



valid until: April 30, 2031

Fraunhofer

TESTED[®] DEVICE

PVA TePla Analytical Systems GmbH
SAM 302 SAM0100970 mod1

Report No. PV 2603-1739

DUPLICATE

Statement of
Qualification

Single product
Digital Testing
(Airflow)

Statement of Qualification · Single product

Customer
 PVA TePla Analytical Systems GmbH
 Deutschordenstrasse 38
 73463 Westhausen
 Germany

Tested product

Category: Process Equipment
 Subcategory: Wafer Equipment
 Product name: Autowafer SAM 302 SAM0100970 mod1

Overview of the test setup for digital testing (airflow)

Digital testing software: ANSYS Fluent software (version: 2025 R2)

Boundary conditions of the inlet and fan parameters:

- Information source of the inlet parameters: data sheet of the Filter Fan Unit FFM-C-12X6-U16-EC-1-4-A2-VF-DS
- Inlet parameter:
 - Inlet area: 0.7442 m²
 - Air inlet velocity: 0.52 m/s
 - Air volume flow: 1.320 m³/h
- Outlet parameter:
 - Outlet area 1 and 3: 0.045 m²
 - Outlet area 2 and 4: 0.056 m²
 - Outlet area 5: 0.0053 m²
 - Sum of outlet area: 0.2073 m²
 - Outlet pressure (outlet area 1 to 5): 0 Pa
- Information source of the fan parameters: data sheet of the NOCTUA NF-A14 industrial PPC-24V-3000 SP IP67 PWM
 - air flow rate of all fans: 269.3 m³/h
 - Fan 1 and 2: diameter: 82 mm
 - Fan 3, 4 and 5: diameter: 140 mm

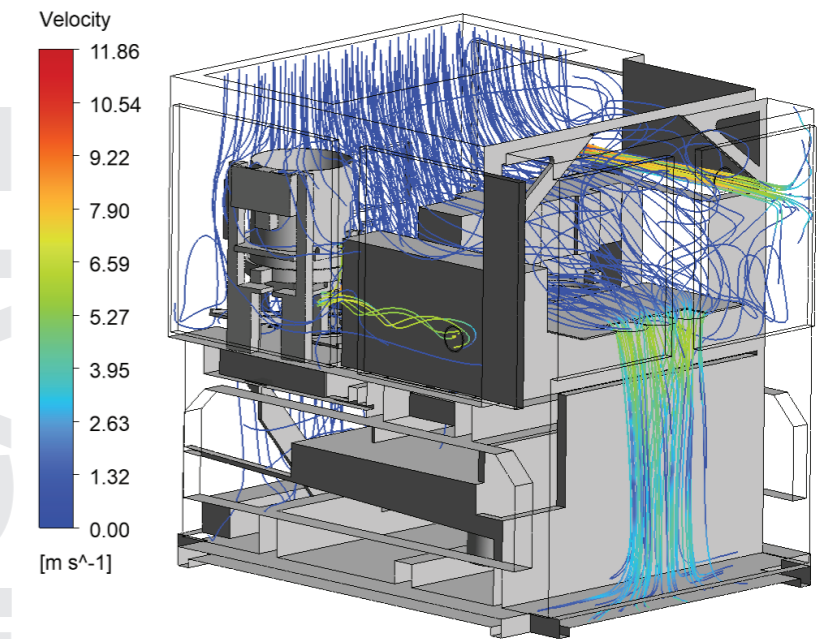
Simulation model parameters and convergence:

- Turbulent model (simulation model parameters):
 - Model: SST k-omega
- Residuals (convergence after 1000 iterations):
 - Continuity: 8.8042 x 10⁻⁴
 - X-velocity: 2.7330 x 10⁻⁴
 - Y-velocity: 3.6101 x 10⁻⁴
 - Z-velocity: 2.9670 x 10⁻⁴
 - K: 1.8179 x 10⁻⁴
 - Omega: 8.1215 x 10⁻⁵

Test result / Classification

The following table shows the summary assessment results of the Autowafer SAM 302 SAM0100970 mod1. For the summery assessment, the worst individual result of each partial assessment is considered:

Summary assessment results		
Airflow quality	whirl zones	medium risk
	direct flow around the wafer paths	medium risk
	backflow	medium risk
Airflow velocity (along the wafers path)		very high risk
Pressure distribution		medium risk



The measuring devices used for the qualification tests are calibrated at regular intervals; their results can be traced back to national and international standards. In cases where no national standards exist, the test procedure implemented complies with the technical regulations and norms applicable at the time of the test. The relevant documentation can be viewed on request at any time.