



ORC

Offshore Racing Congress
World leader in rating technology

**2019
ORC Club
Certificate**

Rating Office

EYU
Purje 8
11911, Tallinn
Estonia

Certificate

Number **EST475**
Issued On **5/14/2019**
ORC Ref **EST0000550**
VPP Ver. **2019 1.01**
Valid until **12/31/2019**

Crew Weight

Default 789kg
Maximum **900kg**
Minimum* **675kg**
**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring

| | ToD | ToT |
|--------------|--------------|---------------|
| Double H.GPH | 580.7 | 1.0332 |
| Double H.OSN | 566.1 | 1.0599 |
| Non Spin GPH | 604.1 | 0.9932 |
| Non Spin OSN | 587.3 | 1.0216 |

Sails Limitations

Headsails **6** Spinnakers **4**

Spinnaker configuration

Symmetric: **Yes 128.16**
Asymmetric: **No**
Flying H/S: **No**
Spin. Pole: **Yes**

Class Division Length

CDL = 10.765

Stability (Measured)

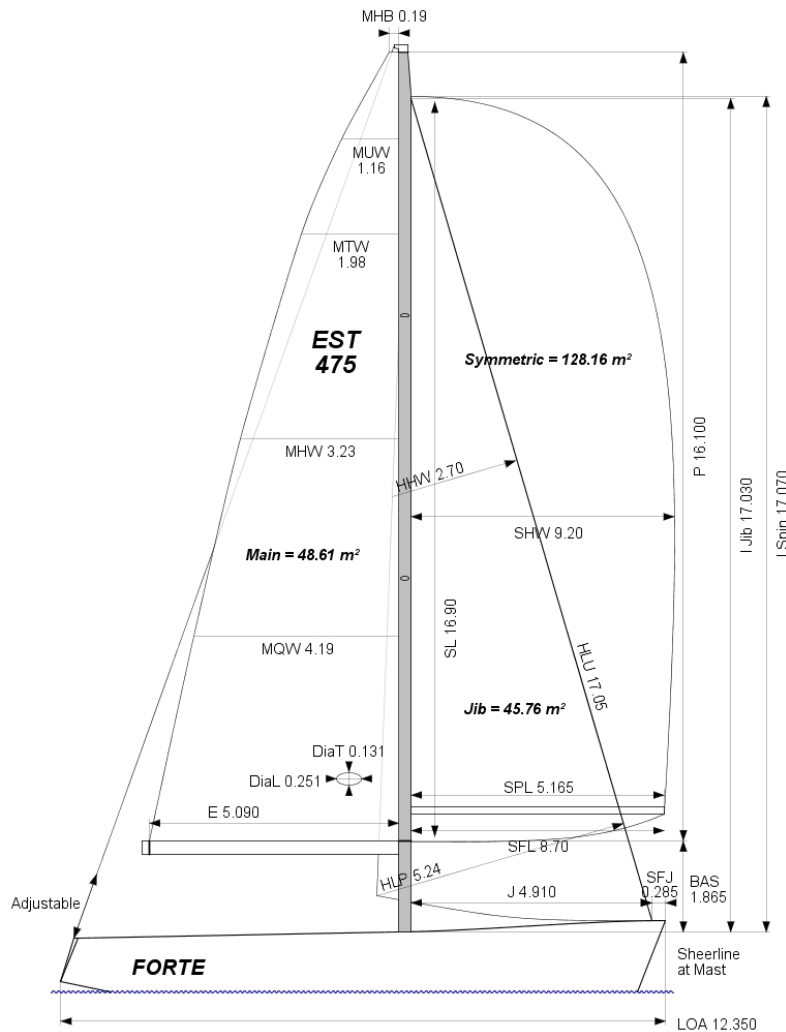
Limit Positive Stab.: **125.4°**
Stability Index: **128.9**

Owner

Uljaste Purjetajate Ordu
Raua 20-7
Tallinn, Estonia
ESS Kalev JK

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

Signature



| BOAT | | GPH | | HULL | | |
|------------------------|--------------------------------|---------------|---------------|---------------------------|----------------------|---------------|
| Name | FORTE | | | Data File | Est0475 | |
| Sail Nr | EST 475 | | | Offset File | EST475.off | |
| | | 570.9 | | Displacement | 6,835kg | |
| | | | | LOA | 12.350m | |
| | | | | MB | 3.646m | |
| | | | | Draft | 2.496m | |
| CLASS | | | | IMS Division | Cruiser/Racer | |
| Class | X-41 | | | Dynamic All. | 0.046% | |
| Designer | JEPPESEN | | | Fwd Accom. | Yes | |
| Builder | X YACHTS | | | Construction | Cored | |
| Series | 01/2006 | | | Fiber Rigging | No | |
| Age Date | 05/2007 | | | Aramid Core | No | |
| Age Allowance | 0.422% | | | Carbon Rudder | No | |
| | | | | Light Stanchions | | |
| | | | | IMSL | 11.097m | |
| | | | | VCGD | -0.104m | |
| | | | | Sink | 23.00kg/mm | |
| | | | | RL | 10.430m | |
| | | | | VCGM | -0.121m | |
| | | | | WS | 30.65m² | |
| | | | | LSM0 | 11.004m | |
| | | | | Displacement/Length ratio | 5.1296 | |
| | | | | Water Ballast | 0 | |
| | | | | Trim Tab | No | |
| | | | | BLR Index | 0.0000 | |
| COMMENTS | | | | CENTERBOARD | | |
| | | | | N/A | | |
| PROPELLER | | | | | | |
| Installation | Strut | PRD | 0.430 | | | |
| Type | Folding 2 blades | PBW | 0.125 | | | |
| | | PIPA | 0.0032 | | | |
| SCORING OPTIONS | | | | | | |
| | COASTAL / LONG DISTANCE | | | WINDWARD / LEEWARD | | |
| Time on Distance | 554.8 | | | 619.5 | | |
| Time on Time | 1.0815 | | | 1.0897 | | |
| Triple Number | Low | Medium | High | Low | Medium | High |
| Time on Distance | 652.1 | 506.2 | 451.9 | 841.4 | 621.3 | 541.7 |
| Time on Time | 1.0351 | 1.3335 | 1.4938 | 0.8022 | 1.0864 | 1.2460 |

| | |
|---------------------|---------------------------------|
| BOAT | |
| Name FORTE | Sail Nr EST 475 |
| File Est0475 | Data in meters/kilograms |

| | | | |
|--|------------------|-----------------------|--|
| INCLINING TEST AND FREEBOARDS | | | |
| Inclining Test Current Inclining | | | |
| Flotation date 12/05/2019 | | SG 1.0000 | |
| FFM 1.444 | FF 1.454 | SFFP 0.200 | |
| FAM 1.094 | FA 1.101 | SAFP 11.995 | |
| W1 106.1 | PD1 583.2 | WD 13.506 | |
| W2 106.1 | PD2 589.2 | GSA 1.0 | |
| W3 106.1 | PD3 575.5 | RSA 1.0 | |
| W4 106.1 | PD4 553.0 | PLM 9000.0 | |
| LCF from stem on CL / on sheer | | 6.911 / 7.126 | |
| Maximum beam station from stem | | 8.432 | |
| RM Measured | | 196.3kg·m | |
| RM Default | | 199.0kg·m | |
| Limit of positive stability / Stab.Index | | 125.4° / 128.9 | |
| Freeboard at mast at 5.195 | | 1.212 | |



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2019
Measurements
Datasheet

| | | | |
|--------------------------------|----------------------------|-------------------|-------------------|
| RIG | | | |
| Forestay Tension Aft | Spreaders 2 | | |
| Inner Stay None Fitted | Runners 0 | | |
| Carbon Mast Yes | Jumper Struts None | | |
| Taper Hollows No | Jib Furler No | | |
| Fiber Rigging No | Main Furler No | | |
| Lenticular Rigging No | Without Backstay No | | |
| Articulated Bowsprit No | | | |
| P 16.100 | E 5.090 | MDT1 0.131 | MW 0.251 |
| IG 17.030 | J 4.910 | MDL1 0.251 | GO 0.276 |
| ISP 17.070 | SFJ 0.285 | MDT2 0.122 | BD 0.270 |
| BAS 1.865 | SPL 5.165 | MDL2 0.190 | MWT 204.00 |
| FSP 0.072 | TPS | TL 0.850 | MCG 5.810 |

| | |
|-----------------------------|--|
| MIZZEN RIG AND SAILS | |
| N/A | |

| | | | |
|------------------------------|--------------------|------------------|--|
| PROPELLER | | | |
| Installation Strut | PRD 0.430 | | |
| Type Folding 2 blades | PBW 0.125 | | |
| Twin Screw No | PIPA 0.0032 | | |
| ST1 0.060 | ST3 | ST5 0.325 | |
| ST2 | ST4 0.092 | EDL 1.540 | |

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|-------------------------------|--|
| Certificate | |
| Number EST475 | |
| ORC Ref EST00000550 | |
| Issued On 5/14/2019 | |
| VPP Ver. 2019 1.01 | |
| Valid until 12/31/2019 | |

| | |
|-----------------|--|
| COMMENTS | |
| | |

| | |
|------------------------|--|
| MOVABLE BALLAST | |
| N/A | |

| | |
|--------------------|--|
| CENTERBOARD | |
| N/A | |

| SAILS INVENTORY | | | | | | | | | | | | | | | | |
|----------------------------------|-------|-------|-------|------|------|--------|----------|------------|-------------|-------------|--------------|----------|-----------|-------------|----------|-------------|
| MAINSAIL (1) | | | | | | | | | | | | | | | | |
| Id | MHB | MUW | MTW | MHW | MQW | Area | Measurer | Meas.Date | Manufacture | Material | Comment | | | | | |
| 6 | 0.19 | 1.16 | 1.98 | 3.23 | 4.19 | 48.62 | | | | Unknown | P16,10;E5,09 | | | | | |
| HEADSAILS (2) | | | | | | | | | | | | | | | | |
| Id | HHB | HUW | HTW | HHW | HQW | HLP | HLU | Ovrlp | Area | Btn | Fly | Measurer | Meas.Date | Manufacture | Material | Comment |
| 9 | 0.12 | 0.76 | 1.42 | 2.70 | 3.97 | 5.24 | 17.05 | 107% | 45.77 | Y | | | | | Unknown | 2015 medium |
| 5 | 0.09 | 0.56 | 1.08 | 2.19 | 3.40 | 4.70 | 16.49 | 96% | 37.47 | Y | D206 | | | | Unknown | G3,5 |
| SYMMETRIC SPINNAKERS (3) | | | | | | | | | | | | | | | | |
| Id | SLU | SLE | SL | SHW | SFL | Area | Measurer | Meas.Date | Manufacture | Material | Comment | | | | | |
| 8 | 16.90 | 16.90 | 16.90 | 9.20 | 8.70 | 128.16 | | | | Unknown | uus Doyle | | | | | |
| 7 | 16.92 | 16.92 | 16.92 | 9.00 | 8.70 | 126.06 | | | | Unknown | heavy S4 | | | | | |
| 3 | 16.94 | 16.94 | 16.94 | 8.63 | 8.70 | 122.03 | EST 2 | 01/07/2011 | | Unknown | reacher | | | | | |
| ASYMMETRIC SPINNAKERS (0) | | | | | | | | | | | | | | | | |
| Id | SLU | SLE | SL | SHW | SFL | Area | Kind | Measurer | Meas.Date | Manufacture | Material | Comment | | | | |

| MEASUREMENT INVENTORY | | | | |
|----------------------------------|--------|-------------|-------------|-----------------|
| Measurer Grubiša, Pindozi | | | | |
| Date 12/05/2019 | | | | |
| Comment Pirita | | | | |
| Id | Item | Weight | Distance | VCG Description |
| Id | Item | Maker | Model | |
| 1 | Engine | Volvo-Penta | D2 (29 kW) | |
| Id | Item | Weight | Description | |

| MEASUREMENT INVENTORY | | | | | | | | |
|------------------------------|-------------|----------|-----------|-------------------|-------|-----|-------|-------------|
| Id | Item | Tank Use | Tank Type | Capcty | Dist. | VCG | Condn | Description |
| 1 | Tank Fuel | | metal | 90.0 | 7.00 | | | 20-0 |
| 2 | Tank Water | | plastic | 180.0 | 6.00 | | | 0-0 |
| 3 | Tank Waste | | metal | 15.0 | 4.00 | | | 0-0 |
| 4 | Tank Boiler | | metal | 15.0 | 10.00 | | | 0-0 |
| Id | Item | Weight | Distance | VCG Description | | | | |
| 1 | Battery | 25.0 | 8.00 | Engine battery | | | | |
| 2 | Battery | 120.0 | 5.00 | Service batteries | | | | |

2019

ORC Club Certificate Appendix

| BOAT | |
|------------------------|----------------------------------|
| Name FORTE | Certificate Number EST475 |
| Sail Nr EST 475 | Issued On 5/14/2019 |

| TIME ALLOWANCES | | | | | | | |
|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Wind Velocity | 6 kt | 8 kt | 10 kt | 12 kt | 14 kt | 16 kt | 20 kt |
| Beat VMG | 946.3 | 778.4 | 687.1 | 653.8 | 640.7 | 634.7 | 620.5 |
| 52° | 621.5 | 522.1 | 478.1 | 463.5 | 458.0 | 455.3 | 448.0 |
| 60° | 588.3 | 502.0 | 466.7 | 452.0 | 445.8 | 442.4 | 435.8 |
| 75° | 563.5 | 488.6 | 458.7 | 440.7 | 427.8 | 420.7 | 414.6 |
| 90° | 570.3 | 490.2 | 458.3 | 439.2 | 421.3 | 405.4 | 386.7 |
| 110° | 586.1 | 486.5 | 448.3 | 424.0 | 407.5 | 394.9 | 373.9 |
| 120° | 601.7 | 495.2 | 453.0 | 425.9 | 399.6 | 379.0 | 354.3 |
| 135° | 665.9 | 537.8 | 474.1 | 444.4 | 418.6 | 392.8 | 340.9 |
| 150° | 790.9 | 630.4 | 532.2 | 475.4 | 446.9 | 423.1 | 375.9 |
| Run VMG | 913.2 | 727.9 | 614.6 | 543.1 | 496.4 | 461.2 | 414.7 |
| Selected Courses | | | | | | | |
| Windward / Leeward | 929.7 | 753.2 | 650.8 | 598.5 | 568.5 | 547.9 | 517.6 |
| Circular Random | 784.1 | 633.9 | 553.9 | 507.9 | 479.5 | 460.3 | 433.8 |
| Coastal / Long Distance | 928.1 | 708.4 | 589.1 | 524.5 | 489.8 | 461.6 | 416.0 |
| Non Spinnaker | 843.9 | 676.1 | 585.3 | 532.1 | 499.0 | 477.0 | 447.9 |

| Velocity Prediction in Knots for True Wind Speeds | | | | | | | |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Wind Velocity | 6 kt | 8 kt | 10 kt | 12 kt | 14 kt | 16 kt | 20 kt |
| Beat Angles | 42.6° | 41.2° | 39.7° | 38.1° | 38.0° | 37.8° | 37.5° |
| Beat VMG | 3.80 | 4.63 | 5.24 | 5.51 | 5.62 | 5.67 | 5.80 |
| 52° | 5.79 | 6.89 | 7.53 | 7.77 | 7.86 | 7.91 | 8.04 |
| 60° | 6.12 | 7.17 | 7.71 | 7.97 | 8.08 | 8.14 | 8.26 |
| 75° | 6.39 | 7.37 | 7.85 | 8.17 | 8.41 | 8.56 | 8.68 |
| 90° | 6.31 | 7.34 | 7.85 | 8.20 | 8.55 | 8.88 | 9.31 |
| 110° | 6.14 | 7.40 | 8.03 | 8.49 | 8.83 | 9.12 | 9.63 |
| 120° | 5.98 | 7.27 | 7.95 | 8.45 | 9.01 | 9.50 | 10.16 |
| 135° | 5.41 | 6.69 | 7.59 | 8.10 | 8.60 | 9.16 | 10.56 |
| 150° | 4.55 | 5.71 | 6.76 | 7.57 | 8.06 | 8.51 | 9.58 |
| Run VMG | 3.94 | 4.95 | 5.86 | 6.63 | 7.25 | 7.81 | 8.68 |
| Gybe Angles | 142.2° | 147.2° | 149.6° | 155.5° | 169.1° | 180.0° | 180.0° |