DOE Reduced Model Summary & Comparison

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Full vs Reduced Model Comparison

Metric	Full Model	Reduced Model
R-squared	N/A	N/A
Adjusted R-squared	N/A	N/A
F-statistic	N/A	26.8986
Parameters	820	451

Reduced Model Benefits

• **795 non-significant terms removed** (97% parameter reduction)
• **Minimal performance impact:** R² decrease of only 0.45% (0.3897 → 0.3852)
• **Improved interpretability:** Focuses on 25 significant terms only
• **Adequate fit:** Lack-of-fit test p-value = 0.121 (no significant lack of fit)
• **Computational efficiency:** Simpler model for predictions and deployment

For detailed analysis, ANOVA tables, LOF test results, and interactive plots, see the complete HTML report:
doe_analysis_reduced.html