

<b>BOAT</b> Name <b>WIRBELZOPF 3/4</b> Sail Nr <b>J80 1089</b>	<b>GPH</b> <b>670,5</b>	<b>HULL</b> Length Overall <b>7,997m</b> Maximum Beam <b>2,490m</b> Displacement <b>1.484kg</b> Draft <b>1,490m</b> IMS Reg. Division <b>Sportboat</b> Dynamic Allowance <b>0,156%</b> Fwd Accommodation <b>No</b> Hull Construction <b>Cored</b> Carbon Rudder <b>No</b> Crew Arm Extension <b>0,00</b>
<b>GENERAL</b> Class <b>J-80 OD</b> Designer <b>JOHNSTONE</b> Builder <b>J-COMPOSITE</b> Series <b>01/1995</b> Age <b>01/2008</b> Age Allowance <b>0,487%</b> Offset File <b>J80_15.OD - 13/4/2015 16:33:40</b> Measurement by <b>ONEDESIGN - 02/09/2002</b>		IMSL <b>7,228m</b> VCGD <b>-0,150m</b> Sink <b>9,02kg/mm</b> RL <b>7,030m</b> VCGM <b>-0,104m</b> WS <b>11,94m<sup>2</sup></b>



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**2015**  
ORC International  
One Design Certificate

**Rating Office**

Offshore  
Racing  
Congress



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	OFFSHORE COASTAL / LONG DISTANCE			INSHORE WINDWARD / LEEWARD		
	PLT	PLD		PLT	PLD	
Time On Distance	<b>653,9</b>			<b>735,6</b>		
Time On Time	<b>0,9176</b>			<b>0,9176</b>		
Performance Line	<b>0,797</b>	<b>108,5</b>		<b>0,878</b>	<b>281,7</b>	
Triple Number	Low <b>0,8882</b>	Medium <b>1,1300</b>	High <b>1,2734</b>	Low <b>0,6819</b>	Medium <b>0,9148</b>	High <b>1,0390</b>

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	<b>1158,9</b>	<b>953,8</b>	<b>841,2</b>	<b>796,4</b>	<b>775,8</b>	<b>764,4</b>	<b>772,1</b>
52°	<b>752,4</b>	<b>628,3</b>	<b>578,7</b>	<b>560,5</b>	<b>551,6</b>	<b>546,5</b>	<b>542,9</b>
60°	<b>705,2</b>	<b>600,4</b>	<b>562,6</b>	<b>542,1</b>	<b>530,5</b>	<b>523,8</b>	<b>518,6</b>
75°	<b>667,6</b>	<b>581,5</b>	<b>549,0</b>	<b>521,1</b>	<b>498,6</b>	<b>485,7</b>	<b>476,9</b>
90°	<b>629,9</b>	<b>560,9</b>	<b>542,2</b>	<b>517,9</b>	<b>493,6</b>	<b>467,9</b>	<b>437,8</b>
110°	<b>636,6</b>	<b>557,6</b>	<b>508,4</b>	<b>478,5</b>	<b>462,6</b>	<b>448,5</b>	<b>417,3</b>
120°	<b>656,5</b>	<b>562,3</b>	<b>522,0</b>	<b>479,7</b>	<b>448,4</b>	<b>429,8</b>	<b>392,2</b>
135°	<b>745,8</b>	<b>608,8</b>	<b>551,7</b>	<b>512,6</b>	<b>473,2</b>	<b>433,2</b>	<b>351,7</b>
150°	<b>888,0</b>	<b>711,6</b>	<b>610,4</b>	<b>556,4</b>	<b>521,2</b>	<b>485,3</b>	<b>404,4</b>
Run VMG	<b>1025,4</b>	<b>821,7</b>	<b>704,3</b>	<b>624,6</b>	<b>580,1</b>	<b>547,0</b>	<b>477,6</b>

**Certificate**

Number **141701**  
ORC Ref **GER20011654**  
Issued On **8/4/2015**  
VPP Ver. **2015 1.01**  
Valid until **1/1/2016**

**Crew Weight**

Declared **339kg**  
Default\* **407kg**  
Non Manual Pwr **No**

**Special Scoring**

	ToD	ToT
Double H.GPH	<b>678,9</b>	<b>0,8838</b>
Double H.OSN	<b>664,1</b>	<b>0,9034</b>
Non Spin GPH	<b>717,0</b>	<b>0,8368</b>
Non Spin OSN	<b>693,5</b>	<b>0,8652</b>
N/S Perf. Line	<b>79,1</b>	<b>0,704</b>

Selected Courses							
Windward / Leeward	<b>1092,1</b>	<b>887,8</b>	<b>772,7</b>	<b>710,5</b>	<b>677,9</b>	<b>655,7</b>	<b>624,8</b>
Circular Random	<b>915,5</b>	<b>743,2</b>	<b>651,3</b>	<b>597,8</b>	<b>563,9</b>	<b>540,4</b>	<b>507,3</b>
Ocean for PCS	<b>976,5</b>	<b>776,2</b>	<b>665,0</b>	<b>596,2</b>	<b>549,0</b>	<b>512,7</b>	<b>454,9</b>
Non Spinnaker	<b>1001,7</b>	<b>802,7</b>	<b>694,8</b>	<b>631,3</b>	<b>591,5</b>	<b>564,9</b>	<b>530,3</b>

**Sails Limitations**

Headsails	Spinnakers
<b>6</b>	<b>3</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>43,5°</b>	<b>42,4°</b>	<b>40,8°</b>	<b>39,2°</b>	<b>38,2°</b>	<b>37,7°</b>	<b>39,1°</b>
Beat VMG	<b>3,11</b>	<b>3,77</b>	<b>4,28</b>	<b>4,52</b>	<b>4,64</b>	<b>4,71</b>	<b>4,66</b>
52°	<b>4,78</b>	<b>5,73</b>	<b>6,22</b>	<b>6,42</b>	<b>6,53</b>	<b>6,59</b>	<b>6,63</b>
60°	<b>5,10</b>	<b>6,00</b>	<b>6,40</b>	<b>6,64</b>	<b>6,79</b>	<b>6,87</b>	<b>6,94</b>
75°	<b>5,39</b>	<b>6,19</b>	<b>6,56</b>	<b>6,91</b>	<b>7,22</b>	<b>7,41</b>	<b>7,55</b>
90°	<b>5,72</b>	<b>6,42</b>	<b>6,64</b>	<b>6,95</b>	<b>7,29</b>	<b>7,69</b>	<b>8,22</b>
110°	<b>5,66</b>	<b>6,46</b>	<b>7,08</b>	<b>7,52</b>	<b>7,78</b>	<b>8,03</b>	<b>8,63</b>
120°	<b>5,48</b>	<b>6,40</b>	<b>6,90</b>	<b>7,51</b>	<b>8,03</b>	<b>8,38</b>	<b>9,18</b>
135°	<b>4,83</b>	<b>5,91</b>	<b>6,53</b>	<b>7,02</b>	<b>7,61</b>	<b>8,31</b>	<b>10,24</b>
150°	<b>4,05</b>	<b>5,06</b>	<b>5,90</b>	<b>6,47</b>	<b>6,91</b>	<b>7,42</b>	<b>8,90</b>
Run VMG	<b>3,51</b>	<b>4,38</b>	<b>5,11</b>	<b>5,76</b>	<b>6,21</b>	<b>6,58</b>	<b>7,54</b>
Gybe Angles	<b>143,7°</b>	<b>145,1°</b>	<b>150,5°</b>	<b>159,7°</b>	<b>169,8°</b>	<b>170,9°</b>	<b>153,5°</b>

**Class Division Length**

CDL = **7,130**

**Storm Sails Areas**

Heavy Weather Jib **12,35**  
Storm Jib (JL=6,22) **4,57**  
Storm Trysail **6,09**

**Owner**

<b>BOAT</b>	
Name <b>WIRBELZOPF 3/4</b>	Sail Nr <b>J80 1089</b>
File <b>J801089.dxt</b>	Data in <b>meters/kilograms</b>

<b>INCLINING TEST AND FREEBOARDS</b>	
Inclining Test <b>Enter VCG directly</b>	
Flotation date <b>02/09/2014</b>	SG <b>1,0000</b>
VCGDe <b>-0,150</b>	
FFM <b>0,812</b>	FF <b>0,817</b> SFFP <b>0,848</b>
FAM <b>0,637</b>	FA <b>0,640</b> SAFP <b>7,993</b>
LCF from stem on CL / on sheer <b>4,187 / 4,358</b>	
Maximum beam station from stem <b>4,590</b>	
RM Measured <b>28,2kg·m</b>	
RM Default <b>27,6kg·m</b>	
Limit of positive stability / Stab.Index <b>113,6° / 107,2</b>	
Freeboard at mast at 2,890 <b>0,730</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>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>9,140</b>	E <b>3,810</b> MDT1 <b>0,082</b> MW <b>0,120</b>
IG <b>9,563</b>	J <b>2,890</b> MDL1 <b>0,133</b> GO <b>0,120</b>
ISP <b>10,073</b>	SFJ <b>0,000</b> MDT2 <b>0,063</b> BD <b>0,094</b>
BAS <b>1,300</b>	SPL <b>0,104</b> MWT <b>56,00</b>
FSP <b>0,054</b>	TPS <b>4,795</b> TL <b>0,380</b> MCG <b>3,210</b>



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## 2015 Measurements Datasheet

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

<b>PROPELLER</b>	
Type <b>No Propeller</b>	

<b>Certificate</b>	
Number <b>141701</b>	
ORC Ref <b>GER20011654</b>	
Issued On <b>8/4/2015</b>	
VPP Ver. <b>2015 1.01</b>	
Valid until <b>1/1/2016</b>	

<b>COMMENTS</b>	
BASED ON CLASSRULE STANDARD GER ORCi CERTIFICATE	

<b>MOVEABLE BALLAST</b>	
N/A	

<b>CENTERBOARD</b>	
N/A	



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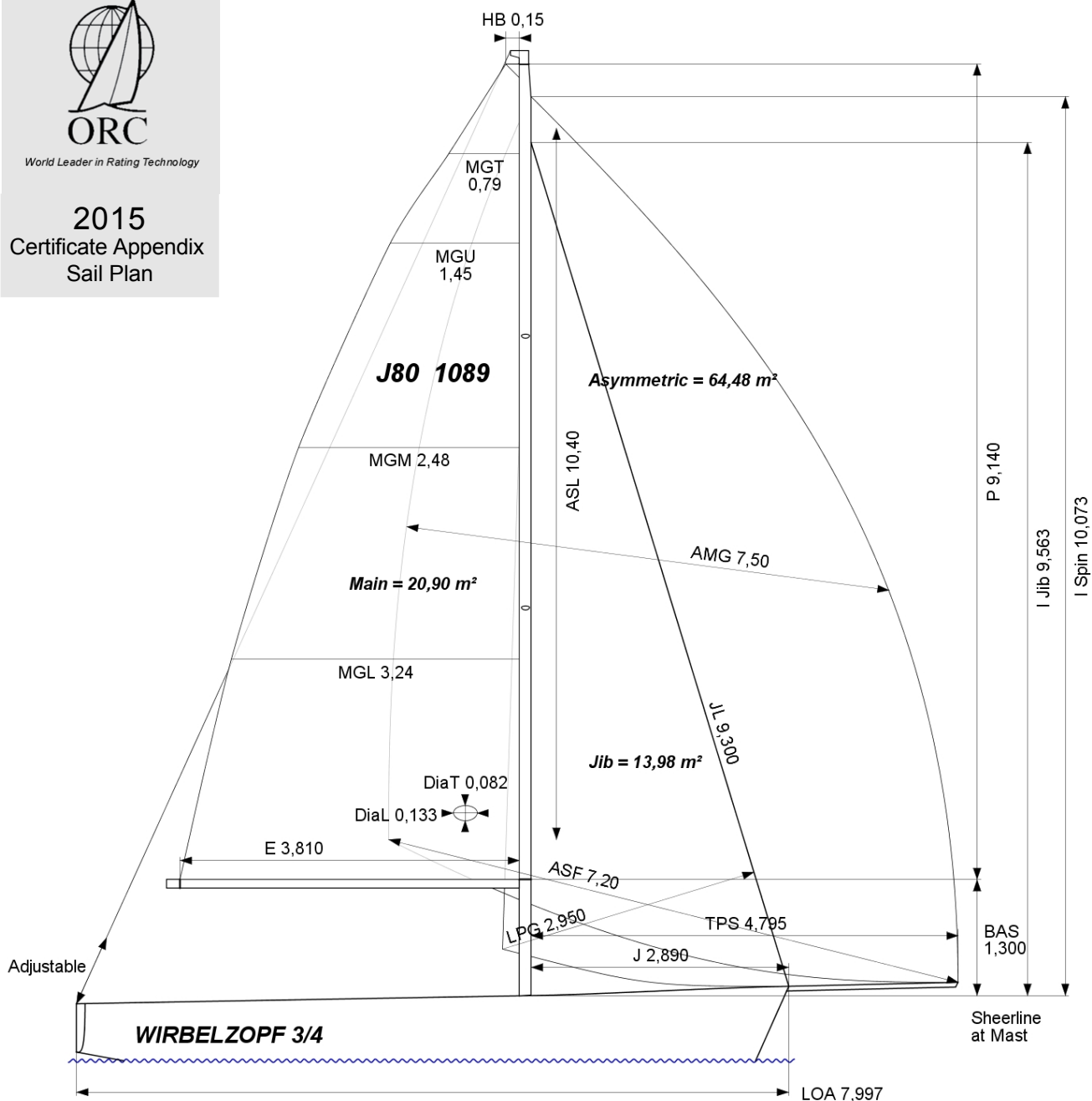
<b>SAILS (Maximum Areas)</b>									
Mainsail	HB	MGT	MGU	MGM	MGL	Area	Area (r)	Formula	
	0,152	0,79	1,45	2,48	3,24	20,90	21,52	P/8 · (E + 2·MGL + 2·MGM + 1.5·MGU + MGT + 0.5·HB)	
Symmetric Not Available									
Asymmetric	SLU	SLE	ASL	AMG	ASF				
	12,00	8,80	10,40	7,50	7,20	64,48		ASL · (ASF + 4·AMG) / 6	

<b>HEADSAILS</b>												
Area = 0.1125·JL·(1.445·LPG+2·JGL+2·JGM+1.5·JGU+JGT+0.5·JH)												
JH	JGT	JGU	JGM	JGL	LPG	JL	Area	Btn	Fly	Meas.Date	Material	Comment
0,08			1,48		2,95	9,30	13,98					* Copied from legacy *



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2015  
Certificate Appendix  
Sail Plan



**SAILS INVENTORY**

**MAINSAIL**

Id	HB	MGT	MGU	MGM	MGL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
ORC	0,152	0,79	1,45	2,48	3,24	20,90					* Copied from legacy

**HEADSAILS**

Id	JH	JGT	JGU	JGM	JGL	LPG	JL	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
ORC	0,08			1,48		2,95	9,30	102%	13,98							* Copied from legacy *

**SYMMETRIC SPINNAKERS**

Id	SL	SMG	SF	Area	Measurer	Meas.Date	Manufacture	Material	Comment
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**ASYMMETRIC SPINNAKERS**

Id	SLU	SLE	ASL	AMG	ASF	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
ORC	12,00	8,80	10,40	7,50	7,20	64,48	asym					* Copied from legacy *