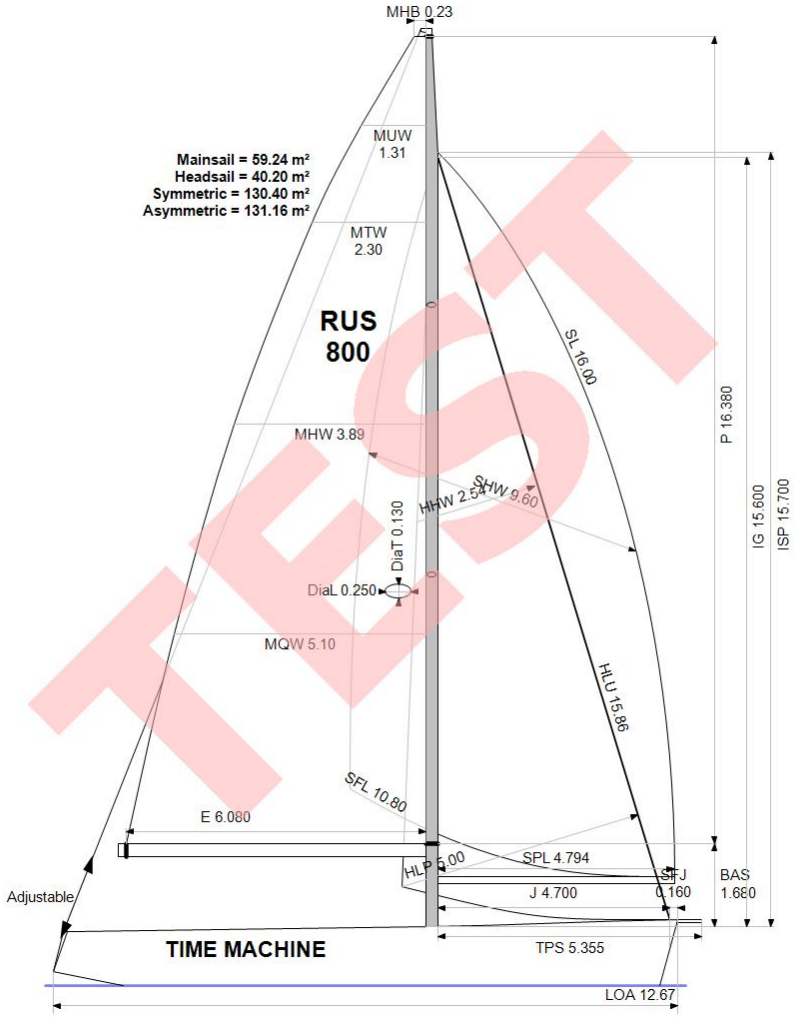
Club
Certificate
2022

Boat
TIME MACHINE
RUS 800



Rated boat velocities in knots							
Wind Velocity	**6 kt**	**8 kt**	**10 kt**	**12 kt**	**14 kt**	**16 kt**	**20 kt**
Beat Angles	43.0°	41.4°	39.9°	39.0°	38.7°	38.2°	38.8°
Beat VMG	3.86	4.73	5.22	5.42	5.52	5.67	5.71
52°	5.87	7.08	7.61	7.77	7.85	7.96	8.05
60°	6.20	7.38	7.85	8.00	8.08	8.16	8.30
75°	6.48	7.56	8.05	8.30	8.43	8.51	8.72
90°	6.40	7.61	8.05	8.43	8.74	8.95	9.17
110°	6.40	7.69	8.29	8.65	8.94	9.22	9.74
120°	6.20	7.54	8.21	8.75	9.26	9.62	10.30
135°	5.55	6.91	7.84	8.39	8.96	9.60	11.21
150°	4.65	5.81	6.92	7.79	8.30	8.81	10.02
Run VMG	4.03	5.04	6.00	6.82	7.44	7.98	8.93
Gybe Angles	140.3°	145.6°	147.8°	154.7°	163.7°	175.4°	175.4°

APH: **502.3** CDL: **10.706**

GPH: **562.2** CertNo: **080022**

BOAT

Class	**GRAND SOLEIL 42R**
Designer	**BOTIN-CARKEEK**
Builder	**DEL PARDO**
Age date	**05.2004**
Series date	**05.2004**
Offset file	**GS42R04-FK.OFF**
Data file	**RU0800 TimeMashine**

HULL

Length Overall	**12.668 m**
Maximum Beam	**3.086 m**
Draft	**2.556 m**
Displacement	**6 963 kg**
DLR	**5.2777**
IMS Division	**Cruiser/Racer**
Dynamic Allowance	**0.000%**
Age Allowance	**0.487%**

PROPELLER

Installation	**Strut**
Type	**Folding 2 blades**
Diameter	**0.490m**

CREW

Maximum weight	**785 kg**
Minimum weight	**589 kg** ** when applied*
Non Manual Power	**No**
Crew Arm Extension	

SAIL AREAS (m²)

	Measured	Rated
Mainsail	**59.24**	**60.67**
Headsail Luffed	**40.20**	**40.20**
Headsail Flying		
Symmetric	**130.40**	**130.40**
Asymmetric	**131.16**	**131.16**

(All asymmetric spinnakers with SHW/SFL > 85%)

STORM SAIL AREAS (m²)

Trysail	**17.43**
Storm Jib	**12.17**
Heavy Weather Jib	**32.86**

SAIL LIMITS

Headsails	**6**
Spinnakers	**4** ** Asymmetric may be tacked on the pole*

STABILITY

Righting Moment	**181.9 kg·m**
Stability Index	**N/A**

COMMENTS

Convert from IMS Cert No.JI1936

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.

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Time Allowances in secs/NM							
Wind Velocity	**6 kt**	**8 kt**	**10 kt**	**12 kt**	**14 kt**	**16 kt**	**20 kt**
Beat VMG	933.3	760.7	689.2	664.4	652.0	634.6	630.3
52°	613.4	508.2	473.4	463.3	458.5	452.4	447.2
60°	580.3	488.0	458.5	449.9	445.4	441.3	433.7
75°	555.9	476.4	447.1	433.6	427.1	422.8	412.7
90°	562.4	473.1	447.0	427.0	411.7	402.1	392.7
110°	562.9	468.4	434.5	416.2	402.8	390.7	369.5
120°	580.2	477.6	438.6	411.5	388.9	374.3	349.3
135°	648.8	520.9	459.4	429.2	401.8	374.9	321.0
150°	773.8	619.2	519.9	461.9	433.8	408.5	359.3
Run VMG	893.5	715.0	600.4	528.1	484.0	451.1	403.0
Selected Courses							
Windward / Leeward	913.4	737.8	644.8	596.2	568.0	542.8	516.7
All purpose	701.1	574.2	516.1	486.9	468.7	452.7	431.0

Single Number Scoring Options		
Course	**Time On Distance**	**Time On Time**
Windward / Leeward	621.0	0.9662
All purpose	502.3	1.1944

Custom scoring options for Russia

Single Number	Time On Distance	Time On Time
Predominantly Upwind	543.7	1.1036
Predominantly Downwind	506.4	1.1849

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

HULL AND APPENDAGES (Lightship Trim)

Class	**GRAND SOLEIL 42R**	LOA	**12.668**	VCGD	**0.045**
Measurement	**30.03.2015**	Max. Beam	**3.086**	VCGM	**0.034**
HIN		Draft	**2.556**	RM Measured (kg·m)	**181.9**
Plan review		Displacement	**6 963**	RM Default (kg·m)	**202.4**
Hull construction	**Cored**	Wetted area	**30.83**	Limit of positive stability(°)	**N/A**
Aramid Hull Core	**No**	IMS L	**11.310**	Stability Index	**N/A**
Carbon Rudder	**Yes**	LSM0	**10.967**		
Light stanchions	**No**	Acc. length	**10.030**		
Trim tab	**No**	Sink (kg/mm)	**23.74**		

PROPELLER

Propeller Type	**Folding 2 blades**						
Installation	**Strut**	PRD	**0.490**	EDL	**1.000**	ST3	**0.265**
Twin screw	**No**	PBW	**0.130**	ST1	**0.060**	ST4	**0.150**
Hydro generator	**No**	PIPA	**0.0039**	ST2	**0.265**	ST5	**0.310**

RIG

Forestay tension	**Aft**	P	**16.380**	E	**6.080**
Inner stay	**None Fitted**	IG	**15.600**	J	**4.700**
Carbon mast	**Yes**	ISP	**15.700**	BAS	**1.680**
Headsail furler	**No**	MDT1	**0.130**	FSD	**0.033**
Mainsail furler	**No**	MDL1	**0.250**	SFJ	**0.160**
Articulated bowsprit	**No**	MDT2	**0.085**	SPL	**4.794**
Non-circular rigging	**No**	MDL2	**0.121**	WPL	
Fiber rigging	**No**	TL	**2.440**	TPS	**5.355**
Runners/Checkstays	**0**	MW	**0.250**	BD	**0.265**
Spreaders	**2**	GO	**0.250**	MWT	**202.00**
				MCG	**5.360**

FLOTATION AND STABILITY

Calculation method	**Poles inclining**	SFFP	**0.183**	SAFP	**12.383**	W1	**21.0**	PD1	**47.0**	WD	**12.120**
Flotation Date	**08.06.2019**	FFM		FAM		W2	**41.6**	PD2	**96.0**	PLM	**2030.00**
Measurer	**RUS 92**	FF	**1.327**	FA	**1.097**	W3	**62.2**	PD3	**144.0**	GSA	**36.3**
Comment		LCFcl	**6.629**	LCFsh	**6.801**	W4	**82.6**	PD4	**192.0**	RSA	**5372.3**
		SG	**1.0250**	HBI	**1.196**						

INVENTORY

BALLAST

Id	*Kind*	*Description*	*Weight*	*LCG*	*VCG*	*TCG*
5	Fixed	3 UNIT(PART IN KEEL)	90	5.65		
4	Fixed	2 UNIT *2	4	6.42		
3	Fixed	4 UNIT * 10	40	6.62		
2	Fixed	4 UNIT *10	40	6.08		
1	Fixed		10	5.16		
		Fixed Ballast Total	**184**			

TANKS

Id	*Description*	*Sp.Wght*	*Capacity*	*Condition*	*LCG*	*VCG*
3	WATER PLASTIK PLASTIK		60	0	5.50	
2	WATER PLASTIK PLASTIK		60	0	4.50	
1	DIESEL METAL METALL	0.9000	80	~~52~~	8.69	
			Total deductible	**47**	**8.69**	

OTHER ITEMS

Id	*Kind*	*Description*	*Weight*	*LCG*	*VCG*
1	Battery	3 UNIT - 75 AMP*H	90	7.29	
1	Engine	YANMAR 3JH4E			
		Total deductible	**0**		

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MAINSAIL

Id	*MHB*	*MUW*	*MTW*	*MHW*	*MQW*	*Area*	*Meas.Date*	*Maker*	*Material*	*Comment*
1	0.23	1.31	2.30	3.89	5.10	59.24	16.08.2013	NORTH SAILS	Unknown	* Copied from legacy *

HEADSAIL

Id	*HHB*	*HUW*	*HTW*	*HHW*	*HQW*	*HLP*	*HLU*	*Btn*	*Flying*	*FT*	*Area*	*Meas.Date*	*Maker*	*Material*	*Comment*
9	0.09	0.69	1.33	2.54	3.75	5.00	15.86	No	No		40.20	30.05.2019	NORTH SAILS	Carbon	

SYMMETRIC SPINNAKER

Id	*SLU*	*SLE*	*SL*	*SHW*	*SFL*	*Area*	*Meas.Date*	*Maker*	*Material*	*Comment*
10	15.73	15.73	15.73	10.00	9.74	130.40	10.07.2017	UK Sails	Nylon	
3	15.89	15.89	15.89	9.07	8.46	118.49	16.08.2013	NORTH SAILS	Unknown	* Copied from legacy
6	15.87	15.87	15.87	9.06	8.42	118.13	20.08.2012	NORTH SAILS	Nylon	

ASYMMETRIC SPINNAKER

Id	*SLU*	*SLE*	*SL*	*SHW*	*SFL*	*Ratio*	*Area*	*Meas.Date*	*Maker*	*Material*	*Comment*
11	16.99	15.00	16.00	9.60	10.80	89%	131.16	10.07.2017	UK Sails	Nylon	
5	16.11	16.11	16.11	8.72	9.25	94%	118.49	16.08.2013	NORTH SAILS	Unknown	* Copied from legacy *