

# Micro 3D

Coordinate Measuring Machines



MICRO 3D  
SPECIFICATIONS  
Release 2022-04





Cruise Speed	mm/s	Joystick (axes)	0 - 100
		CNC (vector)	max. 500 to 800 depending on size
Acceleration	mm/s <sup>2</sup>	CNC (vector)	max. 1000
Measuring speed	mm/s		max. 8
Scanning speed	mm/s		max. 200 (REVO)

### SCANNING PROBE HEADS

				5/6/4, 6/8/5 to 6/10/5	8/10/6 to 8/15/6	10/10/8 to 10/25/8	12/15/10 to 12/30/10
Volumetric Length meas. Error, MPE as per ISO 10360-2:2009 <sup>1)</sup>	E0/E150	μm	T1 (18 °C to 22 °C)	2,2 + L/350	2,3 + L/350	2,6 + L/350	2,8 + L/300
	E0/E150	μm	T2 (16 °C to 26 °C)	2,4 + L/250	2,5 + L/250	2,8 + L/250	3,0 + L/200
Repeatability range, MPL as per ISO 10360-2:2009	RO	μm		2,0	2,1	2,4	2,6
Single stylus form error, MPE as per ISO 10360-5:2010	PFTU	μm		2,2	2,3	2,6	2,8
Single Stylus form error, scanning. MPE as per ISO 10360-4:2000 <sup>3)</sup>	THP	μm		4,0	4,1	4,3	4,5
Required measuring time MPT	T	s		50	50	50	70
Single Stylus form error, scanning. MPE as per ISO 10360-4:2000 <sup>3)</sup>	THN	μm		4,0	4,1	4,3	4,5
Required measuring time MPT	T	s		70	70	70	80
Form measurement error	RONt (MZCI) <sup>2)</sup>	μm		2,3	2,4	2,6	2,9

### INDEXING HEADS OR FIXED HEADS WITH STRAIN-GAUGE TRIGGER PROBE

Volumetric Length meas. Error, MPE as per ISO 10360-2:2009 <sup>1)</sup>	E0/E150	μm	T1 (18 °C to 22 °C)	2,3 + L/350	2,5 + L/350	2,8 + L/350	2,9 + L/300
	E0/E150	μm	T2 (16 °C to 26 °C)	2,5 + L/250	2,7 + L/250	3,0 + L/250	3,0 + L/200
Repeatability range, MPL as per ISO 10360-2:2009	RO	μm	-	2,2	2,4	2,6	2,8
Single stylus form error, MPE as per ISO 10360-5:2010	PFTU	μm	-	2,3	2,5	2,8	2,9

### INDEXING HEADS OR FIXED HEADS WITH TRIGGER PROBE

Volumetric Length meas. Error, MPE as per ISO 10360-2:2009 <sup>1)</sup>	E0/E150	μm	T1 (18 °C to 22 °C)	2,5 + L/350	2,7 + L/350	2,8 + L/350	2,9 + L/300
	E0/E150	μm	T2 (16 °C to 26 °C)	2,7 + L/250	2,8 + L/250	2,9 + L/250	3,1 + L/200
Repeatability range, MPL as per ISO 10360-2:2009	RO	μm	-	2,4	2,5	2,6	2,9
Single stylus form error, MPE as per ISO 10360-5:2010	PFTU	μm	-	2,5	2,7	2,8	2,9

### CONDITIONS TO GUARANTEE ABOVE SPECIFIED ACCURACIES

	TEMPERATURES		TOOLS / STYLUS CONFIGURATIONS	
	Ambient T1	Ambient T2	SP25	SM25-1, stylus Ø4 x 21 mm
Measuring Reference Temperature	18 °C to 22 °C	16 °C to 26 °C	SP80	Stylus Ø5 x 50 mm
Maximum air temperature variations	1,0 °C/h - 2,0 °C/24h	1,0 °C/h - 5,0 °C/24h	TP200	Standard Force Module and stylus Ø4 x 10 mm
Maximum spatial gradient	0,8 °C / m	1,0 °C / m	TRIGGER PROBE	Standard Force Module and stylus Ø4 x 10 mm

1) Measuring length L in mm.

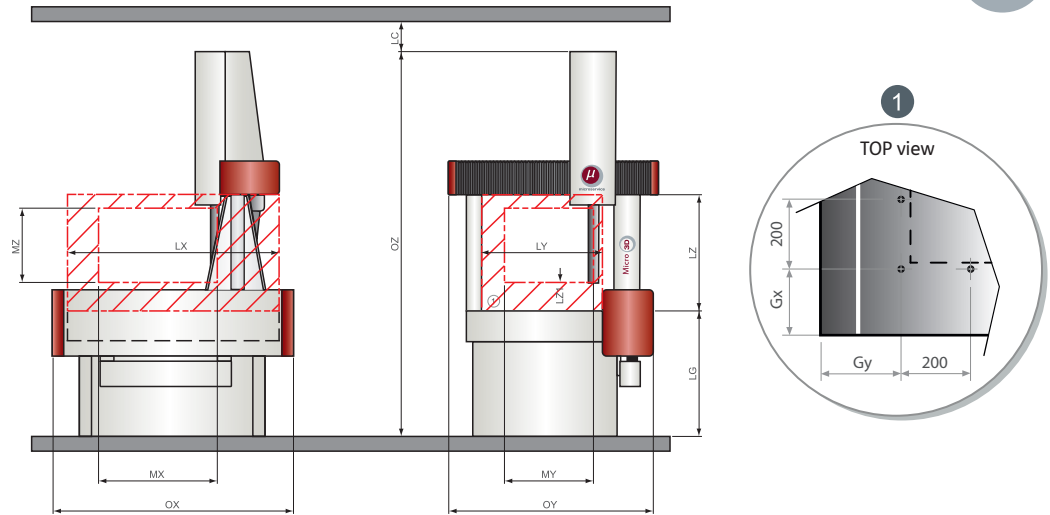
2) RONt test available on SP80 probe head, with Stylus Ø5 x 50 mm, 50 mm ring gauge, speed 5 mm/s, located in the middle of the measuring Volume.

3) For MPE(THP/THN) and MPT(T): sphere is placed in the middle of the measuring volume.

# OVERALL DIMENSIONS

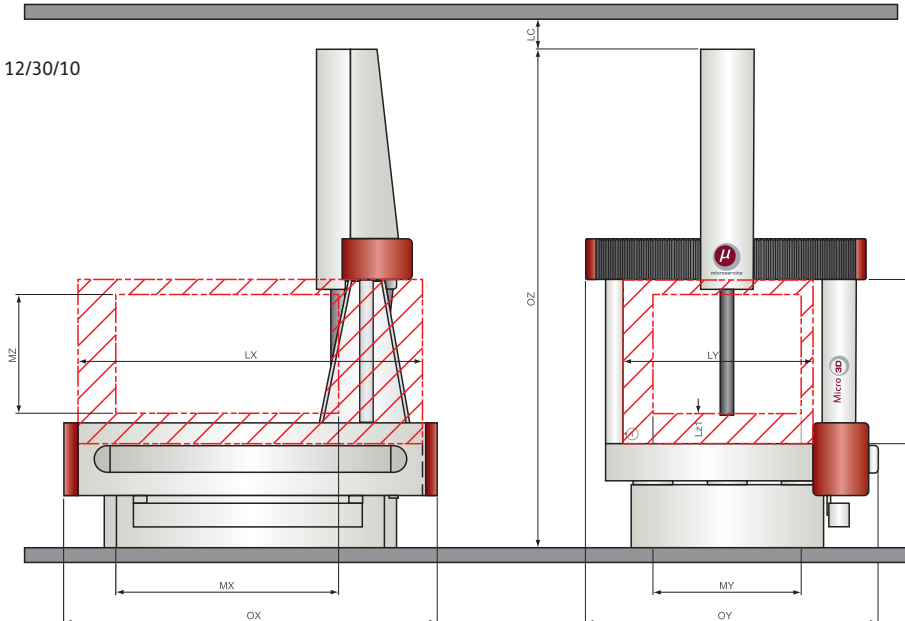


From 5/6/4 to 6/10/5

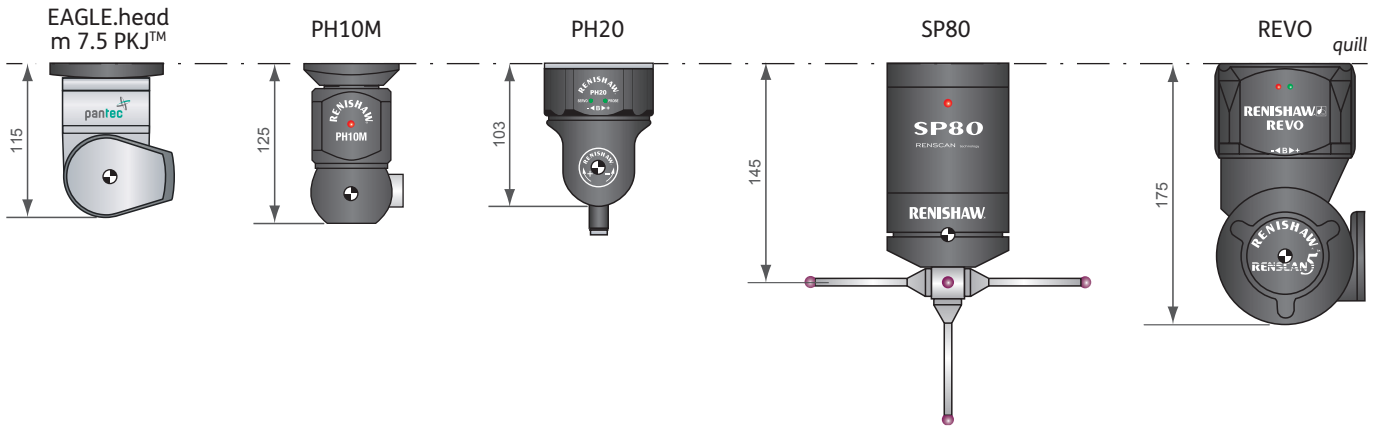


Sizes	Measuring Range <sup>2)</sup>			Overall Dimensions			Working Range				Table Height	Thd. Pattern Datum		Assy Clearance	CMM Weight	Workpiece Max. Weight <sup>3), 4)</sup>
	X Axis	Y Axis	Z Axis	Width	Length	Height	Width	Length	Height	Height		Gx	Gy			
mm																
	MX	MY	MZ	OX	OY	OZ	LX	LY	LZ	H	LG	Gx	Gy	LC	MW	WW
5 / 6 / 4	500	600	400	1285	1420	2535	720	1220	596	684	885	130	190	≥100	1125	500
6 / 8 / 5	600	800	500	1380	1620	2700	818	1420	696	784	850	230	190	≥100	1465	500
6 / 10 / 5	600	1000	500	1380	1820	2700	818	1620	696	784	850	230	190	≥100	1550	650
8 / 10 / 6	800	1000	600	1600	2030	2750	991	1770	796	884	700	222	190	≥100	2300	800
8 / 15 / 6	800	1500	600	1600	2530	2750	991	2270	796	884	700	222	235	≥100	2800	1200
10 / 10 / 8	1000	1000	800	1970	2020	3360	1280	1820	1039	1107	700	260	210	≥100	3050	1500
10 / 15 / 8	1000	1500	800	1970	2520	3360	1280	2320	1039	1107	700	260	260	≥100	3800	2000
10 / 20 / 8	1000	2000	800	1970	3020	3360	1280	2820	1039	1107	700	260	310	≥100	4400	2200
10 / 25 / 8	1000	2500	800	1970	3520	3360	1280	3320	1039	1107	700	260	310	≥100	4900	2200
10 / 30 / 8	1000	3000	800	1970	4020	3360	1277	3820	1042	1107	600	260	310	≥100	5550	2200
12 / 15 / 10	1200	1500	1000	2170	2520	3760	1480	2320	1239	1307	700	260	260	≥100	4200	2200
12 / 20 / 10	1200	2000	1000	2170	3020	3760	1480	2820	1239	1307	700	260	240	≥100	4900	2200
12 / 25 / 10	1200	2500	1000	2170	3520	3760	1480	3320	1239	1307	700	260	260	≥100	5690	2500
12 / 30 / 10	1200	3000	1000	2170	4020	3760	1477	3820	1242	1307	600	260	260	≥100	7250	2800

From 8/10/6 to 12/30/10



1) Given dimensions and weights are approximate values, subject to change, due to the continuous improvement of the product. Actual appearance of specific sizes may be different from above pictures.  
 2) Measuring range is given without probe, at the quill base. Please refer to specific probeheads / probe system to evaluate the actual range.  
 3) According to specified workpiece loading / CMM table risers configuration.  
 4) Heavy duty versions available upon request.



**TECHNICAL DATA**

<b>Mechanical frame</b>	X, Y, Z all in Granite
<b>Sliding system</b>	Air bearings for all axes
<b>Length measuring system</b>	Steel scale, 0,1 μm resolution
<b>Controller</b>	Pantec EAGLE™ series / Renishaw® UCC series
	Protection degree: IP40 (IP54 upon request)
	Cooling system: Fan
<b>Surface Plate (part locking)</b>	Granite, threaded inserts M8x1,25: flatness according to DIN 876/3
<b>Vibration damping system</b>	Passive with elastometer <sup>1)</sup>
<b>Options</b>	Automatic styli changer, Automatic multisensor temperature compensation for T2 (16 °C to 26 °C), on top rotary table, manual and automated part loading system, active pneumatic vibration damping. <sup>1)</sup> if requested, we will perform a vibration analysis.

**MAINS AND COMPRESSED AIR SUPPLY REQUIREMENTS**

<b>Mains</b>	115/230 V 10 % - 50 - 60 Hz; 1,N,PE	<b>5-6-4</b>	<b>6-x-5</b>	<b>8-x-6</b>	<b>10-x-8 / 12-x-10</b>	
<b>Power requirement</b>	1,5 kVA	<b>Pressure (MPa)</b>	≥ 0,6	≥ 0,6	≥ 0,6	≥ 0,7
<b>Power consumption</b>	0,6 kVA	<b>Consumption (Nl/min)</b>	≤ 40	≤ 60	≤ 90	≤ 120

**OPERATING CONDITIONS**

<b>Ambient Humidity</b>	40 % to 70 % UR (non condensing)
<b>Ambient temperature</b>	15 °C to 35 °C
<b>Mains Supply</b>	1/N/PE 115/230 V~ ± 10 %; 50 / 60 Hz (± 4 %) Max. power consumption 2,5 kVA
<b>Compressed air Supply</b>	min. 0,6 MPa, max. 1,0 MPa, pre-cleaned, Class 4 according to ISO 8573/1

**SAFETY REGULATIONS**

Micro 3D complies with EC machine directive 2006/42/EC and EMC directive 2004/108/EEC

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Specifications subject to change, due to the continuous improvement of the product.

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