

<b>BOAT</b> Name <b>KATARIINA II</b> Sail Nr <b>EST 646</b>	<b>GPH</b> <b>625,9</b>	<b>HULL</b> Length Overall <b>10,405m</b> Maximum Beam <b>3,476m</b> Displacement <b>4 783kg</b> Draft <b>2,089m</b> IMS Reg. Division <b>Cruiser/Racer</b> Dynamic Allowance <b>0,155%</b> Fwd Accommodation <b>Yes</b> Hull Construction <b>Cored</b> Carbon Rudder <b>No</b> Crew Arm Extension
<b>GENERAL</b> Class <b>ARCONA 340</b> Designer <b>STEFAN QVIBERG</b> Builder <b>ARCONA YACHTS</b> Series <b>05.2009</b> Age <b>05.2010</b> Age Allowance <b>0,260%</b> Offset File <b>Arc340est646c.off - 7.07.2017</b> Measurement by <b>A.Tetsmann - 06.06.2017</b>		IMSL <b>9,443m</b> VCGD <b>-0,034m</b> Sink <b>19,05kg/mm</b> RL <b>8,560m</b> VCGM <b>-0,038m</b> WS <b>24,88m<sup>2</sup></b> LSMO <b>9,463m</b> Displacement/Length ratio <b>5,6443</b>



**2017**  
ORC International  
Certificate

**Rating Office**  
EYU  
Regati 1  
11911, Tallinn  
Estonia

	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
	Low	Medium	High	Low	Medium	High
Time On Distance	<b>607,3</b>			<b>678,9</b>		
Time On Time	<b>0,9879</b>			<b>0,9943</b>		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	<b>723,4</b>	<b>553,4</b>	<b>486,8</b>	<b>938,5</b>	<b>683,3</b>	<b>586,0</b>
Time on Time	<b>0,9331</b>	<b>1,2198</b>	<b>1,3866</b>	<b>0,7192</b>	<b>0,9879</b>	<b>1,1518</b>

Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	<b>1079,2</b>	<b>892,3</b>	<b>783,0</b>	<b>721,7</b>	<b>698,5</b>	<b>687,7</b>	<b>673,6</b>
52°	<b>701,4</b>	<b>587,4</b>	<b>527,1</b>	<b>501,9</b>	<b>492,7</b>	<b>488,1</b>	<b>482,0</b>
60°	<b>658,4</b>	<b>556,1</b>	<b>510,3</b>	<b>488,8</b>	<b>477,5</b>	<b>472,1</b>	<b>467,9</b>
75°	<b>623,7</b>	<b>534,2</b>	<b>498,4</b>	<b>476,5</b>	<b>457,8</b>	<b>445,2</b>	<b>436,5</b>
90°	<b>625,4</b>	<b>531,7</b>	<b>490,3</b>	<b>466,4</b>	<b>454,1</b>	<b>435,5</b>	<b>407,6</b>
110°	<b>637,4</b>	<b>528,6</b>	<b>487,3</b>	<b>458,8</b>	<b>432,6</b>	<b>411,5</b>	<b>386,8</b>
120°	<b>656,9</b>	<b>541,2</b>	<b>493,9</b>	<b>465,6</b>	<b>437,6</b>	<b>410,6</b>	<b>366,6</b>
135°	<b>727,0</b>	<b>590,5</b>	<b>518,3</b>	<b>485,3</b>	<b>459,2</b>	<b>432,7</b>	<b>381,0</b>
150°	<b>861,2</b>	<b>682,4</b>	<b>577,2</b>	<b>516,2</b>	<b>485,8</b>	<b>461,4</b>	<b>413,5</b>
Run VMG	<b>994,5</b>	<b>787,9</b>	<b>665,6</b>	<b>586,8</b>	<b>531,6</b>	<b>496,0</b>	<b>448,3</b>

**Certificate**  
Number **EST646**  
ORC Ref **EST00001520**  
Issued On **16.07.2017**  
VPP Ver. **2017 1.00**  
Valid until **31.12.2017**

**Crew Weight**  
Declared **653kg**  
Default\* **636kg**  
Non Manual Pwr **No**

**Special Scoring**

	ToD	ToT
Double H.GPH	<b>628,8</b>	<b>0,9542</b>
Double H.OSN	<b>612,4</b>	<b>0,9797</b>
Non Spin GPH	<b>657,6</b>	<b>0,9124</b>
Non Spin OSN	<b>637,4</b>	<b>0,9414</b>

Selected Courses	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Windward / Leeward	<b>1036,8</b>	<b>840,1</b>	<b>724,3</b>	<b>654,2</b>	<b>615,1</b>	<b>591,8</b>	<b>560,9</b>
Circular Random	<b>867,1</b>	<b>698,3</b>	<b>607,1</b>	<b>553,4</b>	<b>519,7</b>	<b>496,9</b>	<b>466,5</b>
Ocean for PCS	<b>1063,3</b>	<b>819,4</b>	<b>681,2</b>	<b>596,3</b>	<b>540,6</b>	<b>500,9</b>	<b>443,8</b>
Non Spinnaker	<b>923,3</b>	<b>738,2</b>	<b>637,0</b>	<b>577,1</b>	<b>539,5</b>	<b>514,6</b>	<b>482,5</b>

**Sails Limitations**

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

Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	<b>43,5°</b>	<b>42,2°</b>	<b>42,0°</b>	<b>40,0°</b>	<b>39,3°</b>	<b>38,7°</b>	<b>38,3°</b>
Beat VMG	<b>3,34</b>	<b>4,03</b>	<b>4,60</b>	<b>4,99</b>	<b>5,15</b>	<b>5,24</b>	<b>5,34</b>
52°	<b>5,13</b>	<b>6,13</b>	<b>6,83</b>	<b>7,17</b>	<b>7,31</b>	<b>7,38</b>	<b>7,47</b>
60°	<b>5,47</b>	<b>6,47</b>	<b>7,05</b>	<b>7,37</b>	<b>7,54</b>	<b>7,63</b>	<b>7,69</b>
75°	<b>5,77</b>	<b>6,74</b>	<b>7,22</b>	<b>7,55</b>	<b>7,86</b>	<b>8,09</b>	<b>8,25</b>
90°	<b>5,76</b>	<b>6,77</b>	<b>7,34</b>	<b>7,72</b>	<b>7,93</b>	<b>8,27</b>	<b>8,83</b>
110°	<b>5,65</b>	<b>6,81</b>	<b>7,39</b>	<b>7,85</b>	<b>8,32</b>	<b>8,75</b>	<b>9,31</b>
120°	<b>5,48</b>	<b>6,65</b>	<b>7,29</b>	<b>7,73</b>	<b>8,23</b>	<b>8,77</b>	<b>9,82</b>
135°	<b>4,95</b>	<b>6,10</b>	<b>6,95</b>	<b>7,42</b>	<b>7,84</b>	<b>8,32</b>	<b>9,45</b>
150°	<b>4,18</b>	<b>5,28</b>	<b>6,24</b>	<b>6,97</b>	<b>7,41</b>	<b>7,80</b>	<b>8,71</b>
Run VMG	<b>3,62</b>	<b>4,57</b>	<b>5,41</b>	<b>6,14</b>	<b>6,77</b>	<b>7,26</b>	<b>8,03</b>
Gybe Angles	<b>145,1°</b>	<b>149,4°</b>	<b>151,5°</b>	<b>157,6°</b>	<b>176,1°</b>	<b>180,0°</b>	<b>180,0°</b>

**Class Division Length**  
CDL = **9,003**

**Storm Sails Areas**

Heavy Weather Jib	<b>28,86</b>
Storm Jib (JL=9,50)	<b>10,69</b>
Storm Trysail	<b>11,13</b>

<b>BOAT</b>	
Name <b>KATARIINA II</b>	Sail Nr <b>EST 646</b>
File <b>Est0646</b>	Data in <b>meters/kilograms</b>

<b>INCLINING TEST AND FREEBOARDS</b>		
Inclining Test <b>Current Inclining</b>		
Flotation date <b>05.07.2017</b>	SG	<b>1,0250</b>
FFM <b>1,241</b>	FF <b>1,240</b>	SFFP <b>0,220</b>
FAM <b>1,101</b>	FA <b>1,103</b>	SAFP <b>10,028</b>
W1 <b>93,4</b>	PD1 <b>504,2</b>	WD <b>9,990</b>
W2 <b>93,4</b>	PD2 <b>504,5</b>	GSA <b>1,0</b>
W3 <b>93,4</b>	PD3 <b>502,6</b>	RSA <b>1,0</b>
W4 <b>93,4</b>	PD4 <b>500,6</b>	PLM <b>9000,0</b>
LCF from stem on CL / on sheer		<b>5,674 / 5,910</b>
Maximum beam station from stem		<b>6,419</b>
RM Measured		<b>146,1kg·m</b>
RM Default		<b>133,9kg·m</b>
Limit of positive stability / Stab.Index		<b>118,2° / 117,3</b>
Freeboard at mast at 3,990		<b>1,103</b>



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**IMS Measurement Certificate**

<b>RIG</b>				
Forestay Tension <b>Aft</b>	Spreaders <b>2</b>			
Inner Stay <b>None Fitted</b>	Runners <b>0</b>			
Carbon Mast <b>Yes</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>13,650</b>	E <b>4,660</b>	MDT1 <b>0,125</b>	MW <b>0,205</b>	
IG <b>14,510</b>	J <b>3,990</b>	MDL1 <b>0,205</b>	GO <b>0,235</b>	
ISP <b>14,615</b>	SFJ	MDT2 <b>0,105</b>	BD	
BAS <b>1,730</b>	SPL <b>4,160</b>	MDL2 <b>0,145</b>	MWT <b>137,90</b>	
FSP <b>0,068</b>	TPS <b>4,320</b>	TL <b>0,910</b>	MCG <b>4,450</b>	

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

<b>PROPELLER</b>		
Installation <b>Strut</b>	PRD	<b>0,425</b>
Type <b>Folding 2 blades</b>	PBW	<b>0,100</b>
Twin Screw <b>No</b>	PIPA	<b>0,0033</b>
ST1 <b>0,042</b>	ST3 <b>0,180</b>	ST5 <b>0,264</b>
ST2 <b>0,180</b>	ST4 <b>0,112</b>	EDL <b>2,420</b>

<b>COMMENTS</b>	

<b>MOVEABLE BALLAST</b>	
N/A	

<b>CENTERBOARD</b>	
N/A	

<b>SAILS (Maximum Areas)</b>									
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula	
	0,350	1,08	1,80	2,97	3,86	38,01	38,74	P/8 · (E + 2·MQW + 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
Symmetric	SLU	SLE	SL	SHW	SFL				
	14,60	14,60	14,60	7,47	7,17	90,16		SL · (SFL + 4·SHW) / 6	
Asymmetric	SLU	SLE	SL	SHW	SFL	Area (r)			
	14,70	13,94	14,32	5,48	7,29	69,71	71,85	AS · (SFL + 4·SHW) / 6	

<b>HEADSAILS</b>												
Area = 0.1125·HLU · (1.445·HLP + 2·HQW + 2·HHW + 1.5·HTW + HUW + 0.5·HHB)												
HHB	HUW	HTW	HHW	HQW	HLP	HLU	Area	Btn	Fly	Meas.Date	Material	Comment
0,10	0,69	1,30	2,31	3,24	4,12	14,50	32,21	Y		20.06.2016	Carbon	
0,10	0,69	1,30	2,32	3,25	4,13	14,45	32,18	Y		20.06.2016	Carbon	
0,10	0,67	1,26	2,32	3,26	4,12	14,46	32,09	Y			Unknow	JibTop 2016
0,10	0,67	1,27	2,28	3,16	4,08	14,45	31,54	Y		20.06.2016	Unknow	
0,08	0,71	1,31	2,34	3,20	4,08	14,16	31,37	Y		19.06.2014	Unknow	LIGHT-MEDIUM
0,08	0,68	1,30	2,31	3,21	4,11	14,19	31,37	Y		19.06.2014	Unknow	MEDIUM
0,09	0,66	1,25	2,25	3,16	4,06	14,19	30,76	Y		19.06.2014	Unknow	MEDIUM-HEAVY

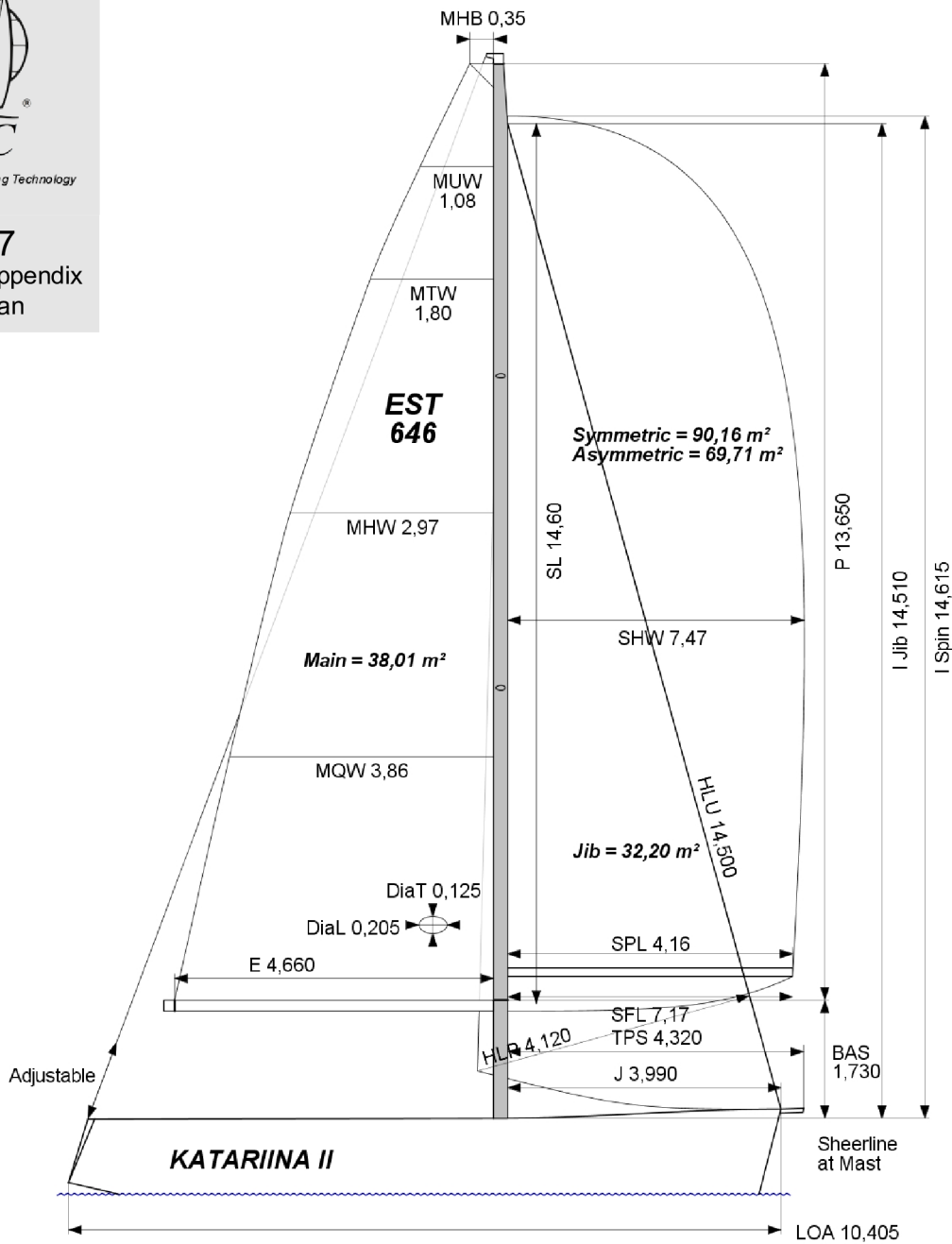
<b>MEASUREMENT INVENTORY</b>				
Measurer <b>PindoZZi FIV 174</b>				
Date <b>05.07.2017</b>				
Comment <b>ORC WC 2017</b>				
Id	Item	Weight	Distance	VCG Description
Id	Item	Maker	Model	
1	Engine	YANMAR	3YM20	
Id	Item	Weight Description		

<b>MEASUREMENT INVENTORY</b>										
Id	Item	Tank Use	Tank Type	Capcty	Dist.	VCG	Condtn	Description		
1	Tank	FUEL	plastic	80,0	8,20		40,0	Fuel tank, starboard		
2	Tank	WATER	plastic	65,0	4,30		0,0	Fresh water, portside		
Id	Item	Weight	Distance	VCG Description						
1	Battery	17,0	7,75	90 Ah, portside						
2	Battery	3,0	7,75	30 Ah, portside						
1	Misc		9,80	Air Heater Eberspächer						



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Certificate Appendix  
Sail Plan



**SAILS INVENTORY**

**MANSAL (1)**

Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment
4a	0,350	1,08	1,80	2,97	3,86	38,01	EST 1	20.06.2016	NorthSails	Carbon	

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
10a	0,10	0,69	1,30	2,31	3,24	4,12	14,50	103%	32,21	Y		EST 1	20.06.2016	NorthSails	Carbon	
11a	0,10	0,69	1,30	2,32	3,25	4,13	14,45	104%	32,18	Y		EST 1	20.06.2016	NorthSails	Carbon	
13	0,10	0,67	1,26	2,32	3,26	4,12	14,46	103%	32,09	Y		EST 1	20.06.2016	NorthSails	Unknown	JibTop 2016
12a	0,10	0,67	1,27	2,28	3,16	4,08	14,45	102%	31,54	Y		EST 1	20.06.2016	NorthSails	Unknown	
6	0,08	0,71	1,31	2,34	3,20	4,08	14,16	102%	31,37	Y		EST 2	19.06.2014	North	Unknown	LIGHT-MEDIUM
8	0,08	0,68	1,30	2,31	3,21	4,11	14,19	103%	31,37	Y		EST 2	19.06.2014	North	Unknown	MEDIUM
7	0,09	0,66	1,25	2,25	3,16	4,06	14,19	102%	30,76	Y		EST 2	19.06.2014	North	Unknown	MEDIUM-HEAVY

**SYMMETRIC SPINNAKERS (6)**

Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
8	14,60	14,60	14,60	7,47	7,17	90,16	D206	08.01.2014	NorthSails	Unknown	S-4
7	14,60	14,60	14,60	7,47	7,17	90,16	D206	08.01.2014	NorthSails	Unknown	S-1,5
6	14,60	14,60	14,60	7,47	7,17	90,16	D206	05.04.2011	NorthSails	Unknown	LIGHT
5	14,60	14,60	14,60	7,47	7,17	90,16	D206	06.04.2011	NorthSails	Unknown	MEDIUM
9	14,60	14,60	14,60	7,42	7,36	90,13	Gemalia		NorthSails	Unknown	

**ASYMMETRIC SPINNAKERS (1)**

Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
3	14,70	13,94	14,32	5,48	7,29	69,71	asym	Hemamali	26.05.2015	NorthSails	Unknown	Code 0