

<b>BOAT</b>
Name <b>Petra</b> Sail Nr <b>BUL-441</b>

<b>GPH</b>
<b>583.1</b>

<b>HULL</b>	Length Overall	<b>12.555m</b>
	Maximum Beam	<b>3.760m</b>
	Displacement	<b>7,854kg</b>
	Draft	<b>2.454m</b>
	IMS Reg. Division	<b>Cruiser/Racer</b>
	Dynamic Allowance	<b>0.079%</b>
	Fwd Accommodation	<b>Yes</b>
	Hull Construction	<b>Cored</b>
	Carbon Rudder	<b>No</b>
	Crew Arm Extension	
	IMSL	<b>11.302m</b> VCGD <b>0.071m</b> Sink <b>24.57kg/mm</b>
	RL	<b>10.034m</b> VCGM <b>0.138m</b> WS <b>32.13m<sup>2</sup></b>
	LSM0	<b>11.299m</b> Displacement/Length ratio <b>5.4447</b>



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

**2019**  
ORC International  
Certificate

<b>GENERAL</b>
Class <b>Bavaria 42 Match</b>
Designer <b>J&amp;J Design</b>
Builder <b>BAVARIA YACHT</b>
Series <b>01/2004</b>
Age <b>01/2004</b>
Age Allowance <b>0.487%</b>
Offset File <b>BA42MDK3.OFF - 30/07/2004 16:05:00</b>
Measurement by - <b>20/05/2019</b>

**Rating Office**

Offshore  
Racing  
Congress

<b>SCORING OPTIONS</b>						
	<b>COASTAL / LONG DISTANCE</b>			<b>WINDWARD / LEEWARD</b>		
Time on Distance	<b>566.4</b>			<b>631.5</b>		
Time on Time	<b>1.0593</b>			<b>1.0689</b>		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	<b>669.9</b>	<b>516.0</b>	<b>460.4</b>	<b>865.2</b>	<b>634.6</b>	<b>550.3</b>
Time on Time	<b>1.0076</b>	<b>1.3081</b>	<b>1.4660</b>	<b>0.7802</b>	<b>1.0637</b>	<b>1.2267</b>



<b>TIME ALLOWANCES</b>							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	<b>974.7</b>	<b>805.1</b>	<b>708.9</b>	<b>666.6</b>	<b>649.2</b>	<b>641.4</b>	<b>634.4</b>
52°	<b>639.8</b>	<b>538.6</b>	<b>487.7</b>	<b>468.9</b>	<b>462.2</b>	<b>458.9</b>	<b>456.5</b>
60°	<b>605.2</b>	<b>515.0</b>	<b>474.6</b>	<b>457.7</b>	<b>450.5</b>	<b>446.8</b>	<b>444.2</b>
75°	<b>578.5</b>	<b>498.8</b>	<b>465.5</b>	<b>447.8</b>	<b>435.7</b>	<b>428.6</b>	<b>422.3</b>
90°	<b>585.0</b>	<b>500.3</b>	<b>464.9</b>	<b>444.9</b>	<b>430.3</b>	<b>416.3</b>	<b>398.1</b>
110°	<b>602.5</b>	<b>497.9</b>	<b>455.8</b>	<b>433.3</b>	<b>417.6</b>	<b>399.8</b>	<b>378.7</b>
120°	<b>617.7</b>	<b>507.1</b>	<b>460.2</b>	<b>435.2</b>	<b>412.2</b>	<b>392.3</b>	<b>362.8</b>
135°	<b>682.7</b>	<b>551.8</b>	<b>481.6</b>	<b>450.4</b>	<b>427.4</b>	<b>404.1</b>	<b>359.5</b>
150°	<b>809.3</b>	<b>646.6</b>	<b>543.8</b>	<b>481.7</b>	<b>452.4</b>	<b>431.0</b>	<b>388.2</b>
Run VMG	<b>934.5</b>	<b>746.7</b>	<b>628.0</b>	<b>551.3</b>	<b>503.6</b>	<b>466.8</b>	<b>423.4</b>

<b>Certificate</b>
Number <b>033/19</b>
ORC Ref <b>BUL10025748</b>
Issued On <b>14/06/2019</b>
VPP Ver. <b>2019 1.01</b>
Valid until <b>31/12/2019</b>

<b>Selected Courses</b>							
Windward / Leeward	<b>954.6</b>	<b>775.8</b>	<b>668.4</b>	<b>608.9</b>	<b>576.4</b>	<b>554.1</b>	<b>528.9</b>
Circular Random	<b>803.5</b>	<b>648.6</b>	<b>565.6</b>	<b>517.6</b>	<b>488.3</b>	<b>469.1</b>	<b>444.8</b>
Coastal / Long Distance	<b>952.6</b>	<b>729.1</b>	<b>603.5</b>	<b>533.3</b>	<b>497.9</b>	<b>469.9</b>	<b>426.0</b>
Non Spinnaker	<b>858.8</b>	<b>687.8</b>	<b>594.9</b>	<b>540.3</b>	<b>506.6</b>	<b>484.6</b>	<b>456.9</b>

<b>Crew Weight</b>
Default 819kg
Maximum <b>850kg</b>
Minimum* <b>638kg</b>
*when applied by the NoR and SI
Non Manual Pwr <b>No</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>42.7°</b>	<b>41.1°</b>	<b>40.3°</b>	<b>39.0°</b>	<b>38.0°</b>	<b>37.7°</b>	<b>37.7°</b>
Beat VMG	<b>3.69</b>	<b>4.47</b>	<b>5.08</b>	<b>5.40</b>	<b>5.54</b>	<b>5.61</b>	<b>5.67</b>
52°	<b>5.63</b>	<b>6.68</b>	<b>7.38</b>	<b>7.68</b>	<b>7.79</b>	<b>7.84</b>	<b>7.89</b>
60°	<b>5.95</b>	<b>6.99</b>	<b>7.58</b>	<b>7.87</b>	<b>7.99</b>	<b>8.06</b>	<b>8.10</b>
75°	<b>6.22</b>	<b>7.22</b>	<b>7.73</b>	<b>8.04</b>	<b>8.26</b>	<b>8.40</b>	<b>8.53</b>
90°	<b>6.15</b>	<b>7.20</b>	<b>7.74</b>	<b>8.09</b>	<b>8.37</b>	<b>8.65</b>	<b>9.04</b>
110°	<b>5.98</b>	<b>7.23</b>	<b>7.90</b>	<b>8.31</b>	<b>8.62</b>	<b>9.00</b>	<b>9.51</b>
120°	<b>5.83</b>	<b>7.10</b>	<b>7.82</b>	<b>8.27</b>	<b>8.73</b>	<b>9.18</b>	<b>9.92</b>
135°	<b>5.27</b>	<b>6.52</b>	<b>7.48</b>	<b>7.99</b>	<b>8.42</b>	<b>8.91</b>	<b>10.01</b>
150°	<b>4.45</b>	<b>5.57</b>	<b>6.62</b>	<b>7.47</b>	<b>7.96</b>	<b>8.35</b>	<b>9.27</b>
Run VMG	<b>3.85</b>	<b>4.82</b>	<b>5.73</b>	<b>6.53</b>	<b>7.15</b>	<b>7.71</b>	<b>8.50</b>
Gybe Angles	<b>140.8°</b>	<b>148.4°</b>	<b>148.5°</b>	<b>155.1°</b>	<b>166.2°</b>	<b>180.0°</b>	<b>180.0°</b>

<b>Special Scoring</b>	
ToD	ToT
Double H.GPH <b>591.7</b>	<b>1.0140</b>
Double H.OSN <b>576.5</b>	<b>1.0407</b>
Non Spin GPH <b>614.1</b>	<b>0.9770</b>
Non Spin OSN <b>596.6</b>	<b>1.0058</b>

<b>Sails Limitations</b>	
Headsails <b>6</b>	Spinnakers <b>4</b>

<b>Class Division Length</b>
<b>CDL = 10.669</b>

<b>Storm Sails Areas</b>	
Heavy Weather Jib <b>33.55</b>	
Storm Jib (JL=10.25) <b>12.43</b>	
Storm Trysail <b>14.65</b>	

**Owner**

<b>BOAT</b>	
Name <b>Petra</b>	Sail Nr <b>BUL-441</b>
File <b>BUL441</b>	Data in <b>meters/kilograms</b>

<b>RIG</b>	
Forestay Tension <b>Aft</b>	Spreaders <b>3</b>
Inner Stay <b>None Fitted</b>	Runners <b>0</b>
Carbon Mast <b>No</b>	Jumper Struts <b>None</b>
Taper Hollows <b>No</b>	Jib Furler <b>No</b>
Fiber Rigging <b>No</b>	Main Furler <b>No</b>
Lenticular Rigging <b>No</b>	Without Backstay <b>No</b>
Articulated Bowsprit <b>No</b>	
P <b>14.550</b>	E <b>5.750</b> MDT1 <b>0.110</b> MW <b>0.230</b>
IG <b>15.710</b>	J <b>4.465</b> MDL1 <b>0.230</b> GO <b>0.245</b>
ISP <b>16.430</b>	SFJ <b>0.195</b> MDT2 <b>0.095</b> BD
BAS <b>1.820</b>	SPL <b>4.495</b> MDL2 <b>0.190</b> MWT
FSP <b>0.070</b>	TPS <b>4.465</b> TL <b>0.710</b> MCG

<b>INCLINING TEST AND FREEBOARDS</b>			
Inclining Test <b>Current Inclining</b>			
Flotation date <b>12/06/2019</b>		SG <b>1.0180</b>	
FFM <b>1.482</b>	FF <b>1.484</b>	SFFP <b>0.240</b>	
FAM <b>1.209</b>	FA <b>1.213</b>	SAFP <b>11.890</b>	
W1 <b>27.0</b>	PD1 <b>60.0</b>	WD <b>10.480</b>	
W2 <b>53.3</b>	PD2 <b>102.0</b>	GSA <b>50.3</b>	
W3 <b>74.8</b>	PD3 <b>145.0</b>	RSA <b>18800.</b>	
W4 <b>95.7</b>	PD4 <b>182.0</b>	PLM <b>2000.0</b>	
LCF from stem on CL / on sheer		<b>6.976 / 7.210</b>	
Maximum beam station from stem		<b>7.710</b>	
RM Measured		<b>191.4kg-m</b>	
RM Default		<b>211.2kg-m</b>	
Limit of positive stability / Stab.Index		<b>114.0° / 118.3</b>	
Freeboard at mast at 4.660		<b>1.298</b>	



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

**2019**  
IMS Measurement  
Certificate

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

<b>PROPELLER</b>			
Installation <b>Strut</b>	PRD <b>0.490</b>		
Type <b>Folding 2 blades</b>	PBW <b>0.135</b>		
Twin Screw <b>No</b>	PIPA <b>0.0038</b>		
ST1 <b>0.065</b>	ST3 <b>0.180</b>	ST5 <b>0.250</b>	
ST2 <b>0.180</b>	ST4 <b>0.110</b>	EDL <b>2.685</b>	

<b>Certificate</b>	
Number <b>033/19</b>	
ORC Ref <b>BUL10025748</b>	
Issued On <b>14/06/2019</b>	
VPP Ver. <b>2019 1.01</b>	
Valid until <b>31/12/2019</b>	

<b>COMMENTS</b>	
Measured with solid locker doors	

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

<b>CENTERBOARD</b>	
N/A	

COPY ONLY Invalid for Racing

World Leader In Rating Technology

<b>SAILS (Maximum Areas)</b>									
<b>Mainsail</b>	<b>MHB</b>	<b>MUW</b>	<b>MTW</b>	<b>MHW</b>	<b>MQW</b>	<b>Area</b>	<b>Area (r)</b>	<b>Formula</b>	
	0.180	1.24	2.17	3.70	4.84	49.86	51.17	P/8 · (E + 2·MQW + 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
<b>Symmetric</b>	<b>SLU</b>	<b>SLE</b>	<b>SL</b>	<b>SHW</b>	<b>SFL</b>				
	16.90	16.90	16.90	9.10	8.70	127.03		SL · (SFL + 4·SHW) / 6	
<b>Asymmetric on centerline</b>	<b>SLU</b>	<b>SLE</b>	<b>SL</b>	<b>SHW</b>	<b>SFL</b>				
	15.75	14.25	15.00	6.08	8.10	81.05		AS · (SFL + 4·SHW) / 6	

<b>HEADSAILS</b>												
Area = 0.1125·HLU · (1.445·HLP + 2·HQW + 2·HHW + 1.5·HTW + HUW + 0.5·HHB)												
<b>HHB</b>	<b>HUW</b>	<b>HTW</b>	<b>HHW</b>	<b>HQW</b>	<b>HLP</b>	<b>HLU</b>	<b>Area</b>	<b>Btn</b>	<b>Fly</b>	<b>Meas.Date</b>	<b>Material</b>	<b>Comment</b>
0.11	0.77	1.50	2.98	4.55	6.18	15.64	47.62			11/06/2019	Carbon	Carbon/Kevlar FusionM
0.11	0.74	1.44	2.93	4.52	6.18	15.68	47.25			11/06/2019	Carbon	Carbon/Kevlar FusionM

<b>MEASUREMENT INVENTORY</b>				
Measurer				
Date <b>12/06/2019</b>				
Comment				
<b>Id</b>	<b>Item</b>	<b>Weight</b>	<b>Distance</b>	<b>VCG Description</b>
<b>Id</b>	<b>Item</b>	<b>Maker</b>	<b>Model</b>	
1	Engine	Volvo Penta	D2-50	
<b>Id</b>	<b>Item</b>	<b>Weight Description</b>		

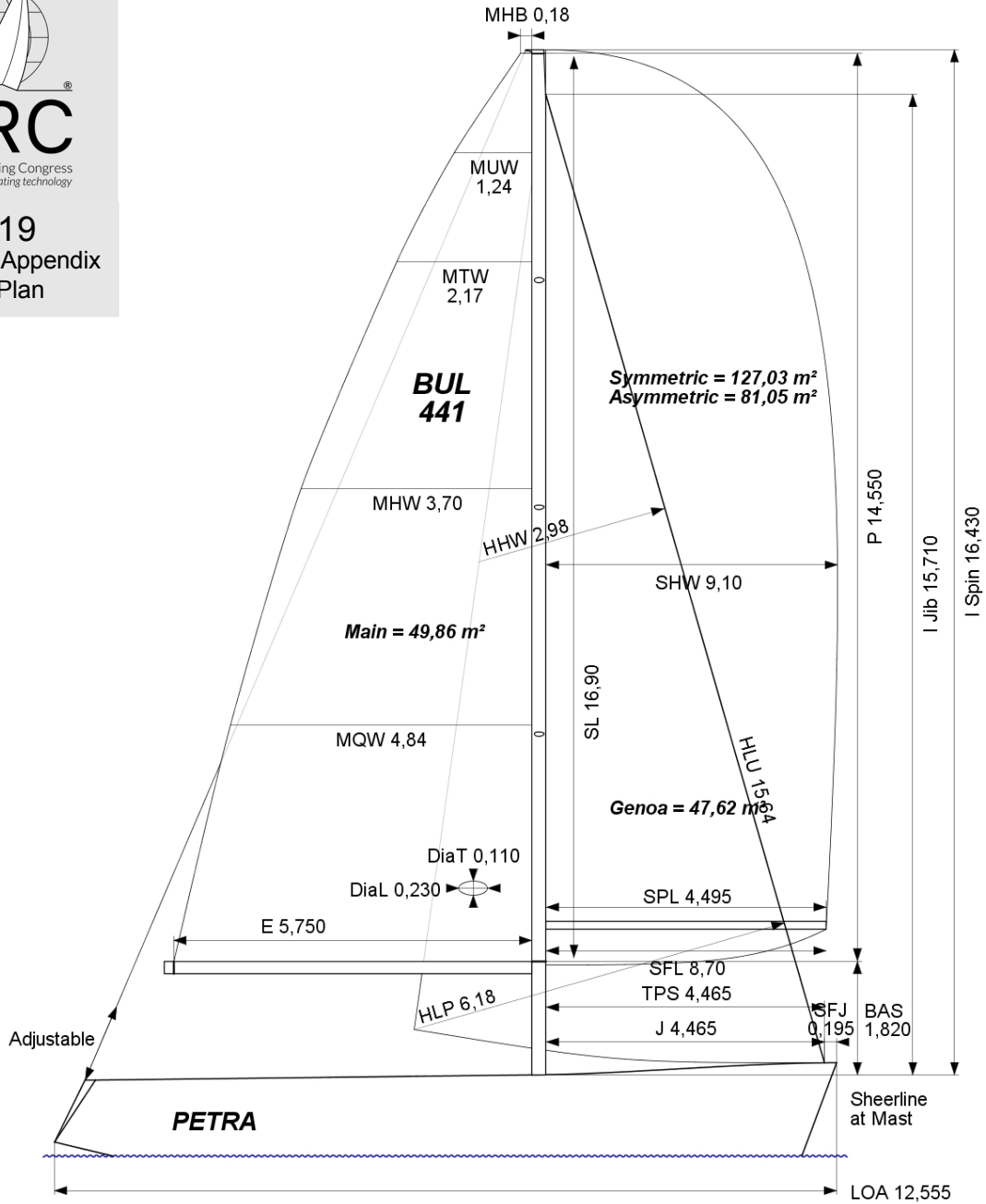
<b>MEASUREMENT INVENTORY</b>						
<b>Id</b>	<b>Item</b>	<b>Tank Use</b>	<b>Tank Type</b>	<b>Capcty</b>	<b>Dist.</b>	<b>VCG Condtn Description</b>
1	Tank Fuel		PVC	150.0	10.00	5-0
2	Tank Water		PVC	120.0	10.00	5-0 Stb side aft cabin
3	Tank Water		PVC	80.0	10.00	5-0 Port side aft cabin
<b>Id</b>	<b>Item</b>	<b>Weight</b>	<b>Distance</b>	<b>VCG Description</b>		
1	Battery		6.85	Starboard gel		
2	Battery		6.85	Starboard gel		
3	Battery		6.85	Starboard gel		
1	Misc	5.0	11.50	Gas Bottle		



**ORC**

Offshore Racing Congress  
World leader in rating technology

**2019**  
Certificate Appendix  
Sail Plan



**SAILS INVENTORY**

MAINSAIL (1)																
Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
1	0.18	1.24	2.17	3.70	4.84	49.87		11/06/2019	Quantum	Carbon	Carbon/Kevlar					
HEADSAILS (2)																
Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
J1	0.11	0.77	1.50	2.98	4.55	6.18	15.64	138%	47.62				11/06/2019	Quantum	Carbon	Carbon/Kevlar
J2	0.11	0.74	1.44	2.93	4.52	6.18	15.68	138%	47.25				11/06/2019	Quantum	Carbon	Carbon/Kevlar
SYMMETRIC SPINNAKERS (2)																
Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
1	16.90	16.90	16.90	9.10	8.70	127.04		11/06/2019	Quantum	Nylon	VMG					
2	16.20	16.20	16.20	7.56	7.47	101.82		11/06/2019	Quantum	Nylon	Reacher					
ASYMMETRIC SPINNAKERS (1)																
Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment				
Code75	15.75	14.25	15.00	6.08	8.10	81.05	asym		11/06/2019	Quantum	Nylon	Code0				