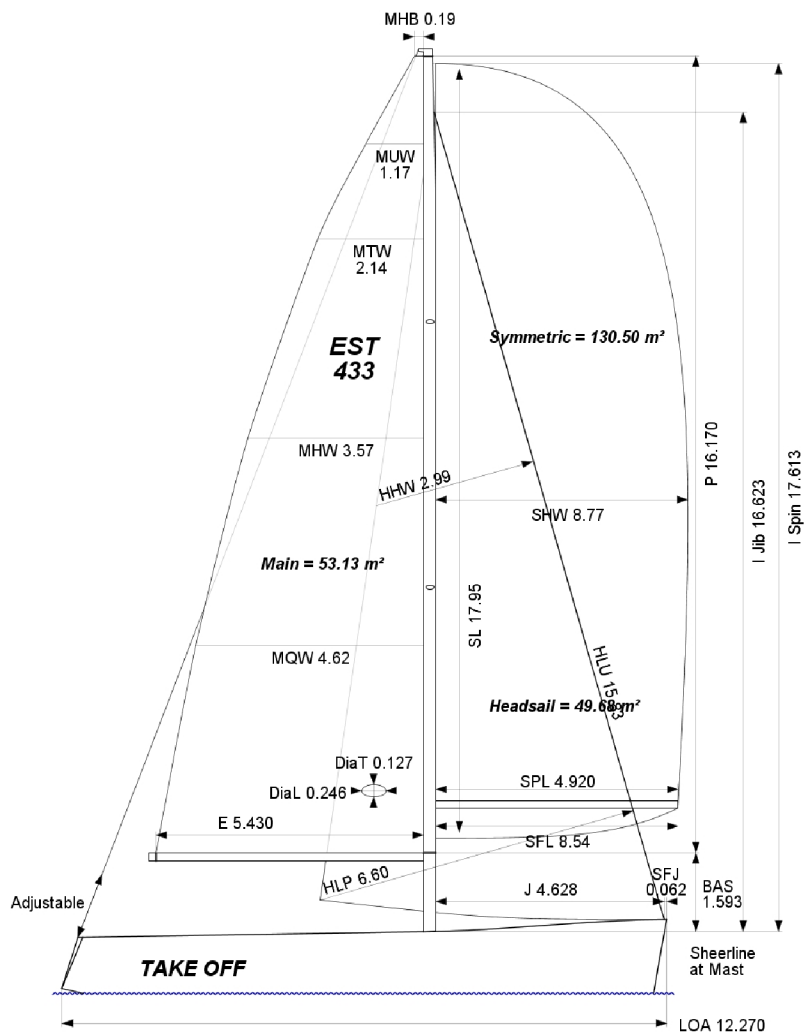




BOAT		GPH	HULL	
Name	Take Off	587.7	Data File	EST433
Sail Nr	EST-433		Offset File	ELAN410N.OFF
CLASS			Displacement	9,106kg
Class	ELAN 410		IMS Division	Cruiser/Racer
Designer	ROB HUMPHREYS		Plan Review	Dynamic All. 0.128%
Builder	ELAN MARIN		Fiber Rigging	No
Series	05/2007		Crew Arm Ex	No
Age Date	03/2009		Carbon Rudder	No
Age Allowance	0.422%		Light Stanchions	No
COMMENTS			IMSL	11.618m
Ex SWE-48			RL	9.585m
PROPELLER			LSM0	11.676m
Installation	Strut	PRD 0.425	Water Ballast	Trim Tab No
Type	Folding 2 blades	PBW 0.125	BLR Index	0.0000
		PIPA 0.0040	CENTERBOARD	
			N/A	

SCORING OPTIONS						
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time on Distance	571.5			638.2		
Time on Time	1.0499			1.0577		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	671.8	520.6	467.7	867.9	642.0	558.8
Time on Time	1.0047	1.2966	1.4431	0.7777	1.0514	1.2080



Rating Office
Estonian Yachting Union
 Purje 8, maja 3
 11911 Tallinn
 Estonia



Certificate
 Number 038/20
 Issued On 05/06/2020
 ORC Ref 03880000JWW
 VPP Ver. 2020 1.02
 Valid until 31/12/2020

Crew Weight
 Default 859kg
 Maximum 850kg
 Minimum* 638kg
 *when applied by the NoR and SI
 Non Manual Pwr No

Special Scoring
 ToD ToT
 Non Spin GPH 618.2 0.9706
 Non Spin OSN 601.3 0.9978

Sails Limitations
 Headsails 6 Spinnakers 4

Spinnaker configuration
 Symmetric: Yes 130.50
 Asymmetric: No
 Flying H/S: No
 Spin. Pole: Yes

Class Division Length
 CDL = 10.596

Stability (Measured)
 Limit Positive Stab.: 111.6°
 Stability Index: 117.2

BOAT

Name **Take Off**
File **EST433**

Sail Nr **EST-433**
Data in **meters/kilograms**

RIG

Forestay Tension **Aft**
Inner Stay **None Fitted**
Carbon Mast **No**
Fiber Rigging **No**
Non-Circular Rigging **No**
Articulated Bowsprit **No**

Spreaders **2**
Runners/Checkstays **0**
Jib Furler **No**
Main Furler **No**

P **16.170** E **5.430** MDT1 **0.127** MW **0.220**
IG **16.623** J **4.628** MDL1 **0.246** GO **0.228**
ISP **17.613** SFJ **0.062** MDT2 **0.125** BD **0.170**
BAS **1.593** SPL **4.920** MDL2 **0.176** MWT **273.00**
FSD **0.035** TPS TL **2.720** MCG **6.180**

INCLINING TEST AND FREEBOARDS

Inclining Test **Current Inclining**
Flotation date **08/05/2009** SG **1.0050**

FFM **1.486** FF **1.500** SFFP **0.430**
FAM **1.043** FA **1.049** SAFP **11.848**

W1 **105.8** PD1 **524.2** WD **12.223**
W2 **105.8** PD2 **523.1** GSA **1.0**
W3 **105.8** PD3 **526.6** RSA **1.0**
W4 **105.8** PD4 **525.4** PLM **9000.0**

LCF from stem on CL / on sheer **6.894 / 7.154**
Maximum beam station from stem **7.500**
RM Measured **194.0kg·m**
RM Default **212.7kg·m**
Limit of positive stability / Stab.Index **111.6° / 117.2**
Freeboard at mast at 4.690 **1.267**

MIZZEN RIG AND SAILS

N/A

COMMENTS

Ex SWE-48

PROPELLER

Installation **Strut** PRD **0.425**
Type **Folding 2 blades** PBW **0.125**
Twin Screw **No** PIPA **0.0040**

ST1 **0.065** ST3 **0.180** ST5 **0.305**
ST2 **0.180** ST4 **0.110** EDL **3.130**

MOVABLE BALLAST

N/A

CENTERBOARD

N/A

Certificate

Number **038/20**
ORC Ref **03880000JWW**
Issued On **05/06/2020**
VPP Ver. **2020 1.02**
Valid until **31/12/2020**


ESTONIAN YACHTING UNION

SAILS INVENTORY

MAINSAIL (1)

Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment
1	0.19	1.17	2.14	3.57	4.62	53.13		06/04/2019		Unknown	

HEADSAILS (2)

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Flying	Measurer	Meas.Date	Manufacture	Material	Comment
1	0.06	0.75	1.44	2.99	4.72	6.60	15.83	143%	49.68		No		22/05/2019		Unknown	
2	0.10	0.86	1.52	2.56	3.54	4.49	14.10	97%	34.71		No		13/05/2014		Unknown	

SYMMETRIC SPINNAKERS (2)

Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
1	17.95	17.95	17.95	8.77	8.54	130.50		26/08/2010		Unknown	S-4
2	17.88	17.88	17.88	8.77	8.54	129.99				Unknown	S-1,5

ASYMMETRIC SPINNAKERS (0)

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

MEASUREMENT INVENTORY

Measurer
Date
Comment
Internal Ballast total = 0.0

Id	Item	Weight	Distance	VCG	Description
SaS	Tools	61.9	5.77	0.00	Sailor-Services

Id	Item	Weight	Description
----	------	--------	-------------

MEASUREMENT INVENTORY

Id	Item	Weight	Distance	VCG	Description
----	------	--------	----------	-----	-------------

© Offshore Racing Congress 2020

www.orc.org

2020

ORC Club Certificate Appendix

BOAT			
Name	Take Off	Certificate Number	038/20
Sail Nr	EST-433	Issued On	05/06/2020

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	985.8	815.7	723.8	682.1	664.7	657.1	651.7
52°	643.9	543.5	491.4	472.5	465.7	462.4	460.8
60°	607.6	517.6	476.6	460.3	453.3	449.7	447.3
75°	579.9	499.6	466.4	449.8	438.9	432.1	426.0
90°	585.6	500.9	465.4	447.4	433.5	421.2	403.0
110°	601.3	497.9	456.8	436.3	422.4	412.1	393.9
120°	616.8	507.8	461.0	437.7	417.3	398.7	377.6
135°	680.7	553.4	482.7	451.9	430.9	409.6	368.1
150°	804.9	641.5	543.7	483.0	453.7	433.8	393.8
Run VMG	929.5	740.7	627.9	552.8	503.8	466.7	425.8
Selected Courses							
Windward / Leeward	957.6	778.2	675.8	617.4	584.2	561.9	538.8
Circular Random	807.1	652.4	570.1	522.9	494.4	476.1	453.7
Coastal / Long Distance	954.8	731.0	609.0	539.4	503.8	476.0	433.9
Non Spinnaker	862.7	691.6	599.0	544.8	511.5	490.1	463.7

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°	40.9°	40.1°	39.4°	39.0°	39.0°
Beat VMG	3.65	4.41	4.97	5.28	5.42	5.48	5.52
52°	5.59	6.62	7.33	7.62	7.73	7.79	7.81
60°	5.93	6.95	7.55	7.82	7.94	8.01	8.05
75°	6.21	7.21	7.72	8.00	8.20	8.33	8.45
90°	6.15	7.19	7.73	8.05	8.30	8.55	8.93
110°	5.99	7.23	7.88	8.25	8.52	8.74	9.14
120°	5.84	7.09	7.81	8.22	8.63	9.03	9.54
135°	5.29	6.51	7.46	7.97	8.35	8.79	9.78
150°	4.47	5.61	6.62	7.45	7.93	8.30	9.14
Run VMG	3.87	4.86	5.73	6.51	7.15	7.71	8.46
Gybe Angles	142.5°	148.0°	150.0°	155.0°	168.0°	180.0°	180.0°