



ORC
Offshore Racing Congress
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2020 ORC Club Certificate

Rating Office

Estonian Yachting Union
Purje 8, maja 3
11911 Tallinn
Estonia



**ESTONIAN
YACHTING
UNION**

Certificate

Number **130/20**
Issued On **06/08/2020**
ORC Ref **03880000022**
VPP Ver. **2020 1.02**
Valid until **31/12/2020**

Crew Weight

Default 618kg
Maximum **665kg**
Minimum* **499kg**
**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring

ToD ToT
Non Spin GPH **653.2 0.9186**
Non Spin OSN **633.4 0.9473**

Sails Limitations

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

Asymmetric on centerline

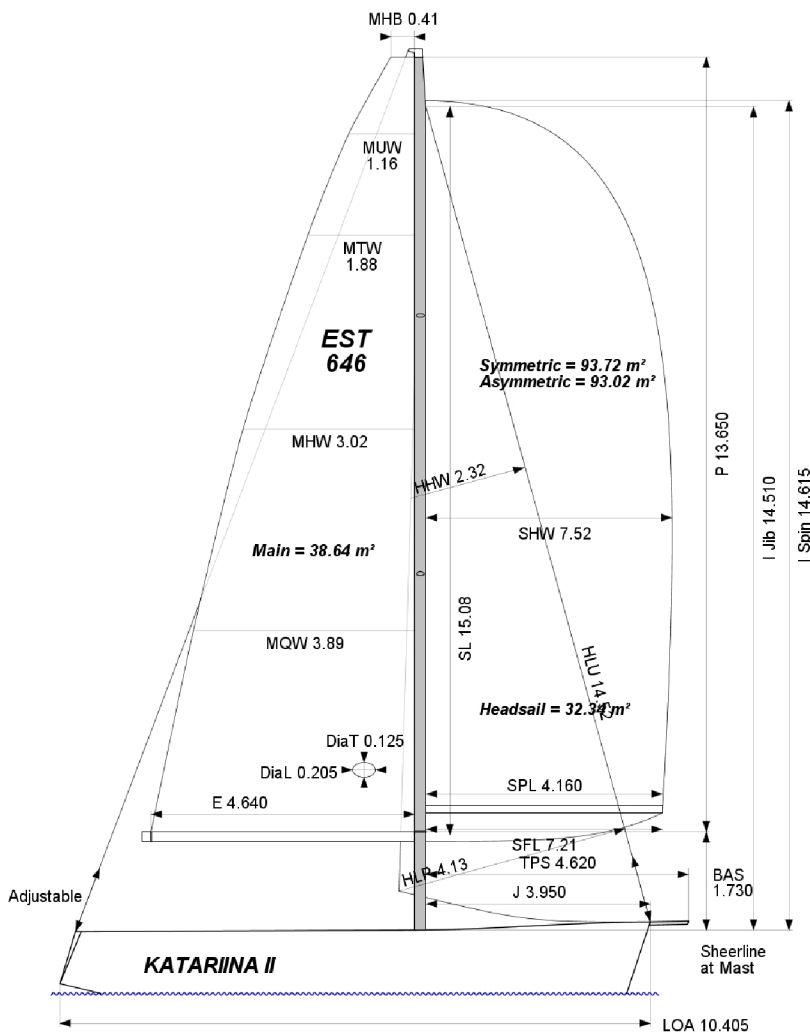
Spinnaker configuration
Symmetric: **Yes 93.72**
Asymmetric: **Yes 93.02**
Flying H/S: **No**
Spin. Pole: **Yes**

Class Division Length

CDL = 9.038

Stability (Measured)

Limit Positive Stab.: **115.8°**
Stability Index: **114.3**



BOAT		GPH		HULL				
Name	KATARIINA II	618.2		Data File	EST646	LOA	10.405m	
Sail Nr	EST 646			Offset File	EST646-	MB	3.476m	
				Displacement	4,621kg	Draft	2.113m	
CLASS				IMS Division	Cruiser/Racer	Dynamic All.	0.141%	
Class	ARCONA 340			Plan Review		Construction	Cored	
Designer	STEFAN QVIBERG			Fiber Rigging	No	Aramid Core	No	
Builder	ARCONA YACHTS			Crew Arm Ex		Carbon Rudder	No	
Series	05/2009					Light Stanchions	No	
Age Date	05/2010			IMSL	9.398m	VCGD	0.017m Sink	18.87kg/mm
Age Allowance	0.357%			RL	8.694m	VCGM	0.023m WS	24.98m
				LSM0	9.274m	Displacement/Length ratio		5.7934
COMMENTS				Water Ballast		Trim Tab	No	
				BLR Index	0.0000			
PROPELLER				CENTERBOARD				
Installation	Strut	PRD	0.425	N/A				
Type	Folding 2 blades	PBW	0.100					
		PIPA	0.0033					
SCORING OPTIONS								
	COASTAL / LONG DISTANCE				WINDWARD / LEEWARD			
Time on Distance	600.8				671.9			
Time on Time	0.9986				1.0047			
Triple Number	Low	Medium	High	Low	Medium	High		
Time on Distance	707.5	547.8	488.9	913.9	672.9	588.8		
Time on Time	0.9541	1.2322	1.3807	0.7386	1.0031	1.1464		

INCLINING TEST AND FREEBOARDS				
Inclining Test Current Inclining				
Flotation date 08/07/2019			SG 1.0000	
FFM	1.261	FF	1.266	SFFP 0.220
FAM	1.091	FA	1.100	SAFP 10.028
W1	80.2	PD1	507.9	WD 11.140
W2	80.2	PD2	511.6	GSA 1.0
W3	80.2	PD3	512.0	RSA 1.0
W4	80.2	PD4	509.6	PLM 9000.0
LCF from stem on CL / on sheer				5.698 / 5.941
Maximum beam station from stem				6.419
RM Measured				137.9kg·m
RM Default				131.0kg·m
Limit of positive stability / Stab.Index				115.8° / 114.3
Freeboard at mast at 3.950				1.119

PROPELLER					
Installation	Strut			PRD	0.425
Type	Folding 2 blades			PBW	0.100
Twin Screw	No			PIPA	0.0033
ST1	0.042	ST3	0.180	ST5	0.264
ST2	0.180	ST4	0.112	EDL	2.420

MOVABLE BALLAST	
N/A	

CENTERBOARD	
	N/A

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SAILS INVENTORY																
MAINSAIL (1)																
Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer		Meas.Date	Manufacture	Material	Comment				
5a	0.41	1.16	1.88	3.02	3.89	38.64			11/07/2019	North Sails	Carbon	2019				
HEADSAILS (8)																
Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Flying	Measurer	Meas.Date	Manufacture	Material	Comment
15a	0.10	0.69	1.30	2.32	3.25	4.13	14.52	105%	32.34	Y	No	EST1	29/07/2020	North Sails	Carbon	SuperLight2018
16a	0.10	0.71	1.31	2.31	3.21	4.12	14.57	104%	32.32	Y	No	EST1	29/07/2020	North Sails	Carbon	Light 2019
10a	0.10	0.69	1.30	2.31	3.24	4.12	14.50	104%	32.21	Y	No		20/06/2016	NorthSails	Carbon	Light 16
11a	0.10	0.69	1.30	2.32	3.25	4.13	14.45	105%	32.19	Y	No		20/06/2016	NorthSails	Carbon	S.Light 16
13	0.10	0.67	1.26	2.32	3.26	4.12	14.46	104%	32.09	Y	No			NorthSails	Unknow	JibTop 2016
14a	0.10	0.69	1.28	2.26	3.16	4.06	14.66	103%	31.94	Y	No		11/07/2019	North Sails	Carbon	Medium 2019
SYMMETRIC SPINNAKERS (3)																
Id	SLU	SLE	SL	SHW	SFL	Area	Measurer		Meas.Date	Manufacture	Material	Comment				
10	15.08	15.08	15.08	7.52	7.21	93.73	EST1		18/05/2020	North Sails	Unknown	S-1,5 2018				
11	14.97	14.97	14.97	7.54	7.21	93.24	EST1		18/05/2020	NorthSails	Unknown	S-2 2019				
12	15.04	15.04	15.04	7.45	7.30	93.00	EST1		18/05/2020	Northsails	Unknown	S-1 2019				
ASYMMETRIC SPINNAKERS (1)																
Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment				
4	15.78	13.35	14.57	7.68	7.60	93.03	asym	EST1	18/05/2020	North sails	Unknown	A-1				

MEASUREMENT INVENTORY

Measurer Tetsmann EST1

Date 08/07/2019

Comment Pirita

Internal Ballast total = 0.0

<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Distance</i>	<i>VCG</i>	<i>Description</i>
<i>Id</i>	<i>Item</i>	<i>Maker</i>	<i>Model</i>		
1	Engine	YANMAR	3YM20		
<i>Id</i>	<i>Item</i>	<i>Weight Description</i>			

MEASUREMENT INVENTORY

<i>Id</i>	<i>Item</i>	<i>Tank Use</i>	<i>Tank Type</i>	<i>Capcty</i>	<i>Dist.</i>	<i>VCG</i>	<i>Condtn</i>	<i>Description</i>
1	Tank	FUEL	Plastic	80.0	8.20		20.0	Fuel tank, starboard
2	Tank	WATER	Plastic	65.0	4.30			Fresh water, portside

<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Distance</i>	<i>VCG Description</i>				
1	Battery	17.0	7.75	90 Ah, portside				
2	Battery	3.0	7.75	30 Ah, portside				
1	Misc		9.80	Air Heater Eberspäche				

2020

ORC Club Certificate Appendix

BOAT			
Name	KATARIINA II	Certificate Number	130/20
Sail Nr	EST 646	Issued On	06/08/2020

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1044.7	860.6	756.1	716.1	702.9	698.5	687.9
52°	681.8	574.6	522.2	503.2	497.2	494.5	487.7
60°	644.0	550.4	508.9	490.5	482.9	479.3	473.0
75°	616.4	533.7	499.3	478.3	462.6	454.0	447.9
90°	623.4	525.4	488.2	471.6	456.0	437.7	416.7
110°	620.3	520.9	482.4	453.4	428.6	413.9	390.8
120°	640.5	532.9	489.3	459.0	430.4	404.0	367.3
135°	712.8	579.0	511.8	479.3	450.9	423.9	368.5
150°	844.7	671.2	568.1	510.5	480.7	454.3	404.6
Run VMG	975.4	775.0	655.3	579.1	526.5	492.2	442.1
Selected Courses							
Windward / Leeward	1010.1	817.8	705.7	647.6	614.7	595.3	565.0
Circular Random	850.0	686.8	599.8	549.6	518.7	498.0	469.8
Coastal / Long Distance	1006.6	768.2	638.1	567.9	530.5	499.4	446.9
Non Spinnaker	912.6	731.0	632.8	575.4	540.1	516.9	486.8

Velocity Prediction in Knots for True Wind Speeds							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	43.1°	41.3°	40.1°	38.6°	39.0°	39.0°	39.0°
Beat VMG	3.45	4.18	4.76	5.03	5.12	5.15	5.23
52°	5.28	6.27	6.89	7.15	7.24	7.28	7.38
60°	5.59	6.54	7.07	7.34	7.45	7.51	7.61
75°	5.84	6.75	7.21	7.53	7.78	7.93	8.04
90°	5.78	6.85	7.37	7.63	7.90	8.22	8.64
110°	5.80	6.91	7.46	7.94	8.40	8.70	9.21
120°	5.62	6.76	7.36	7.84	8.36	8.91	9.80
135°	5.05	6.22	7.03	7.51	7.98	8.49	9.77
150°	4.26	5.36	6.34	7.05	7.49	7.92	8.90
Run VMG	3.69	4.65	5.49	6.22	6.84	7.31	8.14
Gybe Angles	145.0°	149.0°	151.0°	158.0°	178.0°	180.0°	180.0°