



ORC
Offshore Racing Congress
World leader in rating technology

**2019
ORC Club
Certificate**

Rating Office

**EYU
Purje 8
11911, Tallinn
Estonia**

Certificate

Number **EST408**
Issued On **7/1/2019**
ORC Ref **EST00000706**
VPP Ver. **2019 1.01**
Valid until **12/31/2019**

Crew Weight

Default 872kg
Maximum **872kg**
Minimum* **654kg**
**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring

	ToD	ToT
Double H.GPH	582.5	1.0300
Double H.OSN	568.5	1.0554
Non Spin GPH	611.7	0.9809
Non Spin OSN	594.0	1.0101

Sails Limitations

Headsails **6** Spinnakers **4**
Asymmetric on centerline
Spinnaker configuration
Symmetric: **Yes** **145.87**
Asymmetric: **Yes** **159.78**
Flying H/S: **No**
Spin. Pole: **Yes**

Class Division Length

CDL = 10.958

Stability (Measured)

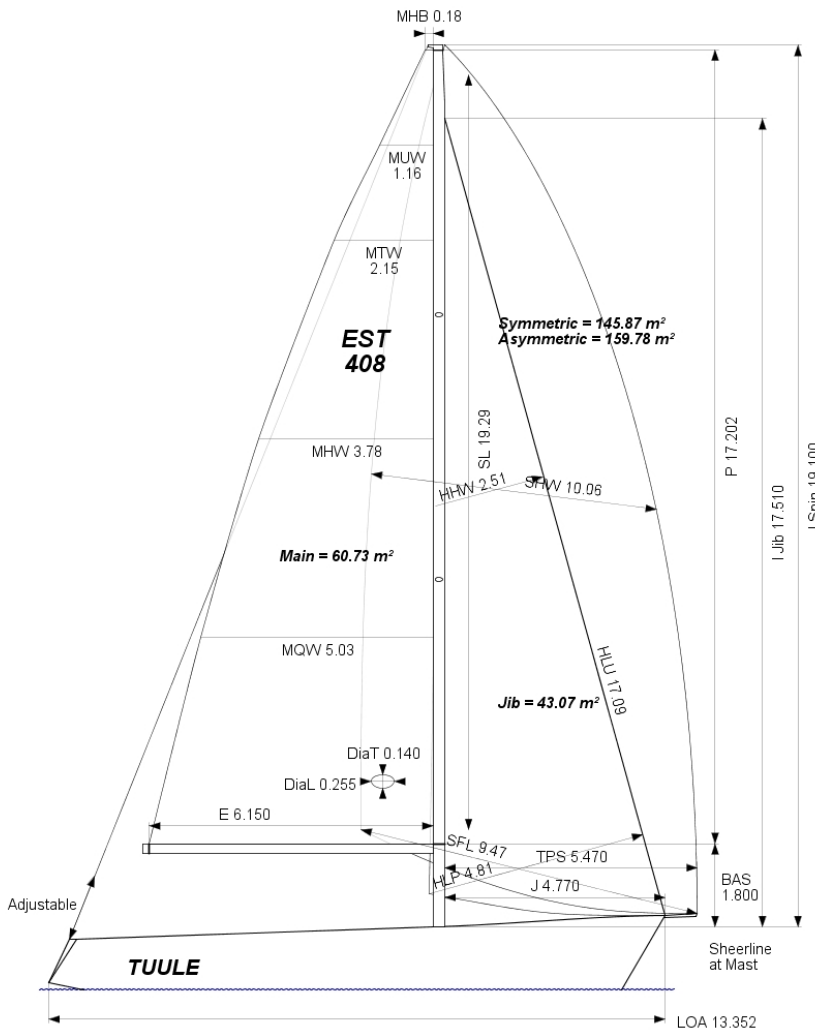
Limit Positive Stab.: **107.5°**
Stability Index: **113.7**

Owner

**OÜ ELLIS
Kabell 15
Tartu, Estonia
Pärnu JK**

I certify that I understand my responsibilities under ORC Rules and Regulations

Signature



BOAT		GPH		HULL		
Name	TUULE		573.6	Data File	Est0408 LOA 13.352m	
Sail Nr	EST 408			Offset File	F231.OFF MB 3.968m	
				Displacement	9,954kg Draft 2.545m	
CLASS				IMS Division	Cruiser/Racer Dynamic All. 0.197%	
Class	First 44.7			Fwd Accom.	Yes Construction Solid	
Designer	B.Farr			Fiber Rigging	No Aramid Core No	
Builder	Beneteau S.A.			Crew Arm Ex	No Carbon Rudder No	
Series	11/2003			Light Stanchions		
Age Date	05/2006			IMSL	11.954m VCGD 0.205m Sink 28.19kg/mm	
Age Allowance	0.487%			RL	9.961m VCGM 0.226m WS 36.92m²	
COMMENTS				LSM0	11.802m Displacement/Length ratio 6.0552	
				Water Ballast	0 Trim Tab No	
				BLR Index	0.0000	
PROPELLER				CENTERBOARD		
Installation	Strut	PRD	0.470	N/A		
Type	Folding 2 blades	PIPA	0.0031			
SCORING OPTIONS						
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time on Distance	558.4			624.8		
Time on Time	1.0745			1.0804		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	655.7	508.2	456.2	848.6	627.7	545.9
Time on Time	1.0295	1.3283	1.4797	0.7954	1.0753	1.2364

BOAT	
Name TUULE	Sail Nr EST 408
File Est0408	Data in meters/kilograms

INCLINING TEST AND FREEBOARDS			
Inclining Test Current Inclining			
Flotation date 26/05/2006		SG 1.0020	
FFM 1.585	FF 1.601	SFFP 0.322	
FAM 1.080	FA 1.092	SAFP 12.761	
W1 125.0	PD1 210.0	WD 11.190	
W2 125.0	PD2 208.0	GSA 12.6	
W3 125.0	PD3 210.0	RSA 4298.7	
W4 125.0	PD4 209.0	PLM 2005.0	
LCF from stem on CL / on sheer		7.570 / 7.813	
Maximum beam station from stem		8.675	
RM Measured		233.9kg·m	
RM Default		267.4kg·m	
Limit of positive stability / Stab.Index		107.5° / 113.7	
Freeboard at mast at 4.770		1.363	



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2019
Measurements
Datasheet

RIG			
Forestay Tension Aft	Spreaders 2		
Inner Stay None Fitted	Runners 0		
Carbon Mast No	Jumper Struts None		
Taper Hollows No	Jib Furler No		
Fiber Rigging No	Main Furler No		
Lenticular Rigging No	Without Backstay No		
Articulated Bowsprit No			
P 17.202	E 6.150	MDT1 0.140	MW 0.255
IG 17.510	J 4.770	MDL1 0.255	GO 0.288
ISP 19.100	SFJ 0.000	MDT2 0.130	BD
BAS 1.800	SPL 5.200	MDL2 0.200	MWT 347.00
FSP 0.050	TPS 5.470	TL 1.200	MCG 6.300

MIZZEN RIG AND SAILS	
N/A	

PROPELLER			
Installation Strut	PRD 0.470		
Type Folding 2 blades	PBW		
Twin Screw No	PIPA 0.0031		
ST1 0.047	ST3	ST5 0.275	
ST2	ST4 0.098	EDL 2.630	

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COMMENTS	

MOVABLE BALLAST	
N/A	

CENTERBOARD	
N/A	

SAILS INVENTORY																
MAINSAIL (1)																
Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
2	0.18	1.16	2.15	3.78	5.03	60.74	EST 1	19/06/2014		Unknown						
HEADSAILS (3)																
Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
9	0.12	0.83	1.47	2.51	3.67	4.81	17.09	101%	43.08			SLO 03	10/06/2019	OneSails	Unknown	Unknow
8	0.12	0.75	1.36	2.45	3.65	4.79	16.93	100%	41.85			EST 5	15/05/2018		Unknown	Unknow
7	0.09	0.67	1.27	2.45	3.63	4.77	16.32	100%	39.79			EST 5	15/05/2018		Unknown	Unknow
SYMMETRIC SPINNAKERS (4)																
Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
8	18.28	18.28	18.28	9.55	9.68	145.88	SLO 03	10/06/2019	OneSails	Unknown						
5	17.14	17.14	17.14	9.06	8.22	127.01	EST 5	15/05/2018		Unknown						
7	17.13	17.13	17.13	8.93	8.33	125.77	EST 5	15/05/2018		Unknown						
6	17.18	17.18	17.18	8.85	8.37	125.33	EST 5	15/05/2018		Unknown						
ASYMMETRIC SPINNAKERS (2)																
Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment				
2	20.47	18.10	19.29	10.06	9.47	159.78	asym	SLO 03	10/06/2019	OneSails	Unknown					
1	16.70	15.85	16.27	6.64	8.85	96.05	asym				Unknown					

2009

ORC Club Certificate Appendix

BOAT	
Name TUULE	Certificate Number EST408
Sail Nr EST 408	Issued On 7/1/2019

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	977.5	806.9	712.5	669.1	653.3	647.2	631.7
52°	640.5	539.5	485.3	464.6	457.6	454.4	447.7
60°	605.4	514.2	469.9	452.1	444.9	441.5	436.8
75°	578.4	495.7	459.2	441.4	430.4	423.6	418.2
90°	576.5	482.3	451.8	438.6	424.3	411.8	394.4
110°	569.0	475.2	439.9	420.9	409.3	400.1	382.9
120°	584.1	484.3	444.4	421.9	401.3	385.3	365.5
135°	652.4	529.3	465.3	437.1	415.9	394.1	353.1
150°	774.5	620.1	525.7	470.9	441.5	421.4	381.5
Run VMG	894.3	716.0	607.1	538.4	491.7	455.4	414.1
Selected Courses							
Windward / Leeward	935.9	761.4	659.8	603.7	572.5	551.3	522.9
Circular Random	787.9	636.8	556.5	510.5	482.6	464.3	440.3
Coastal / Long Distance	931.7	714.2	594.2	527.1	492.1	465.3	422.2
Non Spinnaker	858.0	686.0	592.4	537.4	503.4	481.2	452.6

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	42.7°	41.0°	40.3°	39.5°	38.9°	38.9°	38.5°
Beat VMG	3.68	4.46	5.05	5.38	5.51	5.56	5.70
52°	5.62	6.67	7.42	7.75	7.87	7.92	8.04
60°	5.95	7.00	7.66	7.96	8.09	8.15	8.24
75°	6.22	7.26	7.84	8.16	8.37	8.50	8.61
90°	6.24	7.46	7.97	8.21	8.48	8.74	9.13
110°	6.33	7.58	8.18	8.55	8.79	9.00	9.40
120°	6.16	7.43	8.10	8.53	8.97	9.34	9.85
135°	5.52	6.80	7.74	8.24	8.66	9.13	10.19
150°	4.65	5.81	6.85	7.65	8.15	8.54	9.44
Run VMG	4.03	5.03	5.93	6.69	7.32	7.91	8.69
Gybe Angles	143.2°	146.8°	148.0°	154.9°	165.0°	180.0°	180.0°