

APH: **629.3** CDL: **7.113**

GPH: **705.8** CertNo: **2344.4**

BOAT

Class **LES 31M**
Designer **Struzhilin A.**
Builder **OOO "Aquaplast"**
Age date **01.2007**
Series date **01.2007**
Offset file **LES-31_Fantom-2018.off**
Data file **RU2344_Fantom**

HULL

Length Overall **8.910 m**
Maximum Beam **3.110 m**
Draft **1.661 m**
Displacement **3 605 kg**
DLR **8.9974**
IMS Division **Cruiser/Racer**
Dynamic Allowance **0.351%**
Age Allowance **0.487%**

PROPELLER

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

CREW

Maximum weight **446 kg**
Minimum weight **334 kg * when applied**
Non Manual Power **No**
Crew Arm Extension

SAIL AREAS (m²)

	Measured	Rated
Mainsail	24.39	24.84
Headsail Luffed	25.79	25.79
Headsail Flying		
Symmetric	59.76	59.76
Asymmetric		

STORM SAIL AREAS (m²)

Trysail **7.34**
Storm Jib **6.50**
Heavy Weather Jib **17.55**

SAIL LIMITS

Headsails **5 * Woven polyester sails**
Spinnakers **4**

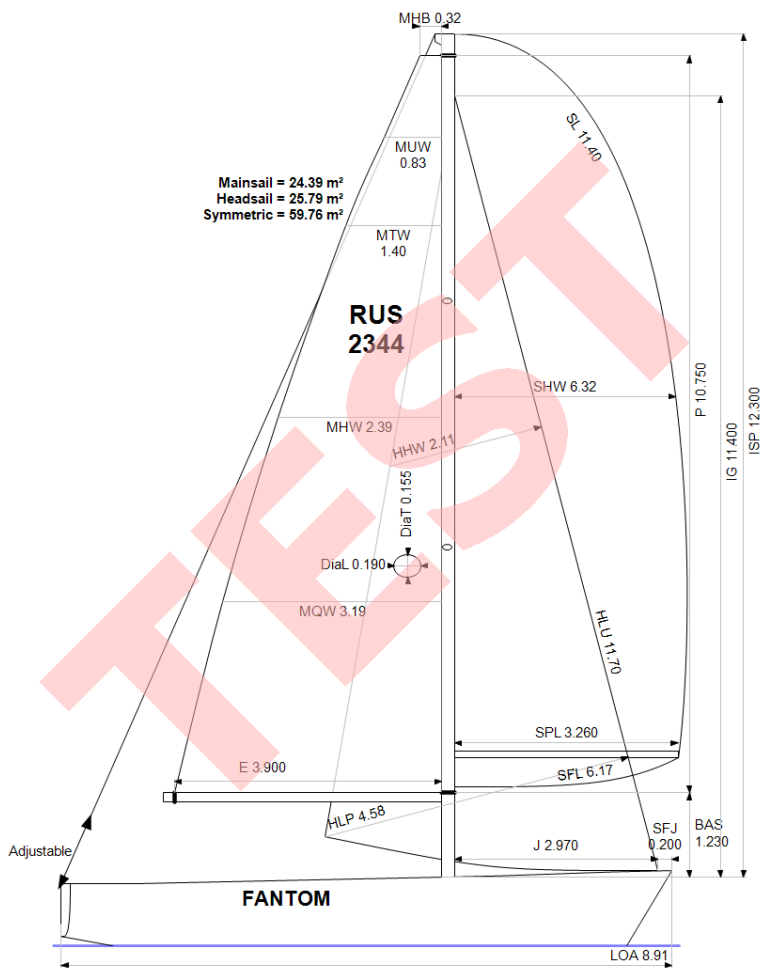
STABILITY

Righting Moment **70.9 kg·m**
Stability Index **N/A**

COMMENTS

DSPL=3200 (2017) FFM=1.07; FAM=0.81

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	43.0°	41.8°	42.4°	40.5°	39.4°	39.3°	39.9°
Beat VMG	2.98	3.56	4.02	4.37	4.53	4.59	4.57
52°	4.57	5.40	5.98	6.26	6.42	6.49	6.52
60°	4.84	5.70	6.16	6.41	6.58	6.68	6.75
75°	5.05	5.91	6.31	6.56	6.76	6.93	7.15
90°	5.01	5.99	6.46	6.74	6.88	7.06	7.45
110°	5.08	6.08	6.54	6.88	7.20	7.49	7.78
120°	4.93	5.96	6.47	6.82	7.16	7.51	8.05
135°	4.49	5.49	6.22	6.60	6.93	7.28	7.97
150°	3.87	4.84	5.70	6.28	6.63	6.94	7.60
Run VMG	3.35	4.20	4.95	5.61	6.15	6.52	7.11
Gybe Angles	146.9°	152.0°	152.9°	161.8°	176.6°	179.0°	179.0°

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2022

Boat
Fantom
RUS 2344

Novokolomiazhskii av 11-70
St-Petersburg
Russia

Time Allowances in secs/NM							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1206.6	1011.0	894.6	823.1	794.5	783.9	786.9
52°	788.0	667.3	602.5	575.2	561.2	555.1	552.2
60°	743.4	631.6	584.1	561.4	547.3	538.9	533.7
75°	712.4	609.0	570.4	549.1	532.7	519.2	503.3
90°	718.6	601.0	557.0	534.3	523.1	509.7	483.0
110°	709.0	592.0	550.2	523.6	499.9	480.9	462.7
120°	730.4	604.1	556.0	528.1	502.6	479.6	446.9
135°	801.6	655.4	578.7	545.2	519.4	494.2	451.7
150°	931.0	743.7	631.3	573.0	543.1	519.0	473.8
Run VMG	1075.0	857.7	727.1	641.2	585.0	552.2	506.0
Selected Courses							
Windward / Leeward	1140.8	934.4	810.8	732.1	689.8	668.0	646.5
All purpose	882.7	731.3	651.9	606.2	580.8	564.2	543.6

Single Number Scoring Options		
Course	Time On Distance	Time On Time
Windward / Leeward	769.4	0.7799
All purpose	629.3	0.9535

Custom scoring options for Russia

Single Number	Time On Distance	Time On Time
Predominantly Upwind	685.4	0.8754
Predominantly Downwind	632.8	0.9482

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2022

Boat
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Data in meters/kilograms (Metric)

HULL AND APPENDAGES (Lightship Trim)

Class	LES 31M	LOA	8.910	VCGD	0.003
Measurement	24.05.2022	Max. Beam	3.110	VCGM	-0.030
HIN		Draft	1.661	RM Measured (kg-m)	70.9
Plan review		Displacement	3 605	RM Default (kg-m)	70.9
Hull construction	Solid	Wetted area	18.35	Limit of positive stability(°)	N/A
Aramid Hull Core	No	IMS L	7.643	Stability Index	N/A
Carbon Rudder	No	LSM0	7.372		
Light stanchions	No	Acc. length	8.910		
Trim tab	No	Sink (kg/mm)	12.74		

PROPELLER

Propeller Type	No Propeller
Hydro generator	No PIPA 0.0000

RIG

Forestay tension	Aft	P	10.750	E	3.900
Inner stay	None Fitted	IG	11.400	J	2.970
Carbon mast	No	ISP	12.300	BAS	1.230
Headsail furler	No	MDT1	0.155	FSD	No Foil
Mainsail furler	No	MDL1	0.190	SFJ	0.200
Articulated bowsprit	No	MDT2		SPL	3.260
Non-circular rigging	No	MDL2		WPL	
Fiber rigging	No	TL	No Taper	TPS	2.970
Runners/Checkstays	0	MW		BD	
Spreaders	2	GO		MWT	
				MCG	

FLOTATION AND STABILITY

Calculation method	VCG estimated	SFFP	0.427	SAFP	7.875
Flotation Date	24.05.2022	FFM	1.070	FAM	0.810
Measurer		FF	1.083	FA	0.825
Comment		LCFcl	4.769	LCFsh	5.014
		SG	1.0000	HBI	1.000

INVENTORY

TANKS	<i>Id</i>	<i>Description</i>	<i>Sp.Wght</i>	<i>Capacity</i>	<i>Condition</i>	<i>LCG</i>	<i>VCG</i>
	G1	Gaz Portable	0.9000	27	27	4.70	
	F1	Fuel Portable	0.9000	20	20	2.60	
	F2	Fuel Portable	0.9000	12	12	8.70	
			<i>Total deductible</i>			53	4.80
OTHER ITEMS	<i>Id</i>	<i>Kind</i>	<i>Description</i>	<i>Weight</i>	<i>LCG</i>	<i>VCG</i>	
	B	Battery	100 А\ч	30	4.10		
	E	Engine	Mercury F 5 MH	25	8.90		
	A	Anchor	Danfort	17	8.70		
	T	Tools		10	4.10		
	DG	Deck Gear		5			
	SE	Safety Equipment		5			
			<i>Total deductible</i>			37	5.11

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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>
1	0.32	0.83	1.40	2.39	3.19	24.39		UlmanSails	Dacron	

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>
1	0.00	0.51	1.00	2.11	3.35	4.58	11.70	No	No		25.79	24.05.2022	UlmanSails	Dacron	

SYMMETRIC SPINNAKER

<i>Id</i>	<i>SLU</i>	<i>SLE</i>	<i>SL</i>	<i>SHW</i>	<i>SFL</i>	<i>Area</i>	<i>Meas.Date</i>	<i>Maker</i>	<i>Material</i>	<i>Comment</i>
0	11.40	11.40	11.40	6.32	6.17	59.76			Nylon	
1	10.60	10.60	10.60	6.20	6.26	54.87			Nylon	