

## 2020 ORC Club Certificate

### Rating Office

EYU  
Purje 8  
11911, Tallinn  
Estonia

### Certificate

Number **EST221**  
Issued On **5/30/2020**  
ORC Ref **03580000JA7**  
VPP Ver. **2020 1.02**  
Valid until **31/12/2020**

### Crew Weight

Default 634kg  
Maximum **410kg**  
Minimum\* **308kg**  
\*when applied by the NoR and SI  
Non Manual Pwr **No**

### Special Scoring

ToD ToT  
Non Spin GPH **676.5 0.8869**  
Non Spin OSN **655.8 0.9150**

### Sails Limitations

Headsails **1** Spinnakers **4**  
**Woven Polyester**

### Spinnaker configuration

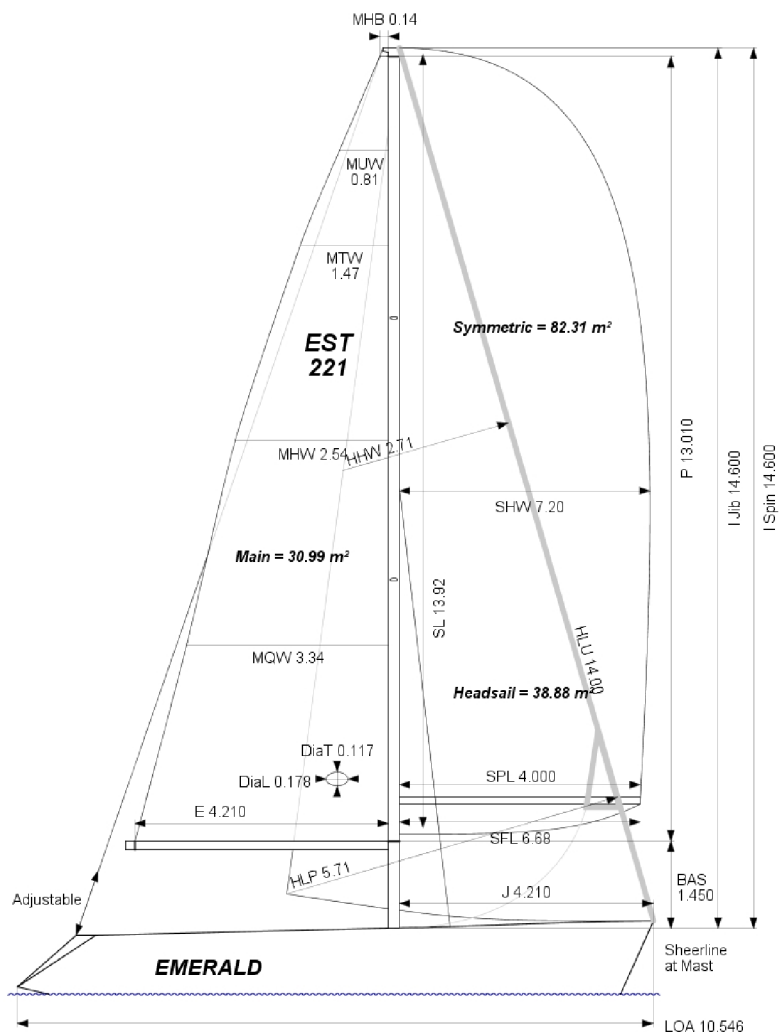
Symmetric: **Yes 82.31**  
Asymmetric: **No**  
Flying H/S: **No**  
Spin. Pole: **Yes**

### Class Division Length

**CDL = 8.799**

### Stability (Estimated)

Limit Positive Stab.: **114.8°**  
Stability Index: **116.0**



| BOAT                                                                                                                                                              |  |                         | GPH           |               | HULL                                                                                                                                                                                                                        |               |               |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------|---------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|--|
| Name <b>EMERALD</b><br>Sail Nr <b>EST 221</b>                                                                                                                     |  |                         | <b>647.2</b>  |               | Data File <b>est0221</b> LOA <b>10.546m</b><br>Offset File <b>EST220.BOF</b> MB <b>3.624m</b><br>Displacement <b>5,791kg</b> Draft <b>1.990m</b>                                                                            |               |               |  |
| CLASS                                                                                                                                                             |  |                         |               |               | IMS Division <b>Cruiser/Racer</b> Dynamic All. <b>0.286%</b><br>Plan Review      Construction <b>Cored</b><br>Fiber Rigging <b>No</b> Aramid Core <b>No</b><br>Crew Arm Ex      Carbon Rudder <b>No</b><br>Light Stanchions |               |               |  |
| Class <b>RIDAS 35</b><br>Designer <b>LÖNNGREN</b><br>Builder <b>RIDAS JAHT</b><br>Series <b>06/1997</b><br>Age Date <b>06/1997</b><br>Age Allowance <b>0.487%</b> |  |                         |               |               | IMSL <b>9.500m</b> VCGD <b>0.068m</b> Sink <b>18.73kg/mm</b><br>RL <b>8.096m</b> VCGM <b>0.034m</b> WS <b>25.27m</b>                                                                                                        |               |               |  |
| COMMENTS                                                                                                                                                          |  |                         |               |               | LSM0 <b>9.435m</b> Displacement/Length ratio                                                                                                                                                                                |               |               |  |
|                                                                                                                                                                   |  |                         |               |               | Water Ballast      Trim Tab <b>No</b><br>BLR Index <b>0.0000</b>                                                                                                                                                            |               |               |  |
|                                                                                                                                                                   |  |                         |               |               |                                                                                                                                                                                                                             |               |               |  |
| PROPELLER                                                                                                                                                         |  |                         |               |               | CENTERBOARD                                                                                                                                                                                                                 |               |               |  |
| Installation <b>Strut</b> PRD <b>0.410</b><br>Type <b>Folding 3 blades</b> PBW <b>0.111</b><br>PIPA <b>0.0029</b>                                                 |  |                         |               |               | N/A                                                                                                                                                                                                                         |               |               |  |
| SCORING OPTIONS                                                                                                                                                   |  |                         |               |               |                                                                                                                                                                                                                             |               |               |  |
|                                                                                                                                                                   |  | COASTAL / LONG DISTANCE |               |               | WINDWARD / LEEWARD                                                                                                                                                                                                          |               |               |  |
| Time on Distance                                                                                                                                                  |  | <b>628.2</b>            |               |               | <b>698.8</b>                                                                                                                                                                                                                |               |               |  |
| Time on Time                                                                                                                                                      |  | <b>0.9550</b>           |               |               | <b>0.9659</b>                                                                                                                                                                                                               |               |               |  |
| Triple Number                                                                                                                                                     |  | Low                     | Medium        | High          | Low                                                                                                                                                                                                                         | Medium        | High          |  |
| Time on Distance                                                                                                                                                  |  | <b>743.0</b>            | <b>572.5</b>  | <b>513.1</b>  | <b>957.3</b>                                                                                                                                                                                                                | <b>703.4</b>  | <b>610.7</b>  |  |
| Time on Time                                                                                                                                                      |  | <b>0.9085</b>           | <b>1.1790</b> | <b>1.3155</b> | <b>0.7051</b>                                                                                                                                                                                                               | <b>0.9596</b> | <b>1.1052</b> |  |

| BOAT                                                                                                                                                                                                                                                                          |       |       |       |      |                                                                                |       |          |            |             | INCLINING TEST AND FREEBOARDS                                                                                                                                                                                                                                                  |          |          |            |             |                                                                                                                                                                      |         |  |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|------|--------------------------------------------------------------------------------|-------|----------|------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|--|--|--|--|
| Name <b>EMERALD</b>                                                                                                                                                                                                                                                           |       |       |       |      | Sail Nr <b>EST 221</b>                                                         |       |          |            |             | Inclining Test <b>Club Estimated VCG</b>                                                                                                                                                                                                                                       |          |          |            |             |                                                                                                                                                                      |         |  |  |  |  |
| File <b>est0221</b>                                                                                                                                                                                                                                                           |       |       |       |      | Data in <b>meters/kilograms</b>                                                |       |          |            |             | Flotation date <b>19/06/1996</b> SG                                                                                                                                                                                                                                            |          |          |            |             |                                                                                                                                                                      |         |  |  |  |  |
| <b>RIG</b><br>Forestay Tension <b>Aft</b> Spreaders <b>2</b><br>Inner Stay <b>Fixed</b> Runners/Checkstays <b>0</b><br>Carbon Mast <b>No</b> Jib Furler <b>Yes</b><br>Fiber Rigging <b>No</b> Main Furler <b>No</b><br>Non-Circular Rigging <b>No</b><br>Articulated Bowsprit |       |       |       |      | FFM FF <b>1.193</b> SFFP <b>0.550</b><br>FAM FA <b>0.955</b> SAFP <b>9.246</b> |       |          |            |             | LCF from stem on CL / on sheer <b>5.750 / 6.022</b><br>Maximum beam station from stem <b>6.694</b><br>RM Measured <b>121.5kg·m</b><br>RM Default <b>118.0kg·m</b><br>Limit of positive stability / Stab.Index <b>114.8° / 116.0</b><br>Freeboard at mast at 4.210 <b>1.085</b> |          |          |            |             |                                                                                                                                                                      |         |  |  |  |  |
| P <b>13.010</b> E <b>4.210</b> MDT1 <b>0.117</b> MW<br>IG <b>14.600</b> J <b>4.210</b> MDL1 <b>0.178</b> GO<br>ISP <b>14.600</b> SFJ MDT2 BD<br>BAS <b>1.450</b> SPL <b>4.000</b> MDL2 MWT<br>FSD <b>0.035</b> TPS TL <b>-3.000</b> MCG                                       |       |       |       |      | <b>MIZZEN RIG AND SAILS</b><br><br><div>N/A</div>                              |       |          |            |             | <b>PROPELLER</b><br>Installation <b>Strut</b> PRD <b>0.410</b><br>Type <b>Folding 3 blades</b> PBW <b>0.111</b><br>Twin Screw <b>No</b> PIPA <b>0.0029</b><br>ST1 <b>0.050</b> ST3 <b>0.170</b> ST5 <b>0.288</b><br>ST2 <b>0.170</b> ST4 <b>0.090</b> EDL <b>1.737</b>         |          |          |            |             | <b>Certificate</b><br>Number <b>EST221</b><br>ORC Ref <b>03580000JA7</b><br>Issued On <b>5/30/2020</b><br>VPP Ver. <b>2020 1.02</b><br>Valid until <b>31/12/2020</b> |         |  |  |  |  |
| <b>COMMENTS</b><br><br>                                                                                                                                                                                                                                                       |       |       |       |      | <b>MOVABLE BALLAST</b><br><br><div>N/A</div>                                   |       |          |            |             | <b>CENTERBOARD</b><br><br><div>N/A</div>                                                                                                                                                                                                                                       |          |          |            |             |                                                                                                                                                                      |         |  |  |  |  |
| <b>SAILS INVENTORY</b>                                                                                                                                                                                                                                                        |       |       |       |      |                                                                                |       |          |            |             |                                                                                                                                                                                                                                                                                |          |          |            |             |                                                                                                                                                                      |         |  |  |  |  |
| <b>MAINSAIL (1)</b>                                                                                                                                                                                                                                                           |       |       |       |      |                                                                                |       |          |            |             |                                                                                                                                                                                                                                                                                |          |          |            |             |                                                                                                                                                                      |         |  |  |  |  |
| Id                                                                                                                                                                                                                                                                            | MHB   | MUW   | MTW   | MHW  | MQW                                                                            | Area  | Measurer | Meas.Date  | Manufacture | Material                                                                                                                                                                                                                                                                       | Comment  |          |            |             |                                                                                                                                                                      |         |  |  |  |  |
| 1                                                                                                                                                                                                                                                                             | 0.14  | 0.81  | 1.47  | 2.54 | 3.34                                                                           | 30.99 | EST7     | 01/04/2020 | Loong Sails | Dacron                                                                                                                                                                                                                                                                         |          |          |            |             |                                                                                                                                                                      |         |  |  |  |  |
| <b>HEADSAILS (1)</b>                                                                                                                                                                                                                                                          |       |       |       |      |                                                                                |       |          |            |             |                                                                                                                                                                                                                                                                                |          |          |            |             |                                                                                                                                                                      |         |  |  |  |  |
| Id                                                                                                                                                                                                                                                                            | HHB   | HUW   | HTW   | HHW  | HQW                                                                            | HLP   | HLU      | Ovrlp      | Area        | Btn                                                                                                                                                                                                                                                                            | Flying   | Measurer | Meas.Date  | Manufacture | Material                                                                                                                                                             | Comment |  |  |  |  |
| 1                                                                                                                                                                                                                                                                             | 0.06  | 0.65  | 1.29  | 2.71 | 4.20                                                                           | 5.71  | 14.00    | 136%       | 38.88       | No                                                                                                                                                                                                                                                                             | EST7     |          | 01/04/2020 | Loong Sails | Dacron                                                                                                                                                               |         |  |  |  |  |
| <b>SYMMETRIC SPINNAKERS (1)</b>                                                                                                                                                                                                                                               |       |       |       |      |                                                                                |       |          |            |             |                                                                                                                                                                                                                                                                                |          |          |            |             |                                                                                                                                                                      |         |  |  |  |  |
| Id                                                                                                                                                                                                                                                                            | SLU   | SLE   | SL    | SHW  | SFL                                                                            | Area  | Measurer | Meas.Date  | Manufacture | Material                                                                                                                                                                                                                                                                       | Comment  |          |            |             |                                                                                                                                                                      |         |  |  |  |  |
| 1                                                                                                                                                                                                                                                                             | 13.92 | 13.92 | 13.92 | 7.20 | 6.68                                                                           | 82.32 | EST7     | 01/04/2020 |             | Nylon                                                                                                                                                                                                                                                                          |          |          |            |             |                                                                                                                                                                      |         |  |  |  |  |
| <b>ASYMMETRIC SPINNAKERS (0)</b>                                                                                                                                                                                                                                              |       |       |       |      |                                                                                |       |          |            |             |                                                                                                                                                                                                                                                                                |          |          |            |             |                                                                                                                                                                      |         |  |  |  |  |
| Id                                                                                                                                                                                                                                                                            | SLU   | SLE   | SL    | SHW  | SFL                                                                            | Area  | Kind     | Measurer   | Meas.Date   | Manufacture                                                                                                                                                                                                                                                                    | Material | Comment  |            |             |                                                                                                                                                                      |         |  |  |  |  |



## 2020 Measurements Datasheet

# 2020

## ORC Club Certificate Appendix

### BOAT

Name **EMERALD**  
Sail Nr **EST 221**

Certificate Number **EST221**  
Issued On **5/30/2020**

### TIME ALLOWANCES

| Wind Velocity           | 6 kt          | 8 kt         | 10 kt        | 12 kt        | 14 kt        | 16 kt        | 20 kt        |
|-------------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Beat VMG                | <b>1087.2</b> | <b>903.4</b> | <b>798.6</b> | <b>742.1</b> | <b>721.6</b> | <b>713.4</b> | <b>716.9</b> |
| 52°                     | <b>711.5</b>  | <b>602.3</b> | <b>543.2</b> | <b>519.2</b> | <b>509.7</b> | <b>505.8</b> | <b>504.3</b> |
| 60°                     | <b>673.3</b>  | <b>573.6</b> | <b>526.8</b> | <b>507.0</b> | <b>496.9</b> | <b>492.4</b> | <b>489.9</b> |
| 75°                     | <b>644.2</b>  | <b>553.2</b> | <b>515.1</b> | <b>496.3</b> | <b>483.6</b> | <b>474.1</b> | <b>465.8</b> |
| 90°                     | <b>650.2</b>  | <b>555.3</b> | <b>514.0</b> | <b>494.4</b> | <b>479.4</b> | <b>465.8</b> | <b>444.1</b> |
| 110°                    | <b>667.6</b>  | <b>552.4</b> | <b>505.3</b> | <b>481.8</b> | <b>462.2</b> | <b>448.8</b> | <b>430.6</b> |
| 120°                    | <b>685.7</b>  | <b>564.7</b> | <b>510.5</b> | <b>484.7</b> | <b>462.8</b> | <b>442.1</b> | <b>413.5</b> |
| 135°                    | <b>754.6</b>  | <b>614.6</b> | <b>535.7</b> | <b>500.4</b> | <b>478.0</b> | <b>456.0</b> | <b>414.0</b> |
| 150°                    | <b>887.7</b>  | <b>704.8</b> | <b>598.6</b> | <b>532.6</b> | <b>500.8</b> | <b>479.7</b> | <b>438.7</b> |
| Run VMG                 | <b>1025.1</b> | <b>813.9</b> | <b>690.2</b> | <b>607.4</b> | <b>549.3</b> | <b>511.1</b> | <b>468.8</b> |
| <b>Selected Courses</b> |               |              |              |              |              |              |              |
| Windward / Leeward      | <b>1056.1</b> | <b>858.6</b> | <b>744.4</b> | <b>674.7</b> | <b>635.4</b> | <b>612.2</b> | <b>592.9</b> |
| Circular Random         | <b>891.4</b>  | <b>719.7</b> | <b>627.8</b> | <b>574.7</b> | <b>542.8</b> | <b>522.7</b> | <b>499.5</b> |
| Coastal / Long Distance | <b>1053.0</b> | <b>806.8</b> | <b>671.4</b> | <b>591.8</b> | <b>552.0</b> | <b>522.5</b> | <b>477.1</b> |
| Non Spinnaker           | <b>944.7</b>  | <b>757.2</b> | <b>655.4</b> | <b>595.9</b> | <b>559.6</b> | <b>536.7</b> | <b>510.0</b> |

### 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   | <b>42.8°</b>  | <b>40.9°</b>  | <b>40.7°</b>  | <b>39.8°</b>  | <b>39.0°</b>  | <b>38.6°</b>  | <b>39.0°</b>  |
| Beat VMG      | <b>3.31</b>   | <b>3.99</b>   | <b>4.51</b>   | <b>4.85</b>   | <b>4.99</b>   | <b>5.05</b>   | <b>5.02</b>   |
| 52°           | <b>5.06</b>   | <b>5.98</b>   | <b>6.63</b>   | <b>6.93</b>   | <b>7.06</b>   | <b>7.12</b>   | <b>7.14</b>   |
| 60°           | <b>5.35</b>   | <b>6.28</b>   | <b>6.83</b>   | <b>7.10</b>   | <b>7.25</b>   | <b>7.31</b>   | <b>7.35</b>   |
| 75°           | <b>5.59</b>   | <b>6.51</b>   | <b>6.99</b>   | <b>7.25</b>   | <b>7.44</b>   | <b>7.59</b>   | <b>7.73</b>   |
| 90°           | <b>5.54</b>   | <b>6.48</b>   | <b>7.00</b>   | <b>7.28</b>   | <b>7.51</b>   | <b>7.73</b>   | <b>8.11</b>   |
| 110°          | <b>5.39</b>   | <b>6.52</b>   | <b>7.12</b>   | <b>7.47</b>   | <b>7.79</b>   | <b>8.02</b>   | <b>8.36</b>   |
| 120°          | <b>5.25</b>   | <b>6.38</b>   | <b>7.05</b>   | <b>7.43</b>   | <b>7.78</b>   | <b>8.14</b>   | <b>8.71</b>   |
| 135°          | <b>4.77</b>   | <b>5.86</b>   | <b>6.72</b>   | <b>7.19</b>   | <b>7.53</b>   | <b>7.89</b>   | <b>8.70</b>   |
| 150°          | <b>4.06</b>   | <b>5.11</b>   | <b>6.01</b>   | <b>6.76</b>   | <b>7.19</b>   | <b>7.51</b>   | <b>8.21</b>   |
| Run VMG       | <b>3.51</b>   | <b>4.42</b>   | <b>5.22</b>   | <b>5.93</b>   | <b>6.55</b>   | <b>7.04</b>   | <b>7.68</b>   |
| Gybe Angles   | <b>146.0°</b> | <b>150.0°</b> | <b>152.0°</b> | <b>157.0°</b> | <b>180.0°</b> | <b>180.0°</b> | <b>180.0°</b> |