



PWA CONSTRUCTORS  
CHAMPION 2005, 2006, 2007, 2008



ISA CONSTRUCTORS  
CHAMPION 2005, 2006, 2007



ISWC CONSTRUCTORS  
CHAMPION 2008

**warp F2009**



North Sails chief sail designer **KAI HOPF** and North Sails chief tester **JIMMY DIAZ** @ work with their new Warp F2009

With the Warp F2009 Kai Hopf introduces a revolutionary way of putting profile into the sail. We call this the **INDEPENDANT.SHAPING.CONCEPT**. Instead of having one shape for the whole sail (body and sleeve) Kai now works with 2 separate (independent) shapings for the sail body and the sleeve. Even though this means twice the design time/effort for Kai the advantages of this shaping concept are a break-through in sail design as it enables Kai to also create different tensions of these 2 parts of the sail:



## KEY FEATURES

## NEW:

## INDEPENDANT.SHAPING.CONCEPT

2 separate (independent) shapings

Sail body tension towards the internal leading edge for better rotation and improved control

Lower mast sleeve tension for more dynamic - easier to sail

Apprx. 15 % weight decrease and increased wind range

Maximum performance on SDM masts



**warp F2009**



WARP F2009		RACING
↙	↘	
SPEED-SLALOM	5,2 5,7 6,3 7,0 8,0 9,0 9,8	
FORMULA	11,0 12,0	

1. The sail body tension is still pretty high plus oriented towards the internal leading edge. Through the leading edge oriented sail body shaping the Warp F2009 rotates even better than its predecessor plus we could also improve the high end control again.

2. The independent shaping enables us to use much lower tension for the mast sleeve area. This makes the Warp F2009 much more dynamic, especially when accelerating (at the start or after jibing) or going through lulls (since it needs less wind pressure now to develop forward motion). This also makes the new Warp a lot less physical to sail.



### Focus on the race not on the sail

The second thing we have focused on during the development of the new Warp is to reduce the weight as much as possible. The design team has achieved this by reducing the number of battens from 8 to 7 in all sizes up to 7.0.

In addition we have replaced the heavy XPly materials in the head and around the boom area with **lighter** (printed) monofilm. In total we were able to reduce the weight by apprx. 15% compared to the Warp F2008.

To sum up the new Warp was designed to match the new PWA 6-3 rules which require that the sail covers a greater wind range. Through the **INDEPENDANT.SHAPING.CONCEPT** we could increase the wind range by 25% compared to last year's Warp. In addition the sail is much less physical to sail due lower sleeve tension and the **reduced overall weight**.



### WHY NORTH?



	WARP F2008								
Size	5,2	5,7	6,3	7,0	8,0	9,0	9,8	11,0	12,0
Boom max (cm)	179	185	193	206	225	242	251	262	tba
Luff max (m)	4,08	4,32	4,52	4,78	5,08	5,28	5,54	5,80	tba
Battens	7	7	7	7	8	8	8	8	8
Camber	4	4	4	4	4	4	4	5	5
Best Mast	400	430	430	460	460	520	520	550	550
Design Focus	Slalom	Slalom	Slalom	Slalom	Slalom	Slalom		Formula	Formula

## AVAILABILITY: March '09