

**GPH = 609.1**    **CDL = 9.058**

**BOAT**

Class **Grand-Surprise**  
Designer **Joubert-Nivelt**  
Builder **Archambault**  
Age Date **01/2003**  
Series Date **06/2000**  
Offset File **GRANDSURPRISE31.OFI**

**HULL**

Length Overall **9.550 m**  
Maximum Beam **2.964 m**  
Draft **2.083 m**  
Displacement **2,810 kg**  
DLR **3.3510**  
IMS Division **Performance**  
Dynamic Allowance **0.000%**  
Age Allowance **0.487%**

**PROPELLER**

Installation **Shaft exposed**  
Type **Folding 2 blades**  
Diameter **0.380m**

**CREW**

Maximum weight **577 kg**  
Minimum weight **433 kg \* when applied**  
Non Manual Power **No**  
Crew Arm Extension

**SAIL AREAS (m²)**

	Measured	Rated
Mainsail	<b>30.95</b>	<b>31.76</b>
Headsail Luffed	<b>27.08</b>	<b>27.08</b>
Headsail Flying		
Symmetric		
Asymmetric	<b>88.50</b>	<b>88.50</b>

\* 1 asymmetric(s) with SHW/SFL < 85%

**SAIL LIMITATIONS**

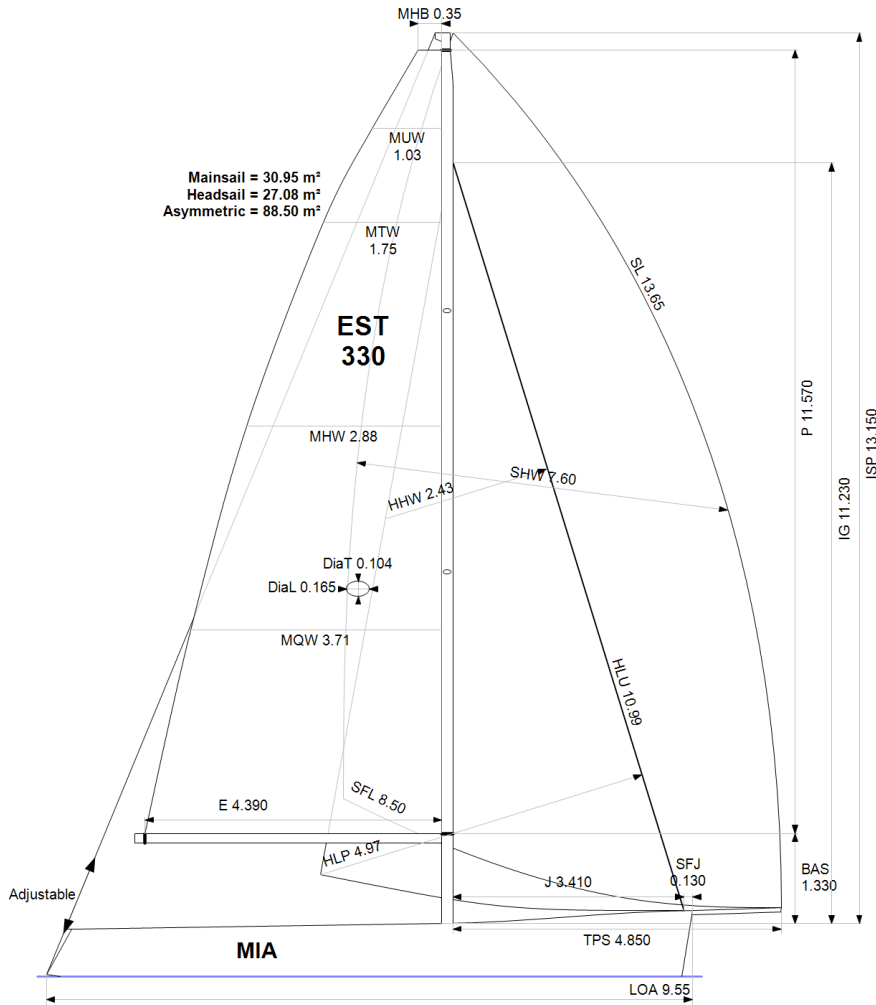
Headsails **5**  
Spinnakers **4**

**STABILITY**

Righting Moment **67.6 kg·m**  
Stability Index **107.4**

**OWNER**

The owner certifies that he/she understands his/her responsibilities under ORC Rule and Regulations.



Rated boat velocities in knots

Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	42.8°	41.3°	39.8°	38.3°	37.5°	37.5°	37.7°
Beat VMG	3.53	4.27	4.82	5.04	5.13	5.18	5.21
52°	5.38	6.38	6.89	7.08	7.17	7.22	7.28
60°	5.70	6.63	7.05	7.29	7.41	7.48	7.54
75°	5.99	6.88	7.22	7.54	7.84	8.01	8.17
90°	6.26	7.07	7.53	7.91	8.19	8.47	8.94
110°	6.03	7.01	7.56	8.11	8.74	9.32	10.09
120°	5.80	6.92	7.49	8.14	8.80	9.31	10.78
135°	5.14	6.42	7.15	7.70	8.38	9.21	11.18
150°	4.33	5.45	6.46	7.08	7.46	7.96	9.58
Run VMG	3.75	4.72	5.59	6.14	6.49	7.01	8.29
Gybe Angles	143.0°	147.0°	148.5°	151.0°	174.0°	177.0°	142.5°

Time Allowances in secs/NM							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1020.9	842.6	746.9	714.0	701.2	695.3	691.6
52°	668.9	564.3	522.7	508.2	501.8	498.5	494.8
60°	631.8	543.3	510.4	494.0	486.0	481.3	477.6
75°	601.4	523.4	498.5	477.4	459.2	449.6	440.9
90°	575.2	509.0	478.0	455.0	439.6	424.9	402.8
110°	596.7	513.7	476.4	444.0	411.7	386.4	356.6
120°	621.2	520.4	480.9	442.4	409.2	386.8	333.9
135°	700.0	560.4	503.3	467.6	429.4	391.1	321.9
150°	830.9	660.2	557.4	508.5	482.5	452.3	375.9
Run VMG	959.5	762.4	643.7	586.4	554.6	513.4	434.1
Selected Courses							
Windward / Leeward	990.2	802.5	695.3	650.2	627.9	604.4	562.9
All purpose	755.1	626.2	561.0	528.7	507.7	489.3	456.8

Single Number Scoring Options		
Course	Time On Distance	Time On Time
Windward / Leeward	678.0	0.8849
All purpose	544.5	1.1020

### Custom scoring options for Estonia

Single Number	Time On Distance	Time On Time
Coastal/Long Distance	594.5	1.0093
Triple Number Coastal/Long Distance Low	690.6	0.8688
Triple Number Coastal/Long Distance Medium	542.3	1.1063
Triple Number Coastal/Long Distance High	481.7	1.2456
Triple Number Windward/Leeward Low	896.3	0.6694
Triple Number Windward/Leeward Medium	672.3	0.8924
Triple Number Windward/Leeward High	594.7	1.0089

Performance Curve	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Coastal/Long Distance	987.1	753.6	629.1	564.4	528.6	495.6	433.6

Data in meters/kilograms (Metric)

**HULL AND APPENDAGES**

Class	<b>Grand-Surprise</b>	LOA	<b>9.550</b>	VCGD	<b>-0.130</b>
Measurement	<b>25/07/2015</b>	Max. Beam	<b>2.964</b>	VCGM	<b>-0.093</b>
Measurer		Draft	<b>2.083</b>	RM Measured (kg·m)	<b>67.6</b>
HIN		Displacement	<b>2,810</b>	RM Default (kg·m)	<b>67.4</b>
Plan review		Wetted area	<b>19.06</b>	Limit of positive stability(°)	<b>110.2</b>
Hull construction	<b>Solid</b>	IMS L	<b>9.375</b>	Stability Index	<b>107.4</b>
Carbon Rudder	<b>No</b>	LSM0	<b>9.430</b>		
Light stanchions		Acc. length	<b>9.550</b>		
Trim tab	<b>No</b>	Sink (kg/mm)	<b>14.78</b>		

**PROPELLER**

Propeller Type	<b>Folding 2 blades</b>	PRD	<b>0.380</b>	PHD	<b>0.050</b>	ESL	<b>0.820</b>	ST2	<b>0.075</b>	ST4	<b>0.047</b>
Installation	<b>Shaft exposed</b>	PBW	<b>0.100</b>	PHL	<b>0.110</b>	ST1	<b>0.016</b>	ST3	<b>0.110</b>	ST5	<b>0.167</b>
Twin screw	<b>No</b>	PSD	<b>0.025</b>	PSA							
PIPA	<b>0.0024</b>										

**RIG**

Forestay tension	<b>Aft</b>	P	<b>11.570</b>	E	<b>4.390</b>
Inner stay	<b>None Fitted</b>	IG	<b>11.230</b>	J	<b>3.410</b>
Carbon mast	<b>No</b>	ISP	<b>13.150</b>	BAS	<b>1.330</b>
Headsail furler	<b>No</b>	MDT1	<b>0.104</b>	FSD	<b>0.028</b>
Mainsail furler	<b>No</b>	MDL1	<b>0.165</b>	SFJ	<b>0.130</b>
Articulated bowsprit	<b>No</b>	MDT2	<b>0.077</b>	SPL	
Non-circular rigging	<b>No</b>	MDL2	<b>0.125</b>	TPS	<b>4.850</b>
Fiber rigging	<b>No</b>	TL	<b>0.510</b>	BD	<b>0.145</b>
Runners/Checkstays	<b>0</b>	MW	<b>0.158</b>	MWT	<b>88.80</b>
Spreaders	<b>2</b>	GO	<b>0.173</b>	MCG	<b>4.560</b>

**FLOTATION AND STABILITY**

Inclining Test	<b>Poles Inclining</b>	SFFP	<b>0.230</b>	SAFP	<b>9.178</b>	W1	<b>46.6</b>	PD1	<b>552.9</b>	WD	<b>10.140</b>
Flotation Date	<b>30/05/2021</b>	FFM	<b>0.963</b>	FAM	<b>0.688</b>	W2	<b>46.6</b>	PD2	<b>550.1</b>	PLM	<b>9000.00</b>
Measurer		FF	<b>0.968</b>	FA	<b>0.695</b>	W3	<b>46.6</b>	PD3	<b>550.1</b>	GSA	<b>1.0</b>
Comment		LCFcl	<b>5.350</b>	LCFsh	<b>5.541</b>	W4	<b>46.6</b>	PD4	<b>550.3</b>	RSA	<b>1.0</b>
		SG	<b>1.0000</b>	HBI	<b>0.781</b>						

**MEASUREMENT INVENTORY**

Id	Tank Type	Capacity	LCG	VCG	Condition	Description
1	<b>Fue</b>	<b>30.0</b>	<b>7.95</b>			<del>15.0</del> Tank, center
1	<b>Battery Starb.</b>		<b>6.55</b>	VCG		
2	<b>Battery Center</b>		<b>5.25</b>			



**MAINSAIL**

Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Maker	Material	Comment
4	0.35	1.03	1.75	2.88	3.71	30.95		01/07/2020	North sails	Unknown	
3a	0.32	1.04	1.71	2.86	3.71	30.80		30/06/2013	Quantum	Unknown	

**HEADSAIL**

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Btn	Flying	FT	Area	Measurer	Meas.Date	Maker	Material	Comment
7	0.09	0.61	1.19	2.43	3.71	4.97	10.99	No	No		27.08		13/05/2021	One Sails	Unknown	
4a	0.07	0.54	0.99	1.79	2.63	3.50	10.92	No	No		19.60		17/04/2020	Quantum	Unknown	
1	0.07	0.55	0.98	1.76	2.59	3.50	10.96	No	No		19.49		17/04/2020		Unknown	
6	0.02	0.60	1.17	2.20	2.97	3.39	9.62	No	Inner		19.05		13/05/2021	One Sails	Unknown	
3	0.08	0.43	0.80	1.58	2.43	3.37	10.96	No	No		17.95		17/04/2020		Unknown	JibTop
5	0.08	0.43	0.79	1.60	2.50	3.37	10.10	Yes	No		16.73		02/07/2020		Unknown	

**ASYMMETRIC SPINNAKER**

Id	SLU	SLE	SL	SHW	SFL	Ratio	Area	Measurer	Meas.Date	Maker	Material	Comment
3	14.76	12.54	13.65	7.60	8.50	89%	88.50		13/05/2021	One Sails	Unknown	
2	15.05	11.94	13.50	7.75	8.22	94%	88.21		13/05/2021	One Sails	Unknown	
1a	12.49	11.30	11.90	5.24	6.81	77%	55.05				Unknown	