

**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 undamaged installation of all system components.
- Proper installation of electrical, air, vacuum, nitrogen, and cooling connections.

2. HARDWARE AND SAFETY CHECKS

- Inspection of all vacuum system components: turbo and dry pump testing.
- Verification of alarm systems related to pressure, temperature, water, and air.
- Testing of emergency stop button and interlock systems.

3. PERFORMANCE VERIFICATION TESTS

- Ultimate vacuum level: $\leq 5 \times 10^{-7}$ Torr.
- Thickness measurement device (SQC-310 preferred): frequency resolution ≤ 0.03 Hz.
- Film thickness uniformity: better than $\pm 3\%$ over a 4" wafer.
- E-beam source: maximum power, response time, and stability check.
- Testing of 6-pocket (6 $\times$ 7 cc) crucible assembly and source motor operation.
- Substrate rotation system: smooth rotation test within 5–30 rpm range.

4. SOFTWARE AND CONTROL TESTS

- Full functional test of PC-based control software and touchscreen interface.
- Verification of recipe creation, saving, and recall functions.
- Verification of user authorization levels and access to historical process records.

5. TRAINING AND DOCUMENTATION

- Provision of at least 1 day of user training (for 3 persons).
- Delivery of complete operation, maintenance, and technical documentation (both printed and digital formats).