

内股

UCHIMATA

Official Parasailor's Agent



Parasailor^{IS}

Parasail^{IS}



Photo credit : Cornell Sailing – The Aventura IV of Jimmy Cornell seeing the Artic Circle - 2015

Redaction : Annie & Marc BERNARD, Voilerie Jacana
Realisation : Pierre Ménardon and Laudine Offrédic, Uchimata Sailing Service

INTRODUCTION

The Parasailor, it's :

- The largest range of use never achieved by a downwind sail : from 60 to 180° apparent wind angle AWA.
- The largest range of use regarding force wind.
- The largest user-friendliness : to sail on short-handed crews or alone with auto-pilot.
- The largest stability off the wind : bow lift and decrease of the heel.
- The most economic : only one sail without spinnaker pole, neither bowsprit, nor furling system... for all off the wind's speed.

PRESENTATION OF PARASAILOR



Photo : Jagan

THE PRINCIPLE

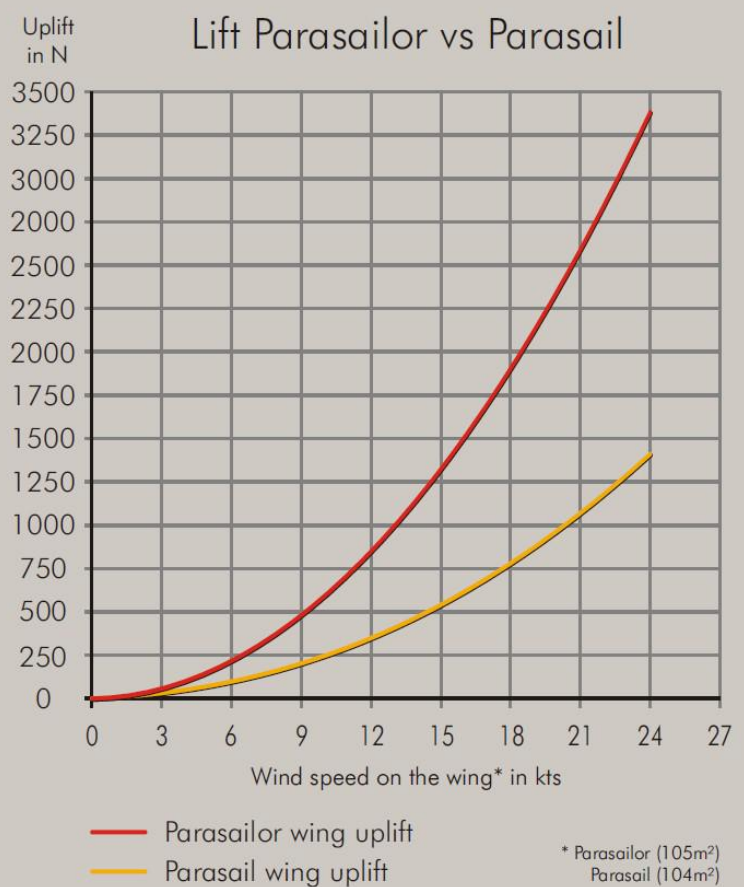
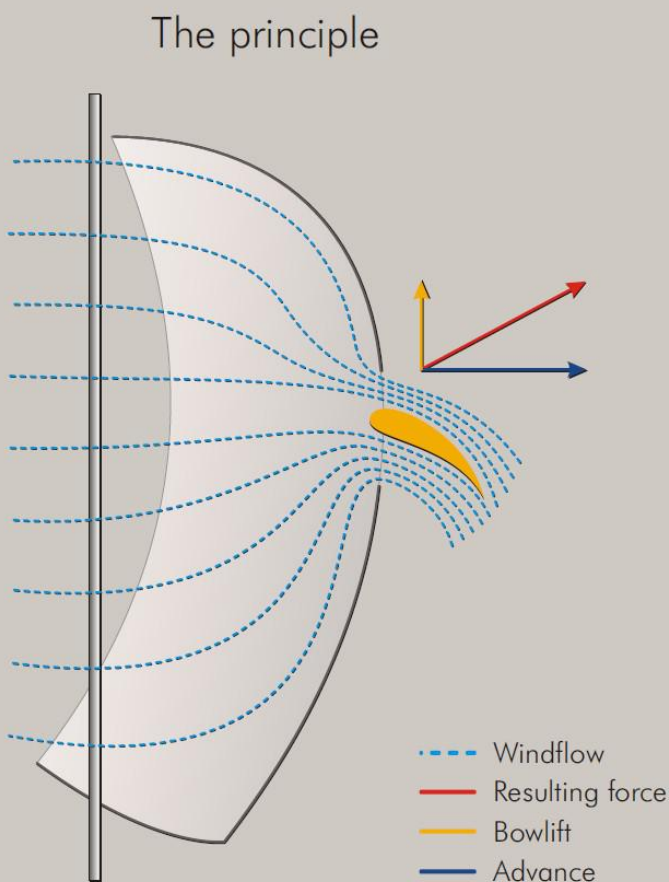
Stem from research of a sail and paragliding's passionate, the Parasailor is a firm stance to gather the both's advantages. The society ISTECH present you here her downwind sail resulting to the association of paragliding wing lift's qualities combined at the power of a symmetric spinnaker. The result is completed and spectacular. This new type of sail is a technologies's mass pushed to obtain a fiability, a facility and a range of use never achieved by a downwind sail.

THE TECHNIC

In a classic spinnaker, the air goes into the sail and slows her race, which increase the pressure and generate the boat's propulsion. The pressure collected on the hollow of the sail, but whose the evacuation isn't canalised, leans to escape at random of ridder tiller, of the sea's formation and gust.

On the Parasailor, the flow is channeled and, discharging by air inlet located in the middle of the sail, is directed toward the sail to supply it of a powerful ventilation and controled which allow to associate a second phenomeon of active's strenght, the lift, whose a element comes to add at the pushing force.

Thanks to the profil and the sail's repercussion, the air is accelerated on the superior's part, what generate a strong depression which will suck up the sail toward the top (like a plane wing).



Crédit : ISTEAG

Aérodynamique

Aerodynamics

Section Parasailor

Détail du venturi

Nozzle effect

Pression d'arrêt

Inflate the wing
Stagnation point
(high pressure)

Ligne d'arrêt

Stagnation line

Portance

Lift

Propulsion

Lignes de courant

Stream lines

Extra propulsion

Zone de basse pression

Low pressure area

Crédit : ISTEAG



Photo : Jacana

THE QUALITY

A fabric with aeronautic standards, like a paraglider's wind with girth hitchrope line knot, a symmetric spinnaker provided with an air intake to canalise the flow, a perfect design, the intelligence, a lot of work and care. That's the recipe which did some Parasailor a performant tool of navigation off the wind.

THE ADVANTAGES

- Single-handedly, a Parasailor replaces advantageously at least two classic downwind sail with qualities really innovatives.
- It allows to navigate from close reaching to running without change a downwind sail during all the cruise.
- It allows to jibe very easy using only the 4 afterguys.
- It's the only symmetric spi which doesn't need spinnaker pole, neither furling system, nor bowsprit. It's already equipped of its own snuffer.
- Powerful but easy-to-use because it has been especially conceived for the navigation on short-handed crews and studied to work with auto-pilot.
- Its air-intake and its wind allow it to handle gusts, wind's changes, to cushion helm's movements and waves, wich allows at the sail to stay stable, without flap and tear.
- It brings stability and calm onboard in limiting monitoring, manœuvres, heel and roll.

It has also many advantages :

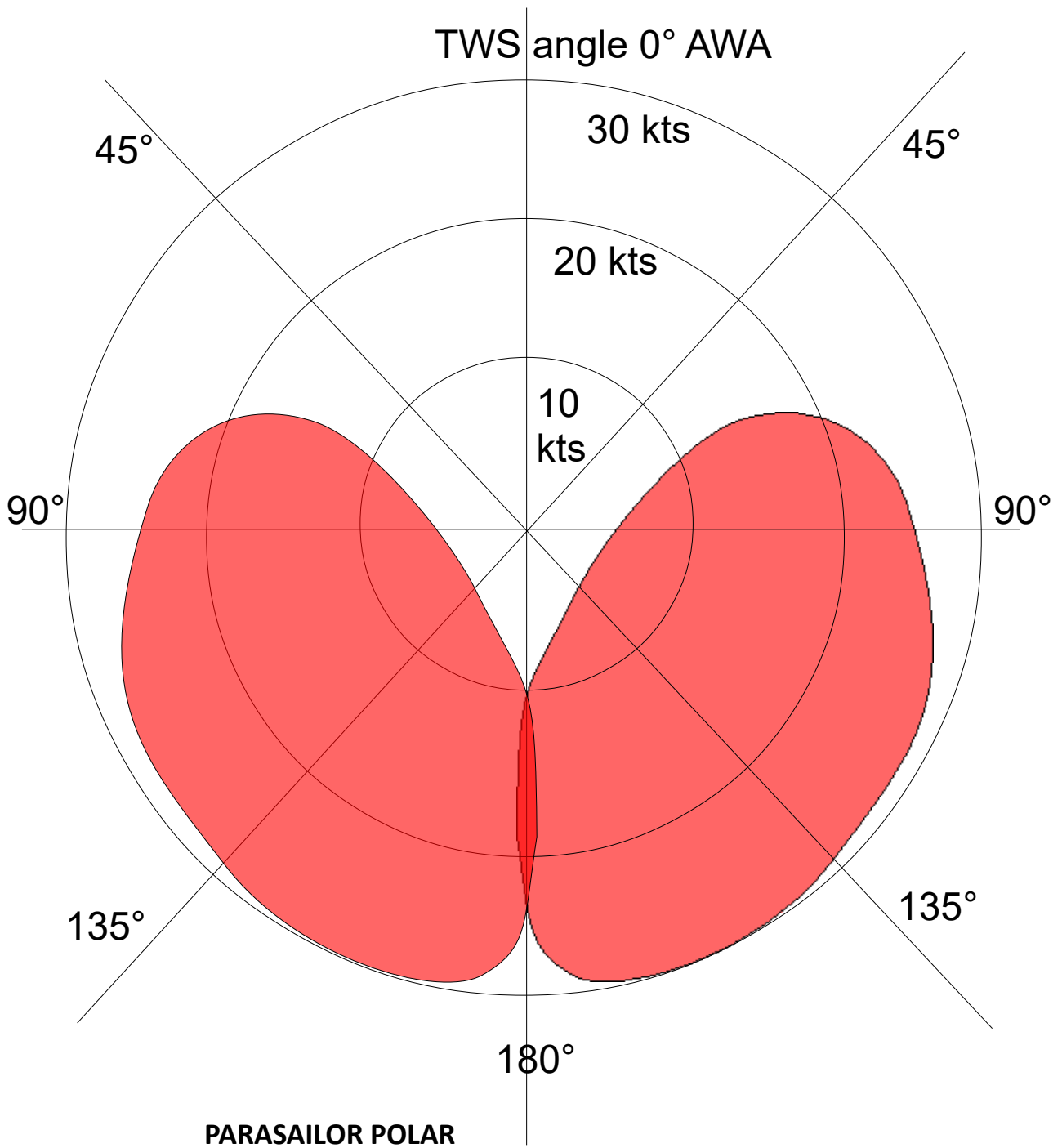
- Stem's reduction
- The increase of the pressure on the rudder blade
- Less risks of capsiz
- An easier departure on surfing



Photo : Jacana

Try it ! We will be glad to present you the Parasailor in action and we invite you to contact us for a next attempt to sea.

THE LARGEST RANGE OF USE NEVER ACHIEVE BY A DOWNWIND SAIL

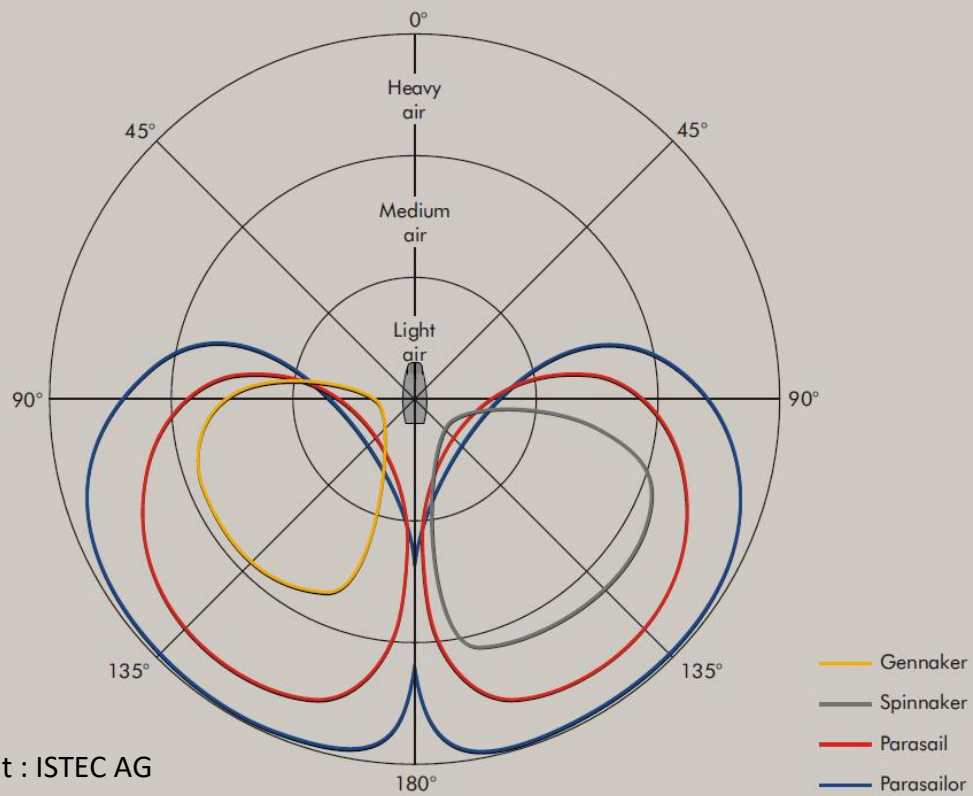


Range of use on AWA of the Parasailor without spinnaker pole
(It can depend on the boat and the use of the mainsail)

Comparaison of families of downwind sails (apparent wind angle)					
	Close reaching 60° à 80°	Reach Beam 80° à 110°	Reach Close 110° à 130°	Reach Broad 130° à 160°	Before The Wind 160° à 180°
Symmetric + spinnaker boom				[Bar]	[Bar]
Asymmetric		[Bar]			
Parasailor	[Bar]	[Bar]	[Bar]	[Bar]	[Bar]

Crédit : Marc Bernard

The right wing for your requirements



Features	Parasailor	Parasail	Spinnaker	Gennaker
Gust venting	maximal ●●●●●	strong ●●●●	no ●	no ●
Heeling	clearly reduced ●●●●●	lower ●●●●	high close to the wind ●●	high ●
Light wind performance	from 5 knots ●●●	from 4 knots ●●●●	from 3 - 4 knots ●●●●	from 2 knots ●●●●●
Strong wind performance	clearly better than spi level ●●●●●	above spi level ●●●	high, but very ambitious ●●	not suitable —
Bow lift / lift	maximal ●●●●●	clear ●●●●	none ●	not relevant —
Yawing	clearly reduced ●●●●●	reduced ●●●●	tends to yaw ●	Increased leeway tendency ●●
Autopilot suitability/ rudder pressure	optimal / none ●●●●●	almost always / minimal ●●●●	only with a light wind / increased ●●	only with a light wind / increased ●
Spinnaker boom	with or without boom ●●●●●	with or without boom ●●●●●	with boom ●●	n / a —
Leech opening / course correction	automatic, active / no reaction necessary ●●●●	automatic / light course correction ●●●	not automatic / ease the sheets and bear off ●	n / a —
Leech stability	very high ●●●●●	increased ●●●	low / sensitive ●	n / a —
Acceleration	gently controllable ●●●	high ●●●●	very high ●●●●●	high ●●●●
Wind angle average approx.	65° - 180° ●●●●●	65° - 180° ●●●●●	90° - 180° ●●●	80° - 140° ●
Hoisting and lowering behaviour	easy ●●●●	very easy ●●●●●	complex due to Spi boom ●	very easy ●●●●●
Inherent stability	very high ●●●●●	high ●●●●	low ●	n / a —
Suitability	Parasailor	Parasail	Spinnaker	Gennaker
Yacht size	30 70 feet, all boat types	all boat types, mega yachts / racer, cruiser	racer, cruiser	racer
Regattas	long distance	long distance	up and down, triangles	only with planing boat, triangles
Blue water	optimally suited, ARC tested	well suited	limited suitability	not defined

Crédit : ISTEAG



To make the most of your cat downwind, a good headsail is important...

Downwind Sails: the Parasailor

The Parasailor? It's a symmetrical spinnaker whose central part forms a paraglider. Particularly efficient and stable in any sudden wind, this is the sail of choice for transatlantic crossings... All hands on deck!

Text and photos: Emmanuel van Deth

No, the symmetrical spi isn't dead! Sure, on board our multihulls gennakers sprout from the bowsprits, unfurling and furling in just a few seconds. Close-reaching or with the wind on the beam, they work very well... but not quite so well beyond a broad reach. And this is where the wind usually blows from on our big trips! So the symmetrical spi has lost none of its magic. The Parasailor is simply an evolution: the same sail, but integrating a paraglider wing in its upper section. The idea is to stabilize the sail by creating lift. And it works well on monohulls with their spinnaker poles! On board our multihulls, the bows enable us to position the tack upwind, which is even better. Let's have a look at how it works! So how does it work? The upper third of the spi is opened by a gigantic kite wing. It's a three-fold principle. It's a question of helping the lift of the sail, of forcing it to spread out properly in a horizontal plane, and also to avoid it collapsing annoyingly (waves or other jolts), by evacuating the air, likely too much of which is

stuck in the sail. That's it for the theory, and it seems to be best adapted to "classic" monohulls. Heavier and generally slower downwind, they are frequently being pushed along when they sail. Not so in the case of multihulls, where the airflow over the spinnaker is almost always laminar, due to their higher speeds, and therefore their higher wind angle. One reason why the famous French sailor, Yves Parlier uses downwind sails with cell-construction... but oriented at 90° to the wing of our Parasailor and better adapted to our cruising multihulls. We need to go offshore, with a few miles of clear water to run in. All the crew gets the sail ready. For now it's securely stowed in the forward cockpit of our test boat, a Lagoon. On each side, two lines are prepared. One acts as a guy, passing through a block fixed at the extremity of the bow. The other is the standard sheet. So that's responsible for the horizontal trimming, which is to say the angle of the sail in relation to the wind. In practice, the four lines are never in use at the time, as you would see

on a big monohull. To windward, the guy is under load, but the sheet remains slack. To leeward, the sheet is the main line for adjustment. The guy is more of a downhaul. The setup is very easy, even for a crew unfamiliar with downwind sails. So here there's no need for either a pole or a bowsprit. That's the first advantage of a Parasailor: the relatively minimal amount of hardware required. We put in a reef. The aim of this is to encourage the maximum lift out of the headsail. The sock is quickly hoisted, thanks to a continuous line, slowed slightly by the wing. The spi isn't completely out yet, but is already beginning to fill. Despite the inevitable weight of the wing and its hangers - compared to a traditional spinnaker, the Parasailor shows an undeniable willingness to fill, and remain filled! This behavior is especially noticeable in a choppy sea. This is equally good news for the sail itself, as it doesn't have any tendency to get caught up on the spreaders. With 7 knots of true wind, we managed to come up to 60° off the apparent, but the spi was starting to curl into the wind. As a result, the orientation of the sail is not ideal and generates a significant sideways force, inevitably leading to leeway. Our speed is 4 knots. A gennaker would do better in these conditions. At 90° to the wind, the Parasailor works well, and the speed builds to an honorable 5.8 knots thanks to a little puff at 8/9 knots. It's no surprise that our spi is even more at ease when we bear away. Gybing is extremely simple, as the sail remains filled. It is tempting to keep the wind very far aft, but in "pushing" mode, the speed is not so great. Around mid-day the wind drops. No more than 2 or 3 knots. Between 110° and 130° the Parasailor manages to stay filled. But our speed stagnates between 1.5 and 1.6 knots. Getting it down: the sock swallows up the spi and its wing, without getting caught up anywhere. In the afternoon, the breeze finally returns to the water, and with 13 knots true, the Parasailor gives its best at 90° to the true wind: the luff shapes perfectly to the wind. So the sail is ideally oriented for a laminar flow. The GPS is celebrating, showing 8 knots... It's no surprise that the cost of spinnaker as technical as the Parasailor is pretty much double that of an asymmetric or a gennaker - around €60 per m². But you need to take into account the hardware you don't need: no bowsprit, no furling gear... And it's undeniable that the Parasailor shows its qualities best on points of sail further aft. Not in terms of pure performance, because there's a tendency to want to drop the main to keep the headsail filled and swallow up the miles on a downwind passage. The best for transatlantic crossing in the trade winds...



1 That hardest part? Pulling the sailbag out of the locker and getting it in place on the trampoline. If you've got any back trouble, don't do this on your own; get help!



2 Getting the sail ready generally takes place on the trampoline. On newer boats with forward cockpits, these can also be used for stowing the bag



4



3

3 The two sheets on each side are ready. The halyard is clipped on to the spi and its sock.



5

5 Guys and sheets clipped on to their respective points. When you get to know the sail, you can even pre-trim the lines



7

4 Hoist! The spi climbs to the top of the mast, hidden by the sock. A little bit of elbow grease from the crew... or an electric winch!



6

6 With a few tugs, the sock is pulled up to the head of the sail, and the spi fills effortlessly by playing the sheet and guy



8

No need for a bowsprit or spi pole here. The deck hardware required is minimal. And gybing is made simple by having a double set of sheets and guys



9

The wing, perfectly trimmed by the multiple hangers, generates a strong lift, great for setting a spi. When unfolded, it also helps the spi maintain a horizontal position

9 The dealer advises, for best sail efficiency, to reef or even drop the main. This advice seems to us to be relevant to very downwind angles on a mono, but perhaps not on a multihull which just wants to go and go!

A nice surprise: during our test, the wing and its hangers made no attempt to get caught up in the rigging



10

11



To get it down, all you need to do is pull on the sock's endless line. This operation only slightly slows down as the wing enters the neck of the sock



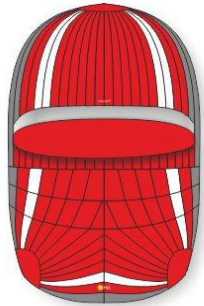
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The spi sock allows for stress-free sail handling. Take your time getting the spi down...

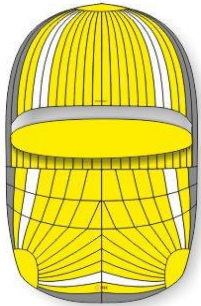
Parasailor's designs

Parasailor Standard-Designs for Parasailor size PS 6.0 - PS 8.5

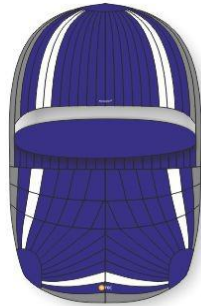
Parasail Standard-Designs for Parasail size PL 12.5 - PL 14.5



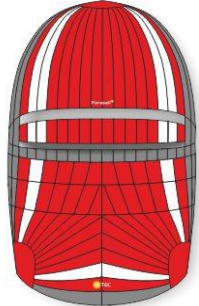
red passion



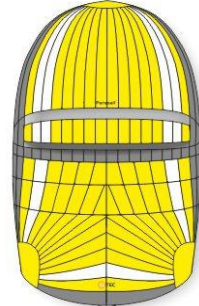
yellow passion



blue passion



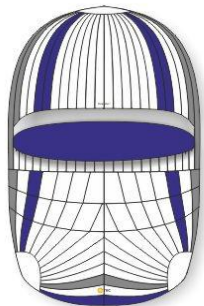
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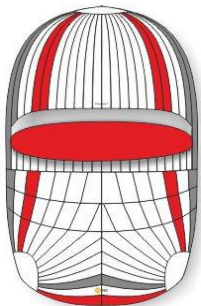
yellow passion



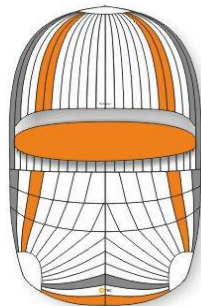
blue passion



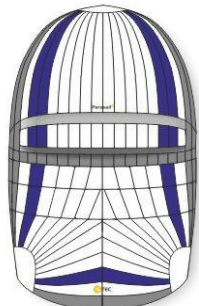
blue vision



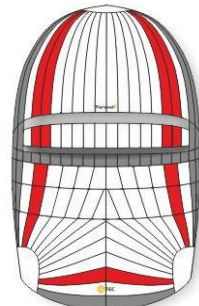
red vision



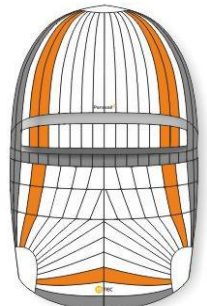
orange vision



blue vision



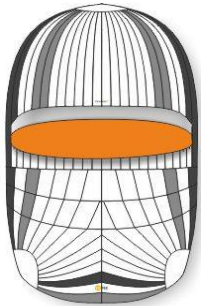
red vision



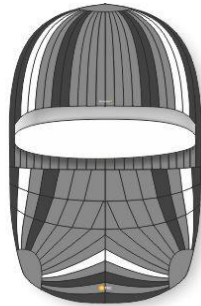
orange vision



orange emotion



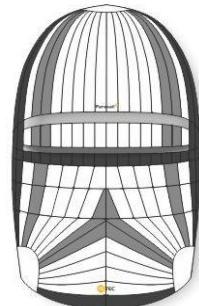
white emotion



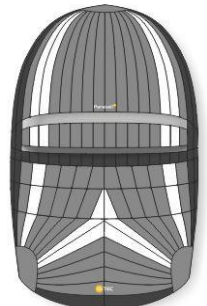
grey emotion



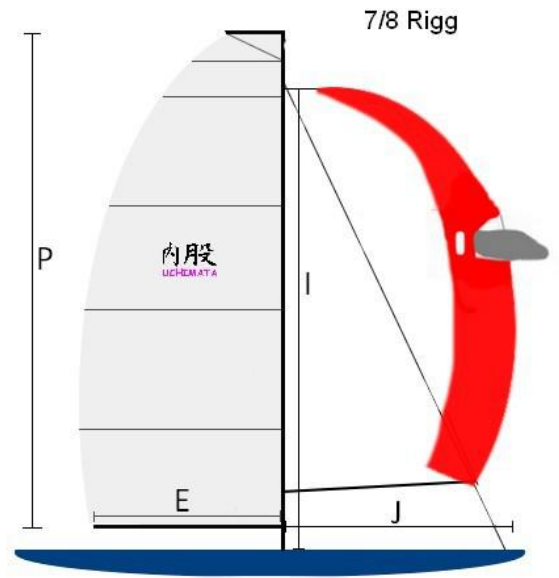
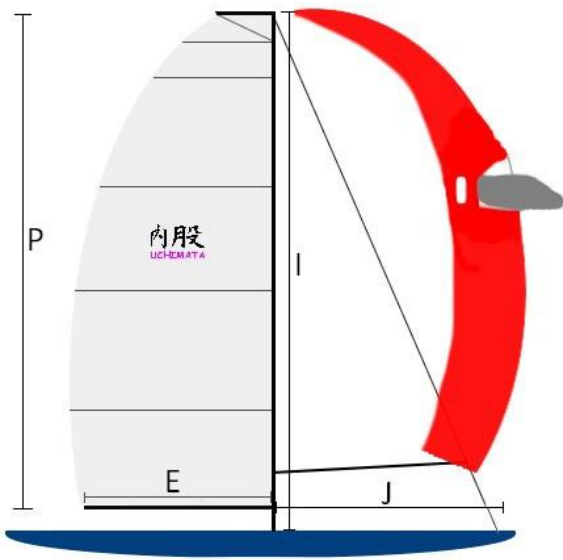
orange emotion



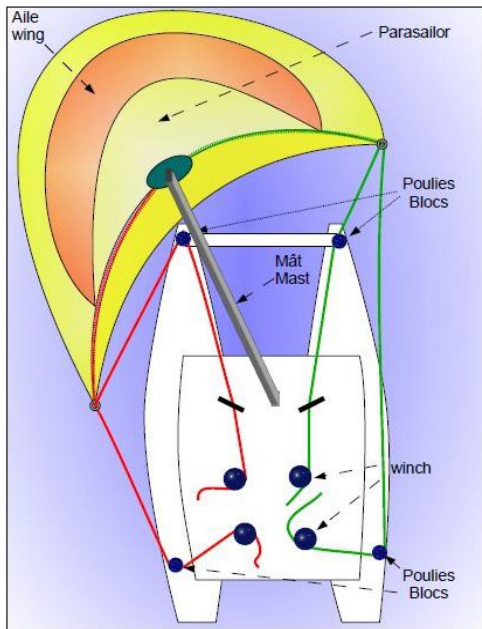
white emotion



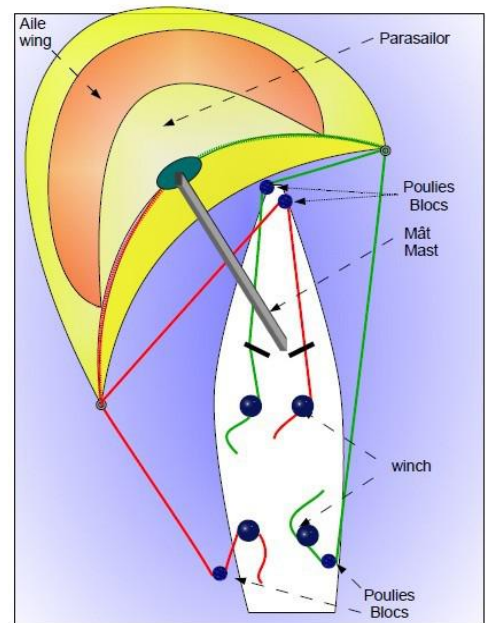
grey emotion



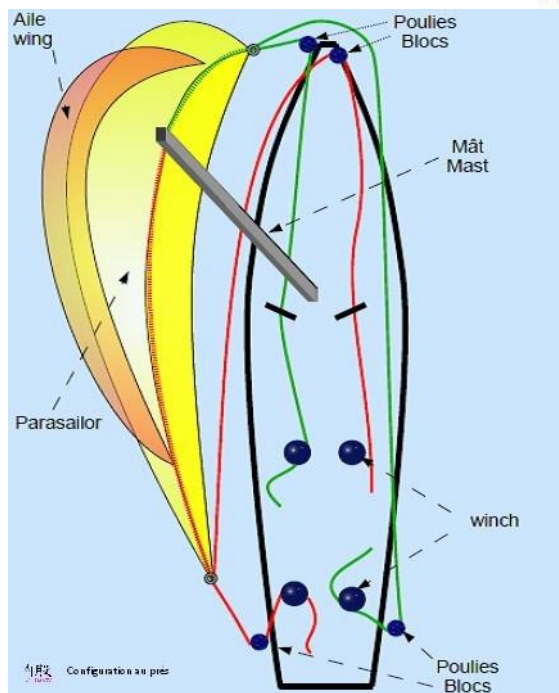
The I is the necessary measure requested to compute the surface of the sail.



内股 Configuration au portant (down wind)



内股 Configuration au portant (down wind)



内股 Configuration au près

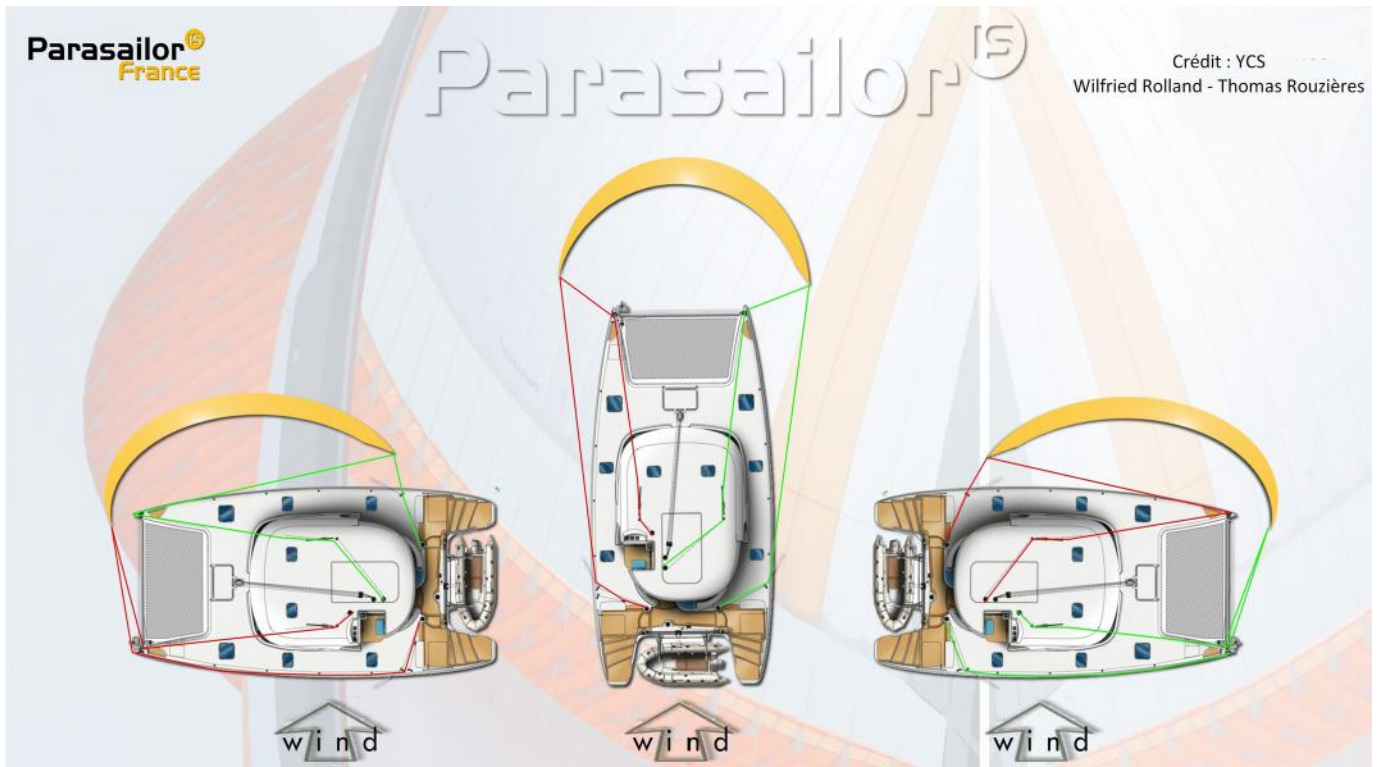


Diagram of plan's deck of multihull / Parasailor

A halyard, the sheets and... a Parasailor. You are ready to sail at the lift with the most stable of sail and always efficient. A unique solution : simple and completed from -60° to $+60^{\circ}$ AWA, passing to 180° of wind.

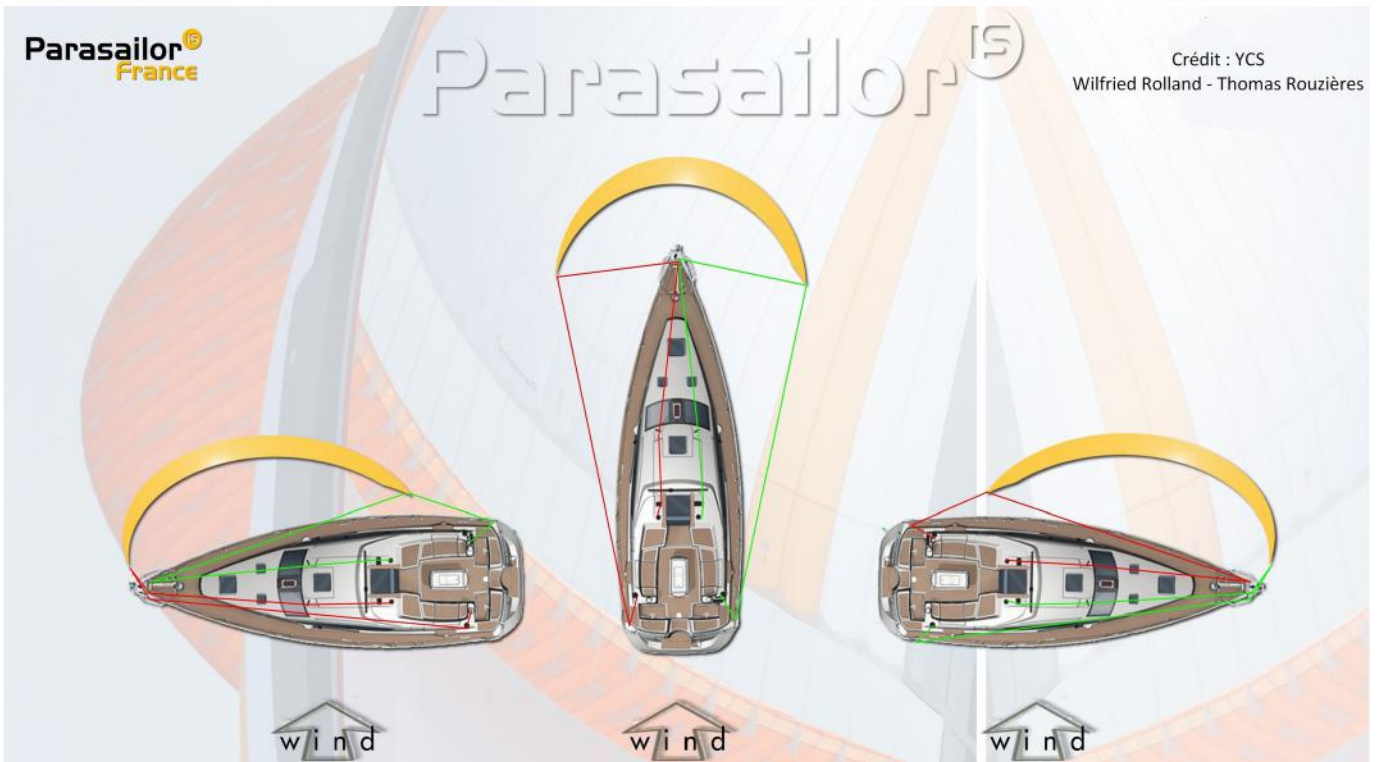


Diagram of plan's deck of single-hulled craft / Parasailor

A halyard, the sheets and... a Parasailor. You are ready to sail at the lift with the most stable of sail and always efficient. A unique solution : simple and completed from -60° to $+60^{\circ}$ AWA, passing to 180° of wind.

Parasailor ^{IS}
bien plus qu'un spi.

Crédit : YCS
Wilfried Rolland - Thomas Rouzières



ISTEC
the downwind company

内股

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