- and Premium-Select version with automatic temperature compensation on all axes and work piece
- Two-stage speed selection and variable speed adjustment (override 0-100%) in all operation modes, resulting in sensitive movement via joystick or in CNC mode

## Probe systems

- PH10M / PH10T motorized indexing head
- TP200 touch-trigger probe, highly precise and suitable for styli up to 100 mm in length. Styli can be changed via optional tool changer
- Touch-trigger probe TP20, Stylus module changeable via optional tool changer
- PH10M motorized indexing head
- SP25M scanning and single-point probe, precise and flexible for stylus lengths of up to 400 mm. Probe module and stylus can be changed via optional tool changer.
- Shapetracer: 3D Line Scanner to report and handle point clouds
- SP80 scanning probe head, highly precise for larger probe lengths. For scanning and single-point probing. Stylus combinations can be changed via optional tool changer
- PH20<sup>TM</sup>: Continuous 5-axis touch-trigger system with „head touch“
- REVO: 5-axis head and probe system for scanning of complex contours and high throughput

# Technical Data LH 108 STANDARD / PREMIUM / PREMIUM-SELECT

Machine Type		LH 108 Standard				LH 108 Premium				LH 108 Premium-Select				
<b>Measuring Ranges, Weights</b>														
Measuring ranges	X	[mm]	1000				1000				1000			
	Y*	[mm]	1200	1600	2000	3000	1200	1600	2000	3000	1200	1600	2000	3000
	Z	[mm]	800				800				800			
Machine weight		[kg]	4480	5540	6925	10390	4480	5540	6925	10390	4480	5540	6925	10390
Permissible part weight		[kg]	2000	2250	2400	3300	2000	2250	2400	3300	2000	2250	2400	3300
<b>General Requirements</b>														
Electric		Single-phase AC 1P+N+PE, 115/230 V ± 10 %, 50/60 Hz, max. 1000 VA, acc. to EN 60204/1												
Compressed air		Supply pressure 6-10 bar, pre-filtered, quality according to ISO 8573-1: Class 4 or better												
Air consumption	passive	[ $\frac{Nl}{min}$ ]	Ø 67						91 (max.)					
	active	[ $\frac{Nl}{min}$ ]	Ø 91						137 (max.)					
<b>Measuring Accuracy</b>														
Measurement system		Photoelectric scale system, optical division 20 µm												
Resolution		[µm]	0,1				0,05				0,05			
Probing uncertainty <sup>1</sup>	MPE <sub>P</sub>	[µm]	TP20 2,7	TP200 2,3	SP25/80 2,0	REVO 2,3	TP200 1,9	SP25/80 1,7	REVO 2,0	SP25/80 1,6				
Volumetric length measuring uncertainty <sup>2</sup>	MPE <sub>E</sub>	[µm]	TP20 2,7+L/300	TP200 2,3+L/300	SP25/80 2,0+L/300	REVO 2,3+L/300	TP200 1,9+L/350	SP25/80 1,7+L/350	REVO 2,0+L/350	SP25/80 1,6+L/450				
Scanning probe uncertainty <sup>3</sup>	MPE <sub>THP</sub>	[µm]	SP25/80 2,6		REVO 2,9		SP25/80 2,3		REVO 2,6		SP25/80 2,2			
Total measuring time for THP	MPT <sub>THP</sub>	[sec]	72				72				72			
<b>Operating Environment</b>														
Operating temperature		[°C]	15-30											
Temperature range for MPE <sub>E</sub> (Standard/Premium)	18-22 °C, ΔT: 1 K <sub>/h</sub> , 1 K <sub>/m</sub> , 2 K <sub>/d</sub>													
Temperature range for MPE <sub>E</sub> (Premium-Select)	19-21 °C, ΔT: 0,5 K <sub>/h</sub> , 0,5 K <sub>/m</sub> , 1 K <sub>/d</sub>													
Relative humidity		[%]	40-70											
<b>Dynamics</b>														
Joystick operation		v <sub>max</sub> [ $\frac{mm}{s}$ ]	0-20 (creep mode), 0-100 (normal)											
CNC mode		v <sub>max</sub> [ $\frac{mm}{s}$ ]	300 axial, 520 volumetric											
CNC mode		a <sub>max</sub> [ $\frac{mm}{s^2}$ ]	600 axial, 1000 volumetric											

1: According to DIN EN ISO 10360-2 / Maximum Permissible Error MPE<sub>P</sub>

- SP25M with Module SM25-1 and Styli Ø 4 x 21 mm
- SP80 and Styli Ø 5 x 50 mm
- TP200 with Standard Force Module and Styli Ø 4 x 21 mm
- TP20 with Standard Force Module and Styli Ø 4 x 10 mm
- REVO with RSP3-3 and Styli Ø 4 x 21 mm

2: According to DIN EN ISO 10360-2 / Maximum Permissible Error MPE<sub>E</sub>

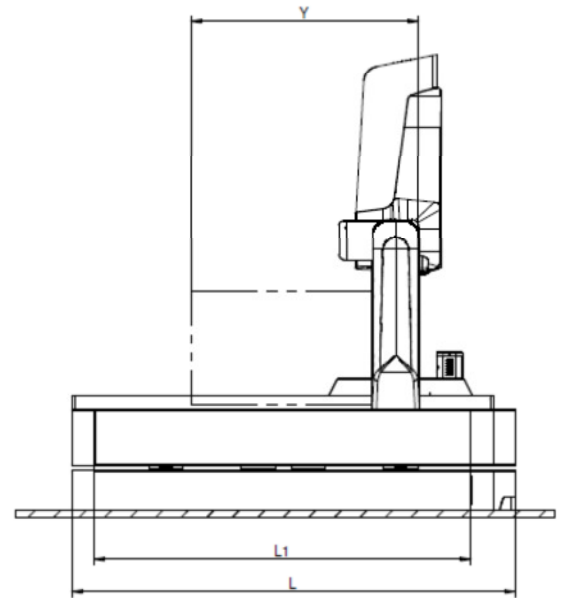
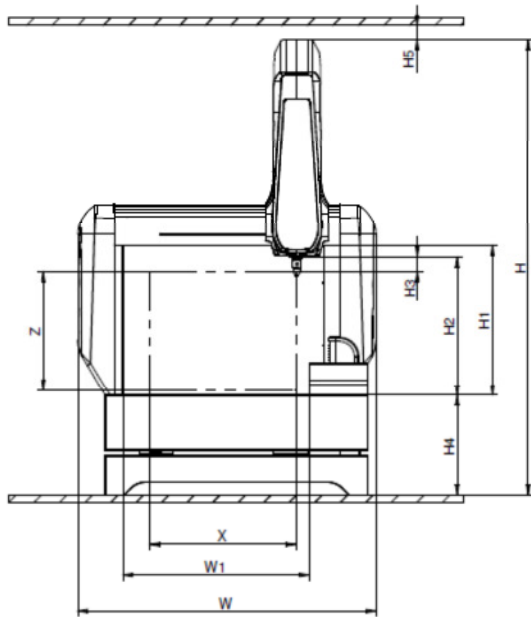
- SP25M with Module SM25-1 and Styli Ø 4 x 21 mm
- SP80 and Styli Ø 5 x 50 mm
- TP200 with Standard Force Module and Styli Ø 4 x 21 mm
- TP20 with Standard Force Module and Styli Ø 4 x 21 mm
- REVO with RSP3-3 and Styli Ø 4 x 21 mm

3: According to DIN EN ISO 10360-4 / Maximum Permissible Error MPE<sub>THP</sub>

- SP25M with Module SM25-1 and Styli Ø 4 x 21 mm
- SP80 and Styli Ø 5 x 50 mm
- REVO with RSP3-3 and Styli Ø 4 x 21 mm

\* More Y-measuring ranges on request

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Overall Dimensions [mm]					
Measuring ranges	X	1000			
	Y*	1200	1600	2000	3000
	Z	800			
Overall dimensions	W	2100			
	L	2720	3120	3720	4820
	H	3210			
Workspace dimensions	H1	1060			
	H2	980			
	H3 (PH10M)	105			
	H4	700			
	L1	2250	2650	3050	4050
	W1	1310			
Inspection room dimension	H5	80 (min.)			

\* More Y-measuring ranges on request

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