Tuf-Lite IV®

AXIAL FLOW FAN TECHNOLOGY
Air Cooled Heat Exchangers
Cooling Towers
Air Cooled Condensers

ADVANCED AERODYNAMICS. HIGHER EFFICIENCY. LONGER LIFE.



BACKWARD SWEPT BLADE DESIGN

PERFORMANCE ADVANTAGE

2-5% IMPROVEMENT
in total efficiency

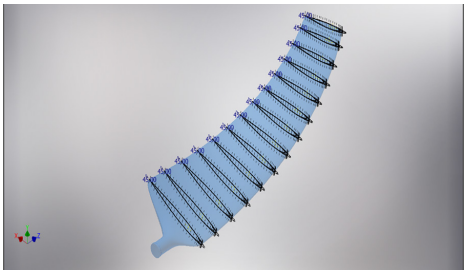
1.5-2 dB(A) REDUCTION
in sound power at similar performance

LOWER VIBRATION
at blade pass and 1x fan speed

MORE AIRFLOW
value per input power

WHY THE SHAPE WORKS

01 BACKWARD SWEEP

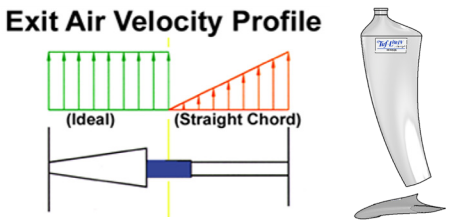


Reduces the abrupt, simultaneous pressure pulse produced by a straight radial edge.

Spreads blade wake interaction over time, reducing tonal noise and vibration.

Controls loading toward the blade tip where rotational speed is highest.

02 OPTIMIZED TWIST & TAPER

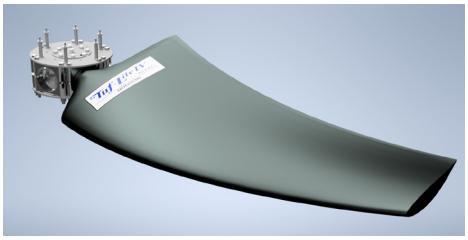


Twist aligns each span wise section with its local relative airflow and angle of attack.

Taper and tailored airfoils distribute aerodynamic loading more uniformly.

Higher lift-to-drag ratio means more shaft power becomes useful airflow.

03 MONOLITHIC COMPOSITE



Single piece carbon fiber and fiberglass hybrid reinforced construction.

Lightweight, corrosion resistant vinyl-ester composite reduces assembly weight.

Tuf-Edge protection, UV inhibition and FEA-qualified layup support long operational life.

WHY THE SHAPE WORKS

Fan power rises rapidly with airflow demand. Improving aerodynamic efficiency reduces the shaft power required for the same useful air duty, directly lowering operating energy while easing noise and vibration.

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ADVANCED AERODYNAMICS. HIGHER EFFICIENCY. LONGER LIFE.

Tuf-Lite® fans provide the highest levels of performance and efficiency in air-cooled heat exchangers, cooling towers, and air-cooled steam condensers.

Superior cooling performance for established and emergent industries.

- Power generation
- LNG liquefaction
- Oil and gas
- Petroleum refining
- Data centers
- Direct carbon capture



Tuf-Lite IV can be used as an OEM product or as a performance upgrade to improve plant reliability, air-flow, cooling performance, and energy efficiency. It has been specifically developed to attain a wide range of speed applications and deliver even greater cooling performance.

- Available in 11’ to 36’ fan diameters
- One piece fan blade
- Constructed with a hybrid layup of carbon fiber and fiberglass for increased strength
- Blade profile employs twist, taper, and sweep to maximize efficiency, reduce noise, and vibration
- Computational fluid dynamics (CFD) technology ensures Tuf-Lite IV is the most aerodynamically efficient fan in the industry
- Finite element analysis (FEA) and in-house stringent testing standards ensure reliability, even in the most extreme environments and applications
- Industry leading 36 month warranty
- Tuf-Lite IV UHT for ultra high temperature applications

Tuf-Lite blades monolithic (single piece) construction eliminates stress concentration, which is the primary reason for bolted aluminum blade failure. Tuf-Lite IV fans are 12% more efficient than their aluminum counterparts and resultant efficiency improvements can be used to either save power, improve performance or for process debottlenecking.

MAXIMIZING PLANT PERFORMANCE

Retrofitting Tuf-Lite axial flow increases throughput, performance and reliability of existing air coolers.

CHART®