



World Leader in Rating Technology

## 2016 ORC Club Certificate

### Rating Office

Hungarian Yachting  
Association  
Istvanmezei ut 1-3  
H-1146 Budapest  
HUNGARY



### Certificate

Number **034/14**  
Issued On **6.7.2016.**  
ORC Ref **HUN00070058**  
VPP Ver. **2016 1.01**  
Valid until **31.12.2016.**

### Crew Weight

Declared **600kg**  
Default\* **784kg**  
Non Manual Pwr **No**

### Special Scoring

	ToD	ToT
Non Spin GPH	<b>639.0</b>	<b>0.9390</b>
Non Spin OSN	<b>620.5</b>	<b>0.9670</b>
N/S Perf. Line	<b>-4.3</b>	<b>0.591</b>

### Sails Limitations

Headsails **1** Spinnakers **3**

**Spinnaker configuration**  
Symmetric: **Yes 134.75**  
Asymmetric: **No**  
Flying H/S: **No**  
Spin. Pole: **Yes**

### Class Division Length

CDL = **9.879**

### Stability

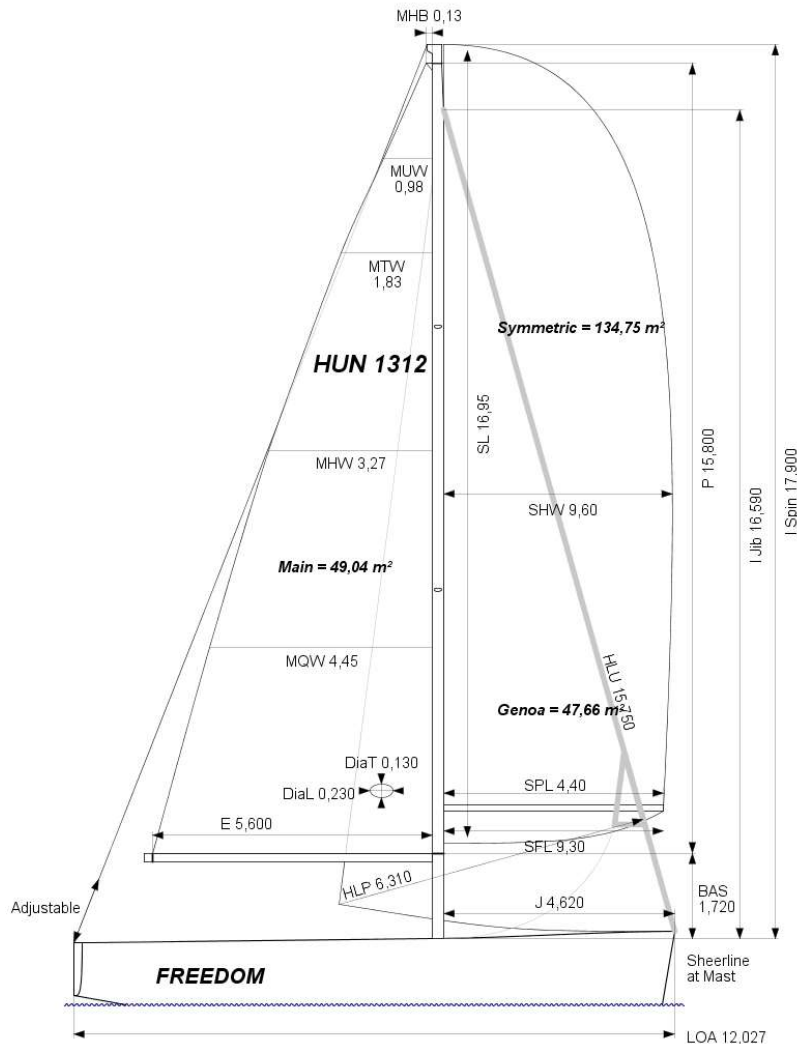
LPS (Estimated): **110.1°**  
Stability Index: **112.6**  
OSR Category: **N/A**

### Owner

**Krisztián Palkovics**  
8000 Székesfehérvár  
Simonyi u.4  
HUNGARY

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

Signature



BOAT	GPH	HULL
Name <b>Freedom</b> Sail Nr <b>HUN 1312</b>	<b>605.7</b>	Data File <b>HUN1312.dxt</b> LOA <b>12.027m</b> Offset File <b>HS400Eb.off</b> MB <b>4.034m</b> Displacement <b>8,400kg</b> Draft <b>2.055m</b>
<b>CLASS</b> Class <b>Hanse 400</b> Designer <b>Judel/Vrolijk</b> Builder <b>YZ Greifswald</b> Series <b>01.2006, CIN DE-HANJ0497D909</b> Age Date <b>01.2009</b> Age Allowance <b>0.325%</b>		IMS Division <b>Cruiser/Racer</b> Dynamic All. <b>0.195%</b> Fwd Accom. <b>Yes</b> Construction <b>Cored</b> Fiber Rigging <b>No</b> Aramid Core <b>No</b> Crew Arm Ex Carbon Rudder <b>No</b> Light Stanchions <b>No</b>
<b>COMMENTS</b>		IMSL <b>11.017m</b> VCGD <b>-0.025m</b> Sink <b>26.36kg/mm</b> RL <b>8.740m</b> VCGM <b>0.194m</b> WS <b>33.71m2</b> LSM0 <b>10.955m</b> Displacement/Length ratio <b>6.3891</b> Water Ballast <b>0</b> Trim Tab <b>No</b>
<b>PROPELLER</b> Installation <b>Strut</b> PRD <b>0.419</b> Type <b>Folding 2 blades</b> PBW <b>0.110</b> PIPA <b>0.0035</b>		<b>CENTERBOARD</b> <b>N/A</b>

SCORING OPTIONS	OFFSHORE COASTAL / LONG DISTANCE			INSHORE WINDWARD / LEEWARD		
	PLT	PLD		PLT	PLD	
Time On Distance	<b>588.2</b>			<b>660.5</b>		
Time On Time	<b>1.0200</b>			<b>1.0219</b>		
Performance Line	<b>0.670</b>	<b>24.1</b>		<b>0.809</b>	<b>166.5</b>	
Triple Number	Low <b>0.9572</b>	Medium <b>1.2640</b>	High <b>1.4366</b>	Low <b>0.7334</b>	Medium <b>1.0113</b>	High <b>1.1897</b>



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## ORC Club Certificate Appendix

<b>BOAT</b>	
Name <b>Freedom</b>	Certificate Number <b>034/14</b>
Sail Nr <b>HUN 1312</b>	Issued On <b>6.7.2016.</b>

<b>TIME ALLOWANCES</b>							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	<b>1088.4</b>	<b>897.5</b>	<b>786.4</b>	<b>714.3</b>	<b>683.7</b>	<b>668.5</b>	<b>661.7</b>
52°	<b>695.2</b>	<b>580.8</b>	<b>512.0</b>	<b>478.1</b>	<b>466.2</b>	<b>460.8</b>	<b>457.0</b>
60°	<b>646.1</b>	<b>543.1</b>	<b>487.3</b>	<b>462.6</b>	<b>451.3</b>	<b>446.3</b>	<b>442.1</b>
75°	<b>605.3</b>	<b>512.8</b>	<b>471.0</b>	<b>450.3</b>	<b>435.5</b>	<b>424.8</b>	<b>416.6</b>
90°	<b>605.0</b>	<b>511.6</b>	<b>465.6</b>	<b>451.0</b>	<b>435.1</b>	<b>419.7</b>	<b>395.5</b>
110°	<b>611.8</b>	<b>503.5</b>	<b>459.4</b>	<b>435.7</b>	<b>419.5</b>	<b>408.7</b>	<b>389.8</b>
120°	<b>627.7</b>	<b>515.5</b>	<b>465.4</b>	<b>440.3</b>	<b>417.2</b>	<b>396.0</b>	<b>374.4</b>
135°	<b>692.6</b>	<b>562.6</b>	<b>489.6</b>	<b>456.4</b>	<b>434.3</b>	<b>412.2</b>	<b>369.7</b>
150°	<b>817.9</b>	<b>650.6</b>	<b>551.1</b>	<b>489.3</b>	<b>458.1</b>	<b>437.1</b>	<b>396.8</b>
Run VMG	<b>944.5</b>	<b>751.3</b>	<b>636.3</b>	<b>560.4</b>	<b>509.9</b>	<b>471.5</b>	<b>428.5</b>
<b>Selected Courses</b>							
Windward / Leeward	<b>1016.4</b>	<b>824.4</b>	<b>711.3</b>	<b>637.3</b>	<b>596.8</b>	<b>570.0</b>	<b>545.1</b>
Circular Random	<b>843.1</b>	<b>677.3</b>	<b>587.2</b>	<b>534.1</b>	<b>501.1</b>	<b>479.8</b>	<b>454.3</b>
Ocean for PCS	<b>1036.9</b>	<b>797.3</b>	<b>660.8</b>	<b>576.5</b>	<b>521.7</b>	<b>483.8</b>	<b>432.9</b>
Non Spinnaker	<b>902.9</b>	<b>719.7</b>	<b>618.7</b>	<b>558.3</b>	<b>520.3</b>	<b>495.6</b>	<b>465.7</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>45.4°</b>	<b>44.0°</b>	<b>43.8°</b>	<b>42.7°</b>	<b>41.8°</b>	<b>41.1°</b>	<b>41.0°</b>
Beat VMG	<b>3.31</b>	<b>4.01</b>	<b>4.58</b>	<b>5.04</b>	<b>5.27</b>	<b>5.38</b>	<b>5.44</b>
52°	<b>5.18</b>	<b>6.20</b>	<b>7.03</b>	<b>7.53</b>	<b>7.72</b>	<b>7.81</b>	<b>7.88</b>
60°	<b>5.57</b>	<b>6.63</b>	<b>7.39</b>	<b>7.78</b>	<b>7.98</b>	<b>8.07</b>	<b>8.14</b>
75°	<b>5.95</b>	<b>7.02</b>	<b>7.64</b>	<b>7.99</b>	<b>8.27</b>	<b>8.47</b>	<b>8.64</b>
90°	<b>5.95</b>	<b>7.04</b>	<b>7.73</b>	<b>7.98</b>	<b>8.27</b>	<b>8.58</b>	<b>9.10</b>
110°	<b>5.88</b>	<b>7.15</b>	<b>7.84</b>	<b>8.26</b>	<b>8.58</b>	<b>8.81</b>	<b>9.24</b>
120°	<b>5.74</b>	<b>6.98</b>	<b>7.74</b>	<b>8.18</b>	<b>8.63</b>	<b>9.09</b>	<b>9.62</b>
135°	<b>5.20</b>	<b>6.40</b>	<b>7.35</b>	<b>7.89</b>	<b>8.29</b>	<b>8.73</b>	<b>9.74</b>
150°	<b>4.40</b>	<b>5.53</b>	<b>6.53</b>	<b>7.36</b>	<b>7.86</b>	<b>8.24</b>	<b>9.07</b>
Run VMG	<b>3.81</b>	<b>4.79</b>	<b>5.66</b>	<b>6.42</b>	<b>7.06</b>	<b>7.63</b>	<b>8.40</b>
Gybe Angles	<b>144.5°</b>	<b>148.7°</b>	<b>150.6°</b>	<b>155.0°</b>	<b>168.3°</b>	<b>180.0°</b>	<b>180.0°</b>