



**ORC**  
Offshore Racing Congress  
World leader in rating technology

**2019  
ORC Club  
Certificate**

**Rating Office**

**EYU  
Purje 8  
11911, Tallinn  
Estonia**

**Certificate**

Number **EST711**  
Issued On **7/2/2019**  
ORC Ref **EST00000714**  
VPP Ver. **2019 1.01**  
Valid until **12/31/2019**

**Crew Weight**

Default 718kg  
Maximum **710kg**  
Minimum\* **533kg**  
*\*when applied by the NoR and SI*  
Non Manual Pwr **No**

**Special Scoring**

	ToD	ToT
Double H.GPH	<b>609.4</b>	<b>0.9846</b>
Double H.OSN	<b>594.4</b>	<b>1.0094</b>
Non Spin GPH	<b>633.0</b>	<b>0.9479</b>
Non Spin OSN	<b>614.9</b>	<b>0.9758</b>

**Sails Limitations**

Headsails **5** Spinnakers **3**

**Spinnaker configuration**

Symmetric: **Yes 106.77**  
Asymmetric: **No**  
Flying H/S: **No**  
Spin. Pole: **Yes**

**Class Division Length**

**CDL = 9.776**

**Stability (Measured)**

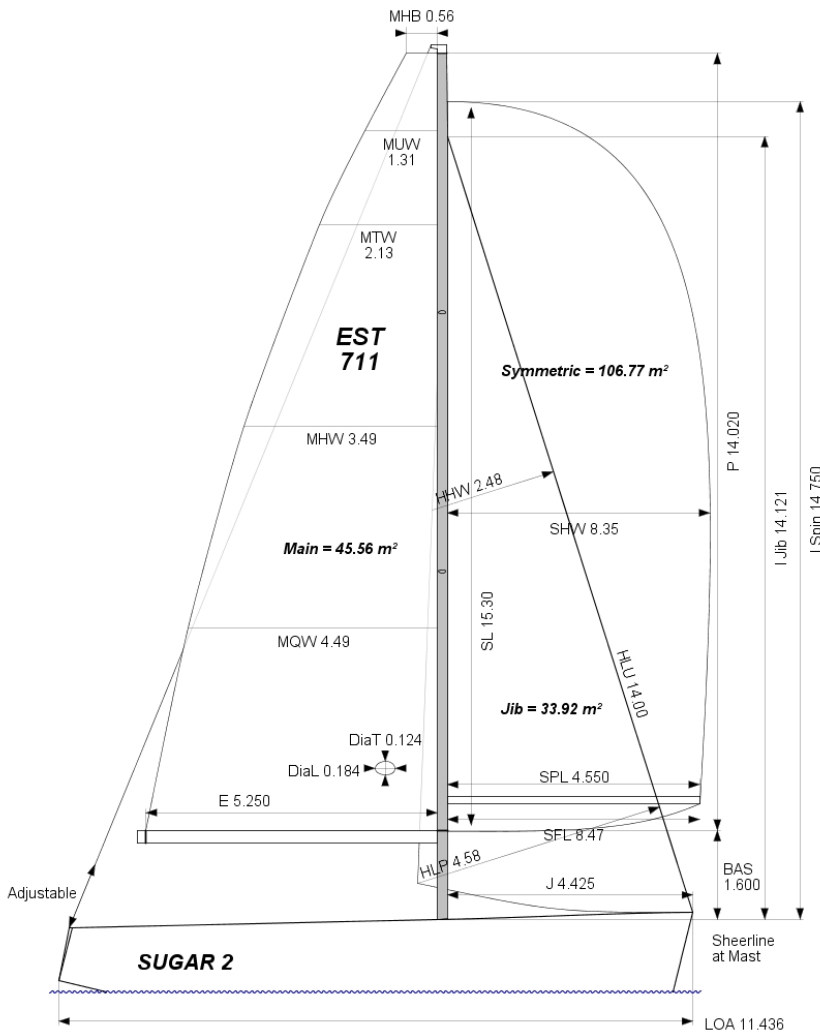
Limit Positive Stab.: **111.4°**  
Stability Index: **112.4**

**Owner**

**Leitvaagen OÜ  
Valguse 17a  
Tallinn, Estonia  
PJK**

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

Signature



BOAT		GPH		HULL		
Name	<b>SUGAR 2</b>			Data File	<b>Est0711</b>	
Sail Nr	<b>EST-711</b>			Offset File	<b>NM38SNSK-1a</b>	
				Displacement	<b>5,642kg</b>	
				LOA	<b>11.436m</b>	
				MB	<b>3.566m</b>	
				Draft	<b>2.015m</b>	
<b>CLASS</b>				IMS Division	<b>Cruiser/Racer</b>	
Class	<b>NM38S</b>			Dynamic All.	<b>0.125%</b>	
Designer	<b>COSSUTTI</b>			Fwd Accom.	<b>Yes</b>	
Builder	<b>NAUTILUS MARINE</b>			Construction	<b>Cored</b>	
Series	<b>09/2010</b>			Fiber Rigging	<b>No</b>	
Age Date	<b>05/2011</b>			Aramid Core	<b>No</b>	
Age Allowance	<b>0.292%</b>			Carbon Rudder	<b>Yes</b>	
				Light Stanchions		
				IMSL	<b>10.554m</b>	
				VCGD	<b>0.095m</b>	
				Sink	<b>21.98kg/mm</b>	
				RL	<b>8.997m</b>	
				VCGM	<b>0.207m</b>	
				WS	<b>27.48m²</b>	
				LSM0	<b>10.295m</b>	
				Displacement/Length ratio	<b>5.1708</b>	
				Water Ballast	<b>0</b>	
				Trim Tab	<b>No</b>	
				BLR Index	<b>0.0000</b>	
<b>COMMENTS</b>				<b>CENTERBOARD</b>		
				<b>N/A</b>		
<b>PROPELLER</b>						
Installation	<b>Strut</b>	PRD	<b>0.405</b>			
Type	<b>Folding 2 blades</b>	PBW	<b>0.108</b>			
		PIPA	<b>0.0029</b>			
<b>SCORING OPTIONS</b>						
	<b>COASTAL / LONG DISTANCE</b>			<b>WINDWARD / LEEWARD</b>		
Time on Distance	<b>582.9</b>			<b>654.8</b>		
Time on Time	<b>1.0294</b>			<b>1.0308</b>		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	<b>689.5</b>	<b>529.8</b>	<b>472.8</b>	<b>895.6</b>	<b>656.2</b>	<b>573.0</b>
Time on Time	<b>0.9790</b>	<b>1.2740</b>	<b>1.4277</b>	<b>0.7537</b>	<b>1.0287</b>	<b>1.1781</b>

<b>BOAT</b>	
Name <b>SUGAR 2</b>	Sail Nr <b>EST-711</b>
File <b>Est0711</b>	Data in <b>meters/kilograms</b>

<b>INCLINING TEST AND FREEBOARDS</b>			
Inclining Test <b>Current Inclining</b>			
Flotation date <b>29/08/2018</b>		SG <b>1.0000</b>	
FFM <b>1.405</b>	FF <b>1.412</b>	SFFP <b>0.550</b>	
FAM <b>1.150</b>	FA <b>1.157</b>	SAFP <b>11.190</b>	
W1 <b>90.0</b>	PD1 <b>537.7</b>	WD <b>11.470</b>	
W2 <b>90.0</b>	PD2 <b>534.0</b>	GSA <b>1.0</b>	
W3 <b>90.0</b>	PD3 <b>540.8</b>	RSA <b>1.0</b>	
W4 <b>90.0</b>	PD4 <b>539.0</b>	PLM <b>9000.0</b>	
LCF from stem on CL / on sheer		<b>6.281 / 6.517</b>	
Maximum beam station from stem		<b>7.900</b>	
RM Measured		<b>151.1kg·m</b>	
RM Default		<b>156.0kg·m</b>	
Limit of positive stability / Stab.Index		<b>111.4° / 112.4</b>	
Freeboard at mast at 4.425		<b>1.309</b>	



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**2019**  
**Measurements**  
**Datasheet**

<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>14.020</b>	E <b>5.250</b>	MDT1 <b>0.124</b>	MW <b>0.178</b>
IG <b>14.121</b>	J <b>4.425</b>	MDL1 <b>0.184</b>	GO <b>0.190</b>
ISP <b>14.750</b>	SFJ <b>0.000</b>	MDT2 <b>0.124</b>	BD <b>0.230</b>
BAS <b>1.600</b>	SPL <b>4.550</b>	MDL2 <b>0.168</b>	MWT <b>171.80</b>
FSP <b>0.088</b>	TPS	TL <b>1.400</b>	MCG <b>5.705</b>

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

<b>PROPELLER</b>			
Installation <b>Strut</b>	PRD <b>0.405</b>		
Type <b>Folding 2 blades</b>	PBW <b>0.108</b>		
Twin Screw <b>No</b>	PIPA <b>0.0029</b>		
ST1 <b>0.051</b>	ST3 <b>0.200</b>	ST5 <b>0.335</b>	
ST2 <b>0.170</b>	ST4 <b>0.088</b>	EDL <b>2.110</b>	

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<b>COMMENTS</b>	

<b>MOVABLE BALLAST</b>	
N/A	

<b>CENTERBOARD</b>	
N/A	

<b>SAILS INVENTORY</b>																
<b>MAINSAIL (1)</b>																
Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
K	0.56	1.31	2.13	3.49	4.49	45.56	EST 5	09/06/2018	Onesails	Unknown	P14,02;E5,25					
<b>HEADSAILS (6)</b>																
Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
B	0.13	0.73	1.35	2.48	3.57	4.58	14.00	104%	33.92	Y		EST 5	09/06/2018	OneSails	Unknown	Jib Top
A	0.13	0.82	1.51	2.55	3.49	4.44	13.91	100%	33.87	Y		EST 5	09/06/2018	Onesails	Unknown	Jib XL
C	0.11	0.83	1.51	2.55	3.48	4.42	13.92	100%	33.82	Y		EST 5	09/06/2018	OneSails	Unknown	Jib L
G	0.12	0.79	1.42	2.45	3.47	4.42	14.03	100%	33.47			ITA160	02/05/2018	OneSails	Unknown	Jib M
H	0.13	0.65	1.16	2.18	3.23	4.29	14.04	97%	30.76			ITA160	09/05/2018	OneSails	Unknown	Jib H
V	0.07	0.45	0.95	1.68	2.56	3.50	12.77	79%	22.19			Sizil	25/05/2015	North	Unknown	Staysail
<b>SYMMETRIC SPINNAKERS (2)</b>																
Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
B	15.30	15.30	15.30	8.35	8.47	106.77	EST 5	09/06/2018	OneSails	Unknown	S1					
C	14.89	14.89	14.89	8.62	8.41	106.44	EST 5	09/06/2018	OneSails	Unknown	S2					
<b>ASYMMETRIC SPINNAKERS (0)</b>																
Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment				

<b>MEASUREMENT INVENTORY</b>				
Measurer <b>Karl-Hannes Tagu EST 7</b>				
Date <b>29/08/2018</b>				
Comment <b>Tallinn-Pirita</b>				
Id	Item	Weight	Distance	VCG Description
Id	Item	Maker	Model	
1	Engine	Lombardini	30HP	
Id	Item	Weight	Description	

<b>MEASUREMENT INVENTORY</b>								
Id	Item	Tank Use	Tank Type	Capcty	Dist.	VCG	Condtn	Description
1	Tank	Diesel	St.steel	60.0	9.04			6-0
2	Tank	Water	St.steel	80.0	8.24			0-0
Id	Item	Weight	Distance	VCG Description				
1	Battery	16.0	7.94					
2	Battery	42.0	8.24	2 service batteries				
1	Misc		6.00	Stove (without oven)				
2	Misc		11.00	Heater Webasto				

# 2009

## ORC Club Certificate Appendix

<b>BOAT</b>	
Name <b>SUGAR 2</b>	Certificate Number <b>EST711</b>
Sail Nr <b>EST-711</b>	Issued On <b>7/2/2019</b>

<b>TIME ALLOWANCES</b>							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	<b>1035.0</b>	<b>848.8</b>	<b>745.4</b>	<b>704.0</b>	<b>689.8</b>	<b>685.6</b>	<b>677.3</b>
52°	<b>669.6</b>	<b>560.1</b>	<b>504.2</b>	<b>484.4</b>	<b>478.1</b>	<b>475.4</b>	<b>468.8</b>
60°	<b>627.5</b>	<b>531.9</b>	<b>488.0</b>	<b>470.2</b>	<b>463.5</b>	<b>460.2</b>	<b>454.5</b>
75°	<b>595.6</b>	<b>512.0</b>	<b>476.6</b>	<b>457.1</b>	<b>443.6</b>	<b>436.5</b>	<b>431.2</b>
90°	<b>601.5</b>	<b>511.0</b>	<b>471.9</b>	<b>454.2</b>	<b>435.5</b>	<b>418.7</b>	<b>400.7</b>
110°	<b>604.0</b>	<b>501.4</b>	<b>461.1</b>	<b>435.4</b>	<b>417.5</b>	<b>404.6</b>	<b>384.7</b>
120°	<b>620.2</b>	<b>510.9</b>	<b>465.9</b>	<b>437.5</b>	<b>410.1</b>	<b>388.0</b>	<b>364.0</b>
135°	<b>686.3</b>	<b>555.1</b>	<b>487.4</b>	<b>455.7</b>	<b>428.5</b>	<b>401.6</b>	<b>348.5</b>
150°	<b>818.2</b>	<b>652.9</b>	<b>548.5</b>	<b>487.4</b>	<b>457.8</b>	<b>432.7</b>	<b>383.5</b>
Run VMG	<b>944.7</b>	<b>753.9</b>	<b>633.4</b>	<b>555.9</b>	<b>507.2</b>	<b>471.6</b>	<b>423.2</b>
<b>Selected Courses</b>							
Windward / Leeward	<b>989.8</b>	<b>801.3</b>	<b>689.4</b>	<b>630.0</b>	<b>598.5</b>	<b>578.6</b>	<b>550.2</b>
Circular Random	<b>827.0</b>	<b>666.8</b>	<b>581.2</b>	<b>531.8</b>	<b>501.6</b>	<b>481.7</b>	<b>455.5</b>
Coastal / Long Distance	<b>985.3</b>	<b>751.4</b>	<b>620.7</b>	<b>549.3</b>	<b>511.8</b>	<b>481.6</b>	<b>433.2</b>
Non Spinnaker	<b>887.7</b>	<b>709.6</b>	<b>612.9</b>	<b>556.4</b>	<b>521.6</b>	<b>498.9</b>	<b>469.9</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>43.7°</b>	<b>42.4°</b>	<b>41.3°</b>	<b>40.3°</b>	<b>39.8°</b>	<b>39.8°</b>	<b>40.8°</b>
Beat VMG	<b>3.48</b>	<b>4.24</b>	<b>4.83</b>	<b>5.11</b>	<b>5.22</b>	<b>5.25</b>	<b>5.32</b>
52°	<b>5.38</b>	<b>6.43</b>	<b>7.14</b>	<b>7.43</b>	<b>7.53</b>	<b>7.57</b>	<b>7.68</b>
60°	<b>5.74</b>	<b>6.77</b>	<b>7.38</b>	<b>7.66</b>	<b>7.77</b>	<b>7.82</b>	<b>7.92</b>
75°	<b>6.04</b>	<b>7.03</b>	<b>7.55</b>	<b>7.88</b>	<b>8.12</b>	<b>8.25</b>	<b>8.35</b>
90°	<b>5.99</b>	<b>7.05</b>	<b>7.63</b>	<b>7.93</b>	<b>8.27</b>	<b>8.60</b>	<b>8.98</b>
110°	<b>5.96</b>	<b>7.18</b>	<b>7.81</b>	<b>8.27</b>	<b>8.62</b>	<b>8.90</b>	<b>9.36</b>
120°	<b>5.80</b>	<b>7.05</b>	<b>7.73</b>	<b>8.23</b>	<b>8.78</b>	<b>9.28</b>	<b>9.89</b>
135°	<b>5.25</b>	<b>6.49</b>	<b>7.39</b>	<b>7.90</b>	<b>8.40</b>	<b>8.96</b>	<b>10.33</b>
150°	<b>4.40</b>	<b>5.51</b>	<b>6.56</b>	<b>7.39</b>	<b>7.86</b>	<b>8.32</b>	<b>9.39</b>
Run VMG	<b>3.81</b>	<b>4.78</b>	<b>5.68</b>	<b>6.48</b>	<b>7.10</b>	<b>7.63</b>	<b>8.51</b>
Gybe Angles	<b>140.4°</b>	<b>148.0°</b>	<b>148.8°</b>	<b>156.1°</b>	<b>170.2°</b>	<b>180.0°</b>	<b>180.0°</b>