

<b>BOAT</b> Name <b>Marina X</b> Sail Nr <b>ISR430</b>	<b>GPH</b> <b>582.2</b>	<b>HULL</b> Length Overall <b>12.500m</b> Maximum Beam <b>3.946m</b> Displacement <b>9,257kg</b> Draft <b>2.228m</b> IMS Reg. Division <b>Cruiser/Racer</b> Dynamic Allowance <b>0.219%</b> Fwd Accommodation <b>Yes</b> Hull Construction <b>Cored</b> Carbon Rudder <b>No</b> Crew Arm Extension
<b>GENERAL</b> Class <b>X 4^3</b> Designer <b>Jepessen</b> Builder <b>X Yachts</b> Series <b>01/2016</b> Age <b>02/2018</b> Age Allowance <b>0.098%</b> Offset File <b>X4.off - 19/12/2016 11:57:46</b> Measurement by - <b>03/08/2018</b>		IMSL <b>11.701m</b> VCGD <b>-0.021m</b> Sink <b>26.35kg/mm</b> RL <b>9.714m</b> VCGM <b>-0.044m</b> WS <b>34.31m<sup>2</sup></b> LSM0 <b>11.650m</b> Displacement/Length ratio <b>5.8545</b>



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SCORING OPTIONS						
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time on Distance	<b>566.1</b>			<b>637.5</b>		
Time on Time	<b>1.0600</b>			<b>1.0588</b>		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	<b>669.4</b>	<b>514.4</b>	<b>461.4</b>	<b>869.4</b>	<b>639.7</b>	<b>559.9</b>
Time on Time	<b>1.0083</b>	<b>1.3121</b>	<b>1.4628</b>	<b>0.7764</b>	<b>1.0551</b>	<b>1.2056</b>

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	<b>1015.3</b>	<b>835.3</b>	<b>732.9</b>	<b>677.5</b>	<b>655.9</b>	<b>647.0</b>	<b>637.0</b>
52°	<b>656.4</b>	<b>551.5</b>	<b>492.4</b>	<b>467.1</b>	<b>456.7</b>	<b>452.6</b>	<b>449.6</b>
60°	<b>616.5</b>	<b>522.9</b>	<b>475.4</b>	<b>454.8</b>	<b>444.3</b>	<b>439.6</b>	<b>436.7</b>
75°	<b>586.5</b>	<b>501.3</b>	<b>463.6</b>	<b>444.9</b>	<b>432.1</b>	<b>422.4</b>	<b>413.3</b>
90°	<b>589.7</b>	<b>490.6</b>	<b>453.0</b>	<b>441.2</b>	<b>428.7</b>	<b>415.3</b>	<b>392.5</b>
110°	<b>577.9</b>	<b>480.7</b>	<b>443.8</b>	<b>422.9</b>	<b>407.2</b>	<b>396.7</b>	<b>378.6</b>
120°	<b>591.6</b>	<b>489.0</b>	<b>448.1</b>	<b>425.1</b>	<b>403.3</b>	<b>383.0</b>	<b>359.6</b>
135°	<b>661.0</b>	<b>534.1</b>	<b>468.3</b>	<b>440.0</b>	<b>418.6</b>	<b>396.5</b>	<b>354.1</b>
150°	<b>783.1</b>	<b>625.9</b>	<b>529.2</b>	<b>474.0</b>	<b>450.1</b>	<b>432.9</b>	<b>399.4</b>
Run VMG	<b>904.3</b>	<b>722.8</b>	<b>611.1</b>	<b>547.3</b>	<b>517.6</b>	<b>483.4</b>	<b>436.3</b>

**Certificate**

Number **030219**  
ORC Ref **ISR00000461**  
Issued On **03/02/2019**  
VPP Ver. **2019 1.01**  
Valid until **31/12/2019**

**Crew Weight**

Default **856kg**  
Maximum **856kg**  
Minimum\* **642kg**  
*\*when applied by the NoR and SI*  
Non Manual Pwr

**Special Scoring**

	ToD	ToT
Double H.GPH	<b>589.2</b>	<b>1.0182</b>
Double H.OSN	<b>573.9</b>	<b>1.0455</b>
Non Spin GPH	<b>622.3</b>	<b>0.9642</b>
Non Spin OSN	<b>603.7</b>	<b>0.9938</b>

Selected Courses							
Windward / Leeward	<b>959.8</b>	<b>779.0</b>	<b>672.0</b>	<b>612.4</b>	<b>586.8</b>	<b>565.2</b>	<b>536.7</b>
Circular Random	<b>803.0</b>	<b>647.5</b>	<b>564.5</b>	<b>516.9</b>	<b>488.3</b>	<b>469.7</b>	<b>445.8</b>
Coastal / Long Distance	<b>954.3</b>	<b>729.6</b>	<b>603.8</b>	<b>532.6</b>	<b>498.1</b>	<b>469.5</b>	<b>424.8</b>
Non Spinnaker	<b>877.8</b>	<b>700.0</b>	<b>602.4</b>	<b>544.6</b>	<b>508.6</b>	<b>485.1</b>	<b>456.1</b>

**Sails Limitations**

Headsails	Spinnakers
<b>6</b>	<b>4</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>43.7°</b>	<b>42.0°</b>	<b>41.3°</b>	<b>40.6°</b>	<b>39.8°</b>	<b>39.5°</b>	<b>39.0°</b>
Beat VMG	<b>3.55</b>	<b>4.31</b>	<b>4.91</b>	<b>5.31</b>	<b>5.49</b>	<b>5.56</b>	<b>5.65</b>
52°	<b>5.48</b>	<b>6.53</b>	<b>7.31</b>	<b>7.71</b>	<b>7.88</b>	<b>7.95</b>	<b>8.01</b>
60°	<b>5.84</b>	<b>6.88</b>	<b>7.57</b>	<b>7.91</b>	<b>8.10</b>	<b>8.19</b>	<b>8.24</b>
75°	<b>6.14</b>	<b>7.18</b>	<b>7.77</b>	<b>8.09</b>	<b>8.33</b>	<b>8.52</b>	<b>8.71</b>
90°	<b>6.11</b>	<b>7.34</b>	<b>7.95</b>	<b>8.16</b>	<b>8.40</b>	<b>8.67</b>	<b>9.17</b>
110°	<b>6.23</b>	<b>7.49</b>	<b>8.11</b>	<b>8.51</b>	<b>8.84</b>	<b>9.07</b>	<b>9.51</b>
120°	<b>6.09</b>	<b>7.36</b>	<b>8.03</b>	<b>8.47</b>	<b>8.93</b>	<b>9.40</b>	<b>10.01</b>
135°	<b>5.45</b>	<b>6.74</b>	<b>7.69</b>	<b>8.18</b>	<b>8.60</b>	<b>9.08</b>	<b>10.17</b>
150°	<b>4.60</b>	<b>5.75</b>	<b>6.80</b>	<b>7.59</b>	<b>8.00</b>	<b>8.32</b>	<b>9.01</b>
Run VMG	<b>3.98</b>	<b>4.98</b>	<b>5.89</b>	<b>6.58</b>	<b>6.95</b>	<b>7.45</b>	<b>8.25</b>
Gybe Angles	<b>143.5°</b>	<b>147.4°</b>	<b>147.6°</b>	<b>149.9°</b>	<b>151.6°</b>	<b>175.3°</b>	<b>177.9°</b>

**Class Division Length**

CDL = **10.709**

**Storm Sails Areas**

Heavy Weather Jib **41.12**  
Storm Jib (JL=11.35) **15.23**  
Storm Trysail **16.62**

**Owner**

<b>BOAT</b>	
Name <b>Marina X</b> File <b>ISR430</b>	Sail Nr <b>ISR430</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>0</b>
Carbon Mast <b>No</b>	Jumper Struts <b>None</b>
Taper Hollows <b>No</b>	Jib Furler <b>Yes</b>
Fiber Rigging <b>No</b>	Main Furler <b>Yes</b>
Lenticular Rigging <b>No</b>	Without Backstay <b>No</b>
Articulated Bowsprit <b>No</b>	
P <b>16.400</b>	E <b>5.790</b> MDT1 <b>0.151</b> MW <b>0.245</b>
IG <b>17.415</b>	J <b>4.730</b> MDL1 <b>0.245</b> GO <b>0.255</b>
ISP <b>18.180</b>	SFJ <b>0.330</b> MDT2 <b>0.150</b> BD <b>0.250</b>
BAS <b>1.813</b>	SPL <b>0.000</b> MDL2 <b>0.193</b> MWT
FSP <b>0.072</b>	TPS <b>5.650</b> TL <b>0.720</b> MCG

<b>INCLINING TEST AND FREEBOARDS</b>		
Inclining Test <b>Boom Inclining</b>	LCFD	
Flotation date <b>03/08/2018</b>	SG <b>1.0290</b>	
FFM <b>1.536</b>	FF <b>1.545</b>	SFFP <b>0.569</b>
FAM <b>1.242</b>	FA <b>1.242</b>	SAFP <b>12.280</b>
W1 <b>85.0</b>	PD1 <b>140.2</b>	WD <b>5.050</b>
W2 <b>85.0</b>	PD2 <b>140.4</b>	GSA <b>1.0</b>
W3 <b>85.0</b>	PD3 <b>142.6</b>	RSA <b>1.0</b>
W4 <b>85.0</b>	PD4 <b>144.4</b>	PLM <b>9000.0</b>
LCF from stem on CL / on sheer	<b>6.984 / 7.225</b>	
Maximum beam station from stem	<b>8.439</b>	
RM Measured	<b>238.3kg-m</b>	
RM Default	<b>231.9kg-m</b>	
Limit of positive stability / Stab.Index	<b>123.8° / 129.1</b>	
Freeboard at mast at 5.060	<b>1.354</b>	



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

<b>PROPELLER</b>		
Installation <b>Strut</b>	PRD <b>0.460</b>	
Type <b>Folding 3 blades</b>	PBW <b>0.125</b>	
Twin Screw <b>No</b>	PIPA <b>0.0039</b>	
ST1 <b>0.050</b>	ST3 <b>0.180</b>	ST5 <b>0.258</b>
ST2 <b>0.180</b>	ST4 <b>0.112</b>	EDL <b>2.820</b>

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<b>COMMENTS</b>	

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



**Invalid for Racing**  
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<b>CENTERBOARD</b>	
N/A	

<b>SAILS (Maximum Areas)</b>									
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula	
	0.150	1.07	1.89	3.36	4.56	52.50	53.13	P/8 · (E + 2·MQW+ 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
Symmetric Not Available									
Asymmetric on centerline	SLU	SLE	SL	SHW	SFL	Area	Formula		
	19.50	17.14	18.32	10.30	9.83	155.81	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)												
HHB	HUW	HTW	HHW	HQW	HLP	HLU	Area	Btn	Fly	Meas.Date	Material	Comment
0.08	0.70	1.32	2.58	3.80	4.99	17.19	43.88	Y		08/08/2018	Carbon	

<b>MEASUREMENT INVENTORY</b>				
Measurer <b>ISR1</b>				
Date <b>03/08/2018</b>				
Comment				
<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Distance</i>	<i>VCG Description</i>
<i>Id</i>	<i>Item</i>	<i>Maker</i>	<i>Model</i>	
1	Engine	Yanmar	4JH45	
<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Description</i>	
4	Fwd Items	42.0	4 Fenders + Misc 30-	

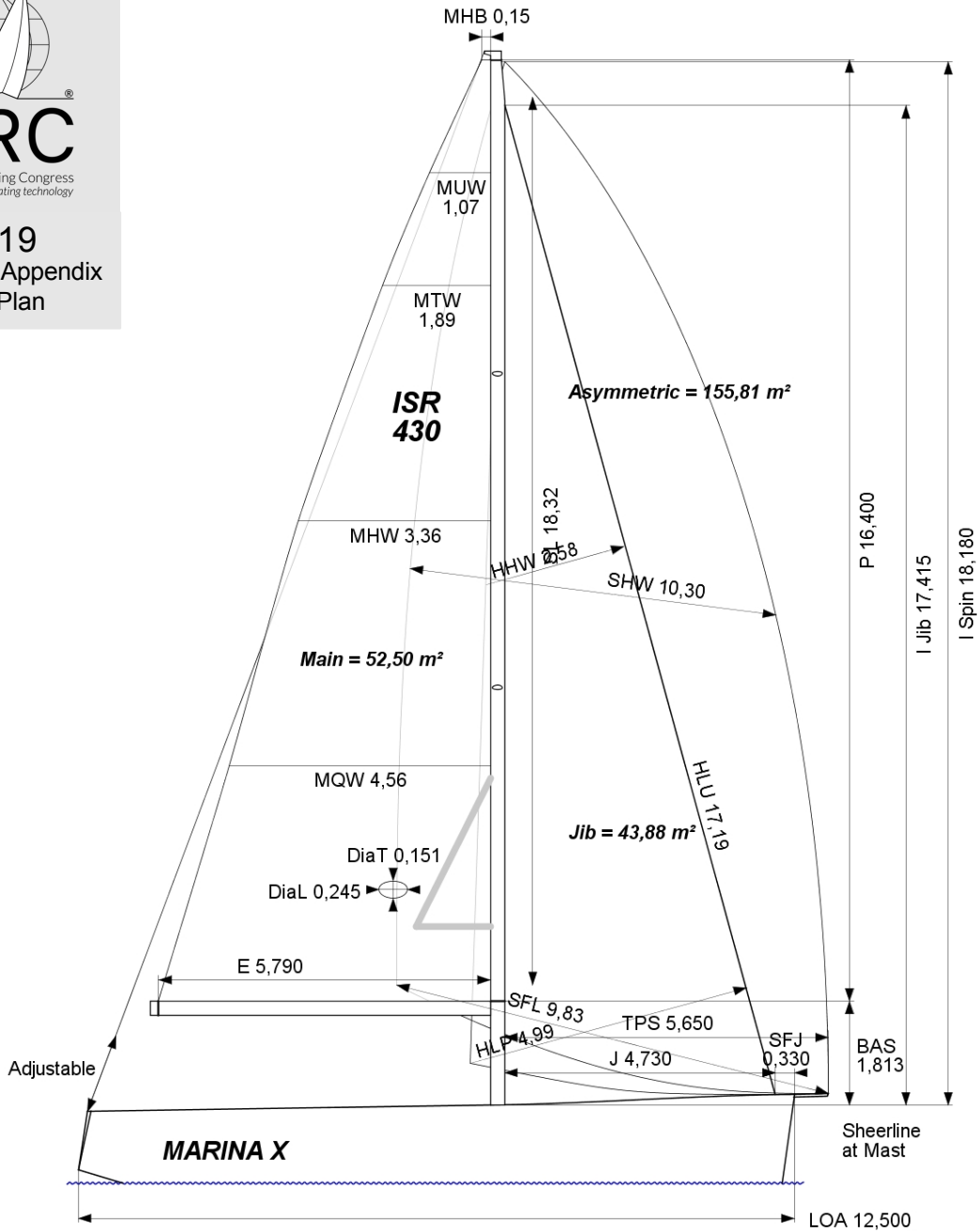
<b>MEASUREMENT INVENTORY</b>							
<i>Id</i>	<i>Item</i>	<i>Tank Use</i>	<i>Tank Type</i>	<i>Capcty</i>	<i>Dist.</i>	<i>VCG</i>	<i>Condtn Description</i>
2	Tank	Disel	Inox - Fix	200.0	6.25		117.0 Stb side
1	Tank	Water	PVC - Fix	340.0	6.25		0.0 Port side
<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Distance</i>	<i>VCG Description</i>			
2	Battery		7.10	2x110 Ah	Stb side		
3	Battery		2.00	Windlass	Battery		
1	Battery		7.10	1x 70 Ah	Centerline		
1	Misc		2.00	Windlass			



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Sail Plan



**SAILS INVENTORY**

**MAINSAIL (1)**

Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment
M1	0.15	1.07	1.89	3.36	4.56	52.51		08/08/2018	NS	Carbon	

**HEADSAILS (1)**

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
Jib1	0.08	0.70	1.32	2.58	3.80	4.99	17.19	105%	43.88	Y			08/08/2018	NS	Carbon	

**SYMMETRIC SPINNAKERS (0)**

Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
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**ASYMMETRIC SPINNAKERS (1)**

Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
A2	19.50	17.14	18.32	10.30	9.83	155.82	asym		10/08/2018	NS	Nylon	