

<b>BOAT</b>
Name <b>KATARIINA II</b>
Sail Nr <b>EST 431</b>

<b>GPH</b>
<b>609,5</b>

<b>HULL</b>
Length Overall <b>11,995 m</b>
Maximum Beam <b>3,793 m</b>
Displacement <b>7 771 kg</b>
Draft <b>2,112 m</b>
IMS Reg. Division <b>Cruiser/Racer</b>
Dynamic Allowance <b>0,623%</b>
Fwd Accommodation <b>Yes</b>
Hull Construction <b>Cored</b>
Carbon Rudder <b>No</b>
Trim Tab <b>No</b>
IMS L <b>11,197</b> VCGD <b>-0,107</b> VCGM <b>0,045</b>
Sink <b>24,17 kg/mm</b> Wetted Area <b>31,21 m<sup>2</sup></b>



**2009**  
ORC International  
Certificate

<b>GENERAL</b>
Class <b>ARCONA 400</b>
Designer <b>S.QVIBERG</b>
Builder <b>BO-MARIN</b>
Series <b>01.2001</b>
Age <b>06.2006</b>
Age Allowance <b>0,520%</b>
Offset File <b>arc40.off - 10.07.2006 9:06:38</b>
Measurement by <b>A.Tetsmann - 06.07.2009</b>

<b>SCORING OPTIONS</b>		
	<b>OFFSHORE</b>	<b>INSHORE</b>
	<b>COASTAL / LONG DISTANCE</b>	<b>WINDWARD / LEEWARD</b>
Time On Distance	<b>609,5</b>	<b>682,2</b>
Time On Time	<b>0,9844</b>	<b>0,9895</b>
Performance Line	PLT <b>0,843</b> PLD <b>90,8</b>	PLT <b>0,989</b> PLD <b>272,1</b>
Triple Number	Low <b>0,9551</b> Medium <b>1,2551</b> High <b>1,4232</b>	Low <b>0,7217</b> Medium <b>0,9993</b> High <b>1,1776</b>

<b>Rating Office</b>
<b>Estonian Yachting Union</b>
<b>Veiko Rosme</b>
<b>Regati 1, 11911, Tallinn</b>
<b>Estonia</b>

<b>TIME ALLOWANCES</b>							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	<b>1049,8</b>	<b>855,2</b>	<b>758,9</b>	<b>712,0</b>	<b>684,0</b>	<b>666,9</b>	<b>652,3</b>
52°	<b>667,1</b>	<b>556,5</b>	<b>506,3</b>	<b>480,5</b>	<b>467,5</b>	<b>460,7</b>	<b>455,0</b>
60°	<b>618,5</b>	<b>527,7</b>	<b>483,8</b>	<b>459,7</b>	<b>451,5</b>	<b>446,6</b>	<b>441,5</b>
75°	<b>581,6</b>	<b>506,5</b>	<b>465,4</b>	<b>445,9</b>	<b>434,5</b>	<b>426,4</b>	<b>417,4</b>
90°	<b>576,6</b>	<b>494,9</b>	<b>454,7</b>	<b>437,5</b>	<b>423,4</b>	<b>414,1</b>	<b>397,7</b>
110°	<b>594,3</b>	<b>508,3</b>	<b>463,8</b>	<b>442,7</b>	<b>423,7</b>	<b>403,5</b>	<b>376,5</b>
120°	<b>635,2</b>	<b>529,7</b>	<b>478,5</b>	<b>450,1</b>	<b>432,5</b>	<b>411,4</b>	<b>373,3</b>
135°	<b>744,0</b>	<b>590,8</b>	<b>515,9</b>	<b>472,2</b>	<b>448,3</b>	<b>431,5</b>	<b>392,7</b>
150°	<b>894,1</b>	<b>696,0</b>	<b>581,9</b>	<b>516,6</b>	<b>475,4</b>	<b>450,6</b>	<b>415,6</b>
Run VMG	<b>1032,4</b>	<b>803,6</b>	<b>671,6</b>	<b>586,5</b>	<b>528,5</b>	<b>487,8</b>	<b>441,9</b>

<b>Certificate</b>
Number <b>EST431</b>
ORC Ref <b>EST00000443</b>
Issued On <b>6.07.2009</b>
VPP Ver. <b>1.11</b>
Valid until <b>31.12.2009</b>

<b>Crew Weight</b>
Declared <b>800 kg</b>
Default* <b>819 kg</b>

<b>Special Scoring</b>
ToD ToT
Double <b>611,9 0,9805</b>
Non Spinnaker <b>644,9 0,9304</b>

<b>Selected Courses</b>							
Windward / Leeward	<b>1059,4</b>	<b>843,2</b>	<b>726,2</b>	<b>657,5</b>	<b>613,5</b>	<b>584,0</b>	<b>553,1</b>
Circular Random	<b>847,1</b>	<b>680,7</b>	<b>590,9</b>	<b>538,3</b>	<b>505,7</b>	<b>484,2</b>	<b>457,0</b>
Ocean for PCS	<b>906,8</b>	<b>712,6</b>	<b>604,2</b>	<b>537,8</b>	<b>494,3</b>	<b>463,5</b>	<b>420,4</b>
Non Spinnaker	<b>912,7</b>	<b>726,3</b>	<b>624,1</b>	<b>563,4</b>	<b>525,5</b>	<b>500,7</b>	<b>470,7</b>

<b>Sails Limitations</b>
Genoa <b>4</b> Jibs <b>3</b> Spinnakers <b>4</b>
Spinnaker configuration <b>Asymmetric-Pole</b>

<b>Storm Sails Areas</b>
Heavy Weather Jib <b>34,73</b>
Storm Jib (JL=10,43) <b>12,86</b>
Storm Trysail <b>14,77</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>45,3°</b>	<b>43,8°</b>	<b>42,3°</b>	<b>40,5°</b>	<b>39,3°</b>	<b>38,6°</b>	<b>38,1°</b>
Beat VMG	<b>3,43</b>	<b>4,21</b>	<b>4,74</b>	<b>5,06</b>	<b>5,26</b>	<b>5,40</b>	<b>5,52</b>
52°	<b>5,40</b>	<b>6,47</b>	<b>7,11</b>	<b>7,49</b>	<b>7,70</b>	<b>7,81</b>	<b>7,91</b>
60°	<b>5,82</b>	<b>6,82</b>	<b>7,44</b>	<b>7,83</b>	<b>7,97</b>	<b>8,06</b>	<b>8,15</b>
75°	<b>6,19</b>	<b>7,11</b>	<b>7,74</b>	<b>8,07</b>	<b>8,29</b>	<b>8,44</b>	<b>8,63</b>
90°	<b>6,24</b>	<b>7,27</b>	<b>7,92</b>	<b>8,23</b>	<b>8,50</b>	<b>8,69</b>	<b>9,05</b>
110°	<b>6,06</b>	<b>7,08</b>	<b>7,76</b>	<b>8,13</b>	<b>8,50</b>	<b>8,92</b>	<b>9,56</b>
120°	<b>5,67</b>	<b>6,80</b>	<b>7,52</b>	<b>8,00</b>	<b>8,32</b>	<b>8,75</b>	<b>9,64</b>
135°	<b>4,84</b>	<b>6,09</b>	<b>6,98</b>	<b>7,62</b>	<b>8,03</b>	<b>8,34</b>	<b>9,17</b>
150°	<b>4,03</b>	<b>5,17</b>	<b>6,19</b>	<b>6,97</b>	<b>7,57</b>	<b>7,99</b>	<b>8,66</b>
Run VMG	<b>3,49</b>	<b>4,48</b>	<b>5,36</b>	<b>6,14</b>	<b>6,81</b>	<b>7,38</b>	<b>8,15</b>
Gybe Angles	<b>142,4°</b>	<b>145,9°</b>	<b>151,6°</b>	<b>161,2°</b>	<b>169,6°</b>	<b>172,2°</b>	<b>177,5°</b>

<b>Owner</b>
<b>Aivar Tuulberg</b>
<b>Kreutzwaldi 19c</b>
<b>Tartu, Estonia</b>
<b>SMS</b>
I certify that I understand my responsibilities under ORC Rules and Regulations
Signature

<b>BOAT</b>	
Name <b>KATARIINA II</b>	Sail Nr <b>EST 431</b>
File <b>Est0431.dxt</b>	Data in <b>meters/kilograms</b>

<b>RIG</b>			
Forestay Tension <b>Aft</b>	Spreaders <b>2</b>		
Inner Forestay <b>None Fitted</b>	Runners <b>0</b>		
Carbon Mast <b>No</b>	Jumpers <b>None</b>		
Taper Hollows <b>No</b>	w/o Backstay <b>No</b>		
P <b>15,350</b>	E <b>5,500</b>	MDT1 <b>0,110</b>	TL <b>2,750</b>
IG <b>16,040</b>	J <b>4,300</b>	MDL1 <b>0,230</b>	MWT <b>250,00</b>
ISP <b>16,100</b>	SFJ <b>0,000</b>	MDT2 <b>0,110</b>	MCG <b>5,600</b>
SPS <b>2,830</b>	SPL <b>4,250</b>	MDL2 <b>0,165</b>	CPW <b>2,400</b>
BAS <b>1,660</b>	TPS <b></b>	MW <b>0,200</b>	BD <b>0,175</b>
BAL <b></b>	FSP <b>0,076</b>	GO <b>0,200</b>	BWT <b></b>

<b>HEAVY ITEMS</b>			
Bow Thruster <b>No</b>	Generator <b>No</b>	Air Condition <b>No</b>	
Windlass <b>No</b>	Jib Furler <b>No</b>	Desalinator <b>No</b>	
Heavy Deck <b>No</b>	Main Furler <b>No</b>		
Headliners <b>No</b>	Water Heater <b>No</b>		
Anchor Weight	Heavy Items Adjustment	<b>0,0000</b>	
Anchor LCG	Total Gyradius Adjustment	<b>0,0392</b>	

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

<b>COMMENTS</b>

<b>INCLINING TEST AND FREEBOARDS</b>		
Inclining Test <b>Current Inclining</b>		
Flotation date <b>07.07.2006</b>		SG <b>1,0050</b>
FFM <b>1,365</b>	FF <b>1,373</b>	SFFP <b>0,455</b>
FAM <b>1,075</b>	FA <b>1,081</b>	SAFP <b>11,346</b>
W1 <b>98,200</b>	PD1 <b>200,0</b>	WD <b>11,750</b>
W2 <b>98,200</b>	PD2 <b>201,0</b>	GSA <b>12,6</b>
W3 <b>98,200</b>	PD3 <b>200,0</b>	RSA <b>4298,7</b>
W4 <b>98,200</b>	PD4 <b>201,0</b>	PLM <b>2005,</b>
Maximum beam station from stem		<b>7,702</b>
RM Measured / Default		<b>201,3 / 203,2</b>
Limit of positive stability		<b>116,0°</b>
Stability Index		<b>119,8</b>
Freeboard at mast at 4,300		<b>1,246</b>

<b>PROPELLER</b>		
Installation <b>Strut Drive</b>	PRD <b>0,430</b>	
Type <b>Folding</b>	PBW	
Twin Screw <b>No</b>	PIPA <b>0,0020</b>	
ST1 <b>0,064</b>	ST3	ST5 <b>0,290</b>
ST2	ST4 <b>0,110</b>	EDL

<b>WATER BALLAST</b>	
N/A	

<b>CENTERBOARD</b>
N/A



**2009**  
IMS Measurement  
Certificate

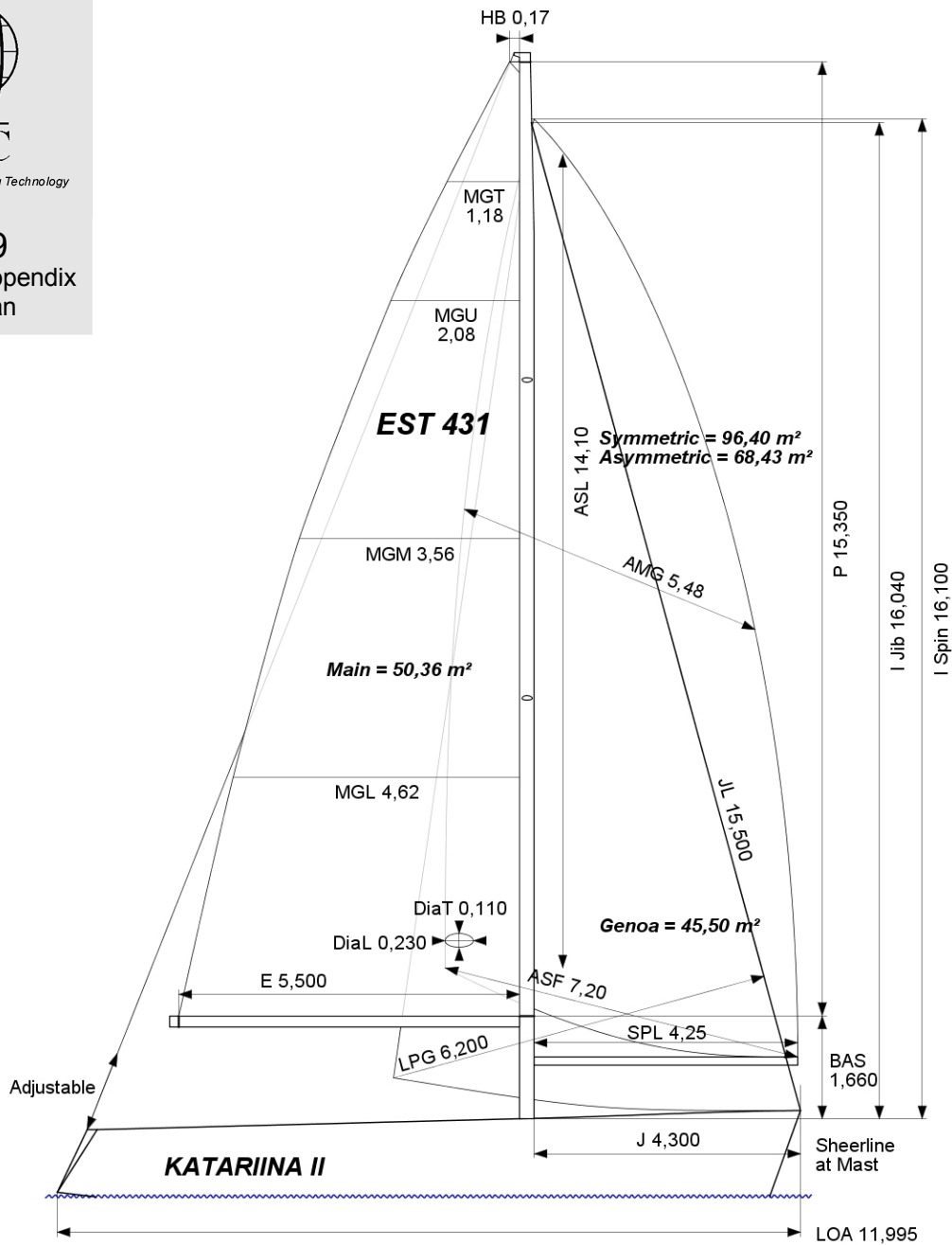
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<b>SAILS (Maximum Areas)</b>										
<b>Mainsail</b>	<b>HB</b>	<b>MGT</b>	<b>MGU</b>	<b>MGM</b>	<b>MGL</b>	<b>MSW</b>	<b>Area</b>	<b>Formula</b>		
	0,170	1,18	2,08	3,56	4,62	28,10	50,36	P/8 · (E + 2·MGL+ 2·MGM + 1.5·MGU + MGT + 0.5·HB)		
<b>Jib/Genoa</b>	<b>JH</b>	<b>JGT</b>	<b>JGU</b>	<b>JGM</b>	<b>JGL</b>	<b>JL</b>	<b>LPG</b>			
	0,07	0,72	1,40	2,78	4,36	15,50	6,20	0.1125·JL·(1.445·LPG+2·JGL+2·JGM+1.5·JGU+JGT+0.5·JH)		
<b>Symmetric</b>	<b>SL</b>	<b>SMG</b>	<b>SF</b>				<b>Area (r)</b>			
	15,70	7,45	7,04				96,40	SL · (SF + 4·SMG) / 6		
<b>Asymmetric</b>	<b>SLU</b>	<b>SLE</b>	<b>ASL</b>	<b>AMG</b>	<b>ASF</b>					
	14,80	13,40	14,10	5,48	7,20					
							68,43	75,06	ASL · (ASF + 4·AMG) / 6	



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Sail Plan



**SAILS INVENTORY**

**MAINSAIL**

Id	HB	MGT	MGU	MGM	MGL	MSW	Area	Measurer	Meas.Dat	Manufacturer	Material	Comment
1	0,170	1,18	2,08	3,56	4,62	28,10	50,36				Unknown	

**JIBS / GENOAS**

Id	JH	JGT	JGU	JGM	JGL	LPG	JL	Ovrlp	Area	Measure	Meas.Dat	Manufacturer	Material	Comment
1	0,08	0,67	1,28	2,57	3,90	5,30	15,58	123%	40,71				Unknown	
2	0,08	0,57	1,10	2,19	3,35	4,54	15,55	106%	34,81				Unknown	
3	0,07	0,72	1,40	2,78	4,36	6,20	15,50	144%	45,50				Unknown	

**SYMMETRIC SPINNAKERS**

Id	SL	SMG	SF	Area	Measurer	Meas.Dat	Manufacturer	Material	Comment
1	15,70	7,45	7,04	96,40				Unknown	

**ASYMMETRIC SPINNAKERS**

Id	SLU	SLE	ASL	AMG	ASF	Area	Kind	Measurer	Meas.Dat	Manufacturer	Material	Comment
1	14,80	13,40	14,10	5,48	7,20	68,43	asym				Unknown	