

# Quant30 – For Leaders not Followers

**Q30** The new Q30 is closely related to and a further development of the pre-series DSS boat Q28. The Q30 combines unparalleled performance with easier handling on the water, as well as during boat preparation and transportation.

The Q30 is a lake racer and daysailer for demanding yachtsmen and -women who always wanted a sailable, high-performance boat and delight in true innovation.

**Hull:** Thanks to DSS technology, the Q30 - as opposed to conventional sports boats - is much less dependent on form stability. It therefore has a very narrow hull, similar to a modern 70-foot racing yacht. The benefits are obvious: The Q30 sails with little resistance, low wavemaking, and even heeling does little damage. This makes it extraordinarily fast when sailing close-hauled, particularly during light and medium winds - a true lake racer.

**Foils:** Foils that guarantee stability are the crucial component of a DSS boat. The same holds true for the Q30. As opposed to the Q28, it sports two foils that can be operated independently, which greatly simplifies handling while sailing, in the harbor and during transport. **The foil lift is similar to the Q28 (see reverse). They are not needed during light winds, and completely disappear into the foil cases, where they cause no resistance or handling effort. At higher winds, you can either leave both foils deployed or they can be extended and/or retracted prior to every maneuver without load.**

**Planing:** The Q30 takes its stability and planing surface from the additional lift at the foil at higher winds. This allows for upright sailing and provides the entire boat with additional lift, which decreases the resistance more than the foil "produces". The Q28 sailing experience is truly impressive.

**Fins:** The Q30's narrow, deep keel fin with its modern shape provides sufficient size and profile for light wind while at the same time ensuring low resistance. The ballast element with its 280 kg (Q28 = 170 kg) creates an astounding level of static stability. The deep, narrow rudder is pre-balanced and conventionally mounted. It can be pulled out towards the bottom on a crane with a twisting motion.

**Central cockpit:** The Q30 provides ample space to work - even when sailing with a crew of 5. In the cockpit, everything is neatly placed and accessible. The control panel with winch dominates the space: Here, the trim lines (Cunningham, outhaul,

boom vang etc.) come together. They can be operated from either side of the boat. A "bridge" made of exposed carbon fiber, beneath which these lines lead to the foot of the mast, ensures that no running rigging can be fouled.

**Storage space:** At the center is the storage box for the motor. On either side, every member of the crew will find personal storage space. Optionally, an additional compartment can be installed in the middle of the boat (in front of the helm). The foreship has two additional openings that provide access to the two foil and air cases.

### THE QUANT30 IS TWO BOATS IN ONE:

**Boat 1 with retracted foils** is very slender, very light, and has plenty of sail surface for light to medium winds. The foil eliminates 60% of the keel ballast. This makes the Q30 extremely fast for its length. Close-hauled and running: The superior, lively boat for our lakes.

**Boat 2 with extended foils** provides a multi-hull feeling from a speed of 9 kts and up. In extreme cases, the foil that rights and lifts the boat allows it to sail nearly 100% faster than comparable conventional boats.

**Conclusion:** In boat 1, the foil acts indirectly as a "stability insurance" in case the wind strengthens. In boat 2, it acts directly as an "afterburner".

**Front cockpit:** The working area available to the foreship crew makes it significantly easier to furl and set the sails. This is where downwind sails are stored. In light wind, this space also allows for more options to trim crew weight.

**Outriggers:** The nicely shaped outriggers or hiking out racks - optionally available in exposed carbon fiber - are an eye-catching feature of the Q30. They are pivot-mounted. When the boat is not moving, simply release the latch and flip the racks up. Their height reaches just to the main boom. The wraparound fixtures also serve to hold the trampoline, which remains attached. On the boat side, the trampoline is attached at only a few points after folding out, the same is true for the port and starboard hiking straps.

**Rig/Sails:** The entire rig (mast, boom, gennaker boom) is made of carbon fiber. The mast has robust dimensions, but is nevertheless lightweight at just 15 to 16 kg weight for the tubing. The main boom has internal lines for the foot and the reef.

Standing rigging of composite (Kevlar) can be specified optionally. Compared to a less expensive Dyform (steel cable) rigging, 7 to 8 kg weight can be saved in the entire rig. Due to its low weight, the mast can be manually stepped or unstepped by the crew using the pivoting mast foot.

**Self-tacking jib:** As an additional user-friendly attribute, a self-tacking jib can be used where the traveller crosses the boat in front of the mast. This fixture also braces the hull. Standard lead points for overlapping head sails are integrated into the cockpit.

**Sails:** The basic sail configuration consists of main and head sail in addition to a gennaker. With this boat, it is crucial to choose the correct sail profiles, therefore, please schedule a consultation with us.

### Specifications Quant30

Loa	9.15 m
Hull width (harbor)	1.95 m
Width with outrigger	3.60 m
Keel draft	2.00 m
Rudder draft	1.30 m
Displacement	700 kg
Ballast	280 kg
Mast length	12.15 m
Luff of main sail	11.65 m
Foot of main sail	3.95 m
Sail surface, close-hauled approx.	47 m²
Gennaker approx.	100 m²
Prices start at*	95.000 £

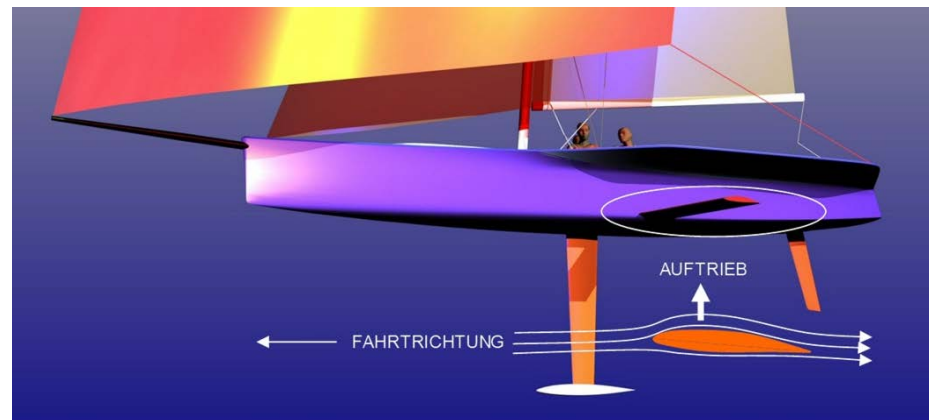
\* Price ex UK manufacturer, painted cockpit, exterior color: monochrome, boat ready to sail, but without sails, excl. transport, customs, duties and VAT. Payable in £ Sterling. (Exchange rate March 2012: 1.40 to 1.45 CHF.) Subject to alteration of prices.





# sailing on foils is more fun

## Lighter and faster – with the Dynamic Stability System (DSS)



**How DSS works:** While conventional boats are weighed down and then righted by crew ballast, pivoting keel, or water ballast on the windward side, DSS reverses this principle: The system provides lift for the boat on the lee side, which also rights it. In order to achieve this, a hydro foil similar to the wing of an airplane is extended from the hull on the lee side below water line level. While the boat is in motion, water streams around the profile and thus provides hydrodynamic lift and righting moment.

During tacking and jibing, this foil is then pulled onto the new lee side through a type of transverse-mounted centerboard trunk and then provides the necessary lift for the yacht to sail upright on the new course.

DSS yachts are always superior to comparable conventional boats:

They can make do with less ballast, which reduces their weight in spite of their superior stability. Close-hauled, superiority is less dramatic than at all other points of sail due to the laws of physics.

**In the best of cases when reaching, a DSS sports boat will be sailing almost twice as quickly as comparable conventional yachts.**

DSS is a well researched, tested and patented system. It was invented and designed by British yacht designer and hydro foil expert Hugh Welbourn.

## Planing in Sports Boats

Type of boat	Length	Boat kg	Crew kg	Total kg	Ballast kg	d/m	DF
Quant 30	9.15	700	280	980	280	107.10	108
Quant 28	8.55	550	350	900	170	105.26	113
Joker	8.10	770	320	1.090	360	134.57	126
Onyx	8.50	1.000	320	1.320	500	155.29	129
Esse	8.50	1.250	280	1'530	700	180.00	136
Longtze	6.80	600	320	920	300	135.29	142
Melges 24	7.82	810	400	1.210	300	154.73	145
Blue 26	8.00	1.200	320	1.520	680	190.00	145
Melges 20	6.10	520	240	760	220	124.59	150
Platu	7.50	1.250	480	1.730	510	230.67	157

Values derived from the Internet, weight in kg, length in m, d/m = displacement/m in kg, displacement figure DF = non-dimensional value that correlates length and displacement (boat + crew) and provides information on planing ability.

The ability to plane in a reaching or running breeze is at the very top of the customers' wish list for modern sports boats. The more quickly a boat can begin to plane and the higher the speeds it can reach, the better. This desire is all too understandable. The fun potential of these boats is high, as is the adventure factor - not just in regattas.

The table shows a comparison regarding the planing potential based on the displacement figure DF\*, a non-dimensional value that correlates length and displacement (boat + crew). The lower the number, the less wind is required to start planing. **For example:** Melges 20 is the third-best boat if you look at displacement per meter. However, if we look at the DF column, it ends up in second-to-last place of the selection..

**Conclusion:** It is too heavy in relation to its length to start planing early.

\*Third root of D (displacement in m3) / L (length in m) \* 1.000 = DF (non-dimensional value)

**DSS sports boats by QUANTBOATS are revolutionary:** They are very light for their length, and the foil provides stability for the stronger winds in spite of their narrow hull forms. The full power from the sails is used for propulsion. They also benefit from more apparent wind generated by the boat's speed, similar to multi-hulls. **Therefore, QUANT boats start to plane very quickly:** Q28 or Q30 can reach speeds of up to 16 to 17 kts with just 10 to 12 kts of wind, depending on the choice of sail and the wave pattern.

**The explanation is simple:** When a Q28 sails at 10 kts or more, the foil develops approx. 500 kg of lift\*. It provides not only a tremendous righting moment, but also partially lifts the entire boat out of the water.

The sails now propel a boat that, physically speaking, only weighs about 400 kg (= total weight minus lift).

The foil allows it to hold its course and reach average speeds previously thought impossible, given the length of 8.5 m.

\* The foil's lift increases with the square of the velocity.

## Tacking

**The narrow hull is optimal for upwind sailing:** At wind speeds of 8 kts, the Q28 is close-hauled (TWA 400/AWA 21.20)\* with a solid 7 kts; 7.5 kts at TWA 450/AWA 23.00. The weight of the crew is sufficient for upwind sailing. The leeway is minimal, the VMG very high. In stronger winds, the foil is used. The medium lift it provides when tacking (approx. 200 kg) is relevant, but in itself not sufficient to eliminate all stability issues. As is common for sports boats, crew work is needed. Due to the higher percentage of ballast, the Q30 is more stable than the Q28.

**Reduced boat movements:** The foil is also useful when tacking, because it smooths the entire system in addition to providing the righting moment. Hydro- and aerodynamic properties become more efficient, the boat holds a straight course, and the drag inducing rudder movements are minimised.

**Close-reaching planing:** With a slight freeing at wind speeds of 12 kts (TWA 520/AWA 27.60), for example, the boat speed rises to over 9 kts and the foil instantly provides more lift. The boat lifts completely and enters a planing mode. Whether this can still be described as "tacking", is a matter of opinion, as opposed to the fun you'll have. That aspect is incontestable.

\*TWA = True Wind Angle, AWA = Apparent Wind Angle

**QUANTBOATS**  
THE FUTURE OF SAILING BASED ON DSS

Max Schmid  
Alpenquai 13, CH-6005 Lucerne  
Mobile +41 (0)79 340 44 22  
info@quant-boats.com  
www.quant-boats.com

Michael Aeppli  
General-Wille-Str. 144, CH-8706 Meilen  
Mobile +41 (0)79 623 77 03  
info@quant-boats.com  
www.quant-boats.com

**QUANTBOATS:** With their new company, Max Schmid and Michael Aeppli aim to develop and build boats with DSS technology for inland waters in order to provide passionate and experienced yachtsmen with access to a new, intense and dynamic style of sailing.

These exceptional boats are developed in close collaboration with Hugh Welbourn's team (dynamicstabilitysystems.com).

The full-service boatyard Bucher & Schmid AG headquartered in Lucerne is our cooperation partner and will service the needs of QUANTBOATS customers. Customers and partners know the boatyard as a safe bet in the Swiss boating market.