



SUSS MicroTec Lithography GmbH SchleissheimerStr.90 85748 Garching GERMANY

UAB Labostera

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Garching, 08.05.2019

Quotation No. 094985vqrev2

Mask Aligner MA/BA6 Gen4

Dear Mr. Aikevicius

Thank you very much for your interest in our products. We take pleasure in submitting our quotation for

Mask Aligner – MA/BA6 Gen4

and we are looking forward to discuss further details with you.

SUSS MicroTec as leading edge supplier of wafer processing equipment for R&D as well as volume production ensures to provide state-of-the-art solutions to your individual requirements, which enables you to stay competitive in terms of technology.

Please do not hesitate to contact us for any additional information.

Best regards

A handwritten signature in blue ink that reads "V. Quet".

Virginie Quet

Director Sales EMEA

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IBAN: DE04700700100413103300, Swift/BIC: DEUTDEMM



Mask Aligner – MA/BA6 Gen4 (according to tender specification)

POS.	QTY.	PART #	DESCRIPTION
Base system			
1	1	100080604	<p>SUSS MA/BA6 Gen4 MASK AND BOND ALIGNER</p> <p><i>basic system incl. housing equipped with motorized alignment stage with</i></p> <ul style="list-style-type: none"> + automatic wedge compensation system in contact or without contact between mask and wafer (with reference balls), alignment gap programmable from 1 to 1000 micron, resolution 1 micron + movement range mask aligner mode: X +/-5.0mm, Y +/-5.0mm, Theta +/-5° + movement range bond aligner mode: X +/-3.0mm, Y +/-3.0mm, Theta +/-3° + reset movement to ZERO position after each exposure <p><i>basic equipment consisting of:</i></p> <ul style="list-style-type: none"> + machine base frame with mechanical-, pneumatic- and electrical equipment 230V-50/60Hz + one joystick X/Y- and THETA for alignment stage control + Protection of mask and wafer when in contact by locking the motors to prevent stage movement + TSA/BSA face-to-face microscope stage with motorized X-Y-manipulator + manual loading and unloading of wafer, single substrates or substrate stack + PLC control with LCD display, WINDOWS GUI + for wafer 1" up to 150 mm diameter and substrates 2"x2" up to 6"x6" for lithography application + for wafer 3" up to 150 mm diameter for bond application + machine base frame made of aluminum profile + operator manual on CD + Safety labelling in English + prepared for BSA microscopes + including adaption kit for Constant Dose exposure mode <p><i>among other things to be ordered separately:</i></p> <ul style="list-style-type: none"> + TSA, BSA or IR microscope systems + exposure unit, -lamp, and - optics + adapter system for mask holders + mask holders and exposure chucks + bond adapter frame + transport fixtures and bond align chucks + other accessories are available
2	1	100076129	TOUCH SCREEN MONITOR 22 INCH MA/BA GEN4
3	1	100004202	<p>IPC-TOUCHPEN</p> <ul style="list-style-type: none"> + Touch-Pen with telephone cord style connection to the click fix mounting + For precise and easy operation of resistive touch panels

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POS.	QTY.	PART #	DESCRIPTION
4	1	100088874	CONSTANT DOSE OPTION MA/BA Gen4
5	1	100075896	ADAPTER SYSTEM FOR MASKHOLDER MABA6
6	1	100076243	MA/BA Gen4 CASSETTE TRAY + Mask-holder station
7	1	100073969	MA/BA Gen4 VIBRATION ISOLATION AND DAMPING SYSTEM + Antivibration machine base frame / grey + Dimension: 894mm x 1056mm + Four wheels + Pneumatic vibration isolation and automatic height control + Vertical frequency of resonance: smaller than 2Hz at rated load + Horizontal frequency of resonance: smaller than 1,8Hz at rated load + Improved horizontal damping + Vertical adjustment stands + Suitable for cleanroom class 100
8	1	100080887	OPERATOR'S MANUAL MA/BA6 GEN4 FOR CLEANROOM + Additional operator's manual in English on cleanroom paper

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POS.	QTY.	PART #	DESCRIPTION
Alignment system			
9	1	100075288	ALIGNMENT SYSTEM TSA/BSA MA/BA Gen4 face-to-face alignment system for mounting of TSA and/or BSA microscopes
10	1	100074228	MICROSCOPE SET TSA-D TL100/LL MA/BA Gen4 WITH OBJECTIVE SLIDER + TSA-D including adaptor for optical fibre, cube for mounting of objective + 2x digital camera incl. Optical fibre, White LED light source with yellow filter, power supply and cables + for Lithography applications only + Objectives separation; 33-150mm (with 7,2x off-set objectives)
11	2	G145984	SINGLE OBJECTIVE UMPL FL 5X/0.15 + Working distance 20mm
12	1	G112796	OFFSET OBJECTIVE 7.2X/0.15 WITH AN OFFSET OF 10MM + Minimum separation is 12mm + Working distance 19.6mm Caution: Movement only in the area of the mask holder opening due to low working distance
13	1	100072334	MICROSCOPE SET BSA MA/BA Gen4 + TSA-D including adaptor for optical fibre, cube for mounting of objective + 2x digital camera incl. Optical fibre, White LED light source with yellow filter, power supply and cables + for Lithography applications only + Objectives separation; same as TSA microscope + Objectives separation; 15mm (When TSA microscope position is at Parking position)
14	1	100076066	MICROSCOPE RAIL BSA MA/BA Gen4 + Rail to be equipped with BSA microscope + for standard applications up to 150mm substrate size
15	1	100085859	AUTO ALIGNMENT MA/BA GEN4 + incl. Auto Alignment with VisionPro

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POS.	QTY.	PART #	DESCRIPTION
Exposure system			
16	1	100080880	EXPOSURE UNIT LED LH UV400 MA/BA GEN4 + MO Exposure Optics mandatory + Lamp house with LED arrays of I-line, G-H-line + Mirror house + Power consumption 450W
17	1	100080885	MO Exposure Optics UV400/LS/W-150 LED LH MA/BA Gen4 + Condenser Lens + Front lens, dia. 180mm + For maximum exposure area 150mm diameter + Surface mirror + MO Integrator #1 and #2 for highest uniformity and source decoupling + Fourier lens + Set of illumination aperture plates to define the illumination angular spectrum + Internal light sensor for Constant Dose-mode

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POS.	QTY.	PART #	DESCRIPTION
Tooling kit for W-2" + W-3" + W-100mm			
18	1	G107191	MASK HOLDER MA6/BA6/BL/PROX/CONT/M-5-6/W-100 + Bottom loading + Contact/proximity wedge-error-compensation + For masks from 5"x5" to 6"x6" + Exposure opening for wafers dia. 100mm + With displaceable stop pins + With displaceable additional mechanical clamping
19	1	G107190	MASK HOLDER MA6/BA6/BL/PROX/CONT/M-3,5-5/W-3 + Bottom loading + Contact/proximity wedge-error-compensation + For masks from 3,5"x3,5" to 5"x5" + Exposure opening for wafers dia 2" - 3" + With displaceable stop pins + With displaceable additional mechanical clamping
20	1	100059267	CHUCK MA6/BA6/VAC/BSA/GLASS/W-2/W-3/W-100/GL-WEC/3VA/SPEC + For wafer 2", 3", 100mm diameter + 3way vacuum areas + For proximity exposure, and Soft-, Hard-, Vacuum-contact exposure NOTE: <i>Vacuum-contact for W-2" and W-3" wafer might be not perfect (because of combination chuck).</i> <i>If vacuum pressure is too high, Mask might be down to chuck side...</i> <i>Then please use soft vacuum function and reduce the chamber pressure! Vacuum chamber lip is out of W-100m, so mask size must be 5x5" for using vacuum contact mode for all wafer sizes!!</i> + For spacer WEC in combination with Mask holder with proximity spacer + With glass insert for large bottom side viewing range (for BSA) + With pre-alignment hair line
21	1	G115069	EXPOSURE TEST DIAL 100MM

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POS.	QTY.	PART #	DESCRIPTION
Tooling kit for 3x3mm, 10x10mm, 20x20,, 30x30mm			
22	1	999993	P MASK HOLDER MA6/BA6/BL/CONT/M-4-5/S-30MM/SHIFT SPEC + Bottom loading + Contact wedge-error-compensation (no proximity flags!) + For masks from 4x4" to 5x5" + Exposure opening for substrates 20x20mm + With displaceable stop pins (TBD - depends on the design!) + With displaceable additional mechanical clamping (TBD /Depends on the design!) + Mask shift SPEC NOTE: <i>Shift amount is depending on the mask size and patterning size and patterning location.</i> <i>Design must be defined prior to PO!</i>
23	1	999992	P CHUCK MA6/BA6/VAC/BSA/GLASS/S-3-10-20-30mm/3VA/SPEC + For substrate size 3x3mm, 10x10mm, 20x20mm, 30x30mm + For Soft - and Vacuum contact exposures + For Proximity WEC with proper mask-holder + With glass insert for large bottom side viewing range (for BSA) + With 4mm of Opaque area (+/-2mm from center) + 3way vacuum areas + With hair-line grooves for pre-alignment NOTE: <i>In BSA mode, if the target separation is smaller than BSA objective separation (15mm), a mask-loading chuck with proper mask size is required for Single BSA!</i> <i>Development time of Single BSA function is not clarified!!</i>

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POS.	QTY.	PART #	DESCRIPTION
External UV intensity measurement system			
24	1	G207355	SUSS UV OPTOMETER CASE CPL. + For intensity and intensity uniformity calculation + Dose measurement functionality + To be ordered with SUSS OPTOMETER probe (365/405nm: G187080) + Storage case for measurement system and probes
25	1	G187080	SUSS UV LIGHT MEASURING PROBE 365/405NM for UV OPTOMETER + Combined 2 channel probe 365/405nm + Improved measurement accuracy and repeatability + Improved shock resistance + only in combination with SUSS UV OPTOMETER (G207355)
26	1	100059248	UV EYE PROTECTION GLASSES
27	1	G300409	POSITION DIAL FOR LIGHT SENSOR [MA6-8GEN3-4]
5x5" Test mask (for Resolution test and Alignment test)			
28	1	100007694	SUSS AL/RES TEST MASK / 5X5X0.090 INCH / QUARTZ / CD 0.5 + Photo mask for alignment and resolution tests + Mask format 5inch x 5inch x 0.090inch + Mask writer: E-beam + Quartz glass, high UV transmission, suited for UV250, UV300 and UV400 optics + Minimum CD: 0.5 µm, CD tolerance: 0.05µm + Line / space resolution test patterns with CD's ranging from 2 to 100µm + Resolution test patterns with circles and squares ranging from 2 to 100µm + Line / space and staggered square resolution patterns for easy cleaving + Flat alignment marks and scales for analyzing first print accuracy + Various other test patterns including dose control forks, proximity daggers, Siemens star, etc. + Standard alignment crosses for double exposure tests + Verniers for easy overlay analysis + Special DirectAlign test patterns + Bar code (Code39)

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POS.	QTY.	PART #	DESCRIPTION
Training credits			
29	6	TCL-0019	TRAINING CREDIT MA/BA Gen4 + training on SUSS equipment in SMT-L in Garching + This 6credits valid for 3days /2persons + Main purpose is for maintenance training (Basic operation training is included in installation cost) + validity 18 months after FAT (We recommend to do this training with PAT)
Installation cost			
30	1	G204012	DOUBLE LAYER CLEANROOM PACKING + Machine and parts cleaned under clean room conditions + First layer applied in clean room
31	1	INST-EU-MABA GEN4	INSTALLATION MA/BA GEN4 / EU + Installation area needs to be prepared by customer according to facility specification. + Supervision of machine unwrapping and roll-in to cleanroom + Optional: Hook-up to facilities at customer site + Final adjustment and check of all machine parts and functions + Includes standard final acceptance test at customer site (FAT) + Includes all travels expenses + Includes basic introduction into operation of machine (Level 1, 1/2 day) + Extend tests including application support has to be purchased separately
		Lithuania	Country of installation

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Further available Options (not specified in Tender)

POS.	QTY.	PART #	DESCRIPTION	Item Price
Mask-holder for W-2"				
<i>(For using spacer WEC)</i>				
32	1	G191109	MASK HOLDER MA6/BA6/BL/PROX/CONT/M-2.5-5/W-2	

Vacuum pump

33 1

- + Bottom loading
- + Contact/proximity wedge-error-compensation
- + For masks from 4"x4" and 5x5"
- + Exposure opening for wafers dia. 2"
- + With displaceable stop pins
- + With displaceable additional mechanical clamping

G206200 VACUUM PUMP (DOUBLE MEMBRANE) 220V/50HZ CPL

- + pump to assist insufficient vacuum supply from facilities

Further options or different configuration is available upon request.

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Terms and Conditions:

Payment Terms	<ul style="list-style-type: none">40% of purchase price upon presentation of order acknowledgement by SMTL, immediately net50% of purchase price upon delivery, but latest 30 days after scheduled acceptance of the equipment at the manufacturer's facilities, against simple receipt, in case shipment cannot be performed due to reasons not caused by SMTL, 30 days net after date of invoice10% of purchase price upon final acceptance (FAT), but latest 90 days after scheduled acceptance of the equipment at the manufacturer's facilities, against simple receipt, if the delay is not caused by SMTL, 30 days net after date of invoice <p>Unless otherwise specifically agreed, prices are quoted in EUR. All prices are net amounts. All applicable taxes, in particular VAT, applicable customs duty, duties and charges of any kind as well as carriage and packing will be added.</p>
Delivery Terms	<p>FCA production site (Free Carrier, Incoterms 2010)</p> <p>Should the shipment of the Product be delayed due to reasons for which SUSS is not responsible, the risk will pass to Customer upon receipt of the notice that the Product is ready for shipment.</p>
Delivery Time	<p>approx. 18 weeks after receipt of purchase order by SMTL, confirmed with Order Acknowledgment</p> <p>Delivery time for installation: tbd</p>
Installation	<p>Please note that delivery time for installation is not covered by "Delivery Time". This delivery information is only valid for upgrades and machines.</p> <p>For installation, SUSS will contact you separately to agree on a specific date.</p>
Acceptance	<p>Acceptance shall be deemed to have taken place 90 days after delivery if the Customer cannot confirm the acceptance within 90 days delivery according to the contractual procedures due to reasons for which SUSS cannot be held responsible.</p>
Export License	<p>Order acceptance by SMTL is subject to receipt of an export license from the German Federal Export Office. SMTL cannot be held responsible for late shipment caused by delays by the German authorities in issuing an export licence or if customer does not provide an acceptable end-user certificate with order. Late delivery penalties will not apply in these cases.</p>
Retention Of Title	<p>SUSS retains full title and ownership to all Products supplied until Customer has paid the full purchase price for all Products supplied under this Contract.</p>
Warranty	<p>12 months after installation</p> <p>If the installation is delayed by the customer by more than 60 days from the date of dispatch then the warranty period will be calculated from the end of the 60 day period. Customer assistance is requested in fitting components when practical.</p>
Liability	<p>In case of liability from simple negligence, independently from the legal ground, liability shall be restricted to damage which is foreseeable or typical for SMTL. This liability shall be restricted to a total maximum amount of 100% of the respective order value.</p>
General T&Cs	<p>General T&Cs (AGB) of the SMTL</p> <p>If they are not attached, please contact your account manager. Agreements deviating from these General Terms, in particular but not exclusively the agreements in reference to general terms of the customer, will only become valid upon written and explicit acknowledgement by SUSS MicroTec. (www.suss.com/en/terms)</p>
Other regulations	<p>If disputes cannot be solved in a friendly manner, then the place of jurisdiction shall be Munich, Germany.</p> <p>This Agreement shall be governed by German law to the exclusion of all procedural and substantive rules of law that refer to a different legal system. The UN Convention on Contracts for the International Sale of Goods is not applicable</p>
Validity of Quotation	<p>90 days from above stated date. Quotation is subject to change without notice.</p>

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Unsecured Sender

Please note that the consignment will be handed over to the forwarder as UNSECURED shipment. SUSS MicroTec Lithography GmbH is not certified known sender. The information about packing details before loading, in particular the amount of packing items, weight and dimension and estimated freight costs, is non-binding. SUSS MicroTec Lithography GmbH is not liable for any exceeding costs due to changes to packing details.

Additional services:

SUSS offers various kinds of maintenance and service contracts. For details about the scale of benefits and prices please contact your account manager.

If you require any further information, please do not hesitate to contact us at any time.

We are convinced to offer herewith a most competitive solution for your requirements and look forward to enter into a fruitful cooperation.

Best regards
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