

BMW ORACLE Racing

BMW ORACLE Racing, USA Challenger for the 33rd America's Cup

SIZE MATTERS

20 stories high

150,000 man-hours to build the yacht

90x90 feet, bigger than a baseball infield

Main Wing

On the Wing Sail

The main wing sail and flaps are trimmed separately; this precise control is the rig's main advantage over a conventional sail

Air flows around the wing sail, creating higher pressure on one side than the other and giving the yacht forward thrust, in the same way as an aircraft is lifted by its wings

The rig can power the boat at up to three times the speed of the prevailing wind

The carbon fiber and Kevlar frame is covered with shrinkable aeronautical film

Rear flap element of wing: nine flaps linked together can be twisted and individually adjusted to provide optimum performance

Dagger Board

Nine hinges hold flaps and wing sail together

USA has more than 250 sensors feeding performance and wind speed information to a central database, collecting more than 26,000 data points per second

The control system for main wing sail uses a small engine to power the hydraulics

The mast rests on a ball to allow for movement, and is held up by conventional stays strong enough to take loads of up to 100 tons America
Winner of the first America's Cup in 1851
Displacement: 154 tons
Length: 30.9m (101ft 3in)

USA 98
Challenger for the 32

9m (101ft 3in)

Challenger for the 32nd America's Cup 2007

Displacement: 24 tons

Length: 25m (82ft)

USA Challenger for the 33rd America's Cup

Two helming positions—one to port, one to starboard—are high upon a horizontal crossbeam allowing the helmsman clear vision of sails and sea on both tacks

Rudder

WING SAIL

Height	223ft / 68m (compared to 102ft / 31m length of a Boeing 747 wing and 143ft / 43.5m length of an Airbus 380 wing)
Chord	10 to 30ft / 3 to 14m
Width	2 to 6ft / 0.5 to 2.0m
Surface area	7,000sq. ft / 650sq. m (profile)
Weight	7,700lbs / 3,500kg (approx.)

HULL

AIRBUS A380 TO SCALE

Boat Type	Trimaran of carbon composite construction
Where Built	Core Builders, Anacortes, WA, USA
Overall Length	100ft / 30m
Waterline Length	90ft / 27m
Beam	90ft / 27m