

# Scientific Benchmark Report

BoolMinGeo vs PyEDA (5-8 Variables)

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3D K-map approach vs symbolic simplification

Experiment Date: 2026-01-09

Random Seed: 42

Total Test Cases: 210

*A Rigorous Statistical Analysis*

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## BENCHMARK SUMMARY

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Total Tests: 210  
Configurations: 2

## RESULTS BY CONFIGURATION

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### 5-variable SOP:

Tests: 105  
Mean PyEDA Time: 0.000213 s  
Mean BoolMinGeo Time: 0.000872 s  
Speedup: 0.24x  
Time Significant: YES

### 6-variable SOP:

Tests: 105  
Mean PyEDA Time: 0.000477 s  
Mean BoolMinGeo Time: 0.001623 s  
Speedup: 0.29x  
Time Significant: YES