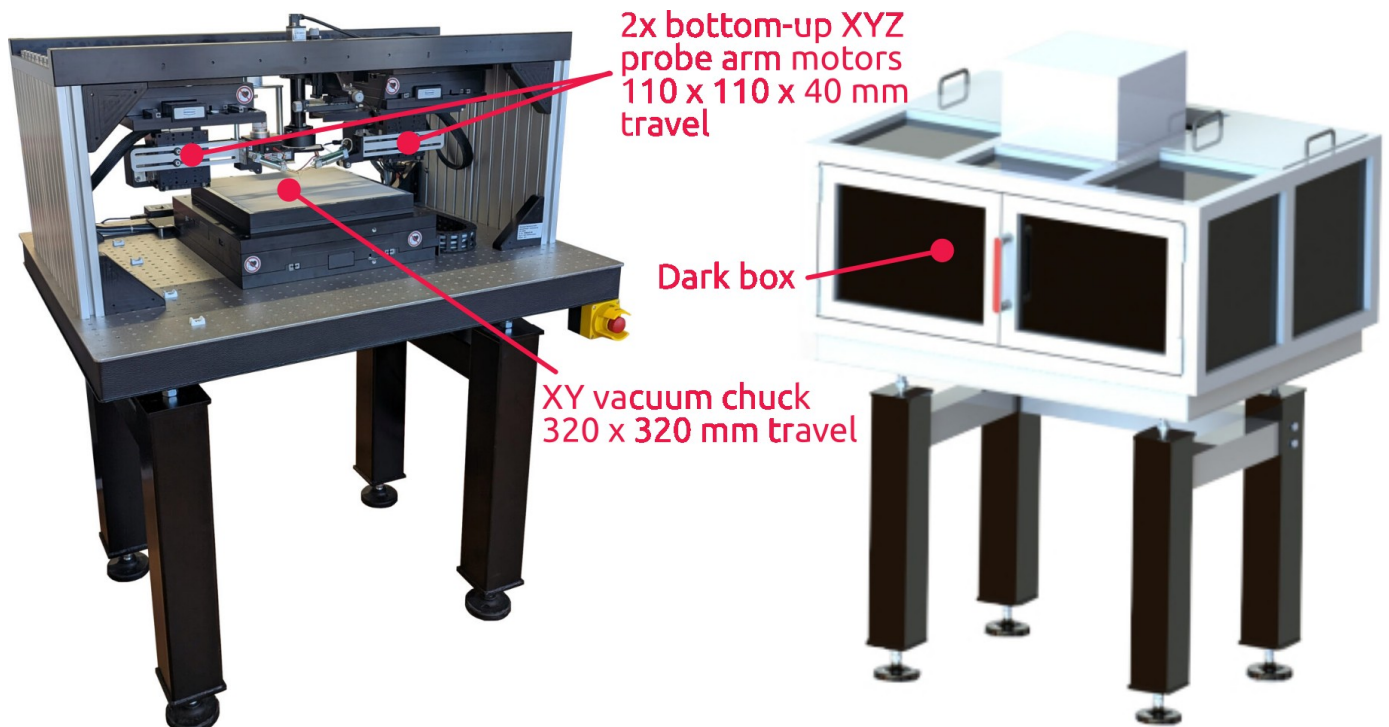


320 mm Automated Test System **ATS-8300G**

Advanced TLP/HMM/HBM Solutions



 YouTube <https://youtu.be/E0FdOpEva1E>

Direct Video Download to Avoid YouTube: <https://www.hppi.de/files/ATS8300G.mp4>

1 Features

- 320 mm fully automated probe station for HBM, TLP, VF-TLP, HMM and CC-TLP on package-, system (PCB) and wafer-level
- 2x bottom-up XYZ probe arm motors (left and right side), 110 mm x 110 mm x 40 mm travel, absolute encoders
- XY microporous vacuum chuck, 320 mm x 320 mm travel, absolute encoders
- flexible pitch 2-pin or fixed pitch 4-pin (Kelvin-type) probe arms
- 4x ultra-fast, simultaneous needle force touch-down sensors with millinewton-level force precision (2x on the left probe arm, 2x on the right probe arm)
- automatic probearm and needle crash avoidance system
- moving target camera
- dark box
- safety shut-down
- compact size: 1 m (width) x 0.9 m (depth) x 1.5 m (height)
- 200 kg weight
- automation software remote control including:
 - probe needle force sensing including probe arm collision avoidance
 - physical alignments (3D, multi-device)
 - automatic BGA/QFP/DIL/etc pin map generator
 - test definition and setup (e.g. ANSI/ESDA/JEDEC JS-001 table 2A, 2B)
 - real time task view
 - moving camera setup
 - probe setup
 - motion controller, pulse generator control, SMU(s) setup and operation
 - measurement data analysis and storage

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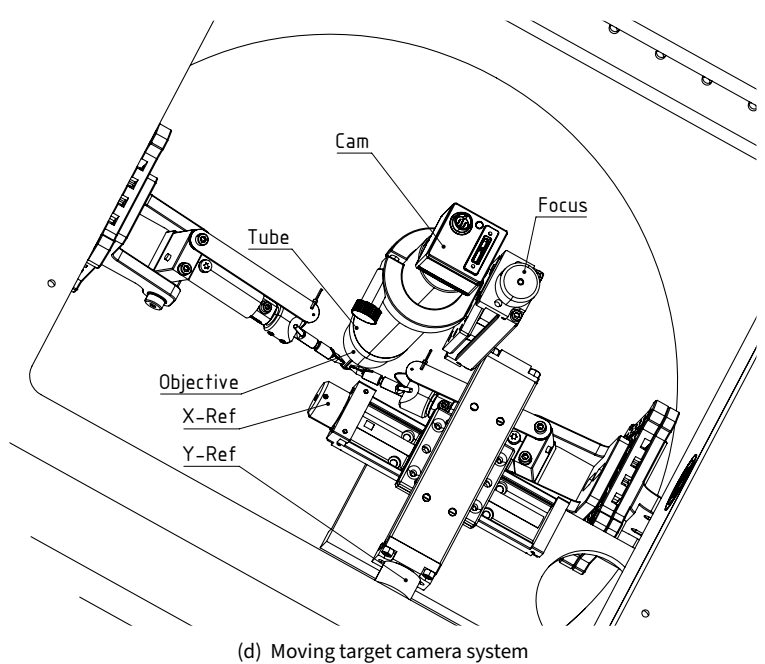
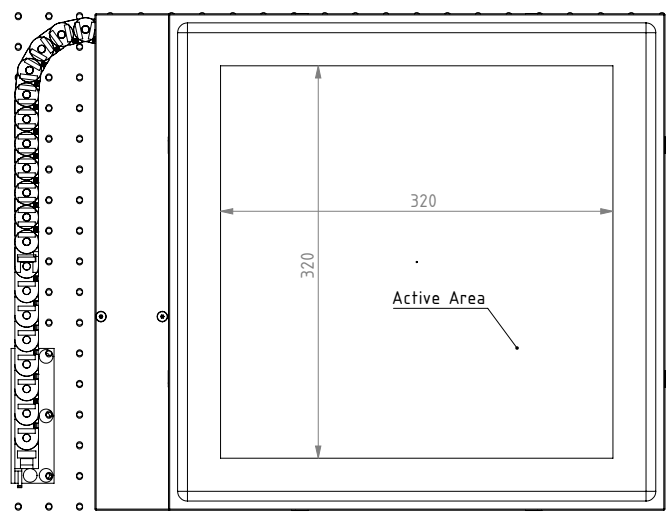
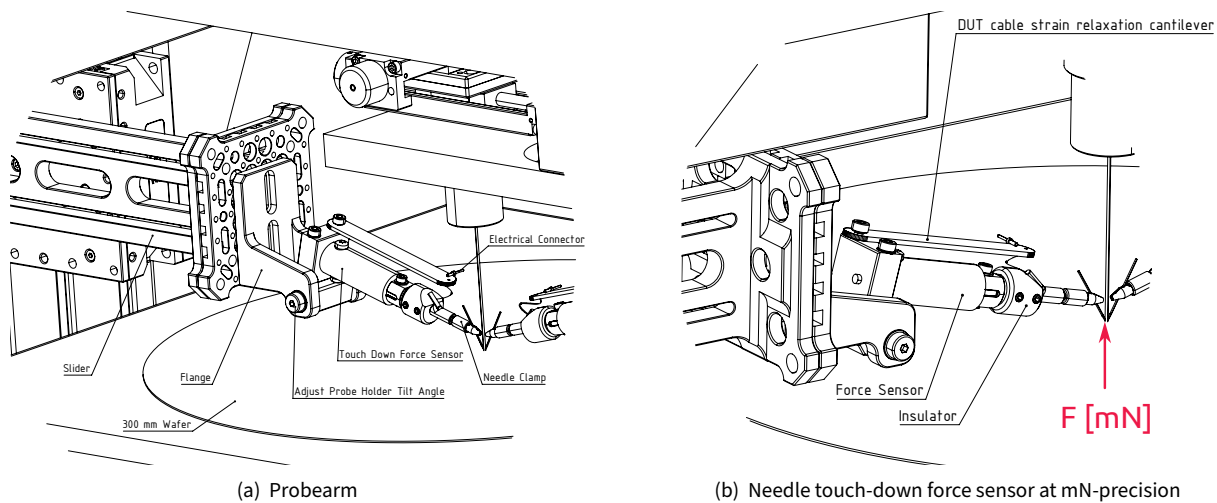


Figure 1: Features

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2 System Specifications

Parameter	Value	Unit	Remarks
XY Microporous Vacuum Chuck			
XY-Travel	320	mm	between hard stops
Active vacuum area	320 x 320	mm ²	microporous active suction area
Repeatability unidirectional	±0.3	µm	
Repeatability bidirectional	±0.4	µm	
Accuracy	±3.3	µm	
Flatness	±9.6	µm	
Straightness	±4.8	µm	
Positioning speed	100	mm s ⁻¹	
Max. acceleration	2	mm s ⁻²	
Max. load F_x	15	N	
Max. load F_y	15	N	
Max. load F_z	100	N	
Two XY Bottom Up Stages (Left and Right Side)			
XY-Travel	110	mm	between hard stops
Repeatability unidirectional	±0.3	µm	
Repeatability bidirectional	±0.4	µm	
Accuracy	±2	µm	
Flatness	±2.2	µm	
Straightness	±1.7	µm	
Positioning speed	200	mm s ⁻¹	
Max. acceleration	4	mm s ⁻²	
Max. load F_x	15	N	
Max. load F_y	15	N	
Max. load F_z	50	N	
Max. torque M_x	2.6	N m	
Max. torque M_y	2.6	N m	
Max. torque M_z	2.4	N m	
Pitch	±100	µrad	
Yaw	±50	µrad	
Weight	12	kg	
Motor	Ironless dynamic linear motor		
Feedback	Linear scale, absolute encoder		
Two Z Bottom Up Stages (Left and Right Side)			
Z-Travel	40	mm	between hard stops
Repeatability unidirectional	±1.5	µm	
Repeatability bidirectional	±3.5	µm	
Accuracy	±4.8	µm	
Flatness	±2	µm	
Straightness	±1.4	µm	
Positioning speed	±1.1	mm s ⁻¹	
Max. acceleration	0.02	mm s ⁻²	
Max. load F	30	N	
Feedback	Absolute encoder		
4x Z Touch-Down Needle Force Sensors (2x Left and 2x Right Side)			
Resolution	0.3	mN	
Relative accuracy	1	mN	after touch-down reference setting
Minimum readout force	-617	mN	equivalent to probe arm weight
Maximum readout force	394	mN	touch-down overdrive
Maximum overload force	5	N	mechanical overload protection
Force sampling interval	1	ms	depending on software readout

Table continued on next page ...

320 mm Automated Test System **ATS-8300G**

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... Table continued from previous page

Parameter	Value	Unit	Remarks
Moving Target Video Camera System			
Resolution	18.1	MPix	UI-3590CP-C-HQ Rev.2 (AB00606)
Frame rate	21	fps	
Sensor resolution	4912 x 3684	Pixel	
Sensor area	6.140 x 4.605	mm ²	
Field of view	6.140 x 4.605	mm ²	Mitutoyo Tube Lense CDF 1X
Working distance	73.7	mm	Mitutoyo Tube Lense CDF 1X
Field of view	2.0467 x 1.5350	mm ²	Mitutoyo Tube Lense CDF 3X
Working distance	77.8	mm	Mitutoyo Tube Lense CDF 3X
ATS-8300G Platform			
AC line voltage range	100 - 240	V	47 Hz to 63 Hz
Power supply rating	840	W	max.
Dark box	1		front access (load), top access (cam)
Size	1056 mm x 872 mm x 1476 mm		W x D x H
Weight	200	kg	max.

Table 1: ATS-8300G system specifications

3 Dimensions

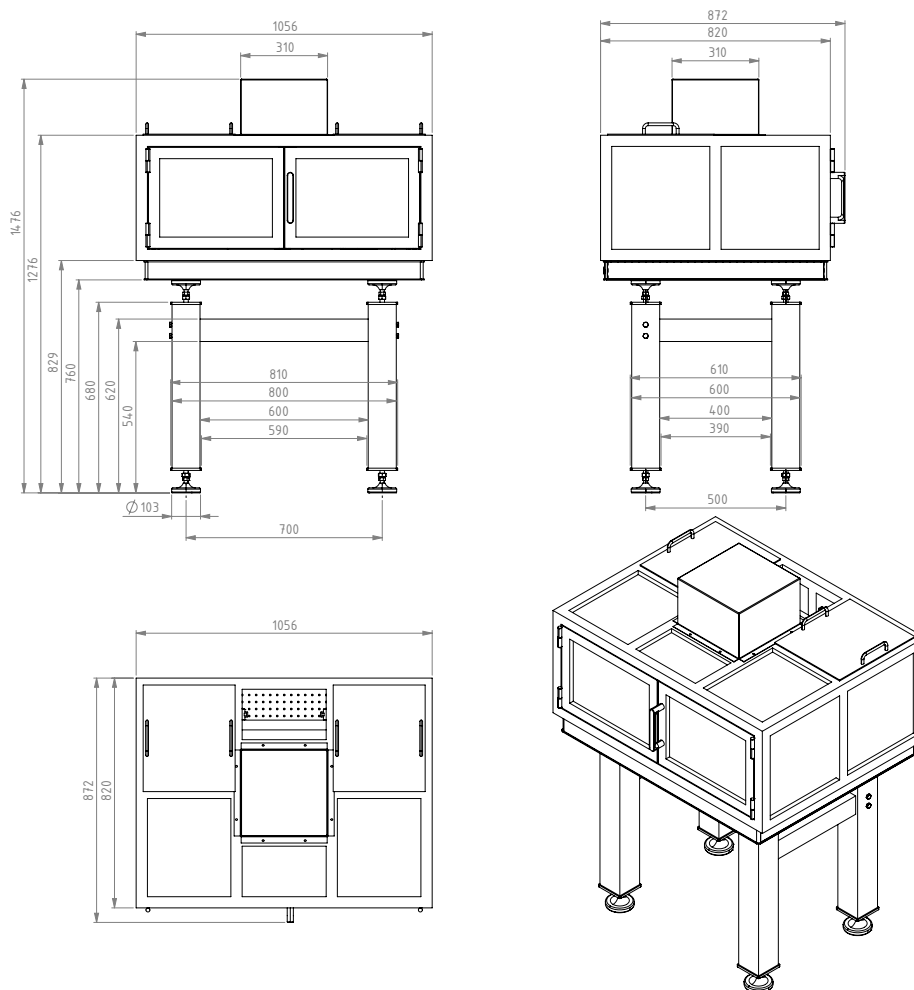


Figure 2: Dimensions in [mm], including dark box

320 mm Automated Test System **ATS-8300G**

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4 Ordering Information

Pos.	Description	Part No.
01	320 mm Automated Test System: <ul style="list-style-type: none"> • 320 mm X/Y-travel microporous ceramic compound vacuum chuck, linear motor, absolute linear scale encoder • Two 110 mm x 110 mm x 40 mm X/Y/Z probe-arm bottom-up motors including: <ul style="list-style-type: none"> - absolute linear scale encoders - probearm fixture platform - 2-channel touch-down probe needle force sensor • Moving target video camera system • Motion controller • Honeycomb breadboard 1000 mm x 800 mm x 70 mm • Accessories fixture kit • 2 x TPA-GFG probe arm kit • Table support • Safety shut-down • Dark box • HPPI automation software including collision avoidance 	ATS-8300G

General

The product data contained in this data-sheet is exclusively intended for technically trained staff. You and your technical departments will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to such application. Our products are solely intended to be commercially used internally and should not be sold to consumers. This data-sheet is describing the specifications of our products for which a warranty is being granted by HPPI GmbH. Any such warranty is granted exclusively pursuant the terms and conditions of the respective supply agreement. There will be no guarantee of any kind for the product and its specifications. For further information on technology, specific applications of our product, delivery terms, conditions and prices please contact HPPI:

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