

APH: **538.2** CDL: **6.399**

GPH: **602.3** CertNo: **22/1**

BOAT

Class **Viper 640**
Designer **Brian Bennett**
Builder **Rondar Raceboats**
Age date **10/2014**
Series date **01/1993**
Offset file **viper_640.off**
Data file **I72V640**

HULL

Length Overall **6.450 m**
Maximum Beam **2.420 m**
Draft **1.403 m**
Displacement **340 kg**
DLR **1.8590**
IMS Division **Sportboat**
Dynamic Allowance **0.000%**
Age Allowance **0.487%**

PROPELLER

Installation **No Propeller**
Type **N/A**
Diameter **N/A**

CREW

Maximum weight **240 kg**
Minimum weight **155 kg** * when applied
Non Manual Power **No**
Crew Arm Extension **0.50 m**

SAIL AREAS (m²)

	Measured	Rated
Mainsail	14.94	15.44
Headsail Luffed	7.62	7.62
Headsail Flying		

Symmetric
Asymmetric **37.71** **38.00**
(All asymmetric spinnakers with SHW/SFL > 85%)

STORM SAIL AREAS (m²)

Trysail **4.05**
Storm Jib **3.62**
Heavy Weather Jib **9.76**

SAIL LIMITS

Headsails **5**
Spinnakers **4**

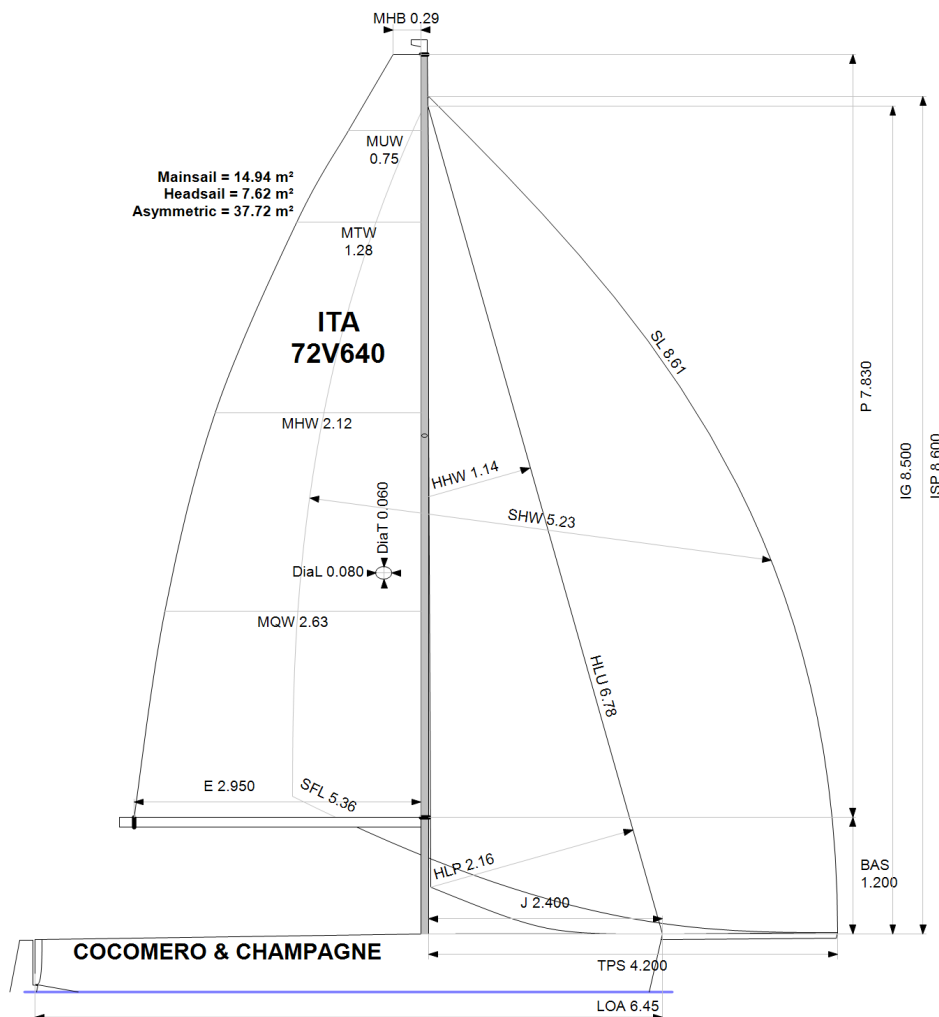
STABILITY

Righting Moment **9.7 kg·m**
Stability Index **N/A**

COMMENTS

Intestatorio: Lanfranconi Oriano

The owner and any other person in charge is responsible that boat is complying with her certificate in accordance with RRS 78.1 and ORC Rule 304.



Rated boat velocities in knots

Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	43.5°	38.7°	37.5°	37.6°	37.5°	38.1°	39.1°
Beat VMG	3.59	4.25	4.40	4.44	4.54	4.57	4.58
52°	5.45	6.09	6.35	6.46	6.68	6.82	6.96
60°	5.67	6.40	6.74	6.91	7.14	7.40	7.63
75°	5.81	6.73	7.43	7.76	7.98	8.42	8.89
90°	5.87	6.66	7.88	8.57	8.99	9.30	10.18
110°	5.96	7.06	7.77	8.44	9.69	10.67	11.82
120°	5.85	7.09	8.12	8.91	9.67	10.39	12.75
135°	5.45	6.47	7.85	9.37	10.49	11.56	13.37
150°	4.62	5.71	6.59	7.88	9.40	11.20	14.24
Run VMG	4.00	4.95	5.71	6.83	8.14	9.70	12.33
Gybe Angles	142.9°	150.5°	145.3°	141.5°	142.0°	144.7°	149.8°

Time Allowances in secs/NM							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1001.5	846.9	817.3	810.9	793.6	788.5	785.5
52°	660.8	590.9	567.3	557.0	539.0	527.9	516.9
60°	635.4	562.4	533.9	520.6	503.9	486.6	472.1
75°	619.2	534.6	484.7	464.1	451.1	427.5	405.1
90°	613.4	540.8	457.0	420.3	400.4	386.9	353.6
110°	604.0	509.9	463.4	426.7	371.7	337.5	304.5
120°	615.8	507.5	443.4	404.3	372.5	346.4	282.3
135°	660.8	556.7	458.6	384.3	343.3	311.5	269.2
150°	778.8	630.0	546.4	456.7	382.9	321.4	252.8
Run VMG	899.3	727.1	630.9	527.3	442.1	371.2	291.9
Selected Courses							
Windward / Leeward	950.4	787.0	724.1	669.1	617.9	579.8	538.7
All purpose	741.1	626.3	568.6	528.0	492.1	464.3	431.5

Single Number Scoring Options		
Course	Time On Distance	Time On Time
Windward / Leeward	680.3	0.8820
All purpose	538.2	1.1147

Custom scoring options for Italy

Single Number	Time On Distance	Time On Time
Coastal/Long Distance	588.1	1.0202
Triple Number Coastal/Long Distance Low	683.7	0.8776
Triple Number Coastal/Long Distance Medium	540.8	1.1095
Triple Number Coastal/Long Distance High	459.0	1.3073
Triple Number Windward/Leeward Low	868.7	0.6907
Triple Number Windward/Leeward Medium	684.5	0.8766
Triple Number Windward/Leeward High	573.9	1.0454

Performance Curve	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Coastal/Long Distance	945.3	741.6	646.2	571.6	514.5	467.7	392.3

Data in **meters/kilograms (Metric)**

HULL AND APPENDAGES (Lightship Trim)

Class	Viper 640	LOA	6.450	VCGD	-0.500
Measurement	09/03/2021	Max. Beam	2.420	VCGM	-0.429
HIN		Draft	1.403	RM Measured (kg·m)	9.7
Plan review		Displacement	340	RM Default (kg·m)	9.4
Hull construction	Cored	Wetted area	5.93	Limit of positive stability(°)	N/A
Aramid Hull Core	No	IMS L	6.016	Stability Index	N/A
Carbon Rudder	No	LSM0	5.676		
Light stanchions	No	Acc. length	6.450		
Trim tab	No	Sink (kg/mm)	5.09		

PROPELLER

Propeller Type	No Propeller
Hydro generator	No PIPA 0.0000

RIG

Forestay tension	Fixed	P	7.830	E	2.950
Inner stay	None Fitted	IG	8.500	J	2.400
Carbon mast	Yes	ISP	8.600	BAS	1.200
Headsail furler	No	MDT1	0.060	FSD	No Foil
Mainsail furler	No	MDL1	0.080	SFJ	
Articulated bowsprit	No	MDT2	0.055	SPL	
Non-circular rigging	No	MDL2	0.060	WPL	
Fiber rigging	No	TL	1.200	TPS	4.200
Runners/Checkstays	0	MW	0.080	BD	
Spreaders	1	GO	0.080	MWT	
				MCG	

FLOTATION AND STABILITY

Calculation method	VCG entered directly	SFFP	-0.006	SAFP	6.450
Flotation Date	09/03/2021	FFM		FAM	
Measurer		FF	0.500	FA	0.100
Comment		LCFcl	3.621	LCFsh	3.779
		SG	1.0200	HBI	0.595



Club
Certificate
2022

Boat
**COCOMERO &
CHAMPAGNE**
ITA-72V640

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MAINSAIL

<i>Id</i>	<i>MHB</i>	<i>MUW</i>	<i>MTW</i>	<i>MHW</i>	<i>MQW</i>	<i>Area</i>	<i>Meas.Date</i>	<i>Maker</i>	<i>Material</i>	<i>Comment</i>
A	0.29	0.75	1.28	2.12	2.63	14.94	09/03/2021			

HEADSAIL

<i>Id</i>	<i>HHB</i>	<i>HUW</i>	<i>HTW</i>	<i>HHW</i>	<i>HQW</i>	<i>HLP</i>	<i>HLU</i>	<i>Btn</i>	<i>Flying</i>	<i>FT</i>	<i>Area</i>	<i>Meas.Date</i>	<i>Maker</i>	<i>Material</i>	<i>Comment</i>
A	0.04	0.33	0.63	1.14	1.65	2.16	6.78	Yes	No		7.62	09/03/2021			

ASYMMETRIC SPINNAKER

<i>Id</i>	<i>SLU</i>	<i>SLE</i>	<i>SL</i>	<i>SHW</i>	<i>SFL</i>	<i>Ratio</i>	<i>Area</i>	<i>Meas.Date</i>	<i>Maker</i>	<i>Material</i>	<i>Comment</i>
A	9.65	7.57	8.61	5.23	5.36	98%	37.71	09/03/2021			