



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

## 2020 ORC Club Certificate

### Rating Office

Estonian Yachting Union  
Purje 8, maja 3  
11911 Tallinn  
Estonia



**ESTONIAN  
YACHTING  
UNION**

### Certificate

Number **156/20**  
Issued On **15/09/2020**  
ORC Ref **03880000QBO**  
VPP Ver. **2020 1.02**  
Valid until **31/12/2020**

### Crew Weight

Default 651kg  
Maximum **650kg**  
Minimum\* **488kg**  
\*when applied by the NoR and SI  
Non Manual Pwr **No**

### Special Scoring

ToD ToT  
Non Spin GPH **687.7 0.8725**  
Non Spin OSN **664.8 0.9026**

### Sails Limitations

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

### Spinnaker configuration

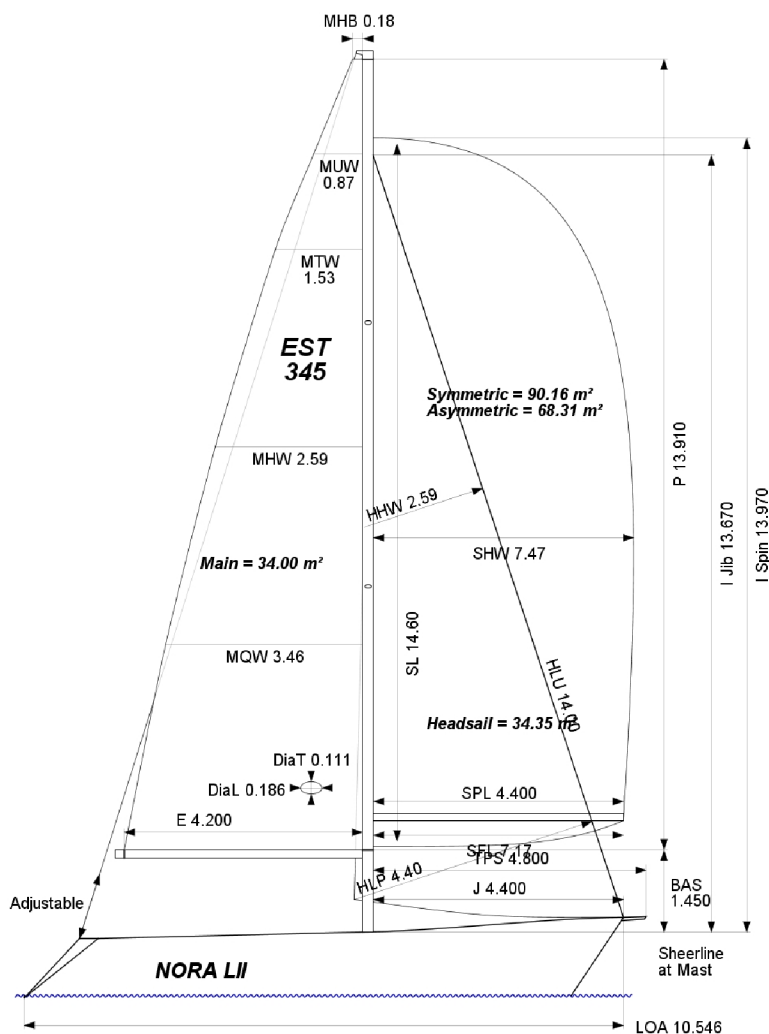
Symmetric: **Yes 90.16**  
Asymmetric: **Yes 73.47**  
Flying H/S: **No**  
Spin. Pole: **Yes**

### Class Division Length

**CDL = 8.731**

### Stability (Estimated)

Limit Positive Stab.: **115.6°**  
Stability Index: **117.7**



| BOAT                                                                                                                                                                    |  |                         | GPH                                                                                                                   |               | HULL                                                                                                                                                                                                                                  |               |               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------|-----------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|
| Name <b>NORA LII</b><br>Sail Nr <b>EST 345</b>                                                                                                                          |  |                         | <b>648.8</b>                                                                                                          |               | Data File <b>EST345</b> LOA <b>10.546m</b><br>Offset File <b>EST220.BOF</b> MB <b>3.624m</b><br>Displacement <b>6,094kg</b> Draft <b>2.028m</b>                                                                                       |               |               |
| CLASS                                                                                                                                                                   |  |                         |                                                                                                                       |               | IMS Division <b>Cruiser/Racer</b> Dynamic All. <b>0.250%</b><br>Plan Review      Construction <b>Solid</b><br>Fiber Rigging <b>No</b> Aramid Core <b>No</b><br>Crew Arm Ex      Carbon Rudder <b>No</b><br>Light Stanchions <b>No</b> |               |               |
| Class <b>Ridas 35</b><br>Designer <b>Lönngren/Ridas</b><br>Builder <b>Ridas Jaht</b><br>Series <b>06/1997</b><br>Age Date <b>04/2003</b><br>Age Allowance <b>0.487%</b> |  |                         | IMSL <b>9.526m</b> VCGD <b>0.000m</b> Sink <b>19.75kg/mm</b><br>RL <b>7.946m</b> VCGM <b>-0.035m</b> WS <b>26.16m</b> |               |                                                                                                                                                                                                                                       |               |               |
|                                                                                                                                                                         |  |                         | LSM0 <b>9.613m</b> Displacement/Length ratio <b>6.8600</b>                                                            |               |                                                                                                                                                                                                                                       |               |               |
| COMMENTS                                                                                                                                                                |  |                         |                                                                                                                       |               | Water Ballast      Trim Tab <b>No</b><br>BLR Index <b>0.0000</b>                                                                                                                                                                      |               |               |
|                                                                                                                                                                         |  |                         |                                                                                                                       |               |                                                                                                                                                                                                                                       |               |               |
| PROPELLER                                                                                                                                                               |  |                         |                                                                                                                       |               | CENTERBOARD                                                                                                                                                                                                                           |               |               |
| Installation <b>Strut</b> PRD <b>0.400</b><br>Type <b>Folding 2 blades</b> PIPA <b>0.0030</b>                                                                           |  |                         |                                                                                                                       |               |                                                                                                                                                                                                                                       | <b>N/A</b>    |               |
| SCORING OPTIONS                                                                                                                                                         |  |                         |                                                                                                                       |               |                                                                                                                                                                                                                                       |               |               |
|                                                                                                                                                                         |  | COASTAL / LONG DISTANCE |                                                                                                                       |               | WINDWARD / LEEWARD                                                                                                                                                                                                                    |               |               |
| Time on Distance                                                                                                                                                        |  | <b>631.4</b>            |                                                                                                                       |               | <b>703.1</b>                                                                                                                                                                                                                          |               |               |
| Time on Time                                                                                                                                                            |  | <b>0.9503</b>           |                                                                                                                       |               | <b>0.9600</b>                                                                                                                                                                                                                         |               |               |
| Triple Number                                                                                                                                                           |  | Low                     | Medium                                                                                                                | High          | Low                                                                                                                                                                                                                                   | Medium        | High          |
| Time on Distance                                                                                                                                                        |  | <b>745.3</b>            | <b>574.4</b>                                                                                                          | <b>510.9</b>  | <b>971.2</b>                                                                                                                                                                                                                          | <b>708.9</b>  | <b>608.0</b>  |
| Time on Time                                                                                                                                                            |  | <b>0.9057</b>           | <b>1.1752</b>                                                                                                         | <b>1.3211</b> | <b>0.6950</b>                                                                                                                                                                                                                         | <b>0.9522</b> | <b>1.1102</b> |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |       |       |      |      |       |          |            |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |          |           |             |          |         |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|------|------|-------|----------|------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-----------|-------------|----------|---------|--|--|--|
| <b>BOAT</b><br>Name <b>NORA LII</b> Sail Nr <b>EST 345</b><br>File <b>EST345</b> Data in <b>meters/kilograms</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |       |       |      |      |       |          |            |             | <b>INCLINING TEST AND FREEBOARDS</b><br>Inclining Test <b>Enter VCG directly</b><br>Flotation date <b>29/05/2020</b> SG <b>1.0250</b><br>VCGDe <b>0.000</b><br>FFM <b>1.354</b> FF <b>1.354</b> SFFP <b>0.550</b><br>FAM <b>0.832</b> FA <b>0.832</b> SAFF <b>9.246</b><br>LCF from stem on CL / on sheer <b>6.168 / 6.435</b><br>Maximum beam station from stem <b>6.694</b><br>RM Measured <b>138.9kg·m</b><br>RM Default <b>125.7kg·m</b><br>Limit of positive stability / Stab.Index <b>115.6° / 117.7</b><br>Freeboard at mast at 4.400 <b>1.113</b> |          |          |           |             |          |         |  |  |  |
| <b>RIG</b><br>Forestay Tension <b>Aft</b> Spreaders <b>2</b><br>Inner Stay <b>None Fitted</b> Runners/Checkstays <b>0</b><br>Carbon Mast <b>No</b> Jib Furler <b>No</b><br>Fiber Rigging <b>No</b> Main Furler <b>No</b><br>Non-Circular Rigging <b>No</b><br>Articulated Bowsprit <b>No</b><br>P <b>13.910</b> E <b>4.200</b> MDT1 <b>0.111</b> MW <b>0.186</b><br>IG <b>13.670</b> J <b>4.400</b> MDL1 <b>0.186</b> GO <b>0.210</b><br>ISP <b>13.970</b> SFJ <b>0.000</b> MDT2 <b>0.111</b> BD<br>BAS <b>1.450</b> SPL <b>4.400</b> MDL2 <b>0.186</b> MWT <b>140.00</b><br>FSD <b>0.035</b> TPS <b>4.800</b> TL      MCG <b>5.180</b> |       |       |       |      |      |       |          |            |             | <b>PROPELLER</b><br>Installation <b>Strut</b> PRD <b>0.400</b><br>Type <b>Folding 2 blades</b> PBW<br>Twin Screw <b>No</b> PIPA <b>0.0030</b><br>ST1 <b>0.058</b> ST3      ST5 <b>0.213</b><br>ST2      ST4 <b>0.098</b> EDL <b>1.900</b>                                                                                                                                                                                                                                                                                                                 |          |          |           |             |          |         |  |  |  |
| <b>MIZZEN RIG AND SAILS</b><br><br><div style="text-align: center;">N/A</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |       |       |      |      |       |          |            |             | <b>MOVABLE BALLAST</b><br><br><div style="text-align: center;">N/A</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |          |           |             |          |         |  |  |  |
| <b>COMMENTS</b><br><br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |       |       |      |      |       |          |            |             | <b>CENTERBOARD</b><br><br><div style="text-align: center;">N/A</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |          |           |             |          |         |  |  |  |
| <b>SAILS INVENTORY</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |       |       |      |      |       |          |            |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |          |           |             |          |         |  |  |  |
| <b>MAINSAIL (1)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |       |       |      |      |       |          |            |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |          |           |             |          |         |  |  |  |
| Id                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | MHB   | MUW   | MTW   | MHW  | MQW  | Area  | Measurer | Meas.Date  | Manufacture | Material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Comment  |          |           |             |          |         |  |  |  |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.18  | 0.87  | 1.53  | 2.59 | 3.46 | 34.01 |          | 07/06/2018 |             | Unknown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |          |           |             |          |         |  |  |  |
| <b>HEADSAILS (2)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |       |       |      |      |       |          |            |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |          |           |             |          |         |  |  |  |
| Id                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | HHB   | HUW   | HTW   | HHW  | HQW  | HLP   | HLU      | Ovrlp      | Area        | Btn                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Flying   | Measurer | Meas.Date | Manufacture | Material | Comment |  |  |  |
| N2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.13  | 0.83  | 1.53  | 2.59 | 3.54 | 4.40  | 14.00    | 100%       | 34.35       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | No       |          |           |             | Unknown  |         |  |  |  |
| N3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 0.12  | 0.74  | 1.36  | 2.40 | 3.41 | 4.41  | 14.00    | 100%       | 32.81       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | No       |          |           |             | Unknown  |         |  |  |  |
| <b>SYMMETRIC SPINNAKERS (3)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |       |       |      |      |       |          |            |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |          |           |             |          |         |  |  |  |
| Id                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SLU   | SLE   | SL    | SHW  | SFL  | Area  | Measurer | Meas.Date  | Manufacture | Material                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Comment  |          |           |             |          |         |  |  |  |
| N2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 14.60 | 14.60 | 14.60 | 7.47 | 7.17 | 90.16 | D206     |            | NS          | Unknown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | medium   |          |           |             |          |         |  |  |  |
| N1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 14.60 | 14.60 | 14.60 | 7.47 | 7.17 | 90.16 | D206     |            | NS          | Unknown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | light    |          |           |             |          |         |  |  |  |
| N3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 13.10 | 13.10 | 13.10 | 7.70 | 7.45 | 83.52 |          |            |             | Unknown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |          |           |             |          |         |  |  |  |
| <b>ASYMMETRIC SPINNAKERS (1)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |       |       |      |      |       |          |            |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |          |           |             |          |         |  |  |  |
| Id                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SLU   | SLE   | SL    | SHW  | SFL  | Area  | Kind     | Measurer   | Meas.Date   | Manufacture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Material | Comment  |           |             |          |         |  |  |  |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 14.78 | 13.40 | 14.09 | 5.46 | 7.25 | 68.32 | asy76    |            |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Unknown  |          |           |             |          |         |  |  |  |



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**2020**  
**Measurements**  
**Datasheet**

**Certificate**

Number **156/20**  
ORC Ref **03880000QBO**  
Issued On **15/09/2020**  
VPP Ver. **2020 1.02**  
Valid until **31/12/2020**



**ESTONIAN**  
**YACHTING**  
**UNION**

# 2020

## ORC Club Certificate Appendix

| <b>BOAT</b> |                 |                    |                   |
|-------------|-----------------|--------------------|-------------------|
| Name        | <b>NORA LII</b> | Certificate Number | <b>156/20</b>     |
| Sail Nr     | <b>EST 345</b>  | Issued On          | <b>15/09/2020</b> |

| <b>TIME ALLOWANCES</b>  |               |              |              |              |              |              |              |
|-------------------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Wind Velocity           | 6 kt          | 8 kt         | 10 kt        | 12 kt        | 14 kt        | 16 kt        | 20 kt        |
| Beat VMG                | <b>1112.8</b> | <b>923.7</b> | <b>814.8</b> | <b>749.1</b> | <b>721.2</b> | <b>709.9</b> | <b>702.1</b> |
| 52°                     | <b>726.3</b>  | <b>615.7</b> | <b>553.4</b> | <b>525.7</b> | <b>513.4</b> | <b>508.5</b> | <b>505.4</b> |
| 60°                     | <b>687.4</b>  | <b>586.0</b> | <b>536.1</b> | <b>513.7</b> | <b>501.8</b> | <b>495.5</b> | <b>491.3</b> |
| 75°                     | <b>638.9</b>  | <b>546.3</b> | <b>511.7</b> | <b>495.5</b> | <b>486.8</b> | <b>479.2</b> | <b>467.3</b> |
| 90°                     | <b>616.4</b>  | <b>531.1</b> | <b>499.9</b> | <b>480.5</b> | <b>464.7</b> | <b>453.2</b> | <b>439.9</b> |
| 110°                    | <b>641.4</b>  | <b>542.3</b> | <b>504.6</b> | <b>482.4</b> | <b>461.7</b> | <b>442.7</b> | <b>413.3</b> |
| 120°                    | <b>677.6</b>  | <b>562.4</b> | <b>511.2</b> | <b>486.2</b> | <b>464.5</b> | <b>442.9</b> | <b>409.2</b> |
| 135°                    | <b>751.5</b>  | <b>615.2</b> | <b>536.7</b> | <b>502.4</b> | <b>480.1</b> | <b>458.2</b> | <b>416.2</b> |
| 150°                    | <b>892.5</b>  | <b>708.5</b> | <b>600.5</b> | <b>534.0</b> | <b>502.9</b> | <b>482.0</b> | <b>441.0</b> |
| Run VMG                 | <b>1030.5</b> | <b>818.1</b> | <b>692.7</b> | <b>608.1</b> | <b>549.7</b> | <b>512.6</b> | <b>470.9</b> |
| <b>Selected Courses</b> |               |              |              |              |              |              |              |
| Windward / Leeward      | <b>1071.7</b> | <b>870.9</b> | <b>753.8</b> | <b>678.6</b> | <b>635.4</b> | <b>611.2</b> | <b>586.5</b> |
| Circular Random         | <b>894.1</b>  | <b>722.0</b> | <b>629.5</b> | <b>575.5</b> | <b>542.4</b> | <b>521.1</b> | <b>494.7</b> |
| Coastal / Long Distance | <b>1067.5</b> | <b>816.1</b> | <b>678.0</b> | <b>594.1</b> | <b>551.6</b> | <b>521.2</b> | <b>474.5</b> |
| Non Spinnaker           | <b>965.1</b>  | <b>771.8</b> | <b>666.1</b> | <b>603.7</b> | <b>565.2</b> | <b>540.5</b> | <b>511.5</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>42.8°</b>  | <b>41.3°</b>  | <b>40.9°</b>  | <b>39.8°</b>  | <b>38.6°</b>  | <b>38.1°</b>  | <b>37.9°</b>  |
| Beat VMG                                                 | <b>3.24</b>   | <b>3.90</b>   | <b>4.42</b>   | <b>4.81</b>   | <b>4.99</b>   | <b>5.07</b>   | <b>5.13</b>   |
| 52°                                                      | <b>4.96</b>   | <b>5.85</b>   | <b>6.51</b>   | <b>6.85</b>   | <b>7.01</b>   | <b>7.08</b>   | <b>7.12</b>   |
| 60°                                                      | <b>5.24</b>   | <b>6.14</b>   | <b>6.71</b>   | <b>7.01</b>   | <b>7.17</b>   | <b>7.26</b>   | <b>7.33</b>   |
| 75°                                                      | <b>5.63</b>   | <b>6.59</b>   | <b>7.04</b>   | <b>7.26</b>   | <b>7.40</b>   | <b>7.51</b>   | <b>7.70</b>   |
| 90°                                                      | <b>5.84</b>   | <b>6.78</b>   | <b>7.20</b>   | <b>7.49</b>   | <b>7.75</b>   | <b>7.94</b>   | <b>8.18</b>   |
| 110°                                                     | <b>5.61</b>   | <b>6.64</b>   | <b>7.13</b>   | <b>7.46</b>   | <b>7.80</b>   | <b>8.13</b>   | <b>8.71</b>   |
| 120°                                                     | <b>5.31</b>   | <b>6.40</b>   | <b>7.04</b>   | <b>7.41</b>   | <b>7.75</b>   | <b>8.13</b>   | <b>8.80</b>   |
| 135°                                                     | <b>4.79</b>   | <b>5.85</b>   | <b>6.71</b>   | <b>7.17</b>   | <b>7.50</b>   | <b>7.86</b>   | <b>8.65</b>   |
| 150°                                                     | <b>4.03</b>   | <b>5.08</b>   | <b>6.00</b>   | <b>6.74</b>   | <b>7.16</b>   | <b>7.47</b>   | <b>8.16</b>   |
| Run VMG                                                  | <b>3.49</b>   | <b>4.40</b>   | <b>5.20</b>   | <b>5.92</b>   | <b>6.55</b>   | <b>7.02</b>   | <b>7.65</b>   |
| Gybe Angles                                              | <b>146.0°</b> | <b>150.0°</b> | <b>151.0°</b> | <b>157.0°</b> | <b>180.0°</b> | <b>180.0°</b> | <b>180.0°</b> |