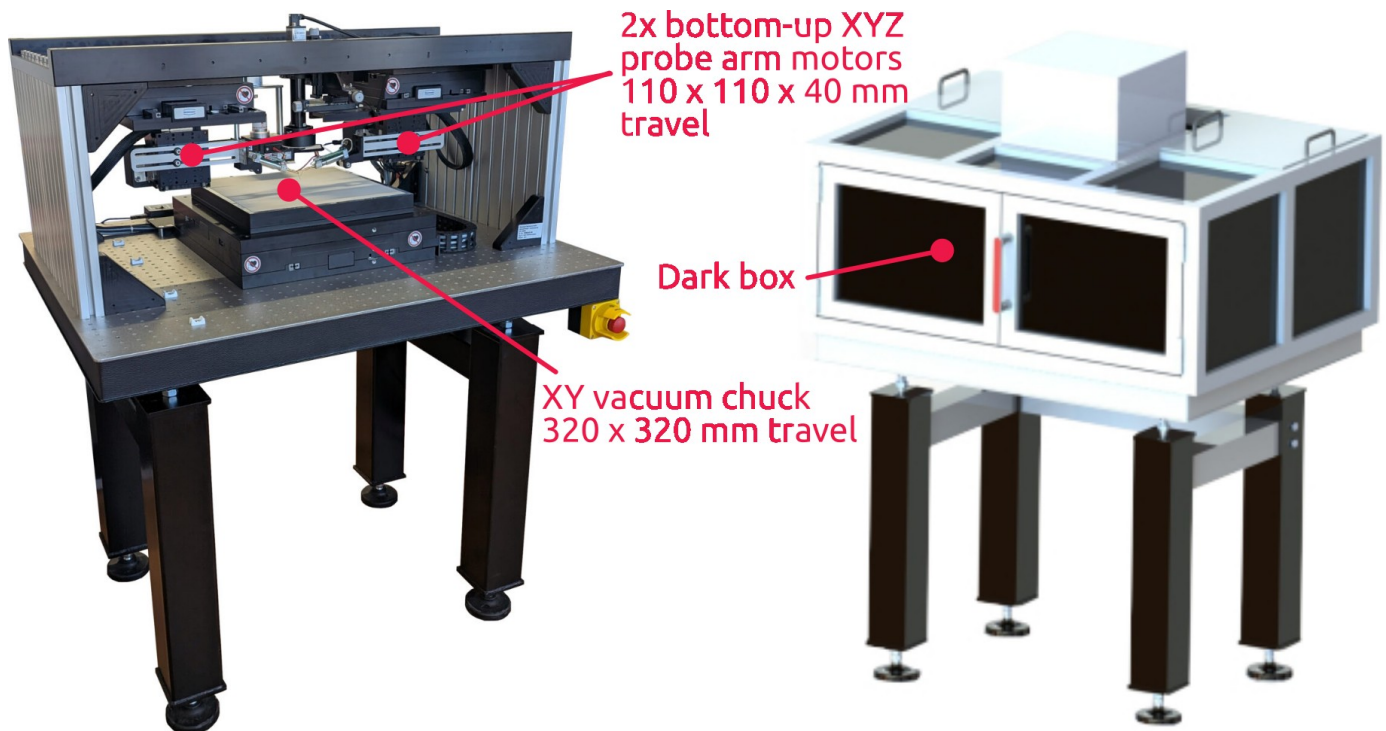


320 mm Automated Test System **ATS-8300G**

Advanced TLP/HMM/HBM Solutions

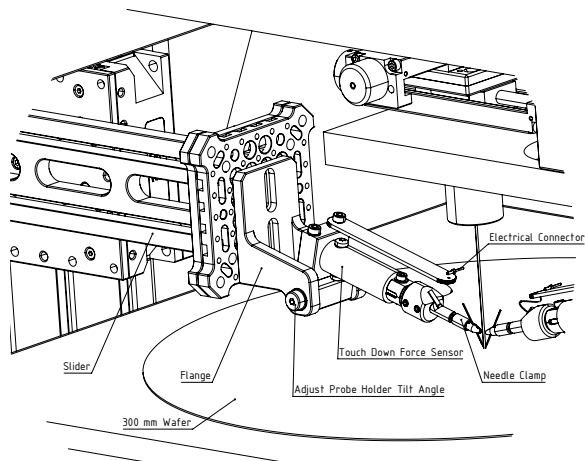


1 Features

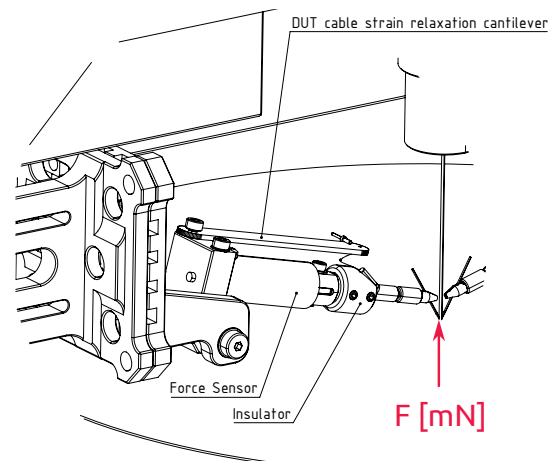
- 320 mm fully automated probe station for HBM, TLP, VF-TLP, HMM and CC-TLP on package-, system (PCB) and wafer-level
- 2x bottom-up XYZ probe arm motors (left and right side), 110 mm x 110 mm x 40 mm travel
- XY microporous vacuum chuck, 320 mm x 320 mm travel
- flexible pitch 2-pin or fixed pitch 4-pin (Kelvin-type) probe arms
- 2x ultra-fast needle force touch-down sensors at [mN] force precision
- 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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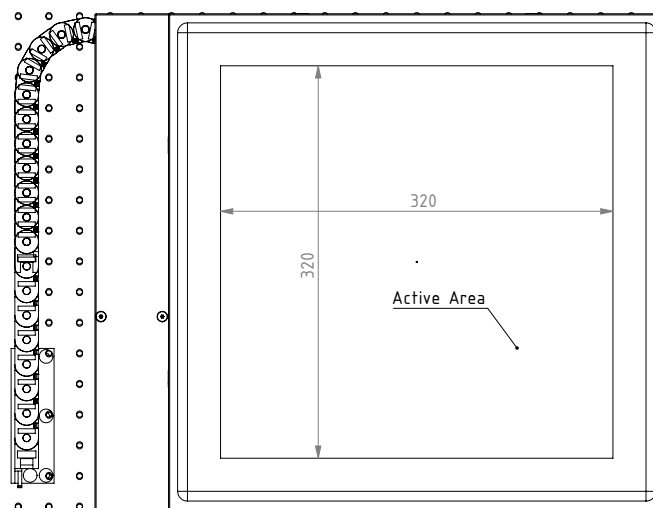
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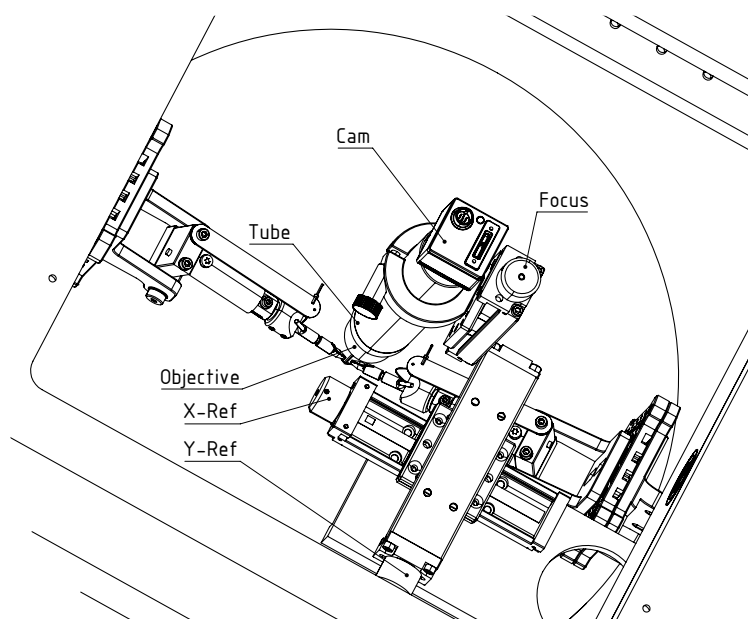
(a) Probearm



(b) Needle touch-down force sensor at mN-precision



(c) 320 mm vacuum chuck for any package shape, size and wafers



(d) Moving target camera system

Figure 1: Features

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

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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		
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	Motor-Encoder		
Two Z Touch-Down Needle Force Sensors (Left and 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
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	

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
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

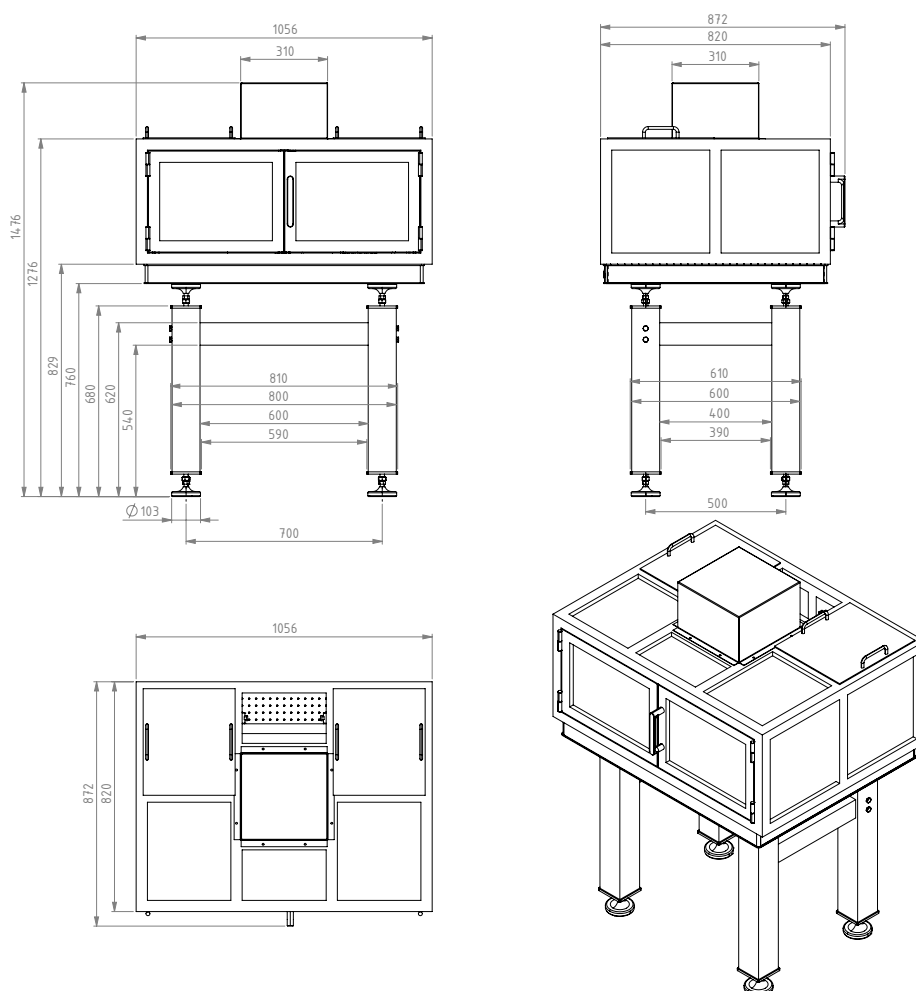


Figure 2: Dimensions in [mm], including dark box

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, 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"> - linear scale encoders - probearm fixture platform - 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

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