Batch Wafer Quality Summary Report

Report Generated: 2025-12-29 14:43:53
Simulation Date: All Dates
Report Type: Summary Only (Per-Wafer Details Excluded)

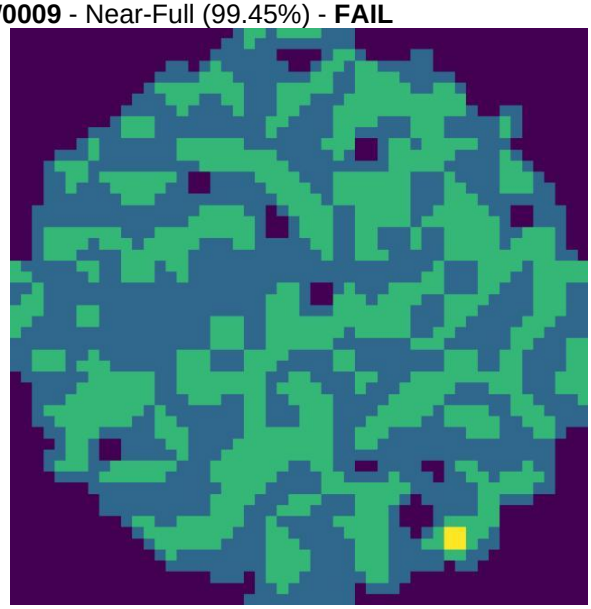
Batch Summary

Total wafers: 2086
Date Range: 2025-12-21 to 2025-12-28 (8 days)
PASS: 1474 | **FAIL:** 612
PASS rate: 70.66%

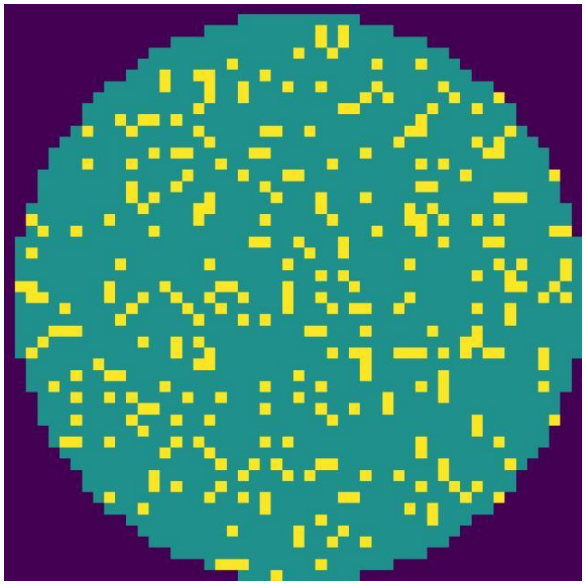
Sample Wafer Images

Showing representative samples: Top defects and good examples

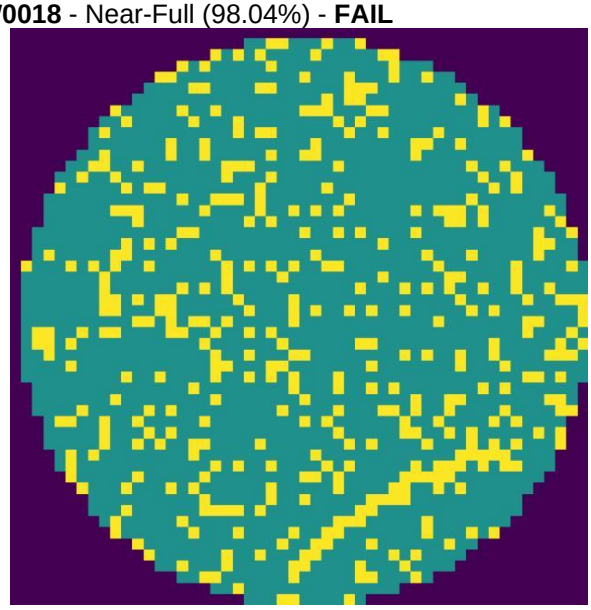
Electrical_ELEC_02_W0009 - Near-Full (99.45%) - **FAIL**



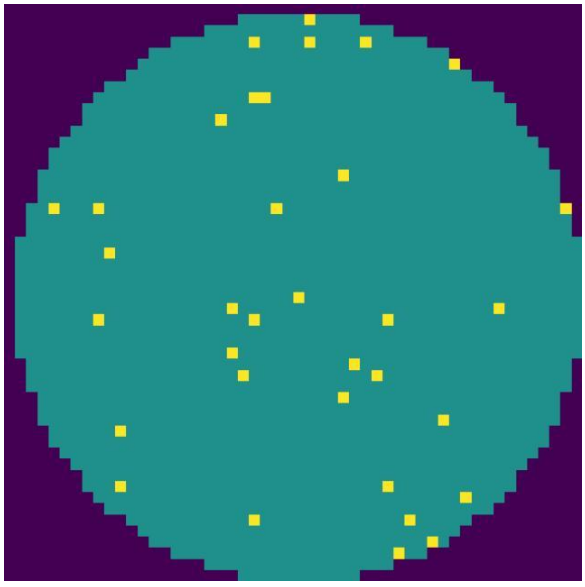
Electrical_ELEC_01_W0027 - Near-Full (98.09%) - **FAIL**



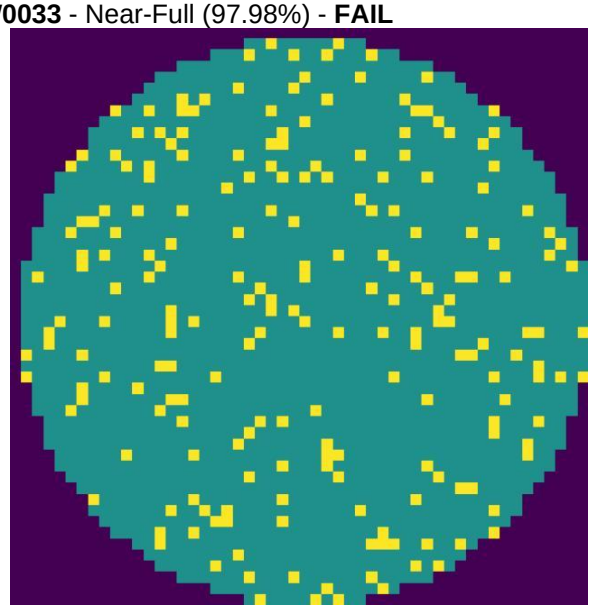
Electrical_ELEC_02_W0018 - Near-Full (98.04%) - **FAIL**



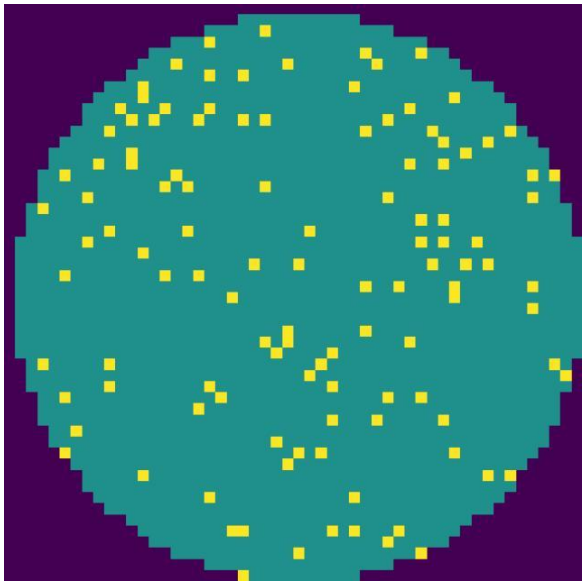
Electrical_ELEC_02_W0035 - Near-Full (98.03%) - **FAIL**



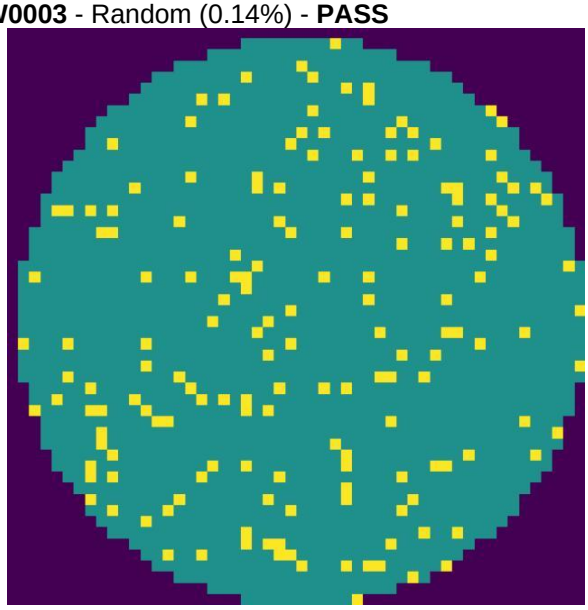
Electrical_ELEC_02_W0033 - Near-Full (97.98%) - **FAIL**



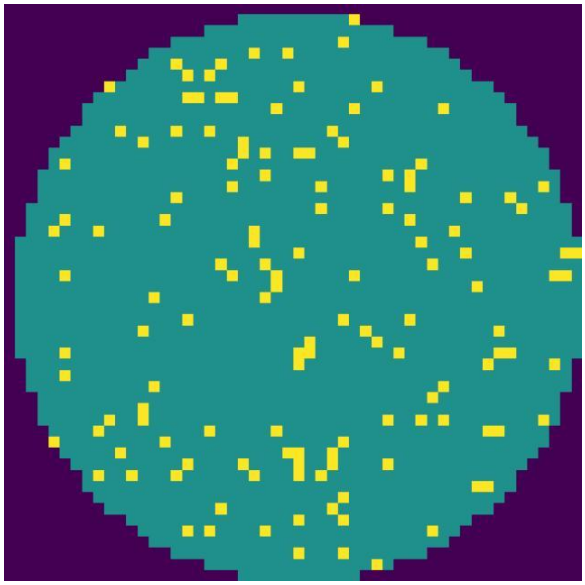
Thermal_THERM_01_W0028 - Near-Full (97.90%) - **FAIL**



Thermal_THERM_01_W0003 - Random (0.14%) - **PASS**



Electrical_ELEC_02_W0027 - Random (0.14%) - **PASS**



Top 5 Highest Defect Percentages

• Electrical_ELEC_02_W0009 (Electrical): 99.45% [Near-Full]
• Electrical_ELEC_01_W0027 (Electrical): 98.09% [Near-Full]
• Electrical_ELEC_02_W0018 (Electrical): 98.04% [Near-Full]
• Electrical_ELEC_02_W0035 (Electrical): 98.03% [Near-Full]
• Electrical_ELEC_02_W0033 (Electrical): 97.98% [Near-Full]

Distribution by Machine Type

• Electrical: 833 wafers
• Mechanical: 714 wafers
• Thermal: 539 wafers

Distribution by Defect Class

• Normal: 1466 wafers
• Edge-Loc: 84 wafers
• Scratch: 84 wafers
• Donut: 82 wafers
• Random: 78 wafers
• Edge-Ring: 76 wafers
• Local: 74 wafers
• Near-Full: 73 wafers
• Center: 69 wafers

AI-Enhanced Engineering Summary

The batch yield is 70.66%, with 1474 wafers passing out of 2086. Electrical machines show a high concentration of defects, particularly in the Near-Full defect class, which dominates the worst defect percentages. Mechanical and Thermal machines have lower defect counts, but the overall yield is impacted by the significant number of wafers with Near-Full defects. Immediate focus on Electrical machine processes is recommended to improve yield.

Estimated batch yield impact: High

Key Risks

• High Near-Full defect rate in Electrical machines
• Significant number of failing wafers (612)
• Potential process issues in Electrical machine operations

Recommended Actions

• Investigate and optimize Electrical machine process parameters
• Perform root cause analysis on Near-Full defects
• Increase monitoring and control for Electrical machine outputs
• Review maintenance and calibration of Electrical equipment