

<b>BOAT</b> Name <b>DONNA</b> Sail Nr <b>FIN-4493</b>	<b>GPH</b> <b>683.9</b>	<b>HULL</b> Length Overall <b>9.447m</b> Maximum Beam <b>3.018m</b> Displacement <b>4,473kg</b> Draft <b>1.637m</b> IMS Reg. Division <b>Cruiser/Racer</b> Dynamic Allowance <b>0.174%</b> Fwd Accommodation <b>Yes</b> Hull Construction <b>Cored</b> Carbon Rudder <b>No</b> Crew Arm Extension
<b>GENERAL</b> Class <b>INFERNO 31</b> Designer <b>H.SÖDERGREN</b> Builder <b>FINNGULF MARIN</b> Series <b>01/1985</b> Age <b>01/1988</b> Age Allowance <b>0.487%</b> Offset File <b>L0009.BOF - 28/03/1990 17:47:00</b> Measurement by - <b>19/05/2019</b>		IMSLS <b>8.169m</b> VCGD <b>-0.055m</b> Sink <b>14.57kg/mm</b> RL <b>6.918m</b> VCGM <b>-0.043m</b> WS <b>19.45m<sup>2</sup></b> LSM0 <b>8.066m</b> Displacement/Length ratio <b>8.5236</b>



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

**2019**  
ORC International  
Certificate

**Rating Office**

Offshore  
Racing  
Congress



SCORING OPTIONS						
Time on Distance	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
	<b>667.9</b>			<b>742.0</b>		
Time on Time	<b>0.8983</b>			<b>0.9097</b>		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	<b>768.0</b>	<b>610.2</b>	<b>554.2</b>	<b>986.0</b>	<b>745.0</b>	<b>658.3</b>
Time on Time	<b>0.8789</b>	<b>1.1062</b>	<b>1.2179</b>	<b>0.6846</b>	<b>0.9061</b>	<b>1.0254</b>

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	<b>1098.0</b>	<b>931.8</b>	<b>840.0</b>	<b>802.8</b>	<b>786.4</b>	<b>779.1</b>	<b>781.0</b>
52°	<b>727.2</b>	<b>622.6</b>	<b>576.3</b>	<b>559.2</b>	<b>552.4</b>	<b>549.1</b>	<b>548.6</b>
60°	<b>690.3</b>	<b>597.6</b>	<b>561.9</b>	<b>546.2</b>	<b>538.3</b>	<b>534.2</b>	<b>532.0</b>
75°	<b>663.2</b>	<b>581.6</b>	<b>551.1</b>	<b>534.1</b>	<b>521.6</b>	<b>512.6</b>	<b>505.0</b>
90°	<b>670.5</b>	<b>582.1</b>	<b>546.5</b>	<b>528.0</b>	<b>514.7</b>	<b>500.3</b>	<b>479.5</b>
110°	<b>688.9</b>	<b>580.1</b>	<b>541.0</b>	<b>517.1</b>	<b>495.1</b>	<b>477.4</b>	<b>460.1</b>
120°	<b>711.8</b>	<b>593.0</b>	<b>546.7</b>	<b>521.7</b>	<b>498.6</b>	<b>476.3</b>	<b>444.6</b>
135°	<b>783.9</b>	<b>648.1</b>	<b>570.8</b>	<b>538.5</b>	<b>515.1</b>	<b>491.5</b>	<b>449.5</b>
150°	<b>920.5</b>	<b>737.7</b>	<b>630.3</b>	<b>566.5</b>	<b>537.4</b>	<b>515.4</b>	<b>471.8</b>
Run VMG	<b>1062.9</b>	<b>851.1</b>	<b>724.1</b>	<b>635.8</b>	<b>575.0</b>	<b>543.2</b>	<b>499.9</b>

**Certificate**  
Number **04493**  
ORC Ref **FIN00003856**  
Issued On **24/05/2019**  
VPP Ver. **2019 1.01**  
Valid until **31/12/2019**

Selected Courses							
Windward / Leeward	<b>1080.5</b>	<b>891.4</b>	<b>782.1</b>	<b>719.3</b>	<b>680.7</b>	<b>661.2</b>	<b>640.4</b>
Circular Random	<b>925.8</b>	<b>754.5</b>	<b>664.4</b>	<b>613.3</b>	<b>582.8</b>	<b>563.4</b>	<b>540.1</b>
Coastal / Long Distance	<b>1078.7</b>	<b>838.7</b>	<b>708.0</b>	<b>634.2</b>	<b>594.9</b>	<b>564.6</b>	<b>515.3</b>
Non Spinnaker	<b>966.8</b>	<b>783.2</b>	<b>685.5</b>	<b>629.5</b>	<b>595.7</b>	<b>574.3</b>	<b>549.4</b>

**Crew Weight**  
Default 507kg  
Maximum **470kg**  
Minimum\* **353kg**  
*\*when applied by the NoR and SI*  
Non Manual Pwr **No**

**Special Scoring**

ToD	ToT
Double H.GPH <b>692.7</b>	<b>0.8662</b>
Double H.OSN <b>677.8</b>	<b>0.8852</b>
Non Spin GPH <b>706.3</b>	<b>0.8495</b>
Non Spin OSN <b>687.9</b>	<b>0.8723</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>42.1°</b>	<b>41.3°</b>	<b>41.2°</b>	<b>40.4°</b>	<b>39.9°</b>	<b>39.6°</b>	<b>39.9°</b>
Beat VMG	<b>3.28</b>	<b>3.86</b>	<b>4.29</b>	<b>4.48</b>	<b>4.58</b>	<b>4.62</b>	<b>4.61</b>
52°	<b>4.95</b>	<b>5.78</b>	<b>6.25</b>	<b>6.44</b>	<b>6.52</b>	<b>6.56</b>	<b>6.56</b>
60°	<b>5.22</b>	<b>6.02</b>	<b>6.41</b>	<b>6.59</b>	<b>6.69</b>	<b>6.74</b>	<b>6.77</b>
75°	<b>5.43</b>	<b>6.19</b>	<b>6.53</b>	<b>6.74</b>	<b>6.90</b>	<b>7.02</b>	<b>7.13</b>
90°	<b>5.37</b>	<b>6.18</b>	<b>6.59</b>	<b>6.82</b>	<b>6.99</b>	<b>7.20</b>	<b>7.51</b>
110°	<b>5.23</b>	<b>6.21</b>	<b>6.65</b>	<b>6.96</b>	<b>7.27</b>	<b>7.54</b>	<b>7.82</b>
120°	<b>5.06</b>	<b>6.07</b>	<b>6.59</b>	<b>6.90</b>	<b>7.22</b>	<b>7.56</b>	<b>8.10</b>
135°	<b>4.59</b>	<b>5.56</b>	<b>6.31</b>	<b>6.69</b>	<b>6.99</b>	<b>7.32</b>	<b>8.01</b>
150°	<b>3.91</b>	<b>4.88</b>	<b>5.71</b>	<b>6.35</b>	<b>6.70</b>	<b>6.98</b>	<b>7.63</b>
Run VMG	<b>3.39</b>	<b>4.23</b>	<b>4.97</b>	<b>5.66</b>	<b>6.26</b>	<b>6.63</b>	<b>7.20</b>
Gybe Angles	<b>147.2°</b>	<b>152.3°</b>	<b>153.6°</b>	<b>164.3°</b>	<b>180.0°</b>	<b>180.0°</b>	<b>180.0°</b>

**Sails Limitations**

Headsails	Spinnakers
<b>5</b>	<b>3</b>

**Class Division Length**  
CDL = **7.544**

**Storm Sails Areas**

Heavy Weather Jib	<b>18.75</b>
Storm Jib (JL=7.66)	<b>6.95</b>
Storm Triesail	<b>9.10</b>

**Owner**

<b>BOAT</b>	
Name <b>DONNA</b>	Sail Nr <b>FIN-4493</b>
File <b>L-4493</b>	Data in <b>meters/kilograms</b>

<b>RIG</b>	
Forestay Tension <b>Aft</b>	Spreaders <b>2</b>
Inner Stay <b>None Fitted</b>	Runners <b>1</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>12.500</b>	E <b>4.158</b> MDT1 <b>0.110</b> MW <b>0.160</b>
IG <b>11.784</b>	J <b>3.565</b> MDL1 <b>0.160</b> GO <b>0.160</b>
ISP <b>11.834</b>	SFJ <b>0.185</b> MDT2 <b>0.090</b> BD <b>0.155</b>
BAS <b>1.484</b>	SPL <b>3.600</b> MDL2 <b>0.115</b> MWT <b>105.00</b>
FSP <b>0.062</b>	TPS <b></b> TL <b>1.850</b> MCG <b>4.370</b>

<b>INCLINING TEST AND FREEBOARDS</b>			
Inclining Test <b>Current Inclining</b>			
Flotation date <b>16/06/2009</b>		SG <b>1.0050</b>	
FFM <b>1.186</b>	FF <b>1.196</b>	SFFP <b>0.593</b>	
FAM <b>0.936</b>	FA <b>0.946</b>	SAFP <b>8.565</b>	
W1 <b>73.6</b>	PD1 <b>728.6</b>	WD <b>9.590</b>	
W2 <b>73.6</b>	PD2 <b>694.7</b>	GSA <b>1.0</b>	
W3 <b>73.6</b>	PD3 <b>719.8</b>	RSA <b>1.0</b>	
W4 <b>73.6</b>	PD4 <b>701.7</b>	PLM <b>9000.0</b>	
LCF from stem on CL / on sheer		<b>5.480 / 5.684</b>	
Maximum beam station from stem		<b>5.614</b>	
RM Measured		<b>78.2kg-m</b>	
RM Default		<b>75.7kg-m</b>	
Limit of positive stability / Stab.Index		<b>121.4° / 124.4</b>	
Freeboard at mast at 3.750		<b>1.037</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>Shaft exposed</b>	PRD <b>0.410</b>		
Type <b>Folding 2 blades</b>	PBW <b>0.100</b>		
Twin Screw <b>No</b>	PIPA <b>0.0049</b>		
PSA <b>22.000</b>	PHL <b>0.165</b>	ST3 <b>0.080</b>	ESL <b>0.735</b>
PSD <b>0.025</b>	ST1 <b>0.024</b>	ST4 <b>0.047</b>	
PHD <b>0.069</b>	ST2 <b>0.079</b>	ST5 <b>0.243</b>	

<b>Certificate</b>	
Number <b>04493</b>	
ORC Ref <b>FIN00003856</b>	
Issued On <b>24/05/2019</b>	
VPP Ver. <b>2019 1.01</b>	
Valid until <b>31/12/2019</b>	

<b>COMMENTS</b>	
New rudder 2019 Jefa RUD 30	

<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>	
	0.160	0.85	1.54	2.64	3.47	30.65	31.18	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>				
	11.70	11.70	11.70	6.38	6.28	62.01		SL · (SFL + 4·SHW) / 6	
<b>Asymmetric</b>									
Not Available									

<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>
0.08	0.67	1.27	2.55	3.91	5.28	11.70	30.49			07/01/2019	Unknow	
0.08	0.66	1.29	2.59	3.91	5.25	11.61	30.33			08/04/2015	Kevlar	

<b>MEASUREMENT INVENTORY</b>				
Measurer <b>FIN104</b>				
Date <b>21/06/2010</b>				
Comment <b>Freeboard remeasured</b>				
<b>Id</b>	<b>Item</b>	<b>Weight</b>	<b>Distance</b>	<b>VCG Description</b>
4	Anchor	10.0	8.73	Anchor + 3 m-
2	Anchor	7.5	7.29	Anchor
4	Feels	10.0	3.56	
<b>Id</b>	<b>Item</b>	<b>Maker</b>	<b>Model</b>	
1	Engine	Yanmar	3GM	
<b>Id</b>	<b>Item</b>	<b>Weight Description</b>		

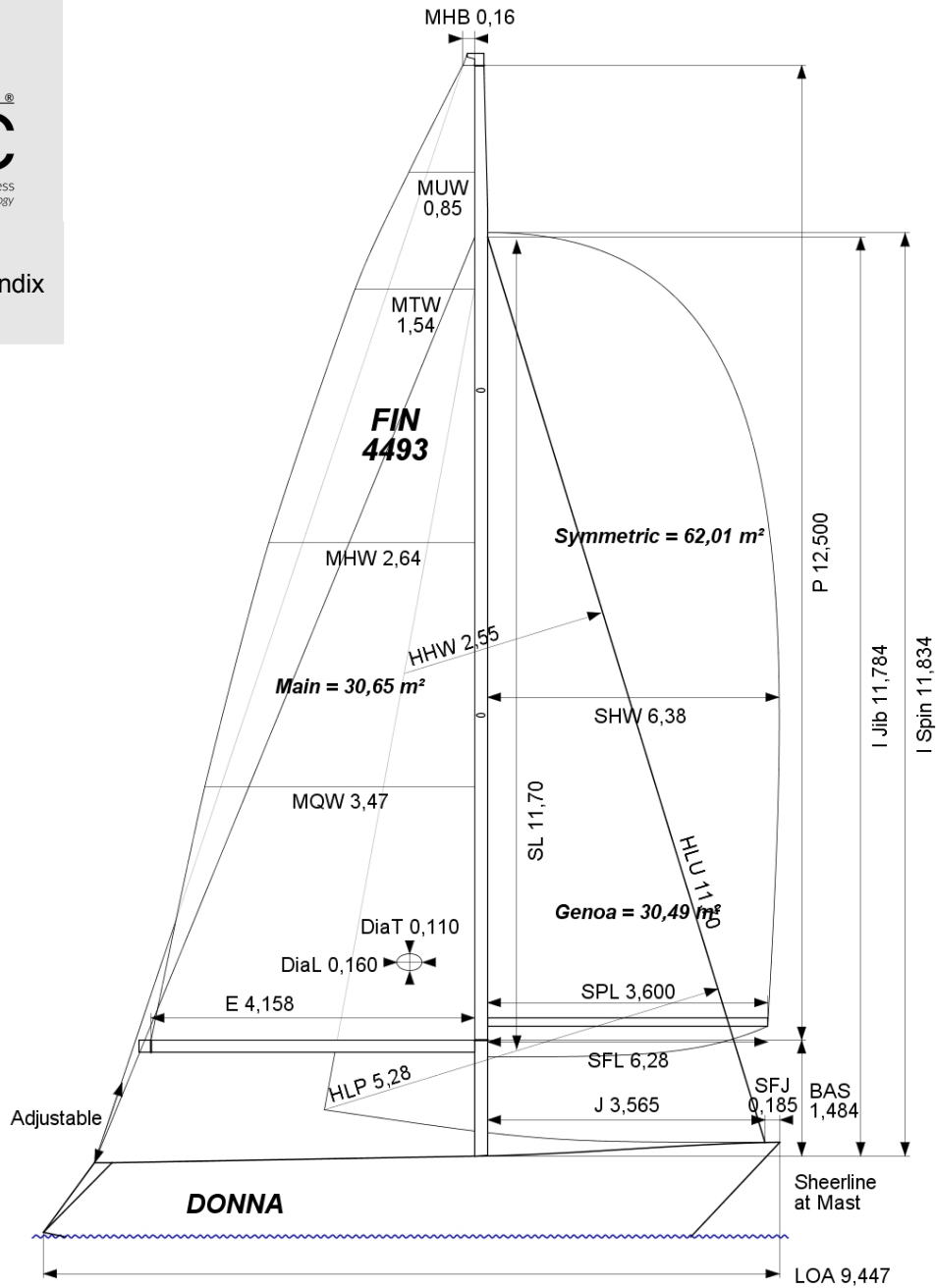
<b>MEASUREMENT INVENTORY</b>									
<b>Id</b>	<b>Item</b>	<b>Tank Use</b>	<b>Tank Type</b>	<b>Capcty</b>	<b>Dist.</b>	<b>VCG</b>	<b>Condtn</b>	<b>Description</b>	
1	Tank	Water	RST	50.0	4.41			0-0 Empty	
2	Tank	Fuel	RST	40.0	4.41			20.0 FB adjusted 1.5 mm	
3	Tank	Waste	RST	30.0	6.85			4-0	
<b>Id</b>	<b>Item</b>	<b>Weight</b>	<b>Distance</b>	<b>VCG Description</b>					
1	Battery		6.86	110 Ah					
2	Battery		6.86	70 Ah					



**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
2	0.16	0.85	1.54	2.64	3.47	30.66		12/02/2013	WB-Sails	Unknown	

**HEADSAILS (2)**

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
Heavy	0.08	0.67	1.27	2.55	3.91	5.28	11.70	148%	30.49				07/01/2019	North Sails	Unknown	
Med	0.08	0.66	1.29	2.59	3.91	5.25	11.61	147%	30.33				08/04/2015	North Sails	Kevlar	

**SYMMETRIC SPINNAKERS (2)**

Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
S3	11.70	11.70	11.70	6.38	6.28	62.01				Unknown	
S2	11.63	11.63	11.63	6.36	6.38	61.68		08/04/2015	North Sails	Nylon	White

**ASYMMETRIC SPINNAKERS (0)**

Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
----	-----	-----	----	-----	-----	------	------	----------	-----------	-------------	----------	---------