

<b>BOAT</b> Name <b>GRANMA X</b> Sail Nr <b>GRE-88</b>	<b>GPH</b> <b>614.4</b>	<b>HULL</b> Length Overall <b>11.360m</b> Maximum Beam <b>3.660m</b> Displacement <b>5,463kg</b> Draft <b>2.101m</b> IMS Reg. Division <b>Performance</b> Dynamic Allowance <b>0.149%</b> Fwd Accommodation <b>No</b> Hull Construction <b>Cored</b> Carbon Rudder <b>No</b> Crew Arm Extension
<b>GENERAL</b> Class <b>IMX-38</b> Designer <b>N.JEPESEN</b> Builder <b>X-YACHTS</b> Series <b>09/1992</b> Age <b>04/1996</b> Age Allowance <b>0.487%</b> Offset File <b>ORC0010.OFF - 23/11/1995 11:10:40</b> Measurement by <b>TSALT/MAVROUD/META - 11/03/2006</b>		IMSL <b>9.831m</b> VCGD <b>-0.020m</b> Sink <b>19.61kg/mm</b> RL <b>8.912m</b> VCGM <b>0.045m</b> WS <b>26.06m<sup>2</sup></b> LSM0 <b>9.761m</b> Displacement/Length ratio <b>5.8742</b>



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<b>SCORING OPTIONS</b>						
	<b>COASTAL / LONG DISTANCE</b>			<b>WINDWARD / LEEWARD</b>		
Time on Distance	<b>596.0</b>			<b>664.6</b>		
Time on Time	<b>1.0067</b>			<b>1.0156</b>		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	<b>704.6</b>	<b>543.8</b>	<b>485.5</b>	<b>905.3</b>	<b>666.8</b>	<b>580.7</b>
Time on Time	<b>0.9580</b>	<b>1.2413</b>	<b>1.3904</b>	<b>0.7456</b>	<b>1.0123</b>	<b>1.1624</b>

<b>TIME ALLOWANCES</b>							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	<b>1034.1</b>	<b>855.9</b>	<b>753.4</b>	<b>707.3</b>	<b>692.2</b>	<b>686.3</b>	<b>672.5</b>
52°	<b>682.4</b>	<b>572.4</b>	<b>518.4</b>	<b>497.8</b>	<b>490.2</b>	<b>486.7</b>	<b>481.3</b>
60°	<b>648.4</b>	<b>547.8</b>	<b>504.5</b>	<b>486.1</b>	<b>476.6</b>	<b>472.4</b>	<b>469.9</b>
75°	<b>623.5</b>	<b>531.7</b>	<b>494.7</b>	<b>474.9</b>	<b>460.4</b>	<b>449.8</b>	<b>441.5</b>
90°	<b>631.2</b>	<b>529.0</b>	<b>488.9</b>	<b>473.4</b>	<b>454.9</b>	<b>438.3</b>	<b>415.6</b>
110°	<b>628.1</b>	<b>519.9</b>	<b>479.2</b>	<b>454.0</b>	<b>434.0</b>	<b>422.0</b>	<b>402.1</b>
120°	<b>644.2</b>	<b>530.5</b>	<b>484.4</b>	<b>456.4</b>	<b>430.6</b>	<b>408.8</b>	<b>383.3</b>
135°	<b>708.8</b>	<b>574.8</b>	<b>505.9</b>	<b>474.4</b>	<b>448.4</b>	<b>422.7</b>	<b>374.8</b>
150°	<b>834.9</b>	<b>664.4</b>	<b>562.3</b>	<b>504.5</b>	<b>475.4</b>	<b>451.3</b>	<b>405.2</b>
Run VMG	<b>964.0</b>	<b>767.2</b>	<b>648.8</b>	<b>574.0</b>	<b>522.8</b>	<b>487.6</b>	<b>440.7</b>

**Certificate**

Number **000231**  
ORC Ref **GRE01010304**  
Issued On **30/07/2018**  
VPP Ver. **2018 1.00**  
Valid until **28/02/2019**

**Crew Weight**

Default **665kg**  
Maximum **680kg**  
Minimum\* **510kg**  
*\*when applied by the NoR and SI*  
Non Manual Pwr **No**

**Special Scoring**

	ToD	ToT
Non Spin GPH	<b>650.4</b>	<b>0.9225</b>
Non Spin OSN	<b>630.0</b>	<b>0.9524</b>

<b>Selected Courses</b>							
Windward / Leeward	<b>999.1</b>	<b>811.5</b>	<b>701.1</b>	<b>640.7</b>	<b>607.5</b>	<b>587.0</b>	<b>556.6</b>
Circular Random	<b>846.2</b>	<b>683.0</b>	<b>595.9</b>	<b>545.7</b>	<b>515.0</b>	<b>494.6</b>	<b>467.4</b>
Coastal / Long Distance	<b>995.6</b>	<b>762.8</b>	<b>633.9</b>	<b>562.7</b>	<b>525.3</b>	<b>495.7</b>	<b>448.3</b>
Non Spinnaker	<b>911.1</b>	<b>728.9</b>	<b>630.0</b>	<b>571.9</b>	<b>536.0</b>	<b>512.3</b>	<b>481.3</b>

**Sails Limitations**

Headsails	Spinnakers
<b>5</b>	<b>3</b>

<b>Velocity Prediction in Knots for True Wind Speeds</b>							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	<b>42.4°</b>	<b>41.1°</b>	<b>40.4°</b>	<b>39.1°</b>	<b>38.8°</b>	<b>38.8°</b>	<b>38.6°</b>
Beat VMG	<b>3.48</b>	<b>4.21</b>	<b>4.78</b>	<b>5.09</b>	<b>5.20</b>	<b>5.25</b>	<b>5.35</b>
52°	<b>5.28</b>	<b>6.29</b>	<b>6.95</b>	<b>7.23</b>	<b>7.34</b>	<b>7.40</b>	<b>7.48</b>
60°	<b>5.55</b>	<b>6.57</b>	<b>7.14</b>	<b>7.41</b>	<b>7.55</b>	<b>7.62</b>	<b>7.66</b>
75°	<b>5.77</b>	<b>6.77</b>	<b>7.28</b>	<b>7.58</b>	<b>7.82</b>	<b>8.00</b>	<b>8.15</b>
90°	<b>5.70</b>	<b>6.80</b>	<b>7.36</b>	<b>7.60</b>	<b>7.91</b>	<b>8.21</b>	<b>8.66</b>
110°	<b>5.73</b>	<b>6.92</b>	<b>7.51</b>	<b>7.93</b>	<b>8.29</b>	<b>8.53</b>	<b>8.95</b>
120°	<b>5.59</b>	<b>6.79</b>	<b>7.43</b>	<b>7.89</b>	<b>8.36</b>	<b>8.81</b>	<b>9.39</b>
135°	<b>5.08</b>	<b>6.26</b>	<b>7.12</b>	<b>7.59</b>	<b>8.03</b>	<b>8.52</b>	<b>9.61</b>
150°	<b>4.31</b>	<b>5.42</b>	<b>6.40</b>	<b>7.14</b>	<b>7.57</b>	<b>7.98</b>	<b>8.88</b>
Run VMG	<b>3.73</b>	<b>4.69</b>	<b>5.55</b>	<b>6.27</b>	<b>6.89</b>	<b>7.38</b>	<b>8.17</b>
Gybe Angles	<b>145.1°</b>	<b>149.0°</b>	<b>150.8°</b>	<b>156.8°</b>	<b>174.2°</b>	<b>180.0°</b>	<b>180.0°</b>

**Class Division Length**

CDL = **9.372**

**Storm Sails Areas**


Heavy Weather Jib **32.84**  
Storm Jib (JL=10.14) **12.16**  
Storm Trysail **11.47**

**Owner**

<b>BOAT</b>	
Name <b>GRANMA X</b>	Sail Nr <b>GRE-88</b>
File <b>GR88IMX</b>	Data in <b>meters/kilograms</b>

<b>INCLINING TEST AND FREEBOARDS</b>			
Inclining Test <b>Current Inclining</b>			
Flotation date <b>13/05/2017</b>		SG <b>1.0265</b>	
FFM <b>1.219</b>	FF <b>1.219</b>	SFFP <b>1.098</b>	
FAM <b>0.957</b>	FA <b>0.957</b>	SAFP <b>10.595</b>	
W1 <b>80.0</b>	PD1 <b>259.0</b>	WD <b>12.260</b>	
W2 <b>80.0</b>	PD2 <b>259.0</b>	GSA <b>50.2</b>	
W3 <b>80.0</b>	PD3 <b>259.0</b>	RSA <b>5941.7</b>	
W4 <b>80.0</b>	PD4 <b>259.0</b>	PLM <b>2069.0</b>	
LCF from stem on CL / on sheer		<b>6.239 / 6.480</b>	
Maximum beam station from stem		<b>6.705</b>	
RM Measured		<b>136.0kg-m</b>	
RM Default		<b>132.9kg-m</b>	
Limit of positive stability / Stab.Index		<b>112.9° / 112.3</b>	
Freeboard at mast at 4.650		<b>1.091</b>	

<b>RIG</b>			
Forestay Tension <b>Aft</b>	Spreaders <b>3</b>		
Inner Stay <b>None Fitted</b>	Runners <b>0</b>		
Carbon Mast <b>No</b>	Jumper Struts <b>None</b>		
Taper Hollows <b>No</b>	Jib Furler <b>No</b>		
Fiber Rigging <b>No</b>	Main Furler <b>No</b>		
Lenticular Rigging <b>No</b>	Without Backstay <b>No</b>		
Articulated Bowsprit <b>No</b>			
P <b>13.380</b>	E <b>4.900</b>	MDT1 <b>0.117</b>	MW <b>0.160</b>
IG <b>15.500</b>	J <b>4.390</b>	MDL1 <b>0.200</b>	GO <b>0.187</b>
ISP <b>15.453</b>	SFJ <b>0.260</b>	MDT2 <b>0.116</b>	BD <b>0.190</b>
BAS <b>1.848</b>	SPL <b>4.485</b>	MDL2 <b>0.160</b>	MWT <b>180.00</b>
FSP <b>0.084</b>	TPS	TL <b>1.600</b>	MCG <b>5.000</b>




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**IMS Measurement Certificate**

**Certificate**

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<b>MIZZEN RIG AND SAILS</b>	
N/A	

<b>PROPELLER</b>			
Installation <b>Strut</b>	PRD <b>0.410</b>		
Type <b>Folding 2 blades</b>	PBW <b>0.110</b>		
Twin Screw <b>No</b>	PIPA <b>0.0031</b>		
ST1 <b>0.048</b>	ST3 <b>0.170</b>	ST5 <b>0.280</b>	
ST2 <b>0.170</b>	ST4 <b>0.097</b>	EDL <b>1.480</b>	

<b>COMMENTS</b>	
ex "AEOLOS II", ex "ELLINIX", ex "MAISTRATO". Builder's displacement.	

<b>MOVABLE BALLAST</b>	
N/A	

<b>CENTERBOARD</b>	
N/A	

<b>SAILS (Maximum Areas)</b>									
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula	
	0.172	1.01	1.84	3.15	4.13	39.00	39.85	P/8 · (E + 2·MQW + 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
Symmetric	SLU	SLE	SL	SHW	SFL	102.77		SL · (SFL + 4·SHW) / 6	
	15.18	15.18	15.18	8.18	7.90				
Asymmetric Not Available									

<b>HEADSAILS</b>												
Area = 0.1125·HLU · (1.445·HLP + 2·HQW + 2·HHW + 1.5·HTW + HUW + 0.5·HHB)												
<b>HHB</b>	<b>HUW</b>	<b>HTW</b>	<b>HHW</b>	<b>HQW</b>	<b>HLP</b>	<b>HLU</b>	<b>Area</b>	<b>Btn</b>	<b>Fly</b>	<b>Meas.Date</b>	<b>Material</b>	<b>Comment</b>
0.13	0.71	1.27	2.28	3.28	4.28	15.36	34.53			06/07/2017	Polyest	#3
0.09	0.58	1.09	2.14	3.22	4.28	15.38	33.16			29/07/2010	Unknow	

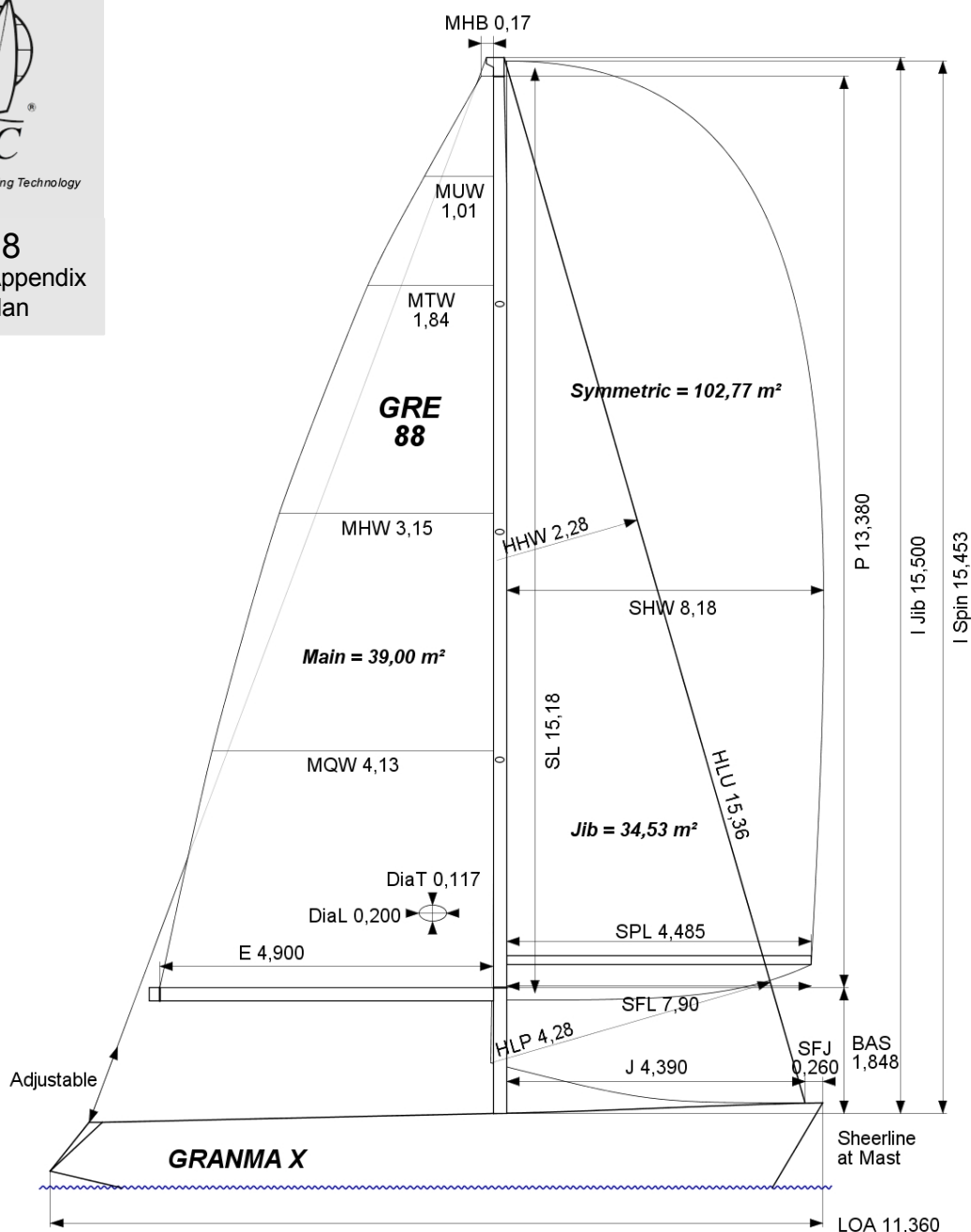
<b>MEASUREMENT INVENTORY</b>				
Measurer <b>SPIRIDELI GRE-16</b>				
Date <b>13/05/2017</b>				
Comment				
<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Distance</i>	<i>VCG Description</i>
<i>Id</i>	<i>Item</i>	<i>Maker</i>	<i>Model</i>	
1	Engine	VOLVO PENTA	2030	
<i>Id</i>	<i>Item</i>	<i>Weight Description</i>		

<b>MEASUREMENT INVENTORY</b>						
<i>Id</i>	<i>Item</i>	<i>Tank Use</i>	<i>Tank Type</i>	<i>Capcty</i>	<i>Dist.</i>	<i>VCG Condtn Description</i>
2	Tank	FUEL	INOX	80.0	6.50	6.0 6 LT
1	Tank	WATER	PVC	120.0	6.30	0.0 EMPTY
<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Distance</i>	<i>VCG Description</i>		
2	Battery	19.0	6.70	70Ah, port		
1	Battery	60.0	6.60	3 x 75Ah, centerline		



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Sail Plan



**SAILS INVENTORY**

**MAINSAIL (1)**

Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment
4	0.172	1.01	1.84	3.15	4.13	39.00	GIAPANTZIS	03/05/2018		Unknown	

**HEADSAILS (2)**

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
9	0.13	0.71	1.27	2.28	3.28	4.28	15.36	97%	34.53			SPIRIDEL	06/07/2017	Quantum	Polyest	#3
6	0.09	0.58	1.09	2.14	3.22	4.28	15.38	97%	33.16			SPIRIDEL	29/07/2010		Unknow	

**SYMMETRIC SPINNAKERS (1)**

Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
9	15.18	15.18	15.18	8.18	7.90	102.77	GIAPANTZIS	03/05/2018	Quantum	Nylon	1.5

**ASYMMETRIC SPINNAKERS (0)**

Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
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