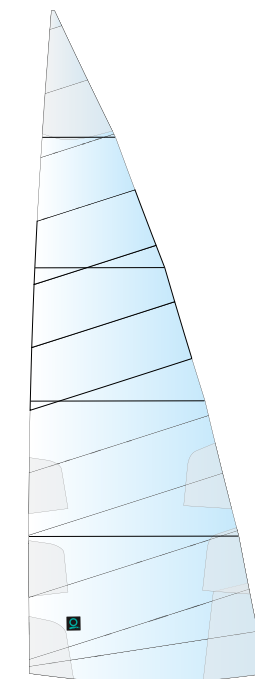
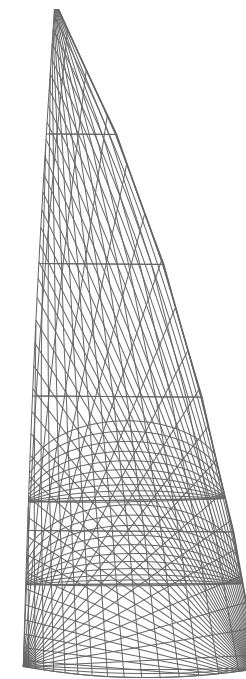
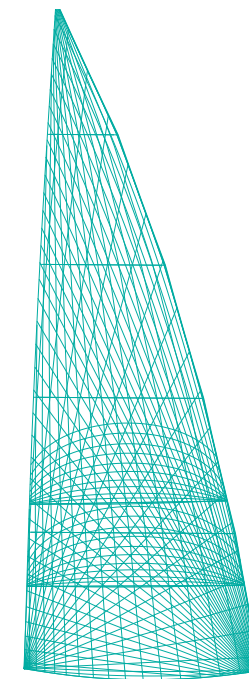
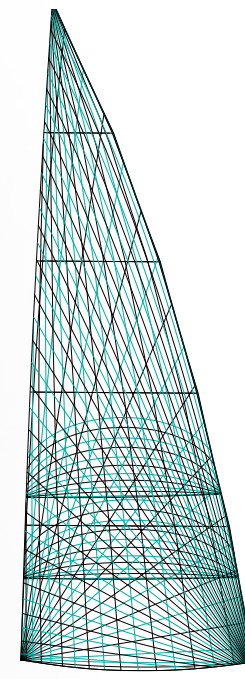
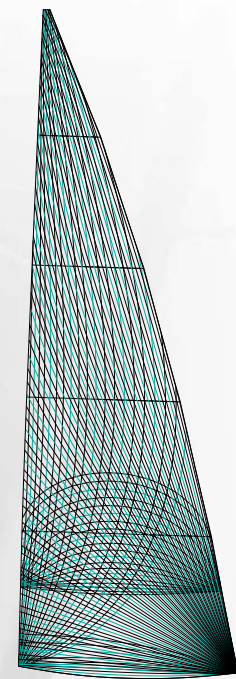
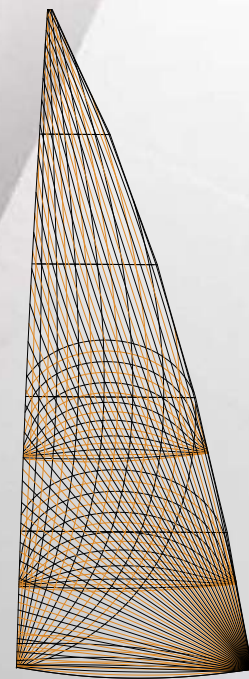




QUANTUMTM
SAIL DESIGN GROUP

CRUISING 2011 **PRODUCT GUIDE**



FIBER KEY

- VECTRAN
- CARBON
- TECHNORA
- POLYESTER

	MC 8500	MC 7700	MC 7500	MC 7000	MC 2000	CW 1000
Description	High-performance Fusion M [®] sail offering superior control over heel and weather helm while maximizing upwind performance.	Superior strength-to-weight ratio and stretch resistance for optimal shaping. Fusion M [®] sail with excellent upwind performance.	Lightweight Fusion M [®] sail with superior, all-around performance in a wide range of wind conditions. Superior durability.	A great option for mid-size cruisers looking for versatility. Fusion M [®] sail with excellent ease of trim, reefing, furling and durability.	Combines the rugged, reliable performance of polyester fiber with state-of-the-art Fusion M [®] construction.	Cross-cut sail made with only the highest quality goods. Tight weave and excellent stretch resistance for exceptional shape-holding.
Boat Size	40-80'	40-80'	40-80'	30-60'	25-45'	50' and under
Construction	Membrane	Membrane	Membrane	Membrane	Membrane	Cross-cut
Material/Fiber	50% Carbon, 50% Vectran with Mylar [®] film and taffeta exterior on one or both sides.	70% Carbon, 30% Technora with Mylar [®] film and taffeta exterior on one or both sides.	50% Carbon, 50% Technora with Mylar [®] film and taffeta exterior on one or both sides.	100% Technora with Mylar [®] film and taffeta exterior on one or both sides.	100% Polyester fiber with Mylar [®] film and taffeta exterior on one or both sides.	Woven polyester
Sail Color	Black & gold fibers	All black fiber	All black fiber	All black fiber	All black fiber	White
Strength/Weight Ratio	★★★★★	★★★★★	★★★★★	★★★	★★	★
Ease of Trim	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★
Control of Heel	★★★★★	★★★★★	★★★★★	★★★	★★	★★
Upwind Performance	★★★★★	★★★★★	★★★★★	★★★	★★	★★
Wind Range Versatility	★★★★★	★★★★★	★★★★★	★★★★★	★★★	★★★
UV Resistance	★★★★★	★★★★★	★★★★★	★★★★★	★★★	★★
Reefing	★★★★★	★★★★★	★★★★★	★★★★★	★★★	★★
Furling	★★★★★	★★★★★	★★★★★	★★★★★	★★★	★★
Durability	★★★★★	★★★★★	★★★★★	★★★★★	★★★	★★★★★
Optimal Shape Retention <small>Estimates for comparison purposes only.</small>	Approximately 90% of foil shape remaining after 1,000 sailing hours	Approximately 90% of foil shape remaining after 1,000 sailing hours	Approximately 80% of foil shape remaining after 1,000 sailing hours	Approximately 60% of foil shape remaining after 1,000 sailing hours	Approximately 40% of foil shape remaining after 1,000 sailing hours	Approximately 20% of foil shape remaining after 1,000 sailing hours
Cost	\$\$\$\$\$	\$\$\$\$\$	\$\$\$\$	\$\$\$	\$\$\$	\$\$

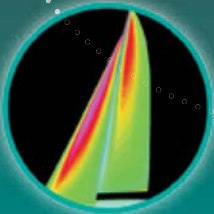


iQ[®] technology



Sail Shape

Define geometry of the sail and create mold shape using 3D design program and extensive database of boat and sail types.



Aerodynamic Analysis

Compute and visualize aerodynamic forces, wind angles and velocities, and the distribution of air pressure using computational fluid dynamic (CFD) calculations.



Structural Analysis and Fiber Mapping

Evaluate stresses and strains on the sail, rig and rigging with finite element analysis (FEA) and materials data to determine optimal flying shape and fiber layout.



Output Design

Adjust and refine all elements of the sail design and structure to achieve optimal shape, structure, fiber type, and layout for the finished product. Transfer precise construction specifications to the manufacturing team.



Manufacturing

Build sails following stringent and precise manufacturing standards and proprietary procedures for optimal quality.



Verification

Validate advancements in design technology and the iQ process through on-the-water testing.

Fusion M[®] Sails

Quantum is the first sailmaker to offer a complete range of composite sails using membrane construction designed specifically for cruising sailors, using the most technically advanced design, lamination and shaping methods in the industry. Fusion M[®] cruising sails use iQ Technology[®], our integrated and proprietary process that creates sails that are fast, easy to handle, efficient, and are ready to take you around the world; a feat no other sail maker can match.

Features and Benefits

- Proprietary design software integrates 3D modeling, aerodynamic analysis, structural analysis and fiber mapping to determine optimal sail flying shape and fiber layout.
- Smart fiber mapping provides more fiber in more directions for greater strength and less stretch, and allows the sail to adapt to the rigors of reefing and partial furling.
- Two-step lamination process uses vacuum bagging, infrared heat and six to eight tons of pressure to thermo-set the adhesives and produce a membrane four to five times stronger than other laminates.
- Superior shape holding reduces heel and helps put you in control while optimizing performance upwind and down.
- Every detail built to the most rigorous construction standards. Backed by the best warranty and service in the industry, Fusion M[®] sails will take you across the Bay or around the world.

Woven Sails

High performance balanced with durability and reasonable cost are the design criteria for Quantum[®] woven sails. Only the highest quality woven polyester is used, featuring a tight weave and high stretch resistance for exceptional shape-holding ability. Woven sails are developed using our iQ Technology[®] design tools and engineered to perform in the most demanding conditions.

Features and Benefits

- Modern cross-cut construction with oversized corner reinforcements, extra wide seams, multiple rows of triple-throw stitching, extra layering, adhesive bonding, double luff tapes, reef belts, a unique batten pocket system, webbing and proper reinforcement throughout.
- Flat, pure, aerodynamic profiles are derived through iQ[®] Technology and tailored to individual boat characteristics and expected usage for optimum upwind performance.



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