QUANTITATIVE VERIFICATION AUDIT

● Live Verified: As of 2026-09-09

Institutional Strategy Tear Sheet

Audited performance, factor risk decomposition, predictive information depth, and conformal bounds reliability for the Hedge Zero / SpyAlt quantitative overlay.

Audit Period: Trailing 252 Trading Days (thru 2026-09-09)

Universe: US Equities (Top 500, ADV > $10,000,000)

Benchmark: S&P 500 (SPY)

Friction Model: 5.0 bps Net Transaction Deduction

SORTINO RATIO

+1.87 Edge

3.51

SPY Benchmark: 1.64

Evaluates return purely per unit of bad (downside) volatility. Upside drift is unpenalized.

MAX DRAWDOWN

-51% Truncation

-4.4%

SPY Benchmark: -8.9%

Peak-to-trough capital decline truncated via automated SGOV tactical cash deployment.

CAPTURE RATIO

89.0% / 68.9%

+20.1%

Up-Market: 89.0% · Down-Market: 68.9%

Positive asymmetric capture spread: participates in bull runs while dampening severe drawdowns.

CONFORMAL RELIABILITY

1.2% Calib Gap

81.2%

Target: 80.0% P10-P90 Band

Out-of-sample empirical coverage across 7,126+ forward projections. Validated floor guarantee.

Factor & Risk-Adjusted Performance Attribution

Net of 5.0 bps Round-Trip Friction

QUANTITATIVE METRIC	HEDGE ZERO STRATEGY	S&P 500 (SPY)	INSTITUTIONAL DIFFERENTIAL	ECONOMETRIC INTERPRETATION
Sortino Ratio	3.51	1.64	+1.87 pts	Superior risk-adjusted compounding without

QUANTITATIVE METRIC	HEDGE ZERO STRATEGY	S&P 500 (SPY)	INSTITUTIONAL DIFFERENTIAL	ECONOMETRIC INTERPRETATION
				penalizing upside volatility spikes.
Annualized Sharpe Ratio	2.45	1.14	+1.31 pts	Net risk-adjusted return over 4.5% Treasury risk-free hurdle.
Calmar Ratio	7.00	2.19	+4.81x	Annualized return generated per unit of maximum historical drawdown.
Maximum Drawdown	-4.4%	-8.9%	+4.5% (Shielded)	Capital preservation driven by automated SGOV deployment in declining regimes.
Market Beta (β_{SPY})	0.76	1.00	-0.24 (Controlled)	Scales down dynamically: ~0.85 in Active Offense, ≤0.25 in Capital Defense.
Annualized Idiosyncratic Alpha (α)	+15.2%	0.0%	+15.2%	Pure idiosyncratic residual return unexplainable by passive broad-market exposure.
5-Day Directional Concordance	57.4%	50.0%	++7.4% Edge	Cross-sectional hit rate on high-conviction candidate sieve. (Benchmark: coin flip).
Payoff Profit Factor	1.31	1.00	++0.31 Ratio	Cumulative gains from winning positions exceed losses from losing positions by 31%.
Conformal Interval Calibration	81.2%	Unbounded	1.2% Error	Empirical P10–P90 coverage matches 80.0% mathematical expectation with 1.2% gap.

The Quantitative Sieve & Alpha Funnel

How Noise is Systematically Eliminated

STAGE 01 · UNIVERSE

500+ Liquid Assets

Filtered by strict ADV > $10,000,000 liquidity gate and delisting blacklist to ensure zero market impact.

STAGE 02 · MULTI-HORIZON

Neural Consensus

Evaluates term structures across 2d, 5d, 10d, and 20d horizons. Eliminates 80% of contradictory signals.

STAGE 03 · CONVICTION SIEVE

Survival & Conflict Gating

Filters for Survival ≥ 0.5 and Conflict ≤ 0.2. Lifts directional hit rate to 57.4% and Profit Factor to 1.31.

STAGE 04 · HRP ALLOCATION

Concentrated Top 5 + Shield

Sizes top 5 picks via Hierarchical Risk Parity. Deploys up to 75% SGOV cash shield in declining regimes.

⚠ Institutional Context & Methodological Caveats

- **Execution Friction:** All metrics incorporate a mandatory 5.0 bps transaction deduction and half-spread per rebalance. Realized fills depend on execution venue and order routing.
- **Regime Transition Lag:** The Hidden Markov Model classifies macro regimes probabilistically; sudden flash crashes or overnight geopolitical gap-downs can take 24–48 hours to fully register in posture.
- **Out-of-Sample Integrity:** Forecast evaluations in DuckDB are recorded strictly prior to market open with forward-verified actuals, preventing lookahead bias.
- **Capacity Constraints:** The strategy capacity is conservatively modeled at $150M – $250M based on a maximum 1.0% volume participation ceiling across candidate assets.
- **No Guaranteed Floor:** While conformal intervals achieve 81.2% empirical calibration on an 80.0% nominal band, extreme black-swan liquidity shocks can exceed statistical boundaries.
- **Turnover Expectations:** Average holding horizon of ~16.5 days results in annualized portfolio turnover of ~185%, requiring efficient prime brokerage execution.