TRIMOS

A-Line



Swiss
Measuring
Instruments

1.

PRESENTATION

Trimos A-line portable articulated measuring arms assure an extremely easy and accurate 3D measurement. The A-line arms certified according to ISO10360-2 or ISO10360-12 standard allow quality control, inspection, verification of small and large size parts. Thanks to an extremely stable carbon structure, all models are light and easy to operate. You can choose between the A3, A5, A6 and AT models according to your application.



- Measuring ranges from 1300 mm to 9000 mm
- Extremely easy to use
- Exist in 6 or 7 axis configurations
- Electromagnetic brake locking system
- Wireless with Bluetooth and battery
- Compatibility with Renishaw autojoint
- Certified to ISO 10360-2 or ISO 10360-12

Models and Measuring ranges

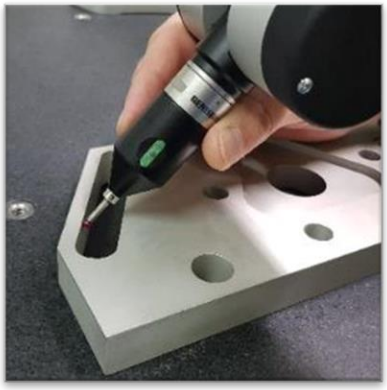


	1,3 m	1,8 m	1,8 m	2,5 m	3,2 m	4 m	5 m	7 m	9 m
	A3	A3							
		A5	A5	A5	A5	A5	A5	A5	A5
		A6	A6	A6	A6	A6	A6	A6	A6

Key Points



Strong and stable mechanical balancing system



Increase your measuring sensitivity with buttons on the probe



Electromagnetic brake for a safe resting position



2.

MEASURING ARM A3

The A3 is the standalone range of the Trimos A-line portable measuring arms. Its particularity is its small size enabling you to take it anywhere without any arrangement.

The 6-axis configuration arm is available at 1.3 m and 1.8 m measuring range. The carbon fiber tubes and aluminum mount base allow to the A3 arm an extremely stable and light structure. With its mass counterbalance an excellent handling experience is guaranteed.

- The most precise range
- Portability extreme
- No special arrangements required
- Autonomy due to the integrated wireless system
- Fixed or interchangeable probe
- Fixed counterweight for a perfectly stable and durable balance
- Buttons mounted on the probe for an improved measuring sensitivity



3.

MEASURING ARM A5

If you need to inspect a big and heavy part, don't move it, take the A5 arms on it and get your measurements done quickly with great flexibility.

The A5 models are the 6 axis arms configurations offering the largest range of the market, from 1.8 m to 9.0 m measuring range.
Its design is made to be adaptable in every environment and compatible with a huge variety of fixtures.

Its lateral mechanical spring loaded system provides a tireless balance of the arm while offering a comfortable handling exempted of any traction.

- Electromagnetic braking system for a safe resting position
- Mounting base in option
- Comfortable rotative handling
- Interchangeable connector by default
- Inexhaustible balance due to the lateral springs system







4.

MEASURING ARM A6

The A6 is the 7 axis arm used in combination with Laser Scanner ScanSurf for point cloud inspection or reverse-engineering.

Its design is the same as the A5 and offers the same measuring ranges.
However, the probe is a pistol handled with integrated buttons for a more comfortable scanning process.

- 7-axis arm
- Ergonomic pistol hand
- Interchangeable autojoint probe connection
- Probe and scan simoultaneously
- Ethernet connection



5.

SOFTWARE

Aberlink or PolyWorks Inspector softwares are used with the Trimos A-line arms. Aberlink can be used with your A3, A5 and A6 standard arms, Polyworks is used with the 7-axis arms for scanning applications.

ABERLINK
Innovative Metrology

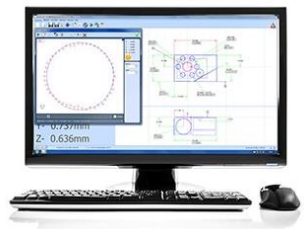
The philosophy for Aberlink is to make measurement easy. It is mostly used for the workshop.

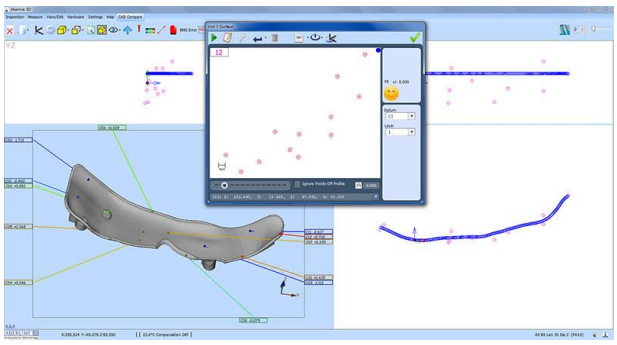
Designed around a graphical interface, Aberlink 3D can work in 2D or 3D, on manual or CNC CMMs and is equally at home when used with either touch, scanning or vision systems.

- Aberlink 3D
Industry standard 2D and 3D measurement software

- CAD Comparison
Aberlink 3D software module – compare points to CAD model

- CAD Programming
Aberlink 3D software module – generate programmes





PolyWorks Inspector

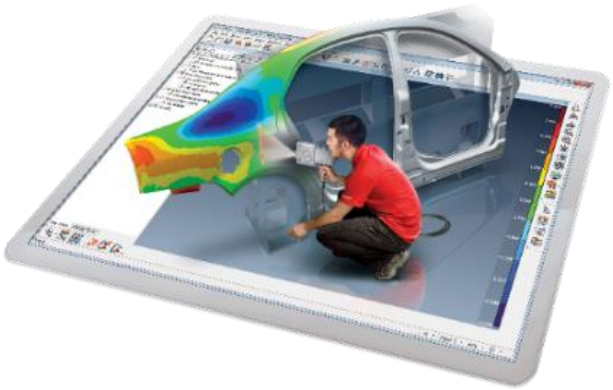
PolyWorksInspector™ is a universal 3D dimensional analysis and quality control software solution to control tool or part dimensions, diagnose and prevent manufacturing and assembly issues, guide assembly building through real-time measurements, and oversee the quality of assembled products by using portable metrology devices and CNC CMMs.

- Review inspection results efficiently
Control views
First-article inspection
Statistical Process Control

- Always get the alignment right
Surface and cross section best-fit
Measurement object best-fit
Multiple device position alignment

- Measure all required dimensions
Universal data handling
Deviation analysis using color maps
Feature-based dimensioning

- Automate quality control tasks
Multipiece data management
Play Inspection tool
Macro scripting



6.

SCANSURF SCANNER

The new Trimos ScanSurf is our latest solution for scanning measurements and reverse engineering. The perfect companion of your Trimos 7 axes A6 articulated arm.



Light & compact:
The ScanSurf scanner is optimized to be mounted on a Trimos Articulated Arm reducing at most the bulk and the weight on the holding axis. The result is an extremely powerful instrument in your hands and you just don't feel it!

Accurate
Thanks to new software solutions for the sensors calibration, the ScanSurf scanner is the most accurate solution for scanning measurements and reverse engineering.

Scanning quality
High performance scanning proven by our partners in data acquisition software, even under not optimal environmental conditions.

Always ready
With the ScanSurf Scanner there's no need to apply any change from probe to scanner and vice versa. In fact, the probe is mounted on an additional autojoint connector to be always ready for tactile measurements when needed.

Large selection
The scanner is available in RED or BLUE light, with sizes from 25 to 100 mm line length at middle range. A great selection to work on any surface and covers any kind of application.

- Compatibility with the A6 models
- Light and compact
- Additional autojoint connection
- Pointer laser
- Accurate
- Large selection of line width
- Compatibility with PolyWorks|Inspector™ & PolyWorks|Modelor™

ScanSurf		
Line length	mm	25 / 50 / 100
Connection		Autojoint
Connectivity		Ethernet
Measuring Arm compatibility		A6
Laser class		2M
Max. points acquisition rate	pt/s	384'000
Max. Points per line (PPL)		1280
Frequency	Hz	Up to 300
Resolution at mid range	µm	25 mm line: 20 µm / 50 mm line: 39 µm / 100 mm line: 78 µm
Weight	Kg	0,4

7.

TECHNICAL DATA

A3	Weight [Kg]	Measuring range [m]	Axes	Accuracy [mm]	
A3-1300	9,5	1,3	6	0,016*1	-
A3-1800	10,4	1,8	6	0,020*1	-

A5	Weight [Kg]	Measuring range [m]	Axes	Accuracy [mm]	
A5-1800	8,4	1,8	6	0,023*1	-
A5-2500	8,9	2,5	6	0,030*1	-
A5-3200	9,3	3,2	6	0,042*1	-
A5-4000	10	4,0	6	0,057*1	-
A5-5000	12,5	5,0	6	0,065*2	-
A5-7000	14	7,0	6	0,080*2	-
A5-9000	16,5	9,0	6	0,150*2	-

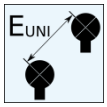
A6	Weight [Kg]	Measuring range [m]	Axes	Accuracy [mm]	
A6-1800	8,9	1,8	7	0,031*1	-
A6-2500	9,4	2,5	7	0,040*1	-
A6-3200	9,8	3,2	7	0,052*1	-
A6-4000	10,5	4,0	7	0,069*1	-
A6-5000	13,5	5,0	7	0,075*2	-
A6-7000	15	7,0	7	0,090*2	-
A6-9000	17,5	9,0	7	0,170*2	-

A6 & ScanSurf	Weight [Kg]	Measuring range [m]	Axes	Accuracy [mm]	Accuracy [mm] with scan ScanSurf		
					25*3	50*3	100 *3
A6-1800	8,9	1,8	7	0,031*1	0,037	0,066	0,104
A6-2500	9,4	2,5	7	0,040*1	0,043	0,069	0,106
A6-3200	9,8	3,2	7	0,052*1	0,052	0,075	0,110
A6-4000	10,5	4,0	7	0,069*1	0,062	0,082	0,115
A6-5000	13,5	5,0	7	0,075*2	0,079	0,096	0,125
A6-7000	15	7,0	7	0,090*2	0,094	0,108	0,135
A6-9000	17,5	9,0	7	0,170*2	0,180	0,180	0,197

*Values reported are expressed with 2 σ error. The values are indicative, for Blue and Red line models, and depend on surface quality and properties, surface diffusivity properties and ambient light conditions

A-Line Arm	
Operational Temperature	+5 ÷ +40 °C
Relative humidity	90% without condensation
Marks of conformity	CE
Power requirement	110 – 220 V / 50 – 60 Hz
Ingress protection	IP 54
Connectivity	Bluetooth & USB
Autonomy on batteries	> 8 h
Certification	ISO 10360-12 up to 3.2 m ISO 10360-2 above

*1 **E_{Uni}**: Maximum permissible longitudinal error of measurement, Unidirectional



*2 **MPE_p**: Maximum permissible Error, probing – ISO 10360-2

*3 Scanner model (line length)

8.

ACCESSORIES



Hard Probe

The mechanical probe is the standard touch probe, available with different sphere diameter. Points can be taken touching the part and pushing the button on board the probe body. The smallest usable probe diameter is 1mm to guarantee the point accuracy, the maximum length suggested is 100mm.



Floating Probe

It is a rigid mechanical probe suspended on a spring driven by an aluminum ring that triggers the probe with a simple touch. The integrated force control avoids to apply uncontrolled load on the part, improving accuracy and repeatability. The control ring is isolated from the probe stylus to avoid thermal impact from the hands of the user.



Touch Trigger Probe

The touch trigger probe acquires points applying the minimum force on the measured part. Is a very precise, quick and comfortable in use, acquires points only touching the surface, without triggering buttons.



Battery

Additional batteries are available to increase the autonomy of your arm with 8 hours. You gain flexibility, you will not have to care about moving your arm near a power supply.



Laser Fork

The laser fork is the perfect equipment for quick and accurate inspection of pipes without direct contact. Pipes from 2 mm to 180 mm of diameter can be measured with our 30, 50-, 80-, 150- and 200-mm forks.



Mobil Tripods

Stable and practical, it is the ideal accessory to move easily and quickly all A-line arms. Due to its heavy construction, it will be the ideal accessory to warranty the best stability and the best accuracy of your arm.



Portable Tripods

It will be your most flexible partner. If you need to change the building, put in on a table or climb some stairs, its light weight dedicates it to that.



Magnetic Base

This magnetic base will allow your arm to produce the highest quality precision. Only a minimum effort will need to install it with your machine.



Stylus

All M4 stylus can be mounted on the A-Line range with a min. ball Ø 0.5mm.



Laser Scanners

For a complex-profile contour scanning different Laser Scanners can be combined with our A6 7 axes arms.

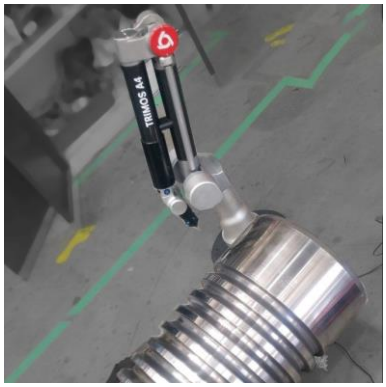
9.

APPLICATIONS



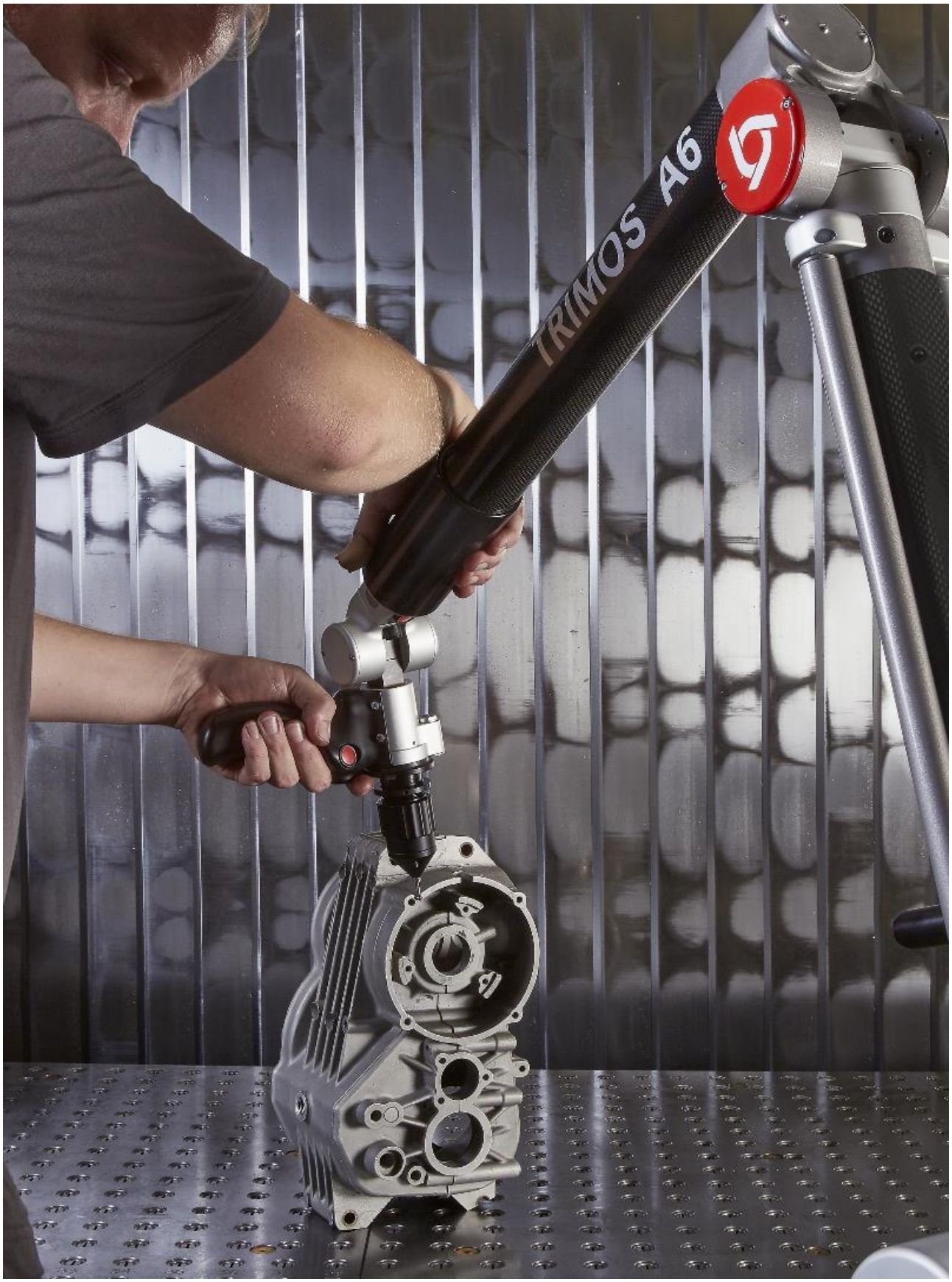










Trimos S.A.
Av.de Longemalle 5
CH-1020 Renens
T. +41 21 633 01 01
info@trimos.ch
www.trimos.com

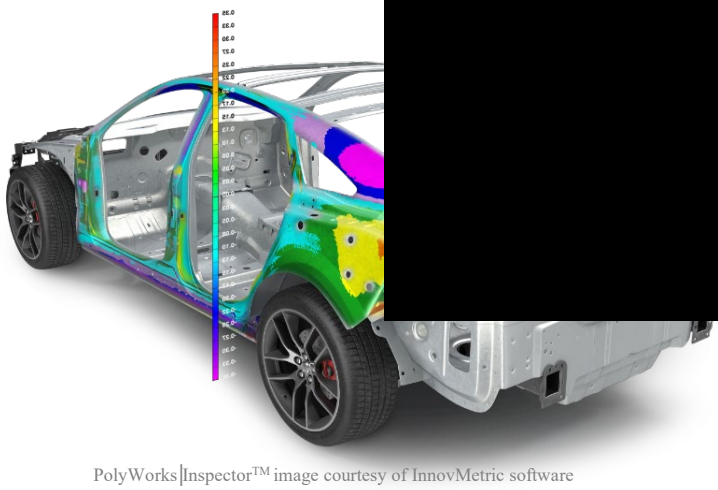
TRIMOS

ScanSurf80

3D Scanner Laser

The perfect price/performance compromise





PolyWorks|Inspector™ image courtesy of InnovMetric software

Swiss Measuring Instruments

1.

PRESENTATION

The Trimos ScanSurf80 laser scanner, the ultimate solution for scanning measurements and reverse engineering.

This high-performance laser scanner provides very high measurement resolution and stability at high speeds of up to 6 kHz, thanks to high-quality height 2048 points per profile and are characterized by high resistance to stray light.

Ergonomy
The ScanSurf scanner is optimized to be mounted on a Trimos Articulated Arm reducing at most the bulk and the weight on the holding axis. The laser scanner above the 6th axis makes the use of the tactile probe more comfortable.

Accurate
The ScanSurf80 offers an exceptional balance of price and accuracy, positioning his performance in the top choice in the entry-level market.

Always ready
With the ScanSurf Scanner there's no need to apply any change from probe to scanner and vice versa. In fact, the probe is mounted on an additional autojoint connector to be always ready for tactile measurements when needed.

Versatile selection
The scanner features BLUE light technology, with a line length covering up to 110 mm, making it suitable for any surface and a wide range of application.



- Compatibility with the 7 axis A6 model
- Shock and vibrations resistant
- Light and compact
- Renishaw Autojoint connector
- Pointer laser
- Ideal price / performance compromise
- Third party software compatible and easy integration

2.

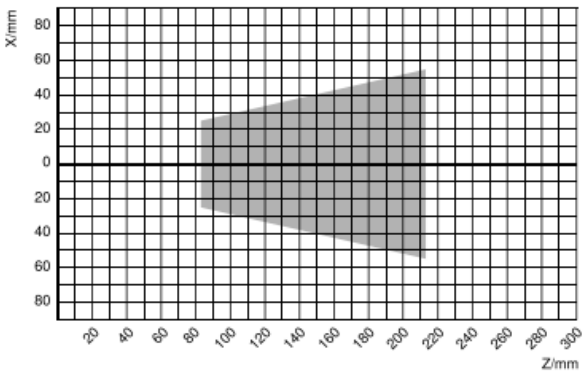
TECHNICAL SPECIFICATIONS

ScanSurf 80		
Measuring range X	mm	50…110
Working range Z	mm	83…213
Max. points acquisition rate	pt/s	350’000
Max. Points per line (PPL)		2048
Resolution in X	µm	26…55 (>2000 points)
Resolution in Z	µm	3.2…14
Linear accuracy	µm	32.5
Laser color		Blue (405 nm)
Connection interface		Renishaw Autojoint
A-Line Measuring Arm compatibility		A6
Communication		Ethernet TCP/IP
Laser class		2M
Ingress Protection		IP 67
Operational Temperature	°C	+0 ÷ +45
Stocking Temperature	°C	-20 ÷ +70
Operational Humidity	%	+5…+95 without condensation
Dimensions	mm	133 x 93 x 38
Weight	Kg	0.45
Software compatibility		PolyWorks|Inspector™ & PolyWorks|Modelor™
Power supply	VDC	18…30
CEM requirements		DIN EN 61000-6-2, 61000-6-4

ScanSurf80 scanning accuracy range

A6 arm measuring range		Accuracy	
1800	mm	0.045	mm
2500	mm	0.050	mm
3200	mm	0.058	mm
4000	mm	0.067	mm
5000	mm	0.083	mm
7000	mm	0.112	mm
9000	mm	0.180	mm

ScanSurf80 scanner laser measuring



Z = working distance
X = working range



Trimos S.A.
Av.de Longemalle 5
CH-1020 Renens
T. +41 21 633 01 01
info@trimos.ch
www.trimos.com

TRIMOS

Accessoires | Zubehör | Accessories

A-Line

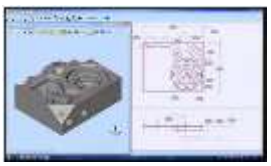
Bras de mesure
Measuring Arms
Messarme

Swiss Measuring Instruments

			A3-W	A3-AW	A5-AW	A6-AW
	**TA-MI-801** 279 940201 001	Stylet bille rubi Ø2 mm, tige acier, M4, L=19 mm Tastkugel Rubin Ø2 mm, Stahlschaft M4, L=19 mm Ruby ball Ø2 mm stylus, stainless steel stem, M4, L=19 mm	x	x	x	x
	**TA-MI-802** 279 940201 002	Stylet bille rubi Ø3 mm, tige acier, M4, L=18,5 mm Tastkugel Rubin Ø3 mm, Stahlschaft M4, L=18,5 mm Ruby ball Ø3 mm stylus, stainless steel stem, M4, L=18,5 mm	x	x	x	x
	**TA-MI-803** 279 940201 003	Stylet bille rubi Ø4 mm, tige acier, M4, L=18 mm Tastkugel Rubin Ø4 mm, Stahlschaft M4, L=18 mm Ruby ball Ø4 mm stylus, stainless steel stem, M4, L=18 mm	x	x	x	x
	**TA-MI-804** 279 940201 004	Stylet bille rubi Ø6 mm, tige acier, M4, =L17 mm Tastkugel Rubin Ø6 mm, Stahlschaft M4, L=17 mm Ruby ball Ø6 mm stylus, stainless steel stem, M4, L=17 mm	x	x	x	x
	**TA-MI-800** 279 940100 001	Stylet à pointe, M4 Spitzstift, M4 Pointed stylus, M4,	x	x	x	x
	**TA-MS-846** 275 940111 001	Palpeur Autojoint à déclenchement automatique Autojoint Messtaster mit Auslösung Autojoint touch-trigger probe		x	x	x
	**TA-MS-819** 275 940000 002	Palpeur Autojoint flottant à déclenchement mécano-électrique Mechanisch-elektrisch ausgelöster, schwebender Autojoint Taster Autojoint floating probe with mecano-electrical trigger		x	x	x
	**TA-MS-843** 709 02 803	Palpeur Autojoint à déclenchement mécanique Autojoint-Taster mit mechanischer Auslösung Autojoint probe with mechanical trigger		x	x	

			A3-W	A3-AW	A5-AW	A6-AW
	**TA-MS-845** 275 940110 005	Long palpeur Autojoint (110 mm) à déclenchement mécanique Langer Autojoint-Taster (110 mm) mit mechanischer Auslösung Long Autojoint probe (110 mm) with mechanical trigger		x	x	
	**TA-MS-844** 275 940110 004	Palpeur Autojoint sans bouton, pour 7 axes Autojoint-Messtaster ohne Taste, für 7 Achsen Autojoint probe w/o button, for 7 axis				x
	**TA-MG-820** 279 940901 001	Sphère étalon certifiée Ø20 mm pour l'étalonnage du palpeur Zertifizierte Ø20 mm Kalibrierkugel zur Kalibrierung des Messtasters Certified sphere Ø20 mm for probe calibration	x	x	x	x
	**TA-MG-862** 279 940901 005	Set de 3 sphères sur support magnétique pour fonction saut de grenouille (leap-frog) Set aus 3 Kugeln auf magnetischer Halterung für Froschsprungfunktion (leap-frog) Set of 3 spheres on magnetic support for leap-frog function	x	X	x	x
	**TA-TO-807** 709 60 005	TRIPOD roulant universel (TA-AD-803 inclus) Universal-Rollstativ TRIPOD (inkl. TA-AD-803) Universal Heavy-Duty rolling TRIPOD (TA-AD-803 included)			x	x
	**TA-TO-808** 709 60 006	TRIPOD portable pour volume de mesure ≤ 2.5 m (TA-AD-803 inclus) Tragbarer TRIPOD für Messvolumen ≤ 2.5 m (inkl. TA-AD-803) Portable TRIPOD for measuring volume ≤ 2.5 m (TA-AD-803 included)			x	x
	**TA-AD-803** 256 940000 001	Adaptateur pour TRIPOD universel TA-TO-807/808 Adapter für TRIPOD Universal für TA-TO-807 /808 Adapter for universal TRIPOD for TA-TO-/808			x	x
	**TA-TO-806** 279 940001 006	Set d'aimants pour A3 Magnetset für A3 A3 magnet set	x	x		

			A3-W	A3-AW	A5-AW	A6-AW
	**TA-TO-803** 279 940001 003	Base magnétique pour volume de mesure ≤ 3.2 m (3 x 700 N) Magnetische Basis für Messvolumen ≤ 3.2 m (3 x 700 N) Magnetic base for measuring volume ≤ 3.2 m (3 x 700 N)			x	x
	**TA-TO-805** 279 940001 005	Base magnétique pour volume de mesure > 4 m (3 x 1000 N) Magnetische Basis für Messvolumen > 4 m (3 x 1000 N) Magnetic base for measuring volume > 4 m (3 x 1000 N)			x	x
	**TA-AD-808** 709 02 805	Base magnétique à activation ON/OFF (140N/cm2) Magnetfuß mit Aktivierung ON/OFF (140 N/cm²) Magnetic base with activation ON/OFF (140N/cm2)			x	x
	**TA-EL-802** 716 50 504	Chargeur AC/DC pour A-Line (sans câble d'alimentation) Ladegerät AC/DC für A-Line (ohne Netzkabel) Charger AC/DC for A-Line (without power supply cable)	x	x	x	x
	**TA-EL-823** 716 70 002	Set de batteries rechargeable 18650 Li-ion Wiederaufladbares 18650 Li-Ion-Batterieset Set of rechargeable batteries 18650 Li-ion	x	x	x	x
	**TA-EL-821** 716 70 001	Set chargeur et batterie externe (+8h d'autonomie) Set aus Ladegerät und externem Akku (+8 Stunden Laufzeit) External charger & battery set (+8h autonomy)	x	x	x	x
	**TA-MS-857** 709 06 008	ScanSurf scanner BLEU, long. de ligne 80 mm ScanSurf Scanner BLAU, Linienlänge 80 mm ScanSurf scanner BLUE, line length 80 mm				x

			A3-W	A3-AW	A5-AW	A6-AW
	**TA-DU-802** 616 40 028	PC portable (clavier US) Tragbarer PC (mit Tastatur US) Laptop (US keyboard)	x	x	x	
	**TA-DU-803** 716 40 040	PC portable Hautes Performances (HP ZBook Fury) Hochleistungs-Laptop (HP ZBook Fury) High Peroformance Laptop (HP ZBook Fury)				x
	**TA-SW-815** 716 12 001	Logiciel Aberlink 3D, module de base pour 3D manuelle Aberlink 3D-Software, Basismodul für manuelles 3D Software Aberlink 3D, standard module for 3D manual	x	x	x	x
	**TA-SW-816** 716 12 003	Aberlink 3D, module de comparaison CAD Aberlink 3D, CAD-Modul zum Vergleichen Aberlink 3D, CAD comparison module	x	x	x	x
	TA-SW-817 716 12 004	Aberlink 3D, licence offline du module de comparaison CAD Aberlink 3D, Offline-Lizenz für das CAD-Vergleichsmodul Aberlink 3D, offline license for CAD comparison module	x	x	x	x
	**TA-SW-827** 716 12 005	Aberlink 3D, module programmation CAD (inclus TA-SW-828) Aberlink 3D, CAD-Programmiermodul (inkl. TA-SW-828) Aberlink 3D, CAD programming module (TA-SW-828 included)	x	x	x	x
	TA-SW-828 716 12 006	Aberlink 3D, licence offline du module de programmation CAD Aberlink 3D, Offline-Lizenz für das CAD-Programmiermodul Aberlink 3D, offline license for CAD programming module	x	x	x	x
	TA-SW-823 716 11 001	Polyworks Inspector Std, pour CMM manuelle avec scanner Polyworks Inspector Std, für manuelles CMM mit Scanner Polyworks Inspector Std, for CMM manual with scanner	x	x	x	x
	TA-SW-832 716 11 003	Polyworks Inspector Probing (Licence pour 3D manuelle) Polyworks Inspector Probing (Lizenz für manuelles 3D) Polyworks Inspector Probing (License for 3D manual)	x	x	x	

TRIMOS SA
Av. de Longemalle 5
CH-1020 Renens
T. +41 2163301 01
www.trimos.com