

[SABANCI ÜNİVERSİTESİ NANOTEKNOLOJİ ARAŞTIRMA VE UYGULAMA MERKEZİ |

E-Beam Evaporation System Acceptance Protocol Criteria

Equipment: E-Beam Evaporation System

This protocol defines the test and inspection criteria to be evaluated during the Site Acceptance Test (SAT) following system installation.

1. GENERAL INSTALLATION CHECKS

- Complete delivery and damage-free installation of system components must be ensured.
- Electrical, air, vacuum, nitrogen, and cooling connections must be fully installed.

2. HARDWARE AND SAFETY CHECKS

- All components of the vacuum system must be checked and tested.
- Pressure, temperature, water, and air systems, as well as relevant alarm systems, must be tested.
- Emergency stop button and interlock systems must be tested.

3. PERFORMANCE VERIFICATION TESTS

- Film production of the required thickness and quality will be required using the substrate and source specified by SUNUM. The thin film produced will be tested to ensure it meets the specifications referenced in the Technical Specifications.
- Final vacuum value: $\leq 5 \times 10^{-7}$ Torr
- Thickness measurement accuracy testing will be conducted, and film thickness uniformity will be demonstrated to be better than $\pm 5\%$ on a 4" wafer.
- E-beam welding: Maximum power, response time, and stability will be checked.
- Crucible structure and welding motor testing will be conducted.
- Substrate rotation system: Uniform rotation will be tested in the 0–20 rpm range.

4. SOFTWARE AND CONTROL TESTS

- Testing of all functions of the PC-based control software and touchscreen interface
- Verification of recipe creation, saving, and recall functions
- User authorization and accessibility of historical process records

5. TRAINING AND DOCUMENTATION

- Provision of at least 2 days of user training (Operator training and general information training will be organized separately).
- Delivery of complete operation, maintenance, and technical documentation (printed and digital)